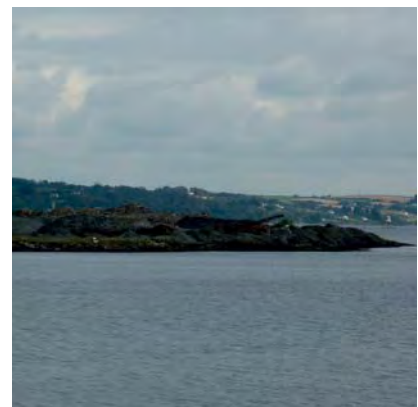


East Tip Remediation Project, Haulbowline, Co Cork

Volume 3 Technical Appendices

Appendix B - Q



October 2013

APPENDIX B

SITE INVESTIGATION FORESHORE

RPS East Tip Foreshore Investigation	
Trial Pit No:	TP1
Date:	14/01/2013
Survey Point ID.:	h1
Depth (m)	Strata Encountered
0 - 0.1	Waste concrete and occasional fill debris (metal bands and plastic tubing)
0.1 - 0.7	Angular - subangular Cobbles and Boulders with sand, silt and shells
0.7 - 1.10	Grey very silty SAND with shells and occasional angular cobbles
1.1	End of Pit
Samples taken from:	0.7 - 0.9m
Notes / Comments:	
Trial Pit located close to base of Revetment from Naval Base in NW corner of East Tip site	
Excavated using a 13.5t tracked excavator	

RPS East Tip Foreshore Investigation	
Trial Pit No:	TP2
Date:	14/01/2013
Survey Point ID.:	h2
Depth (m)	Strata Encountered
0 - 0.2	Very sandy SLAG with metal debris with abundant seashells
0.2 - 1.5	Grey SLAG with metal pieces
1.5 - 2.0	Grey very silty SAND with shells
2	End of Pit
Samples taken from:	0 - 0.2m 1.6 - 1.8m
Notes / Comments:	
Excavated using a 13.5t tracked excavator	

RPS East Tip Foreshore Investigation	
Trial Pit No:	TP3
Date:	14/01/2013
Survey Point ID.:	h3
Depth (m)	Strata Encountered
0 - 0.3	Consolidated SLAG with metal pieces
0.3 - 1.8	Grey SLAG with concrete, refractory bricks and metal pieces
1.8 - 2.0	Grey silty SAND with shells
2	End of Pit
Samples taken from:	0.5 - 1.0, 1.8 - 2.0
<u>Notes / Comments:</u>	
Excavated using a 13.5t tracked excavator	

RPS East Tip Foreshore Investigation	
Trial Pit No:	TP4
Date:	14/01/2013
Survey Point ID.:	h4
Depth (m)	Strata Encountered
0 - 0.10	Boulders of SLAG with metal, tyres and abundant shells
0.10 - 1.50	Consolidated SLAG with some refractory bricks
1.50 - 2.0	Grey SILT with occasional seashells
Samples taken from:	0.5 - 1.0 1.8 - 2.0
<u>Notes / Comments:</u>	
Excavated using a 13.5t tracked excavator	

RPS East Tip Foreshore Investigation	
Trial Pit No:	TP5
Date:	14/01/2013
Survey Point ID.:	h5
Depth (m)	Strata Encountered
0 - 1.2	Consolidated SLAG with rebar, metal pieces, refractory bricks
1.2 - 1.8	Sandy black silty SLAG
1.8 - 2.0	Grey SILT
Samples taken from:	0.3 - 0.5 1.8 - 2.0
Notes / Comments:	
Excavated using a 13.5t tracked excavator	

RPS East Tip Foreshore Investigation	
Trial Pit No:	TP6
Date:	14/01/2013
Survey Point ID.:	h6
Depth (m)	Strata Encountered
0 - 0.5	Brown sandy SLAG in Cobble and Boulder form with rebar and metal scrap debris
0.5 - 2.3	Grey slightly consolidated fine grained SLAG with abundant waste material including steel barrels and refractory bricks
2.3 - 2.5	Grey SILT
Samples taken from:	0.6 - 1.0 2.3 - 2.5
Notes / Comments:	
Excavated using a 13.5t tracked excavator	

RPS East Tip Foreshore Investigation	
Trial Pit No:	TP7
Date:	14/01/2013
Survey Point ID.:	h7
Depth (m)	Strata Encountered
0-0.4	Brown sandy shelly gravel sized SLAG with some refractory brick.
0.4 - 0.7	Grey sandy shelly gravel sized SLAG with occasional metal and plastic waste
0.7 - 1.0	Abundant shells with occasional plastic and refractory bricks
1.0 - 1.2	Grey SILT
Samples taken from:	0.2 - 0.4 1 - 1.2
<u>Notes / Comments:</u>	
Excavated using a 13.5t tracked excavator	

RPS East Tip Foreshore Investigation	
Trial Pit No:	TP8
Date:	14/01/2013
Survey Point ID.:	h8
Depth (m)	Strata Encountered
0-0.1	Large SLAG boulders on surface
0.1 - 0.7	Grey SILT
Samples taken from:	None
<u>Notes / Comments:</u>	
Excavated using a 13.5t tracked excavator	

RPS East Tip Foreshore Investigation	
Trial Pit No:	TP9
Date:	14/01/2013
Survey Point ID.:	h9
Depth (m)	Strata Encountered
0-0.1	Grey SLAG cobbles & boulders on surface
0.1 - 0.3	Grey SILT
Samples taken from:	0 - 0.1 0.1 - 0.2
<u>Notes / Comments:</u>	
Excavated using a 13.5t tracked excavator	

RPS East Tip Foreshore Investigation	
Trial Pit No:	TP10
Date:	14/01/2013
Survey Point ID.:	h10
Depth (m)	Strata Encountered
0 - 0.6	Brown gravelly SLAG with occasional refractory brick
0.6 - 1.0	Grey SILT
Samples taken from:	0.1 - 0.4
<u>Notes / Comments:</u>	
Excavated using a 13.5t tracked excavator	

RPS East Tip Foreshore Investigation	
Trial Pit No:	TP11
Date:	14/01/2013
Survey Point ID.:	h11
Depth (m)	Strata Encountered
0 - 0.8	Brown Gravel sized SLAG with metal pieces
0.8 - 1.0	Grey SILT
Samples taken from:	0.4 - 0.6 0.8 - 1.0
<u>Notes / Comments:</u>	
Excavated using a 13.5t tracked excavator	

RPS East Tip Foreshore Investigation	
Trial Pit No:	TP12
Date:	15/01/2013
Survey Point ID.:	h15
Depth (m)	Strata Encountered
0 - 0.5	Very consolidated SLAG
0.5 - 2.3	Consolidated SLAG with scrap metal, refractory brick and possible millscale (~20%)
2.3 - 2.5	Black SILT
Samples taken from:	0.3 - 0.5 2.3 - 2.5
<u>Notes / Comments:</u>	
Track Machine scaping surface for 40 minutes to break through from 0 -0.50m	
Excavated using a 13.5t tracked excavator	

RPS East Tip Foreshore Investigation	
Trial Pit No:	TP13
Date:	15/01/2013
Survey Point ID.:	h13
Depth (m)	Strata Encountered
0 - 0.3	Very Consolidated SLAG
0.3 - 1.5	Consolidated SLAG and occasional refractory bricks & scrap metal (<5%)
1.5 - 2.1	Dark brown / grey gravel sized consolidated SLAG with abundant C&D waste - plastic, glass, metal & timber
2.1 - 2.3	Dark grey SILT
Samples taken from:	1.8 - 2.0 2.1 - 2.3
<u>Notes / Comments:</u>	
Track Machine scaping surface for 20 minutes to break through from 0 - 0.30m	
Excavated using a 13.5t tracked excavator	

RPS East Tip Foreshore Investigation	
Trial Pit No:	TP14
Date:	15/01/2013
Survey Point ID.:	h14
Depth (m)	Strata Encountered
0 - 1	Consolidated gravel sized SLAG with occasional refractory bricks
1 - 1.2	Grey SILT
Samples taken from:	0.5 - 1.0
<u>Notes / Comments:</u>	
Excavated using a 13.5t tracked excavator	

RPS East Tip Foreshore Investigation	
Trial Pit No:	TP15
Date:	15/01/2013
Survey Point ID.:	h15
Depth (m)	Strata Encountered
0 - 0.3	Loose gravel sized SLAG (highly fused slab at inland end of trial pit - no progress through it with excavator)
0.3 - 0.9	Unprocessed SLAG with abundant refractory bricks and occasional C&D waste
0.9 - 1.1	Grey SILT
Samples taken from:	0.6 - 0.8
<u>Notes / Comments:</u>	
Excavated using a 13.5t tracked excavator	

RPS East Tip Foreshore Investigation	
Trial Pit No:	TP16
Date:	15/01/2013
Survey Point ID.:	h16
Depth (m)	Strata Encountered
0 - 0.3	Loose gravel sized SLAG
0.3 - 1.4	Loose gravel sized SLAG with abundant refractory bricks and waste metal (rebar and steel)
1.4 - 1.6	Grey SILT
Samples taken from:	None Taken
<u>Notes / Comments:</u>	
Excavated using a 13.5t tracked excavator	

RPS East Tip Foreshore Investigation	
Trial Pit No:	TP17
Date:	15/01/2013
Survey Point ID.:	h17
Depth (m)	Strata Encountered
0 - 2.0	Unconsolidated SLAG with occasional C&D waste including metal scrap and refractory bricks. Some black staining with slight HC odours.
2.0 - 2.2	Grey SILT
Samples taken from:	1.7 - 1.9 2 - 2.2
<u>Notes / Comments:</u>	
Excavated at base of bank of slag outside line of proposed perimeter as outlined for SI	
Excavated using a 13.5t tracked excavator	

RPS East Tip Foreshore Investigation	
Trial Pit No:	TP18
Date:	15/01/2013
Survey Point ID.:	h18
Depth (m)	Strata Encountered
0 - 1.5	Loose SLAG with abundant C&D waste - rebar steel, refractory bricks, tyres
1.5 - 1.7	Grey SILT
Samples taken from:	None Taken
<u>Notes / Comments:</u>	
Excavated at base of bank of slag outside line of proposed perimeter as outlined for SI	
Excavated using a 13.5t tracked excavator	

RPS East Tip Foreshore Investigation	
Trial Pit No:	TP19
Date:	15/01/2013
Survey Point ID.:	h19
Depth (m)	Strata Encountered
0 - 1.0	Brown gravel and cobble sized SLAG with occasional rebar steel
1.0 - 1.8	Dark grey very consolidated SLAG with rebar steel, Scrap metal with moderate hydrocarbon odours with occasional pipes and wires.
1.8 - 2.2	Consolidated brown SLAG with frequent wires.
2.2 - 2.5	Grey SILT
Samples taken from:	0.3 - 0.5 1.2 - 1.5 2.2 - 2.5
<u>Notes / Comments:</u>	
Excavated using a 13.5t tracked excavator	

RPS East Tip Foreshore Investigation	
Trial Pit No:	TP20
Date:	15/01/2013
Survey Point ID.:	h20
Depth (m)	Strata Encountered
0 - 1.5	Brown partly consolidated gravel and cobble sized SLAG
1.5 - 1.7	Grey SILT
Samples taken from:	0.5 - 0.7 1.5 - 1.7
<u>Notes / Comments:</u>	
Excavated using a 13.5t tracked excavator	

RPS East Tip Foreshore Investigation	
Trial Pit No:	TP21
Date:	15/01/2013
Survey Point ID.:	h21
Depth (m)	Strata Encountered
0 - 0.5	Brown partly consolidated gravel and cobble sized SLAG with frequent shells
0.5 - 1.8	Dark brown / grey partly consolidated gravel and cobble sized SLAG with shells
1.8 - 4.5	Unconsolidated SLAG with abundant shells and C&D waste including timber, refractory bricks, cables, plastic, springs, metal fragments, batteries.
Samples taken from:	2 - 2.5
<u>Notes / Comments:</u>	
TP terminated as no progress made below 4.5m and high risk of undermining track machine during excavation	
Excavated using a 13.5t tracked excavator	

RPS East Tip Foreshore Investigation	
Trial Pit No:	TP21b
Date:	16/01/2013
Survey Point ID.:	h21b
Depth (m)	Strata Encountered
0 - 0.1	Loose SLAG
0.1 - 0.50	Grey SILT
Samples taken from:	None
<u>Notes / Comments:</u>	
TP located 4m seaward of TP21 below a 0.3m step on the consolidated slag surface at this location	
Excavated using a 13.5t tracked excavator	

RPS East Tip Foreshore Investigation	
Trial Pit No:	TP22
Date:	16/01/2013
Survey Point ID.:	h22
Depth (m)	Strata Encountered
0 - 0.1	Loose gravel sized SLAG with occasional cobble sized pieces of SLAG
0.1 - 0.4	Grey SILT
Samples taken from:	0.2 - 0.4
<u>Notes / Comments:</u>	
Excavated using a 13.5t tracked excavator	

RPS East Tip Foreshore Investigation	
Trial Pit No:	TP23 / TP23b
Date:	16/01/2013
Survey Point ID.:	h23 / h23b
Depth (m)	Strata Encountered
TP23	
0 - 0.9	Brown gravel and cobble sized SLAG with abundant shells and occasional refractory bricks and scrap metal.
0.9	Very consolidated SLAG - No progress made - Pit extended to TP23b
TP23b	
0-0.4	Brown gravel and cobble sized SLAG with abundant shells and occasional refractory bricks and scrap metal.
0.4 - 0.7	Grey SILT with abundant shells
Samples taken from:	0.2 - 0.4 0.4 - 0.7
<u>Notes / Comments:</u>	
TP23 excavated inside line of proposed perimeter due to wide beach and possible shallow slag as identified in pits to the north. Pit extended onto line of proposed perimeter (TP23b) and shallow SLAG encountered there. Excavated using a 13.5t tracked excavator	

RPS East Tip Foreshore Investigation	
Trial Pit No:	TP24
Date:	16/01/2013
Survey Point ID.:	h24
Depth (m)	Strata Encountered
0 - 0.8	Very Consolidated brown mottled dark brown/grey gravel and cobble sized SLAG
0.8 - 2.7	Unprocessed SLAG with abundant C&D waste - plastic, metal, pipe, tiles, cables and wires
2.7 - 3.0	Grey SILT
Samples taken from:	0.3 - 0.5 1.5 - 1.8 2.7 - 3.0
<u>Notes / Comments:</u>	
Excavated using a 13.5t tracked excavator	

RPS East Tip Foreshore Investigation	
Trial Pit No:	TP25
Date:	16/01/2013
Survey Point ID.:	h25
Depth (m)	Strata Encountered
0 - 0.3	Gravel sized SLAG on surface
0.3 - 1.9	Very consolidated gravel and cobble sized SLAG with abundant shells
1.9 - 2.2	Grey SILT
Samples taken from:	1 - 1.2
<u>Notes / Comments:</u>	
TP25 excavated 20m north of TP24 to delineate the C&D waste encountered in TP24	
Excavated using a 13.5t tracked excavator	

RPS East Tip Foreshore Investigation	
Trial Pit No:	TP26
Date:	16/01/2013
Survey Point ID.:	h26
Depth (m)	Strata Encountered
0 - 1.2	Cobble and boulder sized SLAG infilled with gravel sized SLAG and grey silt
1.2 - 2.0	Consolidated slag with occasional metal waste and rebar steel
2.0 - 3.0	Dark grey gravel sized SLAG with frequent metal pieces, cables and a battery
3.0 - 3.2	Grey SILT
Samples taken from:	2.2 - 2.5 3 - 3.2
<u>Notes / Comments:</u>	
Excavated using a 13.5t tracked excavator	

RPS East Tip Foreshore Investigation	
Trial Pit No:	TP27
Date:	16/01/2013
Survey Point ID.:	h27
Depth (m)	Strata Encountered
0 - 0.9	Gravel sized SLAG with frequent refractory bricks, metal & steel
0.9 - 1.1	Grey SILT
Samples taken from:	None
<u>Notes / Comments:</u>	
TP excavated 3m seaward of TP6	
Excavated using a 13.5t tracked excavator	

RPS East Tip Foreshore Investigation	
Trial Pit No:	TP28
Date:	16/01/2013
Survey Point ID.:	h28
Depth (m)	Strata Encountered
0 - 2.5	Loose gravel and cobble sized SLAG with seashells and occasional waste material - wiring, metal , plastic
2.5 - 2.7	Grey SILT
Samples taken from:	No Samples
<u>Notes / Comments:</u>	
Excavated using a 13.5t tracked excavator	

RPS East Tip Foreshore Investigation	
Trial Pit No:	TP29
Date:	16/01/2013
Survey Point ID.:	h29
Depth (m)	Strata Encountered
0 - 0.4	Very consolidated SLAG excavated as gravel
0.4	TP Terminated following 45 minutes and no progress
Samples taken from:	None
<u>Notes / Comments:</u>	
TP29 located between TP12 and TP13 and located at the low water mark	
Excavated using a 13.5t tracked excavator	

APPENDIX C

EAST TIP REMEDIATION CLASSIFICATION OF SLAG WASTE (RPS, 2013)

East Tip Remediation

Classification of Slag Waste

DOCUMENT CONTROL SHEET

Client:	Cork County Council					
Project Title:	East Tip Remediation					
Document Title:	Classification of Slag Waste					
Document No:	MCE0734Rp0007					
This Document Comprises:	DCS	TOC	Text	List of Tables	List of Figures	No. of Appendices
	1	1	13	1	-	5

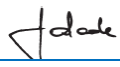

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1 INTRODUCTION

Cork County Council is currently engaged in the statutory process for the remediation of the East Tip, Haulbowline Island, Cork Harbour. Wastes from the former steel works on the island, were deposited at the East Tip over several decades. The Council are applying to the Environmental Protection Agency for a hazardous waste licence.

Whilst it is accepted that some hazardous wastes are present within the tip, necessitating a hazardous waste licence to achieve regularisation, the objective of this study is to demonstrate that only a proportion of the waste within the tip is hazardous, and to examine the extent of the non-hazardous element within the slag based materials.

A 2008 report by White Young Green (WYG)¹, provides a broad characterisation of the waste in the East Tip, based on best estimates; the breakdown of the waste is given as:

Slag	63.52%
Refractories	15.28%
Millscale	13.4%
Scrap metal	6.65%
Sludge	0.99%
Furnace/Flue Dust	0.05%
Refuse	0.05%
C&D Waste	0.05%
Topsoil	0.01%

This study focussed on the slag component of the waste. Slag produced during iron and steel manufacture is accepted as non-hazardous. This study recognises that the slag waste as it exited the steel manufacturing process on site was non-hazardous, and that dangerous substances may have been introduced during uncontrolled tipping alongside hazardous wastes such as flue dust. The purpose of this report is to highlight the non-hazardous nature of ferrous slag, and to demonstrate that a significant proportion of the slag deposited in the East Tip is non-hazardous.

This study is based on the outputs from a site investigation undertaken by WYG in 2012, which RPS used to target the slag. Samples of the slag were obtained in October 2012 to facilitate the application of the EPA's 'Paper Tool of the Procedure for the Identification of the Hazardous Components of Waste, Volume I (Clean Technology Centre, August 2004)' (hereafter Paper Tool). The Paper Tool is an Irish tool developed to guide the waste generator through the process of classifying their waste in accordance with EU legislation.

¹ Environmental Assessment of the East Tip area of Haulbowline Island by White Young Green for the Department of the Environment, Heritage and Local Government; White Young Green (WYG), 2008.

2 SAMPLE SELECTION

The overall objective of the sample selection process was to provide a statistically representative assessment of the slag component of the waste, taking account of the following European standards:

- EN 14899:2005: Characterisation of Waste - Sampling of Waste Materials - Framework for the Preparation and Application of a Sampling Plan.
- CEN/TR 15310-1:2006: Characterization of waste - Sampling of waste materials - Part 1: Guidance on selection and application of criteria for sampling under various conditions.

Samples were selected from an existing pool of samples that were available from the boreholes drilled during a comprehensive site investigation undertaken by WYG on behalf of CCC in 2012. The sampling was undertaken on 26th October 2012, by an RPS environmental scientist with previous experience of the site and samples.

A total of nineteen slag samples were assessed individually using the Paper Tool, as follows:

- 16 No. borehole samples, from varying depths, taken from 13 No. boreholes across the site;
- 3 No. surface samples obtained from stockpiles of processed slag.

The sampling locations are shown on Figure 1, in **Appendix A**. The number of samples and the locations of the samples are considered to provide a broad representation of the slag component of the waste.

The samples were sent to Jones Laboratory for analysis of a comprehensive suite of parameters, which matched the full solid suite used for the completion of a Detailed Quantitative Risk Assessment (dQRA) undertaken by WYG. See **Appendix B** (Analytical Results) for the parameters contained in this suite. Three of the seventeen borehole samples were also tested for dioxins and furans.

3 EPA PAPER TOOL CLASSIFICATION

3.1 BACKGROUND

In the EU, wastes are classified using the European Waste Catalogue and Hazardous Waste List. The catalogue contains two codes for slag from the iron and steel industry, both of which are given an absolute non-hazardous classification. These are:

- 10 02 01 wastes from the processing of slag
- 10 02 02 unprocessed slag

There are three categories of code within the European Waste Catalogue and Hazardous Waste List - (absolute) hazardous, (absolute) non-hazardous or a mirror entry. A mirror entry can be either hazardous or non-hazardous, depending on the composition of the waste. For example:

- 17 05 03* soil and stones containing dangerous substances
- 17 05 04 soil and stones other than those mentioned in 17 05 03*

A producer of soil and stone waste must decide if their waste is hazardous or not and chose which code to apply.

There are no mirror entries for either type of slag waste listed above, indicating that ferrous slag is non-hazardous. Therefore, any slag deemed hazardous as part of this study, is so because of foreign dangerous substances that have been artificially introduced.

In Ireland, hazardous waste is defined in Section 4(1) of the Waste Management Acts 1996 - 2012 as follows:

'hazardous waste' means waste which displays one or more of the hazardous properties listed in the Second Schedule

The EPA's Paper Tool developed by CTC in 2002 (updated in 2004) provides a mechanism for determining if a waste is hazardous or not. Where there is a suspicion or expectation that a waste may be hazardous, the producer can use the Paper Tool to determine which EWC code should apply.

In the case of the slag within the East Tip, the objective is not strictly to facilitate a decision on which EWC code to apply, since as described above, there are only two non-hazardous codes that fit, based upon the known history of steelmaking activities at the site which are well documented. Moreover, the Paper Tool is applied here to examine if dangerous substances are present in the deposited slag, and if so, are they at concentrations that render the slag hazardous.

The Paper Tool employs current best practice in Ireland for determining if a waste is hazardous or not. It is recognised that the tool has not been updated since 2004, however, the tool points out that the legislation referenced is constantly evolving and advises that the most recent legislation should be referenced when using the tool. Whilst the Paper Tool is typically used in the context of a producer determining an appropriate disposal (or recovery) route, its use in classifying the deposited slag for this study is considered appropriate.

The following information sources have been used in this assessment:

- Waste Management Acts, 1996 - 2012;
- European Waste Catalogue and Hazardous Waste List - Valid from 1st January 2002 (EPA, 2002);
- Annex I of Directive 67/548/EEC on the approximation of laws, regulations and administrative provisions relating to the classification, packaging and labelling of dangerous substances;
- Annex VI to Regulation (EC) No 1272/2008 on Classification, Labelling and Packaging of Dangerous Substances;
- Technical Guidance WM2, Hazardous Waste - Interpretation of the definition and classification of hazardous waste (NIEA, 2011).paper tool classification.

The Paper Tool was applied using information on the composition of the waste. The nineteen samples selected were tested for a comprehensive suite of parameters, the results of which are attached in **Appendix B**. The tool was applied to each individual sample.

Where laboratory results were below the limit of detection, these parameters were screened out and were not used in the paper tool. The following parameters were screened out of the assessment:

- MTBE (Methyl Tertiary Butyl Ether) and BTEX (Benzene, Toluene, Ethyl Benzene & Xylenes)
- Ammoniacal Nitrogen as N
- Cyanide (Free Cyanide, Total Cyanide & Complex Cyanide)
- Sulphide
- A selection of individual PAH compounds

Dioxins and furans were also screened out of the assessment on the basis that the concentrations of these were extremely low, in the context of the Paper Tool; see Section 3.3 below for further detail.

Please refer to the analytical results summary in **Appendix C** which lists the parameters used in the Paper Tool for each sample. See also the individual Hazardous Waste Classification Worksheets in **Appendix D**.

Box J of the Hazardous Waste Classification Worksheet was completed using the following sources of information;

- Annex I of Directive 67/548/EEC on the approximation of laws, regulations and administrative provisions relating to the classification, packaging and labelling of dangerous substances;
- Annex VI to Regulation (EC) No 1272/2008 on Classification, Labelling and Packaging of Dangerous Substances;

Where there was no information under the aforementioned directives for individual components of waste, information was referenced from Material Safety Data Sheets (MSDS) from a reputable source i.e. Sigma Aldrich.

For the properties listed in Box K1 of the worksheet, the concentrations of parameters exhibiting that property were summed and compared against threshold values, above which, the material would be rendered hazardous. Please refer to individual worksheets in **Appendix C**.

Box K2 of the classification worksheet lists five properties without thresholds (Explosive, Oxidising, Infectious, Ecotoxic and Residuary Hazardous Property). With respect to ecotoxic, the Waste Management Act definition is:

“waste which presents or may present immediate or delayed risks for one or more sectors of the environment”.

The European Waste Catalogue and Hazardous Waste List does not link the ecotoxic property to any risk phrases or provide specific concentration limits. Technical Guidance WM2, Hazardous Waste - Interpretation of the definition and classification of hazardous waste (Environment Agency, Scottish Environment Protection Agency, Northern Ireland Environment Agency, 2011) was consulted to aid interpretation of the ecotoxic property in this case. Appendix C14 of the guidance provides an assessment of Hazard H14 - Ecotoxicity,

3.1.1 Assessment of Ecotoxicity

Technical Guidance WM2, states that the assessment of hazard H14 Ecotoxic has been developed from the calculation method (or Conventional Method) in the UK's Chemicals (Hazard Information and Packaging for Supply) Regulations 2009 (CHIP). These regulations and their supporting guidance base the determination of ecotoxicity primarily on risk phrases and substance concentrations.

The risk phrases associated with ecotoxic are broken down into hazards to the aquatic environment and hazards to the non-aquatic environment.

Aquatic Environment

R50 Very toxic to aquatic organisms
 R51 Toxic to aquatic organisms
 R52 Harmful to aquatic organisms
 R53 May cause long-term effects in the aquatic environment

Non-aquatic Environment

R54 Toxic to flora
 R55 Toxic to fauna
 R56 Toxic to soil organisms
 R57 Toxic to bees
 R58 May cause long-term adverse effects in the environment

Specifically, Section C14.5: Procedure for Assessment of the Hazardous Property H14 of Appendix C14 was followed. The slag samples were checked for the presence of individual dangerous substances that are classified with the risk phrases outlined above. The WM2 Guidance states that if the concentration of an individual dangerous substance is at or above the Generic Threshold Limits outlined in Table 3.2, then the waste is assigned the hazardous property H14 Ecotoxic and the assessment procedure is complete.

Table 3.1: Generic Threshold Limits (adapted from CHIP)

Classification of the Substance	Generic Threshold Concentration For an individual Substance
R59	≥ 0.1%
R50-53	≥ 0.25%
R51-53	≥ 2.5%
R50 or R52 or R53 or R52-53	≥ 25 %

3.2 ASSESSMENT OF DIOXINS & FURANS

Dioxins are a group of congeners, which are highly persistent environmental pollutants and are by-products of various industrial processes. Dioxins cover a group of 75 polychlorinated dibenzo-p-dioxin

(PCDD) congeners and 135 polychlorinated dibenzofuran (PCDF) congeners, of which 17 are of toxicological concern. They can cause reproductive and developmental problems, damage the immune system, interfere with hormones and also cause cancer. They can also accumulate in the food chain, mainly in the fatty tissue of animals².

Laboratory analysis was carried out on three of the seventeen borehole samples. Dioxins and furans are not inherent to the ferrous slag and would not have been expected within the targeted slag, given the knowledge of the site and the steel production process. Accordingly, the analysis was limited to three confirmatory tests.

The analysis was carried out for the 17-targeted dioxin and furan isomers. Seven of these isomers are polychlorinated dibenzo-p-dioxins, and ten are polychlorinated dibenzofurans, with the most toxic being 2,3,7,8-tetrachlorodi-benzo-p-dioxin (TCDD). The results of the laboratory analysis are outlined in Table 3.1 below, and the laboratory report is attached in **Appendix E**.

Table 3.2: Analytical Results for PCDDs & PCDFs

Congener	Units	Laboratory Limit of Detection	Sample Id		
			BH307 4.5m	BH310C 2.8m	BH313 1.0m
2,3,7,8-TCDF	ng/g	0.0019	<i>0.0088</i>	<i>0.0115</i>	<i>0.0274</i>
1,2,3,7,8-PCDF	ng/g	0.0010	<i>0.0041</i>	<i>0.0048</i>	<i>0.0106</i>
2,3,4,7,8-PCDF	ng/g	0.0009	<i>0.0093</i>	<i>0.0096</i>	<i>0.0211</i>
1,2,3,4,7,8-HxCDF	ng/g	0.0004	<i>0.0139</i>	<i>0.0076</i>	<i>0.0131</i>
1,2,3,6,7,8-HxCDF	ng/g	0.0004	<i>0.0056</i>	<i>0.0076</i>	<i>0.0116</i>
2,3,4,6,7,8- HxCDF	ng/g	0.0004	<i>0.0060</i>	<i>0.0077</i>	<i>0.0180</i>
1,2,3,7,8,9-HxCDF	ng/g	0.0005	<i>0.0052</i>	<i>0.0017</i>	<i>0.0059</i>
1,2,3,4,6,7,8-HpCDF	ng/g	0.0004	<i>0.0159</i>	<i>0.0218</i>	<i>0.0375</i>
1,2,3,4,7,8,9-HpCDF	ng/g	0.0004	<i>0.0041</i>	<i>0.0022</i>	<i>0.0057</i>
OCDF	ng/g	0.0005	<i>0.0114</i>	<i>0.0113</i>	<i>0.0218</i>
Total 2,3,7,8-Furans			<i>0.0842</i>	<i>0.0857</i>	<i>0.1728</i>
2,3,7,8-TCDD	ng/g	0.0033	0.0000	0.0000	0.0000
1,2,3,7,8-PCDD	ng/g	0.0007	0.0000	<i>0.0029</i>	<i>0.0024</i>
1,2,3,4,7,8-HxCDD	ng/g	0.0008	<i>0.0010</i>	<i>0.0034</i>	<i>0.0032</i>
1,2,3,6,7,8-HxCDD	ng/g	0.0008	<i>0.0031</i>	<i>0.0132</i>	<i>0.0116</i>
1,2,3,7,8,9-HxCDD	ng/g	0.0007	<i>0.0017</i>	<i>0.0073</i>	<i>0.0063</i>
1,2,3,4,6,7,8-HpCDD	ng/g	0.0012	<i>0.0510</i>	<i>0.0993</i>	<i>0.0724</i>
OCDD	ng/g	0.0009	<i>0.2083</i>	<i>0.1809</i>	<i>0.1788</i>
Total 2,3,7,8-Dioxins			<i>0.2652</i>	<i>0.3070</i>	<i>0.2746</i>

Note: Results above the laboratory limit of detection are in Italics

² Food Safety Authority, Dioxins & PCBs in Food - Toxicology Factsheet Series, Issue No. 1 May 2009

The results of the laboratory analysis indicate that for each of the samples, all 17 congeners, with the exception of 2,3,7,8-tetrachlorodi-benzo-p-dioxin (TCDD), were detected at concentrations above the laboratory limit of detection. Human exposure to all dioxin-like compounds is usually calculated in terms of Toxic Equivalence Quotients (TEQs). Public health authorities (in particular WHO expert panels) have developed the toxicity equivalence factor (TEF) methodology for determining the potency of dioxin-like compounds, with TCDD as the index chemical. Exposures are calculated as a simple weighted sum of the individual amounts multiplied by their individual TEFs to yield the equivalent dose in units of TCDD exposure³.

The scope of this report does not involve a full assessment of these results with respect to any potential impact on sensitive receptors. Moreover, the focus of this report is to interpret these results in the context of the Paper Tool.

The seventeen congeners listed in Table 3.1 above have been screened out of the paper tool assessment, and therefore have not been run through the tool. The concentrations of each are reported in ng/g, and the maximum concentration reported was 0.2083 ng/g. Converting this to %w/w gives 0.0000002083% w/w. These concentrations, even assuming all seventeen congeners were shown to have each of the hazardous properties, would barely register on the already summed concentrations in either Box K1 or Box K2, and would not trigger any breach of threshold.

The analytical results for the dioxins and furans indicate that the concentrations present in the slag samples examined are so low that they can be deemed insignificant in the context of the Paper Tool i.e. that they are too low to trigger, or contribute to triggering, a hazardous classification.

³International Agency for Research on Cancer, IARC Monographs on the Evaluation of Carcinogenic Risks to Humans, Volume 100F, 2012.

3.3 PAPER TOOL RESULTS

The result for each individual slag sample in terms of its classification as hazardous or not, is presented in Table 3.3 below. Full details are provided in **Appendix D** which contains the individual waste classification worksheets.

Table 3.3: Summary of Paper Tool Results

Sample ID		Result	Comment
BH301	1.0m	Hazardous	Carcinogenic and ecotoxic properties (latter predominantly chromium and zinc).
BH302	5.0m	May be hazardous (marginally)	Ecotoxic properties (predominantly chromium, lead, copper and zinc).
BH302	6.0m	Non-hazardous	
BH303	5-6m	Non-Hazardous	
BH304	2.0m	May be hazardous	Ecotoxic properties (predominantly chromium and zinc).
BH305	0.8 - 1.2m	May be hazardous	Ecotoxic properties (predominantly chromium and zinc).
BH307	4.5-5m	Non-hazardous	
BH308	0.7 - 0.9m	Non-hazardous	
BH308	1.3m	Non-hazardous	
BH309	0.2 - 0.3m	Non-hazardous	
BH309	6.5m	Non-hazardous	
BH310C	2.8m	Non-hazardous	
BH311	0 -0.3m	Hazardous	Carcinogenic properties.
BH313	1.0m	Non-hazardous	
BH315	5.0m	Non-hazardous	
BH316	5-5.5m	Non-hazardous	
SS306		Non-hazardous	
SS310		Non-Hazardous	
SS313		Non-hazardous	

For the three samples recorded as 'may be hazardous' above, the assessment was inconclusive. The concentrations of some of the metals (predominantly chromium and zinc), some compounds of which have ecotoxic properties, were collectively exceeding the relevant threshold (see Box J and Box K of the classification worksheets in **Appendix D** for further information). In the absence of further chemical data identifying the species of the metal present e.g zinc oxide, it was not possible to rule out the presence of the ecotoxic property.

Further testing to identify the form or species of the metal was initiated, but the laboratory advised that the concentrations of the metals present were too low (e.g zinc @ 0.05% w/w) and therefore beyond the capability of the testing methodology or any commercial technique currently.

It is worth noting also, that the threshold for the ecotoxic property for BH302 5.0m of >0.25% w/w (for R50-53), was only very marginally breached at a summed concentration of 0.255% w/w

The locations of the nineteen samples, including the three samples of the stockpiled processed slag, are shown on Figure 1, in **Appendix A**.

3.4 DISCUSSION

In considering the results of the Paper Tool assessment, a distinction is made between the sixteen borehole samples which are understood to represent unprocessed slag, and the three surface samples obtained from stockpiles of processed slag.

3.4.1 Borehole Samples

Eleven of the sixteen borehole samples yielded a non-hazardous classification, which represents 69% of the samples examined.

Two of the samples yielded a hazardous classification, which represents 12.5% of the samples examined. Carcinogenic properties were identified in both cases, leading conclusively to a hazardous classification. The carcinogenic properties identified were 'Carcinogen Category 1 or 2' i.e. those with risk phrases R45 or R49. The parameters tested that are associated with these risk phrases were beryllium, cadmium, hexavalent chromium, phenanthrene, Benzo(a)anthracene, chrysene, benzo(bk)fluoranthene, benzo(a)pyrene, dibenzo(ah)anthracene, benzo(b)fluoranthene, benzo(k)fluoranthene, total aromatics, total aliphatics, Refer to Box K of the individual classification worksheets in **Appendix D** for further information.

Three of the samples yielded a may be hazardous classification, which represents 19.% of the samples examined. The existence of the ecotoxic property could not be ruled out in these cases.

These results indicate that the deposited unprocessed slag, as represented by the sixteen samples assessed, is pre-dominantly non-hazardous. This information is very positive in the context of the potential for the re-use of the slag on site.

3.4.2 Surface Samples

This report has not quantified the volume or extent of the processed slag, nor has it examined the nature of the processing that was undertaken. It is understood that the processing of the slag involved crushing, metal extraction, washing and grading. Three samples were obtained from three separate stockpiles to provide preliminary information with respect to the presence of dangerous substances within the processed slag. These are SS306, SS310 and SS313; their locations are shown on Figure 1 in **Appendix A**.

Application of the Paper Tool to these three samples has yielded a non-hazardous classification in each case. As for the borehole samples, this is a positive signal indicating a potential value in the processed slag that should be examined further in the context of its re-use in the remediation works.

3.4.3 Re-use of Slag

The results of the Paper Tool assessment indicates, in broad terms, that most of the slag on site is non-hazardous, in which case, the following non-hazardous EWC codes apply, where appropriate:

- 10 02 01 wastes from the processing of slag
- 10 02 02 unprocessed slag

In many countries within the EU, with respect to slag exiting the iron and steel production process where a further use is identified, the debate regarding whether or not the material is a waste has been settled⁴. The evaluation is not uniform across Member States with the various environmental authorities recognising some of the slag types as non-waste, product or by-product (e.g. Belgium, Finland, Austria and UK). In these cases, the slag falls outside the definition of waste and therefore outside the control of any waste legislation.

The re-use of ferrous slag is well established and is common practice in Europe and further afield for a range of uses such as cement production, use as an aggregate for various construction applications (primarily road construction), replacement of granular fill for soil stabilisation, use as fertilisers and use of the fines fraction for acid mine drainage treatment.

It is recognised that both the unprocessed slag and the processed slag deposited at Haulbowline are unquestionably waste. However, being a waste need not preclude its re-use, which could be permissible under a waste authorisation, in this case a hazardous waste licence, subject to certain conditions being met, in particular the material must not pose any threat of harm to the environment or human health.

The results of the Paper Tool assessment are a positive signal towards the aim of demonstrating no adverse environmental or human health impact for much of the slag, and indicate that the potential value of the slag as a construction material in the remediation works should be examined further.

It follows that the samples of slag, which have been identified as hazardous or may be hazardous, also present a potential for re-use. It is important to note that the slag represented by these samples was originally non-hazardous as it exited the production process. The hazardous classification relates exclusively to the foreign dangerous substances introduced; the slag itself remains non-hazardous.

The full list of substances that are collectively triggering the hazardous and may be hazardous classifications are:

arsenic, beryllium, cadmium, hexavalent chromium, copper, lead, vanadium, zinc, PAHs (naphthalene, anthracene, pyrene, phenanthrene, benzo(a)anthracene, chrysene, benzo(bk)fluoranthene, benzo(a)pyrene, dibenzo(ah)anthracene, benzo(ghi)perylene, benzo(b)fluoranthene, benzo(k)fluoranthene), total 12 PCBs, total aromatics and total aliphatics.

None of the above metals or hydrocarbons are typical in ferrous slag of the type within the East Tip (EAF slag). Refer to Table 1 of the paper below⁵ for the typical chemical composition of EAF slags.

This report has not examined in detail the sources of these foreign substances, however all of them have been detected at elevated levels within samples of flue dust, sludge and/or millscale, tested as

⁴Position Paper on the Status of Ferrous Slag complying with the Waste Framework Directive (Articles 5/6) and the REACH Regulation, April 2012, The European Slag Association, The European Steel Association.

⁵Chemical, Mineralogical and Morphological Properties of Steel Slag, Irem Zeynep Yildirim and Monica Prezzi. (www.hindawi.com/journals).

part of the dQRA, indicating that their source is present on site. For example, it is known that flue dust deposits are present in the vicinity of BH301 and that flue dust was surface stored in this area; in this case the significantly high concentration of zinc recorded in the slag (8966 mg/kg), is most likely attributed to the flue dust which typically contains very high levels of zinc e.g 189,000mg/kg (18.9% w/w) at dQRA sample ID OP10 (close to BH301) for flue sludge.

It is understood that there may be commercial techniques available that could be applied here, and regulated under the waste licence, to render this portion of the slag non-hazardous and potentially fit for re-use.

4 CONCLUSIONS

This study examined the slag component of the waste within the East Tip. Slag produced during iron and steel manufacture is accepted as non-hazardous. The European Waste Catalogue classifies ferrous slag as non-hazardous under two codes:

- 10 02 01 waste from the processing of slag
- 10 02 02 unprocessed slag

It is accepted that there are hazardous wastes within the tip; the purpose of this study was to highlight the non-hazardous nature of ferrous slag from the steel manufacturing industry and to investigate the deposited slag to determine if it remains non-hazardous, and to what extent.

This study is based on the outputs from a ground investigation undertaken by WYG in 2012, which RPS used to target the slag. Samples of the slag were obtained in October 2012 to facilitate the application of the EPA's Paper Tool. In addition, the processed slag stockpiled on site was also examined.

The following is noted:

- Best available estimates of the waste body indicate that approximately 64% of it is made up of ferrous slag.
- The three processed slag samples assessed yielded a non-hazardous result (100%).
- 69 (11 No.) of the sixteen borehole slag samples assessed, yielded a non-hazardous result.
- 12.5% of the borehole slag samples assessed yielded a hazardous result.
- 19.75% of the borehole slag samples assessed yielded an inconclusive result (may be hazardous).
- Of the nineteen slag samples examined (i.e. borehole samples and processed slag), 74% (14 no.) yielded a non-hazardous result.
- Accounting for the potential of the 'may be hazardous' samples to be non-hazardous, up to 90% (17 no.) of the samples could be considered to be non-hazardous.

It is accepted that a hazardous waste licence application is appropriate, given the established presence of hazardous wastes within the East Tip. However, this study has demonstrated that the majority of the slag, which represents a significant proportion (64%) of the wastes on site, is non-hazardous.

In many countries within the EU, with respect to slag outputs from the iron and steel production process, for which typically a further use is identified, environmental authorities recognise the slag as product, or by-product. The re-use of ferrous slag is well established and is common practice in Europe and further afield for a range of uses.

It is accepted that both the unprocessed slag and the processed slag deposited at Haulbowline are unquestionably waste. However, classification of the slag as a waste need not preclude its re-use, which could be permissible under a waste authorisation, in this case a hazardous waste licence, subject to certain conditions being met, in particular the material must not pose any threat of harm to the environment or human health.

Confirmation of the non-hazardous status of much of the slag provides a platform for further examination and delineation of this material with a view to its reuse as a construction material during the remediation works. Any such re-use would be subject to Cork County Council being able to demonstrate to the authorities (EPA) that the intended use of the slag at the site, would have no adverse environmental or human health impact.

It follows that the slag, which has been identified as hazardous or may be hazardous, also presents a potential for re-use. It is important to note that the slag represented by these samples was originally non-hazardous as it exited the production process. The hazardous classification relates exclusively to the foreign dangerous substances introduced; the slag itself is non-hazardous; none of the hazardous components identified are typical within ferrous slags. There may be commercial techniques available that could be applied here, and regulated under the waste licence, to strip this slag of the foreign substances and render it non-hazardous and thereby potentially fit for use in terms of environmental or human health impact.

APPENDIX A

Figure 1: Location of Samples

APPENDIX B

ANALYTICAL RESULTS

- Collated Summary of Results
- Jones Environmental Laboratory Report

J E Sample No.	18-19	10-11	34-35	8-9	30-31	14-15	1-3	16-17	32-33	12-13	28-29	42-44	24-25	36-38	22-23	4-5	45-46	47-48	49-50		
Sample ID	BH301	BH302	BH302	BH303	BH304	BH305	BH307	BH308	BH308	BH309	BH309	BH310C	BH311	BH313	BH315	BH316	SS306	SS310	SS313		
Depth	1.0	6.0	5.0	5.0-6.0	2.0	0.3-1.2	4.5	0.7-0.9	1.3	6.5	0.2	2.8	0.0-0.3	1.0	5.0	5.0-5.5					
COC No / misc																					
Containers	V J	V J	V J	V J	V J	V J	V J	V J	V J	V J	V J	V J	V J	V J T	V J	V J	V J	V J	V J		
Sample Date	26/10/2012	26/10/2012	26/10/2012	26/10/2012	26/10/2012	26/10/2012	26/10/2012	26/10/2012	26/10/2012	26/10/2012	26/10/2012	26/10/2012	26/10/2012	26/10/2012	26/10/2012	26/10/2012	26/10/2012	26/10/2012	26/10/2012		
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil		
Batch Number	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		
Date of Receipt	LOD	Units	31/10/2012	31/10/2012	31/10/2012	31/10/2012	31/10/2012	31/10/2012	31/10/2012	31/10/2012	31/10/2012	31/10/2012	31/10/2012	31/10/2012	31/10/2012	31/10/2012	31/10/2012	31/10/2012	31/10/2012	31/10/2012	
Aluminium	<50	mg/kg	8955	23960	26900	19800	21030	22210	23170	12960	9040	16960	13340	22040	17630	20940	23370	25240	30870	31730	31540
Antimony	<1	mg/kg	35	<5	<5	<5	<5	<5	<5	<1	<1	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Arsenic #	<0.5	mg/kg	34.9	<0.5	<0.5	<0.5	8.3	3.2	<0.5	7.7	16.3	<0.5	16.9	<0.5	<0.5	<0.5	4.8	<0.5	<0.5	<0.5	
Barium #	<1	mg/kg	280	913	953	681	1058	918	864	662	577	1051	683	705	657	731	951	785	720	798	796
Beryllium	<0.5	mg/kg	3.9	2.3	1.8	2.4	1.4	1.2	1.7	1.3	1.6	1.3	1.8	1.5	2.5	1.9	1.7	1.6	2.2	2.4	1.8
Cadmium #	<0.1	mg/kg	14.8	0.2	3.0	1.0	9.9	11.1	0.5	2.4	1.4	0.5	1.3	4.0	1.6	2.6	1.0	3.2	<0.1	<0.1	<0.1
Calcium	<500	mg/kg	68280	181300	203200	161200	162700	164600	195900	128400	154700	173800	138100	209600	142100	173300	177300	166100	197000	209400	193500
Chromium #	<0.5	mg/kg	1649.0	4919.0	5008.0	4995.0	2306.0	2575.0	6731.0	2077.0	1856.0	2735.0	2443.0	5312.0	4707.0	4069.0	4737.0	3195.0	3565.0	3776.0	4001.0
Copper #	<1	mg/kg	1461	390	430	734	426	333	330	308	322	189	505	427	730	630	526	534	2038	437	309
Lead #	<5	mg/kg	1174	66	288	103	737	496	68	309	256	114	190	211	152	161	94	209	44	31	28
Magnesium	<25	mg/kg	12890	25980	31220	25220	28310	52350	29790	80240	37330	57510	40030	37270	48010	33690	49200	59670	29570	25540	27090
Manganese #	<1	mg/kg	13440	48090	42750	41520	28680	41330	39380	30190	28730	39280	28250	37000	33540	40440	37640	35990	45680	41930	44920
Mercury #	<0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Nickel #	<0.7	mg/kg	406.4	74.2	62.2	141.8	75.7	64.3	46.0	96.3	78.0	59.9	114.7	61.8	157.0	120.7	63.0	231.8	66.3	61.6	44.8
Selenium #	<1	mg/kg	5	15	15	15	12	15	15	10	10	14	10	15	13	14	13	13	16	15	18
Total Sulphate	<50	mg/kg	2771	2212	2510	2586	2489	3297	4312	3761	3371	3604	3015	3100	2386	2196	4673	4399	1037	1219	1075
Vanadium	<1	mg/kg	87	533	608	455	357	350	460	533	418	670	655	462	370	409	574	205	549	1149	698
Water Soluble Boron #	<0.1	mg/kg	9.0	9.1	9.7	10.6	5.4	13.2	24.4	5.2	6.6	16.2	8.8	6.8	8.8	6.7	15.6	16.1	3.6	2.8	4.2
Zinc #	<5	mg/kg	8966	492	1826	746	5124	3802	502	1522	766	573	915	1177	1546	1073	1337	1369	259	241	214

J E Sample No.	18-19	10-11	34-35	8-9	30-31	14-15	1-3	16-17	32-33	12-13	28-29	42-44	24-25	36-38	22-23	4-5	45-46	47-48	49-50	
Sample ID	BH301	BH302	BH302	BH303	BH304	BH305	BH307	BH308	BH308	BH309	BH309	BH310C	BH311	BH313	BH315	BH316	SS306	SS310	SS313	
Depth	1.0	6.0	5.0	5.0-6.0	2.0	0.3-1.2	4.5	0.7-0.9	1.3	6.5	0.2	2.8	0.0-0.3	1.0	5.0	5.0-5.5				
COC No / misc																				
Containers	V J	V J	V J	V J	V J	V J	V J	V J	V J	V J	V J	V J	V J	V J T	V J	V J	V J	V J	V J	
Sample Date	26/10/2012	26/10/2012	26/10/2012	26/10/2012	26/10/2012	26/10/2012	26/10/2012	26/10/2012	26/10/2012	26/10/2012	26/10/2012	26/10/2012	26/10/2012	26/10/2012	26/10/2012	26/10/2012	26/10/2012	26/10/2012	26/10/2012	
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	
Batch Number	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
Date of Receipt	31/10/2012	31/10/2012	31/10/2012	31/10/2012	31/10/2012	31/10/2012	31/10/2012	31/10/2012	31/10/2012	31/10/2012	31/10/2012	31/10/2012	31/10/2012	31/10/2012	31/10/2012	31/10/2012	31/10/2012	31/10/2012	31/10/2012	
LOD																				
Units																				
PAH MS																				
Naphthalene #	<0.04	mg/kg	0.05	<0.04	<0.04	<0.04	0.06	<0.04	<0.04	0.04	0.43	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	
Acenaphthylene	<0.03	mg/kg	0.03	<0.03	<0.03	<0.03	0.08	<0.03	<0.03	<0.03	0.34	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	
Acenaphthene #	<0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.30	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	
Fluorene #	<0.04	mg/kg	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.20	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	
Phenanthrene #	<0.03	mg/kg	0.33	<0.03	0.18	0.04	0.49	0.03	0.03	0.13	15.51	0.06	0.10	0.11	0.06	0.07	0.11	<0.03	<0.03	
Anthracene #	<0.04	mg/kg	0.14	<0.04	<0.04	<0.04	0.16	<0.04	<0.04	0.04	1.79	<0.04	0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	
Fluoranthene #	<0.03	mg/kg	0.59	0.03	0.20	0.05	1.12	0.11	0.04	0.31	22.51	0.11	0.32	0.10	0.23	0.07	0.14	0.03	<0.03	
Pyrene #	<0.03	mg/kg	0.61	0.03	0.16	0.04	0.96	0.09	0.03	0.29	15.46	0.08	0.28	0.05	0.18	0.07	0.12	0.03	<0.03	
Benzo(a)anthracene #	<0.06	mg/kg	0.29	<0.06	0.10	<0.06	0.59	0.08	<0.06	0.17	9.84	0.08	0.18	<0.06	0.09	<0.06	0.08	<0.06	<0.06	
Chrysene #	<0.02	mg/kg	0.37	<0.02	0.10	0.03	0.63	0.07	0.05	0.18	9.90	0.07	0.20	0.04	0.13	0.05	0.08	0.02	<0.02	
Benzo(k)fluoranthene #	<0.07	mg/kg	0.67	<0.07	0.17	0.07	1.27	0.13	0.11	0.38	18.72	0.14	0.35	0.08	0.22	0.07	0.16	<0.07	<0.07	
Benzo(a)pyrene #	<0.04	mg/kg	0.26	<0.04	0.09	<0.04	0.63	0.06	0.06	0.18	7.03	0.07	0.13	<0.04	0.08	<0.04	0.06	<0.04	<0.04	
Indeno(123cd)pyrene #	<0.04	mg/kg	0.28	<0.04	0.06	<0.04	0.54	0.06	0.04	0.13	5.98	0.06	0.12	<0.04	0.09	<0.04	0.04	<0.04	<0.04	
Dibenzo(ah)anthracene #	<0.04	mg/kg	0.05	<0.04	<0.04	<0.04	0.14	<0.04	<0.04	<0.04	1.06	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	
Benzo(ghi)perylene #	<0.04	mg/kg	0.20	<0.04	0.05	<0.04	0.45	0.04	<0.04	0.11	4.45	0.05	0.10	<0.04	0.06	<0.04	0.04	<0.04	<0.04	
Coronene	<0.04	mg/kg	<0.04	<0.04	<0.04	<0.04	0.10	<0.04	<0.04	<0.04	0.62	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	
PAH 17 Total	<0.64	mg/kg	3.87	<0.64	1.11	<0.64	7.22	0.67	<0.64	1.96	113.94	0.72	1.82	<0.64	1.14	<0.64	0.83	<0.64	<0.64	
Benzo(b)fluoranthene	<0.05	mg/kg	0.48	<0.05	0.12	0.05	0.91	0.09	0.08	0.27	13.48	0.10	0.25	0.06	0.16	0.05	0.12	<0.05	<0.05	
Benzo(k)fluoranthene	<0.02	mg/kg	0.19	<0.02	0.05	<0.02	0.36	0.04	0.03	0.11	5.24	0.04	0.10	0.02	0.06	<0.02	0.04	<0.02	<0.02	
PAH Surrogate % Recovery	<0	%	94	91	92	107	83	96	95	89	103	88	87	88	87	85	88	93	88	
VOC TICs		None	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Methyl Tertiary Butyl Ether #	<2	ug/kg	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	
Benzene #	<3	ug/kg	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	
Toluene #	<3	ug/kg	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	
Ethylbenzene #	<3	ug/kg	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	
p/m-Xylene #	<6	ug/kg	<6	<6	<6	<6	<6	<6	<6	<6	<6	<6	<6	<6	<6	<6	<6	<6	<6	
o-Xylene #	<3	ug/kg	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	
Surrogate Recovery Toluene D8	<0	%	108	121	120	119	109	118	119	118	118	118	111	119	101	117	118	116	123	
SVOC TICs		None	See Attached	ND	ND	ND	See Attached	ND	See Attached	See Attached	See Attached	See Attached	See Attached	See Attached	ND	See Attached	See Attached	ND	See Attached	
Mineral Oil (C8-C40)	<30	mg/kg	1072	<30	<30	<30	159	<30	<30	<30	201	<30	242	<30	1297	324	<30	42	<30	

J E Sample No.	18-19	10-11	34-35	8-9	30-31	14-15	1-3	16-17	32-33	12-13	28-29	42-44	24-25	36-38	22-23	4-5	45-46	47-48	49-50		
Sample ID	BH301	BH302	BH302	BH303	BH304	BH305	BH307	BH308	BH308	BH309	BH309	BH310C	BH311	BH313	BH315	BH316	SS306	SS310	SS313		
Depth	1.0	6.0	5.0	5.0-6.0	2.0	0.3-1.2	4.5	0.7-0.9	1.3	6.5	0.2	2.8	0.0-0.3	1.0	5.0	5.0-5.5					
COC No / misc																					
Containers	V J	V J	V J	V J	V J	V J	V J	V J	V J	V J	V J	V J	V J	V J T	V J	V J	V J	V J	V J		
Sample Date	26/10/2012	26/10/2012	26/10/2012	26/10/2012	26/10/2012	26/10/2012	26/10/2012	26/10/2012	26/10/2012	26/10/2012	26/10/2012	26/10/2012	26/10/2012	26/10/2012	26/10/2012	26/10/2012	26/10/2012	26/10/2012	26/10/2012		
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil		
Batch Number	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		
Date of Receipt	31/10/2012	31/10/2012	31/10/2012	31/10/2012	31/10/2012	31/10/2012	31/10/2012	31/10/2012	31/10/2012	31/10/2012	31/10/2012	31/10/2012	31/10/2012	31/10/2012	31/10/2012	31/10/2012	31/10/2012	31/10/2012	31/10/2012		
LOD																					
Units																					
Alcohols/Acetates																					
Acetone	<50	ug/kg	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	
SEM#	<110	mg/kg	2958	294	153	216	1236	244	343	458	648	831	1532	<110	3615	921	505	624	<110	111	262
Natural Moisture Content	<0.1	%	6.8	1.3	2.2	3.0	5.6	10.7	3.9	11.7	9.9	2.6	7.1	7.9	7.6	7.0	7.4	4.0	1.9	0.9	0.7
Ammoniacal Nitrogen as N	<0.6	mg/kg	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6
Chloride	<2	mg/kg	104	878	1099	1204	151	145	1848	150	119	1620	104	241	101	65	1236	1645	357	100	54
Hexavalent Chromium	<0.3	mg/kg	1.2	0.3	<0.3	<0.3	0.4	0.8	0.4	1.5	<0.3	<0.3	0.9	3.0	1.2	3.0	0.8	<0.3	<0.3	<0.3	<0.3
Sulphate as SO4 (2:1 Ext)	<0.0015	g/l	0.2339	0.0513	0.0060	0.0967	0.0324	0.1216	0.4477	0.2452	0.0031	0.2492	0.1346	<0.0015	0.1057	0.0143	0.3332	<0.0015	0.0389	0.0258	0.0265
Free Cyanide	<0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Total Cyanide#	<0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Complex Cyanide	<0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Fraction Organic Carbon	<0.001	None	0.006	<0.001	0.002	<0.001	0.008	0.003	0.003	0.005	0.011	<0.001	0.004	0.004	0.006	0.003	0.002	0.002	<0.001	<0.001	<0.001
Sulphide	<10	mg/kg	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Thiocyanate	<0.6	mg/kg	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	1.8	<0.6	<0.6	<0.6	1.6	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6
Elemental Sulphur	<1	mg/kg	1	<1	1	<1	5	<1	37	<1	2	1	<1	<1	<1	1	104	<1	<1	<1	
pH#	<0.01	pH units	10.46	9.89	9.64	10.64	9.78	10.62	9.56	10.92	11.56	9.95	11.20	12.35	11.11	12.16	10.34	9.49	8.99	8.98	9.04
Dioxins & Furans			-	-	-	-	-	-	See attached	-	-	-	-	See attached	-	See attached	-	-	-	-	
PAHs (SVOCs)																					
2-Methylnaphthalene	<10	ug/kg	35	<10	<10	<10	29	<10	<10	20	264	<10	<10	<10	13	<10	<10	<10	<10	<10	
Other SVOCs																					
Carbazole	<10	ug/kg	140	<10	<10	<10	22	<10	<10	<10	857	<10	<10	<10	<10	<10	<10	<10	<10	<10	
Dibenzofuran	<10	ug/kg	301	<10	<10	<10	22	<10	<10	<10	780	<10	<10	15	32	<10	<10	<10	<10	<10	
Asbestos																					

Notes: ND - None Detected (usually refers to VOC and/SVOC TICs)

NDP - No Determination Possible



Jones Environmental Laboratory

Unit 3 Deeside Point
Zone 3
Deeside Industrial Park
Deeside
CH5 2UA

RPS
West Pier Business Campus
Dun Laoghaire
Co Dublin
Ireland

Tel: +44 (0) 1244 833780
Fax: +44 (0) 1244 833781



No.4225

Attention : Una Fitzgerald
Date : 16th November, 2012
Your reference : MCE0734
Our reference : Test Report 12/8458 Batch 1
Location : East Tip
Date samples received : 31st October, 2012
Status : Final Report
Issue : 1

Twenty three samples were received for analysis on 31st October, 2012. Please find attached our Test Report which should be read with notes at the end of the report and should include all sections if reproduced. Interpretations and opinions are outside the scope of any accreditation, and all results relate only to samples supplied.

All analysis is carried out on as received samples and reported on a dry weight basis unless stated otherwise. Results are not surrogate corrected.

Compiled By:

Phil Sommerton B.Sc
Project Manager

Bob Millward B.Sc
Principal Chemist

Jones Environmental Laboratory

Client Name: RPS
Reference: MCE0734
Location: East Tip
Contact: Una Fitzgerald
JE Job No.: 12/8458

Report : Solid

Solids: V=60g VOC jar, J=250g glass jar, T=plastic tub

J E Sample No.	1-3	4-5	8-9	10-11	12-13	14-15	16-17	18-19	22-23	24-25	Please see attached notes for all abbreviations and acronyms		
Sample ID	BH307	BH316	BH303	BH302	BH309	BH305	BH308	BH301	BH315	BH311			
Depth	4.5	5.0-5.5	5.0-6.0	6.0	6.5	0.3-1.2	0.7-0.9	1.0	5.0	0.0-0.3			
COC No / misc													
Containers	V J	V J	V J	V J	V J	V J	V J	V J	V J	V J			
Sample Date	26/10/2012	26/10/2012	26/10/2012	26/10/2012	26/10/2012	26/10/2012	26/10/2012	26/10/2012	26/10/2012	26/10/2012			
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil			
Batch Number	1	1	1	1	1	1	1	1	1	1			
Date of Receipt	31/10/2012	31/10/2012	31/10/2012	31/10/2012	31/10/2012	31/10/2012	31/10/2012	31/10/2012	31/10/2012	31/10/2012	LOD	Units	Method No.
Aluminium	23170	25240	19800	23960	16960	22210	12960	8955	23370	17630	<50	mg/kg	TM30/PM15
Antimony	<5	<5	<5	<5	<5	<5	<1	35	<5	<5	<1	mg/kg	TM30/PM15
Arsenic #	<0.5	4.8	<0.5	<0.5	<0.5	3.2	7.7	34.9	<0.5	<0.5	<0.5	mg/kg	TM30/PM15
Barium #	864	785	681	913	1051	918	662	280	951	657	<1	mg/kg	TM30/PM15
Beryllium	1.7	1.6	2.4	2.3	1.3	1.2	1.3	3.9	1.7	2.5	<0.5	mg/kg	TM30/PM15
Cadmium #	0.5	3.2	1.0	0.2	0.5	11.1	2.4	14.8	1.0	1.6	<0.1	mg/kg	TM30/PM15
Calcium	195900	166100	161200	181300	173800	164600	128400	68280	177300	142100	<500	mg/kg	TM30/PM15
Chromium #	6731.0	3195.0	4995.0	4919.0	2735.0	2575.0	2077.0	1649.0	4737.0	4707.0	<0.5	mg/kg	TM30/PM15
Copper #	330	534	734	390	189	333	308	1461	526	730	<1	mg/kg	TM30/PM15
Lead #	68	209	103	66	114	496	309	1174	94	152	<5	mg/kg	TM30/PM15
Magnesium	29790	59670	25220	25980	57510	52350	80240	12890	49200	48010	<25	mg/kg	TM30/PM15
Manganese #	39380	35990	41520	48090	39280	41330	30190	13440	37640	33540	<1	mg/kg	TM30/PM15
Mercury #	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	mg/kg	TM30/PM15
Nickel #	46.0	231.8	141.8	74.2	59.9	64.3	96.3	406.4	63.0	157.0	<0.7	mg/kg	TM30/PM15
Selenium #	15	13	15	15	14	15	10	5	13	13	<1	mg/kg	TM30/PM15
Total Sulphate	4312	4399	2586	2212	3604	3297	3761	2771	4673	2386	<50	mg/kg	TM50/PM15
Vanadium	460	205	455	533	670	350	533	87	574	370	<1	mg/kg	TM30/PM15
Water Soluble Boron #	24.4	16.1	10.6	9.1	16.2	13.2	5.2	9.0	15.6	8.8	<0.1	mg/kg	TM74/PM32
Zinc #	502	1369	746	492	573	3802	1522	8966	1337	1546	<5	mg/kg	TM30/PM15
PAH MS													
Naphthalene #	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	0.04	0.05	<0.04	<0.04	<0.04	mg/kg	TM4/PM8
Acenaphthylene	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	0.03	<0.03	<0.03	<0.03	mg/kg	TM4/PM8
Acenaphthene #	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	mg/kg	TM4/PM8
Fluorene #	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	mg/kg	TM4/PM8
Phenanthrene #	0.03	<0.03	0.04	<0.03	0.06	0.03	0.13	0.33	0.11	0.06	<0.03	mg/kg	TM4/PM8
Anthracene #	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	0.04	0.14	<0.04	<0.04	<0.04	mg/kg	TM4/PM8
Fluoranthene #	0.04	0.03	0.05	0.03	0.11	0.11	0.31	0.59	0.14	0.23	<0.03	mg/kg	TM4/PM8
Pyrene #	0.03	0.03	0.04	0.03	0.08	0.09	0.29	0.61	0.12	0.18	<0.03	mg/kg	TM4/PM8
Benzo(a)anthracene #	<0.06	<0.06	<0.06	<0.06	0.08	0.08	0.17	0.29	0.08	0.09	<0.06	mg/kg	TM4/PM8
Chrysene #	0.05	0.02	0.03	<0.02	0.07	0.07	0.18	0.37	0.08	0.13	<0.02	mg/kg	TM4/PM8
Benzo(bk)fluoranthene #	0.11	<0.07	0.07	<0.07	0.14	0.13	0.38	0.67	0.16	0.22	<0.07	mg/kg	TM4/PM8
Benzo(a)pyrene #	0.06	<0.04	<0.04	<0.04	0.07	0.06	0.18	0.26	0.06	0.08	<0.04	mg/kg	TM4/PM8
Indeno(123cd)pyrene #	0.04	<0.04	<0.04	<0.04	0.06	0.06	0.13	0.28	0.04	0.09	<0.04	mg/kg	TM4/PM8
Dibenzo(ah)anthracene #	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	0.05	<0.04	<0.04	<0.04	mg/kg	TM4/PM8
Benzo(ghi)perylene #	<0.04	<0.04	<0.04	<0.04	0.05	0.04	0.11	0.20	0.04	0.06	<0.04	mg/kg	TM4/PM8
Coronene	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	mg/kg	TM4/PM8
PAH 17 Total	<0.64	<0.64	<0.64	<0.64	0.72	0.67	1.96	3.87	0.83	1.14	<0.64	mg/kg	TM4/PM8
Benzo(b)fluoranthene	0.08	<0.05	0.05	<0.05	0.10	0.09	0.27	0.48	0.12	0.16	<0.05	mg/kg	TM4/PM8
Benzo(k)fluoranthene	0.03	<0.02	<0.02	<0.02	0.04	0.04	0.11	0.19	0.04	0.06	<0.02	mg/kg	TM4/PM8
PAH Surrogate % Recovery	95	93	107	91	88	96	89	94	88	87	<0	%	TM4/PM8
VOC TICs	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		None	TM15/PM10
Methyl Tertiary Butyl Ether #	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/kg	TM15/PM10

Please include all sections of this report if it is reproduced

Jones Environmental Laboratory

Client Name: RPS
Reference: MCE0734
Location: East Tip
Contact: Una Fitzgerald
JE Job No.: 12/8458

Report : Solid

Solids: V=60g VOC jar, J=250g glass jar, T=plastic tub

J E Sample No.	1-3	4-5	8-9	10-11	12-13	14-15	16-17	18-19	22-23	24-25	Please see attached notes for all abbreviations and acronyms		
Sample ID	BH307	BH316	BH303	BH302	BH309	BH305	BH308	BH301	BH315	BH311			
Depth	4.5	5.0-5.5	5.0-6.0	6.0	6.5	0.3-1.2	0.7-0.9	1.0	5.0	0.0-0.3			
COC No / misc													
Containers	V J	V J	V J	V J	V J	V J	V J	V J	V J	V J			
Sample Date	26/10/2012	26/10/2012	26/10/2012	26/10/2012	26/10/2012	26/10/2012	26/10/2012	26/10/2012	26/10/2012	26/10/2012			
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil			
Batch Number	1	1	1	1	1	1	1	1	1	1			
Date of Receipt	31/10/2012	31/10/2012	31/10/2012	31/10/2012	31/10/2012	31/10/2012	31/10/2012	31/10/2012	31/10/2012	31/10/2012	LOD	Units	Method No.
Benzene #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/kg	TM15/PM10
Toluene #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/kg	TM15/PM10
Ethylbenzene #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/kg	TM15/PM10
p/m-Xylene #	<6	<6	<6	<6	<6	<6	<6	<6	<6	<6	<6	ug/kg	TM15/PM10
o-Xylene #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/kg	TM15/PM10
Surrogate Recovery Toluene D8	119	116	119	121	118	118	118	108	118	101	<0	%	TM15/PM10
SVOC TICs	See Attached	See Attached	ND	ND	See Attached	ND	See Attached	See Attached	ND	See Attached		None	TM16/PM8
Mineral Oil (C8-C40)	<30	42	<30	<30	<30	<30	<30	1072	<30	1297	<30	mg/kg	TM5/PM16
TPH CWG													
Aliphatics													
>C5-C6 #	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	mg/kg	TM36/PM12
>C6-C8 #	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	mg/kg	TM36/PM12
>C8-C10	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	mg/kg	TM36/PM12
>C10-C12 #	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	mg/kg	TM5/PM16
>C12-C16 #	<4	<4	<4	<4	<4	<4	<4	7	<4	<4	<4	mg/kg	TM5/PM16
>C16-C21 #	<7	<7	<7	<7	<7	<7	10	73	<7	14	<7	mg/kg	TM5/PM16
>C21-C35 #	<7	29	<7	<7	<7	<7	17	760	<7	862	<7	mg/kg	TM5/PM16
Total aliphatics C5-35	<19	29	<19	<19	<19	<19	27	840	<19	876	<19	mg/kg	TM5/PM16
Aromatics													
>C5-EC7	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	mg/kg	TM36/PM12
>EC7-EC8	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	mg/kg	TM36/PM12
>EC8-EC10 #	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	mg/kg	TM36/PM12
>EC10-EC12 #	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	mg/kg	TM5/PM16
>EC12-EC16 #	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	mg/kg	TM5/PM16
>EC16-EC21 #	<7	<7	<7	<7	<7	<7	<7	19	<7	10	<7	mg/kg	TM5/PM16
>EC21-EC35 #	<7	<7	<7	<7	<7	<7	<7	249	<7	421	<7	mg/kg	TM5/PM16
Total aromatics C5-35	<19	<19	<19	<19	<19	<19	<19	268	<19	431	<19	mg/kg	TM5/PM16
Total aliphatics and aromatics(C5-35)	<38	<38	<38	<38	<38	<38	<38	1108	<38	1307	<38	mg/kg	TM5/PM16
PCB 77	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	ug/kg	TM16/PM8
PCB 81	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	ug/kg	TM16/PM8
PCB 105	38	<5	<5	<5	<5	<5	<5	13	13	<5	<5	ug/kg	TM16/PM8
PCB 114	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	ug/kg	TM16/PM8
PCB 118	95	6	<5	<5	<5	<5	<5	26	26	11	<5	ug/kg	TM16/PM8
PCB 123	92	<5	<5	<5	<5	<5	<5	20	24	9	<5	ug/kg	TM16/PM8
PCB 126	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	ug/kg	TM16/PM8
PCB 156	12	<5	<5	<5	<5	<5	<5	5	<5	<5	<5	ug/kg	TM16/PM8
PCB 157	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	ug/kg	TM16/PM8
PCB 167	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	ug/kg	TM16/PM8
PCB 169	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	ug/kg	TM16/PM8

Jones Environmental Laboratory

Client Name: RPS
Reference: MCE0734
Location: East Tip
Contact: Una Fitzgerald
JE Job No.: 12/8458

Report : Solid

Solids: V=60g VOC jar, J=250g glass jar, T=plastic tub

J E Sample No.	1-3	4-5	8-9	10-11	12-13	14-15	16-17	18-19	22-23	24-25	Please see attached notes for all abbreviations and acronyms		
Sample ID	BH307	BH316	BH303	BH302	BH309	BH305	BH308	BH301	BH315	BH311			
Depth	4.5	5.0-5.5	5.0-6.0	6.0	6.5	0.3-1.2	0.7-0.9	1.0	5.0	0.0-0.3			
COC No / misc													
Containers	V J	V J	V J	V J	V J	V J	V J	V J	V J	V J			
Sample Date	26/10/2012	26/10/2012	26/10/2012	26/10/2012	26/10/2012	26/10/2012	26/10/2012	26/10/2012	26/10/2012	26/10/2012			
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil			
Batch Number	1	1	1	1	1	1	1	1	1	1			
Date of Receipt	31/10/2012	31/10/2012	31/10/2012	31/10/2012	31/10/2012	31/10/2012	31/10/2012	31/10/2012	31/10/2012	31/10/2012	LOD	Units	Method No.
PCB 189	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	ug/kg	TM16/PM8
Total 12 PCBs	237	<60	<60	<60	<60	<60	<60	64	63	<60	<60	ug/kg	TM16/PM8
PCB 28 #	19	8	<5	<5	<5	<5	<5	65	54	11	<5	ug/kg	TM17/PM8
PCB 52 #	73	5	<5	<5	<5	<5	<5	28	30	9	<5	ug/kg	TM17/PM8
PCB 101 #	113	5	<5	<5	<5	<5	<5	26	28	17	<5	ug/kg	TM17/PM8
PCB 118 #	95	<5	<5	<5	<5	<5	<5	22	26	11	<5	ug/kg	TM17/PM8
PCB 138 #	105	<5	<5	<5	<5	<5	<5	36	25	39	<5	ug/kg	TM17/PM8
PCB 153 #	66	<5	<5	<5	<5	<5	<5	25	16	33	<5	ug/kg	TM17/PM8
PCB 180 #	14	<5	<5	<5	<5	<5	<5	12	8	43	<5	ug/kg	TM17/PM8
Total 7 PCBs #	485	<35	<35	<35	<35	<35	<35	214	187	163	<35	ug/kg	TM17/PM8
Total Phenols HPLC	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	mg/kg	TM26/PM21
Alcohols/Acetates													
Acetone	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	ug/kg	TM83/PM10
SEM #	343	624	216	294	831	244	458	2958	505	3615	<110	mg/kg	TM7/PM6
Natural Moisture Content	3.9	4.0	3.0	1.3	2.6	10.7	11.7	6.8	7.4	7.6	<0.1	%	PM4/PM0
Ammoniacal Nitrogen as N	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	mg/kg	TM38/PM20
Chloride	1848	1645	1204	878	1620	145	150	104	1236	101	<2	mg/kg	TM38/PM20
Hexavalent Chromium	0.4	<0.3	<0.3	0.3	<0.3	0.8	1.5	1.2	0.8	1.2	<0.3	mg/kg	TM38/PM20
Sulphate as SO4 (2:1 Ext)	0.4477	<0.0015	0.0967	0.0513	0.2492	0.1216	0.2452	0.2339	0.3332	0.1057	<0.0015	g/l	TM38/PM20
Free Cyanide	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	mg/kg	TM89/PM45
Total Cyanide #	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	mg/kg	TM89/PM45
Complex Cyanide	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	mg/kg	TM89/PM45
Fraction Organic Carbon	0.003	0.002	<0.001	<0.001	<0.001	0.003	0.005	0.006	0.002	0.006	<0.001	None	TM21/PM24
Sulphide	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	mg/kg	TM106/PM45
Thiocyanate	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	1.8	<0.6	<0.6	<0.6	<0.6	mg/kg	TM107/PM45
Elemental Sulphur	37	104	<1	<1	1	<1	<1	1	1	<1	<1	mg/kg	TM108/PM8
pH #	9.56	9.49	10.64	9.89	9.95	10.62	10.92	10.46	10.34	11.11	<0.01	pH units	TM73/PM11
Dioxins & Furans	See attached	-	-	-	-	-	-	-	-	-	-		Subcontracted

Jones Environmental Laboratory

Client Name: RPS
Reference: MCE0734
Location: East Tip
Contact: Una Fitzgerald
JE Job No.: 12/8458

Report : Solid

Solids: V=60g VOC jar, J=250g glass jar, T=plastic tub

J E Sample No.	26-27	28-29	30-31	32-33	34-35	36-38	42-44	45-46	47-48	49-50	Please see attached notes for all abbreviations and acronyms		
Sample ID	BH311	BH309	BH304	BH308	BH302	BH313	BH310C	SS306	SS310	SS313			
Depth	4.5	0.2	2.0	1.3	5.0	1.0	2.8						
COC No / misc													
Containers	V J	V J	V J	V J	V J	V J T	V J	V J	V J	V J			
Sample Date	26/10/2012	26/10/2012	26/10/2012	26/10/2012	26/10/2012	26/10/2012	26/10/2012	26/10/2012	26/10/2012	26/10/2012			
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil			
Batch Number	1	1	1	1	1	1	1	1	1	1			
Date of Receipt	31/10/2012	31/10/2012	31/10/2012	31/10/2012	31/10/2012	31/10/2012	31/10/2012	31/10/2012	31/10/2012	31/10/2012	LOD	Units	Method No.
Aluminium	NDP	13340	21030	9040	26900	20940	22040	30870	31730	31540	<50	mg/kg	TM30/PM15
Antimony	NDP	<5	<5	<1	<5	<5	<5	<5	<5	<5	<1	mg/kg	TM30/PM15
Arsenic #	NDP	16.9	8.3	16.3	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	mg/kg	TM30/PM15
Barium #	NDP	683	1058	577	953	731	705	720	798	796	<1	mg/kg	TM30/PM15
Beryllium	NDP	1.8	1.4	1.6	1.8	1.9	1.5	2.2	2.4	1.8	<0.5	mg/kg	TM30/PM15
Cadmium #	NDP	1.3	9.9	1.4	3.0	2.6	4.0	<0.1	<0.1	<0.1	<0.1	mg/kg	TM30/PM15
Calcium	NDP	138100	162700	154700	203200	173300	209600	197000	209400	193500	<500	mg/kg	TM30/PM15
Chromium #	NDP	2443.0	2306.0	1856.0	5008.0	4069.0	5312.0	3565.0	3776.0	4001.0	<0.5	mg/kg	TM30/PM15
Copper #	NDP	505	426	322	430	630	427	2038	437	309	<1	mg/kg	TM30/PM15
Lead #	NDP	190	737	256	288	161	211	44	31	28	<5	mg/kg	TM30/PM15
Magnesium	NDP	40030	28310	37330	31220	33690	37270	29570	25540	27090	<25	mg/kg	TM30/PM15
Manganese #	NDP	28250	28680	28730	42750	40440	37000	45680	41930	44920	<1	mg/kg	TM30/PM15
Mercury #	NDP	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	mg/kg	TM30/PM15
Nickel #	NDP	114.7	75.7	78.0	62.2	120.7	61.8	66.3	61.6	44.8	<0.7	mg/kg	TM30/PM15
Selenium #	NDP	10	12	10	15	14	15	16	15	18	<1	mg/kg	TM30/PM15
Total Sulphate	NDP	3015	2489	3371	2510	2196	3100	1037	1219	1075	<50	mg/kg	TM50/PM15
Vanadium	NDP	655	357	418	608	409	462	549	1149	698	<1	mg/kg	TM30/PM15
Water Soluble Boron #	NDP	8.8	5.4	6.6	9.7	6.7	6.8	3.6	2.8	4.2	<0.1	mg/kg	TM74/PM32
Zinc #	NDP	915	5124	766	1826	1073	1177	259	241	214	<5	mg/kg	TM30/PM15
PAH MS													
Naphthalene #	0.06	<0.04	0.06	0.43	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	mg/kg	TM4/PM8
Acenaphthylene	0.04	<0.03	0.08	0.34	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	mg/kg	TM4/PM8
Acenaphthene #	<0.05	<0.05	<0.05	0.30	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	mg/kg	TM4/PM8
Fluorene #	<0.04	<0.04	<0.04	<0.20	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	mg/kg	TM4/PM8
Phenanthrene #	0.27	0.10	0.49	15.51	0.18	0.07	0.11	<0.03	<0.03	<0.03	<0.03	mg/kg	TM4/PM8
Anthracene #	0.09	0.04	0.16	1.79	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	mg/kg	TM4/PM8
Fluoranthene #	0.56	0.32	1.12	22.51	0.20	0.07	0.10	<0.03	<0.03	<0.03	<0.03	mg/kg	TM4/PM8
Pyrene #	0.46	0.28	0.96	15.46	0.16	0.07	0.05	<0.03	<0.03	<0.03	<0.03	mg/kg	TM4/PM8
Benzo(a)anthracene #	0.28	0.18	0.59	9.84	0.10	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	mg/kg	TM4/PM8
Chrysene #	0.26	0.20	0.63	9.90	0.10	0.05	0.04	<0.02	<0.02	<0.02	<0.02	mg/kg	TM4/PM8
Benzo(bk)fluoranthene #	0.52	0.35	1.27	18.72	0.17	0.07	0.08	<0.07	<0.07	<0.07	<0.07	mg/kg	TM4/PM8
Benzo(a)pyrene #	0.24	0.13	0.63	7.03	0.09	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	mg/kg	TM4/PM8
Indeno(123cd)pyrene #	0.20	0.12	0.54	5.98	0.06	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	mg/kg	TM4/PM8
Dibenzo(ah)anthracene #	<0.04	<0.04	0.14	1.06	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	mg/kg	TM4/PM8
Benzo(ghi)perylene #	0.15	0.10	0.45	4.45	0.05	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	mg/kg	TM4/PM8
Coronene	<0.04	<0.04	0.10	0.62	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	mg/kg	TM4/PM8
PAH 17 Total	3.13	1.82	7.22	113.94	1.11	<0.64	<0.64	<0.64	<0.64	<0.64	<0.64	mg/kg	TM4/PM8
Benzo(b)fluoranthene	0.37	0.25	0.91	13.48	0.12	0.05	0.06	<0.05	<0.05	<0.05	<0.05	mg/kg	TM4/PM8
Benzo(k)fluoranthene	0.15	0.10	0.36	5.24	0.05	<0.02	0.02	<0.02	<0.02	<0.02	<0.02	mg/kg	TM4/PM8
PAH Surrogate % Recovery	102	87	83	103	92	85	88	88	99	80	<0	%	TM4/PM8
VOC TICs	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		None	TM15/PM10
Methyl Tertiary Butyl Ether #	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/kg	TM15/PM10

Please include all sections of this report if it is reproduced

Jones Environmental Laboratory

Client Name: RPS
Reference: MCE0734
Location: East Tip
Contact: Una Fitzgerald
JE Job No.: 12/8458

Report : Solid

Solids: V=60g VOC jar, J=250g glass jar, T=plastic tub

J E Sample No.	26-27	28-29	30-31	32-33	34-35	36-38	42-44	45-46	47-48	49-50	Please see attached notes for all abbreviations and acronyms		
Sample ID	BH311	BH309	BH304	BH308	BH302	BH313	BH310C	SS306	SS310	SS313			
Depth	4.5	0.2	2.0	1.3	5.0	1.0	2.8						
COC No / misc													
Containers	V J	V J	V J	V J	V J	V J T	V J	V J	V J	V J			
Sample Date	26/10/2012	26/10/2012	26/10/2012	26/10/2012	26/10/2012	26/10/2012	26/10/2012	26/10/2012	26/10/2012	26/10/2012			
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil			
Batch Number	1	1	1	1	1	1	1	1	1	1			
Date of Receipt	31/10/2012	31/10/2012	31/10/2012	31/10/2012	31/10/2012	31/10/2012	31/10/2012	31/10/2012	31/10/2012	31/10/2012	LOD	Units	Method No.
Benzene #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/kg	TM15/PM10
Toluene #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/kg	TM15/PM10
Ethylbenzene #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/kg	TM15/PM10
p/m-Xylene #	<6	<6	<6	<6	<6	<6	<6	<6	<6	<6	<6	ug/kg	TM15/PM10
o-Xylene #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/kg	TM15/PM10
Surrogate Recovery Toluene D8	121	111	109	118	120	117	119	123	120	121	<0	%	TM15/PM10
SVOC TICs	ND	See Attached	See Attached	See Attached	ND	See Attached	ND	ND	ND	ND		None	TM16/PM8
Mineral Oil (C8-C40)	<30	242	159	201	<30	324	<30	<30	<30	<30	<30	mg/kg	TM5/PM16
TPH CWG													
Aliphatics													
>C5-C6 #	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	mg/kg	TM36/PM12
>C6-C8 #	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	mg/kg	TM36/PM12
>C8-C10	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	mg/kg	TM36/PM12
>C10-C12 #	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	mg/kg	TM5/PM16
>C12-C16 #	<4	<4	<4	7	<4	<4	<4	<4	<4	<4	<4	mg/kg	TM5/PM16
>C16-C21 #	<7	25	11	32	<7	24	<7	<7	<7	<7	<7	mg/kg	TM5/PM16
>C21-C35 #	<7	155	115	124	<7	227	<7	<7	<7	<7	<7	mg/kg	TM5/PM16
Total aliphatics C5-35	<19	180	126	163	<19	251	<19	<19	<19	<19	<19	mg/kg	TM5/PM16
Aromatics													
>C5-EC7	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	mg/kg	TM36/PM12
>EC7-EC8	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	mg/kg	TM36/PM12
>EC8-EC10 #	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	mg/kg	TM36/PM12
>EC10-EC12 #	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	mg/kg	TM5/PM16
>EC12-EC16 #	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	mg/kg	TM5/PM16
>EC16-EC21 #	<7	15	10	19	<7	<7	<7	<7	<7	<7	<7	mg/kg	TM5/PM16
>EC21-EC35 #	<7	130	121	110	<7	31	<7	<7	<7	<7	<7	mg/kg	TM5/PM16
Total aromatics C5-35	<19	145	131	129	<19	31	<19	<19	<19	<19	<19	mg/kg	TM5/PM16
Total aliphatics and aromatics(C5-35)	<38	325	257	292	<38	282	<38	<38	<38	<38	<38	mg/kg	TM5/PM16
PCB 77	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	ug/kg	TM16/PM8
PCB 81	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	ug/kg	TM16/PM8
PCB 105	<5	<5	14	<5	<5	<5	<5	<5	<5	<5	<5	ug/kg	TM16/PM8
PCB 114	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	ug/kg	TM16/PM8
PCB 118	<5	7	35	<5	<5	7	<5	<5	<5	<5	<5	ug/kg	TM16/PM8
PCB 123	<5	5	37	<5	<5	6	<5	<5	<5	<5	<5	ug/kg	TM16/PM8
PCB 126	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	ug/kg	TM16/PM8
PCB 156	<5	<5	8	<5	<5	<5	<5	<5	<5	<5	<5	ug/kg	TM16/PM8
PCB 157	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	ug/kg	TM16/PM8
PCB 167	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	ug/kg	TM16/PM8
PCB 169	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	ug/kg	TM16/PM8

Jones Environmental Laboratory

Client Name: RPS
Reference: MCE0734
Location: East Tip
Contact: Una Fitzgerald
JE Job No.: 12/8458

Report : Solid

Solids: V=60g VOC jar, J=250g glass jar, T=plastic tub

J E Sample No.	26-27	28-29	30-31	32-33	34-35	36-38	42-44	45-46	47-48	49-50	Please see attached notes for all abbreviations and acronyms		
Sample ID	BH311	BH309	BH304	BH308	BH302	BH313	BH310C	SS306	SS310	SS313			
Depth	4.5	0.2	2.0	1.3	5.0	1.0	2.8						
COC No / misc													
Containers	V J	V J	V J	V J	V J	V J T	V J	V J	V J	V J			
Sample Date	26/10/2012	26/10/2012	26/10/2012	26/10/2012	26/10/2012	26/10/2012	26/10/2012	26/10/2012	26/10/2012	26/10/2012			
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil			
Batch Number	1	1	1	1	1	1	1	1	1	1			
Date of Receipt	31/10/2012	31/10/2012	31/10/2012	31/10/2012	31/10/2012	31/10/2012	31/10/2012	31/10/2012	31/10/2012	31/10/2012	LOD	Units	Method No.
PCB 189	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	ug/kg	TM16/PM8
Total 12 PCBs	<60	<60	94	<60	<60	<60	<60	<60	<60	<60	<60	ug/kg	TM16/PM8
PCB 28 #	<5	<5	10	<5	<5	15	<5	<5	<5	<5	<5	ug/kg	TM17/PM8
PCB 52 #	<5	6	34	<5	<5	7	<5	<5	<5	<5	<5	ug/kg	TM17/PM8
PCB 101 #	<5	6	67	<5	<5	7	<5	<5	<5	<5	<5	ug/kg	TM17/PM8
PCB 118 #	<5	6	35	<5	<5	7	<5	<5	<5	<5	<5	ug/kg	TM17/PM8
PCB 138 #	<5	6	80	9	<5	10	<5	<5	<5	<5	<5	ug/kg	TM17/PM8
PCB 153 #	<5	<5	50	7	<5	10	<5	<5	<5	<5	<5	ug/kg	TM17/PM8
PCB 180 #	<5	<5	20	8	<5	9	<5	<5	<5	<5	<5	ug/kg	TM17/PM8
Total 7 PCBs #	<35	<35	296	<35	<35	65	<35	<35	<35	<35	<35	ug/kg	TM17/PM8
Total Phenols HPLC	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	mg/kg	TM26/PM21
Alcohols/Acetates													
Acetone	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	ug/kg	TM83/PM10
SEM #	447	1532	1236	648	153	921	<110	<110	111	262	<110	mg/kg	TM7/PM6
Natural Moisture Content	NDP	7.1	5.6	9.9	2.2	7.0	7.9	1.9	0.9	0.7	<0.1	%	PM4/PM0
Ammoniacal Nitrogen as N	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	mg/kg	TM38/PM20
Chloride	NDP	104	151	119	1099	65	241	357	100	54	<2	mg/kg	TM38/PM20
Hexavalent Chromium	0.3	0.9	0.4	<0.3	<0.3	3.0	3.0	<0.3	<0.3	<0.3	<0.3	mg/kg	TM38/PM20
Sulphate as SO4 (2:1 Ext)	NDP	0.1346	0.0324	0.0031	0.0060	0.0143	<0.0015	0.0389	0.0258	0.0265	<0.0015	g/l	TM38/PM20
Free Cyanide	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	mg/kg	TM89/PM45
Total Cyanide #	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	mg/kg	TM89/PM45
Complex Cyanide	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	mg/kg	TM89/PM45
Fraction Organic Carbon	NDP	0.004	0.008	0.011	0.002	0.003	0.004	<0.001	<0.001	<0.001	<0.001	None	TM21/PM24
Sulphide	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	mg/kg	TM106/PM45
Thiocyanate	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	1.6	<0.6	<0.6	<0.6	<0.6	mg/kg	TM107/PM45
Elemental Sulphur	8	<1	5	2	1	<1	<1	<1	<1	<1	<1	mg/kg	TM108/PM8
pH #	10.57	11.20	9.78	11.56	9.64	12.16	12.35	8.99	8.98	9.04	<0.01	pH units	TM73/PM11
Dioxins & Furans	-	-	-	-	-	See attached	See attached	-	-	-			Subcontracted

Jones Environmental Laboratory

Client Name: RPS
Reference: MCE0734
Location: East Tip
Contact: Una Fitzgerald
JE Job No.: 12/8458

SVOC Report : Solid

J E Sample No.	1-3	4-5	8-9	10-11	12-13	14-15	16-17	18-19	22-23	24-25	Please see attached notes for all abbreviations and acronyms		
Sample ID	BH307	BH316	BH303	BH302	BH309	BH305	BH308	BH301	BH315	BH311	LOD	Units	Method No.
Depth	4.5	5.0-5.5	5.0-6.0	6.0	6.5	0.3-1.2	0.7-0.9	1.0	5.0	0.0-0.3			
COC No / misc													
Containers	V J	V J	V J	V J	V J	V J	V J	V J	V J	V J			
Sample Date	26/10/2012	26/10/2012	26/10/2012	26/10/2012	26/10/2012	26/10/2012	26/10/2012	26/10/2012	26/10/2012	26/10/2012			
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil			
Batch Number	1	1	1	1	1	1	1	1	1	1			
Date of Receipt	31/10/2012	31/10/2012	31/10/2012	31/10/2012	31/10/2012	31/10/2012	31/10/2012	31/10/2012	31/10/2012	31/10/2012			
SVOC MS													
Phenols													
2-Chlorophenol	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/kg	TM16/PM8
2-Methylphenol	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/kg	TM16/PM8
2-Nitrophenol	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/kg	TM16/PM8
2,4-Dichlorophenol	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/kg	TM16/PM8
2,4-Dimethylphenol	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/kg	TM16/PM8
2,4,5-Trichlorophenol	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/kg	TM16/PM8
2,4,6-Trichlorophenol	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/kg	TM16/PM8
4-Chloro-3-methylphenol	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/kg	TM16/PM8
4-Methylphenol	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/kg	TM16/PM8
4-Nitrophenol	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/kg	TM16/PM8
Pentachlorophenol	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/kg	TM16/PM8
Phenol	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/kg	TM16/PM8
PAHs													
2-Chloronaphthalene	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/kg	TM16/PM8
2-Methylnaphthalene	<10	<10	<10	<10	<10	<10	20	35	<10	13	<10	ug/kg	TM16/PM8
Phthalates													
Bis(2-ethylhexyl) phthalate	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/kg	TM16/PM8
Butylbenzyl phthalate	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/kg	TM16/PM8
Di-n-butyl phthalate	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/kg	TM16/PM8
Di-n-Octyl phthalate	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/kg	TM16/PM8
Diethyl phthalate	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/kg	TM16/PM8
Dimethyl phthalate	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/kg	TM16/PM8
Other SVOCs													
1,2-Dichlorobenzene	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/kg	TM16/PM8
1,2,4-Trichlorobenzene	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/kg	TM16/PM8
1,3-Dichlorobenzene	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/kg	TM16/PM8
1,4-Dichlorobenzene	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/kg	TM16/PM8
2-Nitroaniline	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/kg	TM16/PM8
2,4-Dinitrotoluene	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/kg	TM16/PM8
2,6-Dinitrotoluene	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/kg	TM16/PM8
3-Nitroaniline	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/kg	TM16/PM8
4-Bromophenylphenylether	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/kg	TM16/PM8
4-Chloroaniline	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/kg	TM16/PM8
4-Chlorophenylphenylether	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/kg	TM16/PM8
4-Nitroaniline	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/kg	TM16/PM8
Azobenzene	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/kg	TM16/PM8
Bis(2-chloroethoxy)methane	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/kg	TM16/PM8
Bis(2-chloroethyl)ether	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/kg	TM16/PM8
Carbazole	<10	<10	<10	<10	<10	<10	<10	140	<10	<10	<10	ug/kg	TM16/PM8
Dibenzofuran	<10	<10	<10	<10	<10	<10	17	32	<10	<10	<10	ug/kg	TM16/PM8
Hexachlorobenzene	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/kg	TM16/PM8
Hexachlorobutadiene	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/kg	TM16/PM8
Hexachlorocyclopentadiene	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/kg	TM16/PM8
Hexachloroethane	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/kg	TM16/PM8
Isophorone	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/kg	TM16/PM8
N-nitrosodi-n-propylamine	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/kg	TM16/PM8
Nitrobenzene	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/kg	TM16/PM8

Jones Environmental Laboratory

Client Name: RPS
 Reference: MCE0734
 Location: East Tip
 Contact: Una Fitzgerald
 JE Job No.: 12/8458

SVOC Report : Solid

J E Sample No.	26-27	28-29	30-31	32-33	34-35	36-38	42-44	45-46	47-48	49-50	Please see attached notes for all abbreviations and acronyms		
Sample ID	BH311	BH309	BH304	BH308	BH302	BH313	BH310C	SS306	SS310	SS313	LOD	Units	Method No.
Depth	4.5	0.2	2.0	1.3	5.0	1.0	2.8						
COC No / misc													
Containers	V J	V J	V J	V J	V J	V J T	V J	V J	V J	V J			
Sample Date	26/10/2012	26/10/2012	26/10/2012	26/10/2012	26/10/2012	26/10/2012	26/10/2012	26/10/2012	26/10/2012	26/10/2012			
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil			
Batch Number	1	1	1	1	1	1	1	1	1	1			
Date of Receipt	31/10/2012	31/10/2012	31/10/2012	31/10/2012	31/10/2012	31/10/2012	31/10/2012	31/10/2012	31/10/2012	31/10/2012			
SVOC MS													
Phenols													
2-Chlorophenol	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/kg	TM16/PM8
2-Methylphenol	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/kg	TM16/PM8
2-Nitrophenol	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/kg	TM16/PM8
2,4-Dichlorophenol	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/kg	TM16/PM8
2,4-Dimethylphenol	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/kg	TM16/PM8
2,4,5-Trichlorophenol	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/kg	TM16/PM8
2,4,6-Trichlorophenol	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/kg	TM16/PM8
4-Chloro-3-methylphenol	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/kg	TM16/PM8
4-Methylphenol	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/kg	TM16/PM8
4-Nitrophenol	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/kg	TM16/PM8
Pentachlorophenol	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/kg	TM16/PM8
Phenol	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/kg	TM16/PM8
PAHs													
2-Chloronaphthalene	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/kg	TM16/PM8
2-Methylnaphthalene	30	<10	29	264	<10	<10	<10	<10	<10	<10	<10	ug/kg	TM16/PM8
Phthalates													
Bis(2-ethylhexyl) phthalate	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/kg	TM16/PM8
Butylbenzyl phthalate	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/kg	TM16/PM8
Di-n-butyl phthalate	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/kg	TM16/PM8
Di-n-Octyl phthalate	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/kg	TM16/PM8
Diethyl phthalate	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/kg	TM16/PM8
Dimethyl phthalate	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/kg	TM16/PM8
Other SVOCs													
1,2-Dichlorobenzene	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/kg	TM16/PM8
1,2,4-Trichlorobenzene	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/kg	TM16/PM8
1,3-Dichlorobenzene	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/kg	TM16/PM8
1,4-Dichlorobenzene	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/kg	TM16/PM8
2-Nitroaniline	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/kg	TM16/PM8
2,4-Dinitrotoluene	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/kg	TM16/PM8
2,6-Dinitrotoluene	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/kg	TM16/PM8
3-Nitroaniline	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/kg	TM16/PM8
4-Bromophenyphenylether	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/kg	TM16/PM8
4-Chloroaniline	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/kg	TM16/PM8
4-Chlorophenyphenylether	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/kg	TM16/PM8
4-Nitroaniline	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/kg	TM16/PM8
Azobenzene	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/kg	TM16/PM8
Bis(2-chloroethoxy)methane	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/kg	TM16/PM8
Bis(2-chloroethyl)ether	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/kg	TM16/PM8
Carbazole	<10	<10	22	857	<10	<10	<10	<10	<10	<10	<10	ug/kg	TM16/PM8
Dibenzofuran	32	<10	22	780	<10	<10	15	<10	<10	<10	<10	ug/kg	TM16/PM8
Hexachlorobenzene	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/kg	TM16/PM8
Hexachlorobutadiene	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/kg	TM16/PM8
Hexachlorocyclopentadiene	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/kg	TM16/PM8
Hexachloroethane	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/kg	TM16/PM8
Isophorone	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/kg	TM16/PM8
N-nitrosodi-n-propylamine	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/kg	TM16/PM8
Nitrobenzene	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/kg	TM16/PM8

Client Name: RPS

VOC Report : Solid

Reference: MCE0734

Location: East Tip

Contact: Una Fitzgerald

JE Job No.: 12/8458

J E Sample No.	1-3	4-5	8-9	10-11	12-13	14-15	16-17	18-19	22-23	24-25	Please see attached notes for all abbreviations and acronyms		
Sample ID	BH307	BH316	BH303	BH302	BH309	BH305	BH308	BH301	BH315	BH311	LOD	Units	Method No.
Depth	4.5	5.0-5.5	5.0-6.0	6.0	6.5	0.3-1.2	0.7-0.9	1.0	5.0	0.0-0.3			
COC No / misc													
Containers	V J	V J	V J	V J	V J	V J	V J	V J	V J	V J			
Sample Date	26/10/2012	26/10/2012	26/10/2012	26/10/2012	26/10/2012	26/10/2012	26/10/2012	26/10/2012	26/10/2012	26/10/2012			
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil			
Batch Number	1	1	1	1	1	1	1	1	1	1			
Date of Receipt	31/10/2012	31/10/2012	31/10/2012	31/10/2012	31/10/2012	31/10/2012	31/10/2012	31/10/2012	31/10/2012	31/10/2012			
VOC MS													
Dichlorodifluoromethane	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/kg	TM15/PM10
Methyl Tertiary Butyl Ether #	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/kg	TM15/PM10
Chloromethane #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/kg	TM15/PM10
Vinyl Chloride	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/kg	TM15/PM10
Bromomethane	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	ug/kg	TM15/PM10
Chloroethane #	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/kg	TM15/PM10
Trichlorofluoromethane #	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/kg	TM15/PM10
1,1-Dichloroethene #	<6	<6	<6	<6	<6	<6	<6	<6	<6	<6	<6	ug/kg	TM15/PM10
Dichloromethane #	<7	<7	<7	<7	<7	<7	<7	<7	<7	<7	<7	ug/kg	TM15/PM10
trans-1-2-Dichloroethene #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/kg	TM15/PM10
1,1-Dichloroethane #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/kg	TM15/PM10
cis-1-2-Dichloroethene #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/kg	TM15/PM10
2,2-Dichloropropane	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	ug/kg	TM15/PM10
Bromochloromethane #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/kg	TM15/PM10
Chloroform #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/kg	TM15/PM10
1,1,1-Trichloroethane #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/kg	TM15/PM10
1,1-Dichloropropene #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/kg	TM15/PM10
Carbon tetrachloride #	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	ug/kg	TM15/PM10
1,2-Dichloroethane #	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	ug/kg	TM15/PM10
Benzene #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/kg	TM15/PM10
Trichloroethene #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/kg	TM15/PM10
1,2-Dichloropropane #	<6	<6	<6	<6	<6	<6	<6	<6	<6	<6	<6	ug/kg	TM15/PM10
Dibromomethane #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/kg	TM15/PM10
Bromodichloromethane #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/kg	TM15/PM10
cis-1-3-Dichloropropene	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	ug/kg	TM15/PM10
Toluene #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/kg	TM15/PM10
trans-1-3-Dichloropropene	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/kg	TM15/PM10
1,1,2-Trichloroethane #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/kg	TM15/PM10
Tetrachloroethene #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/kg	TM15/PM10
1,3-Dichloropropane #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/kg	TM15/PM10
Dibromochloromethane #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/kg	TM15/PM10
1,2-Dibromoethane #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/kg	TM15/PM10
Chlorobenzene #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/kg	TM15/PM10
1,1,1,2-Tetrachloroethane	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/kg	TM15/PM10
Ethylbenzene #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/kg	TM15/PM10
p/m-Xylene #	<6	<6	<6	<6	<6	<6	<6	<6	<6	<6	<6	ug/kg	TM15/PM10
o-Xylene #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/kg	TM15/PM10
Styrene #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/kg	TM15/PM10
Bromoform #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/kg	TM15/PM10
Isopropylbenzene #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/kg	TM15/PM10
1,1,2,2-Tetrachloroethane #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/kg	TM15/PM10
Bromobenzene	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/kg	TM15/PM10
1,2,3-Trichloropropane #	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	ug/kg	TM15/PM10
Propylbenzene #	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	ug/kg	TM15/PM10
2-Chlorotoluene	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/kg	TM15/PM10
1,3,5-Trimethylbenzene #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/kg	TM15/PM10
4-Chlorotoluene	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/kg	TM15/PM10
tert-Butylbenzene #	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	ug/kg	TM15/PM10
1,2,4-Trimethylbenzene #	<6	<6	<6	<6	<6	<6	<6	<6	<6	<6	<6	ug/kg	TM15/PM10
sec-Butylbenzene #	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	ug/kg	TM15/PM10
4-Isopropyltoluene #	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	ug/kg	TM15/PM10
1,3-Dichlorobenzene #	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	ug/kg	TM15/PM10
1,4-Dichlorobenzene #	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	ug/kg	TM15/PM10
n-Butylbenzene #	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	ug/kg	TM15/PM10
1,2-Dichlorobenzene #	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	ug/kg	TM15/PM10
1,2-Dibromo-3-chloropropane #	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	ug/kg	TM15/PM10
1,2,4-Trichlorobenzene #	<7	<7	<7	<7	<7	<7	<7	<7	<7	<7	<7	ug/kg	TM15/PM10
Hexachlorbutadiene	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	ug/kg	TM15/PM10
Naphthalene	<27	<27	<27	<27	<27	<27	<27	<27	<27	<27	<27	ug/kg	TM15/PM10
1,2,3-Trichlorobenzene #	<7	<7	<7	<7	<7	<7	<7	<7	<7	<7	<7	ug/kg	TM15/PM10
Surrogate Recovery Toluene D8	119	116	119	121	118	118	118	108	118	101	<0	%	TM15/PM10

Client Name: RPS

VOC Report : Solid

Reference: MCE0734

Location: East Tip

Contact: Una Fitzgerald

JE Job No.: 12/8458

J E Sample No.	26-27	28-29	30-31	32-33	34-35	36-38	42-44	45-46	47-48	49-50	Please see attached notes for all abbreviations and acronyms		
Sample ID	BH311	BH309	BH304	BH308	BH302	BH313	BH310C	SS306	SS310	SS313	LOD	Units	Method No.
Depth	4.5	0.2	2.0	1.3	5.0	1.0	2.8						
COC No / misc													
Containers	V J	V J	V J	V J	V J	V J T	V J	V J	V J	V J			
Sample Date	26/10/2012	26/10/2012	26/10/2012	26/10/2012	26/10/2012	26/10/2012	26/10/2012	26/10/2012	26/10/2012	26/10/2012			
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil			
Batch Number	1	1	1	1	1	1	1	1	1	1			
Date of Receipt	31/10/2012	31/10/2012	31/10/2012	31/10/2012	31/10/2012	31/10/2012	31/10/2012	31/10/2012	31/10/2012	31/10/2012			
VOC MS													
Dichlorodifluoromethane	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/kg	TM15/PM10
Methyl Tertiary Butyl Ether #	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/kg	TM15/PM10
Chloromethane #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/kg	TM15/PM10
Vinyl Chloride	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/kg	TM15/PM10
Bromomethane	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	ug/kg	TM15/PM10
Chloroethane #	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/kg	TM15/PM10
Trichlorofluoromethane #	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/kg	TM15/PM10
1,1-Dichloroethene #	<6	<6	<6	<6	<6	<6	<6	<6	<6	<6	<6	ug/kg	TM15/PM10
Dichloromethane #	<7	<7	<7	<7	<7	<7	<7	<7	<7	<7	<7	ug/kg	TM15/PM10
trans-1-2-Dichloroethene #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/kg	TM15/PM10
1,1-Dichloroethane #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/kg	TM15/PM10
cis-1-2-Dichloroethene #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/kg	TM15/PM10
2,2-Dichloropropane	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	ug/kg	TM15/PM10
Bromochloromethane #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/kg	TM15/PM10
Chloroform #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/kg	TM15/PM10
1,1,1-Trichloroethane #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/kg	TM15/PM10
1,1-Dichloropropene #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/kg	TM15/PM10
Carbon tetrachloride #	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	ug/kg	TM15/PM10
1,2-Dichloroethane #	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	ug/kg	TM15/PM10
Benzene #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/kg	TM15/PM10
Trichloroethene #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/kg	TM15/PM10
1,2-Dichloropropane #	<6	<6	<6	<6	<6	<6	<6	<6	<6	<6	<6	ug/kg	TM15/PM10
Dibromomethane #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/kg	TM15/PM10
Bromodichloromethane #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/kg	TM15/PM10
cis-1-3-Dichloropropene	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	ug/kg	TM15/PM10
Toluene #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/kg	TM15/PM10
trans-1-3-Dichloropropene	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/kg	TM15/PM10
1,1,2-Trichloroethane #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/kg	TM15/PM10
Tetrachloroethene #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/kg	TM15/PM10
1,3-Dichloropropane #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/kg	TM15/PM10
Dibromochloromethane #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/kg	TM15/PM10
1,2-Dibromoethane #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/kg	TM15/PM10
Chlorobenzene #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/kg	TM15/PM10
1,1,1,2-Tetrachloroethane	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/kg	TM15/PM10
Ethylbenzene #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/kg	TM15/PM10
p/m-Xylene #	<6	<6	<6	<6	<6	<6	<6	<6	<6	<6	<6	ug/kg	TM15/PM10
o-Xylene #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/kg	TM15/PM10
Styrene #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/kg	TM15/PM10
Bromoform #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/kg	TM15/PM10
Isopropylbenzene #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/kg	TM15/PM10
1,1,2,2-Tetrachloroethane #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/kg	TM15/PM10
Bromobenzene	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/kg	TM15/PM10
1,2,3-Trichloropropane #	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	ug/kg	TM15/PM10
Propylbenzene #	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	ug/kg	TM15/PM10
2-Chlorotoluene	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/kg	TM15/PM10
1,3,5-Trimethylbenzene #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/kg	TM15/PM10
4-Chlorotoluene	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/kg	TM15/PM10
tert-Butylbenzene #	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	ug/kg	TM15/PM10
1,2,4-Trimethylbenzene #	<6	<6	<6	<6	<6	<6	<6	<6	<6	<6	<6	ug/kg	TM15/PM10
sec-Butylbenzene #	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	ug/kg	TM15/PM10
4-Isopropyltoluene #	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	ug/kg	TM15/PM10
1,3-Dichlorobenzene #	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	ug/kg	TM15/PM10
1,4-Dichlorobenzene #	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	ug/kg	TM15/PM10
n-Butylbenzene #	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	ug/kg	TM15/PM10
1,2-Dichlorobenzene #	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	ug/kg	TM15/PM10
1,2-Dibromo-3-chloropropane #	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	ug/kg	TM15/PM10
1,2,4-Trichlorobenzene #	<7	<7	<7	<7	<7	<7	<7	<7	<7	<7	<7	ug/kg	TM15/PM10
Hexachlorbutadiene	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	ug/kg	TM15/PM10
Naphthalene	<27	<27	<27	<27	<27	<27	<27	<27	<27	<27	<27	ug/kg	TM15/PM10
1,2,3-Trichlorobenzene #	<7	<7	<7	<7	<7	<7	<7	<7	<7	<7	<7	ug/kg	TM15/PM10
Surrogate Recovery Toluene D8	121	111	109	118	120	117	119	123	120	121	<0	%	TM15/PM10

NOTES TO ACCOMPANY ALL SCHEDULES AND REPORTS

JE Job No.: 12/8458

SOILS

Please note we are only MCERTS accredited for sand, loam and clay and any other matrix is outside our scope of accreditation.

Where an MCERTS report has been requested, you will be notified within 48 hours of any samples that have been identified as being outside our MCERTS scope. As validation has been performed on clay, sand and loam, only samples that are predominantly these matrices, or combinations of them will be within our MCERTS scope. If samples are not one of a combination of the above matrices they will not be marked as MCERTS accredited.

It is assumed that you have taken representative samples on site and require analysis on a representative subsample. Stones will generally be included unless we are requested to remove them.

All samples will be discarded one month after the date of reporting, unless we are instructed to the contrary. If we are instructed to keep samples, a storage charge of £1 (1.5 Euros) per sample per month will be applied until we are asked to dispose of them.

If you have not already done so, please send us a purchase order if this is required by your company.

Where appropriate please make sure that our detection limits are suitable for your needs, if they are not, please notify us immediately.

All analysis is reported on a dry weight basis unless stated otherwise. Results are not surrogate corrected. Samples are dried at 35°C ±5°C unless otherwise stated. Moisture content for CEN Leachate tests are dried at 105°C ±5°C.

WATERS

Please note we are not a Drinking Water Inspectorate (DWI) Approved Laboratory. It is important that detection limits are carefully considered when requesting water analysis.

UKAS accreditation applies to surface water and groundwater and one other matrix which is analysis specific, any other liquids are outside our scope of accreditation

As surface waters require different sample preparation to groundwaters the laboratory must be informed of the water type when submitting samples.

DEVIATING SAMPLES

Samples must be received in a condition appropriate to the requested analyses. All samples should be submitted to the laboratory in suitable containers with sufficient ice packs to sustain an appropriate temperature for the requested analysis. If this is not the case you will be informed and any test results that may be compromised highlighted on your deviating samples report.

SURROGATES

Surrogate compounds are added during the preparation process to monitor recovery of analytes. However low recovery in soils is often due to peat, clay or other organic rich matrices. For waters this can be due to oxidants, surfactants, organic rich sediments or remediation fluids. Acceptable limits for most organic methods are 70 - 130% and for VOCs are 50 - 150%. When surrogate recoveries are outside the performance criteria but the associated AQC passes this is assumed to be due to matrix effect. Results are not surrogate corrected.

NOTE

Data is only accredited when all the requirements of our Quality System have been met. In certain circumstances where the requirements have not been met, the laboratory may issue the data in an interim report but will remove the accreditation, in this instance results should be considered indicative only. Where possible samples will be re-extracted and a final report issued with accredited results. Please do not hesitate to contact the laboratory if further details are required of the circumstances which have led to the removal of accreditation.

ABBREVIATIONS and ACRONYMS USED

#	UKAS accredited.
B	Indicates analyte found in associated method blank.
DR	Dilution required.
M	MCERTS accredited.
NA	Not applicable
NAD	No Asbestos Detected.
ND	None Detected (usually refers to VOC and/SVOC TICs).
NDP	No Determination Possible
SS	Calibrated against a single substance.
SV	Surrogate recovery outside performance criteria. This may be due to a matrix effect.
W	Results expressed on as received basis.
+	AQC failure, accreditation has been removed from this result, if appropriate, see 'Note' on previous page.
++	Result outside calibration range, results should be considered as indicative only and are not accredited.
*	Analysis subcontracted to a Jones Environmental approved laboratory.
NFD	No Fibres Detected

APPENDIX C

List of Parameters used in the Paper Tool

J E Sample No.	18-19	10-11	34-35	8-9	30-31	14-15	1-3	16-17	32-33	12-13	28-29	42-44	24-25	36-38	22-23	4-5	45-46	47-48	49-50
Sample ID	BH301	BH302	BH302	BH303	BH304	BH305	BH307	BH308	BH308	BH309	BH309	BH310C	BH311	BH313	BH315	BH316	SS306	SS310	SS313
Depth	1.0	6.0	5.0	5.0-6.0	2.0	0.3-1.2	4.5	0.7-0.9	1.3	6.5	0.2	2.8	0.0-0.3	1.0	5.0	5.0-5.5			
COC No / misc																			
Containers	V J	V J	V J	V J	V J	V J	V J	V J	V J	V J	V J	V J	V J	V J T	V J	V J	V J	V J	V J
Sample Date	26/10/2012	26/10/2012	26/10/2012	26/10/2012	26/10/2012	26/10/2012	26/10/2012	26/10/2012	26/10/2012	26/10/2012	26/10/2012	26/10/2012	26/10/2012	26/10/2012	26/10/2012	26/10/2012	26/10/2012	26/10/2012	26/10/2012
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
Batch Number	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Units	% w/w	% w/w	% w/w	% w/w	% w/w	% w/w	% w/w	% w/w	% w/w	% w/w	% w/w	% w/w	% w/w	% w/w	% w/w	% w/w	% w/w	% w/w	% w/w
Aluminium	0.8955	2.396	2.69	1.98	2.103	2.221	2.317	1.296	0.904	1.696	1.334	2.204	1.763	2.094	2.337	2.524	3.0870	3.173	3.154
Antimony	0.0035	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Arsenic #	0.00349	-	-	-	0.00083	0.00032	-	0.00077	0.00163	-	0.00169	-	-	-	-	0.00048	-	-	-
Barium #	0.028	0.0913	0.0953	0.0681	0.1058	0.0918	0.0864	0.0662	0.0577	0.1051	0.0683	0.0705	0.0657	0.0731	0.0951	0.0785	0.0720	0.0798	0.0796
Beryllium	0.00039	0.00023	0.00018	0.00024	0.00014	0.00012	0.00017	0.00013	0.00016	0.00013	0.00018	0.00015	0.00025	0.00019	0.00017	0.00016	0.0002	0.00024	0.00018
Cadmium #	0.00148	0.00002	0.0003	0.0001	0.00099	0.00111	0.00005	0.00024	0.00014	0.00005	0.00013	0.0004	0.00016	0.00026	0.0001	0.00032	-	-	-
Calcium	6.828	18.13	20.32	16.12	16.27	16.46	19.59	12.84	15.47	17.38	13.81	20.96	14.21	17.33	17.73	16.61	19.7000	20.94	19.35
Chromium #	0.1649	0.4919	0.5008	0.4995	0.2306	0.2575	0.6731	0.2077	0.1856	0.2735	0.2443	0.5312	0.4707	0.4069	0.4737	0.3195	0.3565	0.3776	0.4001
Copper #	0.1461	0.039	0.043	0.0734	0.0426	0.0333	0.033	0.0308	0.0322	0.0189	0.0505	0.0427	0.073	0.063	0.0526	0.0534	0.2038	0.0437	0.0309
Lead #	0.1174	0.0066	0.0288	0.0103	0.0737	0.0496	0.0068	0.0309	0.0256	0.0114	0.019	0.0211	0.0152	0.0161	0.0094	0.0209	0.0044	0.0031	0.0028
Magnesium	1.289	2.598	3.122	2.522	2.831	5.235	2.979	8.024	3.733	5.751	4.003	3.727	4.801	3.369	4.92	5.967	2.9570	2.554	2.709
Manganese #	1.344	4.809	4.275	4.152	2.868	4.133	3.938	3.019	2.873	3.928	2.825	3.7	3.354	4.044	3.764	3.599	4.5680	4.193	4.492
Nickel #	0.04064	0.00742	0.00622	0.01418	0.00757	0.00643	0.0046	0.00963	0.0078	0.00599	0.01147	0.00618	0.0157	0.01207	0.0063	0.02318	0.0066	0.00616	0.00448
Selenium #	0.0005	0.0015	0.0015	0.0015	0.0012	0.0015	0.0015	0.001	0.001	0.0014	0.001	0.0015	0.0013	0.0014	0.0013	0.0013	0.0016	0.0015	0.0018
Total Sulphate	0.2771	0.2212	0.251	0.2586	0.2489	0.3297	0.4312	0.3761	0.3371	0.3604	0.3015	0.31	0.2386	0.2196	0.4673	0.4399	0.1037	0.1219	0.1075
Vanadium	0.0087	0.0533	0.0608	0.0455	0.0357	0.035	0.046	0.0533	0.0418	0.067	0.0655	0.0462	0.037	0.0409	0.0574	0.0205	0.0549	0.1149	0.0698
Water Soluble Boron #	0.0009	0.00091	0.00097	0.00106	0.00054	0.00132	0.00244	0.00052	0.00066	0.00162	0.00088	0.00068	0.00088	0.00067	0.00156	0.00161	0.0004	0.00028	0.00042
Zinc #	0.8966	0.0492	0.1826	0.0746	0.5124	0.3802	0.0502	0.1522	0.0766	0.0573	0.0915	0.1177	0.1546	0.1073	0.1337	0.1369	0.0259	0.0241	0.0214

J E Sample No.	18-19	10-11	34-35	8-9	30-31	14-15	1-3	16-17	32-33	12-13	28-29	42-44	24-25	36-38	22-23	4-5	45-46	47-48	49-50
Sample ID	BH301	BH302	BH302	BH303	BH304	BH305	BH307	BH308	BH308	BH309	BH309	BH310C	BH311	BH313	BH315	BH316	SS306	SS310	SS313
Depth	1.0	6.0	5.0	5.0-6.0	2.0	0.3-1.2	4.5	0.7-0.9	1.3	6.5	0.2	2.8	0.0-0.3	1.0	5.0	5.0-5.5			
COC No / misc																			
Containers	V J	V J	V J	V J	V J	V J	V J	V J	V J	V J	V J	V J	V J	V J T	V J	V J	V J	V J	V J
Sample Date	26/10/2012	26/10/2012	26/10/2012	26/10/2012	26/10/2012	26/10/2012	26/10/2012	26/10/2012	26/10/2012	26/10/2012	26/10/2012	26/10/2012	26/10/2012	26/10/2012	26/10/2012	26/10/2012	26/10/2012	26/10/2012	26/10/2012
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
Batch Number	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Units	% w/w	% w/w	% w/w	% w/w	% w/w	% w/w	% w/w	% w/w	% w/w	% w/w	% w/w	% w/w	% w/w	% w/w	% w/w	% w/w	% w/w	% w/w	% w/w
PAH MS																			
Naphthalene #	0.000005	-	-	-	0.000006	-	-	0.000004	0.000043	-	-	-	-	-	-	-	-	-	-
Acenaphthylene	0.000003	-	-	-	0.000008	-	-	-	0.000034	-	-	-	-	-	-	-	-	-	-
Acenaphthene #	-	-	-	-	-	-	-	-	0.00003	-	-	-	-	-	-	-	-	-	-
Phenanthrene #	0.000033	-	0.000018	0.000004	0.000049	0.000003	0.000003	0.000013	0.001551	0.000006	0.00001	0.000011	0.000006	0.000007	0.000011	-	-	-	-
Anthracene #	0.000014	-	-	-	0.000016	-	-	0.000004	0.000179	-	0.000004	-	-	-	-	-	-	-	-
Fluoranthene #	0.000059	0.000003	0.00002	0.000005	0.000112	0.000011	0.000004	0.000031	0.002251	0.000011	0.000032	0.00001	0.000023	0.000007	0.000014	0.000003	-	-	-
Pyrene #	0.000061	0.000003	0.000016	0.000004	0.000096	0.000009	0.000003	0.000029	0.001546	0.000008	0.000028	0.000005	0.000018	0.000007	0.000012	0.000003	-	-	-
Benzo(a)anthracene #	0.000029	-	0.00001	-	0.000059	0.000008	-	0.000017	0.000984	0.000008	0.000018	-	0.000009	-	0.000008	-	-	-	-
Chrysene #	0.000037	-	0.00001	0.000003	0.000063	0.000007	0.000005	0.000018	0.00099	0.000007	0.00002	0.000004	0.000013	0.000005	0.000008	0.000002	-	-	-
Benzo(bk)fluoranthene #	0.000067	-	0.000017	0.000007	0.000127	0.000013	0.000011	0.000038	0.001872	0.000014	0.000035	0.000008	0.000022	0.000007	0.000016	-	-	-	-
Benzo(a)pyrene #	0.000026	-	0.000009	-	0.000063	0.000006	0.000006	0.000018	0.000703	0.000007	0.000013	-	0.000008	-	0.000006	-	-	-	-
Indeno(123cd)pyrene #	0.000028	-	0.000006	-	0.000054	0.000006	0.000004	0.000013	0.000598	0.000006	0.000012	-	0.000009	-	0.000004	-	-	-	-
Dibenzo(ah)anthracene #	0.000005	-	-	-	0.000014	-	-	-	0.000106	-	-	-	-	-	-	-	-	-	-
Benzo(ghi)perylene #	0.00002	-	0.000005	-	0.000045	0.000004	-	0.000011	0.000445	0.000005	0.00001	-	0.000006	-	0.000004	-	-	-	-
Coronene	-	-	-	-	0.00001	-	-	-	0.000062	-	-	-	-	-	-	-	-	-	-
PAH 17 Total	0.000387	-	0.000111	-	0.000722	0.000067	-	0.000196	0.011394	0.000072	0.000182	-	0.000114	-	0.000083	-	-	-	-
Benzo(b)fluoranthene	0.000048	-	0.000012	0.000005	0.000091	0.000009	0.000008	0.000027	0.001348	0.00001	0.000025	0.000006	0.000016	0.000005	0.000012	-	-	-	-
Benzo(k)fluoranthene	0.000019	-	0.000005	-	0.000036	0.000004	0.000003	0.000011	0.000524	0.000004	0.00001	0.000002	0.000006	-	0.000004	-	-	-	-
Mineral Oil (C8-C40)	0.1072	-	-	-	0.0159	-	-	-	0.0201	-	0.0242	-	0.1297	0.0324	-	0.0042	-	-	-

J E Sample No.	18-19	10-11	34-35	8-9	30-31	14-15	1-3	16-17	32-33	12-13	28-29	42-44	24-25	36-38	22-23	4-5	45-46	47-48	49-50
Sample ID	BH301	BH302	BH302	BH303	BH304	BH305	BH307	BH308	BH308	BH309	BH309	BH310C	BH311	BH313	BH315	BH316	SS306	SS310	SS313
Depth	1.0	6.0	5.0	5.0-6.0	2.0	0.3-1.2	4.5	0.7-0.9	1.3	6.5	0.2	2.8	0.0-0.3	1.0	5.0	5.0-5.5			
COC No / misc																			
Containers	V J	V J	V J	V J	V J	V J	V J	V J	V J	V J	V J	V J	V J	V J T	V J	V J	V J	V J	V J
Sample Date	26/10/2012	26/10/2012	26/10/2012	26/10/2012	26/10/2012	26/10/2012	26/10/2012	26/10/2012	26/10/2012	26/10/2012	26/10/2012	26/10/2012	26/10/2012	26/10/2012	26/10/2012	26/10/2012	26/10/2012	26/10/2012	26/10/2012
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
Batch Number	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Units	% w/w	% w/w	% w/w	% w/w	% w/w	% w/w	% w/w	% w/w	% w/w	% w/w	% w/w	% w/w	% w/w	% w/w	% w/w	% w/w	% w/w	% w/w	% w/w
TPH CWG																			
Aliphatics																			
>C12-C16 #	0.0007	-	-	-	-	-	-	-	0.0007	-	-	-	-	-	-	-	-	-	-
>C16-C21 #	0.0073	-	-	-	0.0011	-	-	0.001	0.0032	-	0.0025	-	0.0014	0.0024	-	-	-	-	-
>C21-C35 #	0.076	-	-	-	0.0115	-	-	0.0017	0.0124	-	0.0155	-	0.0862	0.0227	-	0.0029	-	-	-
Total aliphatics C5-35	0.084	-	-	-	0.0126	-	-	0.0027	0.0163	-	0.018	-	0.0876	0.0251	-	0.0029	-	-	-
Aromatics																			
>EC16-EC21 #	0.0019	-	-	-	0.001	-	-	-	0.0019	-	0.0015	-	0.001	-	-	-	-	-	-
>EC21-EC35 #	0.0249	-	-	-	0.0121	-	-	-	0.011	-	0.013	-	0.0421	0.0031	-	-	-	-	-
Total aromatics C5-35	0.0268	-	-	-	0.0131	-	-	-	0.0129	-	0.0145	-	0.0431	0.0031	-	-	-	-	-
Total aliphatics and aromatics	0.1108	-	-	-	0.0257	-	-	-	0.0292	-	0.0325	-	0.1307	0.0282	-	-	-	-	-
PCB 105	0.0000013	-	-	-	0.0000014	-	0.0000038	-	-	-	-	-	-	-	-	-	-	-	-
PCB 118	0.0000026	-	-	-	0.0000035	-	0.0000095	-	-	-	0.0000007	-	0.0000011	0.0000007	0.0000026	-	-	-	-
PCB 123	0.000002	-	-	-	0.0000037	-	0.0000092	-	-	-	0.0000005	-	0.0000009	0.0000006	0.0000024	-	-	-	-
PCB 156	0.0000005	-	-	-	0.0000008	-	0.0000012	-	-	-	-	-	-	-	-	-	-	-	-
Total 12 PCBs	0.0000064	-	-	-	0.0000094	-	0.0000237	-	-	-	-	-	-	-	0.0000063	-	-	-	-
PCB 28 #	0.0000065	-	-	-	0.000001	-	0.0000019	-	-	-	-	-	0.0000011	0.0000015	0.0000054	-	-	-	-
PCB 52 #	0.0000028	-	-	-	0.0000034	-	0.0000073	-	-	-	0.0000006	-	0.0000009	0.0000007	0.0000003	-	-	-	-
PCB 101 #	0.0000026	-	-	-	0.0000067	-	0.0000113	-	-	-	0.0000006	-	0.0000017	0.0000007	0.0000028	-	-	-	-
PCB 118 #	0.0000022	-	-	-	0.0000035	-	0.0000095	-	-	-	0.0000006	-	0.0000011	0.0000007	0.0000026	-	-	-	-
PCB 138 #	0.0000036	-	-	-	0.0000008	-	0.0000105	-	-	-	0.0000006	-	0.0000039	0.0000001	0.0000025	-	-	-	-
PCB 153 #	0.0000025	-	-	-	0.0000005	-	0.0000066	-	-	-	-	-	0.0000033	0.0000001	0.0000016	-	-	-	-
PCB 180 #	0.0000012	-	-	-	0.0000002	-	0.0000014	-	-	-	-	-	0.0000043	0.0000009	0.0000008	-	-	-	-
Total 7 PCBs #	0.0000214	-	-	-	0.0000296	-	0.0000485	-	-	-	-	-	0.0000163	0.0000065	0.0000187	-	-	-	-
SEM #	0.2958	0.0294	0.0153	0.0216	0.1236	0.0244	0.0343	0.0458	0.0648	0.0831	0.1532	-	0.3615	0.0921	0.0505	0.0624	-	0.0111	0.0262
Chloride	0.0104	0.0878	0.1099	0.1204	0.0151	0.0145	0.1848	0.015	0.0119	0.162	0.0104	0.0241	0.0101	0.0065	0.1236	0.1645	0.0357	0.01	0.0054
Hexavalent Chromium	0.00012	0.00003	-	-	0.00004	0.00008	0.00004	0.00015	-	-	0.00009	0.0003	0.00012	0.0003	0.00008	-	-	-	-
Thiocyanate	-	-	-	-	-	-	-	0.00018	-	-	-	0.00016	-	-	-	-	-	-	-
Elemental Sulphur	-	-	0.0001	-	0.0005	-	0.0037	-	0.0002	0.0001	-	-	-	-	0.0001	0.0104	-	-	-
Dioxins & Furans																			
PAHs (SVOCs)																			
2-Methylnaphthalene	0.0000035	-	-	-	0.0000029	-	-	0.000002	0.0000264	-	-	-	0.0000013	-	-	-	-	-	-
Other SVOCs																			
Carbazole	0.000014	-	-	-	0.0000022	-	-	-	0.0000857	-	-	-	-	-	-	-	-	-	-
Dibenzofuran	0.0000301	-	-	-	0.0000022	-	-	-	0.000078	-	-	0.0000015	0.0000032	-	-	-	-	-	-
Asbestos	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Note: "-" denotes that the parameter has been screened out of the assessment as concentration is below the laboratory limit of detection

APPENDIX D

Hazardous Waste Classification Worksheets

Hazardous Waste Classification Worksheet (Revised 31st August 2004)

Box No.	Information Required	Information	
Company Details			
A	Company Name	Cork County Council	
	Company Address	Haulbowline Island, County Cork	
	Date	06/02/2013	
	IPC or Waste License Number (if applicable)	Not yet applicable	
	Contact Person	Cormac O'Suilleabhain	
	Waste Description	Slag - Borehole BH301, 1.0m.	
European Waste Catalogue/Hazardous Waste List			
B	Possible EWC Codes		Asterisk Yes / No
		10 02 01	<input type="checkbox"/> / <input checked="" type="checkbox"/>
		10 02 02	<input type="checkbox"/> / <input checked="" type="checkbox"/>
		Refer to Section 3.1 of Report	
C	Six-Digit EWC Code	Not Applicable	Asterisk Yes / No <input type="checkbox"/> / <input type="checkbox"/>
D	EWC Description	Not Applicable	
<i>CI</i>	Mirror Entry Code (if applicable)	Not Applicable	Asterisk Yes / No <input type="checkbox"/> / <input type="checkbox"/>
<i>DI</i>	Mirror Entry Description (if applicable)	Not Applicable	
E	Is this waste classified as hazardous waste according to HWL?	Mirror Entry	<input type="checkbox"/>
		No	<input checked="" type="checkbox"/>
		Yes	<input type="checkbox"/>

Hazardous Waste Classification Worksheet (Revised 31st August 2004)

Category I Waste (Box F)

- 1. Anatomical substances, hospital or other clinical waste.
- 2. Pharmaceutical, medicinal or veterinary compounds.
- 3. Wood preservatives.
- 4. Biocides or phyto-pharmaceutical substances.
- 5. Residue from substances employed as solvents.
- 6. Halogenated organic substances not employed as solvents, excluding inert polymerized materials.
- 7. Tempering salts containing cyanides.
- 8. Mineral oils or oily substances (including cutting sludges).
- 9. Mixtures or emulsions of oil and water or hydrocarbon and water.
- 10. Substances containing polychlorinated biphenyls or polychlorinated terphenyls (including dielectrics).
- 11. Tarry materials arising from refining, distillation or any pyrolytic treatment (including still bottoms).
- 12. Inks, dyes, pigments, paints, lacquers or varnishes.
- 13. Resins, latex, plasticizers, glues or adhesives.
- 14. Chemical substances arising from research and development or teaching activities (including laboratory residues) which are not identified or are new and whose effects on humans or the environment are not known.
- 15. Pyrotechnics or other explosive materials.
- 16. Photographic chemicals or processing materials.
- 17. Any material contaminated with any congener of polychlorinated dibenzo-furan.
- 18. Any material contaminated with any congener of polychlorinated dibenzo-p-dioxin.

Category II Waste (Box G)

- 19. Animal or vegetable soaps, fats or waxes.
- 20. Non-halogenated organic substances not employed as solvents.
- 21. Inorganic substances without metals or metal compounds.
- 22. Ashes or cinders.
- 23. Soil, sand or clay (including dredging spoils).
- 24. Non-cyanidic tempering salts.
- 25. Metallic dust or powder.
- 26. Spent catalyst materials.
- 27. Liquids or sludges containing metals or metal compounds.
- 28. Residue (other than scrubber sludges, sludges from water purification plants and sewage sludges (untreated or unsuitable for use in agriculture)) from pollution control operations (including baghouse dusts).
- 29. Scrubber sludges.
- 30. Sludges from water purification plants.
- 31. Decarbonization residue.
- 32. Ion-exchange column residue.
- 33. Sewage sludges, untreated or unsuitable for use in agriculture.
- 34. Residue from cleaning of tanks or equipment.
- 35. Contaminated equipment.
- 36. Contaminated containers (including packaging and gas cylinders).
- 37. Batteries or other electrical cells.
- 38. Vegetable oils.
- 39. Materials resulting from the selective collection of waste from households.
- 40. Any other waste.

Hazardous Waste Classification Worksheet (Revised 31st August 2004)

Category II Constituents (Box H)

- | | |
|---|--|
| <input type="checkbox"/> 41. Beryllium or beryllium compounds. | <input type="checkbox"/> 71. Azides. |
| <input type="checkbox"/> 42. Vanadium compounds. | <input type="checkbox"/> 72. Polychlorinated biphenyls or polychlorinated terphenyls. |
| <input type="checkbox"/> 43. Chromium (VI) compounds. | <input type="checkbox"/> 73. Pharmaceutical or veterinary compounds. |
| <input type="checkbox"/> 44. Cobalt compounds. | <input type="checkbox"/> 74. Biocides or phyto-pharmaceutical substances (including pesticides). |
| <input type="checkbox"/> 45. Nickel compounds. | <input type="checkbox"/> 75. Infectious substances. |
| <input type="checkbox"/> 46. Copper compounds. | <input type="checkbox"/> 76. Creosotes. |
| <input type="checkbox"/> 47. Zinc compounds. | <input type="checkbox"/> 77. Isocyanates or thiocyanates. |
| <input type="checkbox"/> 48. Arsenic or arsenic compounds. | <input type="checkbox"/> 78. Organic cyanides (including nitriles). |
| <input type="checkbox"/> 49. Selenium or selenium compounds. | <input type="checkbox"/> 79. Phenols or phenol compounds. |
| <input type="checkbox"/> 50. Silver compounds. | <input type="checkbox"/> 80. Halogenated solvents. |
| <input type="checkbox"/> 51. Cadmium or cadmium compounds. | <input type="checkbox"/> 81. Organic solvents, excluding halogenated solvents. |
| <input type="checkbox"/> 52. Tin compounds. | <input type="checkbox"/> 82. Organohalogen compounds, excluding inert polymerized materials and other substances referred to in this Part. |
| <input type="checkbox"/> 53. Antimony or antimony compounds. | <input type="checkbox"/> 83. Aromatic compounds; polycyclic and heterocyclic organic compounds. |
| <input type="checkbox"/> 54. Tellurium or tellurium compounds. | <input type="checkbox"/> 84. Aliphatic amines. |
| <input type="checkbox"/> 55. Barium compounds, excluding barium sulphate. | <input type="checkbox"/> 85. Aromatic amines. |
| <input type="checkbox"/> 56. Mercury or mercury compounds. | <input type="checkbox"/> 86. Ethers. |
| <input type="checkbox"/> 57. Thallium or thallium compounds. | <input type="checkbox"/> 87. Substances of an explosive character, excluding those referred to elsewhere in this Part. |
| <input type="checkbox"/> 58. Lead or lead compounds. | <input type="checkbox"/> 88. Sulphur organic compounds. |
| <input type="checkbox"/> 59. Inorganic sulphides. | <input type="checkbox"/> 89. Any congener of polychlorinated dibenzo-furan. |
| <input type="checkbox"/> 60. Inorganic fluorine compounds, excluding calcium fluoride. | <input type="checkbox"/> 90. Any congener of polychlorinated dibenzo-p-dioxin. |
| <input type="checkbox"/> 61. Inorganic cyanides. | <input type="checkbox"/> 91. Hydrocarbons and their oxygen, nitrogen or sulphur compounds not otherwise referred to in this Part. |
| <input type="checkbox"/> 62. Any of the following alkaline or alkaline earth metals, namely, lithium, sodium, potassium, calcium, magnesium in uncombined form. | |
| <input type="checkbox"/> 63. Acidic solutions or acids in solid form. | |
| <input type="checkbox"/> 64. Basic solutions or bases in solid form. | |
| <input type="checkbox"/> 65. Asbestos (dust or fibres). | |
| <input type="checkbox"/> 66. Phosphorus: phosphorus compounds, excluding mineral phosphates. | |
| <input type="checkbox"/> 67. Metal carbonyls. | |
| <input type="checkbox"/> 68. Peroxides. | |
| <input type="checkbox"/> 69. Chlorates. | |
| <input type="checkbox"/> 70. Perchlorates. | |

Hazardous Waste Classification Worksheet (Revised 31st August 2004)

<i>Box I: Property Test Results and Waste Classification</i>					
Property	Property Testing			Waste Classification	
	Test Code	Title of Test	Results	Hazard (s)	Risk Phrase (s)
Explosive					
Oxidising					
Flammable					
Irritant/ Corrosive		NOT APPLICABLE			
Harmful/Toxic					
Carcinogenic					
Infectious	No test methods available for this property				
Toxic for Reproduction					
Mutagenic					
Ecotoxic					
Residuary hazardous property					

Hazardous Waste Classification Worksheet

Box J: Waste Composition details (revised 31st August 2004)

Classification according to EU Directives 67/548/EEC or 1999/45/EC														Classification according to Regulation (EC) No 1272/2008			
Substance	Assumed Compound	CAS No.	% w/w ^{NOTE 1}	Flash Point (°C)	Source Data	EU Hazard	Risk Phrase	Classification	Carcinogen Group No.	Toxic for Reproduction Category	Mutagenic Category	Source Data	Signal Word	Hazard Class & Category Code	Hazard Statement Code		
Aluminium	Aluminium Powder (pyrophoric)	7429-90-5	0.8955	n/a not data available as per	Annex I of Directive 67/548/EEC	F	R15	Contact with water liberates extremely flammable gases	n/a	n/a	n/a	Annex VI to Directive 1272/2008	Danger	Water-react. 2	H261		
							R17	Spontaneously flammable in air						Pyr. Sol. 1	H250		
Antimony	Antimony Compounds	n/a	0.0035	n/a	Annex I of Directive 67/548/EEC	Xn	R20/22	Harmful by inhalation and if swallowed	n/a	n/a	n/a	Annex VI to Directive 1272/2008	Warning	Acute Tox. 4	H332		
						N	R51/53	Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment						Aquatic Chronic 2	H411		
Arsenic	Arsenic	7440-38-2	0.00349	n/a	Annex I of Directive 67/548/EEC	T	R23/25	Toxic by inhalation and if swallowed	n/a	na	n/a	Annex VI to Directive 1272/2008	Danger	Acute Tox. 3	H331		
						N	R50/53	Very toxic to aquatic organisms and may cause long-term effects in the aquatic environment						Acute Tox. 3	H301		
														Aquatic Acute 1	H400		
														Aquatic Chronic 1	H410		
Barium	Barium Salts	n/a	0.028	n/a	Annex I of Directive 67/548/EEC	Xn	R20/22	Harmful by inhalation and if swallowed	n/a	n/a	n/a	Annex VI to Directive 1272/2008	Warning	Acute Tox. 4	H332		
Beryllium	Beryllium	7440-41-7	0.00039	n/a	Annex I of Directive 67/548/EEC		R49	May cause cancer by inhalation.	Carc. Cat. 2;	n/a	n/a	Annex VI to Directive 1272/2008	Danger	Acute Tox. 4	H302		
						T+	R26	Also very toxic by inhalation						Carc. 1B	H350		
						T	R25	Also toxic if swallowed.						Acute Tox. 2 *	H330		
							R48/23	Also toxic: danger of serious damage to health by prolonged exposure through inhalation						Acute Tox. 3 *	H301		
							R36/37/38	Irritating to eyes, respiratory system and skin						STOT RE 1	H372		
							R43	May cause sensitization by skin contact						Eye Irrit. 2	H319		
			STOT SE 3	H335													
														Skin Irrit. 2	H315		
														Skin Sens. 1	H317		
Cadmium	cadmium (non-pyrophoric) cadmium oxide (nonpyrophoric)	7440-43-9/1306-19-0	0.00148	n/a	Annex I of Directive 67/548/EEC		R45	May cause cancer	Carc. Cat. 2;	Repr. Cat. 3;	Muta. Cat. 3;	Annex VI to Directive 1272/2008	Danger	Carc. 1B	H350		
							R68	Possible risk of irreversible damage						Muta. 2	H341		
							R62	Possible risk of impaired fertility						Repr. 2	H361FD		
							R63	Possible risk of harm to the unborn child						Acute Tox. 2	H330		
						T	R48/23/25	Toxic; danger or serious damage to health to prolonged exposure through inhalation and if swallowed.						STOT RE 1	H372		
						T+	R26	Also very toxic by inhalation						Aquatic Acute 1	H400		
N	R50/53	Very toxic to aquatic organisms and may cause long-term effects in the aquatic environment	Aquatic Chronic 1	H410													
Calcium	Calcium	7440-70-2	6.828	n/a not data available as per Sigma Aldrich MSDS	Annex I of Directive 67/548/EEC	F	R15	Contact with water liberates extremely flammable gases	n/a	n/a	n/a	Annex VI to Directive 1272/2008	Danger	Water-react. 2	H261		
Hexavalent Chromium	Chromium (VI) compounds	n/a	0.00012	n/a	Annex I of Directive 67/548/EEC		R49	May cause cancer by inhalation.	Carc. Cat. 2	n/a	n/a	Annex VI to Directive 1272/2008	Danger	Carc. 1B	H350		
							R43	May cause sensitization by skin contact						Skin Sens. 1	H317		
						N	R50/53	Very toxic to aquatic organisms and may cause long-term effects in the aquatic environment						Aquatic Acute 1	H400		
Chromium	Chromium	7440-47-3	0.1649	n/a	Sigma Aldrich	N	R50	Very toxic to aquatic organisms	n/a	n/a	n/a	Sigma Aldrich	Warning	Aquatic Chronic 1	H410		
						Xn	R22	Harmful if swallowed						Acute Tox. 4 *	H302		
Copper	Copper (I) Oxide	1317-39-1	0.1461	n/a	Annex I of Directive 67/548/EEC	N	R50/53	Very toxic to aquatic organisms and may cause long-term effects in the aquatic environment	n/a	n/a	n/a	Annex VI to Directive 1272/2008	Warning	Aquatic Acute 1	H400		
Lead	Lead Compounds	n/a	0.1174	n/a	Annex I of Directive 67/548/EEC		R61	May cause harm to the unborn child	n/a	Repr. Cat. 1; Repr. Cat. 3;	n/a	Annex VI to Directive 1272/2008	Danger	Aquatic Chronic 1	H410		
							R62	Possible risk of impaired fertility						Repr. 1A	H360DF		
						Xn	R20/22	Harmful by inhalation and if swallowed						Acute Tox. 4	H332		
							R33	Danger of cumulative effects						STOT RE 2	H302		
						N	R50/53	Very toxic to aquatic organisms and may cause long-term effects in the aquatic environment						Aquatic Acute 1	H373		
													Aquatic Chronic 1	H410			
Magnesium	Magnesium, powder or turnings	n/a	1.289	n/a not data available as per Sigma Aldrich MSDS	Annex I of Directive 67/548/EEC	F	R11	Highly flammable	n/a	n/a	n/a	Annex VI to Directive 1272/2008	Danger	Flam. Sol. 1	H228		
							R15	Contact with water liberates extremely flammable gases						Water-react. 2	H261		
Manganese	Manganese dioxide	1313-13-9	1.344	n/a	Annex I of Directive 67/548/EEC	Xn	R20/22	Harmful by inhalation and if swallowed	n/a	n/a	n/a	Annex VI to Directive 1272/2008	Warning	Acute Tox. 4	H332		
														Self-heat. 1	H252		
Nickel	Nickel	7440-02-0	0.04064	n/a	Annex I of Directive 67/548/EEC	Xn	R40	Limited evidence of a carcinogenic effect	Carc. Cat. 3	n/a	n/a	Annex VI to Directive 1272/2008	Warning	Acute Tox. 4	H302		
							R43	May cause sensitization by skin contact						Carc. 2	H351		
							R23/25	Toxic by inhalation and if swallowed						Skin Sens. 1	H317		
Selenium	Selenium	7782-49-2	0.0005	n/a	Annex I of Directive 67/548/EEC	T	R33	Danger of cumulative effects	n/a	n/a	n/a	Annex VI to Directive 1272/2008	Danger	Acute Tox. 3	H301		
							R53	May cause long-term effects in the aquatic environment						STOT RE 2	H373		
														Aquatic Chronic 4	H413		

Hazardous Waste Classification Worksheet

Box J: Waste Composition details (revised 31st August 2004)

					Classification according to EU Directives 67/548/EEC or 1999/45/EC						Classification according to Regulation (EC) No 1272/2008					
Substance	Assumed Compound	CAS No.	% w/w ^{NOTE 1}	Flash Point (°C)	Source Data	EU Hazard	Risk Phrase	Classification	Carcinogen Group No.	Toxic for Reproduction Category	Mutagenic Category	Source Data	Signal Word	Hazard Class & Category Code	Hazard Statement Code	
Total Sulphate	-	-	0.2771	n/a	Annex I of Directive 67/548/EEC			This substance is not classified as dangerous according to Directive 67/548/EEC						Not a hazardous substance or mixture according to Regulation (EC) No. 1272/2008		
Vanadium	Vanadium pentoxide	1314-62-1	0.0087	n/a	Annex I of Directive 67/548/EEC		R63	Possible risk of harm to the unborn child	n/a	Repr. Cat. 3;	Muta. Cat. 3;	Annex VI to Directive 1272/2008	Danger	Muta. 2	H341	
							R68	Possible risk of irreversible effects						Repr. 2	H361d	
							T	R48/23						Toxic; danger of serious damage to health by prolonged exposure through inhalation	STOT RE 1	H372
							Xn	R20/22						Harmful by inhalation and if swallowed	Acute Tox. 4	H332
							Xi	R37						Irritating to respiratory system	Acute Tox. 4	H302
	N	R51/53	Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment	STOT SE 3	H335											
Water Soluble Boron	Boron	7440-42-8	0.0009	n/a	Sigma Aldrich	Xn	R22	Harmful if swallowed	n/a	n/a	n/a	Sigma Aldrich	Warning	Acute Tox. 4	H302	
Zinc	Zinc oxide	1314-13-2	0.8966	n/a	Annex I of Directive 67/548/EEC				n/a	n/a	n/a	Annex VI to Directive 1272/2008	Warning	Aquatic Acute 1	H400	
						N	R50/53	Very toxic to aquatic organisms and may cause long-term effects in the aquatic environment						Aquatic Chronic 1	H410	
Chloride	Hydrogen Chloride	7647-01-0	0.0104	n/a	Annex I of Directive 67/548/EEC				n/a	n/a	n/a	Annex VI to Directive 1272/2008	Danger	Press. Gas	H331	
						C	R35	Causes severe burns						Acute Tox. 3	H314	
Naphthalene	Naphthalene	91-20-3	0.000005	n/a	Annex I of Directive 67/548/EEC				Carc. Cat. 3;	n/a	n/a	Annex VI to Directive 1272/2008	Warning	Carc. 2	H351	
						Xn	R22	Harmful if swallowed						Acute Tox. 4	H302	
						N	R50/53	Very toxic to aquatic organisms and may cause long-term effects in the aquatic environment						Aquatic Acute 1	H400	
Acenaphthylene	Acenaphthylene	208-96-8	0.000003	122.0	Sigma Aldrich				n/a	n/a	n/a	Sigma Aldrich	Warning	Acute Tox. 4	H302	
						Xn	R36/37/38	Irritating to eyes, respiratory system and skin.						Skin Irrit. 2	H315	
Phenanthrene	Phenanthrene, disn. Residues	122070-78-4	0.000033	n/a	Annex I of Directive 67/548/EEC				Carc. Cat. 2;	n/a	n/a	Annex VI to Directive 1272/2008	Danger	Eye Irrit. 2	H319	
						T	R45	May cause cancer						STOT SE 3	H335	
Anthracene	Anthracene	120-12-7	0.000014	121.0	Sigma Aldrich				Carc. Cat. 3;	n/a	n/a	Sigma Aldrich	Warning	Skin Irrit. 2	H315	
						N	R50/53	Very toxic to aquatic organisms and may cause long-term effects in the aquatic environment						Eye Irrit. 2	H319	
Fluoranthene	Benzo[k]fluorene	206-44-0	0.000059	198.0	Sigma Aldrich				n/a	n/a	n/a	Sigma Aldrich	Warning	STOT SE 3	H335	
						Xn	R22	Harmful if swallowed						Acute Tox. 4	H302	
Pyrene	Benzo[def]phenanthrene	129-00-0	0.000061	> 200.0	Sigma Aldrich				n/a	n/a	n/a	Sigma Aldrich	Warning	Aquatic Acute 1	H400	
						N	R50/53	Very toxic to aquatic organisms and may cause long-term effects in the aquatic environment						Aquatic Chronic 1	H410	
Benzo(a)anthracene	Benz(a)anthracene	56-55-3	0.000029	n/a	Annex I of Directive 67/548/EEC				Carc. Cat. 2	n/a	n/a	Annex VI to Directive 1272/2008	Danger	Carc. 1B	H350	
						T	R45	May cause cancer						Aquatic Acute 1	H400	
						N	R50/53	Very toxic to aquatic organisms and may cause long-term effects in the aquatic environment						Aquatic Chronic 1	H410	
Chrysene	Chrysene	218-01-9	0.000037	n/a	Annex I of Directive 67/548/EEC				Carc. Cat. 2	n/a	Muta. Cat. 3;	Annex VI to Directive 1272/2008	Danger	Carc. 1B	H350	
						T	R68	Possible risk of irreversible effects						Muta. 2	H341	
						N	R50/53	Very toxic to aquatic organisms and may cause long-term effects in the aquatic environment						Aquatic Acute 1	H400	
Benzo(bk)fluoranthene	benzo(k)fluoranthene	207-08-9	0.000067	n/a	Annex I of Directive 67/548/EEC				Carc. Cat. 2;	n/a	n/a	Annex VI to Directive 1272/2008	Danger	Aquatic Chronic 1	H410	
						N	R50/53	Very toxic to aquatic organisms and may cause long-term effects in the aquatic environment						Carc. 1B	H350	
Benzo(a)pyrene	benzo(a)pyrene	50-32-8	0.000026	n/a	Annex I of Directive 67/548/EEC				Carc. Cat. 2;	Repr. Cat. 2	Muta. Cat. 2;	Annex VI to Directive 1272/2008	Danger	Aquatic Acute 1	H400	
							R45	May cause cancer						Aquatic Chronic 1	H410	
							R46	May cause heritable genetic damage						Carc. 1B	H350	
							R60	May impair fertility						Muta. 1B	H340	
							R61	May cause harm to the unborn child						Repr. 1B	H360FD	
	T	R43	May cause sensitisation by skin contact	Skin Sens. 1	H317											
	N	R50/53	Very toxic to aquatic organisms and may cause long-term effects in the aquatic environment	Aquatic Acute 1	H400											
														Aquatic Chronic 1	H410	

Hazardous Waste Classification Worksheet

Box J: Waste Composition details (revised 31st August 2004)

					Classification according to EU Directives 67/548/EEC or 1999/45/EC							Classification according to Regulation (EC) No 1272/2008			
Substance	Assumed Compound	CAS No.	% w/w ^{NOTE 1}	Flash Point (°C)	Source Data	EU Hazard	Risk Phrase	Classification	Carcinogen Group No.	Toxic for Reproduction Category	Mutagenic Category	Source Data	Signal Word	Hazard Class & Category Code	Hazard Statement Code
Indeno(1,2,3-cd)pyrene	Indeno[1,2,3-cd]pyrene	193-39-5	0.000028	n/a	Sigma Aldrich	Xn	R40	Limited evidence of a carcinogenic effect	Carc. Cat. 2;	n/a	n/a	Sigma Aldrich	Warning	Carc 2	H351
Dibenzo(ah)anthracene	dibenz[a,h]anthracene	53-70-3	0.000005	n/a	Annex I of Directive 67/548/EEC	T	R45	May cause cancer	Carc. Cat. 2;	n/a	n/a	Annex VI to Directive 1272/2008	Danger	Carc. 1B	H350
						N	R50/53	Very toxic to aquatic organisms and may cause long-term effects in the aquatic environment						Aquatic Acute 1	H400
Benzo(ghi)perylene	Benzo[ghi]perylene	191-24-2	0.00002	n/a	Sigma Aldrich	N	R50/53	Very toxic to aquatic organisms and may cause long-term adverse effects in the aquatic environment	Carc. Cat. 3;	n/a	n/a	Sigma Aldrich	Warning	Aquatic Acute 1	H400
						T	R45	May cause cancer						Aquatic Chronic 1	H410
Benzo(b)fluoranthene	Benzo(b)fluoranthene	205-99-2	0.000048	n/a	Sigma Aldrich	N	R50/53	Very toxic to aquatic organisms and may cause long-term effects in the aquatic environment	Carc. Cat. 2;	n/a	n/a	Sigma Aldrich	Danger	Aquatic Acute 1	H400
						T	R45	May cause cancer						Aquatic Chronic 1	H410
Benzo(k)fluoranthene	benzo(k)fluoranthene	207-08-9	0.000019	n/a	Annex I of Directive 67/548/EEC	T	R45	May cause cancer	Carc. Cat. 2;	n/a	n/a	Annex VI to Directive 1272/2008	Danger	Carc. 1B	H350
						N	R50/53	Very toxic to aquatic organisms and may cause long-term effects in the aquatic environment						Aquatic Acute 1	H400
Mineral Oil (C8-C40)	Mineral Oil	8042-47-5	0.1072	> 112 °C	Sigma Aldrich	This substance is not classified as dangerous according to Directive 67/548/EEC						Not a hazardous substance or mixture according to Regulation (EC) No. 1272/2008			
Total aromatics C5-35	Aromatic hydrocarbons	90989-41-6	0.0268	n/a	Annex I of Directive 67/548/EEC	T	R45	May cause cancer	Carc. Cat. 2;	n/a	n/a	Annex VI to Directive 1272/2008	Danger	Carc. 1B	H350
						T	R45	May cause cancer						Fam. Gas 1	H220
Total aliphatics C5-35	Distillates (petroleum),	68477-35-0	0.084	n/a	Annex I of Directive 67/548/EEC	T	R46	May cause heritable genetic damage	Carc. Cat. 2;	n/a	Muta. Cat. 2;	Annex VI to Directive 1272/2008	Danger	Press. Gas	H350
Total 12 PCBs	polychlorobiphenyls; PCB	1336-36-3	0.0000064	n/a	Annex I of Directive 67/548/EEC	Xn	R33	Danger of cumulative effects	n/a	n/a	n/a	Annex VI to Directive 1272/2008	Warning	STOT RE 2	H373
						N	R50/53	Very toxic to aquatic organisms and may cause long-term effects in the aquatic environment						Aquatic Acute 1	H400
Total 7 PCBs	polychlorobiphenyls; PCB	1336-36-3	0.0000214	n/a	Annex I of Directive 67/548/EEC	Xn	R33	Danger of cumulative effects	n/a	n/a	n/a	Annex VI to Directive 1272/2008	Warning	STOT RE 2	H373
						N	R50/53	Very toxic to aquatic organisms and may cause long-term effects in the aquatic environment						Aquatic Acute 1	H400
Thiocyanate	thiocyanic acid	463-56-9	-	n/a	Annex I of Directive 67/548/EEC	Xn	R20/21/22	Harmful by inhalation, in contact with skin and if swallowed	n/a	n/a	n/a	Annex VI to Directive 1272/2008	Warning	Acute Tox. 4	H332
							R32	Contact with acids liberates very toxic gas						Acute Tox. 4	H312
						N	R52/53	Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment						Acute Tox. 4	H302

Hazardous Waste Classification Worksheet (Revised 31st August 2004)

Box K: Waste Composition Details		
Properties with Thresholds (Box K1)		
Property	Threshold	Total in Waste
	(% w/w)	(% w/w)
Flash Point < 55 °C		
Very Toxic	> 0.1	0.002
Toxic	> 3	0.025
Harmful	> 25	1.689
Corrosive with Risk Phrase R35	>1	0.010
Corrosive with Risk Phrase R34	> 5	0.0
Irritant with Risk Phrase R41	> 10	0.0
Irritant with Risk Phrase R36, R37, R38	> 20	0.009
Carcinogen Category 1 or 2	> 0.1	0.113
Carcinogen Category 3	> 1	0.041
Toxic for Reproduction Category 1 and 2 with Risk Phrases R60, R61	> 0.5	0.117
Toxic for Reproduction Category 3 with Risk Phrases R62, R63	> 5	0.128
Mutagenic Category 1 and 2 with Risk Phrase R46	> 0.1	0.084
Mutagenic Category 3 with Risk Phrase R68	> 1	0.0102
Properties without thresholds (Box K2)		
Property	Total (% w/w) in waste	
Explosive	0	
Oxidising	0	
Infectious	0	
Ecotoxic	1.343	
Residuary Hazardous property	0	

Final EWC Code		
L	Final EWC Code	Possibly 10 02 01 or 10 02 02 with hazardous components identified in the sample
M	Final EWC Description	Refer to Section 3.1 of Report

Hazardous Waste Classification Worksheet (Revised 31st August 2004)

Note 1:	
Very Toxic, those with an EU Hazard Phrase of T+ under EU Directives 67/548/EEC or 1999/45/EC or those with R-phrases of R26, R27, R28 and combined risk phrases with or without R39	Beryllium, Cadmium,
Toxic, those with an EU Hazard Phrase of T under EU Directives 67/548/EEC or 1999/45/EC or those with R-phrases of R23, R24, R25 and combined risk phrases with or without R39 or R48	Arsenic, Beryllium, Cadmium, Selenium, Vanadium, Chloride,
Harmful, those with an EU Hazard Phrase of Xn under Directive 67/548/EEC or 1999/45/EC or those with R-phrases of R20, R21, R22, R65, R68 and combined risk phrases with or without R48	Antimony, Barium, Copper, Lead, Manganese, (Nickel), Vanadium, Water Soluble Boron, Naphthalene, Acenaphthylene, (Anthracene), Fluoranthene, (Indeno(1,2,3-cd)pyrene), (Total 12 PCBs & Total 7 PCBs),
Corrosive with Risk Phrase R35	Chloride,
Corrosive with Risk Phrase R34	No parameters identified
Irritant with Risk Phrase R41	No parameters identified
Irritant with Risk Phrase R36, R37, R38	Beryllium, Vanadium, Acenaphthylene, Anthracene
Carcinogen Category 1 or 2 are those with R-phrases R45 or R49	Beryllium, Cadmium, Hexavalent Chromium, Phenanthrene, Benzo(a)anthracene, Chrysene, Benzo(bk)fluoranthene, Benzo(a)pyrene, Dibenzo(ah)anthracene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Total Aromatics, Total Aliphatics,
Carcinogen Category 3 are those with R-phrase R40	Nickel, Naphthalene, Indeno(1,2,3-cd)pyrene
Toxic for Reproduction Category 1 and 2 with Risk Phrases R60, R61	Lead, Benzo(a)pyrene,
Toxic for Reproduction Category 3 with Risk Phrases R62, R63	Cadmium, Lead, Vanadium,
Mutagenic Category 1 and 2 with Risk Phrase R46	Benzo(a)pyrene, Total Aliphatics
Mutagenic Category 3 with Risk Phrase R68	Cadmium, Total Sulphate, Vanadium,
Explosive (with R-phrases R2, R3 or related r-phrases)	No parameters identified
Oxidising (with R-phrases R7, R8, R9)	No parameters identified
Infectious	No parameters identified
Ecotoxic (with R-phrases R50, R51, R52, R53 Aquatic Env and R54, R55, R56, R57, R58 for Non-Aquatic Env) & combined risk phrases	Antimony, Arsenic, Cadmium, Hexavalent Chromium, Chromium, Copper, Lead, Selenium, Vanadium, Zinc, Naphthalene, Anthracene, Fluoranthene, Pyrene, Benzo(a)anthracene, Chrysene, Benzo(bk)fluoranthene, Benzo(a)pyrene, Dibenzo(ghi)perylene, Benzo(b)fluoranthene, Benzo(k)fluoranthene,, Total 12 PCBs, Total 7 PCBs,

Hazardous Waste Classification Worksheet (Revised 31st August 2004)

Ecotoxic (Based on Thresholds in WM2)			
R59	> 0.1 %	No parameters identified	
		Arsenic, Cadmium, Hexavalent Chromium, Copper, Lead, Vanadium, Zinc, Naphthalene, Anthracene, Pyrene, Benzo(a)anthracene, Chrysene, Benzo(bk)fluoranthene, Benzo(a)pyrene, Dibenzo(ah)anthracene, Benzo(ghi)perylene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Total 12 PCBs, Total 7 PCBs,	1.339
R50-53	> 0.25%		
R51-53	> 2.5%	Antimony,	0.0035
R50 or R52 or R53 or R52-53	> 25%	Chromium, Fluoranthene, Selenium	0.1655
			1.508

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SECOND SCHEDULE: PART III (Waste Management Act 1996)

Properties of Waste which render it hazardous

There is set out in each paragraph of this Part a general term denoting a particular property of waste which renders it hazardous, followed by an explanation of such general term by reference to a description of substances or preparations which possess the particular property.

"Explosive": substances or preparations which may explode under the effect of flame or which are more sensitive to shocks or friction than dinitrobenzene.

"Oxidizing": substances or preparations which exhibit highly exothermic reactions when in contact with other substances, particularly flammable substances.

"Highly flammable":

- (a) liquid substances or preparations having a flash point below 21°C (including extremely flammable liquids), or
- (b) substances or preparations which may become hot and finally catch fire in contact with air at ambient temperature without any application of energy, or
- (c) solid substances or preparations which may readily catch fire after brief contact with a source of ignition and which continue to burn or to be consumed after removal of the source of ignition, or
- (d) gaseous substances or preparations which are flammable in air at normal pressure, or
- (e) substances or preparations which, in contact with water or damp air, evolve highly flammable gases in dangerous quantities.

"Flammable": liquid substances or preparations having a flash point of not less than 21°C and not more than 55°C.

"Irritant": non-corrosive substances or preparations which, through immediate, prolonged or repeated contact with the skin or mucous membrane, can cause inflammation.

"Harmful": substances or preparations which, if they are inhaled or ingested or if they penetrate the skin, may involve limited health risks.

"Toxic": substances or preparations (including very toxic substances or preparations) which, if they are inhaled or ingested or if they penetrate the skin, may cause serious, acute or chronic health risks or death.

"Carcinogenic": substances or preparations which, if they are inhaled or ingested or if they penetrate the skin, may induce cancer or increase its incidence.

"Corrosive": substances or preparations which may destroy living tissue on contact.

"Infectious": substances containing viable micro-organisms or their toxins which are known or reliably believed to cause disease in humans or other living organisms.

"Teratogenic": substances or preparations which, if they are inhaled or ingested or if they penetrate the skin, may induce non-hereditary congenital malformations or increase their incidence.

"Mutagenic": substances or preparations which, if they are inhaled or ingested or if they penetrate the skin, may induce hereditary genetic defects or increase their incidence.

"Ecotoxic": substances or preparations which present or may present immediate or delayed risks for one or more sectors of the environment.

"Residuary hazardous property":

- (a) substances or preparations which release toxic or very toxic gases in contact with water, air or an acid, or
- (b) substances or preparations capable by any means, after being disposed of, of yielding another substance which possesses any property referred to in this or any other paragraph of this Part.

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Box No.	Information Required	Information	
<i>Company Details</i>			
A	Company Name	Cork County Council	
	Company Address	Haulbowline Island, County Cork	
	Date	06/02/2013	
	IPC or Waste License Number (if applicable)	Not yet applicable	
	Contact Person	Cormac O'Suilleabhain	
	Waste Description	Slag - Borehole BH302, 6.0m	
<i>European Waste Catalogue/Hazardous Waste List</i>			
B	Possible EWC Codes		Asterisk Yes / No 10 02 01 <input type="checkbox"/> / <input checked="" type="checkbox"/>
			10 02 02 <input type="checkbox"/> / <input checked="" type="checkbox"/>
		Refer to Section 3.1 of Report	<input type="checkbox"/> / <input type="checkbox"/>
C	Six-Digit EWC Code	Not Applicable	Asterisk Yes / No <input type="checkbox"/> / <input type="checkbox"/>
D	EWC Description	Not Applicable	
<i>CI</i>	<i>Mirror Entry Code (if applicable)</i>	Not Applicable	Asterisk Yes / No <input type="checkbox"/> / <input type="checkbox"/>
<i>DI</i>	<i>Mirror Entry Description (if applicable)</i>	Not Applicable	
E	Is this waste classified as hazardous waste according to HWL?	Mirror Entry	<input type="checkbox"/>
		No	<input checked="" type="checkbox"/>
		Yes	<input type="checkbox"/>

Hazardous Waste Classification Worksheet (Revised 31st August 2004)

Category I Waste (Box F)

- 1. Anatomical substances, hospital or other clinical waste.
- 2. Pharmaceutical, medicinal or veterinary compounds.
- 3. Wood preservatives.
- 4. Biocides or phyto-pharmaceutical substances.
- 5. Residue from substances employed as solvents.
- 6. Halogenated organic substances not employed as solvents, excluding inert polymerized materials.
- 7. Tempering salts containing cyanides.
- 8. Mineral oils or oily substances (including cutting sludges).
- 9. Mixtures or emulsions of oil and water or hydrocarbon and water.
- 10. Substances containing polychlorinated biphenyls or polychlorinated terphenyls (including dielectrics).
- 11. Tarry materials arising from refining, distillation or any pyrolytic treatment (including still bottoms).
- 12. Inks, dyes, pigments, paints, lacquers or varnishes.
- 13. Resins, latex, plasticizers, glues or adhesives.
- 14. Chemical substances arising from research and development or teaching activities (including laboratory residues) which are not identified or are new and whose effects on humans or the environment are not known.
- 15. Pyrotechnics or other explosive materials.
- 16. Photographic chemicals or processing materials.
- 17. Any material contaminated with any congener of polychlorinated dibenzo-furan.
- 18. Any material contaminated with any congener of polychlorinated dibenzo-p-dioxin.

Category II Waste (Box G)

- 19. Animal or vegetable soaps, fats or waxes.
- 20. Non-halogenated organic substances not employed as solvents.
- 21. Inorganic substances without metals or metal compounds.
- 22. Ashes or cinders.
- 23. Soil, sand or clay (including dredging spoils).
- 24. Non-cyanidic tempering salts.
- 25. Metallic dust or powder.
- 26. Spent catalyst materials.
- 27. Liquids or sludges containing metals or metal compounds.
- 28. Residue (other than scrubber sludges, sludges from water purification plants and sewage sludges (untreated or unsuitable for use in agriculture)) from pollution control operations (including baghouse dusts).
- 29. Scrubber sludges.
- 30. Sludges from water purification plants.
- 31. Decarbonization residue.
- 32. Ion-exchange column residue.
- 33. Sewage sludges, untreated or unsuitable for use in agriculture.
- 34. Residue from cleaning of tanks or equipment.
- 35. Contaminated equipment.
- 36. Contaminated containers (including packaging and gas cylinders).
- 37. Batteries or other electrical cells.
- 38. Vegetable oils.
- 39. Materials resulting from the selective collection of waste from households.
- 40. Any other waste.

Hazardous Waste Classification Worksheet (Revised 31st August 2004)

Category II Constituents (Box H)

- | | |
|---|--|
| <input type="checkbox"/> 41. Beryllium or beryllium compounds. | <input type="checkbox"/> 71. Azides. |
| <input type="checkbox"/> 42. Vanadium compounds. | <input type="checkbox"/> 72. Polychlorinated biphenyls or polychlorinated terphenyls. |
| <input type="checkbox"/> 43. Chromium (VI) compounds. | <input type="checkbox"/> 73. Pharmaceutical or veterinary compounds. |
| <input type="checkbox"/> 44. Cobalt compounds. | <input type="checkbox"/> 74. Biocides or phyto-pharmaceutical substances (including pesticides). |
| <input type="checkbox"/> 45. Nickel compounds. | <input type="checkbox"/> 75. Infectious substances. |
| <input type="checkbox"/> 46. Copper compounds. | <input type="checkbox"/> 76. Creosotes. |
| <input type="checkbox"/> 47. Zinc compounds. | <input type="checkbox"/> 77. Isocyanates or thiocyanates. |
| <input type="checkbox"/> 48. Arsenic or arsenic compounds. | <input type="checkbox"/> 78. Organic cyanides (including nitriles). |
| <input type="checkbox"/> 49. Selenium or selenium compounds. | <input type="checkbox"/> 79. Phenols or phenol compounds. |
| <input type="checkbox"/> 50. Silver compounds. | <input type="checkbox"/> 80. Halogenated solvents. |
| <input type="checkbox"/> 51. Cadmium or cadmium compounds. | <input type="checkbox"/> 81. Organic solvents, excluding halogenated solvents. |
| <input type="checkbox"/> 52. Tin compounds. | <input type="checkbox"/> 82. Organohalogen compounds, excluding inert polymerized materials and other substances referred to in this Part. |
| <input type="checkbox"/> 53. Antimony or antimony compounds. | <input type="checkbox"/> 83. Aromatic compounds; polycyclic and heterocyclic organic compounds. |
| <input type="checkbox"/> 54. Tellurium or tellurium compounds. | <input type="checkbox"/> 84. Aliphatic amines. |
| <input type="checkbox"/> 55. Barium compounds, excluding barium sulphate. | <input type="checkbox"/> 85. Aromatic amines. |
| <input type="checkbox"/> 56. Mercury or mercury compounds. | <input type="checkbox"/> 86. Ethers. |
| <input type="checkbox"/> 57. Thallium or thallium compounds. | <input type="checkbox"/> 87. Substances of an explosive character, excluding those referred to elsewhere in this Part. |
| <input type="checkbox"/> 58. Lead or lead compounds. | <input type="checkbox"/> 88. Sulphur organic compounds. |
| <input type="checkbox"/> 59. Inorganic sulphides. | <input type="checkbox"/> 89. Any congener of polychlorinated dibenzo-furan. |
| <input type="checkbox"/> 60. Inorganic fluorine compounds, excluding calcium fluoride. | <input type="checkbox"/> 90. Any congener of polychlorinated dibenzo-p-dioxin. |
| <input type="checkbox"/> 61. Inorganic cyanides. | <input type="checkbox"/> 91. Hydrocarbons and their oxygen, nitrogen or sulphur compounds not otherwise referred to in this Part. |
| <input type="checkbox"/> 62. Any of the following alkaline or alkaline earth metals, namely, lithium, sodium, potassium, calcium, magnesium in uncombined form. | |
| <input type="checkbox"/> 63. Acidic solutions or acids in solid form. | |
| <input type="checkbox"/> 64. Basic solutions or bases in solid form. | |
| <input type="checkbox"/> 65. Asbestos (dust or fibres). | |
| <input type="checkbox"/> 66. Phosphorus: phosphorus compounds, excluding mineral phosphates. | |
| <input type="checkbox"/> 67. Metal carbonyls. | |
| <input type="checkbox"/> 68. Peroxides. | |
| <input type="checkbox"/> 69. Chlorates. | |
| <input type="checkbox"/> 70. Perchlorates. | |

Hazardous Waste Classification Worksheet (Revised 31st August 2004)

<i>Box I: Property Test Results and Waste Classification</i>					
Property	Property Testing			Waste Classification	
	Test Code	Title of Test	Results	Hazard (s)	Risk Phrase (s)
Explosive					
Oxidising					
Flammable					
Irritant/ Corrosive		NOT APPLICABLE			
Harmful/Toxic					
Carcinogenic					
Infectious	No test methods available for this property				
Toxic for Reproduction					
Mutagenic					
Ecotoxic					
Residuary hazardous property					

Hazardous Waste Classification Worksheet

Box J: Waste Composition details (revised 31st August 2004)

					Classification according to EU Directives 67/548/EEC or 1999/45/EC					Classification according to Regulation (EC) No 1272/2008					
Substance	Assumed Compound	CAS No.	% w/w ^{NOTE 1}	Flash Point (°C)	Source Data	EU Hazard	Risk Phrase	Classification	Carcinogen Group No.	Toxic for Reproduction Category	Mutagenic Category	Source Data	Signal Word	Hazard Class & Category Code	Hazard Statement Code
Aluminium	Aluminium Powder (pyrophoric)	7429-90-5	2.396	n/a	Annex I of Directive 67/548/EEC	F	R15	Contact with water liberates extremely flammable gases	n/a	n/a	n/a	Annex VI to Directive 1272/2008	Danger	Water-react. 2	H261
							R17	Spontaneously flammable in air						Pyr. Sol. 1	H250
Antimony	Antimony Compounds	n/a	-		Annex I of Directive 67/548/EEC	Xn	R20/22	Harmful by inhalation and if swallowed	n/a	n/a	n/a	Annex VI to Directive 1272/2008	Warning	Acute Tox. 4	H332
						N	R51/53	Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment						Acute Tox. 4	H302
Arsenic	Arsenic	7440-38-2	-		Annex I of Directive 67/548/EEC	T	R23/25	Toxic by inhalation and if swallowed	n/a	na	n/a	Annex VI to Directive 1272/2008	Danger	Acute Tox. 3	H331
						N	R50/53	Very toxic to aquatic organisms and may cause long-term effects in the aquatic environment						Acute Tox. 3	H301
														Aquatic Acute 1	H400
Barium	Barium Salts	n/a	0.0913		Annex I of Directive 67/548/EEC	Xn	R20/22	Harmful by inhalation and if swallowed	n/a	n/a	n/a	Annex VI to Directive 1272/2008	Warning	Acute Tox. 4	H332
														Acute Tox. 4	H302
Beryllium	Beryllium	7440-41-7	0.00023		Annex I of Directive 67/548/EEC	R49	R49	May cause cancer by inhalation.	Carc. Cat. 2;	n/a	n/a	Annex VI to Directive 1272/2008	Danger	Carc. 1B	H350
						T+	R26	Also very toxic by inhalation						Acute Tox. 2 *	H330
						T	R25	Also toxic if swallowed						Acute Tox. 3 *	H301
							R48/23	Also toxic; danger of serious damage to health by prolonged exposure through inhalation						STOT RE 1	H372
							R36/37/38	Irritating to eyes, respiratory system and skin						Eye Irrit. 2	H319
Cadmium	cadmium (non-pyrophoric)/ cadmium oxide (nonpyrophoric)	7440-43-9/1306-19-0	0.00002		Annex I of Directive 67/548/EEC		R43	May cause sensitization by skin contact	Carc. Cat. 2;	Repr. Cat. 3;	Muta. Cat. 3;	Annex VI to Directive 1272/2008	Danger	STOT SE 3	H335
							R45	May cause cancer						Skin Irrit. 2	H315
							R68	Possible risk of irreversible damage						Skin Sens. 1	H317
							R62	Possible risk of impaired fertility						Muta. 2	H341
							R63	Possible risk of harm to the unborn child						Repr. 2	H361fd
Calcium	Calcium	7440-70-2	18.13		Annex I of Directive 67/548/EEC	T	R48/23/25	Toxic; danger or serious damage to health by prolonged exposure through inhalation and if swallowed	n/a	n/a	n/a	Annex VI to Directive 1272/2008	Danger	Acute Tox. 2	H330
						T+	R26	Also very toxic by inhalation						STOT RE 1	H372
						N	R50/53	Very toxic to aquatic organisms and may cause long-term effects in the aquatic environment						Aquatic Acute 1	H400
														Aquatic Chronic 1	H410
Hexavalent Chromium	Chromium (VI) compounds	n/a	0.00003		Annex I of Directive 67/548/EEC		R49	May cause cancer by inhalation.	Carc. Cat. 2	n/a	n/a	Annex VI to Directive 1272/2008	Danger	Carc. 1B	H350
							R43	May cause sensitization by skin contact						Skin Sens. 1	H317
						N	R50/53	Very toxic to aquatic organisms and may cause long-term effects in the aquatic environment						Aquatic Acute 1	H400
Chromium	Chromium	7440-47-3	0.4919		Sigma Aldrich	N	R50	Very toxic to aquatic organisms	n/a	n/a	n/a	Sigma Aldrich	Warning	Aquatic Acute 1	H400
						Xn	R22	Harmful if swallowed						Acute Tox. 4 *	H302
Copper	Copper (I) Oxide	1317-39-1	0.039		Annex I of Directive 67/548/EEC	N	R50/53	Very toxic to aquatic organisms and may cause long-term effects in the aquatic environment	n/a	n/a	n/a	Annex VI to Directive 1272/2008	Warning	Aquatic Acute 1	H400
														Aquatic Chronic 1	H410
Lead	Lead Compounds	n/a	0.0066		Annex I of Directive 67/548/EEC		R61	May cause harm to the unborn child	n/a	Repr. Cat. 1;	Repr. Cat. 3;	Annex VI to Directive 1272/2008	Danger	Repr. 1A	H360DF
						Xn	R20/22	Harmful by inhalation and if swallowed						Acute Tox. 4	H332
						N	R50/53	Very toxic to aquatic organisms and may cause long-term effects in the aquatic environment						STOT RE 2	H373
Magnesium	Magnesium, powder or turnings	n/a	2.598		Annex I of Directive 67/548/EEC	F	R11	Highly flammable	n/a	n/a	n/a	Annex VI to Directive 1272/2008	Danger	Flam. Sol. 1	H228
							R15	Contact with water liberates extremely flammable gases						Water-react. 2	H261
Manganese	Manganese dioxide	1313-13-9	4.809		Annex I of Directive 67/548/EEC	Xn	R20/22	Harmful by inhalation and if swallowed	n/a	n/a	n/a	Annex VI to Directive 1272/2008	Warning	Self-heal. 1	H252
														Acute Tox. 4	H332
Nickel	Nickel	7440-02-0	0.00742		Annex I of Directive 67/548/EEC	Xn	R40	Limited evidence of a carcinogenic effect	Carc. Cat. 3	n/a	n/a	Annex VI to Directive 1272/2008	Warning	Acute Tox. 4	H302
							R43	May cause sensitization by skin contact						Carc. 2	H351
Selenium	Selenium	7782-49-2	0.0015		Annex I of Directive 67/548/EEC		R23/25	Toxic by inhalation and if swallowed	n/a	n/a	n/a	Annex VI to Directive 1272/2008	Danger	Skin Sens. 1	H317
							R33	Danger of cumulative effects						Acute Tox. 3	H301
							R53	May cause long-term effects in the aquatic environment						STOT RE 2	H373
													Aquatic Chronic 4	H413	

Hazardous Waste Classification Worksheet

Box J: Waste Composition details (revised 31st August 2004)

					Classification according to EU Directives 67/548/EEC or 1999/45/EC					Classification according to Regulation (EC) No 1272/2008							
Substance	Assumed Compound	CAS No.	% w/w ^{NOTE 1}	Flash Point (°C)	Source Data	EU Hazard	Risk Phrase	Classification	Carcinogen Group No.	Toxic for Reproduction Category	Mutagenic Category	Source Data	Signal Word	Hazard Class & Category Code	Hazard Statement Code		
Total Sulphate	-	-	0.2212	n/a	Annex I of Directive 67/548/EEC			This substance is not classified as dangerous according to Directive 67/548/EEC				Not a hazardous substance or mixture according to Regulation (EC) No. 1272/2008					
Vanadium	Vanadium pentoxide	1314-62-1	0.0533		Annex I of Directive 67/548/EEC			R63	n/a	Repr. Cat. 3;	Muta. Cat. 3;	Annex VI to Directive 1272/2008	Danger	Muta. 2	H341		
								R68						Possible risk of irreversible effects	Repr. 2	H361D	
								T						R48/23	Toxic: danger of serious damage to health by prolonged exposure through inhalation	STOT RE 1	H372
								Xn						R20/22	Harmful by inhalation and if swallowed	Acute Tox. 4	H332
								Xi						R37	Irritating to respiratory system	Acute Tox. 4	H302
N	R51/53	Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment	STOT SE 3	H335													
Water Soluble Boron	Boron	7440-42-8	0.00091		Sigma Aldrich	Xn	R22	Harmful if swallowed	n/a	n/a	n/a	Sigma Aldrich	Warning	Acute Tox. 4	H302		
Zinc	Zinc oxide	1314-13-2	0.0492		Annex I of Directive 67/548/EEC			Very toxic to aquatic organisms and may cause long-term effects in the aquatic environment	n/a	n/a	n/a	Annex VI to Directive 1272/2008	Warning	Aquatic Acute 1	H400		
														N	R50/53	Aquatic Chronic 1	H410
Chloride	Hydrogen Chloride	7647-01-0	0.0878		Annex I of Directive 67/548/EEC			T	R23	Toxic by inhalation	n/a	n/a	n/a	Annex VI to Directive 1272/2008	Danger	Press. Gas	H331
								C	R35	Causes severe burns						Acute Tox. 3	H314
Naphthalene	Naphthalene	91-20-3	-		Annex I of Directive 67/548/EEC			R40	Carc. Cat. 3;	n/a	n/a	Annex VI to Directive 1272/2008	Warning	Carc. 2	H351		
								Xn						R22	Harmful if swallowed	Acute Tox. 4	H302
								N						R50/53	Very toxic to aquatic organisms and may cause long-term effects in the aquatic environment	Aquatic Acute 1	H400
Acenaphthylene	Acenaphthylene	208-96-8	-	122.0	Sigma Aldrich			R22	n/a	n/a	n/a	Sigma Aldrich	Warning	Acute Tox. 4	H302		
								Xn						R36/37/38	Irritating to eyes, respiratory system and skin.	Eye Irrit. 2	H315
																STOT SE 3	H335
Phenanthrene	Phenanthrene, distn. Residues	122070-78-4	-		Annex I of Directive 67/548/EEC			T	R45	May cause cancer	Carc. Cat. 2;	n/a	n/a	Annex VI to Directive 1272/2008	Danger	Carc. 1B	H350
								Xn	R36/37/38	Irritating to eyes, respiratory system and skin						Skin Irrit. 2	H315
Anthracene	Anthracene	120-12-7	-	121.0	Sigma Aldrich			N	R50/53	Very toxic to aquatic organisms and may cause long-term effects in the aquatic environment	Carc. Cat. 3;	n/a	n/a	Sigma Aldrich	Warning	Eye Irrit. 2	H319
																STOT SE 3	H335
Fluoranthene	Benzo[k]fluorene	206-44-0	0.000003	198.0	Sigma Aldrich			Xn	R22	Harmful if swallowed	n/a	n/a	n/a	Sigma Aldrich	Warning	Acute Tox. 4	H302
								N	R50	Very toxic to aquatic organisms						Aquatic Acute 1	H400
Pyrene	Benzo[def]phenanthrene	129-00-0	0.000003	> 200.0	Sigma Aldrich			N	R50/53	Very toxic to aquatic organisms and may cause long-term effects in the aquatic environment	n/a	n/a	n/a	Sigma Aldrich	Warning	Aquatic Acute 1	H400
																Aquatic Chronic 1	H410
Benzo(a)anthracene	Benz(a)anthracene	56-55-3	-		Annex I of Directive 67/548/EEC			T	R45	May cause cancer	Carc. Cat. 2	n/a	n/a	Annex VI to Directive 1272/2008	Danger	Carc. 1B	H350
								N	R50/53	Very toxic to aquatic organisms and may cause long-term effects in the aquatic environment						Aquatic Acute 1	H400
Chrysene	Chrysene	218-01-9	-		Annex I of Directive 67/548/EEC			R45	Carc. Cat. 2	n/a	Muta. Cat. 3;	Annex VI to Directive 1272/2008	Danger	Carc. 1B	H350		
								R68						Possible risk of irreversible effects	Muta. 2	H341	
								N						R50/53	Very toxic to aquatic organisms and may cause long-term effects in the aquatic environment	Aquatic Acute 1	H400
Benzo(bk)fluoranthene	benzo(k)fluoranthene	207-08-9	-		Annex I of Directive 67/548/EEC			T	R45	May cause cancer	Carc. Cat. 2;	n/a	n/a	Annex VI to Directive 1272/2008	Danger	Carc. 1B	H350
								N	R50/53	Very toxic to aquatic organisms and may cause long-term effects in the aquatic environment						Aquatic Acute 1	H400
Benzo(a)pyrene	benzo(a)pyrene	50-32-8	-		Annex I of Directive 67/548/EEC			R45	Carc. Cat. 2;	Repr. Cat. 2	Muta. Cat. 2;	Annex VI to Directive 1272/2008	Danger	Aquatic Chronic 1	H410		
								R46						May cause heritable genetic damage	Carc. 1B	H350	
								R60						May impair fertility	Muta. 1B	H340	
								R61						May cause harm to the unborn child	Repr. 1B	H360FD	
								T						R43	May cause sensitisation by skin contact	Skin Sens. 1	H317
N	R50/53	Very toxic to aquatic organisms and may cause long-term effects in the aquatic environment	Aquatic Acute 1	H400													

Hazardous Waste Classification Worksheet

Box J: Waste Composition details (revised 31st August 2004)

					Classification according to EU Directives 67/548/EEC or 1999/45/EC					Classification according to Regulation (EC) No 1272/2008							
Substance	Assumed Compound	CAS No.	% w/w ^{NOTE 1}	Flash Point (°C)	Source Data	EU Hazard	Risk Phrase	Classification	Carcinogen Group No.	Toxic for Reproduction Category	Mutagenic Category	Source Data	Signal Word	Hazard Class & Category Code	Hazard Statement Code		
Indeno(1,2,3-cd)pyrene	Indeno[1,2,3-cd]pyrene	193-39-5	-	n/a	Sigma Aldrich	Xn	R40	Limited evidence of a carcinogenic effect	Carc. Cat. 2;	n/a	n/a	Sigma Aldrich	Warning	Carc 2	H351		
Dibenzo(a,h)anthracene	dibenzo[a,h]anthracene	53-70-3	-		Annex I of Directive 67/548/EEC	T	R45	May cause cancer	Carc. Cat. 2;	n/a	n/a	Annex VI to Directive 1272/2008	Danger	Carc. 1B	H350		
						N	R50/53	Very toxic to aquatic organisms and may cause long-term effects in the aquatic environment						Aquatic Acute 1	H400	Aquatic Chronic 1	H410
Benzo(g,h)perylene	Benzo[ghi]perylene	191-24-2	-		Sigma Aldrich	N	R50/53	Very toxic to aquatic organisms and may cause long-term adverse effects in the aquatic environment	Carc. Cat. 3;	n/a	n/a	Sigma Aldrich	Warning	Aquatic Acute 1	H400	Aquatic Chronic 1	H410
						T	R45	May cause cancer						Carc. 1B	H350		
Benzo(b)fluoranthene	Benzo[b]fluoranthene	205-99-2	-		Sigma Aldrich	N	R50/53	Very toxic to aquatic organisms and may cause long-term effects in the aquatic environment	Carc. Cat. 2;	n/a	n/a	Sigma Aldrich	Danger	Aquatic Acute 1	H400	Aquatic Chronic 1	H410
						T	R45	May cause cancer						Carc. 1B	H350		
Benzo(k)fluoranthene	benzo[k]fluoranthene	207-08-9	-		Annex I of Directive 67/548/EEC	T	R45	May cause cancer	Carc. Cat. 2;	n/a	n/a	Annex VI to Directive 1272/2008	Danger	Carc. 1B	H350		
						N	R50/53	Very toxic to aquatic organisms and may cause long-term effects in the aquatic environment						Aquatic Acute 1	H400	Aquatic Chronic 1	H410
Mineral Oil (C8-C40)	Mineral Oil	8042-47-5	-	> 112 °C	Sigma Aldrich	This substance is not classified as dangerous according to Directive 67/548/EEC						Not a hazardous substance or mixture according to Regulation (EC) No. 1272/2008					
Total aromatics C5-35	Aromatic hydrocarbons	90989-41-6	-		Annex I of Directive 67/548/EEC	T	R45	May cause cancer	Carc. Cat. 2;	n/a	n/a	Annex VI to Directive 1272/2008	Danger	Carc. 1B	H350		
						T	R45	May cause cancer						Flam. Gas 1	H220		
Total aliphatics C5-35	Distillates (petroleum).	68477-35-0	-		Annex I of Directive 67/548/EEC	T	R46	May cause heritable genetic damage	Carc. Cat. 2;	n/a	Muta. Cat. 2;	Annex VI to Directive 1272/2008	Danger	Press. Gas	H350		
Total 12 PCBs	polychlorobiphenyls; PCB	1336-36-3	-		Annex I of Directive 67/548/EEC	Xn	R33	Danger of cumulative effects	n/a	n/a	n/a	Annex VI to Directive 1272/2008	Warning	STOT RE 2	H373		
						N	R50/53	Very toxic to aquatic organisms and may cause long-term effects in the aquatic environment						Aquatic Acute 1	H400	Aquatic Chronic 1	H410
Total 7 PCBs	polychlorobiphenyls; PCB	1336-36-3	-		Annex I of Directive 67/548/EEC	Xn	R33	Danger of cumulative effects	n/a	n/a	n/a	Annex VI to Directive 1272/2008	Warning	STOT RE 2	H373		
						N	R50/53	Very toxic to aquatic organisms and may cause long-term effects in the aquatic environment						Aquatic Acute 1	H400	Aquatic Chronic 1	H410
Thiocyanate	thiocyanic acid	463-56-9	-		Annex I of Directive 67/548/EEC	Xn	R20/21/22	Harmful by inhalation, in contact with skin and if swallowed	n/a	n/a	n/a	Annex VI to Directive 1272/2008	Warning	Acute Tox. 4	H332		
						N	R52/53	Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment						Acute Tox. 4	H302	Aquatic Chronic 3	H412

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Box K: Waste Composition Details		
Properties with Thresholds (Box K1)		
Property	Threshold	Total in Waste
	(% w/w)	(% w/w)
Flash Point < 55 °C		
Very Toxic	> 0.1	0.0003
Toxic	> 3	0.143
Harmful	> 25	5.008
Corrosive with Risk Phrase R35	>1	0.088
Corrosive with Risk Phrase R34	> 5	0.000
Irritant with Risk Phrase R41	> 10	0.000
Irritant with Risk Phrase R36, R37, R38	> 20	0.054
Carcinogen Category 1 or 2	> 0.1	0.0003
Carcinogen Category 3	> 1	0.007
Toxic for Reproduction Category 1 and 2 with Risk Phrases R60, R61	> 0.5	0.007
Toxic for Reproduction Category 3 with Risk Phrases R62, R63	> 5	0.060
Mutagenic Category 1 and 2 with Risk Phrase R46	> 0.1	0.0
Mutagenic Category 3 with Risk Phrase R68	> 1	0.0533
Properties without thresholds (Box K2)		
Property	Total (% w/w) in waste	
Explosive	0	
Oxidising	0	
Infectious	0	
Ecotoxic	0.6416	
Residuary Hazardous property	0	

Final EWC Code		
L	Final EWC Code	Possibly 10 02 01 or 10 02 02 with no hazardous components detected
M	Final EWC Description	Refer to Section 3.1 of Report

Hazardous Waste Classification Worksheet (Revised 31st August 2004)

Note 1:	
Very Toxic, those with an EU Hazard Phrase of T+ under EU Directives 67/548/EEC or 1999/45/EC or those with R-phrases of R26, R27, R28 and combined risk phrases with or without R39	Beryllium, Cadmium, Total Sulphate, Water Soluble Boron,
Toxic, those with an EU Hazard Phrase of T under EU Directives 67/548/EEC or 1999/45/EC or those with R-phrases of R23, R24, R25 and combined risk phrases with or without R39 or R48	Arsenic, Beryllium, Cadmium, Selenium, Total Sulphate, Vanadium, Chloride,
Harmful, those with an EU Hazard Phrase of Xn under Directive 67/548/EEC or 1999/45/EC or those with R-phrases of R20, R21, R22, R65, R68 and combined risk phrases with or without R48	Antimony, Barium, Copper, Lead, Manganese, (Nickel), Vanadium, Naphthalene, Acenaphthylene, (Anthracene), Fluoranthene, (Indeno(1,2,3-cd)pyrene), (Total 12 PCBs & Total 7 PCBs), Thiocyanate
Corrosive with Risk Phrase R35	Chloride,
Corrosive with Risk Phrase R34	Total Sulphate,
Irritant with Risk Phrase R41	No parameters identified
Irritant with Risk Phrase R36, R37, R38	Beryllium, Vanadium, Acenaphthylene, Anthracene
Carcinogen Category 1 or 2 are those with R-phrases R45 or R49	Beryllium, Cadmium, Hexavalent Chromium, Total Sulphate, Phenanthrene, Benzo(a)anthracene, Chrysene, Benzo(bk)fluoranthene, Benzo(a)pyrene, Dibenzo(ah)anthracene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Total Aromatics, Total Aliphatics,
Carcinogen Category 3 are those with R-phrase R40	Nickel, Naphthalene, Indeno(1,2,3-cd)pyrene
Toxic for Reproduction Category 1 and 2 with Risk Phrases R60, R61	Lead, Benzo(a)pyrene,
Toxic for Reproduction Category 3 with Risk Phrases R62, R63	Cadmium, Lead, Vanadium,
Mutagenic Category 1 and 2 with Risk Phrase R46	Benzo(a)pyrene, Total Aliphatics
Mutagenic Category 3 with Risk Phrase R68	Cadmium, Total Sulphate, Vanadium,
Explosive (with R-phrases R2, R3 or related r-phrases)	No parameters identified
Oxidising (with R-phrases R7, R8, R9)	No parameters identified
Infectious	No parameters identified
Ecotoxic (with R-phrases R50, R51, R52, R53 Aquatic Env and R54, R55, R56, R57, R58 for Non-Aquatic Env) & combined risk phrases	Antimony, Arsenic, Cadmium, Hexavalent Chromium, Chromium, Copper, Lead, Selenium, Vanadium, Zinc, Naphthalene, Anthracene, Fluoranthene, Pyrene, Benzo(a)anthracene, Chrysene, Benzo(bk)fluoranthene, Benzo(a)pyrene, Dibenzo(ghi)perylene, Benzo(b)fluoranthene, Benzo(k)fluoranthene,, Total 12 PCBs, Total 7 PCBs, Thiocyanate

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Ecotoxic (Based on Thresholds in WM2)			
R59	> 0.1 %	No parameters identified	
		Cadmium, Hexavalent Chromium, Copper, Lead, Vanadium, Zinc, Pyrene,	0.09
R50-53	> 0.25%		
R51-53	> 2.5%	Vanadium	0.0533
R50 or R52 or R53 or R52-53	> 25%	Chromium, Fluoranthene, Selenium	0.4934
			0.6416

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SECOND SCHEDULE: PART III (Waste Management Act 1996)

Properties of Waste which render it hazardous

There is set out in each paragraph of this Part a general term denoting a particular property of waste which renders it hazardous, followed by an explanation of such general term by reference to a description of substances or preparations which possess the particular property.

"Explosive": substances or preparations which may explode under the effect of flame or which are more sensitive to shocks or friction than dinitrobenzene.

"Oxidizing": substances or preparations which exhibit highly exothermic reactions when in contact with other substances, particularly flammable substances.

"Highly flammable":

- (a) liquid substances or preparations having a flash point below 21°C (including extremely flammable liquids), or
- (b) substances or preparations which may become hot and finally catch fire in contact with air at ambient temperature without any application of energy, or
- (c) solid substances or preparations which may readily catch fire after brief contact with a source of ignition and which continue to burn or to be consumed after removal of the source of ignition, or
- (d) gaseous substances or preparations which are flammable in air at normal pressure, or
- (e) substances or preparations which, in contact with water or damp air, evolve highly flammable gases in dangerous quantities.

"Flammable": liquid substances or preparations having a flash point of not less than 21°C and not more than 55°C.

"Irritant": non-corrosive substances or preparations which, through immediate, prolonged or repeated contact with the skin or mucous membrane, can cause inflammation.

"Harmful": substances or preparations which, if they are inhaled or ingested or if they penetrate the skin, may involve limited health risks.

"Toxic": substances or preparations (including very toxic substances or preparations) which, if they are inhaled or ingested or if they penetrate the skin, may cause serious, acute or chronic health risks or death.

"Carcinogenic": substances or preparations which, if they are inhaled or ingested or if they penetrate the skin, may induce cancer or increase its incidence.

"Corrosive": substances or preparations which may destroy living tissue on contact.

"Infectious": substances containing viable micro-organisms or their toxins which are known or reliably believed to cause disease in humans or other living organisms.

"Teratogenic": substances or preparations which, if they are inhaled or ingested or if they penetrate the skin, may induce non-hereditary congenital malformations or increase their incidence.

"Mutagenic": substances or preparations which, if they are inhaled or ingested or if they penetrate the skin, may induce hereditary genetic defects or increase their incidence.

"Ecotoxic": substances or preparations which present or may present immediate or delayed risks for one or more sectors of the environment.

"Residuary hazardous property":

- (a) substances or preparations which release toxic or very toxic gases in contact with water, air or an acid, or
- (b) substances or preparations capable by any means, after being disposed of, of yielding another substance which possesses any property referred to in this or any other paragraph of this Part.

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Box No.	Information Required	Information	
Company Details			
A	Company Name	Cork County Council	
	Company Address	Haulbowline Island, County Cork	
	Date	06/02/2013	
	IPC or Waste License Number (if applicable)	Not yet applicable	
	Contact Person	Cormac O'Suilleabhain	
	Waste Description	Slag - Borehole BH302, 5.0m	
European Waste Catalogue/Hazardous Waste List			
B	Possible EWC Codes		Asterisk Yes / No <input type="checkbox"/> / <input checked="" type="checkbox"/>
		10 02 01	<input type="checkbox"/> / <input checked="" type="checkbox"/>
		10 02 02	<input type="checkbox"/> / <input checked="" type="checkbox"/>
		Refer to Section 3.1 of Report	
C	Six-Digit EWC Code	Not Applicable	Asterisk Yes / No <input type="checkbox"/> / <input type="checkbox"/>
D	EWC Description	Not Applicable	
<i>CI</i>	Mirror Entry Code (if applicable)	Not Applicable	Asterisk Yes / No <input type="checkbox"/> / <input type="checkbox"/>
<i>DI</i>	Mirror Entry Description (if applicable)	Not Applicable	
E	Is this waste classified as hazardous waste according to HWL?	Mirror Entry	<input type="checkbox"/>
		No	<input checked="" type="checkbox"/>
		Yes	<input type="checkbox"/>

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Category I Waste (Box F)

- 1. Anatomical substances, hospital or other clinical waste.
- 2. Pharmaceutical, medicinal or veterinary compounds.
- 3. Wood preservatives.
- 4. Biocides or phyto-pharmaceutical substances.
- 5. Residue from substances employed as solvents.
- 6. Halogenated organic substances not employed as solvents, excluding inert polymerized materials.
- 7. Tempering salts containing cyanides.
- 8. Mineral oils or oily substances (including cutting sludges).
- 9. Mixtures or emulsions of oil and water or hydrocarbon and water.
- 10. Substances containing polychlorinated biphenyls or polychlorinated terphenyls (including dielectrics).
- 11. Tarry materials arising from refining, distillation or any pyrolytic treatment (including still bottoms).
- 12. Inks, dyes, pigments, paints, lacquers or varnishes.
- 13. Resins, latex, plasticizers, glues or adhesives.
- 14. Chemical substances arising from research and development or teaching activities (including laboratory residues) which are not identified or are new and whose effects on humans or the environment are not known.
- 15. Pyrotechnics or other explosive materials.
- 16. Photographic chemicals or processing materials.
- 17. Any material contaminated with any congener of polychlorinated dibenzo-furan.
- 18. Any material contaminated with any congener of polychlorinated dibenzo-p-dioxin.

Category II Waste (Box G)

- 19. Animal or vegetable soaps, fats or waxes.
- 20. Non-halogenated organic substances not employed as solvents.
- 21. Inorganic substances without metals or metal compounds.
- 22. Ashes or cinders.
- 23. Soil, sand or clay (including dredging spoils).
- 24. Non-cyanidic tempering salts.
- 25. Metallic dust or powder.
- 26. Spent catalyst materials.
- 27. Liquids or sludges containing metals or metal compounds.
- 28. Residue (other than scrubber sludges, sludges from water purification plants and sewage sludges (untreated or unsuitable for use in agriculture)) from pollution control operations (including baghouse dusts).
- 29. Scrubber sludges.
- 30. Sludges from water purification plants.
- 31. Decarbonization residue.
- 32. Ion-exchange column residue.
- 33. Sewage sludges, untreated or unsuitable for use in agriculture.
- 34. Residue from cleaning of tanks or equipment.
- 35. Contaminated equipment.
- 36. Contaminated containers (including packaging and gas cylinders).
- 37. Batteries or other electrical cells.
- 38. Vegetable oils.
- 39. Materials resulting from the selective collection of waste from households.
- 40. Any other waste.

Hazardous Waste Classification Worksheet (Revised 31st August 2004)

Category II Constituents (Box H)

- | | |
|---|--|
| <input type="checkbox"/> 41. Beryllium or beryllium compounds. | <input type="checkbox"/> 71. Azides. |
| <input type="checkbox"/> 42. Vanadium compounds. | <input type="checkbox"/> 72. Polychlorinated biphenyls or polychlorinated terphenyls. |
| <input type="checkbox"/> 43. Chromium (VI) compounds. | <input type="checkbox"/> 73. Pharmaceutical or veterinary compounds. |
| <input type="checkbox"/> 44. Cobalt compounds. | <input type="checkbox"/> 74. Biocides or phyto-pharmaceutical substances (including pesticides). |
| <input type="checkbox"/> 45. Nickel compounds. | <input type="checkbox"/> 75. Infectious substances. |
| <input type="checkbox"/> 46. Copper compounds. | <input type="checkbox"/> 76. Creosotes. |
| <input type="checkbox"/> 47. Zinc compounds. | <input type="checkbox"/> 77. Isocyanates or thiocyanates. |
| <input type="checkbox"/> 48. Arsenic or arsenic compounds. | <input type="checkbox"/> 78. Organic cyanides (including nitriles). |
| <input type="checkbox"/> 49. Selenium or selenium compounds. | <input type="checkbox"/> 79. Phenols or phenol compounds. |
| <input type="checkbox"/> 50. Silver compounds. | <input type="checkbox"/> 80. Halogenated solvents. |
| <input type="checkbox"/> 51. Cadmium or cadmium compounds. | <input type="checkbox"/> 81. Organic solvents, excluding halogenated solvents. |
| <input type="checkbox"/> 52. Tin compounds. | <input type="checkbox"/> 82. Organohalogen compounds, excluding inert polymerized materials and other substances referred to in this Part. |
| <input type="checkbox"/> 53. Antimony or antimony compounds. | <input type="checkbox"/> 83. Aromatic compounds; polycyclic and heterocyclic organic compounds. |
| <input type="checkbox"/> 54. Tellurium or tellurium compounds. | <input type="checkbox"/> 84. Aliphatic amines. |
| <input type="checkbox"/> 55. Barium compounds, excluding barium sulphate. | <input type="checkbox"/> 85. Aromatic amines. |
| <input type="checkbox"/> 56. Mercury or mercury compounds. | <input type="checkbox"/> 86. Ethers. |
| <input type="checkbox"/> 57. Thallium or thallium compounds. | <input type="checkbox"/> 87. Substances of an explosive character, excluding those referred to elsewhere in this Part. |
| <input type="checkbox"/> 58. Lead or lead compounds. | <input type="checkbox"/> 88. Sulphur organic compounds. |
| <input type="checkbox"/> 59. Inorganic sulphides. | <input type="checkbox"/> 89. Any congener of polychlorinated dibenzo-furan. |
| <input type="checkbox"/> 60. Inorganic fluorine compounds, excluding calcium fluoride. | <input type="checkbox"/> 90. Any congener of polychlorinated dibenzo-p-dioxin. |
| <input type="checkbox"/> 61. Inorganic cyanides. | <input type="checkbox"/> 91. Hydrocarbons and their oxygen, nitrogen or sulphur compounds not otherwise referred to in this Part. |
| <input type="checkbox"/> 62. Any of the following alkaline or alkaline earth metals, namely, lithium, sodium, potassium, calcium, magnesium in uncombined form. | |
| <input type="checkbox"/> 63. Acidic solutions or acids in solid form. | |
| <input type="checkbox"/> 64. Basic solutions or bases in solid form. | |
| <input type="checkbox"/> 65. Asbestos (dust or fibres). | |
| <input type="checkbox"/> 66. Phosphorus: phosphorus compounds, excluding mineral phosphates. | |
| <input type="checkbox"/> 67. Metal carbonyls. | |
| <input type="checkbox"/> 68. Peroxides. | |
| <input type="checkbox"/> 69. Chlorates. | |
| <input type="checkbox"/> 70. Perchlorates. | |

Hazardous Waste Classification Worksheet (Revised 31st August 2004)

<i>Box I: Property Test Results and Waste Classification</i>					
Property	Property Testing			Waste Classification	
	Test Code	Title of Test	Results	Hazard (s)	Risk Phrase (s)
Explosive					
Oxidising					
Flammable					
Irritant/ Corrosive		NOT APPLICABLE			
Harmful/Toxic					
Carcinogenic					
Infectious	No test methods available for this property				
Toxic for Reproduction					
Mutagenic					
Ecotoxic					
Residuary hazardous property					

Hazardous Waste Classification Worksheet

Box J: Waste Composition details (revised 31st August 2004)

					Classification according to EU Directives 67/548/EEC or 1999/45/EC							Classification according to Regulation (EC) No 1272/2008			
Substance	Assumed Compound	CAS No.	% w/w ^{NOTE 1}	Flash Point (°C)	Source Data	EU Hazard	Risk Phrase	Classification	Carcinogen Group No.	Toxic for Reproduction Category	Mutagenic Category	Source Data	Signal Word	Hazard Class & Category Code	Hazard Statement Code
Aluminium	Aluminium Powder (pyrophoric)	7429-90-5	2.69	n/a not data available as per Sigma Aldrich MSDS	Annex I of Directive 67/548/EEC	F	R15	Contact with water liberates extremely flammable gases	n/a	n/a	n/a	Annex VI to Directive 1272/2008	Danger	Water-react. 2	H261
							R17	Spontaneously flammable in air						Pyr. Sol. 1	H250
Antimony	Antimony Compounds	n/a	-	n/a	Annex I of Directive 67/548/EEC	N	R20/22	Harmful by inhalation and if swallowed	n/a	n/a	n/a	Annex VI to Directive 1272/2008	Warning	Acute Tox. 4	H332
							R51/53	Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment						Acute Tox. 4	H302
Arsenic	Arsenic	7440-38-2	-	n/a	Annex I of Directive 67/548/EEC	T	R23/25	Toxic by inhalation and if swallowed	n/a	na	n/a	Annex VI to Directive 1272/2008	Danger	Acute Tox. 3	H331
							R50/53	Very toxic to aquatic organisms and may cause long-term effects in the aquatic environment						Acute Tox. 3	H301
														Acute Tox. 3 *	H301
														Acute Tox. 3 *	H301
Barium	Barium Salts	n/a	0.0953	n/a	Annex I of Directive 67/548/EEC	Xn	R20/22	Harmful by inhalation and if swallowed	n/a	n/a	n/a	Annex VI to Directive 1272/2008	Warning	Acute Tox. 4	H332
														Acute Tox. 4	H302
Beryllium	Beryllium	7440-41-7	0.00018	n/a	Annex I of Directive 67/548/EEC	T	R49	May cause cancer by inhalation.	Carc. Cat. 2;	n/a	n/a	Annex VI to Directive 1272/2008	Danger	Carc. 1B	H350i
							R26	Also very toxic by inhalation						Acute Tox. 2 *	H330
							R25	Also toxic if swallowed.						Acute Tox. 3 *	H301
							R48/23	Also toxic; danger of serious damage to health by prolonged exposure through inhalation						STOT RE 1	H372
							R36/37/38	Irritating to eyes, respiratory system and skin						Eye Irrit. 2	H319
							R43	May cause sensitization by skin contact						STOT SE 3	H335
Cadmium	cadmium (non-pyrophoric) cadmium oxide (nonpyrophoric)	7440-43-9/1306-19-0	0.0003	n/a	Annex I of Directive 67/548/EEC	T	R45	May cause cancer	Carc. Cat. 2;	Repr. Cat. 3;	Muta. Cat. 3;	Annex VI to Directive 1272/2008	Danger	Carc. 1B	H350
							R68	Possible risk of irreversible damage						Muta. 2	H341
							R62	Possible risk of impaired fertility						Repr. 2	H361fd
							R63	Possible risk of harm to the unborn child						Acute Tox. 2	H330
							R48/23/25	Toxic; danger or serious damage to health by prolonged exposure through inhalation and if swallowed						STOT RE 1	H372
							R26	Also very toxic by inhalation						Acute Acute 1	H400
Calcium	Calcium	7440-70-2	20.32	n/a not data available as per Sigma Aldrich MSDS	Annex I of Directive 67/548/EEC	F	R15	Contact with water liberates extremely flammable gases	n/a	n/a	n/a	Annex VI to Directive 1272/2008	Danger	Water-react. 2	H261
Hexavalent Chromium	Chromium (VI) compounds	n/a	-	n/a	Annex I of Directive 67/548/EEC	N	R49	May cause cancer by inhalation.	Carc. Cat. 2	n/a	n/a	Annex VI to Directive 1272/2008	Danger	Carc. 1B	H350i
							R43	May cause sensitization by skin contact						Skin Sens. 1	H317
							R50/53	Very toxic to aquatic organisms and may cause long-term effects in the aquatic environment						Acute Acute 1	H400
Chromium	Chromium	7440-47-3	0.5008	n/a	Sigma Aldrich	N	R50	Very toxic to aquatic organisms	n/a	n/a	n/a	Sigma Aldrich	Warning	Acute Acute 1	H400
							R22	Harmful if swallowed						Acute Tox. 4 *	H302
Copper	Copper (I) Oxide	1317-39-1	0.043	n/a	Annex I of Directive 67/548/EEC	N	R50/53	Very toxic to aquatic organisms and may cause long-term effects in the aquatic environment	n/a	n/a	n/a	Annex VI to Directive 1272/2008	Warning	Acute Acute 1	H400
														Acute Acute 1	H410
Lead	Lead Compounds	n/a	0.0288	n/a	Annex I of Directive 67/548/EEC	Xn	R61	May cause harm to the unborn child	n/a	Repr. Cat. 1; Repr. Cat. 3;	n/a	Annex VI to Directive 1272/2008	Danger	Repr. 1A	H360Df
							R62	Possible risk of impaired fertility						Acute Tox. 4	H332
							R20/22	Harmful by inhalation and if swallowed						STOT RE 2	H332
							R33	Danger of cumulative effects						Acute Acute 1	H400
Magnesium	Magnesium, powder or turnings	n/a	3.122	n/a not data available as per Sigma Aldrich MSDS	Annex I of Directive 67/548/EEC	F	R11	Highly flammable	n/a	n/a	n/a	Annex VI to Directive 1272/2008	Danger	Flam. Sol. 1	H228
							R15	Contact with water liberates extremely flammable gases						Water-react. 2	H261
Manganese	Manganese dioxide	1313-13-9	4.275	n/a	Annex I of Directive 67/548/EEC	Xn	R20/22	Harmful by inhalation and if swallowed	n/a	n/a	n/a	Annex VI to Directive 1272/2008	Warning	Self-heat. 1	H252
														Acute Tox. 4	H332
Nickel	Nickel	7440-02-0	0.00622	n/a	Annex I of Directive 67/548/EEC	Xn	R40	Limited evidence of a carcinogenic effect	Carc. Cat. 3	n/a	n/a	Annex VI to Directive 1272/2008	Warning	Acute Tox. 4	H332
							R43	May cause sensitization by skin contact						Carc. 2	H351
Selenium	Selenium	7782-49-2	0.0015	n/a	Annex I of Directive 67/548/EEC	T	R23/25	Toxic by inhalation and if swallowed	n/a	n/a	n/a	Annex VI to Directive 1272/2008	Danger	Skin Sens. 1	H317
							R33	Danger of cumulative effects						Acute Tox. 3	H331
							R53	May cause long-term effects in the aquatic environment						STOT RE 2	H373
													Acute Chronic 4	H413	

Hazardous Waste Classification Worksheet

Box J: Waste Composition details (revised 31st August 2004)

					Classification according to EU Directives 67/548/EEC or 1999/45/EC						Classification according to Regulation (EC) No 1272/2008				
Substance	Assumed Compound	CAS No.	% w/w ^{NOTE 1}	Flash Point (°C)	Source Data	EU Hazard	Risk Phrase	Classification	Carcinogen Group No.	Toxic for Reproduction Category	Mutagenic Category	Source Data	Signal Word	Hazard Class & Category Code	Hazard Statement Code
Total Sulphate	-	-	0.251	n/a	Annex I of Directive 67/548/EEC			This substance is not classified as dangerous according to Directive 67/548/EEC						Not a hazardous substance or mixture according to Regulation (EC) No. 1272/2008	
Vanadium	Vanadium pentoxide	1314-62-1	0.0608	n/a	Annex I of Directive 67/548/EEC		R63	Possible risk of harm to the unborn child	n/a	Repr. Cat. 3;	Muta. Cat. 3;	Annex VI to Directive 1272/2008	Danger	Muta. 2	H341
							R68	Possible risk of irreversible effects						Repr. 2	H361d
							T	R48/23 Toxic; danger of serious damage to health by prolonged exposure through inhalation						STOT RE 1	H372
							Xn	R20/22 Harmful by inhalation and if swallowed						Acute Tox. 4	H332
							Xi	R37 Irritating to respiratory system						Acute Tox. 4	H302
	N	R51/53 Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment	STOT SE 3	H335											
Water Soluble Boron	Boron	7440-42-8	0.00097	n/a	Sigma Aldrich	Xn	R22	Harmful if swallowed	n/a	n/a	n/a	Sigma Aldrich	Warning	Acute Tox. 4	H302
Zinc	Zinc oxide	1314-13-2	0.1826	n/a	Annex I of Directive 67/548/EEC				n/a	n/a	n/a	Annex VI to Directive 1272/2008	Warning	Aquatic Acute 1	H400
						N	R50/53	Very toxic to aquatic organisms and may cause long-term effects in the aquatic environment						Aquatic Chronic 1	H410
Chloride	Hydrogen Chloride	7647-01-0	0.1099	n/a	Annex I of Directive 67/548/EEC				n/a	n/a	n/a	Annex VI to Directive 1272/2008	Danger	Press. Gas	H331
						C	R35	Causes severe burns						Acute Tox. 3	H314
Naphthalene	Naphthalene	91-20-3	-	n/a	Annex I of Directive 67/548/EEC				Carc. Cat. 3;	n/a	n/a	Annex VI to Directive 1272/2008	Warning	Carc. 2	H351
						Xn	R22	Harmful if swallowed						Acute Tox. 4	H302
						N	R50/53	Very toxic to aquatic organisms and may cause long-term effects in the aquatic environment						Aquatic Acute 1	H400
Acenaphthylene	Acenaphthylene	208-96-8	-	122.0	Sigma Aldrich				n/a	n/a	n/a	Sigma Aldrich	Warning	Acute Tox. 4	H302
						Xn	R36/37/38	Irritating to eyes, respiratory system and skin.						Skin Irrit. 2	H315
														Eye Irrit. 2	H319
Phenanthrene	Phenanthrene, disn. Residues	122070-78-4	0.000018	n/a	Annex I of Directive 67/548/EEC				Carc. Cat. 2;	n/a	n/a	Annex VI to Directive 1272/2008	Danger	STOT SE 3	H335
						T	R45	May cause cancer						Carc. 1B	H350
Anthracene	Anthracene	120-12-7	-	121.0	Sigma Aldrich				Carc. Cat. 3;	n/a	n/a	Sigma Aldrich	Warning	Skin Irrit. 2	H315
						N	R50/53	Very toxic to aquatic organisms and may cause long-term effects in the aquatic environment						Eye Irrit. 2	H319
Fluoranthene	Benzo[k]fluorene	206-44-0	0.00002	198.0	Sigma Aldrich				n/a	n/a	n/a	Sigma Aldrich	Warning	STOT SE 3	H335
						Xn	R22	Harmful if swallowed						Acute Tox. 4	H302
Pyrene	Benzo[def]phenanthrene	129-00-0	0.000016	> 200.0	Sigma Aldrich				n/a	n/a	n/a	Sigma Aldrich	Warning	Aquatic Acute 1	H400
						N	R50/53	Very toxic to aquatic organisms and may cause long-term effects in the aquatic environment						Aquatic Chronic 1	H410
Benzo(a)anthracene	Benz(a)anthracene	56-55-3	0.00001	n/a	Annex I of Directive 67/548/EEC				Carc. Cat. 2	n/a	n/a	Annex VI to Directive 1272/2008	Danger	Carc. 1B	H350
														Aquatic Acute 1	H400
														Aquatic Chronic 1	H410
Chrysene	Chrysene	218-01-9	0.00001	n/a	Annex I of Directive 67/548/EEC				Carc. Cat. 2	n/a	Muta. Cat. 3;	Annex VI to Directive 1272/2008	Danger	Carc. 1B	H350
														Muta. 2	H341
														Aquatic Acute 1	H400
Benzo(bk)fluoranthene	benzo(k)fluoranthene	207-08-9	0.000017	n/a	Annex I of Directive 67/548/EEC				Carc. Cat. 2;	n/a	n/a	Annex VI to Directive 1272/2008	Danger	Aquatic Chronic 1	H410
						N	R50/53	Very toxic to aquatic organisms and may cause long-term effects in the aquatic environment						Carc. 1B	H350
Benzo(a)pyrene	benzo(a)pyrene	50-32-8	0.000009	n/a	Annex I of Directive 67/548/EEC				Carc. Cat. 2;	Repr. Cat. 2	Muta. Cat. 2;	Annex VI to Directive 1272/2008	Danger	R45	May cause cancer
														R46	May cause heritable genetic damage
														R60	May impair fertility
														R61	May cause harm to the unborn child
														R43	May cause sensitisation by skin contact
					N	R50/53	Very toxic to aquatic organisms and may cause long-term effects in the aquatic environment						Aquatic Acute 1	H400	
														Aquatic Chronic 1	H410

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Box J: Waste Composition details (revised 31st August 2004)

					Classification according to EU Directives 67/548/EEC or 1999/45/EC							Classification according to Regulation (EC) No 1272/2008								
Substance	Assumed Compound	CAS No.	% w/w ^{NOTE 1}	Flash Point (°C)	Source Data	EU Hazard	Risk Phrase	Classification	Carcinogen Group No.	Toxic for Reproduction Category	Mutagenic Category	Source Data	Signal Word	Hazard Class & Category Code	Hazard Statement Code					
Indeno(1,2,3-cd)pyrene	Indeno[1,2,3-cd]pyrene	193-39-5	0.000006	n/a	Sigma Aldrich	Xn	R40	Limited evidence of a carcinogenic effect	Carc. Cat. 2;	n/a	n/a	Sigma Aldrich	Warning	Carc 2	H351					
Dibenzo(ah)anthracene	dibenz[a,h]anthracene	53-70-3	-	n/a	Annex I of Directive 67/548/EEC	T	R45	May cause cancer	Carc. Cat. 2;	n/a	n/a	Annex VI to Directive 1272/2008	Danger	Carc. 1B	H350					
						N	R50/53	Very toxic to aquatic organisms and may cause long-term effects in the aquatic environment						Aquatic Acute 1	H400	Aquatic Chronic 1	H410			
Benzo(ghi)perylene	Benzo(ghi)perylene	191-24-2	0.000005	n/a	Sigma Aldrich	N	R50/53	Very toxic to aquatic organisms and may cause long-term adverse effects in the aquatic environment	Carc. Cat. 3;	n/a	n/a	Sigma Aldrich	Warning	Aquatic Acute 1	H400					
						T	R45	May cause cancer						Aquatic Chronic 1	H410	Carc. 1B	H350			
Benzo(b)fluoranthene	Benzo(b)fluoranthene	205-99-2	0.000012	n/a	Sigma Aldrich	N	R50/53	Very toxic to aquatic organisms and may cause long-term effects in the aquatic environment	Carc. Cat. 2;	n/a	n/a	Sigma Aldrich	Danger	Aquatic Acute 1	H400					
						T	R45	May cause cancer						Aquatic Chronic 1	H410	Carc. 1B	H350			
Benzo(k)fluoranthene	benzo(k)fluoranthene	207-08-9	0.000005	n/a	Annex I of Directive 67/548/EEC	T	R45	May cause cancer	Carc. Cat. 2;	n/a	n/a	Annex VI to Directive 1272/2008	Danger	Carc. 1B	H350					
						N	R50/53	Very toxic to aquatic organisms and may cause long-term effects in the aquatic environment						Aquatic Acute 1	H400	Aquatic Chronic 1	H410			
Mineral Oil (C8-C40)	Mineral Oil	8042-47-5	-	> 112 °C	Sigma Aldrich	This substance is not classified as dangerous according to Directive 67/548/EEC						Not a hazardous substance or mixture according to Regulation (EC) No. 1272/2008								
Total aromatics C5-35	Aromatic hydrocarbons	90989-41-6	-	n/a	Annex I of Directive 67/548/EEC	T	R45	May cause cancer	Carc. Cat. 2;	n/a	n/a	Annex VI to Directive 1272/2008	Danger	Carc. 1B	H350					
						T	R45	May cause cancer						Fam. Gas 1	H220					
Total aliphatics C5-35	Distillates (petroleum),	68477-35-0	-	n/a	Annex I of Directive 67/548/EEC	T	R46	May cause heritable genetic damage	Carc. Cat. 2;	n/a	Muta. Cat. 2;	Annex VI to Directive 1272/2008	Danger	Press. Gas	H350					
																			Carc. 1A	H340
Total 12 PCBs	polychlorobiphenyls; PCB	1336-36-3	-	n/a	Annex I of Directive 67/548/EEC	Xn	R33	Danger of cumulative effects	n/a	n/a	n/a	Annex VI to Directive 1272/2008	Warning	STOT RE 2	H373					
						N	R50/53	Very toxic to aquatic organisms and may cause long-term effects in the aquatic environment						Aquatic Acute 1	H400	Aquatic Chronic 1	H410			
Total 7 PCBs	polychlorobiphenyls; PCB	1336-36-3	-	n/a	Annex I of Directive 67/548/EEC	Xn	R33	Danger of cumulative effects	n/a	n/a	n/a	Annex VI to Directive 1272/2008	Warning	STOT RE 2	H373					
						N	R50/53	Very toxic to aquatic organisms and may cause long-term effects in the aquatic environment						Aquatic Acute 1	H400	Aquatic Chronic 1	H410			
Thiocyanate	thiocyanic acid	463-56-9	-	n/a	Annex I of Directive 67/548/EEC	Xn	R20/21/22	Harmful by inhalation, in contact with skin and if swallowed	n/a	n/a	n/a	Annex VI to Directive 1272/2008	Warning	Acute Tox. 4	H332					
																			Acute Tox. 4	H312
						N	R52/53	Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment						Acute Tox. 4	H302	Aquatic Chronic 3	H412			

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Box K: Waste Composition Details		
Properties with Thresholds (Box K1)		
Property	Threshold	Total in Waste
	(% w/w)	(% w/w)
Flash Point < 55 °C		0
Very Toxic	> 0.1	0.0005
Toxic	> 3	0.1727
Harmful	> 25	4.510
Corrosive with Risk Phrase R35	>1	0.110
Corrosive with Risk Phrase R34	> 5	0.0
Irritant with Risk Phrase R41	> 10	0.0
Irritant with Risk Phrase R36, R37, R38	> 20	0.061
Carcinogen Category 1 or 2	> 0.1	0.0006
Carcinogen Category 3	> 1	0.0062
Toxic for Reproduction Category 1 and 2 with Risk Phrases R60, R61	> 0.5	0.0288
Toxic for Reproduction Category 3 with Risk Phrases R62, R63	> 5	0.0899
Mutagenic Category 1 and 2 with Risk Phrase R46	> 0.1	0.00001
Mutagenic Category 3 with Risk Phrase R68	> 1	0.0611
Properties without thresholds (Box K2)		
Property	Total (% w/w) in waste	
Explosive	0	
Oxidising	0	
Infectious	0	
Ecotoxic	0.818	
Residuary Hazardous property	0	

Final EWC Code		
L	Final EWC Code	Possibly 10 02 01 or 10 02 02 with hazardous components detected
M	Final EWC Description	Refer to Section 3.1 of Report

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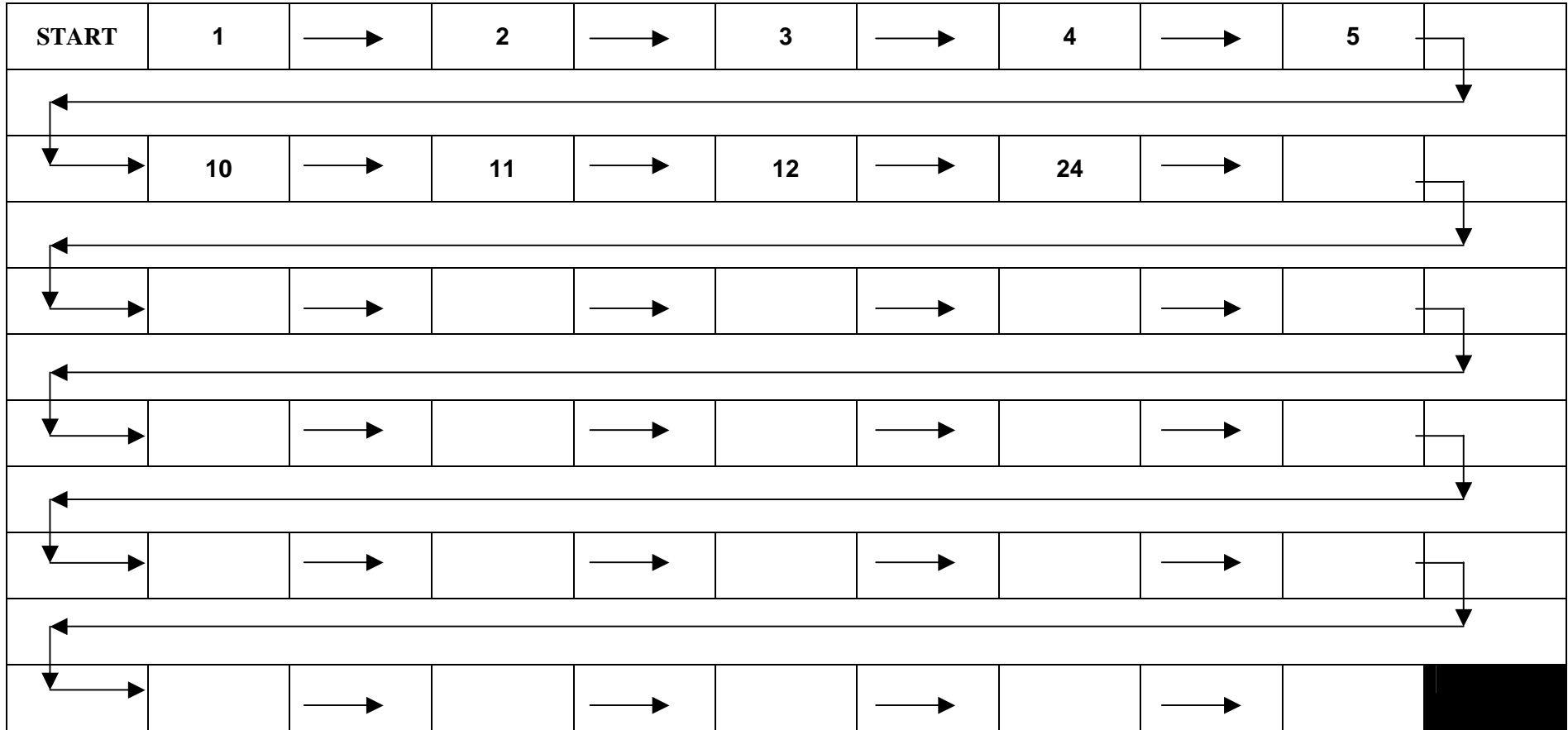
Note 1:	
Very Toxic, those with an EU Hazard Phrase of T+ under EU Directives 67/548/EEC or 1999/45/EC or those with R-phrases of R26, R27, R28 and combined risk phrases with or without R39	Beryllium, Cadmium,
Toxic, those with an EU Hazard Phrase of T under EU Directives 67/548/EEC or 1999/45/EC or those with R-phrases of R23, R24, R25 and combined risk phrases with or without R39 or R48	Beryllium, Cadmium, Selenium, Vanadium, Chloride,
Harmful, those with an EU Hazard Phrase of Xn under Directive 67/548/EEC or 1999/45/EC or those with R-phrases of R20, R21, R22, R65, R68 and combined risk phrases with or without R48	Barium, Copper, Lead, Manganese, (Nickel), Vanadium, Water Soluble Boron, Fluoroanthene, (Indeno(1,2,3-cd)pyrene),
Corrosive with Risk Phrase R35	Chloride,
Corrosive with Risk Phrase R34	No parameters identified
Irritant with Risk Phrase R41	No parameters identified
Irritant with Risk Phrase R36, R37, R38	Beryllium, Vanadium,
Carcinogen Category 1 or 2 are those with R-phrases R45 or R49	Beryllium, Cadmium, Phenanthrene, Benzo(a)anthracene, Chrysene, Benzo(bk)fluoranthene, Benzo(a)pyrene, Benzo(b)fluoranthene, Benzo(k)fluoranthene,
Carcinogen Category 3 are those with R-phrase R40	Nickel, Indeno(1,2,3-cd)pyrene
Toxic for Reproduction Category 1 and 2 with Risk Phrases R60, R61	Lead, Benzo(a)pyrene,
Toxic for Reproduction Category 3 with Risk Phrases R62, R63	Cadmium, Lead, Vanadium,
Mutagenic Category 1 and 2 with Risk Phrase R46	Benzo(a)pyrene, Total Aliphatics
Mutagenic Category 3 with Risk Phrase R68	Cadmium, Total Sulphate, Vanadium,
Explosive (with R-phrases R2, R3 or related r-phrases)	No parameters identified
Oxidising (with R-phrases R7, R8, R9)	No parameters identified
Infectious	No parameters identified
Ecotoxic (with R-phrases R50, R51, R52, R53 Aquatic Env and R54, R55, R56, R57, R58 for Non-Aquatic Env) & combined risk phrases	Cadmium, Chromium, Copper, Lead, Selenium, Vanadium, Zinc, Fluoroanthene, Pyrene, Benzo(a)anthracene, Chrysene, Benzo(bk)fluoranthene, Benzo(a)pyrene, Benzo(ghi)perylene, Benzo(b)fluoranthene, Benzo(k)fluoranthene,

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Ecotoxic (Based on Thresholds in WM2)			
R59	> 0.1 %	No parameters identified	
		Cadmium, Copper, Lead, Zinc, Pyrene, Benzo(a)anthracene, Chrysene, Benzo(bk)fluoranthene, Benzo(a)pyrene, Benzo(ghi)perylene, Benzo(b)fluoranthene, Benzo(k)fluoranthene,	0.255
R50-53	> 0.25%		
R51-53	> 2.5%	Vanadium	0.0608
R50 or R52 or R53 or R52-53	> 25%	Chromium, Fluoranthene, Selenium	0.5023
		No parameters identified	0.818

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Box N - Route Map - Insert the tab numbers as you are directed to them (not applicable to computer tool)



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SECOND SCHEDULE: PART III (Waste Management Act 1996)

Properties of Waste which render it hazardous

There is set out in each paragraph of this Part a general term denoting a particular property of waste which renders it hazardous, followed by an explanation of such general term by reference to a description of substances or preparations which possess the particular property.

"Explosive": substances or preparations which may explode under the effect of flame or which are more sensitive to shocks or friction than dinitrobenzene.

"Oxidizing": substances or preparations which exhibit highly exothermic reactions when in contact with other substances, particularly flammable substances.

"Highly flammable":

- (a) liquid substances or preparations having a flash point below 21°C (including extremely flammable liquids), or
- (b) substances or preparations which may become hot and finally catch fire in contact with air at ambient temperature without any application of energy, or
- (c) solid substances or preparations which may readily catch fire after brief contact with a source of ignition and which continue to burn or to be consumed after removal of the source of ignition, or
- (d) gaseous substances or preparations which are flammable in air at normal pressure, or
- (e) substances or preparations which, in contact with water or damp air, evolve highly flammable gases in dangerous quantities.

"Flammable": liquid substances or preparations having a flash point of not less than 21°C and not more than 55°C.

"Irritant": non-corrosive substances or preparations which, through immediate, prolonged or repeated contact with the skin or mucous membrane, can cause inflammation.

"Harmful": substances or preparations which, if they are inhaled or ingested or if they penetrate the skin, may involve limited health risks.

"Toxic": substances or preparations (including very toxic substances or preparations) which, if they are inhaled or ingested or if they penetrate the skin, may cause serious, acute or chronic health risks or death.

"Carcinogenic": substances or preparations which, if they are inhaled or ingested or if they penetrate the skin, may induce cancer or increase its incidence.

"Corrosive": substances or preparations which may destroy living tissue on contact.

"Infectious": substances containing viable micro-organisms or their toxins which are known or reliably believed to cause disease in humans or other living organisms.

"Teratogenic": substances or preparations which, if they are inhaled or ingested or if they penetrate the skin, may induce non-hereditary congenital malformations or increase their incidence.

"Mutagenic": substances or preparations which, if they are inhaled or ingested or if they penetrate the skin, may induce hereditary genetic defects or increase their incidence.

"Ecotoxic": substances or preparations which present or may present immediate or delayed risks for one or more sectors of the environment.

"Residuary hazardous property":

- (a) substances or preparations which release toxic or very toxic gases in contact with water, air or an acid, or
- (b) substances or preparations capable by any means, after being disposed of, of yielding another substance which possesses any property referred to in this or any other paragraph of this Part.

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Box No.	Information Required	Information	
<i>Company Details</i>			
A	Company Name	Cork County Council	
	Company Address	Haulbowline Island, County Cork	
	Date	06/02/2013	
	IPC or Waste License Number (if applicable)	Not yet applicable	
	Contact Person	Cormac O'Suilleabhain	
	Waste Description	Slag - Borehole BH303, 5.0m - 6.0m	
<i>European Waste Catalogue/Hazardous Waste List</i>			
B	Possible EWC Codes		Asterisk Yes / No <input type="checkbox"/> / <input checked="" type="checkbox"/>
		10 02 01	<input type="checkbox"/> / <input checked="" type="checkbox"/>
		10 02 02	<input type="checkbox"/> / <input checked="" type="checkbox"/>
		Refer to Section 3.1 of Report	
C	Six-Digit EWC Code	Not Applicable	Asterisk Yes / No <input type="checkbox"/> / <input type="checkbox"/>
D	EWC Description	Not Applicable	
<i>CI</i>	<i>Mirror Entry Code (if applicable)</i>	Not Applicable	Asterisk Yes / No <input type="checkbox"/> / <input type="checkbox"/>
<i>DI</i>	<i>Mirror Entry Description (if applicable)</i>	Not Applicable	
E	Is this waste classified as hazardous waste according to HWL?	Mirror Entry	<input type="checkbox"/>
		No	<input checked="" type="checkbox"/>
		Yes	<input type="checkbox"/>

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Category I Waste (Box F)

- 1. Anatomical substances, hospital or other clinical waste.
- 2. Pharmaceutical, medicinal or veterinary compounds.
- 3. Wood preservatives.
- 4. Biocides or phyto-pharmaceutical substances.
- 5. Residue from substances employed as solvents.
- 6. Halogenated organic substances not employed as solvents, excluding inert polymerized materials.
- 7. Tempering salts containing cyanides.
- 8. Mineral oils or oily substances (including cutting sludges).
- 9. Mixtures or emulsions of oil and water or hydrocarbon and water.
- 10. Substances containing polychlorinated biphenyls or polychlorinated terphenyls (including dielectrics).
- 11. Tarry materials arising from refining, distillation or any pyrolytic treatment (including still bottoms).
- 12. Inks, dyes, pigments, paints, lacquers or varnishes.
- 13. Resins, latex, plasticizers, glues or adhesives.
- 14. Chemical substances arising from research and development or teaching activities (including laboratory residues) which are not identified or are new and whose effects on humans or the environment are not known.
- 15. Pyrotechnics or other explosive materials.
- 16. Photographic chemicals or processing materials.
- 17. Any material contaminated with any congener of polychlorinated dibenzo-furan.
- 18. Any material contaminated with any congener of polychlorinated dibenzo-p-dioxin.

Category II Waste (Box G)

- 19. Animal or vegetable soaps, fats or waxes.
- 20. Non-halogenated organic substances not employed as solvents.
- 21. Inorganic substances without metals or metal compounds.
- 22. Ashes or cinders.
- 23. Soil, sand or clay (including dredging spoils).
- 24. Non-cyanidic tempering salts.
- 25. Metallic dust or powder.
- 26. Spent catalyst materials.
- 27. Liquids or sludges containing metals or metal compounds.
- 28. Residue (other than scrubber sludges, sludges from water purification plants and sewage sludges (untreated or unsuitable for use in agriculture)) from pollution control operations (including baghouse dusts).
- 29. Scrubber sludges.
- 30. Sludges from water purification plants.
- 31. Decarbonization residue.
- 32. Ion-exchange column residue.
- 33. Sewage sludges, untreated or unsuitable for use in agriculture.
- 34. Residue from cleaning of tanks or equipment.
- 35. Contaminated equipment.
- 36. Contaminated containers (including packaging and gas cylinders).
- 37. Batteries or other electrical cells.
- 38. Vegetable oils.
- 39. Materials resulting from the selective collection of waste from households.
- 40. Any other waste.

Hazardous Waste Classification Worksheet (Revised 31st August 2004)

Category II Constituents (Box H)

- | | |
|---|--|
| <input type="checkbox"/> 41. Beryllium or beryllium compounds. | <input type="checkbox"/> 71. Azides. |
| <input type="checkbox"/> 42. Vanadium compounds. | <input type="checkbox"/> 72. Polychlorinated biphenyls or polychlorinated terphenyls. |
| <input type="checkbox"/> 43. Chromium (VI) compounds. | <input type="checkbox"/> 73. Pharmaceutical or veterinary compounds. |
| <input type="checkbox"/> 44. Cobalt compounds. | <input type="checkbox"/> 74. Biocides or phyto-pharmaceutical substances (including pesticides). |
| <input type="checkbox"/> 45. Nickel compounds. | <input type="checkbox"/> 75. Infectious substances. |
| <input type="checkbox"/> 46. Copper compounds. | <input type="checkbox"/> 76. Creosotes. |
| <input type="checkbox"/> 47. Zinc compounds. | <input type="checkbox"/> 77. Isocyanates or thiocyanates. |
| <input type="checkbox"/> 48. Arsenic or arsenic compounds. | <input type="checkbox"/> 78. Organic cyanides (including nitriles). |
| <input type="checkbox"/> 49. Selenium or selenium compounds. | <input type="checkbox"/> 79. Phenols or phenol compounds. |
| <input type="checkbox"/> 50. Silver compounds. | <input type="checkbox"/> 80. Halogenated solvents. |
| <input type="checkbox"/> 51. Cadmium or cadmium compounds. | <input type="checkbox"/> 81. Organic solvents, excluding halogenated solvents. |
| <input type="checkbox"/> 52. Tin compounds. | <input type="checkbox"/> 82. Organohalogen compounds, excluding inert polymerized materials and other substances referred to in this Part. |
| <input type="checkbox"/> 53. Antimony or antimony compounds. | <input type="checkbox"/> 83. Aromatic compounds; polycyclic and heterocyclic organic compounds. |
| <input type="checkbox"/> 54. Tellurium or tellurium compounds. | <input type="checkbox"/> 84. Aliphatic amines. |
| <input type="checkbox"/> 55. Barium compounds, excluding barium sulphate. | <input type="checkbox"/> 85. Aromatic amines. |
| <input type="checkbox"/> 56. Mercury or mercury compounds. | <input type="checkbox"/> 86. Ethers. |
| <input type="checkbox"/> 57. Thallium or thallium compounds. | <input type="checkbox"/> 87. Substances of an explosive character, excluding those referred to elsewhere in this Part. |
| <input type="checkbox"/> 58. Lead or lead compounds. | <input type="checkbox"/> 88. Sulphur organic compounds. |
| <input type="checkbox"/> 59. Inorganic sulphides. | <input type="checkbox"/> 89. Any congener of polychlorinated dibenzo-furan. |
| <input type="checkbox"/> 60. Inorganic fluorine compounds, excluding calcium fluoride. | <input type="checkbox"/> 90. Any congener of polychlorinated dibenzo-p-dioxin. |
| <input type="checkbox"/> 61. Inorganic cyanides. | <input type="checkbox"/> 91. Hydrocarbons and their oxygen, nitrogen or sulphur compounds not otherwise referred to in this Part. |
| <input type="checkbox"/> 62. Any of the following alkaline or alkaline earth metals, namely, lithium, sodium, potassium, calcium, magnesium in uncombined form. | |
| <input type="checkbox"/> 63. Acidic solutions or acids in solid form. | |
| <input type="checkbox"/> 64. Basic solutions or bases in solid form. | |
| <input type="checkbox"/> 65. Asbestos (dust or fibres). | |
| <input type="checkbox"/> 66. Phosphorus: phosphorus compounds, excluding mineral phosphates. | |
| <input type="checkbox"/> 67. Metal carbonyls. | |
| <input type="checkbox"/> 68. Peroxides. | |
| <input type="checkbox"/> 69. Chlorates. | |
| <input type="checkbox"/> 70. Perchlorates. | |

Hazardous Waste Classification Worksheet (Revised 31st August 2004)

<i>Box I: Property Test Results and Waste Classification</i>					
Property	Property Testing			Waste Classification	
	Test Code	Title of Test	Results	Hazard (s)	Risk Phrase (s)
Explosive					
Oxidising					
Flammable					
Irritant/ Corrosive		NOT APPLICABLE			
Harmful/Toxic					
Carcinogenic					
Infectious	No test methods available for this property				
Toxic for Reproduction					
Mutagenic					
Ecotoxic					
Residuary hazardous property					

Hazardous Waste Classification Worksheet

Box J: Waste Composition details (revised 31st August 2004)

					Classification according to EU Directives 67/548/EEC or 1999/45/EC					Classification according to Regulation (EC) No 1272/2008					
Substance	Assumed Compound	CAS No.	% w/w <small>NOTE 1</small>	Flash Point (°C)	Source Data	EU Hazard	Risk Phrase	Classification	Carcinogen Group No.	Toxic for Reproduction Category	Mutagenic Category	Source Data	Signal Word	Hazard Class & Category Code	Hazard Statement Code
Aluminium	Aluminium Powder (pyrophoric)	7429-90-5	1.98	n/a not data available as per Sigma Aldrich MSDS	Annex I of Directive 67/548/EEC	F	R15	Contact with water liberates extremely flammable gases	n/a	n/a	n/a	Annex VI to Directive 1272/2008	Danger	Water-react. 2	H261
							R17	Spontaneously flammable in air						Pyr. Sol. 1	H250
Antimony	Antimony Compounds	n/a	-	n/a	Annex I of Directive 67/548/EEC	N	R20/22	Harmful by inhalation and if swallowed	n/a	n/a	n/a	Annex VI to Directive 1272/2008	Warning	Acute Tox. 4	H332
							R51/53	Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment						Acute Tox. 4	H302
Arsenic	Arsenic	7440-38-2	-	n/a	Annex I of Directive 67/548/EEC	T	R23/25	Toxic by inhalation and if swallowed	n/a	na	n/a	Annex VI to Directive 1272/2008	Danger	Acute Tox. 3	H331
							R50/53	Very toxic to aquatic organisms and may cause long-term effects in the aquatic environment						Acute Tox. 3	H301
Barium	Barium Salts	n/a	0.0681	n/a	Annex I of Directive 67/548/EEC	Xn	R20/22	Harmful by inhalation and if swallowed	n/a	n/a	n/a	Annex VI to Directive 1272/2008	Warning	Acute Tox. 4	H332
														Acute Tox. 4	H302
Beryllium	Beryllium	7440-41-7	0.00024	n/a	Annex I of Directive 67/548/EEC	T	R49	May cause cancer by inhalation.	Carc. Cat. 2;	n/a	n/a	Annex VI to Directive 1272/2008	Danger	Acute Tox. 4	H332
							R26	Also very toxic by inhalation						Carc. 1B	H350i
							R25	Also toxic if swallowed.						Acute Tox. 2 *	H330
							R48/23	Also toxic: danger of serious damage to health by prolonged exposure through inhalation						Acute Tox. 3 *	H301
							R36/37/38	Irritating to eyes, respiratory system and skin						STOT RE 1	H372
R43	May cause sensitization by skin contact	Eye Irrit. 2	H319												
Cadmium	cadmium (non-pyrophoric)/ cadmium oxide (nonpyrophoric)	7440-43-9/ 1306-19-0	0.0001	n/a	Annex I of Directive 67/548/EEC	T	R48/23/25	Toxic, danger or serious damage to health by prolonged exposure through inhalation and if swallowed	Carc. Cat. 2;	Repr. Cat. 3;	Muta. Cat. 3;	Annex VI to Directive 1272/2008	Danger	STOT SE 3	H335
							R26	Also very toxic by inhalation						Skin Irrit. 2	H315
							R50/53	Very toxic to aquatic organisms and may cause long-term effects in the aquatic environment						Skin Sens. 1	H317
							R68	Possible risk of irreversible damage						Carc. 1B	H350
							R62	Possible risk of impaired fertility						Muta. 2	H341
Calcium	Calcium	7440-70-2	16.12	n/a not data available as per Sigma Aldrich MSDS	Annex I of Directive 67/548/EEC	F	R15	Contact with water liberates extremely flammable gases	n/a	n/a	n/a	Annex VI to Directive 1272/2008	Danger	Water-react. 2	H261
							R63	Possible risk of harm to the unborn child						Repr. 2	H361fd
							R48/23/25	Toxic, danger or serious damage to health by prolonged exposure through inhalation and if swallowed						Acute Tox. 2	H330
							R26	Also very toxic by inhalation						STOT RE 1	H372
							R50/53	Very toxic to aquatic organisms and may cause long-term effects in the aquatic environment						Aquatic Acute 1	H400
Hexavalent Chromium	Chromium (VI) compounds	n/a	-	n/a	Annex I of Directive 67/548/EEC	N	R49	May cause cancer by inhalation.	Carc. Cat. 2	n/a	n/a	Annex VI to Directive 1272/2008	Danger	Carc. 1B	H350i
							R43	May cause sensitization by skin contact						Skin Sens. 1	H317
							R50/53	Very toxic to aquatic organisms and may cause long-term effects in the aquatic environment						Aquatic Acute 1	H400
Chromium	Chromium	7440-47-3	0.4996	n/a	Sigma Aldrich	N	R50	Very toxic to aquatic organisms	n/a	n/a	n/a	Sigma Aldrich	Warning	Aquatic Chronic 1	H410
							R22	Harmful if swallowed						Acute Tox. 4 *	H302
Copper	Copper (I) Oxide	1317-39-1	0.0734	n/a	Annex I of Directive 67/548/EEC	N	R50/53	Very toxic to aquatic organisms and may cause long-term effects in the aquatic environment	n/a	n/a	n/a	Annex VI to Directive 1272/2008	Warning	Aquatic Acute 1	H400
														Aquatic Chronic 1	H410
Lead	Lead Compounds	n/a	0.0103	n/a	Annex I of Directive 67/548/EEC	Xn	R61	May cause harm to the unborn child	n/a	Repr. Cat. 1; Repr. Cat. 3;	n/a	Annex VI to Directive 1272/2008	Danger	Repr. 1A	H360Df
							R62	Possible risk of impaired fertility						Acute Tox. 4	H332
							R20/22	Harmful by inhalation and if swallowed						STOT RE 2	H372
							R33	Danger of cumulative effects						Aquatic Acute 1	H373
Magnesium	Magnesium, powder or turnings	n/a	2.522	n/a not data available as per Sigma Aldrich MSDS	Annex I of Directive 67/548/EEC	F	R11	Highly flammable	n/a	n/a	n/a	Annex VI to Directive 1272/2008	Danger	Flam. Sol. 1	H228
							R15	Contact with water liberates extremely flammable gases						Water-react. 2	H261
Manganese	Manganese dioxide	1313-13-9	4.152	n/a	Annex I of Directive 67/548/EEC	Xn	R20/22	Harmful by inhalation and if swallowed	n/a	n/a	n/a	Annex VI to Directive 1272/2008	Warning	Self-heat. 1	H252
														Acute Tox. 4	H332
Nickel	Nickel	7440-02-0	0.01418	n/a	Annex I of Directive 67/548/EEC	Xn	R40	Limited evidence of a carcinogenic effect	Carc. Cat. 3	n/a	n/a	Annex VI to Directive 1272/2008	Warning	Carc. 2	H351
							R43	May cause sensitization by skin contact						Skin Sens. 1	H317
Selenium	Selenium	7782-49-2	0.0015	n/a	Annex I of Directive 67/548/EEC	T	R23/25	Toxic by inhalation and if swallowed	n/a	n/a	n/a	Annex VI to Directive 1272/2008	Danger	Acute Tox. 3	H331
							R33	Danger of cumulative effects						Acute Tox. 3	H301
							R53	May cause long-term effects in the aquatic environment						STOT RE 2	H373
														Aquatic Chronic 4	H413

Hazardous Waste Classification Worksheet

Box J: Waste Composition details (revised 31st August 2004)

					Classification according to EU Directives 67/548/EEC or 1999/45/EC							Classification according to Regulation (EC) No 1272/2008			
Substance	Assumed Compound	CAS No.	% w/w <small>NOTE 1</small>	Flash Point (°C)	Source Data	EU Hazard	Risk Phrase	Classification	Carcinogen Group No.	Toxic for Reproduction Category	Mutagenic Category	Source Data	Signal Word	Hazard Class & Category Code	Hazard Statement Code
Indeno(1,2,3-cd)pyrene	Indeno[1,2,3-cd]pyrene	193-39-5	-	n/a	Sigma Aldrich	Xn	R40	Limited evidence of a carcinogenic effect	Carc. Cat. 2;	n/a	n/a	Sigma Aldrich	Warning	Carc. 2	H351
Dibenzo(ah)anthracene	dibenzo[a,h]anthracene	53-70-3	-	n/a	Annex I of Directive 67/548/EEC	T	R45	May cause cancer	Carc. Cat. 2;	n/a	n/a	Annex VI to Directive 1272/2008	Danger	Carc. 1B	H350
						N	R50/53	Very toxic to aquatic organisms and may cause long-term effects in the aquatic environment						Aquatic Acute 1	H400
Benzo(ghi)perylene	Benzo[ghi]perylene	191-24-2	-	n/a	Sigma Aldrich	N	R50/53	Very toxic to aquatic organisms and may cause long-term adverse effects in the aquatic environment	Carc. Cat. 3;	n/a	n/a	Sigma Aldrich	Warning	Aquatic Acute 1	H400
						T	R45	May cause cancer						Aquatic Chronic 1	H410
Benzo(b)fluoranthene	Benzo[b]fluoranthene	205-99-2	0.000005	n/a	Sigma Aldrich	N	R50/53	Very toxic to aquatic organisms and may cause long-term effects in the aquatic environment	Carc. Cat. 2;	n/a	n/a	Sigma Aldrich	Danger	Aquatic Acute 1	H400
														Aquatic Chronic 1	H410
Benzo(k)fluoranthene	benzo[k]fluoranthene	207-08-9	-	n/a	Annex I of Directive 67/548/EEC	T	R45	May cause cancer	Carc. Cat. 2;	n/a	n/a	Annex VI to Directive 1272/2008	Danger	Carc. 1B	H350
						N	R50/53	Very toxic to aquatic organisms and may cause long-term effects in the aquatic environment						Aquatic Acute 1	H400
Mineral Oil (C8-C40)	Mineral Oil	8042-47-5	-	> 112 °C	Sigma Aldrich	This substance is not classified as dangerous according to Directive 67/548/EEC						Not a hazardous substance or mixture according to Regulation (EC) No. 1272/2008			
Total aromatics C5-35	Aromatic hydrocarbons	90989-41-6	-	n/a	Annex I of Directive 67/548/EEC	T	R45	May cause cancer	Carc. Cat. 2;	n/a	n/a	Annex VI to Directive 1272/2008	Danger	Carc. 1B	H350
						R45	May cause cancer	Fiam. Gas 1						H220	
Total aliphatics C5-35	Distillates (petroleum),	68477-35-0	-	n/a	Annex I of Directive 67/548/EEC	T	R46	May cause heritable genetic damage	Carc. Cat. 2;	n/a	Muta. Cat. 2;	Annex VI to Directive 1272/2008	Danger	Press. Gas	H350
														Carc. 1A	H340
Total 12 PCBs	polychlorobiphenyls, PCB	1336-36-3	-	n/a	Annex I of Directive 67/548/EEC	Xn	R33	Danger of cumulative effects	n/a	n/a	n/a	Annex VI to Directive 1272/2008	Warning	STOT RE 2	H373
						N	R50/53	Very toxic to aquatic organisms and may cause long-term effects in the aquatic environment						Aquatic Acute 1	H400
Total 7 PCBs	polychlorobiphenyls, PCB	1336-36-3	-	n/a	Annex I of Directive 67/548/EEC	Xn	R33	Danger of cumulative effects	n/a	n/a	n/a	Annex VI to Directive 1272/2008	Warning	STOT RE 2	H373
						N	R50/53	Very toxic to aquatic organisms and may cause long-term effects in the aquatic environment						Aquatic Acute 1	H400
Thiocyanate	thiocyanic acid	463-56-9	-	n/a	Annex I of Directive 67/548/EEC	Xn	R20/21/22	Harmful by inhalation, in contact with skin and if swallowed	n/a	n/a	n/a	Annex VI to Directive 1272/2008	Warning	Aquatic Chronic 1	H410
														Acute Tox. 4	H332
						N	R52/53	Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment						Acute Tox. 4	H302

Hazardous Waste Classification Worksheet (Revised 31st August 2004)

Box K: Waste Composition Details		
Properties with Thresholds (Box K1)		
Property	Threshold	Total in Waste
	(% w/w)	(% w/w)
Flash Point < 55 °C		0
Very Toxic	> 0.1	0.0003
Toxic	> 3	0.168
Harmful	> 25	4.365
Corrosive with Risk Phrase R35	>1	0.120
Corrosive with Risk Phrase R34	> 5	0.000
Irritant with Risk Phrase R41	> 10	0.000
Irritant with Risk Phrase R36, R37, R38	> 20	0.046
Carcinogen Category 1 or 2	> 0.1	0.0004
Carcinogen Category 3	> 1	0.014
Toxic for Reproduction Category 1 and 2 with Risk Phrases R60, R61	> 0.5	0.010
Toxic for Reproduction Category 3 with Risk Phrases R62, R63	> 5	0.056
Mutagenic Category 1 and 2 with Risk Phrase R46	> 0.1	0.000
Mutagenic Category 3 with Risk Phrase R68	> 1	0.0456
Properties without thresholds (Box K2)		
Property	Total (% w/w) in waste	
Explosive	0	
Oxidising	0	
Infectious	0	
Ecotoxic	0.7049	
Residuary Hazardous property	0	

Final EWC Code		
L	Final EWC Code	Possibly 10 02 01 or 10 02 02 with no hazardous components detected
M	Final EWC Description	Refer to Section 3.1 of Report

Hazardous Waste Classification Worksheet (Revised 31st August 2004)

Note 1:	
Very Toxic, those with an EU Hazard Phrase of T+ under EU Directives 67/548/EEC or 1999/45/EC or those with R-phrases of R26, R27, R28 and combined risk phrases with or without R39	Beryllium, Cadmium,
Toxic, those with an EU Hazard Phrase of T under EU Directives 67/548/EEC or 1999/45/EC or those with R-phrases of R23, R24, R25 and combined risk phrases with or without R39 or R48	Arsenic, Beryllium, Cadmium, Selenium, Vanadium, Chloride,
Harmful, those with an EU Hazard Phrase of Xn under Directive 67/548/EEC or 1999/45/EC or those with R-phrases of R20, R21, R22, R65, R68 and combined risk phrases with or without R48	Antimony, Barium, Copper, Lead, Manganese, (Nickel), Vanadium, Naphthalene, Acenaphthylene, (Anthracene), Fluoroanthene, (Indeno(1,2,3-cd)pyrene), (Total 12 PCBs & Total 7 PCBs), Thiocyanate,
Corrosive with Risk Phrase R35	Chloride,
Corrosive with Risk Phrase R34	Total Sulphate,
Irritant with Risk Phrase R41	No parameters identified
Irritant with Risk Phrase R36, R37, R38	Beryllium, Vanadium, Acenaphthylene, Anthracene
Carcinogen Category 1 or 2 are those with R-phrases R45 or R49	Beryllium, Cadmium, Hexavalent Chromium, Total Sulphate, Phenanthrene, Benzo(a)anthracene, Chrysene, Benzo(bk)fluoranthene, Benzo(a)pyrene, Dibenzo(ah)anthracene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Total Aromatics, Total Aliphatics,
Carcinogen Category 3 are those with R-phrase R40	Nickel, Naphthalene, Indeno(1,2,3-cd)pyrene
Toxic for Reproduction Category 1 and 2 with Risk Phrases R60, R61	Lead, Benzo(a)pyrene,
Toxic for Reproduction Category 3 with Risk Phrases R62, R63	Cadmium, Lead, Vanadium,
Mutagenic Category 1 and 2 with Risk Phrase R46	Benzo(a)pyrene, Total Aliphatics
Mutagenic Category 3 with Risk Phrase R68	Cadmium, Total Sulphate, Vanadium,
Explosive (with R-phrases R2, R3 or related r-phrases)	No parameters identified
Oxidising (with R-phrases R7, R8, R9)	No parameters identified
Infectious	No parameters identified
Ecotoxic (with R-phrases R50, R51, R52, R53 Aquatic Env and R54, R55, R56, R57, R58 for Non-Aquatic Env) & combined risk phrases	Arsenic, Cadmium, Hexavalent Chromium, Chromium, Copper, Lead, Selenium, Vanadium, Zinc, Naphthalene, Anthracene, Fluoroanthene, Pyrene, Benzo(a)anthracene, Chrysene, Benzo(bk)fluoranthene, Benzo(a)pyrene, Dibenzo(ghi)perylene, Benzo(b)fluoranthene, Benzo(k)fluoranthene,, Total 12 PCBs, Total 7 PCBs, Thiocyanate

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Ecotoxic (Based on Thresholds in WM2)			
R59	> 0.1 %	No parameters identified	
R50-53	> 0.25%	Cadmium, Copper, Lead, Vanadium, Zinc, Pyrene, Chrysene, Benzo(bk)fluoranthene, Benzo(b)fluoranthene,	0.16
R51-53	> 2.5%	Vanadium	0.0455
R50 or R52 or R53 or R52-53	> 25%	Chromium, Fluoranthene, Selenium	0.5010

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SECOND SCHEDULE: PART III (Waste Management Act 1996)

Properties of Waste which render it hazardous

There is set out in each paragraph of this Part a general term denoting a particular property of waste which renders it hazardous, followed by an explanation of such general term by reference to a description of substances or preparations which possess the particular property.

"Explosive": substances or preparations which may explode under the effect of flame or which are more sensitive to shocks or friction than dinitrobenzene.

"Oxidizing": substances or preparations which exhibit highly exothermic reactions when in contact with other substances, particularly flammable substances.

"Highly flammable":

- (a) liquid substances or preparations having a flash point below 21°C (including extremely flammable liquids), or
- (b) substances or preparations which may become hot and finally catch fire in contact with air at ambient temperature without any application of energy, or
- (c) solid substances or preparations which may readily catch fire after brief contact with a source of ignition and which continue to burn or to be consumed after removal of the source of ignition, or
- (d) gaseous substances or preparations which are flammable in air at normal pressure, or
- (e) substances or preparations which, in contact with water or damp air, evolve highly flammable gases in dangerous quantities.

"Flammable": liquid substances or preparations having a flash point of not less than 21°C and not more than 55°C.

"Irritant": non-corrosive substances or preparations which, through immediate, prolonged or repeated contact with the skin or mucous membrane, can cause inflammation.

"Harmful": substances or preparations which, if they are inhaled or ingested or if they penetrate the skin, may involve limited health risks.

"Toxic": substances or preparations (including very toxic substances or preparations) which, if they are inhaled or ingested or if they penetrate the skin, may cause serious, acute or chronic health risks or death.

"Carcinogenic": substances or preparations which, if they are inhaled or ingested or if they penetrate the skin, may induce cancer or increase its incidence.

"Corrosive": substances or preparations which may destroy living tissue on contact.

"Infectious": substances containing viable micro-organisms or their toxins which are known or reliably believed to cause disease in humans or other living organisms.

"Teratogenic": substances or preparations which, if they are inhaled or ingested or if they penetrate the skin, may induce non-hereditary congenital malformations or increase their incidence.

"Mutagenic": substances or preparations which, if they are inhaled or ingested or if they penetrate the skin, may induce hereditary genetic defects or increase their incidence.

"Ecotoxic": substances or preparations which present or may present immediate or delayed risks for one or more sectors of the environment.

"Residuary hazardous property":

- (a) substances or preparations which release toxic or very toxic gases in contact with water, air or an acid, or
- (b) substances or preparations capable by any means, after being disposed of, of yielding another substance which possesses any property referred to in this or any other paragraph of this Part.

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Box No.	Information Required	Information	
Company Details			
A	Company Name	Cork County Council	
	Company Address	Haulbowline Island, County Cork	
	Date	06/02/2013	
	IPC or Waste License Number (if applicable)	Not yet applicable	
	Contact Person	Cormac O'Suilleabhain	
	Waste Description	Slag - Borehole BH304, 2.0m	
European Waste Catalogue/Hazardous Waste List			
B	Possible EWC Codes		Asterisk Yes / No
		10 02 01	<input type="checkbox"/> / <input checked="" type="checkbox"/>
		10 02 02	<input type="checkbox"/> / <input checked="" type="checkbox"/>
		Refer to Section 3.1 of Report	
C	Six-Digit EWC Code	Not Applicable	Asterisk Yes / No <input type="checkbox"/> / <input type="checkbox"/>
D	EWC Description	Not Applicable	
<i>CI</i>	Mirror Entry Code (if applicable)	Not Applicable	Asterisk Yes / No <input type="checkbox"/> / <input type="checkbox"/>
<i>DI</i>	Mirror Entry Description (if applicable)	Not Applicable	
E	Is this waste classified as hazardous waste according to HWL?	Mirror Entry	<input type="checkbox"/>
		No	<input checked="" type="checkbox"/>
		Yes	<input type="checkbox"/>

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Category I Waste (Box F)

- 1. Anatomical substances, hospital or other clinical waste.
- 2. Pharmaceutical, medicinal or veterinary compounds.
- 3. Wood preservatives.
- 4. Biocides or phyto-pharmaceutical substances.
- 5. Residue from substances employed as solvents.
- 6. Halogenated organic substances not employed as solvents, excluding inert polymerized materials.
- 7. Tempering salts containing cyanides.
- 8. Mineral oils or oily substances (including cutting sludges).
- 9. Mixtures or emulsions of oil and water or hydrocarbon and water.
- 10. Substances containing polychlorinated biphenyls or polychlorinated terphenyls (including dielectrics).
- 11. Tarry materials arising from refining, distillation or any pyrolytic treatment (including still bottoms).
- 12. Inks, dyes, pigments, paints, lacquers or varnishes.
- 13. Resins, latex, plasticizers, glues or adhesives.
- 14. Chemical substances arising from research and development or teaching activities (including laboratory residues) which are not identified or are new and whose effects on humans or the environment are not known.
- 15. Pyrotechnics or other explosive materials.
- 16. Photographic chemicals or processing materials.
- 17. Any material contaminated with any congener of polychlorinated dibenzo-furan.
- 18. Any material contaminated with any congener of polychlorinated dibenzo-p-dioxin.

Category II Waste (Box G)

- 19. Animal or vegetable soaps, fats or waxes.
- 20. Non-halogenated organic substances not employed as solvents.
- 21. Inorganic substances without metals or metal compounds.
- 22. Ashes or cinders.
- 23. Soil, sand or clay (including dredging spoils).
- 24. Non-cyanidic tempering salts.
- 25. Metallic dust or powder.
- 26. Spent catalyst materials.
- 27. Liquids or sludges containing metals or metal compounds.
- 28. Residue (other than scrubber sludges, sludges from water purification plants and sewage sludges (untreated or unsuitable for use in agriculture)) from pollution control operations (including baghouse dusts).
- 29. Scrubber sludges.
- 30. Sludges from water purification plants.
- 31. Decarbonization residue.
- 32. Ion-exchange column residue.
- 33. Sewage sludges, untreated or unsuitable for use in agriculture.
- 34. Residue from cleaning of tanks or equipment.
- 35. Contaminated equipment.
- 36. Contaminated containers (including packaging and gas cylinders).
- 37. Batteries or other electrical cells.
- 38. Vegetable oils.
- 39. Materials resulting from the selective collection of waste from households.
- 40. Any other waste.

Hazardous Waste Classification Worksheet (Revised 31st August 2004)

Category II Constituents (Box H)

- | | |
|---|--|
| <input type="checkbox"/> 41. Beryllium or beryllium compounds. | <input type="checkbox"/> 71. Azides. |
| <input type="checkbox"/> 42. Vanadium compounds. | <input type="checkbox"/> 72. Polychlorinated biphenyls or polychlorinated terphenyls. |
| <input type="checkbox"/> 43. Chromium (VI) compounds. | <input type="checkbox"/> 73. Pharmaceutical or veterinary compounds. |
| <input type="checkbox"/> 44. Cobalt compounds. | <input type="checkbox"/> 74. Biocides or phyto-pharmaceutical substances (including pesticides). |
| <input type="checkbox"/> 45. Nickel compounds. | <input type="checkbox"/> 75. Infectious substances. |
| <input type="checkbox"/> 46. Copper compounds. | <input type="checkbox"/> 76. Creosotes. |
| <input type="checkbox"/> 47. Zinc compounds. | <input type="checkbox"/> 77. Isocyanates or thiocyanates. |
| <input type="checkbox"/> 48. Arsenic or arsenic compounds. | <input type="checkbox"/> 78. Organic cyanides (including nitriles). |
| <input type="checkbox"/> 49. Selenium or selenium compounds. | <input type="checkbox"/> 79. Phenols or phenol compounds. |
| <input type="checkbox"/> 50. Silver compounds. | <input type="checkbox"/> 80. Halogenated solvents. |
| <input type="checkbox"/> 51. Cadmium or cadmium compounds. | <input type="checkbox"/> 81. Organic solvents, excluding halogenated solvents. |
| <input type="checkbox"/> 52. Tin compounds. | <input type="checkbox"/> 82. Organohalogen compounds, excluding inert polymerized materials and other substances referred to in this Part. |
| <input type="checkbox"/> 53. Antimony or antimony compounds. | <input type="checkbox"/> 83. Aromatic compounds; polycyclic and heterocyclic organic compounds. |
| <input type="checkbox"/> 54. Tellurium or tellurium compounds. | <input type="checkbox"/> 84. Aliphatic amines. |
| <input type="checkbox"/> 55. Barium compounds, excluding barium sulphate. | <input type="checkbox"/> 85. Aromatic amines. |
| <input type="checkbox"/> 56. Mercury or mercury compounds. | <input type="checkbox"/> 86. Ethers. |
| <input type="checkbox"/> 57. Thallium or thallium compounds. | <input type="checkbox"/> 87. Substances of an explosive character, excluding those referred to elsewhere in this Part. |
| <input type="checkbox"/> 58. Lead or lead compounds. | <input type="checkbox"/> 88. Sulphur organic compounds. |
| <input type="checkbox"/> 59. Inorganic sulphides. | <input type="checkbox"/> 89. Any congener of polychlorinated dibenzo-furan. |
| <input type="checkbox"/> 60. Inorganic fluorine compounds, excluding calcium fluoride. | <input type="checkbox"/> 90. Any congener of polychlorinated dibenzo-p-dioxin. |
| <input type="checkbox"/> 61. Inorganic cyanides. | <input type="checkbox"/> 91. Hydrocarbons and their oxygen, nitrogen or sulphur compounds not otherwise referred to in this Part. |
| <input type="checkbox"/> 62. Any of the following alkaline or alkaline earth metals, namely, lithium, sodium, potassium, calcium, magnesium in uncombined form. | |
| <input type="checkbox"/> 63. Acidic solutions or acids in solid form. | |
| <input type="checkbox"/> 64. Basic solutions or bases in solid form. | |
| <input type="checkbox"/> 65. Asbestos (dust or fibres). | |
| <input type="checkbox"/> 66. Phosphorus: phosphorus compounds, excluding mineral phosphates. | |
| <input type="checkbox"/> 67. Metal carbonyls. | |
| <input type="checkbox"/> 68. Peroxides. | |
| <input type="checkbox"/> 69. Chlorates. | |
| <input type="checkbox"/> 70. Perchlorates. | |

Hazardous Waste Classification Worksheet (Revised 31st August 2004)

<i>Box I: Property Test Results and Waste Classification</i>					
Property	Property Testing			Waste Classification	
	Test Code	Title of Test	Results	Hazard (s)	Risk Phrase (s)
Explosive					
Oxidising					
Flammable					
Irritant/ Corrosive		NOT APPLICABLE			
Harmful/Toxic					
Carcinogenic					
Infectious	No test methods available for this property				
Toxic for Reproduction					
Mutagenic					
Ecotoxic					
Residuary hazardous property					

Hazardous Waste Classification Worksheet

Box J: Waste Composition details (revised 31st August 2004)

					Classification according to EU Directives 67/548/EEC or 1999/45/EC							Classification according to Regulation (EC) No 1272/2008			
Substance	Assumed Compound	CAS No.	% w/w ^{NOTE 1}	Flash Point (°C)	Source Data	EU Hazard	Risk Phrase	Classification	Carcinogen Group No.	Toxic for Reproduction Category	Mutagenic Category	Source Data	Signal Word	Hazard Class & Category Code	Hazard Statement Code
Aluminium	Aluminium Powder (pyrophoric)	7429-90-5	2.103	n/a not data available as per Sigma Aldrich MSDS	Annex I of Directive 67/548/EEC	F	R15	Contact with water liberates extremely flammable gases	n/a	n/a	n/a	Annex VI to Directive 1272/2008	Danger	Water-react. 2	H261
							R17	Spontaneously flammable in air						Pyr. Sol. 1	H250
Antimony	Antimony Compounds	n/a	-	n/a	Annex I of Directive 67/548/EEC	Xn	R20/22	Harmful by inhalation and if swallowed	n/a	n/a	n/a	Annex VI to Directive 1272/2008	Warning	Acute Tox. 4	H332
						N	R51/53	Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment						Acute Tox. 4	H302
Arsenic	Arsenic	7440-38-2	0.00083	n/a	Annex I of Directive 67/548/EEC	T	R23/25	Toxic by inhalation and if swallowed	n/a	na	n/a	Annex VI to Directive 1272/2008	Danger	Acute Tox. 3	H331
						N	R50/53	Very toxic to aquatic organisms and may cause long-term effects in the aquatic environment						Acute Tox. 3	H301
Barium	Barium Salts	n/a	0.1058	n/a	Annex I of Directive 67/548/EEC	Xn	R20/22	Harmful by inhalation and if swallowed	n/a	n/a	n/a	Annex VI to Directive 1272/2008	Warning	Acute Tox. 4	H332
														Acute Tox. 4	H302
Beryllium	Beryllium	7440-41-7	0.00014	n/a	Annex I of Directive 67/548/EEC	T+	R49	May cause cancer by inhalation.	Carc. Cat. 2;	n/a	n/a	Annex VI to Directive 1272/2008	Danger	Carc. 1B	H350
						T	R26	Also very toxic by inhalation.						Acute Tox. 2 *	H330
							R25	Also toxic if swallowed.						Acute Tox. 3 *	H301
							R48/23	Also toxic; danger of serious damage to health by prolonged exposure through inhalation						STOT RE 1	H372
							R36/37/38	Irritating to eyes, respiratory system and skin						Eye Irrit. 2	H319
							R43	May cause sensitization by skin contact						STOT SE 3	H335
Cadmium	cadmium (non-pyrophoric)/ cadmium oxide (nonpyrophoric)	7440-43-9/ 1306-19-0	0.00099	n/a	Annex I of Directive 67/548/EEC		R45	May cause cancer	Carc. Cat. 2;	Repr. Cat. 3;	Muta. Cat. 3;	Annex VI to Directive 1272/2008	Danger	Carc. 1B	H350
							R68	Possible risk of irreversible damage						Muta. 2	H341
							R62	Possible risk of impaired fertility						Repr. 2	H361fd
							R63	Possible risk of harm to the unborn child						Acute Tox. 2	H330
						T	R48/23/25	Toxic; danger or serious damage to health by prolonged exposure through inhalation and if swallowed.						STOT RE 1	H372
						T+	R26	Also very toxic by inhalation						Acute Acute 1	H400
Calcium	Calcium	7440-70-2	16.27	n/a not data available as per Sigma Aldrich MSDS	Annex I of Directive 67/548/EEC	F	R15	Contact with water liberates extremely flammable gases	n/a	n/a	n/a	Annex VI to Directive 1272/2008	Danger	Water-react. 2	H261
Hexavalent Chromium	Chromium (VI) compounds	n/a	0.00004	n/a	Annex I of Directive 67/548/EEC		R49	May cause cancer by inhalation.	Carc. Cat. 2	n/a	n/a	Annex VI to Directive 1272/2008	Danger	Carc. 1B	H350i
							R43	May cause sensitization by skin contact						Skin Sens. 1	H317
						N	R50/53	Very toxic to aquatic organisms and may cause long-term effects in the aquatic environment						Acute Acute 1	H400
Chromium	Chromium	7440-47-3	0.2306	n/a	Sigma Aldrich	N	R50	Very toxic to aquatic organisms	n/a	n/a	n/a	Sigma Aldrich	Warning	Acute Chronic 1	H410
						Xn	R22	Harmful if swallowed						Acute Tox. 4 *	H302
Copper	Copper (I) Oxide	1317-39-1	0.0426	n/a	Annex I of Directive 67/548/EEC	N	R50/53	Very toxic to aquatic organisms and may cause long-term effects in the aquatic environment	n/a	n/a	n/a	Annex VI to Directive 1272/2008	Warning	Acute Acute 1	H400
														Acute Chronic 1	H410
Lead	Lead Compounds	n/a	0.0737	n/a	Annex I of Directive 67/548/EEC	Xn	R61	May cause harm to the unborn child	n/a	Repr. Cat. 1; Repr. Cat. 3;	n/a	Annex VI to Directive 1272/2008	Danger	Repr. 1A	H360DD
							R62	Possible risk of impaired fertility						Acute Tox. 4	H332
							R20/22	Harmful by inhalation and if swallowed						STOT RE 2	H302
						N	R50/53	Very toxic to aquatic organisms and may cause long-term effects in the aquatic environment						Acute Acute 1	H373
Magnesium	Magnesium, powder or turnings	n/a	2.831	n/a not data available as per Sigma Aldrich MSDS	Annex I of Directive 67/548/EEC	F	R11	Highly flammable	n/a	n/a	n/a	Annex VI to Directive 1272/2008	Danger	Flam. Sol. 1	H228
							R15	Contact with water liberates extremely flammable gases						Water-react. 2	H261
Manganese	Manganese dioxide	1313-13-9	2.868	n/a	Annex I of Directive 67/548/EEC	Xn	R20/22	Harmful by inhalation and if swallowed	n/a	n/a	n/a	Annex VI to Directive 1272/2008	Warning	Self-heat. 1	H252
														Acute Tox. 4	H332
Nickel	Nickel	7440-02-0	0.00757	n/a	Annex I of Directive 67/548/EEC	Xn	R40	Limited evidence of a carcinogenic effect	Carc. Cat. 3	n/a	n/a	Annex VI to Directive 1272/2008	Warning	Acute Tox. 4	H302
							R43	May cause sensitization by skin contact						Carc. 2	H351
Selenium	Selenium	7782-49-2	0.0012	n/a	Annex I of Directive 67/548/EEC	T	R23/25	Toxic by inhalation and if swallowed	n/a	n/a	n/a	Annex VI to Directive 1272/2008	Danger	Skin Sens. 1	H317
							R33	Danger of cumulative effects						Acute Tox. 3	H331
							R53	May cause long-term effects in the aquatic environment						STOT RE 2	H373
													Acute Chronic 4	H413	

Hazardous Waste Classification Worksheet

Box J: Waste Composition details (revised 31st August 2004)

					Classification according to EU Directives 67/548/EEC or 1999/45/EC					Classification according to Regulation (EC) No 1272/2008					
Substance	Assumed Compound	CAS No.	% w/w ^{NOTE 1}	Flash Point (°C)	Source Data	EU Hazard	Risk Phrase	Classification	Carcinogen Group No.	Toxic for Reproduction Category	Mutagenic Category	Source Data	Signal Word	Hazard Class & Category Code	Hazard Statement Code
Total Sulphate	-	-	0.2489	n/a	Annex I of Directive 67/548/EEC			This substance is not classified as dangerous according to Directive 67/548/EEC				Not a hazardous substance or mixture according to Regulation (EC) No. 1272/2008			
Vanadium	Vanadium pentoxide	1314-62-1	0.0357	n/a	Annex I of Directive 67/548/EEC			R63 Possible risk of harm to the unborn child	n/a	Repr. Cat. 3;	Muta. Cat. 3;	Annex VI to Directive 1272/2008	Danger	Muta. 2	H341
								R68 Possible risk of irreversible effects						Rscr. 2	H361d
						T	R48/23	Toxic; danger of serious damage to health by prolonged exposure through inhalation						STOT RE 1	H372
						Xn	R20/22	Harmful by inhalation and if swallowed						Acute Tox. 4	H332
								R37 Irritating to respiratory system						Acute Tox. 4	H302
		R51/53	Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment			STOT SE 3	H335								
Water Soluble Boron	Boron	7440-42-8	0.00054	n/a	Sigma Aldrich	Xn	R22	Harmful if swallowed	n/a	n/a	n/a	Sigma Aldrich	Warning	Acute Chronic 2	H411
														Acute Tox. 4	H302
Zinc	Zinc oxide	1314-13-2	0.5124	n/a	Annex I of Directive 67/548/EEC	N	R50/53	Very toxic to aquatic organisms and may cause long-term effects in the aquatic environment	n/a	n/a	n/a	Annex VI to Directive 1272/2008	Warning	Aquatic Acute 1	H400
														Aquatic Chronic 1	H410
Chloride	Hydrogen Chloride	7647-01-0	0.0151	n/a	Annex I of Directive 67/548/EEC	T	R23	Toxic by inhalation	n/a	n/a	n/a	Annex VI to Directive 1272/2008	Danger	Press. Gas	H331
						C	R35	Causes severe burns						Acute Tox. 3	H314
														Skin Corr. 1A	
Naphthalene	Naphthalene	91-20-3	0.000006	n/a	Annex I of Directive 67/548/EEC	Xn	R40	Limited evidence of a carcinogenic effect	Carc. Cat.3;	n/a	n/a	Annex VI to Directive 1272/2008	Warning	Carc. 2	H351
														Acute Tox. 4	H303
						N	R50/53	Very toxic to aquatic organisms and may cause long-term effects in the aquatic environment						Aquatic Acute 1	H400
														Aquatic Chronic 1	H410
Acenaphthylene	Acenaphthylene	208-96-8	0.000008	122.0	Sigma Aldrich	Xn	R22	Harmful if swallowed	n/a	n/a	n/a	Sigma Aldrich	Warning	Acute Tox. 4	H302
								R36/37/38 Irritating to eyes, respiratory system and skin.						Skin Irrit. 2	H315
														Eye Irrit. 2	H319
														STOT SE 3	H335
Phenanthrene	Phenanthrene, distn. Residues	122070-78-4	0.000049	n/a	Annex I of Directive 67/548/EEC	T	R45	May cause cancer	Carc. Cat. 2;	n/a	n/a	Annex VI to Directive 1272/2008	Danger	Carc. 1B	H350
						Xn	R36/37/38	Irritating to eyes, respiratory system and skin						Skin Irrit. 2	H315
Anthracene	Anthracene	120-12-7	0.000016	121.0	Sigma Aldrich	N	R50/53	Very toxic to aquatic organisms and may cause long-term effects in the aquatic environment	Carc. Cat.3;	n/a	n/a	Sigma Aldrich	Warning	Eye Irrit. 2	H319
														STOT SE 3	H335
														Aquatic Chronic 1	H410
Fluoranthene	Benzo[<i>k</i>]fluorene	206-44-0	0.000112	198.0	Sigma Aldrich	Xn	R22	Harmful if swallowed	n/a	n/a	n/a			Acute Tox. 4	H302
						N	R50	Very toxic to aquatic organisms				Sigma Aldrich	Warning	Aquatic Acute 1	H400
														Aquatic Chronic 1	H410
Pyrene	Benzo[<i>def</i>]phenanthrene	129-00-0	0.000096	> 200.0	Sigma Aldrich	N	R50/53	Very toxic to aquatic organisms and may cause long-term effects in the aquatic environment	n/a	n/a	n/a	Sigma Aldrich	Warning	Aquatic Acute 1	H400
														Aquatic Chronic 1	H410
Benzo(a)anthracene	Benzo(a)anthracene	56-55-3	0.000059	n/a	Annex I of Directive 67/548/EEC	T	R45	May cause cancer	Carc. Cat. 2	n/a	n/a	Annex VI to Directive 1272/2008	Danger	Carc. 1B	H350
						N	R50/53	Very toxic to aquatic organisms and may cause long-term effects in the aquatic environment						Aquatic Acute 1	H400
														Aquatic Chronic 1	H410
Chrysene	Chrysene	218-01-9	0.000063	n/a	Annex I of Directive 67/548/EEC	T	R45	May cause cancer	Carc. Cat. 2	n/a	Muta. Cat. 3;	Annex VI to Directive 1272/2008	Danger	Carc. 1B	H350
								R68 Possible risk of irreversible effects						Muta. 2	H341
						N	R50/53	Very toxic to aquatic organisms and may cause long-term effects in the aquatic environment						Aquatic Acute 1	H400
														Aquatic Chronic 1	H410
Benzo(b)fluoranthene	benzo(k)fluoranthene	207-08-9	0.000127	n/a	Annex I of Directive 67/548/EEC	T	R45	May cause cancer	Carc. Cat. 2;	n/a	n/a	Annex VI to Directive 1272/2008	Danger	Carc. 1B	H350
						N	R50/53	Very toxic to aquatic organisms and may cause long-term effects in the aquatic environment						Aquatic Acute 1	H400
														Aquatic Chronic 1	H410
Benzo(a)pyrene	benzo(a)pyrene	50-32-8	0.000063	n/a	Annex I of Directive 67/548/EEC			R45 May cause cancer	Carc. Cat. 2;	Repr. Cat. 2	Muta. Cat. 2;	Annex VI to Directive 1272/2008	Danger	Carc. 1B	H350
								R46 May cause heritable genetic damage						Muta. 1B	H340
								R60 May impair fertility						Repr. 1B	H360FD
						T	R61	May cause harm to the unborn child						Skin Sens. 1	H317
								R43 May cause sensitisation by skin contact						Aquatic Acute 1	H400
						N	R50/53	Very toxic to aquatic organisms and may cause long-term effects in the aquatic environment						Aquatic Chronic 1	H410

Hazardous Waste Classification Worksheet

Box J: Waste Composition details (revised 31st August 2004)

					Classification according to EU Directives 67/548/EEC or 1999/45/EC					Classification according to Regulation (EC) No 1272/2008					
Substance	Assumed Compound	CAS No.	% w/w ^{NOTE 1}	Flash Point (°C)	Source Data	EU Hazard	Risk Phrase	Classification	Carcinogen Group No.	Toxic for Reproduction Category	Mutagenic Category	Source Data	Signal Word	Hazard Class & Category Code	Hazard Statement Code
Indeno[1,2,3-cd]pyrene	Indeno[1,2,3-cd]pyrene	193-39-5	0.000054	n/a	Sigma Aldrich	Xn	R40	Limited evidence of a carcinogenic effect	Carc. Cat. 2;	n/a	n/a	Sigma Aldrich	Warning	Carc 2	H351
Dibenzo(ah)anthracene	dibenz[a,h]anthracene	53-70-3	0.000014	n/a	Annex I of Directive 67/548/EEC	T	R45	May cause cancer	Carc. Cat. 2;	n/a	n/a	Annex VI to Directive 1272/2008	Danger	Carc. 1B Aquatic Acute 1 Aquatic Chronic 1	H350 H400 H410
Benzo(ghi)perylene	Benzo(ghi)perylene	191-24-2	0.000045	n/a	Sigma Aldrich	N	R50/53	Very toxic to aquatic organisms and may cause long-term adverse effects in the aquatic environment	Carc. Cat. 3;	n/a	n/a	Sigma Aldrich	Warning	Aquatic Acute 1 Aquatic Chronic 1 Car. 1B	H400 H410 H350
Benzo(b)fluoranthene	Benzo(b)fluoranthene	205-99-2	0.000091	n/a	Sigma Aldrich	T	R45	May cause cancer	Carc. Cat. 2;	n/a	n/a	Sigma Aldrich	Danger	Aquatic Acute 1 Aquatic Chronic 1	H400 H410
Benzo(k)fluoranthene	benzo(k)fluoranthene	207-08-9	0.000036	n/a	Annex I of Directive 67/548/EEC	T	R45	May cause cancer	Carc. Cat. 2;	n/a	n/a	Annex VI to Directive 1272/2008	Danger	Car. 1B Aquatic Acute 1 Aquatic Chronic 1	H350 H400 H410
Mineral Oil (C8-C40)	Mineral Oil	8042-47-5	0.0159	> 112 °C	Sigma Aldrich	This substance is not classified as dangerous according to Directive 67/548/EEC						Not a hazardous substance or mixture according to Regulation (EC) No. 1272/2008			
Total aromatics C5-35	Aromatic hydrocarbons	90989-41-6	0.0131	n/a	Annex I of Directive 67/548/EEC	T	R45	May cause cancer	Carc. Cat. 2;	n/a	n/a	Annex VI to Directive 1272/2008	Danger	Car. 1B Flam. Gas 1 Press. Gas	H350 H223 H350
Total aliphatics C5-35	Distillates (petroleum),	68477-35-0	0.0126	n/a	Annex I of Directive 67/548/EEC	T	R46	May cause heritable genetic damage	Carc. Cat. 2;	n/a	Muta. Cat. 2;	Annex VI to Directive 1272/2008	Danger	Car. 1A Muta. 1B	H340 H340
Total 12 PCBs	polychlorobiphenyls; PCB	1336-36-3	0.0000094	n/a	Annex I of Directive 67/548/EEC	Xn	R33	Danger of cumulative effects	n/a	n/a	n/a	Annex VI to Directive 1272/2008	Warning	STOT RE 2 Aquatic Acute 1 Aquatic Chronic 1	H373 H400 H410
Total 7 PCBs	polychlorobiphenyls; PCB	1336-36-3	0.0000296	n/a	Annex I of Directive 67/548/EEC	Xn	R33	Danger of cumulative effects	n/a	n/a	n/a	Annex VI to Directive 1272/2008	Warning	STOT RE 2 Aquatic Acute 1 Aquatic Chronic 1	H373 H400 H410
Thiocyanate	thiocyanic acid	463-56-9	-	n/a	Annex I of Directive 67/548/EEC	Xn	R20/21/22 R32	Harmful by inhalation, in contact with skin and if swallowed Contact with acids liberates very toxic gas	n/a	n/a	n/a	Annex VI to Directive 1272/2008	Warning	Acute Tox. 4 Acute Tox. 4 Acute Tox. 4 Aquatic Chronic 3	H332 H312 H302 H412

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Box K: Waste Composition Details		
Properties with Thresholds (Box K1)		
Property	Threshold	Total in Waste
	(% w/w)	(% w/w)
Flash Point < 55 °C		
Very Toxic	> 0.1	0.001
Toxic	> 3	0.054
Harmful	> 25	3.134
Corrosive with Risk Phrase R35	>1	0.015
Corrosive with Risk Phrase R34	> 5	0.000
Irritant with Risk Phrase R41	> 10	0.000
Irritant with Risk Phrase R36, R37, R38	> 20	0.036
Carcinogen Category 1 or 2	> 0.1	0.027
Carcinogen Category 3	> 1	0.008
Toxic for Reproduction Category 1 and 2 with Risk Phrases R60, R61	> 0.5	0.074
Toxic for Reproduction Category 3 with Risk Phrases R62, R63	> 5	0.110
Mutagenic Category 1 and 2 with Risk Phrase R46	> 0.1	0.013
Mutagenic Category 3 with Risk Phrase R68	> 1	0.0367
Properties without thresholds (Box K2)		
Property	Total (% w/w) in waste	
Explosive	0	
Oxidising	0	
Infectious	0	
Ecotoxic	0.8988	
Residuary Hazardous property	0	

Final EWC Code		
L	Final EWC Code	Possibly 10 02 01 or 10 02 02 with hazardous components identified in the sample
M	Final EWC Description	Refer to European Waste Catalogue & Hazardous Waste List

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Note 1:	
Very Toxic, those with an EU Hazard Phrase of T+ under EU Directives 67/548/EEC or 1999/45/EC or those with R-phrases of R26, R27, R28 and combined risk phrases with or without R39	Beryllium, Cadmium
Toxic, those with an EU Hazard Phrase of T under EU Directives 67/548/EEC or 1999/45/EC or those with R-phrases of R23, R24, R25 and combined risk phrases with or without R39 or R48	Arsenic, Beryllium, Cadmium, Selenium, Vanadium, Chloride,
Harmful, those with an EU Hazard Phrase of Xn under Directive 67/548/EEC or 1999/45/EC or those with R-phrases of R20, R21, R22, R65, R68 and combined risk phrases with or without R48	Barium, Copper, Lead, Manganese, (Nickel), Vanadium, Water Soluble Boron, Naphthalene, Acenaphthylene, (Anthracene), Fluoroanthene, (Indeno(1,2,3-cd)pyrene), (Total 12 PCBs & Total 7 PCBs),
Corrosive with Risk Phrase R35	Chloride,
Corrosive with Risk Phrase R34	No parameters identified
Irritant with Risk Phrase R41	No parameters identified
Irritant with Risk Phrase R36, R37, R38	Beryllium, Vanadium, Acenaphthylene, Anthracene
Carcinogen Category 1 or 2 are those with R-phrases R45 or R49	Beryllium, Cadmium, Hexavalent Chromium, Phenanthrene, Benzo(a)anthracene, Chrysene, Benzo(bk)fluoranthene, Benzo(a)pyrene, Dibenz(ah)anthracene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Total Aromatics, Total Aliphatics,
Carcinogen Category 3 are those with R-phrase R40	Nickel, Naphthalene, Indeno(1,2,3-cd)pyrene
Toxic for Reproduction Category 1 and 2 with Risk Phrases R60, R61	Lead, Benzo(a)pyrene,
Toxic for Reproduction Category 3 with Risk Phrases R62, R63	Cadmium, Lead, Vanadium,
Mutagenic Category 1 and 2 with Risk Phrase R46	Benzo(a)pyrene, Total Aliphatics
Mutagenic Category 3 with Risk Phrase R68	Cadmium, Vanadium
Explosive (with R-phrases R2, R3 or related r-phrases)	No parameters identified
Oxidising (with R-phrases R7, R8, R9)	No parameters identified
Infectious	No parameters identified
Ecotoxic (with R-phrases R50, R51, R52, R53 Aquatic Env and R54, R55, R56, R57, R58 for Non-Aquatic Env) & combined risk phrases	Antimony, Arsenic, Cadmium, Hexavalent Chromium, Chromium, Copper, Lead, Selenium, Vanadium, Zinc, Naphthalene, Anthracene, Fluoranthene, Pyrene, Benzo(a)anthracene, Chrysene, Benzo(bk)fluoranthene, Benzo(a)pyrene, Dibenz(ghi)perylene, Benzo(b)fluoranthene, Benzo(k)fluoranthene,, Total 12 PCBs, Total 7 PCBs, Thiocyanate

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Ecotoxic (Based on Thresholds in WM2)			
R59	> 0.1 %	No parameters identified	
		Arsenic, Cadmium, Hexavalent Chromium, Copper, Lead, Vanadium, Zinc, Naphthalene, Anthracene, Pyrene, Benzo(a)anthracene, Chrysene, Benzo(bk)fluoranthene, Benzo(a)pyrene, Dibenzo(ah)anthracene, Benzo(ghi)perylene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Total 12 PCBs, Total 7 PCBs,	0.63
R50-53	> 0.25%		
R51-53	> 2.5%	Antimony, Vanadium	0.0357
R50 or R52 or R53 or R52-53	> 25%	Chromium, Fluoranthene,	0.23
			0.8988

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SECOND SCHEDULE: PART III (Waste Management Act 1996)

Properties of Waste which render it hazardous

There is set out in each paragraph of this Part a general term denoting a particular property of waste which renders it hazardous, followed by an explanation of such general term by reference to a description of substances or preparations which possess the particular property.

"Explosive": substances or preparations which may explode under the effect of flame or which are more sensitive to shocks or friction than dinitrobenzene.

"Oxidizing": substances or preparations which exhibit highly exothermic reactions when in contact with other substances, particularly flammable substances.

"Highly flammable":

- (a) liquid substances or preparations having a flash point below 21°C (including extremely flammable liquids), or
- (b) substances or preparations which may become hot and finally catch fire in contact with air at ambient temperature without any application of energy, or
- (c) solid substances or preparations which may readily catch fire after brief contact with a source of ignition and which continue to burn or to be consumed after removal of the source of ignition, or
- (d) gaseous substances or preparations which are flammable in air at normal pressure, or
- (e) substances or preparations which, in contact with water or damp air, evolve highly flammable gases in dangerous quantities.

"Flammable": liquid substances or preparations having a flash point of not less than 21°C and not more than 55°C.

"Irritant": non-corrosive substances or preparations which, through immediate, prolonged or repeated contact with the skin or mucous membrane, can cause inflammation.

"Harmful": substances or preparations which, if they are inhaled or ingested or if they penetrate the skin, may involve limited health risks.

"Toxic": substances or preparations (including very toxic substances or preparations) which, if they are inhaled or ingested or if they penetrate the skin, may cause serious, acute or chronic health risks or death.

"Carcinogenic": substances or preparations which, if they are inhaled or ingested or if they penetrate the skin, may induce cancer or increase its incidence.

"Corrosive": substances or preparations which may destroy living tissue on contact.

"Infectious": substances containing viable micro-organisms or their toxins which are known or reliably believed to cause disease in humans or other living organisms.

"Teratogenic": substances or preparations which, if they are inhaled or ingested or if they penetrate the skin, may induce non-hereditary congenital malformations or increase their incidence.

"Mutagenic": substances or preparations which, if they are inhaled or ingested or if they penetrate the skin, may induce hereditary genetic defects or increase their incidence.

"Ecotoxic": substances or preparations which present or may present immediate or delayed risks for one or more sectors of the environment.

"Residuary hazardous property":

- (a) substances or preparations which release toxic or very toxic gases in contact with water, air or an acid, or
- (b) substances or preparations capable by any means, after being disposed of, of yielding another substance which possesses any property referred to in this or any other paragraph of this Part.

Hazardous Waste Classification Worksheet (Revised 31st August 2004)

Box No.	Information Required	Information	
<i>Company Details</i>			
A	Company Name	Cork County Council	
	Company Address	Haulbowline Island, County Cork	
	Date	06/02/2013	
	IPC or Waste License Number (if applicable)	Not yet applicable	
	Contact Person	Cormac O'Suilleabhain	
	Waste Description	Slag - Borehole BH305, 0.8m - 1.2m	
<i>European Waste Catalogue/Hazardous Waste List</i>			
B	Possible EWC Codes		Asterisk Yes / No 10 02 01 <input type="checkbox"/> / <input checked="" type="checkbox"/>
			10 02 02 <input type="checkbox"/> / <input checked="" type="checkbox"/>
			Refer to Section 3.1 of Report
C	Six-Digit EWC Code	Not Applicable	Asterisk Yes / No <input type="checkbox"/> / <input type="checkbox"/>
D	EWC Description	Not Applicable	
<i>CI</i>	<i>Mirror Entry Code (if applicable)</i>	Not Applicable	Asterisk Yes / No <input type="checkbox"/> / <input type="checkbox"/>
<i>DI</i>	<i>Mirror Entry Description (if applicable)</i>	Not Applicable	
E	Is this waste classified as hazardous waste according to HWL?	Mirror Entry <input type="checkbox"/>	
		No <input checked="" type="checkbox"/>	
		Yes <input type="checkbox"/>	

Hazardous Waste Classification Worksheet (Revised 31st August 2004)

Category I Waste (Box F)

- 1. Anatomical substances, hospital or other clinical waste.
- 2. Pharmaceutical, medicinal or veterinary compounds.
- 3. Wood preservatives.
- 4. Biocides or phyto-pharmaceutical substances.
- 5. Residue from substances employed as solvents.
- 6. Halogenated organic substances not employed as solvents, excluding inert polymerized materials.
- 7. Tempering salts containing cyanides.
- 8. Mineral oils or oily substances (including cutting sludges).
- 9. Mixtures or emulsions of oil and water or hydrocarbon and water.
- 10. Substances containing polychlorinated biphenyls or polychlorinated terphenyls (including dielectrics).
- 11. Tarry materials arising from refining, distillation or any pyrolytic treatment (including still bottoms).
- 12. Inks, dyes, pigments, paints, lacquers or varnishes.
- 13. Resins, latex, plasticizers, glues or adhesives.
- 14. Chemical substances arising from research and development or teaching activities (including laboratory residues) which are not identified or are new and whose effects on humans or the environment are not known.
- 15. Pyrotechnics or other explosive materials.
- 16. Photographic chemicals or processing materials.
- 17. Any material contaminated with any congener of polychlorinated dibenzo-furan.
- 18. Any material contaminated with any congener of polychlorinated dibenzo-p-dioxin.

Category II Waste (Box G)

- 19. Animal or vegetable soaps, fats or waxes.
- 20. Non-halogenated organic substances not employed as solvents.
- 21. Inorganic substances without metals or metal compounds.
- 22. Ashes or cinders.
- 23. Soil, sand or clay (including dredging spoils).
- 24. Non-cyanidic tempering salts.
- 25. Metallic dust or powder.
- 26. Spent catalyst materials.
- 27. Liquids or sludges containing metals or metal compounds.
- 28. Residue (other than scrubber sludges, sludges from water purification plants and sewage sludges (untreated or unsuitable for use in agriculture)) from pollution control operations (including baghouse dusts).
- 29. Scrubber sludges.
- 30. Sludges from water purification plants.
- 31. Decarbonization residue.
- 32. Ion-exchange column residue.
- 33. Sewage sludges, untreated or unsuitable for use in agriculture.
- 34. Residue from cleaning of tanks or equipment.
- 35. Contaminated equipment.
- 36. Contaminated containers (including packaging and gas cylinders).
- 37. Batteries or other electrical cells.
- 38. Vegetable oils.
- 39. Materials resulting from the selective collection of waste from households.
- 40. Any other waste.

Hazardous Waste Classification Worksheet (Revised 31st August 2004)

Category II Constituents (Box H)

- | | |
|---|--|
| <input type="checkbox"/> 41. Beryllium or beryllium compounds. | <input type="checkbox"/> 71. Azides. |
| <input type="checkbox"/> 42. Vanadium compounds. | <input type="checkbox"/> 72. Polychlorinated biphenyls or polychlorinated terphenyls. |
| <input type="checkbox"/> 43. Chromium (VI) compounds. | <input type="checkbox"/> 73. Pharmaceutical or veterinary compounds. |
| <input type="checkbox"/> 44. Cobalt compounds. | <input type="checkbox"/> 74. Biocides or phyto-pharmaceutical substances (including pesticides). |
| <input type="checkbox"/> 45. Nickel compounds. | <input type="checkbox"/> 75. Infectious substances. |
| <input type="checkbox"/> 46. Copper compounds. | <input type="checkbox"/> 76. Creosotes. |
| <input type="checkbox"/> 47. Zinc compounds. | <input type="checkbox"/> 77. Isocyanates or thiocyanates. |
| <input type="checkbox"/> 48. Arsenic or arsenic compounds. | <input type="checkbox"/> 78. Organic cyanides (including nitriles). |
| <input type="checkbox"/> 49. Selenium or selenium compounds. | <input type="checkbox"/> 79. Phenols or phenol compounds. |
| <input type="checkbox"/> 50. Silver compounds. | <input type="checkbox"/> 80. Halogenated solvents. |
| <input type="checkbox"/> 51. Cadmium or cadmium compounds. | <input type="checkbox"/> 81. Organic solvents, excluding halogenated solvents. |
| <input type="checkbox"/> 52. Tin compounds. | <input type="checkbox"/> 82. Organohalogen compounds, excluding inert polymerized materials and other substances referred to in this Part. |
| <input type="checkbox"/> 53. Antimony or antimony compounds. | <input type="checkbox"/> 83. Aromatic compounds; polycyclic and heterocyclic organic compounds. |
| <input type="checkbox"/> 54. Tellurium or tellurium compounds. | <input type="checkbox"/> 84. Aliphatic amines. |
| <input type="checkbox"/> 55. Barium compounds, excluding barium sulphate. | <input type="checkbox"/> 85. Aromatic amines. |
| <input type="checkbox"/> 56. Mercury or mercury compounds. | <input type="checkbox"/> 86. Ethers. |
| <input type="checkbox"/> 57. Thallium or thallium compounds. | <input type="checkbox"/> 87. Substances of an explosive character, excluding those referred to elsewhere in this Part. |
| <input type="checkbox"/> 58. Lead or lead compounds. | <input type="checkbox"/> 88. Sulphur organic compounds. |
| <input type="checkbox"/> 59. Inorganic sulphides. | <input type="checkbox"/> 89. Any congener of polychlorinated dibenzo-furan. |
| <input type="checkbox"/> 60. Inorganic fluorine compounds, excluding calcium fluoride. | <input type="checkbox"/> 90. Any congener of polychlorinated dibenzo-p-dioxin. |
| <input type="checkbox"/> 61. Inorganic cyanides. | <input type="checkbox"/> 91. Hydrocarbons and their oxygen, nitrogen or sulphur compounds not otherwise referred to in this Part. |
| <input type="checkbox"/> 62. Any of the following alkaline or alkaline earth metals, namely, lithium, sodium, potassium, calcium, magnesium in uncombined form. | |
| <input type="checkbox"/> 63. Acidic solutions or acids in solid form. | |
| <input type="checkbox"/> 64. Basic solutions or bases in solid form. | |
| <input type="checkbox"/> 65. Asbestos (dust or fibres). | |
| <input type="checkbox"/> 66. Phosphorus: phosphorus compounds, excluding mineral phosphates. | |
| <input type="checkbox"/> 67. Metal carbonyls. | |
| <input type="checkbox"/> 68. Peroxides. | |
| <input type="checkbox"/> 69. Chlorates. | |
| <input type="checkbox"/> 70. Perchlorates. | |

Hazardous Waste Classification Worksheet (Revised 31st August 2004)

<i>Box I: Property Test Results and Waste Classification</i>					
Property	Property Testing			Waste Classification	
	Test Code	Title of Test	Results	Hazard (s)	Risk Phrase (s)
Explosive					
Oxidising					
Flammable					
Irritant/ Corrosive		NOT APPLICABLE			
Harmful/Toxic					
Carcinogenic					
Infectious	No test methods available for this property				
Toxic for Reproduction					
Mutagenic					
Ecotoxic					
Residuary hazardous property					

Hazardous Waste Classification Worksheet (Revised 31st August 2004)

Hazardous Waste Classification Worksheet (Revised 31st August 2004)

Box K: Waste Composition Details		
Properties with Thresholds (Box K1)		
Property	Threshold	Total in Waste
	(% w/w)	(% w/w)
Flash Point < 55 °C		0
Very Toxic	> 0.1	0.001
Toxic	> 3	0.053
Harmful	> 25	4.350
Corrosive with Risk Phrase R35	>1	0.015
Corrosive with Risk Phrase R34	> 5	0.000
Irritant with Risk Phrase R41	> 10	0.000
Irritant with Risk Phrase R36, R37, R38	> 20	0.035
Carcinogen Category 1 or 2	> 0.1	0.001
Carcinogen Category 3	> 1	0.006
Toxic for Reproduction Category 1 and 2 with Risk Phrases R60, R61	> 0.5	0.050
Toxic for Reproduction Category 3 with Risk Phrases R62, R63	> 5	0.086
Mutagenic Category 1 and 2 with Risk Phrase R46	> 0.1	0.000006
Mutagenic Category 3 with Risk Phrase R68	> 1	0.0361
Properties without thresholds (Box K2)		
Property	Total (% w/w) in waste	
Explosive	0	
Oxidising	0	
Infectious	0	
Ecotoxic	0.7587	
Residuary Hazardous property	0	

Final EWC Code		
L	Final EWC Code	Possibly 10 02 01 or 10 02 02 with hazardous components identified in the sample
M	Final EWC Description	Refer to Section 3.1 of Report

Hazardous Waste Classification Worksheet (Revised 31st August 2004)

Note 1:	
Very Toxic, those with an EU Hazard Phrase of T+ under EU Directives 67/548/EEC or 1999/45/EC or those with R-phrases of R26, R27, R28 and combined risk phrases with or without R39	Beryllium, Cadmium,
Toxic, those with an EU Hazard Phrase of T under EU Directives 67/548/EEC or 1999/45/EC or those with R-phrases of R23, R24, R25 and combined risk phrases with or without R39 or R48	Arsenic, Beryllium, Cadmium, Selenium, Vanadium, Chloride,
Harmful, those with an EU Hazard Phrase of Xn under Directive 67/548/EEC or 1999/45/EC or those with R-phrases of R20, R21, R22, R65, R68 and combined risk phrases with or without R48	Barium, Copper, Lead, Manganese, (Nickel), Vanadium, Water Soluble Boron, Fluoroanthene, (Indeno(1,2,3-cd)pyrene),
Corrosive with Risk Phrase R35	Chloride,
Corrosive with Risk Phrase R34	No parameters identified
Irritant with Risk Phrase R41	No parameters identified
Irritant with Risk Phrase R36, R37, R38	Beryllium, Vanadium,
Carcinogen Category 1 or 2 are those with R-phrases R45 or R49	Beryllium, Cadmium, Hexavalent Chromium, Phenanthrene, Benzo(a)anthracene, Chrysene, Benzo(bk)fluoranthene, Benzo(a)pyrene, Benzo(b)fluoranthene, Benzo(k)fluoranthene,
Carcinogen Category 3 are those with R-phrase R40	Nickel, Indeno(1,2,3-cd)pyrene
Toxic for Reproduction Category 1 and 2 with Risk Phrases R60, R61	Lead, Benzo(a)pyrene,
Toxic for Reproduction Category 3 with Risk Phrases R62, R63	Cadmium, Lead, Vanadium,
Mutagenic Category 1 and 2 with Risk Phrase R46	Benzo(a)pyrene,
Mutagenic Category 3 with Risk Phrase R68	Cadmium, Vanadium
Explosive (with R-phrases R2, R3 or related r-phrases)	No parameters identified
Oxidising (with R-phrases R7, R8, R9)	No parameters identified
Infectious	No parameters identified
Ecotoxic (with R-phrases R50, R51, R52, R53 Aquatic Env and R54, R55, R56, R57, R58 for Non-Aquatic Env) & combined risk phrases	Arsenic, Cadmium, Hexavalent Chromium, Chromium, Copper, Lead, Selenium, Vanadium, Zinc, Fluoranthene, Pyrene, Benzo(a)anthracene, Chrysene, Benzo(bk)fluoranthene, Benzo(a)pyrene, Dibenz(ghi)perylene, Benzo(b)fluoranthene, Benzo(k)fluoranthene,

Hazardous Waste Classification Worksheet (Revised 31st August 2004)

Ecotoxic (Based on Thresholds in WM2)			
R59	> 0.1 %	No parameters identified	
		Arsenic, Cadmium, Hexavalent Chromium, Copper, Lead, Zinc, Pyrene, Benzo(a)anthracene, Chrysene, Benzo(bk)fluoranthene, Benzo(a)pyrene, Dibenzo(ah)anthracene, Benzo(ghi)perylene, Benzo(b)fluoranthene, Benzo(k)fluoranthene,	0.465
R50-53	> 0.25%		
R51-53	> 2.5%	Vanadium	0.035
R50 or R52 or R53 or R52-53	> 25%	Chromium, Fluoranthene, Selenium	0.2590
			0.7587

Hazardous Waste Classification Worksheet (Revised 31st August 2004)

SECOND SCHEDULE: PART III (Waste Management Act 1996)

Properties of Waste which render it hazardous

There is set out in each paragraph of this Part a general term denoting a particular property of waste which renders it hazardous, followed by an explanation of such general term by reference to a description of substances or preparations which possess the particular property.

"Explosive": substances or preparations which may explode under the effect of flame or which are more sensitive to shocks or friction than dinitrobenzene.

"Oxidizing": substances or preparations which exhibit highly exothermic reactions when in contact with other substances, particularly flammable substances.

"Highly flammable":

(a) liquid substances or preparations having a flash point below 21°C (including extremely flammable liquids), or

(b) substances or preparations which may become hot and finally catch fire in contact with air at ambient temperature without any application of energy, or

(c) solid substances or preparations which may readily catch fire after brief contact with a source of ignition and which continue to burn or to be consumed after removal of the source of ignition, or

(d) gaseous substances or preparations which are flammable in air at normal pressure, or

(e) substances or preparations which, in contact with water or damp air, evolve highly flammable gases in dangerous quantities.

"Flammable": liquid substances or preparations having a flash point of not less than 21°C and not more than 55°C.

"Irritant": non-corrosive substances or preparations which, through immediate, prolonged or repeated contact with the skin or mucous membrane, can cause inflammation.

"Harmful": substances or preparations which, if they are inhaled or ingested or if they penetrate the skin, may involve limited health risks.

"Toxic": substances or preparations (including very toxic substances or preparations) which, if they are inhaled or ingested or if they penetrate the skin, may cause serious, acute or chronic health risks or death.

"Carcinogenic": substances or preparations which, if they are inhaled or ingested or if they penetrate the skin, may induce cancer or increase its incidence.

"Corrosive": substances or preparations which may destroy living tissue on contact.

"Infectious": substances containing viable micro-organisms or their toxins which are known or reliably believed to cause disease in humans or other living organisms.

"Teratogenic": substances or preparations which, if they are inhaled or ingested or if they penetrate the skin, may induce non-hereditary congenital malformations or increase their incidence.

"Mutagenic": substances or preparations which, if they are inhaled or ingested or if they penetrate the skin, may induce hereditary genetic defects or increase their incidence.

"Ecotoxic": substances or preparations which present or may present immediate or delayed risks for one or more sectors of the environment.

"Residuary hazardous property":

(a) substances or preparations which release toxic or very toxic gases in contact with water, air or an acid, or

(b) substances or preparations capable by any means, after being disposed of, of yielding another substance which possesses any property referred to in this or any other paragraph of this Part.

Hazardous Waste Classification Worksheet (Revised 31st August 2004)

Box No.	Information Required	Information	
<i>Company Details</i>			
A	Company Name	Cork County Council	
	Company Address	Haulbowline Island, County Cork	
	Date	06/02/2013	
	IPC or Waste License Number (if applicable)	Not yet applicable	
	Contact Person	Cormac O'Suilleabhain	
	Waste Description	Slag - Borehole BH307, 4.5m	
<i>European Waste Catalogue/Hazardous Waste List</i>			
B	Possible EWC Codes		Asterisk Yes / No <input type="checkbox"/> / <input checked="" type="checkbox"/>
		10 02 01	<input type="checkbox"/> / <input checked="" type="checkbox"/>
		10 02 02	<input type="checkbox"/> / <input checked="" type="checkbox"/>
		Refer to Section 3.1 of Report	
C	Six-Digit EWC Code	Not Applicable	Asterisk Yes / No <input type="checkbox"/> / <input type="checkbox"/>
D	EWC Description	Not Applicable	
<i>CI</i>	<i>Mirror Entry Code (if applicable)</i>	Not Applicable	Asterisk Yes / No <input type="checkbox"/> / <input checked="" type="checkbox"/>
<i>DI</i>	<i>Mirror Entry Description (if applicable)</i>	Not Applicable	
E	Is this waste classified as hazardous waste according to HWL?	Mirror Entry	<input type="checkbox"/>
		No	<input checked="" type="checkbox"/>
		Yes	<input type="checkbox"/>

Hazardous Waste Classification Worksheet (Revised 31st August 2004)

Category I Waste (Box F)

- 1. Anatomical substances, hospital or other clinical waste.
- 2. Pharmaceutical, medicinal or veterinary compounds.
- 3. Wood preservatives.
- 4. Biocides or phyto-pharmaceutical substances.
- 5. Residue from substances employed as solvents.
- 6. Halogenated organic substances not employed as solvents, excluding inert polymerized materials.
- 7. Tempering salts containing cyanides.
- 8. Mineral oils or oily substances (including cutting sludges).
- 9. Mixtures or emulsions of oil and water or hydrocarbon and water.
- 10. Substances containing polychlorinated biphenyls or polychlorinated terphenyls (including dielectrics).
- 11. Tarry materials arising from refining, distillation or any pyrolytic treatment (including still bottoms).
- 12. Inks, dyes, pigments, paints, lacquers or varnishes.
- 13. Resins, latex, plasticizers, glues or adhesives.
- 14. Chemical substances arising from research and development or teaching activities (including laboratory residues) which are not identified or are new and whose effects on humans or the environment are not known.
- 15. Pyrotechnics or other explosive materials.
- 16. Photographic chemicals or processing materials.
- 17. Any material contaminated with any congener of polychlorinated dibenzo-furan.
- 18. Any material contaminated with any congener of polychlorinated dibenzo-p-dioxin.

Category II Waste (Box G)

- 19. Animal or vegetable soaps, fats or waxes.
- 20. Non-halogenated organic substances not employed as solvents.
- 21. Inorganic substances without metals or metal compounds.
- 22. Ashes or cinders.
- 23. Soil, sand or clay (including dredging spoils).
- 24. Non-cyanidic tempering salts.
- 25. Metallic dust or powder.
- 26. Spent catalyst materials.
- 27. Liquids or sludges containing metals or metal compounds.
- 28. Residue (other than scrubber sludges, sludges from water purification plants and sewage sludges (untreated or unsuitable for use in agriculture)) from pollution control operations (including baghouse dusts).
- 29. Scrubber sludges.
- 30. Sludges from water purification plants.
- 31. Decarbonization residue.
- 32. Ion-exchange column residue.
- 33. Sewage sludges, untreated or unsuitable for use in agriculture.
- 34. Residue from cleaning of tanks or equipment.
- 35. Contaminated equipment.
- 36. Contaminated containers (including packaging and gas cylinders).
- 37. Batteries or other electrical cells.
- 38. Vegetable oils.
- 39. Materials resulting from the selective collection of waste from households.
- 40. Any other waste.

Hazardous Waste Classification Worksheet (Revised 31st August 2004)

Category II Constituents (Box H)

- | | |
|---|--|
| <input type="checkbox"/> 41. Beryllium or beryllium compounds. | <input type="checkbox"/> 71. Azides. |
| <input type="checkbox"/> 42. Vanadium compounds. | <input type="checkbox"/> 72. Polychlorinated biphenyls or polychlorinated terphenyls. |
| <input type="checkbox"/> 43. Chromium (VI) compounds. | <input type="checkbox"/> 73. Pharmaceutical or veterinary compounds. |
| <input type="checkbox"/> 44. Cobalt compounds. | <input type="checkbox"/> 74. Biocides or phyto-pharmaceutical substances (including pesticides). |
| <input type="checkbox"/> 45. Nickel compounds. | <input type="checkbox"/> 75. Infectious substances. |
| <input type="checkbox"/> 46. Copper compounds. | <input type="checkbox"/> 76. Creosotes. |
| <input type="checkbox"/> 47. Zinc compounds. | <input type="checkbox"/> 77. Isocyanates or thiocyanates. |
| <input type="checkbox"/> 48. Arsenic or arsenic compounds. | <input type="checkbox"/> 78. Organic cyanides (including nitriles). |
| <input type="checkbox"/> 49. Selenium or selenium compounds. | <input type="checkbox"/> 79. Phenols or phenol compounds. |
| <input type="checkbox"/> 50. Silver compounds. | <input type="checkbox"/> 80. Halogenated solvents. |
| <input type="checkbox"/> 51. Cadmium or cadmium compounds. | <input type="checkbox"/> 81. Organic solvents, excluding halogenated solvents. |
| <input type="checkbox"/> 52. Tin compounds. | <input type="checkbox"/> 82. Organohalogen compounds, excluding inert polymerized materials and other substances referred to in this Part. |
| <input type="checkbox"/> 53. Antimony or antimony compounds. | <input type="checkbox"/> 83. Aromatic compounds; polycyclic and heterocyclic organic compounds. |
| <input type="checkbox"/> 54. Tellurium or tellurium compounds. | <input type="checkbox"/> 84. Aliphatic amines. |
| <input type="checkbox"/> 55. Barium compounds, excluding barium sulphate. | <input type="checkbox"/> 85. Aromatic amines. |
| <input type="checkbox"/> 56. Mercury or mercury compounds. | <input type="checkbox"/> 86. Ethers. |
| <input type="checkbox"/> 57. Thallium or thallium compounds. | <input type="checkbox"/> 87. Substances of an explosive character, excluding those referred to elsewhere in this Part. |
| <input type="checkbox"/> 58. Lead or lead compounds. | <input type="checkbox"/> 88. Sulphur organic compounds. |
| <input type="checkbox"/> 59. Inorganic sulphides. | <input type="checkbox"/> 89. Any congener of polychlorinated dibenzo-furan. |
| <input type="checkbox"/> 60. Inorganic fluorine compounds, excluding calcium fluoride. | <input type="checkbox"/> 90. Any congener of polychlorinated dibenzo-p-dioxin. |
| <input type="checkbox"/> 61. Inorganic cyanides. | <input type="checkbox"/> 91. Hydrocarbons and their oxygen, nitrogen or sulphur compounds not otherwise referred to in this Part. |
| <input type="checkbox"/> 62. Any of the following alkaline or alkaline earth metals, namely, lithium, sodium, potassium, calcium, magnesium in uncombined form. | |
| <input type="checkbox"/> 63. Acidic solutions or acids in solid form. | |
| <input type="checkbox"/> 64. Basic solutions or bases in solid form. | |
| <input type="checkbox"/> 65. Asbestos (dust or fibres). | |
| <input type="checkbox"/> 66. Phosphorus: phosphorus compounds, excluding mineral phosphates. | |
| <input type="checkbox"/> 67. Metal carbonyls. | |
| <input type="checkbox"/> 68. Peroxides. | |
| <input type="checkbox"/> 69. Chlorates. | |
| <input type="checkbox"/> 70. Perchlorates. | |

Hazardous Waste Classification Worksheet (Revised 31st August 2004)

<i>Box I: Property Test Results and Waste Classification</i>					
Property	Property Testing			Waste Classification	
	Test Code	Title of Test	Results	Hazard (s)	Risk Phrase (s)
Explosive					
Oxidising					
Flammable					
Irritant/ Corrosive		NOT APPLICABLE			
Harmful/Toxic					
Carcinogenic					
Infectious	No test methods available for this property				
Toxic for Reproduction					
Mutagenic					
Ecotoxic					
Residuary hazardous property					

Hazardous Waste Classification Worksheet

Box J: Waste Composition details (revised 31st August 2004)

					Classification according to EU Directives 67/548/EEC or 1999/45/EC								Classification according to Regulation (EC) No 1272/2008			
Substance	Assumed Compound	CAS No.	% w/w ^{NOTE 1}	Flash Point (°C)	Source Data	EU Hazard	Risk Phrase	Classification	Carcinogen Group No.	Toxic for Reproduction Category	Mutagenic Category	Source Data	Signal Word	Hazard Class & Category Code	Hazard Statement Code	
Aluminium	Aluminium Powder (pyrophoric)	7429-90-5	2.317	n/a not data available as per Sigma Aldrich MSDS	Annex I of Directive 67/548/EEC	F	R15	Contact with water liberates extremely flammable gases	n/a	n/a	n/a	Annex VI to Directive 1272/2008	Danger	Water-react. 2	H261	
							R17	Spontaneously flammable in air						Pyr. Sol. 1	H250	
Antimony	Antimony Compounds	n/a	-	n/a	Annex I of Directive 67/548/EEC	Xn	R20/22	Harmful by inhalation and if swallowed	n/a	n/a	n/a	Annex VI to Directive 1272/2008	Warning	Acute Tox. 4	H332	
						N	R51/53	Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment						Acute Tox. 4	H302	
Arsenic	Arsenic	7440-38-2	-	n/a	Annex I of Directive 67/548/EEC	T	R23/25	Toxic by inhalation and if swallowed	n/a	na	n/a	Annex VI to Directive 1272/2008	Danger	Acute Tox. 3	H331	
						N	R50/53	Very toxic to aquatic organisms and may cause long-term effects in the aquatic environment						Acute Tox. 3	H301	
Barium	Barium Salts	n/a	0.0864	n/a	Annex I of Directive 67/548/EEC	Xn	R20/22	Harmful by inhalation and if swallowed	n/a	n/a	n/a	Annex VI to Directive 1272/2008	Warning	Acute Tox. 4	H332	
														Acute Tox. 4	H302	
Beryllium	Beryllium	7440-41-7	0.00017	n/a	Annex I of Directive 67/548/EEC	T+	R49	May cause cancer by inhalation.	Carc. Cat. 2;	n/a	n/a	Annex VI to Directive 1272/2008	Danger	Carc. 1B	H350	
						T	R26	Also very toxic by inhalation.						Acute Tox. 2 *	H330	
							R25	Also toxic if swallowed.						Acute Tox. 3 *	H301	
							R48/23	Also toxic; danger of serious damage to health by prolonged exposure through inhalation						STOT RE 1	H372	
							R36/37/38	Irritating to eyes, respiratory system and skin						Eye Irrit. 2	H319	
							R43	May cause sensitization by skin contact						STOT SE 3	H335	
Cadmium	cadmium (non-pyrophoric)/ cadmium oxide (nonpyrophoric)	7440-43-9/ 1306-19-0	0.00005	n/a	Annex I of Directive 67/548/EEC		R45	May cause cancer	Carc. Cat. 2;	Repr. Cat. 3;	Muta. Cat. 3;	Annex VI to Directive 1272/2008	Danger	Carc. 1B	H350	
							R68	Possible risk of irreversible damage						Muta. 2	H341	
							R62	Possible risk of impaired fertility						Repr. 2	H361D	
							R63	Possible risk of harm to the unborn child						Acute Tox. 2	H330	
						T	R48/23/25	Toxic; danger or serious damage to health to prolonged exposure through inhalation and if swallowed						STOT RE 1	H372	
						T+	R26	Also very toxic by inhalation						Acute Acute 1	H400	
N	R50/53	Very toxic to aquatic organisms and may cause long-term effects in the aquatic environment	Acute Chronic 1	H410												
Calcium	Calcium	7440-70-2	19.59	n/a not data available as per Sigma Aldrich MSDS	Annex I of Directive 67/548/EEC	F	R15	Contact with water liberates extremely flammable gases	n/a	n/a	n/a	Annex VI to Directive 1272/2008	Danger	Water-react. 2	H261	
Hexavalent Chromium	Chromium (VI) compounds	n/a	0.00004	n/a	Annex I of Directive 67/548/EEC		R49	May cause cancer by inhalation.	Carc. Cat. 2	n/a	n/a	Annex VI to Directive 1272/2008	Danger	Carc. 1B	H350	
							R43	May cause sensitization by skin contact						Skin Sens. 1	H317	
						N	R50/53	Very toxic to aquatic organisms and may cause long-term effects in the aquatic environment						Acute Acute 1	H400	
Chromium	Chromium	7440-47-3	0.6731	n/a	Sigma Aldrich	N	R50	Very toxic to aquatic organisms	n/a	n/a	n/a	Sigma Aldrich	Warning	Acute Chronic 1	H410	
Copper	Copper (I) Oxide	1317-39-1	0.033	n/a	Annex I of Directive 67/548/EEC	Xn	R22	Harmful if swallowed	n/a	n/a	n/a	Annex VI to Directive 1272/2008	Warning	Acute Tox. 4 *	H302	
						N	R50/53	Very toxic to aquatic organisms and may cause long-term effects in the aquatic environment						Acute Acute 1	H400	
Lead	Lead Compounds	n/a	0.0068	n/a	Annex I of Directive 67/548/EEC	Xn	R61	May cause harm to the unborn child	n/a	Repr. Cat. 1; Repr. Cat. 3;	n/a	Annex VI to Directive 1272/2008	Danger	Acute Chronic 1	H410	
							R62	Possible risk of impaired fertility						Repr. 1A	H360Df	
Magnesium	Magnesium, powder or turnings	n/a	2.979	n/a not data available as per Sigma Aldrich MSDS	Annex I of Directive 67/548/EEC	F	R11	Highly flammable	n/a	n/a	n/a	Annex VI to Directive 1272/2008	Danger	Acute Tox. 4	H332	
							R15	Contact with water liberates extremely flammable gases						STOT RE 2	H302	
Manganese	Manganese dioxide	1313-13-9	3.938	n/a	Annex I of Directive 67/548/EEC	Xn	R20/22	Harmful by inhalation and if swallowed	n/a	n/a	n/a	Annex VI to Directive 1272/2008	Warning	Acute Acute 1	H400	
														Acute Tox. 4	H332	
Nickel	Nickel	7440-02-0	0.0046	n/a	Annex I of Directive 67/548/EEC	Xn	R40	Limited evidence of a carcinogenic effect	Carc. Cat. 3	n/a	n/a	Annex VI to Directive 1272/2008	Warning	Acute Tox. 4	H302	
							R43	May cause sensitization by skin contact						Carc. 2	H351	
Selenium	Selenium	7782-49-2	0.0015	n/a	Annex I of Directive 67/548/EEC	T	R23/25	Toxic by inhalation and if swallowed	n/a	n/a	n/a	Annex VI to Directive 1272/2008	Danger	Skin Sens. 1	H317	
							R33	Danger of cumulative effects						Acute Tox. 3	H331	
							R53	May cause long-term effects in the aquatic environment						Acute Tox. 3	H301	
													STOT RE 2	H373		
													Acute Chronic 4	H413		

Hazardous Waste Classification Worksheet

Box J: Waste Composition details (revised 31st August 2004)

					Classification according to EU Directives 67/548/EEC or 1999/45/EC					Classification according to Regulation (EC) No 1272/2008							
Substance	Assumed Compound	CAS No.	% w/w ^{NOTE 1}	Flash Point (°C)	Source Data	EU Hazard	Risk Phrase	Classification	Carcinogen Group No.	Toxic for Reproduction Category	Mutagenic Category	Source Data	Signal Word	Hazard Class & Category Code	Hazard Statement Code		
Total Sulphate	-	-	0.4312	n/a	Annex I of Directive 67/548/EEC	This substance is not classified as dangerous according to Directive 67/548/EEC									Not a hazardous substance or mixture according to Regulation (EC) No. 1272/2008		
Vanadium	Vanadium pentoxide	1314-62-1	0.046	n/a	Annex I of Directive 67/548/EEC		R63	Possible risk of harm to the unborn child	n/a	Repr. Cat. 3;	Muta. Cat. 3;	Annex VI to Directive 1272/2008	Danger	Muta. 2	H341		
							R68	Possible risk of irreversible effects						Repr. 2	H361d		
							T	R48/23						Toxic; danger of serious damage to health by prolonged exposure through inhalation	STOT RE 1	H372	
							Xn	R20/22						Harmful by inhalation and if swallowed	Acute Tox. 4	H332	
							Xi	R37						Irritating to respiratory system	Acute Tox. 4	H302	
	N	R51/53	Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment	STOT SE 3	H335												
Water Soluble Boron	Boron	7440-42-8	0.00244	n/a	Sigma Aldrich	Xn	R22	Harmful if swallowed	n/a	n/a	n/a	Sigma Aldrich	Warning	Acute Tox. 4	H302		
Zinc	Zinc oxide	1314-13-2	0.0502	n/a	Annex I of Directive 67/548/EEC		N	R50/53	Very toxic to aquatic organisms and may cause long-term effects in the aquatic environment	n/a	n/a	n/a	Annex VI to Directive 1272/2008	Warning	Aquatic Acute 1	H400	
Chloride	Hydrogen Chloride	7647-01-0	0.1848	n/a	Annex I of Directive 67/548/EEC		T	R23	Toxic by inhalation	n/a	n/a	n/a	Annex VI to Directive 1272/2008	Danger	Press. Gas	H331	
							C	R35	Causes severe burns						Acute Tox. 3	H314	
Naphthalene	Naphthalene	91-20-3	-	n/a	Annex I of Directive 67/548/EEC			R40	Limited evidence of a carcinogenic effect	Carc. Cat. 3;	n/a	n/a	Annex VI to Directive 1272/2008	Warning	Carc. 2	H351	
							Xn	R22	Harmful if swallowed						Acute Tox. 4	H302	
							N	R50/53	Very toxic to aquatic organisms and may cause long-term effects in the aquatic environment						Aquatic Acute 1	H400	
Acenaphthylene	Acenaphthylene	208-96-8	-	122.0	Sigma Aldrich			R22	Harmful if swallowed	n/a	n/a	n/a	Sigma Aldrich	Warning	Acute Tox. 4	H302	
							Xn	R36/37/38	Irritating to eyes, respiratory system and skin.						Skin Irrit. 2	H315	
															Eye Irrit. 2	H319	
Phenanthrene	Phenanthrene, distn. Residues	122070-78-4	0.000003	n/a	Annex I of Directive 67/548/EEC		T	R45	May cause cancer	Carc. Cat. 2;	n/a	n/a	Annex VI to Directive 1272/2008	Danger	Carc. 1B	H350	
							Xn	R36/37/38	Irritating to eyes, respiratory system and skin						Skin Irrit. 2	H315	
Anthracene	Anthracene	120-12-7	-	121.0	Sigma Aldrich			R50/53	Very toxic to aquatic organisms and may cause long-term effects in the aquatic environment	Carc. Cat. 3;	n/a	n/a	Sigma Aldrich	Warning	Eye Irrit. 2	H319	
Fluoranthene	Benzo[<i>k</i>]fluorene	206-44-0	0.000004	198.0	Sigma Aldrich			R22	Harmful if swallowed	n/a	n/a	n/a	Sigma Aldrich	Warning	Acute Tox. 4	H302	
Pyrene	Benzo[<i>def</i>]phenanthrene	129-00-0	0.000003	> 200.0	Sigma Aldrich			R50/53	Very toxic to aquatic organisms and may cause long-term effects in the aquatic environment	n/a	n/a	n/a	Sigma Aldrich	Warning	Aquatic Acute 1	H400	
Benzo(a)anthracene	Benz(a)anthracene	56-55-3	-	n/a	Annex I of Directive 67/548/EEC		T	R45	May cause cancer	Carc. Cat. 2	n/a	n/a	Annex VI to Directive 1272/2008	Danger	Carc. 1B	H350	
							N	R50/53	Very toxic to aquatic organisms and may cause long-term effects in the aquatic environment						Aquatic Acute 1	H400	
Chrysene	Chrysene	218-01-9	0.000005	n/a	Annex I of Directive 67/548/EEC			R45	May cause cancer	Carc. Cat. 2	n/a	Muta. Cat. 3;	Annex VI to Directive 1272/2008	Danger	Carc. 1B	H350	
							T	R68	Possible risk of irreversible effects						Muta. 2	H341	
							N	R50/53	Very toxic to aquatic organisms and may cause long-term effects in the aquatic environment						Aquatic Acute 1	H400	
Benzo(bk)fluoranthene	benzo(k)fluoranthene	207-08-9	0.000011	n/a	Annex I of Directive 67/548/EEC		T	R45	May cause cancer	Carc. Cat. 2;	n/a	n/a	Annex VI to Directive 1272/2008	Danger	Carc. 1B	H350	
							N	R50/53	Very toxic to aquatic organisms and may cause long-term effects in the aquatic environment						Aquatic Acute 1	H400	
Benzo(a)pyrene	benzo(a)pyrene	50-32-8	0.000006	n/a	Annex I of Directive 67/548/EEC			R45	May cause cancer	Carc. Cat. 2;	Repr. Cat. 2	Muta. Cat. 2;	Annex VI to Directive 1272/2008	Danger	Carc. 1B	H350	
								R46	May cause heritable genetic damage						Muta. 1B	H340	
								R60	May impair fertility						Repr. 1B	H360FD	
							T	R61	May cause harm to the unborn child						Skin Sens. 1	H317	
								R43	May cause sensitisation by skin contact						Aquatic Acute 1	H400	
							N	R50/53	Very toxic to aquatic organisms and may cause long-term effects in the aquatic environment						Aquatic Chronic 1	H410	

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Box J: Waste Composition details (revised 31st August 2004)

					Classification according to EU Directives 67/548/EEC or 1999/45/EC							Classification according to Regulation (EC) No 1272/2008					
Substance	Assumed Compound	CAS No.	% w/w ^{NOTE 1}	Flash Point (°C)	Source Data	EU Hazard	Risk Phrase	Classification	Carcinogen Group No.	Toxic for Reproduction Category	Mutagenic Category	Source Data	Signal Word	Hazard Class & Category Code	Hazard Statement Code		
Indeno(1,2,3-cd)pyrene	Indeno[1,2,3-cd]pyrene	193-39-5	0.000004	n/a	Sigma Aldrich	Xn	R40	Limited evidence of a carcinogenic effect	Carc. Cat. 2;	n/a	n/a	Sigma Aldrich	Warning	Carc 2	H351		
Dibenzo(ah)anthracene	dibenz[a,h]anthracene	53-70-3	-	n/a	Annex I of Directive 67/548/EEC	T	R45	May cause cancer	Carc. Cat. 2;	n/a	n/a	Annex VI to Directive 1272/2008	Danger	Carc. 1B	H350		
						N	R50/53	Very toxic to aquatic organisms and may cause long-term effects in the aquatic environment						Aquatic Acute 1	H400		
														Aquatic Chronic 1	H410		
Benzo(ghi)perylene	Benzo[ghi]perylene	191-24-2	-	n/a	Sigma Aldrich	N	R50/53	Very toxic to aquatic organisms and may cause long-term adverse effects in the aquatic environment	Carc. Cat. 3;	n/a	n/a	Sigma Aldrich	Warning	Aquatic Acute 1	H400		
						T	R45	May cause cancer						Aquatic Chronic 1	H410		
						N	R50/53	Very toxic to aquatic organisms and may cause long-term effects in the aquatic environment						Carc. 1B	H350		
Benzo(b)fluoranthene	Benzo(b)fluoranthene	205-99-2	0.000008	n/a	Sigma Aldrich	N	R50/53	Very toxic to aquatic organisms and may cause long-term effects in the aquatic environment	Carc. Cat. 2;	n/a	n/a	Sigma Aldrich	Danger	Aquatic Acute 1	H400		
														Aquatic Chronic 1	H410		
Benzo(k)fluoranthene	benzo(k)fluoranthene	207-08-9	0.000003	n/a	Annex I of Directive 67/548/EEC	T	R45	May cause cancer	Carc. Cat. 2;	n/a	n/a	Annex VI to Directive 1272/2008	Danger	Carc. 1B	H350		
						N	R50/53	Very toxic to aquatic organisms and may cause long-term effects in the aquatic environment						Aquatic Acute 1	H400		
														Aquatic Chronic 1	H410		
Mineral Oil (C8-C40)	Mineral Oil	8042-47-5	-	> 112 °C	Sigma Aldrich	This substance is not classified as dangerous according to Directive 67/548/EEC						Not a hazardous substance or mixture according to Regulation (EC) No. 1272/2008					
Total aromatics C5-35	Aromatic hydrocarbons	90989-41-6	-	n/a	Annex I of Directive 67/548/EEC	T	R45	May cause cancer	Carc. Cat. 2;	n/a	n/a	Annex VI to Directive 1272/2008	Danger	Carc. 1B	H350		
														R45	May cause cancer	Fam. Gas 1	H220
Total aliphatics C5-35	Distillates (petroleum),	68477-35-0	-	n/a	Annex I of Directive 67/548/EEC	T	R46	May cause heritable genetic damage	Carc. Cat. 2;	n/a	Muta. Cat. 2;	Annex VI to Directive 1272/2008	Danger	Press. Gas	H350		
														Carc. 1A	H340		
														Muta. 1B			
Total 12 PCBs	polychlorobiphenyls; PCB	1336-36-3	0.0000237	n/a	Annex I of Directive 67/548/EEC	Xn	R33	Danger of cumulative effects	n/a	n/a	n/a	Annex VI to Directive 1272/2008	Warning	STOT RE 2	H373		
						N	R50/53	Very toxic to aquatic organisms and may cause long-term effects in the aquatic environment						Aquatic Acute 1	H400		
														Aquatic Chronic 1	H410		
Total 7 PCBs	polychlorobiphenyls; PCB	1336-36-3	0.0000485	n/a	Annex I of Directive 67/548/EEC	Xn	R33	Danger of cumulative effects	n/a	n/a	n/a	Annex VI to Directive 1272/2008	Warning	STOT RE 2	H373		
						N	R50/53	Very toxic to aquatic organisms and may cause long-term effects in the aquatic environment						Aquatic Acute 1	H400		
														Aquatic Chronic 1	H410		
Thiocyanate	thiocyanic acid	463-56-9	-	n/a	Annex I of Directive 67/548/EEC	Xn	R20/21/22	Harmful by inhalation, in contact with skin and if swallowed	n/a	n/a	n/a	Annex VI to Directive 1272/2008	Warning	Acute Tox. 4	H332		
														R32	Contact with acids liberates very toxic gas	Acute Tox. 4	H312
						N	R52/53	Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment						Acute Tox. 4	H302		
													Aquatic Chronic 3	H412			

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Box K: Waste Composition Details		
Properties with Thresholds (Box K1)		
Property	Threshold	Total in Waste
	(% w/w)	(% w/w)
Flash Point < 55 °C		
Very Toxic	> 0.1	0.0002
Toxic	> 3	0.233
Harmful	> 25	4.117
Corrosive with Risk Phrase R35	>1	0.185
Corrosive with Risk Phrase R34	> 5	0.000
Irritant with Risk Phrase R41	> 10	0.000
Irritant with Risk Phrase R36, R37, R38	> 20	0.046
Carcinogen Category 1 or 2	> 0.1	0.0003
Carcinogen Category 3	> 1	0.005
Toxic for Reproduction Category 1 and 2 with Risk Phrases R60, R61	> 0.5	0.007
Toxic for Reproduction Category 3 with Risk Phrases R62, R63	> 5	0.053
Mutagenic Category 1 and 2 with Risk Phrase R46	> 0.1	0.00001
Mutagenic Category 3 with Risk Phrase R68	> 1	0.0461
Properties without thresholds (Box K2)		
Property	Total (% w/w) in waste	
Explosive	0	
Oxidising	0	
Infectious	0	
Ecotoxic	0.811	
Residuary Hazardous property	0	

Final EWC Code		
L	Final EWC Code	Possibly 10 02 01 or 10 02 02 with no hazardous components identified in the sample
M	Final EWC Description	Refer to Section 3.1 of Report

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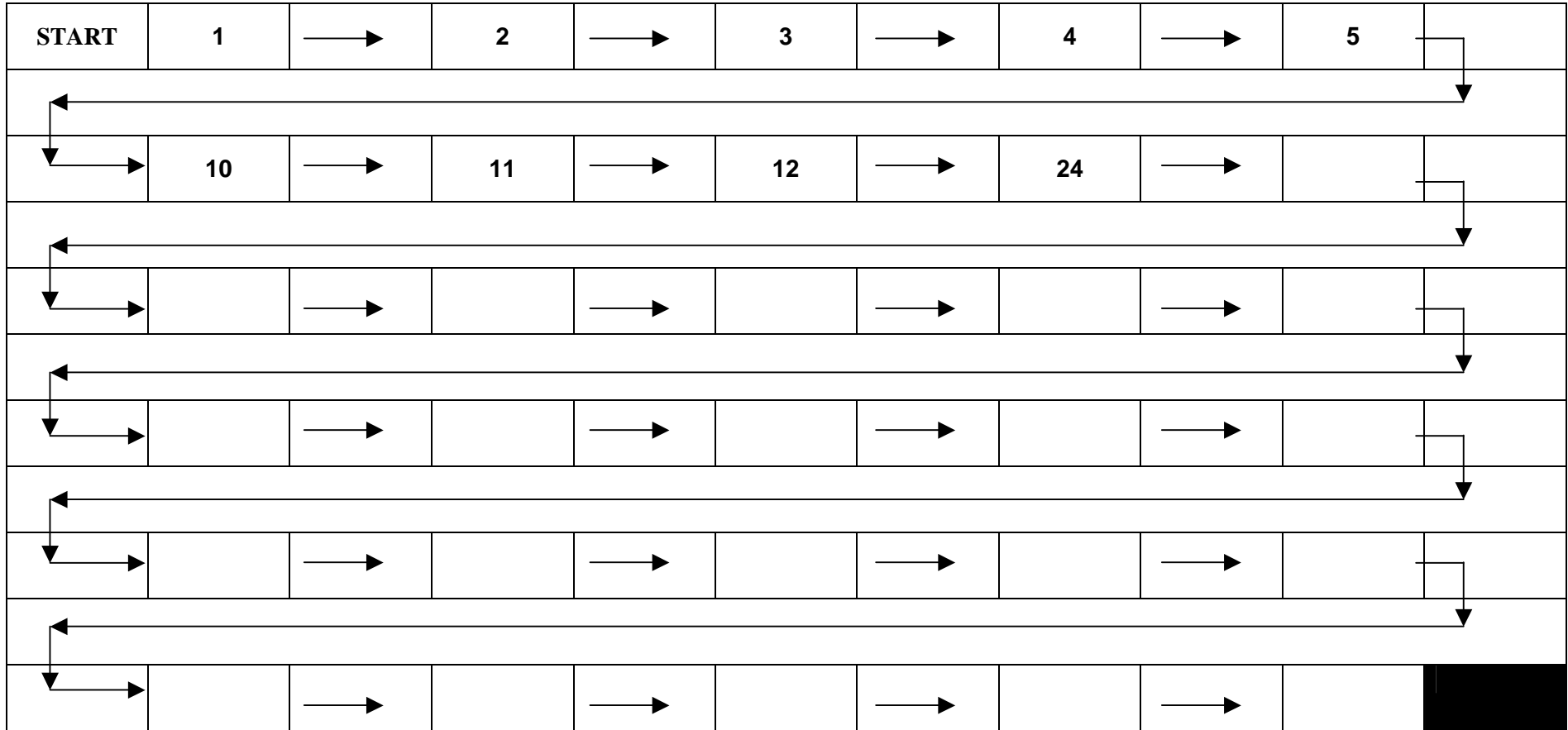
Note 1:	
Very Toxic, those with an EU Hazard Phrase of T+ under EU Directives 67/548/EEC or 1999/45/EC or those with R-phrases of R26, R27, R28 and combined risk phrases with or without R39	Beryllium, Cadmium,
Toxic, those with an EU Hazard Phrase of T under EU Directives 67/548/EEC or 1999/45/EC or those with R-phrases of R23, R24, R25 and combined risk phrases with or without R39 or R48	Beryllium, Cadmium, Selenium, Vanadium, Chloride,
Harmful, those with an EU Hazard Phrase of Xn under Directive 67/548/EEC or 1999/45/EC or those with R-phrases of R20, R21, R22, R65, R68 and combined risk phrases with or without R48	Barium, Copper, Lead, Manganese, (Nickel), Vanadium, Water Soluble Boron, Fluoroanthene, (Indeno(1,2,3-cd)pyrene), (Total 12 PCBs & Total 7 PCBs),
Corrosive with Risk Phrase R35	Chloride,
Corrosive with Risk Phrase R34	No parameters identified
Irritant with Risk Phrase R41	No parameters identified
Irritant with Risk Phrase R36, R37, R38	Beryllium, Vanadium,
Carcinogen Category 1 or 2 are those with R-phrases R45 or R49	Beryllium, Cadmium, Hexavalent Chromium, Phenanthrene, Chrysene, Benzo(bk)fluoranthene, Benzo(a)pyrene, Benzo(b)fluoranthene, Benzo(k)fluoranthene,
Carcinogen Category 3 are those with R-phrase R40	Nickel, Indeno(1,2,3-cd)pyrene
Toxic for Reproduction Category 1 and 2 with Risk Phrases R60, R61	Lead, Benzo(a)pyrene,
Toxic for Reproduction Category 3 with Risk Phrases R62, R63	Cadmium, Lead, Vanadium,
Mutagenic Category 1 and 2 with Risk Phrase R46	Benzo(a)pyrene, Total Aliphatics
Mutagenic Category 3 with Risk Phrase R68	Cadmium, Total Sulphate, Vanadium,
Explosive (with R-phrases R2, R3 or related r-phrases)	No parameters identified
Oxidising (with R-phrases R7, R8, R9)	No parameters identified
Infectious	No parameters identified
Ecotoxic (with R-phrases R50, R51, R52, R53 Aquatic Env and R54, R55, R56, R57, R58 for Non-Aquatic Env) & combined risk phrases	Cadmium, Hexavalent Chromium, Chromium, Copper, Lead, Selenium, Vanadium, Zinc, Fluoranthene, Pyrene, Chrysene, Benzo(bk)fluoranthene, Benzo(a)pyrene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Total 12 PCBs, Total 7 PCBs,

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Ecotoxic (Based on Thresholds in WM2)			
R59	> 0.1 %	No parameters identified	
		Cadmium, Hexavalent Chromium, Copper, Lead, Vanadium, Zinc, Pyrene, Chrysene, Benzo(bk)fluoranthene, Benzo(a)pyrene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Total 12 PCBs, Total 7 PCBs,	0.090
R50-53	> 0.25%		
R51-53	> 2.5%	Vanadium	0.046
		Chromium, Fluoranthene, Selenium	0.6746
R50 or R52 or R53 or R52-53	> 25%		
			0.811

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Box N - Route Map - Insert the tab numbers as you are directed to them (not applicable to computer tool)



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SECOND SCHEDULE: PART III (Waste Management Act 1996)

Properties of Waste which render it hazardous

There is set out in each paragraph of this Part a general term denoting a particular property of waste which renders it hazardous, followed by an explanation of such general term by reference to a description of substances or preparations which possess the particular property.

"Explosive": substances or preparations which may explode under the effect of flame or which are more sensitive to shocks or friction than dinitrobenzene.

"Oxidizing": substances or preparations which exhibit highly exothermic reactions when in contact with other substances, particularly flammable substances.

"Highly flammable":

- (a) liquid substances or preparations having a flash point below 21°C (including extremely flammable liquids), or
- (b) substances or preparations which may become hot and finally catch fire in contact with air at ambient temperature without any application of energy, or
- (c) solid substances or preparations which may readily catch fire after brief contact with a source of ignition and which continue to burn or to be consumed after removal of the source of ignition, or
- (d) gaseous substances or preparations which are flammable in air at normal pressure, or
- (e) substances or preparations which, in contact with water or damp air, evolve highly flammable gases in dangerous quantities.

"Flammable": liquid substances or preparations having a flash point of not less than 21°C and not more than 55°C.

"Irritant": non-corrosive substances or preparations which, through immediate, prolonged or repeated contact with the skin or mucous membrane, can cause inflammation.

"Harmful": substances or preparations which, if they are inhaled or ingested or if they penetrate the skin, may involve limited health risks.

"Toxic": substances or preparations (including very toxic substances or preparations) which, if they are inhaled or ingested or if they penetrate the skin, may cause serious, acute or chronic health risks or death.

"Carcinogenic": substances or preparations which, if they are inhaled or ingested or if they penetrate the skin, may induce cancer or increase its incidence.

"Corrosive": substances or preparations which may destroy living tissue on contact.

"Infectious": substances containing viable micro-organisms or their toxins which are known or reliably believed to cause disease in humans or other living organisms.

"Teratogenic": substances or preparations which, if they are inhaled or ingested or if they penetrate the skin, may induce non-hereditary congenital malformations or increase their incidence.

"Mutagenic": substances or preparations which, if they are inhaled or ingested or if they penetrate the skin, may induce hereditary genetic defects or increase their incidence.

"Ecotoxic": substances or preparations which present or may present immediate or delayed risks for one or more sectors of the environment.

"Residuary hazardous property":

- (a) substances or preparations which release toxic or very toxic gases in contact with water, air or an acid, or
- (b) substances or preparations capable by any means, after being disposed of, of yielding another substance which possesses any property referred to in this or any other paragraph of this Part.

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Box No.	Information Required	Information	
Company Details			
A	Company Name	Cork County Council	
	Company Address	Haulbowline Island, County Cork	
	Date	06/02/2013	
	IPC or Waste License Number (if applicable)	Not yet applicable	
	Contact Person	Cormac O'Suilleabhain	
	Waste Description	Slag - Borehole BH308, 0.7m - 0.9m	
European Waste Catalogue/Hazardous Waste List			
B	Possible EWC Codes		Asterisk Yes / No <input type="checkbox"/> / <input checked="" type="checkbox"/>
		10 02 01	<input type="checkbox"/> / <input checked="" type="checkbox"/>
		10 02 02	<input type="checkbox"/> / <input checked="" type="checkbox"/>
		Refer to Section 3.1 of Report	
C	Six-Digit EWC Code	Not Applicable	Asterisk Yes / No <input type="checkbox"/> / <input type="checkbox"/>
D	EWC Description	Not Applicable	
<i>CI</i>	Mirror Entry Code (if applicable)	Not Applicable	Asterisk Yes / No <input type="checkbox"/> / <input type="checkbox"/>
<i>DI</i>	Mirror Entry Description (if applicable)	Not Applicable	
E	Is this waste classified as hazardous waste according to HWL?	Mirror Entry	<input type="checkbox"/>
		No	<input checked="" type="checkbox"/>
		Yes	<input type="checkbox"/>

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Category I Waste (Box F)

- 1. Anatomical substances, hospital or other clinical waste.
- 2. Pharmaceutical, medicinal or veterinary compounds.
- 3. Wood preservatives.
- 4. Biocides or phyto-pharmaceutical substances.
- 5. Residue from substances employed as solvents.
- 6. Halogenated organic substances not employed as solvents, excluding inert polymerized materials.
- 7. Tempering salts containing cyanides.
- 8. Mineral oils or oily substances (including cutting sludges).
- 9. Mixtures or emulsions of oil and water or hydrocarbon and water.
- 10. Substances containing polychlorinated biphenyls or polychlorinated terphenyls (including dielectrics).
- 11. Tarry materials arising from refining, distillation or any pyrolytic treatment (including still bottoms).
- 12. Inks, dyes, pigments, paints, lacquers or varnishes.
- 13. Resins, latex, plasticizers, glues or adhesives.
- 14. Chemical substances arising from research and development or teaching activities (including laboratory residues) which are not identified or are new and whose effects on humans or the environment are not known.
- 15. Pyrotechnics or other explosive materials.
- 16. Photographic chemicals or processing materials.
- 17. Any material contaminated with any congener of polychlorinated dibenzo-furan.
- 18. Any material contaminated with any congener of polychlorinated dibenzo-p-dioxin.

Category II Waste (Box G)

- 19. Animal or vegetable soaps, fats or waxes.
- 20. Non-halogenated organic substances not employed as solvents.
- 21. Inorganic substances without metals or metal compounds.
- 22. Ashes or cinders.
- 23. Soil, sand or clay (including dredging spoils).
- 24. Non-cyanidic tempering salts.
- 25. Metallic dust or powder.
- 26. Spent catalyst materials.
- 27. Liquids or sludges containing metals or metal compounds.
- 28. Residue (other than scrubber sludges, sludges from water purification plants and sewage sludges (untreated or unsuitable for use in agriculture)) from pollution control operations (including baghouse dusts).
- 29. Scrubber sludges.
- 30. Sludges from water purification plants.
- 31. Decarbonization residue.
- 32. Ion-exchange column residue.
- 33. Sewage sludges, untreated or unsuitable for use in agriculture.
- 34. Residue from cleaning of tanks or equipment.
- 35. Contaminated equipment.
- 36. Contaminated containers (including packaging and gas cylinders).
- 37. Batteries or other electrical cells.
- 38. Vegetable oils.
- 39. Materials resulting from the selective collection of waste from households.
- 40. Any other waste.

Hazardous Waste Classification Worksheet (Revised 31st August 2004)

Category II Constituents (Box H)

- | | |
|---|--|
| <input type="checkbox"/> 41. Beryllium or beryllium compounds. | <input type="checkbox"/> 71. Azides. |
| <input type="checkbox"/> 42. Vanadium compounds. | <input type="checkbox"/> 72. Polychlorinated biphenyls or polychlorinated terphenyls. |
| <input type="checkbox"/> 43. Chromium (VI) compounds. | <input type="checkbox"/> 73. Pharmaceutical or veterinary compounds. |
| <input type="checkbox"/> 44. Cobalt compounds. | <input type="checkbox"/> 74. Biocides or phyto-pharmaceutical substances (including pesticides). |
| <input type="checkbox"/> 45. Nickel compounds. | <input type="checkbox"/> 75. Infectious substances. |
| <input type="checkbox"/> 46. Copper compounds. | <input type="checkbox"/> 76. Creosotes. |
| <input type="checkbox"/> 47. Zinc compounds. | <input type="checkbox"/> 77. Isocyanates or thiocyanates. |
| <input type="checkbox"/> 48. Arsenic or arsenic compounds. | <input type="checkbox"/> 78. Organic cyanides (including nitriles). |
| <input type="checkbox"/> 49. Selenium or selenium compounds. | <input type="checkbox"/> 79. Phenols or phenol compounds. |
| <input type="checkbox"/> 50. Silver compounds. | <input type="checkbox"/> 80. Halogenated solvents. |
| <input type="checkbox"/> 51. Cadmium or cadmium compounds. | <input type="checkbox"/> 81. Organic solvents, excluding halogenated solvents. |
| <input type="checkbox"/> 52. Tin compounds. | <input type="checkbox"/> 82. Organohalogen compounds, excluding inert polymerized materials and other substances referred to in this Part. |
| <input type="checkbox"/> 53. Antimony or antimony compounds. | <input type="checkbox"/> 83. Aromatic compounds; polycyclic and heterocyclic organic compounds. |
| <input type="checkbox"/> 54. Tellurium or tellurium compounds. | <input type="checkbox"/> 84. Aliphatic amines. |
| <input type="checkbox"/> 55. Barium compounds, excluding barium sulphate. | <input type="checkbox"/> 85. Aromatic amines. |
| <input type="checkbox"/> 56. Mercury or mercury compounds. | <input type="checkbox"/> 86. Ethers. |
| <input type="checkbox"/> 57. Thallium or thallium compounds. | <input type="checkbox"/> 87. Substances of an explosive character, excluding those referred to elsewhere in this Part. |
| <input type="checkbox"/> 58. Lead or lead compounds. | <input type="checkbox"/> 88. Sulphur organic compounds. |
| <input type="checkbox"/> 59. Inorganic sulphides. | <input type="checkbox"/> 89. Any congener of polychlorinated dibenzo-furan. |
| <input type="checkbox"/> 60. Inorganic fluorine compounds, excluding calcium fluoride. | <input type="checkbox"/> 90. Any congener of polychlorinated dibenzo-p-dioxin. |
| <input type="checkbox"/> 61. Inorganic cyanides. | <input type="checkbox"/> 91. Hydrocarbons and their oxygen, nitrogen or sulphur compounds not otherwise referred to in this Part. |
| <input type="checkbox"/> 62. Any of the following alkaline or alkaline earth metals, namely, lithium, sodium, potassium, calcium, magnesium in uncombined form. | |
| <input type="checkbox"/> 63. Acidic solutions or acids in solid form. | |
| <input type="checkbox"/> 64. Basic solutions or bases in solid form. | |
| <input type="checkbox"/> 65. Asbestos (dust or fibres). | |
| <input type="checkbox"/> 66. Phosphorus: phosphorus compounds, excluding mineral phosphates. | |
| <input type="checkbox"/> 67. Metal carbonyls. | |
| <input type="checkbox"/> 68. Peroxides. | |
| <input type="checkbox"/> 69. Chlorates. | |
| <input type="checkbox"/> 70. Perchlorates. | |

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<i>Box I: Property Test Results and Waste Classification</i>					
Property	Property Testing			Waste Classification	
	Test Code	Title of Test	Results	Hazard (s)	Risk Phrase (s)
Explosive					
Oxidising					
Flammable					
Irritant/ Corrosive		NOT APPLICABLE			
Harmful/Toxic					
Carcinogenic					
Infectious	No test methods available for this property				
Toxic for Reproduction					
Mutagenic					
Ecotoxic					
Residuary hazardous property					

Hazardous Waste Classification Worksheet

Box J: Waste Composition details (revised 31st August 2004)

					Classification according to EU Directives 67/548/EEC or 1999/45/EC								Classification according to Regulation (EC) No 1272/2008			
Substance	Assumed Compound	CAS No.	% w/w ^{NOTE 1}	Flash Point (°C)	Source Data	EU Hazard	Risk Phrase	Classification	Carcinogen Group No.	Toxic for Reproduction Category	Mutagenic Category	Source Data	Signal Word	Hazard Class & Category Code	Hazard Statement Code	
Aluminium	Aluminium Powder (pyrophoric)	7429-90-5	1.296	n/a not data available as per Sigma Aldrich MSDS	Annex I of Directive 67/548/EEC	F	R15	Contact with water liberates extremely flammable gases	n/a	n/a	n/a	Annex VI to Directive 1272/2008	Danger	Water-react. 2	H261	
							R17	Spontaneously flammable in air						Pyr. Sol. 1	H250	
Antimony	Antimony Compounds	n/a	-	n/a	Annex I of Directive 67/548/EEC	N	Xn	R20/22	Harmful by inhalation and if swallowed	n/a	n/a	n/a	Annex VI to Directive 1272/2008	Warning	Acute Tox. 4	H332
							R51/53	Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment	Acute Tox. 4						H302	
Arsenic	Arsenic	7440-38-2	0.00077	n/a	Annex I of Directive 67/548/EEC	T	R23/25	Toxic by inhalation and if swallowed	n/a	na	n/a	Annex VI to Directive 1272/2008	Danger	Acute Tox. 3	H331	
							N	R50/53						Very toxic to aquatic organisms and may cause long-term effects in the aquatic environment	Acute Tox. 3	H301
															Aquatic Acute 1	H400
															Aquatic Chronic 1	H410
Barium	Barium Salts	n/a	0.0662	n/a	Annex I of Directive 67/548/EEC	Xn	R20/22	Harmful by inhalation and if swallowed	n/a	n/a	n/a	Annex VI to Directive 1272/2008	Warning	Acute Tox. 4	H332	
															Acute Tox. 4	H302
Beryllium	Beryllium	7440-41-7	0.00013	n/a	Annex I of Directive 67/548/EEC	T	R49	May cause cancer by inhalation.	Carc. Cat. 2;	n/a	n/a	Annex VI to Directive 1272/2008	Danger	Carc. 1B	H350	
							R26	Also very toxic by inhalation						Acute Tox. 2 *	H330	
							R25	Also toxic if swallowed.						Acute Tox. 3 *	H301	
							R48/23	Also toxic: danger of serious damage to health by prolonged exposure through inhalation						STOT RE 1	H372	
							R36/37/38	Irritating to eyes, respiratory system and skin						Eye Irrit. 2	H319	
							R43	May cause sensitization by skin contact						STOT SE 3	H335	
Cadmium	cadmium (non-pyrophoric) cadmium oxide (nonpyrophoric)	7440-43-9/1306-19-0	0.00024	n/a	Annex I of Directive 67/548/EEC	T	R45	May cause cancer	Carc. Cat. 2;	Repr. Cat. 3;	Muta. Cat. 3;	Annex VI to Directive 1272/2008	Danger	Carc. 1B	H350	
							R68	Possible risk of irreversible damage						Muta. 2	H341	
							R62	Possible risk of impaired fertility						Repr. 2	H361FD	
							R63	Possible risk of harm to the unborn child						Acute Tox. 2	H330	
							R48/23/25	Toxic: danger of serious damage to health to prolonged exposure through inhalation and if swallowed.						STOT RE 1	H372	
							T+	R26						Also very toxic by inhalation	Aquatic Acute 1	H400
Calcium	Calcium	7440-70-2	12.84	n/a not data available as per Sigma Aldrich MSDS	Annex I of Directive 67/548/EEC	F	R15	Contact with water liberates extremely flammable gases	n/a	n/a	n/a	Annex VI to Directive 1272/2008	Danger	Water-react. 2	H261	
Hexavalent Chromium	Chromium (VI) compounds	n/a	0.00015	n/a	Annex I of Directive 67/548/EEC	N	R49	May cause cancer by inhalation.	Carc. Cat. 2	n/a	n/a	Annex VI to Directive 1272/2008	Danger	Carc. 1B	H350	
							R43	May cause sensitization by skin contact						Skin Sens. 1	H317	
							R50/53	Very toxic to aquatic organisms and may cause long-term effects in the aquatic environment						Aquatic Acute 1	H400	
Chromium	Chromium	7440-47-3	0.2077	n/a	Sigma Aldrich	N	R50	Very toxic to aquatic organisms	n/a	n/a	n/a	Sigma Aldrich	Warning	Aquatic Acute 1	H400	
							Xn	R22						Harmful if swallowed	Acute Tox. 4 *	H302
Copper	Copper (I) Oxide	1317-39-1	0.0308	n/a	Annex I of Directive 67/548/EEC	N	R50/53	Very toxic to aquatic organisms and may cause long-term effects in the aquatic environment	n/a	n/a	n/a	Annex VI to Directive 1272/2008	Warning	Aquatic Acute 1	H400	
															Aquatic Chronic 1	H410
Lead	Lead Compounds	n/a	0.0309	n/a	Annex I of Directive 67/548/EEC	Xn	R61	May cause harm to the unborn child	n/a	Repr. Cat. 1; Repr. Cat. 3;	n/a	Annex VI to Directive 1272/2008	Danger	Repr. 1A	H360DF	
							R62	Possible risk of impaired fertility						Acute Tox. 4	H332	
							R20/22	Harmful by inhalation and if swallowed						STOT RE 2	H302	
							R33	Danger of cumulative effects						Aquatic Acute 1	H373	
Magnesium	Magnesium, powder or turnings	n/a	8.024	n/a not data available as per Sigma Aldrich MSDS	Annex I of Directive 67/548/EEC	F	R11	Highly flammable	n/a	n/a	n/a	Annex VI to Directive 1272/2008	Danger	Flam. Sol. 1	H228	
							R15	Contact with water liberates extremely flammable gases						Water-react. 2	H261	
Manganese	Manganese dioxide	1313-13-9	3.019	n/a	Annex I of Directive 67/548/EEC	Xn	R20/22	Harmful by inhalation and if swallowed	n/a	n/a	n/a	Annex VI to Directive 1272/2008	Warning	Self-heat. 1	H252	
															Acute Tox. 4	H332
Nickel	Nickel	7440-02-0	0.00963	n/a	Annex I of Directive 67/548/EEC	Xn	R40	Limited evidence of a carcinogenic effect	Carc. Cat. 3	n/a	n/a	Annex VI to Directive 1272/2008	Warning	Carc. 2	H351	
							R43	May cause sensitization by skin contact						Skin Sens. 1	H317	
Selenium	Selenium	7782-49-2	0.001	n/a	Annex I of Directive 67/548/EEC	T	R23/25	Toxic by inhalation and if swallowed	n/a	n/a	n/a	Annex VI to Directive 1272/2008	Danger	Acute Tox. 3	H331	
							R33	Danger of cumulative effects						Acute Tox. 3	H301	
							R53	May cause long-term effects in the aquatic environment						STOT RE 2	H373	
													Aquatic Chronic 4	H413		

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Box J: Waste Composition details (revised 31st August 2004)

					Classification according to EU Directives 67/548/EEC or 1999/45/EC							Classification according to Regulation (EC) No 1272/2008			
Substance	Assumed Compound	CAS No.	% w/w ^{NOTE 1}	Flash Point (°C)	Source Data	EU Hazard	Risk Phrase	Classification	Carcinogen Group No.	Toxic for Reproduction Category	Mutagenic Category	Source Data	Signal Word	Hazard Class & Category Code	Hazard Statement Code
Total Sulphate	-	-	0.3761	n/a	Annex I of Directive 67/548/EEC			This substance is not classified as dangerous according to Directive 67/548/EEC						Not a hazardous substance or mixture according to Regulation (EC) No. 1272/2008	
Vanadium	Vanadium pentoxide	1314-62-1	0.0533	n/a	Annex I of Directive 67/548/EEC		R63	Possible risk of harm to the unborn child	n/a	Repr. Cat. 3;	Muta. Cat. 3;	Annex VI to Directive 1272/2008	Danger	Muta. 2	H341
							R68	Possible risk of irreversible effects						Repr. 2	H361d
							T	R48/23 Toxic; danger of serious damage to health by prolonged exposure through inhalation						STOT RE 1	H372
							Xn	R20/22 Harmful by inhalation and if swallowed						Acute Tox. 4	H332
							Xi	R37 Irritating to respiratory system						Acute Tox. 4	H302
	N	R51/53 Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment	STOT SE 3	H335											
Water Soluble Boron	Boron	7440-42-8	0.00052	n/a	Sigma Aldrich	Xn	R22	Harmful if swallowed	n/a	n/a	n/a	Sigma Aldrich	Warning	Acute Tox. 4	H302
Zinc	Zinc oxide	1314-13-2	0.1522	n/a	Annex I of Directive 67/548/EEC				n/a	n/a	n/a	Annex VI to Directive 1272/2008	Warning	Aquatic Acute 1	H400
						N	R50/53	Very toxic to aquatic organisms and may cause long-term effects in the aquatic environment						Aquatic Chronic 1	H410
Chloride	Hydrogen Chloride	7647-01-0	0.015	n/a	Annex I of Directive 67/548/EEC				n/a	n/a	n/a	Annex VI to Directive 1272/2008	Danger	Press. Gas	H331
						C	R35	Causes severe burns						Acute Tox. 3	H314
Naphthalene	Naphthalene	91-20-3	0.000004	n/a	Annex I of Directive 67/548/EEC				Carc. Cat. 3;	n/a	n/a	Annex VI to Directive 1272/2008	Warning	Carc. 2	H351
						Xn	R22	Harmful if swallowed						Acute Tox. 4	H302
						N	R50/53	Very toxic to aquatic organisms and may cause long-term effects in the aquatic environment						Aquatic Acute 1	H400
Acenaphthylene	Acenaphthylene	208-96-8	-	122.0	Sigma Aldrich				n/a	n/a	n/a	Sigma Aldrich	Warning	Acute Tox. 4	H302
						Xn	R36/37/38	Irritating to eyes, respiratory system and skin.						Skin Irrit. 2	H315
														Eye Irrit. 2	H319
Phenanthrene	Phenanthrene, disn. Residues	122070-78-4	-	n/a	Annex I of Directive 67/548/EEC				Carc. Cat. 2;	n/a	n/a	Annex VI to Directive 1272/2008	Danger	STOT SE 3	H335
						T	R45	May cause cancer						Carc. 1B	H350
						Xn	R36/37/38	Irritating to eyes, respiratory system and skin						Skin Irrit. 2	H315
Anthracene	Anthracene	120-12-7	0.000004	121.0	Sigma Aldrich				Carc. Cat. 3;	n/a	n/a	Sigma Aldrich	Warning	Eye Irrit. 2	H319
						N	R50/53	Very toxic to aquatic organisms and may cause long-term effects in the aquatic environment						STOT SE 3	H335
														Aquatic Chronic 1	H410
Fluoranthene	Benzo[k]fluorene	206-44-0	0.000031	198.0	Sigma Aldrich				n/a	n/a	n/a	Sigma Aldrich	Warning	Acute Tox. 4	H302
						Xn	R22	Harmful if swallowed						Aquatic Acute 1	H400
Pyrene	Benzo[def]phenanthrene	129-00-0	0.000029	> 200.0	Sigma Aldrich				n/a	n/a	n/a	Sigma Aldrich	Warning	Aquatic Acute 1	H400
						N	R50/53	Very toxic to aquatic organisms and may cause long-term effects in the aquatic environment						Aquatic Chronic 1	H410
Benzo(a)anthracene	Benz(a)anthracene	56-55-3	0.000017	n/a	Annex I of Directive 67/548/EEC				Carc. Cat. 2	n/a	n/a	Annex VI to Directive 1272/2008	Danger	Carc. 1B	H350
						T	R45	May cause cancer						Aquatic Acute 1	H400
						N	R50/53	Very toxic to aquatic organisms and may cause long-term effects in the aquatic environment						Aquatic Chronic 1	H410
Chrysene	Chrysene	218-01-9	0.000018	n/a	Annex I of Directive 67/548/EEC				Carc. Cat. 2	n/a	Muta. Cat. 3;	Annex VI to Directive 1272/2008	Danger	Carc. 1B	H350
						T	R68	Possible risk of irreversible effects						Muta. 2	H341
						N	R50/53	Very toxic to aquatic organisms and may cause long-term effects in the aquatic environment						Aquatic Acute 1	H400
Benzo(bk)fluoranthene	benzo(k)fluoranthene	207-08-9	0.000038	n/a	Annex I of Directive 67/548/EEC				Carc. Cat. 2;	n/a	n/a	Annex VI to Directive 1272/2008	Danger	Aquatic Chronic 1	H410
						T	R45	May cause cancer						Carc. 1B	H350
						N	R50/53	Very toxic to aquatic organisms and may cause long-term effects in the aquatic environment						Aquatic Acute 1	H400
Benzo(a)pyrene	benzo(a)pyrene	50-32-8	0.000018	n/a	Annex I of Directive 67/548/EEC				Carc. Cat. 2;	Repr. Cat. 2	Muta. Cat. 2;	Annex VI to Directive 1272/2008	Danger	R45	May cause cancer
							R46	May cause heritable genetic damage						Carc. 1B	H350
							R60	May impair fertility						Muta. 1B	H340
							R61	May cause harm to the unborn child						Repr. 1B	H360FD
							R43	May cause sensitisation by skin contact						Skin Sens. 1	H317
	N	R50/53	Very toxic to aquatic organisms and may cause long-term effects in the aquatic environment	Aquatic Acute 1	H400										
													Aquatic Chronic 1	H410	

Hazardous Waste Classification Worksheet

Box J: Waste Composition details (revised 31st August 2004)

					Classification according to EU Directives 67/548/EEC or 1999/45/EC							Classification according to Regulation (EC) No 1272/2008					
Substance	Assumed Compound	CAS No.	% w/w ^{NOTE 1}	Flash Point (°C)	Source Data	EU Hazard	Risk Phrase	Classification	Carcinogen Group No.	Toxic for Reproduction Category	Mutagenic Category	Source Data	Signal Word	Hazard Class & Category Code	Hazard Statement Code		
Indeno(1,2,3-cd)pyrene	Indeno[1,2,3-cd]pyrene	193-39-5	0.000013	n/a	Sigma Aldrich	Xn	R40	Limited evidence of a carcinogenic effect	Carc. Cat. 2;	n/a	n/a	Sigma Aldrich	Warning	Carc 2	H351		
Dibenzo(ah)anthracene	dibenz[a,h]anthracene	53-70-3	-	n/a	Annex I of Directive 67/548/EEC	T	R45	May cause cancer	Carc. Cat. 2;	n/a	n/a	Annex VI to Directive 1272/2008	Danger	Carc. 1B	H350		
						N	R50/53	Very toxic to aquatic organisms and may cause long-term effects in the aquatic environment						Aquatic Acute 1	H400		
														Aquatic Chronic 1	H410		
Benzo(ghi)perylene	Benzo(ghi)perylene	191-24-2	0.000011	n/a	Sigma Aldrich	N	R50/53	Very toxic to aquatic organisms and may cause long-term adverse effects in the aquatic environment	Carc. Cat. 3;	n/a	n/a	Sigma Aldrich	Warning	Aquatic Acute 1	H400		
						T	R45	May cause cancer						Aquatic Chronic 1	H410		
Benzo(b)fluoranthene	Benzo(b)fluoranthene	205-99-2	0.000027	n/a	Sigma Aldrich	N	R50/53	Very toxic to aquatic organisms and may cause long-term effects in the aquatic environment	Carc. Cat. 2;	n/a	n/a	Sigma Aldrich	Danger	Carc. 1B	H350		
														Aquatic Acute 1	H400		
Benzo(k)fluoranthene	benzo(k)fluoranthene	207-08-9	0.000011	n/a	Annex I of Directive 67/548/EEC	T	R45	May cause cancer	Carc. Cat. 2;	n/a	n/a	Annex VI to Directive 1272/2008	Danger	Carc. 1B	H350		
						N	R50/53	Very toxic to aquatic organisms and may cause long-term effects in the aquatic environment						Aquatic Acute 1	H400		
														Aquatic Chronic 1	H410		
Mineral Oil (C8-C40)	Mineral Oil	8042-47-5	-	> 112 °C	Sigma Aldrich	This substance is not classified as dangerous according to Directive 67/548/EEC						Not a hazardous substance or mixture according to Regulation (EC) No. 1272/2008					
Total aromatics C5-35	Aromatic hydrocarbons	90989-41-6	-	n/a	Annex I of Directive 67/548/EEC	T	R45	May cause cancer	Carc. Cat. 2;	n/a	n/a	Annex VI to Directive 1272/2008	Danger	Carc. 1B	H350		
								R45						May cause cancer	Fam. Gas 1	H220	
Total aliphatics C5-35	Distillates (petroleum),	68477-35-0	0.0027	n/a	Annex I of Directive 67/548/EEC	T	R46	May cause heritable genetic damage	Carc. Cat. 2;	n/a	Muta. Cat. 2;	Annex VI to Directive 1272/2008	Danger	Press. Gas	H350		
														Carc. 1A	H340		
														Muta. 1B	H360		
Total 12 PCBs	polychlorobiphenyls; PCB	1336-36-3	-	n/a	Annex I of Directive 67/548/EEC	Xn	R33	Danger of cumulative effects	n/a	n/a	n/a	Annex VI to Directive 1272/2008	Warning	STOT RE 2	H373		
						N	R50/53	Very toxic to aquatic organisms and may cause long-term effects in the aquatic environment						Aquatic Acute 1	H400		
														Aquatic Chronic 1	H410		
Total 7 PCBs	polychlorobiphenyls; PCB	1336-36-3	-	n/a	Annex I of Directive 67/548/EEC	Xn	R33	Danger of cumulative effects	n/a	n/a	n/a	Annex VI to Directive 1272/2008	Warning	STOT RE 2	H373		
						N	R50/53	Very toxic to aquatic organisms and may cause long-term effects in the aquatic environment						Aquatic Acute 1	H400		
														Aquatic Chronic 1	H410		
Thiocyanate	thiocyanic acid	463-56-9	0.00018	n/a	Annex I of Directive 67/548/EEC	Xn	R20/21/22	Harmful by inhalation, in contact with skin and if swallowed	n/a	n/a	n/a	Annex VI to Directive 1272/2008	Warning	Acute Tox. 4	H332		
														R32	Contact with acids liberates very toxic gas	Acute Tox. 4	H312
						N	R52/53	Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment						Acute Tox. 4	H302		
														Aquatic Chronic 3	H412		

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Box K: Waste Composition Details		
Properties with Thresholds (Box K1)		
Property	Threshold	Total in Waste
	(% w/w)	(% w/w)
Flash Point < 55 °C		0
Very Toxic	> 0.1	0.0004
Toxic	> 3	0.070
Harmful	> 25	3.211
Corrosive with Risk Phrase R35	>1	0.015
Corrosive with Risk Phrase R34	> 5	0.0
Irritant with Risk Phrase R41	> 10	0.0
Irritant with Risk Phrase R36, R37, R38	> 20	0.053
Carcinogen Category 1 or 2	> 0.1	0.003
Carcinogen Category 3	> 1	0.010
Toxic for Reproduction Category 1 and 2 with Risk Phrases R60, R61	> 0.5	0.031
Toxic for Reproduction Category 3 with Risk Phrases R62, R63	> 5	0.084
Mutagenic Category 1 and 2 with Risk Phrase R46	> 0.1	0.003
Mutagenic Category 3 with Risk Phrase R68	> 1	0.0535
Properties without thresholds (Box K2)		
Property	Total (% w/w) in waste	
Explosive	0	
Oxidising	0	
Infectious	0	
Ecotoxic	0.477	
Residuary Hazardous property	0	

Final EWC Code		
L	Final EWC Code	Possibly 10 02 01 or 10 02 02 with no hazardous components identified in the sample
M	Final EWC Description	Refer to Section 3.1 of Report

Hazardous Waste Classification Worksheet (Revised 31st August 2004)

Note 1:	
Very Toxic, those with an EU Hazard Phrase of T+ under EU Directives 67/548/EEC or 1999/45/EC or those with R-phrases of R26, R27, R28 and combined risk phrases with or without R39	Beryllium, Cadmium,
Toxic, those with an EU Hazard Phrase of T under EU Directives 67/548/EEC or 1999/45/EC or those with R-phrases of R23, R24, R25 and combined risk phrases with or without R39 or R48	Arsenic, Beryllium, Cadmium, Selenium, Total Sulphate, Vanadium, Chloride,
Harmful, those with an EU Hazard Phrase of Xn under Directive 67/548/EEC or 1999/45/EC or those with R-phrases of R20, R21, R22, R65, R68 and combined risk phrases with or without R48	Barium, Copper, Lead, Manganese, (Nickel), Vanadium, Water Soluble Boron, Naphthalene, (Anthracene), Fluoroanthene, (Indeno(1,2,3-cd)pyrene), Thiocyanate
Corrosive with Risk Phrase R35	Chloride,
Corrosive with Risk Phrase R34	Total Sulphate,
Irritant with Risk Phrase R41	No parameters identified
Irritant with Risk Phrase R36, R37, R38	Beryllium, Vanadium, Anthracene
Carcinogen Category 1 or 2 are those with R-phrases R45 or R49	Beryllium, Cadmium, Hexavalent Chromium, Benzo(a)anthracene, Chrysene, Benzo(bk)fluoranthene, Benzo(a)pyrene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Total Aliphatics,
Carcinogen Category 3 are those with R-phrase R40	Nickel, Naphthalene, Indeno(1,2,3-cd)pyrene
Toxic for Reproduction Category 1 and 2 with Risk Phrases R60, R61	Lead, Benzo(a)pyrene,
Toxic for Reproduction Category 3 with Risk Phrases R62, R63	Cadmium, Lead, Vanadium,
Mutagenic Category 1 and 2 with Risk Phrase R46	Benzo(a)pyrene, Total Aliphatics
Mutagenic Category 3 with Risk Phrase R68	Cadmium, Vanadium,
Explosive (with R-phrases R2, R3 or related r-phrases)	No parameters identified
Oxidising (with R-phrases R7, R8, R9)	No parameters identified
Infectious	No parameters identified
Ecotoxic (with R-phrases R50, R51, R52, R53 Aquatic Env and R54, R55, R56, R57, R58 for Non-Aquatic Env) & combined risk phrases	Arsenic, Cadmium, Hexavalent Chromium, Chromium, Copper, Lead, Selenium, Vanadium, Zinc, Naphthalene, Anthracene, Fluoranthene, Pyrene, Benzo(a)anthracene, Chrysene, Benzo(bk)fluoranthene, Benzo(a)pyrene, Benzo(ghi)perylene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Thiocyanate

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Ecotoxic (Based on Thresholds in WM2)			
R59	> 0.1 %	No parameters identified	
		Arsenic, Cadmium, Hexavalent Chromium, Copper, Lead, Zinc, Naphthalene, Anthracene, Pyrene, Benzo(a)anthracene, Chrysene, Benzo(bk)fluoranthene, Benzo(a)pyrene, Benzo(ghi)perylene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Thiocyanate	0.22
R50-53	> 0.25%		
R51-53	> 2.5%	Vanadium	0.0533
R50 or R52 or R53 or R52-53	> 25%	Chromium, Fluoranthene, Selenium	0.2087
			0.477

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SECOND SCHEDULE: PART III (Waste Management Act 1996)

Properties of Waste which render it hazardous

There is set out in each paragraph of this Part a general term denoting a particular property of waste which renders it hazardous, followed by an explanation of such general term by reference to a description of substances or preparations which possess the particular property.

"Explosive": substances or preparations which may explode under the effect of flame or which are more sensitive to shocks or friction than dinitrobenzene.

"Oxidizing": substances or preparations which exhibit highly exothermic reactions when in contact with other substances, particularly flammable substances.

"Highly flammable":

- (a) liquid substances or preparations having a flash point below 21°C (including extremely flammable liquids), or
- (b) substances or preparations which may become hot and finally catch fire in contact with air at ambient temperature without any application of energy, or
- (c) solid substances or preparations which may readily catch fire after brief contact with a source of ignition and which continue to burn or to be consumed after removal of the source of ignition, or
- (d) gaseous substances or preparations which are flammable in air at normal pressure, or
- (e) substances or preparations which, in contact with water or damp air, evolve highly flammable gases in dangerous quantities.

"Flammable": liquid substances or preparations having a flash point of not less than 21°C and not more than 55°C.

"Irritant": non-corrosive substances or preparations which, through immediate, prolonged or repeated contact with the skin or mucous membrane, can cause inflammation.

"Harmful": substances or preparations which, if they are inhaled or ingested or if they penetrate the skin, may involve limited health risks.

"Toxic": substances or preparations (including very toxic substances or preparations) which, if they are inhaled or ingested or if they penetrate the skin, may cause serious, acute or chronic health risks or death.

"Carcinogenic": substances or preparations which, if they are inhaled or ingested or if they penetrate the skin, may induce cancer or increase its incidence.

"Corrosive": substances or preparations which may destroy living tissue on contact.

"Infectious": substances containing viable micro-organisms or their toxins which are known or reliably believed to cause disease in humans or other living organisms.

"Teratogenic": substances or preparations which, if they are inhaled or ingested or if they penetrate the skin, may induce non-hereditary congenital malformations or increase their incidence.

"Mutagenic": substances or preparations which, if they are inhaled or ingested or if they penetrate the skin, may induce hereditary genetic defects or increase their incidence.

"Ecotoxic": substances or preparations which present or may present immediate or delayed risks for one or more sectors of the environment.

"Residuary hazardous property":

- (a) substances or preparations which release toxic or very toxic gases in contact with water, air or an acid, or
- (b) substances or preparations capable by any means, after being disposed of, of yielding another substance which possesses any property referred to in this or any other paragraph of this Part.

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Box No.	Information Required	Information	
<i>Company Details</i>			
A	Company Name	Cork County Council	
	Company Address	Haulbowline Island, County Cork	
	Date	06/02/2013	
	IPC or Waste License Number (if applicable)	Not yet applicable	
	Contact Person	Cormac O'Suilleabhain	
	Waste Description	Slag - Borehole BH308, 1.3m	
<i>European Waste Catalogue/Hazardous Waste List</i>			
B	Possible EWC Codes		Asterisk Yes / No <input type="checkbox"/> / <input checked="" type="checkbox"/>
		10 02 01	<input type="checkbox"/> / <input checked="" type="checkbox"/>
		10 02 02	<input type="checkbox"/> / <input checked="" type="checkbox"/>
		Refer to Section 3.1 of Report	
C	Six-Digit EWC Code	Not Applicable	Asterisk Yes / No <input type="checkbox"/> / <input type="checkbox"/>
D	EWC Description	Not Applicable	
<i>CI</i>	<i>Mirror Entry Code (if applicable)</i>	Not Applicable	Asterisk Yes / No <input type="checkbox"/> / <input type="checkbox"/>
<i>DI</i>	<i>Mirror Entry Description (if applicable)</i>	Not Applicable	
E	Is this waste classified as hazardous waste according to HWL?	Mirror Entry	<input type="checkbox"/>
		No	<input checked="" type="checkbox"/>
		Yes	<input type="checkbox"/>

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Category I Waste (Box F)

- 1. Anatomical substances, hospital or other clinical waste.
- 2. Pharmaceutical, medicinal or veterinary compounds.
- 3. Wood preservatives.
- 4. Biocides or phyto-pharmaceutical substances.
- 5. Residue from substances employed as solvents.
- 6. Halogenated organic substances not employed as solvents, excluding inert polymerized materials.
- 7. Tempering salts containing cyanides.
- 8. Mineral oils or oily substances (including cutting sludges).
- 9. Mixtures or emulsions of oil and water or hydrocarbon and water.
- 10. Substances containing polychlorinated biphenyls or polychlorinated terphenyls (including dielectrics).
- 11. Tarry materials arising from refining, distillation or any pyrolytic treatment (including still bottoms).
- 12. Inks, dyes, pigments, paints, lacquers or varnishes.
- 13. Resins, latex, plasticizers, glues or adhesives.
- 14. Chemical substances arising from research and development or teaching activities (including laboratory residues) which are not identified or are new and whose effects on humans or the environment are not known.
- 15. Pyrotechnics or other explosive materials.
- 16. Photographic chemicals or processing materials.
- 17. Any material contaminated with any congener of polychlorinated dibenzo-furan.
- 18. Any material contaminated with any congener of polychlorinated dibenzo-p-dioxin.

Category II Waste (Box G)

- 19. Animal or vegetable soaps, fats or waxes.
- 20. Non-halogenated organic substances not employed as solvents.
- 21. Inorganic substances without metals or metal compounds.
- 22. Ashes or cinders.
- 23. Soil, sand or clay (including dredging spoils).
- 24. Non-cyanidic tempering salts.
- 25. Metallic dust or powder.
- 26. Spent catalyst materials.
- 27. Liquids or sludges containing metals or metal compounds.
- 28. Residue (other than scrubber sludges, sludges from water purification plants and sewage sludges (untreated or unsuitable for use in agriculture)) from pollution control operations (including baghouse dusts).
- 29. Scrubber sludges.
- 30. Sludges from water purification plants.
- 31. Decarbonization residue.
- 32. Ion-exchange column residue.
- 33. Sewage sludges, untreated or unsuitable for use in agriculture.
- 34. Residue from cleaning of tanks or equipment.
- 35. Contaminated equipment.
- 36. Contaminated containers (including packaging and gas cylinders).
- 37. Batteries or other electrical cells.
- 38. Vegetable oils.
- 39. Materials resulting from the selective collection of waste from households.
- 40. Any other waste.

Hazardous Waste Classification Worksheet (Revised 31st August 2004)

Category II Constituents (Box H)

- | | |
|---|--|
| <input type="checkbox"/> 41. Beryllium or beryllium compounds. | <input type="checkbox"/> 71. Azides. |
| <input type="checkbox"/> 42. Vanadium compounds. | <input type="checkbox"/> 72. Polychlorinated biphenyls or polychlorinated terphenyls. |
| <input type="checkbox"/> 43. Chromium (VI) compounds. | <input type="checkbox"/> 73. Pharmaceutical or veterinary compounds. |
| <input type="checkbox"/> 44. Cobalt compounds. | <input type="checkbox"/> 74. Biocides or phyto-pharmaceutical substances (including pesticides). |
| <input type="checkbox"/> 45. Nickel compounds. | <input type="checkbox"/> 75. Infectious substances. |
| <input type="checkbox"/> 46. Copper compounds. | <input type="checkbox"/> 76. Creosotes. |
| <input type="checkbox"/> 47. Zinc compounds. | <input type="checkbox"/> 77. Isocyanates or thiocyanates. |
| <input type="checkbox"/> 48. Arsenic or arsenic compounds. | <input type="checkbox"/> 78. Organic cyanides (including nitriles). |
| <input type="checkbox"/> 49. Selenium or selenium compounds. | <input type="checkbox"/> 79. Phenols or phenol compounds. |
| <input type="checkbox"/> 50. Silver compounds. | <input type="checkbox"/> 80. Halogenated solvents. |
| <input type="checkbox"/> 51. Cadmium or cadmium compounds. | <input type="checkbox"/> 81. Organic solvents, excluding halogenated solvents. |
| <input type="checkbox"/> 52. Tin compounds. | <input type="checkbox"/> 82. Organohalogen compounds, excluding inert polymerized materials and other substances referred to in this Part. |
| <input type="checkbox"/> 53. Antimony or antimony compounds. | <input type="checkbox"/> 83. Aromatic compounds; polycyclic and heterocyclic organic compounds. |
| <input type="checkbox"/> 54. Tellurium or tellurium compounds. | <input type="checkbox"/> 84. Aliphatic amines. |
| <input type="checkbox"/> 55. Barium compounds, excluding barium sulphate. | <input type="checkbox"/> 85. Aromatic amines. |
| <input type="checkbox"/> 56. Mercury or mercury compounds. | <input type="checkbox"/> 86. Ethers. |
| <input type="checkbox"/> 57. Thallium or thallium compounds. | <input type="checkbox"/> 87. Substances of an explosive character, excluding those referred to elsewhere in this Part. |
| <input type="checkbox"/> 58. Lead or lead compounds. | <input type="checkbox"/> 88. Sulphur organic compounds. |
| <input type="checkbox"/> 59. Inorganic sulphides. | <input type="checkbox"/> 89. Any congener of polychlorinated dibenzo-furan. |
| <input type="checkbox"/> 60. Inorganic fluorine compounds, excluding calcium fluoride. | <input type="checkbox"/> 90. Any congener of polychlorinated dibenzo-p-dioxin. |
| <input type="checkbox"/> 61. Inorganic cyanides. | <input type="checkbox"/> 91. Hydrocarbons and their oxygen, nitrogen or sulphur compounds not otherwise referred to in this Part. |
| <input type="checkbox"/> 62. Any of the following alkaline or alkaline earth metals, namely, lithium, sodium, potassium, calcium, magnesium in uncombined form. | |
| <input type="checkbox"/> 63. Acidic solutions or acids in solid form. | |
| <input type="checkbox"/> 64. Basic solutions or bases in solid form. | |
| <input type="checkbox"/> 65. Asbestos (dust or fibres). | |
| <input type="checkbox"/> 66. Phosphorus: phosphorus compounds, excluding mineral phosphates. | |
| <input type="checkbox"/> 67. Metal carbonyls. | |
| <input type="checkbox"/> 68. Peroxides. | |
| <input type="checkbox"/> 69. Chlorates. | |
| <input type="checkbox"/> 70. Perchlorates. | |

Hazardous Waste Classification Worksheet (Revised 31st August 2004)

<i>Box I: Property Test Results and Waste Classification</i>					
Property	Property Testing			Waste Classification	
	Test Code	Title of Test	Results	Hazard (s)	Risk Phrase (s)
Explosive					
Oxidising					
Flammable					
Irritant/ Corrosive		NOT APPLICABLE			
Harmful/Toxic					
Carcinogenic					
Infectious	No test methods available for this property				
Toxic for Reproduction					
Mutagenic					
Ecotoxic					
Residuary hazardous property					

Hazardous Waste Classification Worksheet

Box J: Waste Composition details (revised 31st August 2004)

					Classification according to EU Directives 67/548/EEC or 1999/45/EC							Classification according to Regulation (EC) No 1272/2008			
Substance	Assumed Compound	CAS No.	% w/w ^{NOTE 1}	Flash Point (°C)	Source Data	EU Hazard	Risk Phrase	Classification	Carcinogen Group No.	Toxic for Reproduction Category	Mutagenic Category	Source Data	Signal Word	Hazard Class & Category Code	Hazard Statement Code
Aluminium	Aluminium Powder (pyrophoric)	7429-90-5	0.904	n/a not data available as per Sigma Aldrich MSDS	Annex I of Directive 67/548/EEC	F	R15	Contact with water liberates extremely flammable gases	n/a	n/a	n/a	Annex VI to Directive 1272/2008	Danger	Water-react. 2	H261
						R17	Spontaneously flammable in air	Pyr. Sol. 1						H250	
Antimony	Antimony Compounds	n/a	-	n/a	Annex I of Directive 67/548/EEC	Xn	R20/22	Harmful by inhalation and if swallowed	n/a	n/a	n/a	Annex VI to Directive 1272/2008	Warning	Acute Tox. 4	H332
						N	R51/53	Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment						Acute Tox. 4	H302
Arsenic	Arsenic	7440-38-2	0.00163	n/a	Annex I of Directive 67/548/EEC	T	R23/25	Toxic by inhalation and if swallowed	n/a	na	n/a	Annex VI to Directive 1272/2008	Danger	Acute Tox. 3	H331
						N	R50/53	Very toxic to aquatic organisms and may cause long-term effects in the aquatic environment						Acute Tox. 3	H301
Barium	Barium Salts	n/a	0.0577	n/a	Annex I of Directive 67/548/EEC	Xn	R20/22	Harmful by inhalation and if swallowed	n/a	n/a	n/a	Annex VI to Directive 1272/2008	Warning	Acute Tox. 4	H332
														Acute Tox. 4	H302
Beryllium	Beryllium	7440-41-7	0.00016	n/a	Annex I of Directive 67/548/EEC	T+	R49	May cause cancer by inhalation.	Carc. Cat. 2;	n/a	n/a	Annex VI to Directive 1272/2008	Danger	Carc. 1B	H350
						T	R26	Also very toxic by inhalation						Acute Tox. 2 *	H330
							R25	Also toxic if swallowed.						Acute Tox. 3 *	H301
							R48/23	Also toxic: danger of serious damage to health by prolonged exposure through inhalation						STOT RE 1	H372
							R36/37/38	Irritating to eyes, respiratory system and skin						Eye Irrit. 2	H319
							R43	May cause sensitization by skin contact						STOT SE 3	H335
Cadmium	cadmium (non-pyrophoric)/ cadmium oxide (nonpyrophoric)	7440-43-9/ 1306-19-0	0.00014	n/a	Annex I of Directive 67/548/EEC		R45	May cause cancer	Carc. Cat. 2;	Repr. Cat. 3;	Muta. Cat. 3;	Annex VI to Directive 1272/2008	Danger	Carc. 1B	H350
							R68	Possible risk of irreversible damage						Muta. 2	H341
							R62	Possible risk of impaired fertility						Repr. 2	H361Df
							R63	Possible risk of harm to the unborn child						Acute Tox. 2	H330
						T	R48/23/25	Toxic: danger or serious damage to health to prolonged exposure through inhalation and if swallowed						STOT RE 1	H372
						T+	R26	Also very toxic by inhalation						Aquatic Acute 1	H400
Calcium	Calcium	7440-70-2	15.47	n/a not data available as per Sigma Aldrich MSDS	Annex I of Directive 67/548/EEC	F	R15	Contact with water liberates extremely flammable gases	n/a	n/a	n/a	Annex VI to Directive 1272/2008	Danger	Water-react. 2	H261
Hexavalent Chromium	Chromium (VI) compounds	n/a	-	n/a	Annex I of Directive 67/548/EEC		R49	May cause cancer by inhalation.	Carc. Cat. 2	n/a	n/a	Annex VI to Directive 1272/2008	Danger	Carc. 1B	H350i
							R43	May cause sensitization by skin contact						Skin Sens. 1	H317
						N	R50/53	Very toxic to aquatic organisms and may cause long-term effects in the aquatic environment						Aquatic Acute 1	H400
Chromium	Chromium	7440-47-3	0.1856	n/a	Sigma Aldrich	N	R50	Very toxic to aquatic organisms	n/a	n/a	n/a	Sigma Aldrich	Warning	Aquatic Chronic 1	H410
						Xn	R22	Harmful if swallowed						Acute Tox. 4 *	H302
Copper	Copper (I) Oxide	1317-39-1	0.0322	n/a	Annex I of Directive 67/548/EEC	N	R50/53	Very toxic to aquatic organisms and may cause long-term effects in the aquatic environment	n/a	n/a	n/a	Annex VI to Directive 1272/2008	Warning	Acute Acute 1	H400
														Aquatic Chronic 1	H410
Lead	Lead Compounds	n/a	0.0256	n/a	Annex I of Directive 67/548/EEC		R61	May cause harm to the unborn child	n/a	Repr. Cat. 1; Repr. Cat. 3;	n/a	Annex VI to Directive 1272/2008	Danger	Repr. 1A	H360Df
							R62	Possible risk of impaired fertility						Acute Tox. 4	H332
						Xn	R20/22	Harmful by inhalation and if swallowed						STOT RE 2	H302
							R33	Danger of cumulative effects						Aquatic Acute 1	H373
Magnesium	Magnesium, powder or turnings	n/a	3.733	n/a not data available as per Sigma Aldrich MSDS	Annex I of Directive 67/548/EEC	F	R11	Highly flammable	n/a	n/a	n/a	Annex VI to Directive 1272/2008	Danger	Flam. Sol. 1	H228
							R15	Contact with water liberates extremely flammable gases						Water-react. 2	H261
Manganese	Manganese dioxide	1313-13-9	2.873	n/a	Annex I of Directive 67/548/EEC	Xn	R20/22	Harmful by inhalation and if swallowed	n/a	n/a	n/a	Annex VI to Directive 1272/2008	Warning	Self-heat. 1	H252
														Acute Tox. 4	H332
Nickel	Nickel	7440-02-0	0.0078	n/a	Annex I of Directive 67/548/EEC	Xn	R40	Limited evidence of a carcinogenic effect	Carc. Cat. 3	n/a	n/a	Annex VI to Directive 1272/2008	Warning	Carc. 2	H351
							R43	May cause sensitization by skin contact						Skin Sens. 1	H317
Selenium	Selenium	7782-49-2	0.001	n/a	Annex I of Directive 67/548/EEC		R23/25	Toxic by inhalation and if swallowed	n/a	n/a	n/a	Annex VI to Directive 1272/2008	Danger	Acute Tox. 3	H331
							R33	Danger of cumulative effects						Acute Tox. 3	H301
							R53	May cause long-term effects in the aquatic environment						STOT RE 2	H373
													Aquatic Chronic 4	H413	

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Box J: Waste Composition details (revised 31st August 2004)

				Classification according to EU Directives 67/548/EEC or 1999/45/EC							Classification according to Regulation (EC) No 1272/2008				
Substance	Assumed Compound	CAS No.	% w/w ^{NOTE 1}	Flash Point (°C)	Source Data	EU Hazard	Risk Phrase	Classification	Carcinogen Group No.	Toxic for Reproduction Category	Mutagenic Category	Source Data	Signal Word	Hazard Class & Category Code	Hazard Statement Code
Total Sulphate	-	-	0.3371	n/a	Annex I of Directive 67/548/EEC			This substance is not classified as dangerous according to Directive 67/548/EEC						Not a hazardous substance or mixture according to Regulation (EC) No. 1272/2008	
Vanadium	Vanadium pentoxide	1314-62-1	0.0418	n/a	Annex I of Directive 67/548/EEC			R63 Possible risk of harm to the unborn child R68 Possible risk of irreversible effects T R48/23 Toxic: danger of serious damage to health by prolonged exposure through inhalation Xn R20/22 Harmful by inhalation and if swallowed Xi R37 Irritating to respiratory system N R51/53 Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment	n/a	Repr. Cat. 3;	Muta. Cat. 3;	Annex VI to Directive 1272/2008	Danger	Muta. 2 Repr. 2 STOT RE 1 Acute Tox. 4 Acute Tox. 4 STOT SE 3 Aquatic Chronic 2	H341 H361d H372 H332 H302 H335 H411
Water Soluble Boron	Boron	7440-42-8	0.00066	n/a	Sigma Aldrich	Xn	R22	Harmful if swallowed	n/a	n/a	n/a	Sigma Aldrich	Warning	Acute Tox. 4	H302
Zinc	Zinc oxide	1314-13-2	0.0766	n/a	Annex I of Directive 67/548/EEC	N	R50/53	Very toxic to aquatic organisms and may cause long-term effects in the aquatic environment	n/a	n/a	n/a	Annex VI to Directive 1272/2008	Warning	Aquatic Acute 1 Aquatic Chronic 1	H400 H410
Chloride	Hydrogen Chloride	7647-01-0	0.0119	n/a	Annex I of Directive 67/548/EEC	T C	R23 R35	Toxic by inhalation Causes severe burns	n/a	n/a	n/a	Annex VI to Directive 1272/2008	Danger	Press. Gas 3 Acute Tox. 3 Skin Corr. 1A	H331 H314
Naphthalene	Naphthalene	91-20-3	0.00043	n/a	Annex I of Directive 67/548/EEC	Xn N	R40 R22 R50/53	Limited evidence of a carcinogenic effect Harmful if swallowed Very toxic to aquatic organisms and may cause long-term effects in the aquatic environment	Carc. Cat.3;	n/a	n/a	Annex VI to Directive 1272/2008	Warning	Carc. 2 Acute Tox. 4 Aquatic Acute 1 Aquatic Chronic 1	H351 H302 H400 H410
Acenaphthylene	Acenaphthylene	208-96-8	0.00034	122.0	Sigma Aldrich	Xn	R22 R36/37/38	Harmful if swallowed Irritating to eyes, respiratory system and skin.	n/a	n/a	n/a	Sigma Aldrich	Warning	Acute Tox. 4 Skin Irrit. 2 Eye Irrit. 2 STOT SE 3	H302 H315 H319 H335
Phenanthrene	Phenanthrene, distn. Residues	122070-78-4	0.001551	n/a	Annex I of Directive 67/548/EEC	T Xn	R45 R36/37/38	May cause cancer Irritating to eyes, respiratory system and skin	Carc. Cat. 2;	n/a	n/a	Annex VI to Directive 1272/2008	Danger	Carc. 1B Skin Irrit. 2	H350 H315
Anthracene	Anthracene	120-12-7	0.000179	121.0	Sigma Aldrich	N	R50/53	Very toxic to aquatic organisms and may cause long-term effects in the aquatic environment	Carc. Cat.3;	n/a	n/a	Sigma Aldrich	Warning	Eye Irrit. 2 STOT SE 3 Aquatic Chronic 1	H319 H335 H410
Fluoranthene	Benzo[<i>k</i>]fluorene	206-44-0	0.002251	198.0	Sigma Aldrich	Xn N	R22 R50	Harmful if swallowed Very toxic to aquatic organisms	n/a	n/a	n/a	Sigma Aldrich	Warning	Acute Tox. 4 Aquatic Acute 1 Aquatic Chronic 1	H302 H400 H410
Pyrene	Benzo[<i>def</i>]phenanthrene	129-00-0	0.001546	> 200.0	Sigma Aldrich	N	R50/53	Very toxic to aquatic organisms and may cause long-term effects in the aquatic environment	n/a	n/a	n/a	Sigma Aldrich	Warning	Aquatic Acute 1 Aquatic Chronic 1	H400 H410
Benzo[<i>a</i>]anthracene	Benzo[<i>a</i>]anthracene	56-55-3	0.000984	n/a	Annex I of Directive 67/548/EEC	T N	R45 R50/53	May cause cancer Very toxic to aquatic organisms and may cause long-term effects in the aquatic environment	Carc. Cat. 2	n/a	n/a	Annex VI to Directive 1272/2008	Danger	Carc. 1B Aquatic Acute 1 Aquatic Chronic 1	H350 H400 H410
Chrysene	Chrysene	218-01-9	0.00099	n/a	Annex I of Directive 67/548/EEC	T N	R45 R50/53	May cause cancer Possible risk of irreversible effects Very toxic to aquatic organisms and may cause long-term effects in the aquatic environment	Carc. Cat. 2	n/a	Muta. Cat. 3;	Annex VI to Directive 1272/2008	Danger	Carc. 1B Muta. 2 Aquatic Acute 1 Aquatic Chronic 1	H350 H341 H400 H410
Benzo[<i>bk</i>]fluoranthene	benzo[<i>k</i>]fluoranthene	207-08-9	0.001872	n/a	Annex I of Directive 67/548/EEC	N	R50/53	Very toxic to aquatic organisms and may cause long-term effects in the aquatic environment	Carc. Cat. 2;	n/a	n/a	Annex VI to Directive 1272/2008	Danger	Carc. 1B Aquatic Acute 1 Aquatic Chronic 1	H350 H400 H410
Benzo[<i>a</i>]pyrene	benzo[<i>a</i>]pyrene	50-32-8	0.000703	n/a	Annex I of Directive 67/548/EEC	T N	R45 R61 R43 R50/53	May cause cancer May cause heritable genetic damage May impair fertility May cause harm to the unborn child May cause sensitisation by skin contact Very toxic to aquatic organisms and may cause long-term effects in the aquatic environment	Carc. Cat. 2;	Repr. Cat. 2	Muta. Cat. 2;	Annex VI to Directive 1272/2008	Danger	Carc. 1B Muta. 1B Repr. 1B Skin Sens. 1 Aquatic Acute 1	H350 H340 H360FD H317 H400

Hazardous Waste Classification Worksheet

Box J: Waste Composition details (revised 31st August 2004)

					Classification according to EU Directives 67/548/EEC or 1999/45/EC							Classification according to Regulation (EC) No 1272/2008			
Substance	Assumed Compound	CAS No.	% w/w ^{NOTE 1}	Flash Point (°C)	Source Data	EU Hazard	Risk Phrase	Classification	Carcinogen Group No.	Toxic for Reproduction Category	Mutagenic Category	Source Data	Signal Word	Hazard Class & Category Code	Hazard Statement Code
Indeno[1,2,3-cd]pyrene	Indeno[1,2,3-cd]pyrene	193-99-5	0.000598	n/a	Sigma Aldrich	Xn	R40	Limited evidence of a carcinogenic effect	Carc. Cat. 2;	n/a	n/a	Sigma Aldrich	Warning	Carc 2	H351
Dibenzo[ah]anthracene	dibenzo[ah]anthracene	53-70-3	0.000106	n/a	Annex I of Directive 67/548/EEC	T	R45	May cause cancer	Carc. Cat. 2;	n/a	n/a	Annex VI to Directive 1272/2008	Danger	Carc. 1B	H350
						N	R50/53	Very toxic to aquatic organisms and may cause long-term effects in the aquatic environment						Aquatic Acute 1	H400
Benzo[ghi]perylene	Benzo[ghi]perylene	191-24-2	0.000445	n/a	Sigma Aldrich	N	R50/53	Very toxic to aquatic organisms and may cause long-term adverse effects in the aquatic environment	Carc. Cat. 3;	n/a	n/a	Sigma Aldrich	Warning	Aquatic Acute 1	H400
						T	R45	May cause cancer						Aquatic Chronic 1	H410
Benzo[b]fluoranthene	Benzo[b]fluoranthene	205-99-2	0.001348	n/a	Sigma Aldrich	N	R50/53	Very toxic to aquatic organisms and may cause long-term effects in the aquatic environment	Carc. Cat. 2;	n/a	n/a	Sigma Aldrich	Danger	Aquatic Acute 1	H400
														Aquatic Chronic 1	H410
Benzo[k]fluoranthene	benzo[k]fluoranthene	207-08-9	0.000524	n/a	Annex I of Directive 67/548/EEC	T	R45	May cause cancer	Carc. Cat. 2;	n/a	n/a	Annex VI to Directive 1272/2008	Danger	Carc. 1B	H350
						N	R50/53	Very toxic to aquatic organisms and may cause long-term effects in the aquatic environment						Aquatic Acute 1	H400
Mineral Oil (C8-C40)	Mineral Oil	8042-47-5	0.0201	> 112 °C	Sigma Aldrich	This substance is not classified as dangerous according to Directive 67/548/EEC						Not a hazardous substance or mixture according to Regulation (EC) No. 1272/2008			
Total aromatics C5-35	Aromatic hydrocarbons	90989-41-6	0.0129	n/a	Annex I of Directive 67/548/EEC	T	R45	May cause cancer	Carc. Cat. 2;	n/a	n/a	Annex VI to Directive 1272/2008	Danger	Carc. 1B	H350
														Flam. Gas 1	H220
Total aliphatics C5-35	Distillates (petroleum),	68477-35-0	0.0163	n/a	Annex I of Directive 67/548/EEC	T	R46	May cause heritable genetic damage	Carc. Cat. 2;	n/a	Muta. Cat. 2;	Annex VI to Directive 1272/2008	Danger	Press. Gas	H350
														Carc. 1A	H340
Total 12 PCBs	polychlorobiphenyls; PCB	1336-36-3	-	n/a	Annex I of Directive 67/548/EEC	Xn	R33	Danger of cumulative effects	n/a	n/a	n/a	Annex VI to Directive 1272/2008	Warning	STOT RE 2	H373
						N	R50/53	Very toxic to aquatic organisms and may cause long-term effects in the aquatic environment						Aquatic Acute 1	H400
Total 7 PCBs	polychlorobiphenyls; PCB	1336-36-3	-	n/a	Annex I of Directive 67/548/EEC	Xn	R33	Danger of cumulative effects	n/a	n/a	n/a	Annex VI to Directive 1272/2008	Warning	STOT RE 2	H373
						N	R50/53	Very toxic to aquatic organisms and may cause long-term effects in the aquatic environment						Aquatic Acute 1	H400
Thiocyanate	thiocyanic acid	463-56-9	-	n/a	Annex I of Directive 67/548/EEC	Xn	R20/21/22	Harmful by inhalation, in contact with skin and if swallowed	n/a	n/a	n/a	Annex VI to Directive 1272/2008	Warning	Acute Tox. 4	H312
						N	R52/53	Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment						Acute Tox. 4	H302
														Aquatic Chronic 3	H412

Hazardous Waste Classification Worksheet (Revised 31st August 2004)

Box K: Waste Composition Details		
Properties with Thresholds (Box K1)		
Property	Threshold	Total in Waste
	(% w/w)	(% w/w)
Flash Point < 55 °C		0
Very Toxic	> 0.1	0.0003
Toxic	> 3	0.057
Harmful	> 25	3.043
Corrosive with Risk Phrase R35	>1	0.012
Corrosive with Risk Phrase R34	> 5	0.0
Irritant with Risk Phrase R41	> 10	0.0
Irritant with Risk Phrase R36, R37, R38	> 20	0.100
Carcinogen Category 1 or 2	> 0.1	0.038
Carcinogen Category 3	> 1	0.008
Toxic for Reproduction Category 1 and 2 with Risk Phrases R60, R61	> 0.5	0.026
Toxic for Reproduction Category 3 with Risk Phrases R62, R63	> 5	0.068
Mutagenic Category 1 and 2 with Risk Phrase R46	> 0.1	0.017
Mutagenic Category 3 with Risk Phrase R68	> 1	0.043
Properties without thresholds (Box K2)		
Property	Total (% w/w) in waste	
Explosive	0	
Oxidising	0	
Infectious	0	
Ecotoxic	0.376	
Residuary Hazardous property	0	

Final EWC Code		
L	Final EWC Code	Possibly 10 02 01 or 10 02 02 with no hazardous components identified in the sample
M	Final EWC Description	Refer to Section 3.1 of Report

Hazardous Waste Classification Worksheet (Revised 31st August 2004)

Note 1:	
Very Toxic, those with an EU Hazard Phrase of T+ under EU Directives 67/548/EEC or 1999/45/EC or those with R-phrases of R26, R27, R28 and combined risk phrases with or without R39	Beryllium, Cadmium,
Toxic, those with an EU Hazard Phrase of T under EU Directives 67/548/EEC or 1999/45/EC or those with R-phrases of R23, R24, R25 and combined risk phrases with or without R39 or R48	Arsenic, Beryllium, Cadmium, Selenium, Total Sulphate, Vanadium, Chloride,
Harmful, those with an EU Hazard Phrase of Xn under Directive 67/548/EEC or 1999/45/EC or those with R-phrases of R20, R21, R22, R65, R68 and combined risk phrases with or without R48	Barium, Copper, Lead, Manganese, (Nickel), Vanadium, Naphthalene, Acenaphthylene, (Anthracene), Fluoroanthene, Chrysene (Indeno(1,2,3-cd)pyrene),
Corrosive with Risk Phrase R35	Chloride,
Corrosive with Risk Phrase R34	Total Sulphate,
Irritant with Risk Phrase R41	No parameters identified
Irritant with Risk Phrase R36, R37, R38	Beryllium, Vanadium, Acenaphthylene, Anthracene
Carcinogen Category 1 or 2 are those with R-phrases R45 or R49	Beryllium, Cadmium, Hexavalent Chromium, Total Sulphate, Phenanthrene, Benzo(a)anthracene, Chrysene, Benzo(bk)fluoranthene, Benzo(a)pyrene, Dibenzo(ah)anthracene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Total Aromatics, Total Aliphatics,
Carcinogen Category 3 are those with R-phrase R40	Nickel, Naphthalene, Indeno(1,2,3-cd)pyrene
Toxic for Reproduction Category 1 and 2 with Risk Phrases R60, R61	Lead, Benzo(a)pyrene,
Toxic for Reproduction Category 3 with Risk Phrases R62, R63	Cadmium, Lead, Vanadium,
Mutagenic Category 1 and 2 with Risk Phrase R46	Benzo(a)pyrene, Total Aliphatics
Mutagenic Category 3 with Risk Phrase R68	Cadmium, Vanadium, Chrysene
Explosive (with R-phrases R2, R3 or related r-phrases)	No parameters identified
Oxidising (with R-phrases R7, R8, R9)	No parameters identified
Infectious	No parameters identified
Ecotoxic (with R-phrases R50, R51, R52, R53 Aquatic Env and R54, R55, R56, R57, R58 for Non-Aquatic Env) & combined risk phrases	Arsenic, Cadmium, Chromium, Copper, Lead, Selenium, Vanadium, Zinc, Naphthalene, Anthracene, Fluoranthene, Pyrene, Benzo(a)anthracene, Chrysene, Benzo(bk)fluoranthene, Benzo(a)pyrene, Dibenzo(ghi)perylene, Benzo(b)fluoranthene, Benzo(k)fluoranthene,, Total 12 PCBs, Total 7 PCBs, Thiocyanate

Hazardous Waste Classification Worksheet (Revised 31st August 2004)

Ecotoxic (Based on Thresholds in WM2)			
R59	> 0.1 %	No parameters identified	
		Arsenic, Cadmium, Copper, Lead, Zinc, Naphthalene, Anthracene, Pyrene, Benzo(a)anthracene, Chrysene, Benzo(bk)fluoranthene, Benzo(a)pyrene, Dibenzo(ah)anthracene, Benzo(ghi)perylene, Benzo(b)fluoranthene, Benzo(k)fluoranthene,	0.145
R50-53	> 0.25%		
R51-53	> 2.5%	Vanadium	0.0418
R50 or R52 or R53 or R52-53	> 25%	Chromium, Fluoranthene, Selenium	0.1889
			0.376

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SECOND SCHEDULE: PART III (Waste Management Act 1996)

Properties of Waste which render it hazardous

There is set out in each paragraph of this Part a general term denoting a particular property of waste which renders it hazardous, followed by an explanation of such general term by reference to a description of substances or preparations which possess the particular property.

"Explosive": substances or preparations which may explode under the effect of flame or which are more sensitive to shocks or friction than dinitrobenzene.

"Oxidizing": substances or preparations which exhibit highly exothermic reactions when in contact with other substances, particularly flammable substances.

"Highly flammable":

- (a) liquid substances or preparations having a flash point below 21°C (including extremely flammable liquids), or
- (b) substances or preparations which may become hot and finally catch fire in contact with air at ambient temperature without any application of energy, or
- (c) solid substances or preparations which may readily catch fire after brief contact with a source of ignition and which continue to burn or to be consumed after removal of the source of ignition, or
- (d) gaseous substances or preparations which are flammable in air at normal pressure, or
- (e) substances or preparations which, in contact with water or damp air, evolve highly flammable gases in dangerous quantities.

"Flammable": liquid substances or preparations having a flash point of not less than 21°C and not more than 55°C.

"Irritant": non-corrosive substances or preparations which, through immediate, prolonged or repeated contact with the skin or mucous membrane, can cause inflammation.

"Harmful": substances or preparations which, if they are inhaled or ingested or if they penetrate the skin, may involve limited health risks.

"Toxic": substances or preparations (including very toxic substances or preparations) which, if they are inhaled or ingested or if they penetrate the skin, may cause serious, acute or chronic health risks or death.

"Carcinogenic": substances or preparations which, if they are inhaled or ingested or if they penetrate the skin, may induce cancer or increase its incidence.

"Corrosive": substances or preparations which may destroy living tissue on contact.

"Infectious": substances containing viable micro-organisms or their toxins which are known or reliably believed to cause disease in humans or other living organisms.

"Teratogenic": substances or preparations which, if they are inhaled or ingested or if they penetrate the skin, may induce non-hereditary congenital malformations or increase their incidence.

"Mutagenic": substances or preparations which, if they are inhaled or ingested or if they penetrate the skin, may induce hereditary genetic defects or increase their incidence.

"Ecotoxic": substances or preparations which present or may present immediate or delayed risks for one or more sectors of the environment.

"Residuary hazardous property":

- (a) substances or preparations which release toxic or very toxic gases in contact with water, air or an acid, or
- (b) substances or preparations capable by any means, after being disposed of, of yielding another substance which possesses any property referred to in this or any other paragraph of this Part.

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Box No.	Information Required	Information	
Company Details			
A	Company Name	Cork County Council	
	Company Address	Haulbowline Island, County Cork	
	Date	06/02/2013	
	IPC or Waste License Number (if applicable)	Not yet applicable	
	Contact Person	Cormac O'Suilleabhain	
	Waste Description	Slag - Borehole BH309, 0.2m	
European Waste Catalogue/Hazardous Waste List			
B	Possible EWC Codes		Asterisk Yes / No <input type="checkbox"/> / <input checked="" type="checkbox"/>
		10 02 01	<input type="checkbox"/> / <input checked="" type="checkbox"/>
		10 02 02	<input type="checkbox"/> / <input checked="" type="checkbox"/>
		Refer to Section 3.1 of Report	
C	Six-Digit EWC Code	Not Applicable	Asterisk Yes / No <input type="checkbox"/> / <input type="checkbox"/>
D	EWC Description	Not Applicable	
<i>CI</i>	Mirror Entry Code (if applicable)	Not Applicable	Asterisk Yes / No <input type="checkbox"/> / <input type="checkbox"/>
<i>DI</i>	Mirror Entry Description (if applicable)	Not Applicable	
E	Is this waste classified as hazardous waste according to HWL?	Mirror Entry	<input type="checkbox"/>
		No	<input checked="" type="checkbox"/>
		Yes	<input type="checkbox"/>

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Category I Waste (Box F)

- 1. Anatomical substances, hospital or other clinical waste.
- 2. Pharmaceutical, medicinal or veterinary compounds.
- 3. Wood preservatives.
- 4. Biocides or phyto-pharmaceutical substances.
- 5. Residue from substances employed as solvents.
- 6. Halogenated organic substances not employed as solvents, excluding inert polymerized materials.
- 7. Tempering salts containing cyanides.
- 8. Mineral oils or oily substances (including cutting sludges).
- 9. Mixtures or emulsions of oil and water or hydrocarbon and water.
- 10. Substances containing polychlorinated biphenyls or polychlorinated terphenyls (including dielectrics).
- 11. Tarry materials arising from refining, distillation or any pyrolytic treatment (including still bottoms).
- 12. Inks, dyes, pigments, paints, lacquers or varnishes.
- 13. Resins, latex, plasticizers, glues or adhesives.
- 14. Chemical substances arising from research and development or teaching activities (including laboratory residues) which are not identified or are new and whose effects on humans or the environment are not known.
- 15. Pyrotechnics or other explosive materials.
- 16. Photographic chemicals or processing materials.
- 17. Any material contaminated with any congener of polychlorinated dibenzo-furan.
- 18. Any material contaminated with any congener of polychlorinated dibenzo-p-dioxin.

Category II Waste (Box G)

- 19. Animal or vegetable soaps, fats or waxes.
- 20. Non-halogenated organic substances not employed as solvents.
- 21. Inorganic substances without metals or metal compounds.
- 22. Ashes or cinders.
- 23. Soil, sand or clay (including dredging spoils).
- 24. Non-cyanidic tempering salts.
- 25. Metallic dust or powder.
- 26. Spent catalyst materials.
- 27. Liquids or sludges containing metals or metal compounds.
- 28. Residue (other than scrubber sludges, sludges from water purification plants and sewage sludges (untreated or unsuitable for use in agriculture)) from pollution control operations (including baghouse dusts).
- 29. Scrubber sludges.
- 30. Sludges from water purification plants.
- 31. Decarbonization residue.
- 32. Ion-exchange column residue.
- 33. Sewage sludges, untreated or unsuitable for use in agriculture.
- 34. Residue from cleaning of tanks or equipment.
- 35. Contaminated equipment.
- 36. Contaminated containers (including packaging and gas cylinders).
- 37. Batteries or other electrical cells.
- 38. Vegetable oils.
- 39. Materials resulting from the selective collection of waste from households.
- 40. Any other waste.

Hazardous Waste Classification Worksheet (Revised 31st August 2004)

Category II Constituents (Box H)

- | | |
|---|--|
| <input type="checkbox"/> 41. Beryllium or beryllium compounds. | <input type="checkbox"/> 71. Azides. |
| <input type="checkbox"/> 42. Vanadium compounds. | <input type="checkbox"/> 72. Polychlorinated biphenyls or polychlorinated terphenyls. |
| <input type="checkbox"/> 43. Chromium (VI) compounds. | <input type="checkbox"/> 73. Pharmaceutical or veterinary compounds. |
| <input type="checkbox"/> 44. Cobalt compounds. | <input type="checkbox"/> 74. Biocides or phyto-pharmaceutical substances (including pesticides). |
| <input type="checkbox"/> 45. Nickel compounds. | <input type="checkbox"/> 75. Infectious substances. |
| <input type="checkbox"/> 46. Copper compounds. | <input type="checkbox"/> 76. Creosotes. |
| <input type="checkbox"/> 47. Zinc compounds. | <input type="checkbox"/> 77. Isocyanates or thiocyanates. |
| <input type="checkbox"/> 48. Arsenic or arsenic compounds. | <input type="checkbox"/> 78. Organic cyanides (including nitriles). |
| <input type="checkbox"/> 49. Selenium or selenium compounds. | <input type="checkbox"/> 79. Phenols or phenol compounds. |
| <input type="checkbox"/> 50. Silver compounds. | <input type="checkbox"/> 80. Halogenated solvents. |
| <input type="checkbox"/> 51. Cadmium or cadmium compounds. | <input type="checkbox"/> 81. Organic solvents, excluding halogenated solvents. |
| <input type="checkbox"/> 52. Tin compounds. | <input type="checkbox"/> 82. Organohalogen compounds, excluding inert polymerized materials and other substances referred to in this Part. |
| <input type="checkbox"/> 53. Antimony or antimony compounds. | <input type="checkbox"/> 83. Aromatic compounds; polycyclic and heterocyclic organic compounds. |
| <input type="checkbox"/> 54. Tellurium or tellurium compounds. | <input type="checkbox"/> 84. Aliphatic amines. |
| <input type="checkbox"/> 55. Barium compounds, excluding barium sulphate. | <input type="checkbox"/> 85. Aromatic amines. |
| <input type="checkbox"/> 56. Mercury or mercury compounds. | <input type="checkbox"/> 86. Ethers. |
| <input type="checkbox"/> 57. Thallium or thallium compounds. | <input type="checkbox"/> 87. Substances of an explosive character, excluding those referred to elsewhere in this Part. |
| <input type="checkbox"/> 58. Lead or lead compounds. | <input type="checkbox"/> 88. Sulphur organic compounds. |
| <input type="checkbox"/> 59. Inorganic sulphides. | <input type="checkbox"/> 89. Any congener of polychlorinated dibenzo-furan. |
| <input type="checkbox"/> 60. Inorganic fluorine compounds, excluding calcium fluoride. | <input type="checkbox"/> 90. Any congener of polychlorinated dibenzo-p-dioxin. |
| <input type="checkbox"/> 61. Inorganic cyanides. | <input type="checkbox"/> 91. Hydrocarbons and their oxygen, nitrogen or sulphur compounds not otherwise referred to in this Part. |
| <input type="checkbox"/> 62. Any of the following alkaline or alkaline earth metals, namely, lithium, sodium, potassium, calcium, magnesium in uncombined form. | |
| <input type="checkbox"/> 63. Acidic solutions or acids in solid form. | |
| <input type="checkbox"/> 64. Basic solutions or bases in solid form. | |
| <input type="checkbox"/> 65. Asbestos (dust or fibres). | |
| <input type="checkbox"/> 66. Phosphorus: phosphorus compounds, excluding mineral phosphates. | |
| <input type="checkbox"/> 67. Metal carbonyls. | |
| <input type="checkbox"/> 68. Peroxides. | |
| <input type="checkbox"/> 69. Chlorates. | |
| <input type="checkbox"/> 70. Perchlorates. | |

Hazardous Waste Classification Worksheet (Revised 31st August 2004)

<i>Box I: Property Test Results and Waste Classification</i>					
Property	Property Testing			Waste Classification	
	Test Code	Title of Test	Results	Hazard (s)	Risk Phrase (s)
Explosive					
Oxidising					
Flammable					
Irritant/ Corrosive		NOT APPLICABLE			
Harmful/Toxic					
Carcinogenic					
Infectious	No test methods available for this property				
Toxic for Reproduction					
Mutagenic					
Ecotoxic					
Residuary hazardous property					

Hazardous Waste Classification Worksheet

Box J: Waste Composition details (revised 31st August 2004)

					Classification according to EU Directives 67/548/EEC or 1999/45/EC							Classification according to Regulation (EC) No 1272/2008								
Substance	Assumed Compound	CAS No.	% w/w ^{NOTE 1}	Flash Point (°C)	Source Data	EU Hazard	Risk Phrase	Classification	Carcinogen Group No.	Toxic for Reproduction Category	Mutagenic Category	Source Data	Signal Word	Hazard Class & Category Code	Hazard Statement Code					
Aluminium	Aluminium Powder (pyrophoric)	7429-90-5	1.334	n/a not data available as per	Annex I of Directive 67/548/EEC	F	R15 R17	Contact with water liberates extremely flammable gases Spontaneously flammable in air	n/a	n/a	n/a	Annex VI to Directive 1272/2008	Danger	Water-react. 2	H261					
						Xn	R20/22	Harmful by inhalation and if swallowed						Acute Tox. 4	H332					
Antimony	Antimony Compounds	n/a	-	n/a	Annex I of Directive 67/548/EEC	N	R51/53	Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment	n/a	n/a	n/a	Annex VI to Directive 1272/2008	Warning	Acute Tox. 4	H302					
														Aquatic Chronic 2	H411					
Arsenic	Arsenic	7440-38-2	0.00169	n/a	Annex I of Directive 67/548/EEC	T	R23/25	Toxic by inhalation and if swallowed	n/a	na	n/a	Annex VI to Directive 1272/2008	Danger	Acute Tox. 3	H331					
						N	R50/53	Very toxic to aquatic organisms and may cause long-term effects in the aquatic environment									Acute Tox. 3	H301		
																	Aquatic Acute 1	H400		
															Aquatic Chronic 1	H410				
Barium	Barium Salts	n/a	0.0683	n/a	Annex I of Directive 67/548/EEC	Xn	R20/22	Harmful by inhalation and if swallowed	n/a	n/a	n/a	Annex VI to Directive 1272/2008	Warning	Acute Tox. 4	H332					
Beryllium	Beryllium	7440-41-7	0.00018	n/a	Annex I of Directive 67/548/EEC	T+	R49	May cause cancer by inhalation.	Carc. Cat. 2;	n/a	n/a	Annex VI to Directive 1272/2008	Danger	Acute Tox. 4	H302					
						T	R25	Also very toxic if swallowed.												
							R48/23	Also toxic: danger of serious damage to health by prolonged exposure through inhalation												
							R36/37/38	Irritating to eyes, respiratory system and skin												
							R43	May cause sensitization by skin contact												
Cadmium	cadmium (non-pyrophoric) cadmium oxide (nonpyrophoric)	7440-43-9/ 1306-19-0	0.00013	n/a	Annex I of Directive 67/548/EEC		R45	May cause cancer	Carc. Cat. 2;	Repr. Cat. 3;	Muta. Cat. 3;	Annex VI to Directive 1272/2008	Danger	Carc. 1B	H350					
							R68	Possible risk of irreversible damage												
							R62	Possible risk of impaired fertility												
							R63	Possible risk of harm to the unborn child												
						T	R48/23/25	Toxic; danger or serious damage to health by prolonged exposure through inhalation and if swallowed.												
						T+	R26	Also very toxic by inhalation												
	N	R50/53	Very toxic to aquatic organisms and may cause long-term effects in the aquatic environment																	
															Muta. 2	H341				
																Repr. 2	H361FD			
																Acute Tox. 2	H330			
																STOT RE 1	H372			
																Aquatic Acute 1	H400			
																Aquatic Chronic 1	H410			
Calcium	Calcium	7440-70-2	13.81	n/a not data available as per Sigma Aldrich MSDS	Annex I of Directive 67/548/EEC	F	R15	Contact with water liberates extremely flammable gases	n/a	n/a	n/a	Annex VI to Directive 1272/2008	Danger	Water-react. 2	H261					
Hexavalent Chromium	Chromium (VI) compounds	n/a	0.00009	n/a	Annex I of Directive 67/548/EEC		R49	May cause cancer by inhalation.	Carc. Cat. 2	n/a	n/a	Annex VI to Directive 1272/2008	Danger	Carc. 1B	H350					
							R43	May cause sensitization by skin contact												
						N	R50/53	Very toxic to aquatic organisms and may cause long-term effects in the aquatic environment												
Chromium	Chromium	7440-47-3	0.2443	n/a	Sigma Aldrich	N	R50	Very toxic to aquatic organisms	n/a	n/a	n/a	Sigma Aldrich	Warning	Aquatic Acute 1	H400					
						Xn	R22	Harmful if swallowed								Acute Tox. 4 *	H302			
Copper	Copper (I) Oxide	1317-39-1	0.0505	n/a	Annex I of Directive 67/548/EEC	N	R50/53	Very toxic to aquatic organisms and may cause long-term effects in the aquatic environment	n/a	n/a	n/a	Annex VI to Directive 1272/2008	Warning	Aquatic Acute 1	H400					
																Aquatic Chronic 1	H410			
Lead	Lead Compounds	n/a	0.019	n/a	Annex I of Directive 67/548/EEC		R61	May cause harm to the unborn child	n/a	Repr. Cat. 1; Repr. Cat. 3;	n/a	Annex VI to Directive 1272/2008	Danger	Repr. 1A	H360DF					
							R62	Possible risk of impaired fertility												
						Xn	R20/22 R33	Harmful by inhalation and if swallowed Danger of cumulative effects												
						N	R50/53	Very toxic to aquatic organisms and may cause long-term effects in the aquatic environment												
																Acute Tox. 4	H332			
																STOT RE 2	H302			
																Aquatic Acute 1	H373			
																Aquatic Chronic 1	H410			
Magnesium	Magnesium, powder or turnings	n/a	4.003	n/a not data available as per Sigma Aldrich MSDS	Annex I of Directive 67/548/EEC	F	R11	Highly flammable	n/a	n/a	n/a	Annex VI to Directive 1272/2008	Danger	Flam. Sol. 1	H228					
							R15	Contact with water liberates extremely flammable gases												
Manganese	Manganese dioxide	1313-13-9	2.825	n/a	Annex I of Directive 67/548/EEC	Xn	R20/22	Harmful by inhalation and if swallowed	n/a	n/a	n/a	Annex VI to Directive 1272/2008	Warning	Water-react. 2	H261					
																Self-heat. 1	H252			
																Acute Tox. 4	H332			
																Acute Tox. 4	H302			
Nickel	Nickel	7440-02-0	0.01147	n/a	Annex I of Directive 67/548/EEC	Xn	R40 R43	Limited evidence of a carcinogenic effect May cause sensitization by skin contact	Carc. Cat. 3	n/a	n/a	Annex VI to Directive 1272/2008	Warning	Carc. 2	H351					
																Skin Sens. 1	H317			
																Acute Tox. 3	H331			
																Acute Tox. 3	H301			
Selenium	Selenium	7782-49-2	0.001	n/a	Annex I of Directive 67/548/EEC	T	R23/25 R33	Toxic by inhalation and if swallowed Danger of cumulative effects	n/a	n/a	n/a	Annex VI to Directive 1272/2008	Danger	STOT RE 2	H373					
																Aquatic Chronic 4	H413			

Hazardous Waste Classification Worksheet

Box J: Waste Composition details (revised 31st August 2004)

					Classification according to EU Directives 67/548/EEC or 1999/45/EC							Classification according to Regulation (EC) No 1272/2008				
Substance	Assumed Compound	CAS No.	% w/w ^{NOTE 1}	Flash Point (°C)	Source Data	EU Hazard	Risk Phrase	Classification	Carcinogen Group No.	Toxic for Reproduction Category	Mutagenic Category	Source Data	Signal Word	Hazard Class & Category Code	Hazard Statement Code	
Total Sulphate	-	-	0.3015	n/a	Annex I of Directive 67/548/EEC	This substance is not classified as dangerous according to Directive 67/548/EEC						Not a hazardous substance or mixture according to Regulation (EC) No. 1272/2008				
Vanadium	Vanadium pentoxide	1314-62-1	0.0655	n/a	Annex I of Directive 67/548/EEC		R63	Possible risk of harm to the unborn child	n/a	Repr. Cat. 3;	Muta. Cat. 3;	Annex VI to Directive 1272/2008	Danger	Muta. 2	H341	
							R68	Possible risk of irreversible effects						Repr. 2	H361d	
							T	R48/23						Toxic; danger of serious damage to health by prolonged exposure through inhalation	STOT RE 1	H372
							Xn	R20/22						Harmful by inhalation and if swallowed	Acute Tox. 4	H332
							Xi	R37						Irritating to respiratory system	Acute Tox. 4	H302
	N	R51/53	Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment	STOT SE 3	H335											
Water Soluble Boron	Boron	7440-42-8	0.00088	n/a	Sigma Aldrich	Xn	R22	Harmful if swallowed	n/a	n/a	n/a	Sigma Aldrich	Warning	Acute Tox. 4	H302	
Zinc	Zinc oxide	1314-13-2	0.0915	n/a	Annex I of Directive 67/548/EEC				n/a	n/a	n/a	Annex VI to Directive 1272/2008	Warning	Aquatic Acute 1	H400	
						N	R50/53	Very toxic to aquatic organisms and may cause long-term effects in the aquatic environment						Aquatic Chronic 1	H410	
Chloride	Hydrogen Chloride	7647-01-0	0.0104	n/a	Annex I of Directive 67/548/EEC				n/a	n/a	n/a	Annex VI to Directive 1272/2008	Danger	Press. Gas	H331	
						C	R35	Causes severe burns						Acute Tox. 3	H314	
Naphthalene	Naphthalene	91-20-3	-	n/a	Annex I of Directive 67/548/EEC				Carc. Cat. 3;	n/a	n/a	Annex VI to Directive 1272/2008	Warning	Carc. 2	H351	
						Xn	R22	Harmful if swallowed						Acute Tox. 4	H302	
						N	R50/53	Very toxic to aquatic organisms and may cause long-term effects in the aquatic environment						Aquatic Acute 1	H400	
Acenaphthylene	Acenaphthylene	208-96-8	-	122.0	Sigma Aldrich				n/a	n/a	n/a	Sigma Aldrich	Warning	Acute Tox. 4	H302	
						Xn	R36/37/38	Irritating to eyes, respiratory system and skin.						Skin Irrit. 2	H315	
														Eye Irrit. 2	H319	
Phenanthrene	Phenanthrene, disn. Residues	122070-78-4	0.00001	n/a	Annex I of Directive 67/548/EEC				Carc. Cat. 2;	n/a	n/a	Annex VI to Directive 1272/2008	Danger	STOT SE 3	H335	
						T	R45	May cause cancer						Carc. 1B	H350	
						Xn	R36/37/38	Irritating to eyes, respiratory system and skin						Skin Irrit. 2	H315	
Anthracene	Anthracene	120-12-7	0.000004	121.0	Sigma Aldrich				Carc. Cat. 3;	n/a	n/a	Sigma Aldrich	Warning	Eye Irrit. 2	H319	
						N	R50/53	Very toxic to aquatic organisms and may cause long-term effects in the aquatic environment						STOT SE 3	H335	
														Aquatic Chronic 1	H410	
Fluoranthene	Benzo[k]fluorene	206-44-0	0.000032	198.0	Sigma Aldrich				n/a	n/a	n/a	Sigma Aldrich	Warning	Acute Tox. 4	H302	
						Xn	R22	Harmful if swallowed						Aquatic Acute 1	H400	
Pyrene	Benzo[def]phenanthrene	129-00-0	0.000028	> 200.0	Sigma Aldrich				n/a	n/a	n/a	Sigma Aldrich	Warning	Aquatic Acute 1	H400	
						N	R50/53	Very toxic to aquatic organisms and may cause long-term effects in the aquatic environment						Aquatic Chronic 1	H410	
Benzo(a)anthracene	Benz(a)anthracene	56-55-3	0.000018	n/a	Annex I of Directive 67/548/EEC				Carc. Cat. 2	n/a	n/a	Annex VI to Directive 1272/2008	Danger	Carc. 1B	H350	
						N	R50/53	Very toxic to aquatic organisms and may cause long-term effects in the aquatic environment						Aquatic Acute 1	H400	
														Aquatic Chronic 1	H410	
Chrysene	Chrysene	218-01-9	0.00002	n/a	Annex I of Directive 67/548/EEC				Carc. Cat. 2	n/a	Muta. Cat. 3;	Annex VI to Directive 1272/2008	Danger	Carc. 1B	H350	
						T	R68	Possible risk of irreversible effects						Muta. 2	H341	
						N	R50/53	Very toxic to aquatic organisms and may cause long-term effects in the aquatic environment						Aquatic Acute 1	H400	
Benzo(bk)fluoranthene	benzo(k)fluoranthene	207-08-9	0.000035	n/a	Annex I of Directive 67/548/EEC				Carc. Cat. 2;	n/a	n/a	Annex VI to Directive 1272/2008	Danger	Aquatic Chronic 1	H410	
						N	R50/53	Very toxic to aquatic organisms and may cause long-term effects in the aquatic environment						Carc. 1B	H350	
														Muta. 1B	H340	
Benzo(a)pyrene	benzo(a)pyrene	50-32-8	0.000013	n/a	Annex I of Directive 67/548/EEC				Carc. Cat. 2;	Repr. Cat. 2	Muta. Cat. 2;	Annex VI to Directive 1272/2008	Danger	Repr. 1B	H360FD	
							R45	May cause cancer						Skin Sens. 1	H317	
							R46	May cause heritable genetic damage						Aquatic Acute 1	H400	
							R60	May impair fertility						Aquatic Chronic 1	H410	
							R61	May cause harm to the unborn child								
	T	R43	May cause sensitisation by skin contact													
	N	R50/53	Very toxic to aquatic organisms and may cause long-term effects in the aquatic environment													

Hazardous Waste Classification Worksheet

Box J: Waste Composition details (revised 31st August 2004)

					Classification according to EU Directives 67/548/EEC or 1999/45/EC							Classification according to Regulation (EC) No 1272/2008			
Substance	Assumed Compound	CAS No.	% w/w ^{NOTE 1}	Flash Point (°C)	Source Data	EU Hazard	Risk Phrase	Classification	Carcinogen Group No.	Toxic for Reproduction Category	Mutagenic Category	Source Data	Signal Word	Hazard Class & Category Code	Hazard Statement Code
Indeno(1,2,3-cd)pyrene	Indeno[1,2,3-cd]pyrene	193-39-5	0.000012	n/a	Sigma Aldrich	Xn	R40	Limited evidence of a carcinogenic effect	Carc. Cat. 2;	n/a	n/a	Sigma Aldrich	Warning	Carc 2	H351
Dibenzo(ah)anthracene	dibenz[a,h]anthracene	53-70-3	-	n/a	Annex I of Directive 67/548/EEC	T	R45	May cause cancer	Carc. Cat. 2;	n/a	n/a	Annex VI to Directive 1272/2008	Danger	Carc. 1B	H350
						N	R50/53	Very toxic to aquatic organisms and may cause long-term effects in the aquatic environment						Aquatic Acute 1	H400
Benzo(ghi)perylene	Benzo(ghi)perylene	191-24-2	0.00001	n/a	Sigma Aldrich	N	R50/53	Very toxic to aquatic organisms and may cause long-term adverse effects in the aquatic environment	Carc. Cat. 3;	n/a	n/a	Sigma Aldrich	Warning	Aquatic Acute 1	H400
Benzo(b)fluoranthene	Benzo(b)fluoranthene	205-99-2	0.000025	n/a	Sigma Aldrich	T	R45	May cause cancer	Carc. Cat. 2;	n/a	n/a	Sigma Aldrich	Danger	Carc. 1B	H350
						N	R50/53	Very toxic to aquatic organisms and may cause long-term effects in the aquatic environment						Aquatic Acute 1	H400
Benzo(k)fluoranthene	benzo(k)fluoranthene	207-08-9	0.00001	n/a	Annex I of Directive 67/548/EEC	T	R45	May cause cancer	Carc. Cat. 2;	n/a	n/a	Annex VI to Directive 1272/2008	Danger	Carc. 1B	H350
						N	R50/53	Very toxic to aquatic organisms and may cause long-term effects in the aquatic environment						Aquatic Acute 1	H400
Mineral Oil (C8-C40)	Mineral Oil	8042-47-5	0.0242	> 112 °C	Sigma Aldrich	This substance is not classified as dangerous according to Directive 67/548/EEC						Not a hazardous substance or mixture according to Regulation (EC) No. 1272/2008			
Total aromatics C5-35	Aromatic hydrocarbons	90989-41-6	0.0145	n/a	Annex I of Directive 67/548/EEC	T	R45	May cause cancer	Carc. Cat. 2;	n/a	n/a	Annex VI to Directive 1272/2008	Danger	Carc. 1B	H350
Total aliphatics C5-35	Distillates (petroleum),	68477-35-0	0.018	n/a	Annex I of Directive 67/548/EEC	T	R46	May cause heritable genetic damage						Carc. Cat. 2;	n/a
Total 12 PCBs	polychlorobiphenyls; PCB	1336-36-3	-	n/a	Annex I of Directive 67/548/EEC	Xn	R33	Danger of cumulative effects	n/a	n/a	n/a	Annex VI to Directive 1272/2008	Warning	STOT RE 2	H373
						N	R50/53	Very toxic to aquatic organisms and may cause long-term effects in the aquatic environment						Aquatic Acute 1	H400
Total 7 PCBs	polychlorobiphenyls; PCB	1336-36-3	-	n/a	Annex I of Directive 67/548/EEC	Xn	R33	Danger of cumulative effects	n/a	n/a	n/a	Annex VI to Directive 1272/2008	Warning	STOT RE 2	H373
						N	R50/53	Very toxic to aquatic organisms and may cause long-term effects in the aquatic environment						Aquatic Acute 1	H400
Thiocyanate	thiocyanic acid	463-56-9	-	n/a	Annex I of Directive 67/548/EEC	Xn	R20/21/22	Harmful by inhalation, in contact with skin and if swallowed	n/a	n/a	n/a	Annex VI to Directive 1272/2008	Warning	Acute Tox. 4	H332
							R32	Contact with acids liberates very toxic gas						Acute Tox. 4	H312
						N	R52/53	Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment						Acute Tox. 4	H302

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Box K: Waste Composition Details		
Properties with Thresholds (Box K1)		
Property	Threshold	Total in Waste
	(% w/w)	(% w/w)
Flash Point < 55 °C		0
Very Toxic	> 0.1	0.0003
Toxic	> 3	0.0789
Harmful	> 25	3.041
Corrosive with Risk Phrase R35	>1	0.010
Corrosive with Risk Phrase R34	> 5	0.0
Irritant with Risk Phrase R41	> 10	0.0
Irritant with Risk Phrase R36, R37, R38	> 20	0.066
Carcinogen Category 1 or 2	> 0.1	0.033
Carcinogen Category 3	> 1	0.011
Toxic for Reproduction Category 1 and 2 with Risk Phrases R60, R61	> 0.5	0.019
Toxic for Reproduction Category 3 with Risk Phrases R62, R63	> 5	0.085
Mutagenic Category 1 and 2 with Risk Phrase R46	> 0.1	0.018
Mutagenic Category 3 with Risk Phrase R68	> 1	0.066
Properties without thresholds (Box K2)		
Property	Total (% w/w) in waste	
Explosive	0	
Oxidising	0	
Infectious	0	
Ecotoxic	0.4739	
Residuary Hazardous property	0	

Final EWC Code		
L	Final EWC Code	Possibly 10 02 01 or 10 02 02 with no hazardous components detected in the sample
M	Final EWC Description	Refer to Section 3.1 of Report

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Note 1:	
Very Toxic, those with an EU Hazard Phrase of T+ under EU Directives 67/548/EEC or 1999/45/EC or those with R-phrases of R26, R27, R28 and combined risk phrases with or without R39	Beryllium, Cadmium,
Toxic, those with an EU Hazard Phrase of T under EU Directives 67/548/EEC or 1999/45/EC or those with R-phrases of R23, R24, R25 and combined risk phrases with or without R39 or R48	Arsenic, Beryllium, Cadmium, Selenium, Vanadium, Chloride,
Harmful, those with an EU Hazard Phrase of Xn under Directive 67/548/EEC or 1999/45/EC or those with R-phrases of R20, R21, R22, R65, R68 and combined risk phrases with or without R48	Barium, Copper, Lead, Manganese, (Nickel), Vanadium, Water Soluble Boron, Fluoroanthene, Chrysene, (Indeno(1,2,3-cd)pyrene),
Corrosive with Risk Phrase R35	Chloride,
Corrosive with Risk Phrase R34	Total Sulphate,
Irritant with Risk Phrase R41	No parameters identified
Irritant with Risk Phrase R36, R37, R38	Beryllium, Vanadium, Anthracene
Carcinogen Category 1 or 2 are those with R-phrases R45 or R49	Beryllium, Cadmium, Hexavalent Chromium, Phenanthrene, Benzo(a)anthracene, Chrysene, Benzo(bk)fluoranthene, Benzo(a)pyrene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Total Aromatics, Total Aliphatics
Carcinogen Category 3 are those with R-phrase R40	Nickel, Indeno(1,2,3-cd)pyrene
Toxic for Reproduction Category 1 and 2 with Risk Phrases R60, R61	Lead, Benzo(a)pyrene,
Toxic for Reproduction Category 3 with Risk Phrases R62, R63	Cadmium, Lead, Vanadium,
Mutagenic Category 1 and 2 with Risk Phrase R46	Benzo(a)pyrene, Total Aliphatics
Mutagenic Category 3 with Risk Phrase R68	Cadmium, Vanadium, Chrysene
Explosive (with R-phrases R2, R3 or related r-phrases)	No parameters identified
Oxidising (with R-phrases R7, R8, R9)	No parameters identified
Infectious	No parameters identified
Ecotoxic (with R-phrases R50, R51, R52, R53 Aquatic Env and R54, R55, R56, R57, R58 for Non-Aquatic Env) & combined risk phrases	Cadmium, Chromium, Copper, Lead, Selenium, Vanadium, Zinc, Fluoranthene, Pyrene, Benzo(a)anthracene, Chrysene, Benzo(bk)fluoranthene, Benzo(a)pyrene, Benzo(ghi)perylene, Benzo(b)fluoranthene, Benzo(k)fluoranthene,

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Ecotoxic (Based on Thresholds in WM2)			
R59	> 0.1 %	No parameters identified	
		Arsenic, Cadmium, Hexavalent Chromium, Copper, Lead, Zinc, Naphthalene, Pyrene, Benzo(a)anthracene, Chrysene, Benzo(bk)fluoranthene, Benzo(a)pyrene, Benzo(ghi)perylene, Benzo(b)fluoranthene, Benzo(k)fluoranthene,	0.163
R50-53	> 0.25%		
R51-53	> 2.5%	Antimony, Vanadium	0.0655
R50 or R52 or R53 or R52-53	> 25%	Chromium, Fluoranthene, Selenium	0.2453
			0.4739

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SECOND SCHEDULE: PART III (Waste Management Act 1996)

Properties of Waste which render it hazardous

There is set out in each paragraph of this Part a general term denoting a particular property of waste which renders it hazardous, followed by an explanation of such general term by reference to a description of substances or preparations which possess the particular property.

"Explosive": substances or preparations which may explode under the effect of flame or which are more sensitive to shocks or friction than dinitrobenzene.

"Oxidizing": substances or preparations which exhibit highly exothermic reactions when in contact with other substances, particularly flammable substances.

"Highly flammable":

- (a) liquid substances or preparations having a flash point below 21°C (including extremely flammable liquids), or
- (b) substances or preparations which may become hot and finally catch fire in contact with air at ambient temperature without any application of energy, or
- (c) solid substances or preparations which may readily catch fire after brief contact with a source of ignition and which continue to burn or to be consumed after removal of the source of ignition, or
- (d) gaseous substances or preparations which are flammable in air at normal pressure, or
- (e) substances or preparations which, in contact with water or damp air, evolve highly flammable gases in dangerous quantities.

"Flammable": liquid substances or preparations having a flash point of not less than 21°C and not more than 55°C.

"Irritant": non-corrosive substances or preparations which, through immediate, prolonged or repeated contact with the skin or mucous membrane, can cause inflammation.

"Harmful": substances or preparations which, if they are inhaled or ingested or if they penetrate the skin, may involve limited health risks.

"Toxic": substances or preparations (including very toxic substances or preparations) which, if they are inhaled or ingested or if they penetrate the skin, may cause serious, acute or chronic health risks or death.

"Carcinogenic": substances or preparations which, if they are inhaled or ingested or if they penetrate the skin, may induce cancer or increase its incidence.

"Corrosive": substances or preparations which may destroy living tissue on contact.

"Infectious": substances containing viable micro-organisms or their toxins which are known or reliably believed to cause disease in humans or other living organisms.

"Teratogenic": substances or preparations which, if they are inhaled or ingested or if they penetrate the skin, may induce non-hereditary congenital malformations or increase their incidence.

"Mutagenic": substances or preparations which, if they are inhaled or ingested or if they penetrate the skin, may induce hereditary genetic defects or increase their incidence.

"Ecotoxic": substances or preparations which present or may present immediate or delayed risks for one or more sectors of the environment.

"Residuary hazardous property":

- (a) substances or preparations which release toxic or very toxic gases in contact with water, air or an acid, or
- (b) substances or preparations capable by any means, after being disposed of, of yielding another substance which possesses any property referred to in this or any other paragraph of this Part.

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Box No.	Information Required	Information	
<i>Company Details</i>			
A	Company Name	Cork County Council	
	Company Address	Haulbowline Island, County Cork	
	Date	06/02/2013	
	IPC or Waste License Number (if applicable)	Not yet applicable	
	Contact Person	Cormac O'Suilleabhain	
	Waste Description	Slag - Borehole BH309, 6.5m	
<i>European Waste Catalogue/Hazardous Waste List</i>			
B	Possible EWC Codes		Asterisk Yes / No <input type="checkbox"/> / <input checked="" type="checkbox"/>
		10 02 01	<input type="checkbox"/> / <input checked="" type="checkbox"/>
		10 02 02	<input type="checkbox"/> / <input checked="" type="checkbox"/>
		Refer to Section 3.1 of Report	
C	Six-Digit EWC Code	Not Applicable	Asterisk Yes / No <input type="checkbox"/> / <input type="checkbox"/>
D	EWC Description	Not Applicable	
<i>CI</i>	Mirror Entry Code (if applicable)	Not Applicable	Asterisk Yes / No <input type="checkbox"/> / <input type="checkbox"/>
<i>DI</i>	Mirror Entry Description (if applicable)	Not Applicable	
E	Is this waste classified as hazardous waste according to HWL?	Mirror Entry	<input type="checkbox"/>
		No	<input checked="" type="checkbox"/>
		Yes	<input type="checkbox"/>

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Category I Waste (Box F)

- 1. Anatomical substances, hospital or other clinical waste.
- 2. Pharmaceutical, medicinal or veterinary compounds.
- 3. Wood preservatives.
- 4. Biocides or phyto-pharmaceutical substances.
- 5. Residue from substances employed as solvents.
- 6. Halogenated organic substances not employed as solvents, excluding inert polymerized materials.
- 7. Tempering salts containing cyanides.
- 8. Mineral oils or oily substances (including cutting sludges).
- 9. Mixtures or emulsions of oil and water or hydrocarbon and water.
- 10. Substances containing polychlorinated biphenyls or polychlorinated terphenyls (including dielectrics).
- 11. Tarry materials arising from refining, distillation or any pyrolytic treatment (including still bottoms).
- 12. Inks, dyes, pigments, paints, lacquers or varnishes.
- 13. Resins, latex, plasticizers, glues or adhesives.
- 14. Chemical substances arising from research and development or teaching activities (including laboratory residues) which are not identified or are new and whose effects on humans or the environment are not known.
- 15. Pyrotechnics or other explosive materials.
- 16. Photographic chemicals or processing materials.
- 17. Any material contaminated with any congener of polychlorinated dibenzo-furan.
- 18. Any material contaminated with any congener of polychlorinated dibenzo-p-dioxin.

Category II Waste (Box G)

- 19. Animal or vegetable soaps, fats or waxes.
- 20. Non-halogenated organic substances not employed as solvents.
- 21. Inorganic substances without metals or metal compounds.
- 22. Ashes or cinders.
- 23. Soil, sand or clay (including dredging spoils).
- 24. Non-cyanidic tempering salts.
- 25. Metallic dust or powder.
- 26. Spent catalyst materials.
- 27. Liquids or sludges containing metals or metal compounds.
- 28. Residue (other than scrubber sludges, sludges from water purification plants and sewage sludges (untreated or unsuitable for use in agriculture)) from pollution control operations (including baghouse dusts).
- 29. Scrubber sludges.
- 30. Sludges from water purification plants.
- 31. Decarbonization residue.
- 32. Ion-exchange column residue.
- 33. Sewage sludges, untreated or unsuitable for use in agriculture.
- 34. Residue from cleaning of tanks or equipment.
- 35. Contaminated equipment.
- 36. Contaminated containers (including packaging and gas cylinders).
- 37. Batteries or other electrical cells.
- 38. Vegetable oils.
- 39. Materials resulting from the selective collection of waste from households.
- 40. Any other waste.

Hazardous Waste Classification Worksheet (Revised 31st August 2004)

Category II Constituents (Box H)

- | | |
|---|--|
| <input type="checkbox"/> 41. Beryllium or beryllium compounds. | <input type="checkbox"/> 71. Azides. |
| <input type="checkbox"/> 42. Vanadium compounds. | <input type="checkbox"/> 72. Polychlorinated biphenyls or polychlorinated terphenyls. |
| <input type="checkbox"/> 43. Chromium (VI) compounds. | <input type="checkbox"/> 73. Pharmaceutical or veterinary compounds. |
| <input type="checkbox"/> 44. Cobalt compounds. | <input type="checkbox"/> 74. Biocides or phyto-pharmaceutical substances (including pesticides). |
| <input type="checkbox"/> 45. Nickel compounds. | <input type="checkbox"/> 75. Infectious substances. |
| <input type="checkbox"/> 46. Copper compounds. | <input type="checkbox"/> 76. Creosotes. |
| <input type="checkbox"/> 47. Zinc compounds. | <input type="checkbox"/> 77. Isocyanates or thiocyanates. |
| <input type="checkbox"/> 48. Arsenic or arsenic compounds. | <input type="checkbox"/> 78. Organic cyanides (including nitriles). |
| <input type="checkbox"/> 49. Selenium or selenium compounds. | <input type="checkbox"/> 79. Phenols or phenol compounds. |
| <input type="checkbox"/> 50. Silver compounds. | <input type="checkbox"/> 80. Halogenated solvents. |
| <input type="checkbox"/> 51. Cadmium or cadmium compounds. | <input type="checkbox"/> 81. Organic solvents, excluding halogenated solvents. |
| <input type="checkbox"/> 52. Tin compounds. | <input type="checkbox"/> 82. Organohalogen compounds, excluding inert polymerized materials and other substances referred to in this Part. |
| <input type="checkbox"/> 53. Antimony or antimony compounds. | <input type="checkbox"/> 83. Aromatic compounds; polycyclic and heterocyclic organic compounds. |
| <input type="checkbox"/> 54. Tellurium or tellurium compounds. | <input type="checkbox"/> 84. Aliphatic amines. |
| <input type="checkbox"/> 55. Barium compounds, excluding barium sulphate. | <input type="checkbox"/> 85. Aromatic amines. |
| <input type="checkbox"/> 56. Mercury or mercury compounds. | <input type="checkbox"/> 86. Ethers. |
| <input type="checkbox"/> 57. Thallium or thallium compounds. | <input type="checkbox"/> 87. Substances of an explosive character, excluding those referred to elsewhere in this Part. |
| <input type="checkbox"/> 58. Lead or lead compounds. | <input type="checkbox"/> 88. Sulphur organic compounds. |
| <input type="checkbox"/> 59. Inorganic sulphides. | <input type="checkbox"/> 89. Any congener of polychlorinated dibenzo-furan. |
| <input type="checkbox"/> 60. Inorganic fluorine compounds, excluding calcium fluoride. | <input type="checkbox"/> 90. Any congener of polychlorinated dibenzo-p-dioxin. |
| <input type="checkbox"/> 61. Inorganic cyanides. | <input type="checkbox"/> 91. Hydrocarbons and their oxygen, nitrogen or sulphur compounds not otherwise referred to in this Part. |
| <input type="checkbox"/> 62. Any of the following alkaline or alkaline earth metals, namely, lithium, sodium, potassium, calcium, magnesium in uncombined form. | |
| <input type="checkbox"/> 63. Acidic solutions or acids in solid form. | |
| <input type="checkbox"/> 64. Basic solutions or bases in solid form. | |
| <input type="checkbox"/> 65. Asbestos (dust or fibres). | |
| <input type="checkbox"/> 66. Phosphorus: phosphorus compounds, excluding mineral phosphates. | |
| <input type="checkbox"/> 67. Metal carbonyls. | |
| <input type="checkbox"/> 68. Peroxides. | |
| <input type="checkbox"/> 69. Chlorates. | |
| <input type="checkbox"/> 70. Perchlorates. | |

Hazardous Waste Classification Worksheet (Revised 31st August 2004)

<i>Box I: Property Test Results and Waste Classification</i>					
Property	Property Testing			Waste Classification	
	Test Code	Title of Test	Results	Hazard (s)	Risk Phrase (s)
Explosive					
Oxidising					
Flammable					
Irritant/ Corrosive		NOT APPLICABLE			
Harmful/Toxic					
Carcinogenic					
Infectious	No test methods available for this property				
Toxic for Reproduction					
Mutagenic					
Ecotoxic					
Residuary hazardous property					

Hazardous Waste Classification Worksheet

Box J: Waste Composition details (revised 31st August 2004)

Classification according to EU Directives 67/548/EEC or 1999/45/EC															Classification according to Regulation (EC) No 1272/2008		
Substance	Assumed Compound	CAS No.	% w/w ^{NOTE 1}	Flash Point (°C)	Source Data	EU Hazard	Risk Phrase	Classification	Carcinogen Group No.	Toxic for Reproduction Category	Mutagenic Category	Source Data	Signal Word	Hazard Class & Category Code	Hazard Statement Code		
Aluminium	Aluminium Powder (pyrophoric)	7429-90-5	1.696	n/a no data available as per Sigma Aldrich MSDS	Annex I of Directive 67/548/EEC	F	R15	Contact with water liberates extremely flammable gases	n/a	n/a	n/a	Annex VI to Directive 1272/2008	Danger	Water-react. 2	H261		
						R17	Spontaneously flammable in air	Pyr. Sol. 1						H250			
Antimony	Antimony Compounds	n/a	-	n/a	Annex I of Directive 67/548/EEC	Xn	R20/22	Harmful by inhalation and if swallowed	n/a	n/a	n/a	Annex VI to Directive 1272/2008	Warning	Acute Tox. 4	H332		
						N	R51/53	Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment						Acute Tox. 4	H302		
Arsenic	Arsenic	7440-38-2	-	n/a	Annex I of Directive 67/548/EEC	T	R23/25	Toxic by inhalation and if swallowed	n/a	na	n/a	Annex VI to Directive 1272/2008	Danger	Acute Tox. 3	H331		
						N	R50/53	Very toxic to aquatic organisms and may cause long-term effects in the aquatic environment						Acute Tox. 3	H301		
														Aquatic Acute 1	H400		
Barium	Barium Salts	n/a	0.1051	n/a	Annex I of Directive 67/548/EEC	Xn	R20/22	Harmful by inhalation and if swallowed	n/a	n/a	n/a	Annex VI to Directive 1272/2008	Warning	Acute Tox. 4	H332		
														Acute Tox. 4	H302		
Beryllium	Beryllium	7440-41-7	0.00013	n/a	Annex I of Directive 67/548/EEC	T+	R49	May cause cancer by inhalation.	Carc. Cat. 2;	n/a	n/a	Annex VI to Directive 1272/2008	Danger	Carc. 1B	H350i		
						T	R26	Also very toxic by inhalation						Acute Tox. 2 *	H330		
							R25	Also toxic if swallowed						Acute Tox. 3 *	H301		
							R48/23	Also toxic: danger of serious damage to health by prolonged exposure through inhalation						STOT RE 1	H372		
							R36/37/38	Irritating to eyes, respiratory system and skin						Eye Irrit. 2	H319		
							R43	May cause sensitization by skin contact						STOT SE 3	H335		
Cadmium	cadmium (non-pyrophoric) / cadmium oxide (nonpyrophoric)	7440-43-9/ 1306-19-0	0.00005	n/a	Annex I of Directive 67/548/EEC		R45	May cause cancer	Carc. Cat. 2;	Repr. Cat. 3;	Muta. Cat. 3;	Annex VI to Directive 1272/2008	Danger	Carc. 1B	H350		
							R68	Possible risk of irreversible damage						Muta. 2	H341		
							R62	Possible risk of impaired fertility						Repr. 2	H361fd		
							R63	Possible risk of harm to the unborn child						Acute Tox. 2	H330		
						T	R48/23/25	Toxic: danger or serious damage to health by prolonged exposure through inhalation and if swallowed						STOT RE 1	H372		
						T+	R26	Also very toxic by inhalation						Aquatic Acute 1	H400		
N	R50/53	Very toxic to aquatic organisms and may cause long-term effects in the aquatic environment	Aquatic Chronic 1	H410													
Calcium	Calcium	7440-70-2	17.38	n/a not data available as per Sigma Aldrich MSDS	Annex I of Directive 67/548/EEC	F	R15	Contact with water liberates extremely flammable gases	n/a	n/a	n/a	Annex VI to Directive 1272/2008	Danger	Water-react. 2	H261		
Hexavalent Chromium	Chromium (VI) compounds	n/a	-	n/a	Annex I of Directive 67/548/EEC		R49	May cause cancer by inhalation.	Carc. Cat. 2	n/a	n/a	Annex VI to Directive 1272/2008	Danger	Carc. 1B	H350i		
							R43	May cause sensitization by skin contact						Skin Sens. 1	H317		
						N	R50/53	Very toxic to aquatic organisms and may cause long-term effects in the aquatic environment						Aquatic Acute 1	H400		
Chromium	Chromium	7440-47-3	0.2735	n/a	Sigma Aldrich	N	R50	Very toxic to aquatic organisms	n/a	n/a	n/a	Sigma Aldrich	Warning	Aquatic Acute 1	H400		
Copper	Copper (I) Oxide	1317-39-1	0.0189	n/a	Annex I of Directive 67/548/EEC	Xn	R22	Harmful if swallowed	n/a	n/a	n/a	Annex VI to Directive 1272/2008	Warning	Acute Tox. 4 *	H302		
						N	R50/53	Very toxic to aquatic organisms and may cause long-term effects in the aquatic environment						Aquatic Acute 1	H400		
Lead	Lead Compounds	n/a	0.0114	n/a	Annex I of Directive 67/548/EEC		R61	May cause harm to the unborn child	n/a	Repr. Cat. 1; Repr. Cat. 3;	n/a	Annex VI to Directive 1272/2008	Danger	Aquatic Chronic 1	H410		
							R62	Possible risk of impaired fertility						Repr. 1A	H360Df		
						Xn	R20/22	Harmful by inhalation and if swallowed						Acute Tox. 4	H332		
							R33	Danger of cumulative effects						STOT RE 2	H302		
N	R50/53	Very toxic to aquatic organisms and may cause long-term effects in the aquatic environment	Aquatic Acute 1	H373													
Magnesium	Magnesium, powder or turnings	n/a	5.751	n/a not data available as per Sigma Aldrich MSDS	Annex I of Directive 67/548/EEC	F	R11	Highly flammable	n/a	n/a	n/a	Annex VI to Directive 1272/2008	Danger	Flam. Sol. 1	H228		
							R15	Contact with water liberates extremely flammable gases						Water-react. 2	H261		
Managnese	Manganese dioxide	1313-13-9	3.928	n/a	Annex I of Directive 67/548/EEC	Xn	R20/22	Harmful by inhalation and if swallowed	n/a	n/a	n/a	Annex VI to Directive 1272/2008	Warning	Acute Tox. 4	H332		
Nickel	Nickel	7440-02-0	0.00599	n/a	Annex I of Directive 67/548/EEC	Xn	R40	Limited evidence of a carcinogenic effect	Carc. Cat. 3	n/a	n/a	Annex VI to Directive 1272/2008	Warning	Acute Tox. 4	H302		
							R43	May cause sensitization by skin contact						Carc. 2	H351		
Selenium	Selenium	7782-49-2	0.0014	n/a	Annex I of Directive 67/548/EEC	T	R23/25	Toxic by inhalation and if swallowed	n/a	n/a	n/a	Annex VI to Directive 1272/2008	Danger	Skin Sens. 1	H317		
							R33	Danger of cumulative effects						Acute Tox. 3	H331		
							R53	May cause long-term effects in the aquatic environment						Acute Tox. 3	H301		
													STOT RE 2	H373			
													Aquatic Chronic 4	H413			

Hazardous Waste Classification Worksheet

Box J: Waste Composition details (revised 31st August 2004)

					Classification according to EU Directives 67/548/EEC or 1999/45/EC							Classification according to Regulation (EC) No 1272/2008			
Substance	Assumed Compound	CAS No.	% w/w ^{NOTE 1}	Flash Point (°C)	Source Data	EU Hazard	Risk Phrase	Classification	Carcinogen Group No.	Toxic for Reproduction Category	Mutagenic Category	Source Data	Signal Word	Hazard Class & Category Code	Hazard Statement Code
Total Sulphate	-	-	0.3604	n/a	Annex I of Directive 67/548/EEC			This substance is not classified as dangerous according to Directive 67/548/EEC				Not a hazardous substance or mixture according to Regulation (EC) No. 1272/2008			
Vanadium	Vanadium pentoxide	1314-62-1	0.067	n/a	Annex I of Directive 67/548/EEC		R63	Possible risk of harm to the unborn child	n/a	Repr. Cat. 3;	Muta. Cat. 3;	Annex VI to Directive 1272/2008	Danger	Muta. 2	H341
							R68	Possible risk of irreversible effects						Repr. 2	H361D
							R48/23	Toxic; danger of serious damage to health by prolonged exposure through inhalation						STOT RE 1	H372
							Xn	Harmful by inhalation and if swallowed						Acute Tox. 4	H332
							Xi	Irritating to respiratory system						Acute Tox. 4	H302
	N	R51/53	Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment					STOT SE 3	H335						
Water Soluble Boron	Boron	7440-42-8	0.00162	n/a	Sigma Aldrich	Xn	R22	Harmful if swallowed	n/a	n/a	n/a	Sigma Aldrich	Warning	Acute Tox. 4	H302
Zinc	Zinc oxide	1314-13-2	0.0573	n/a	Annex I of Directive 67/548/EEC				n/a	n/a	n/a	Annex VI to Directive 1272/2008	Warning	Acute Acute 1	H400
						N	R50/53	Very toxic to aquatic organisms and may cause long-term effects in the aquatic environment						Acute Chronic 1	H410
Chloride	Hydrogen Chloride	7647-01-0	0.162	n/a	Annex I of Directive 67/548/EEC				n/a	n/a	n/a	Annex VI to Directive 1272/2008	Danger	Press. Gas	H331
						C	R35	Causes severe burns						Acute Tox. 3	H314
Naphthalene	Naphthalene	91-20-3	-	n/a	Annex I of Directive 67/548/EEC				Carc. Cat.3;	n/a	n/a	Annex VI to Directive 1272/2008	Warning	Carc. 2	H351
						Xn	R22	Harmful if swallowed						Acute Tox. 4	H302
						N	R50/53	Very toxic to aquatic organisms and may cause long-term effects in the aquatic environment						Acute Acute 1	H400
Acenaphthylene	Acenaphthylene	208-96-8	-	122.0	Sigma Aldrich				n/a	n/a	n/a	Sigma Aldrich	Warning	Acute Tox. 4	H302
						Xn	R36/37/38	Irritating to eyes, respiratory system and skin.						Skin Irrit. 2	H315
														Eye Irrit. 2	H319
														STOT SE 3	H335
Phenanthrene	Phenanthrene, distn. Residues	122070-78-4	0.000006	n/a	Annex I of Directive 67/548/EEC				Carc. Cat. 2;	n/a	n/a	Annex VI to Directive 1272/2008	Danger	Carc. 1B	H350
						Xn	R36/37/38	Irritating to eyes, respiratory system and skin						Skin Irrit. 2	H315
Anthracene	Anthracene	120-12-7	-	121.0	Sigma Aldrich				Carc. Cat.3;	n/a	n/a	Sigma Aldrich	Warning	Eye Irrit. 2	H319
						N	R50/53	Very toxic to aquatic organisms and may cause long-term effects in the aquatic environment						STOT SE 3	H335
														Acute Chronic 1	H410
Fluoranthene	Benz[<i>jk</i>]fluorene	206-44-0	0.000011	198.0	Sigma Aldrich				n/a	n/a	n/a	Sigma Aldrich	Warning	Acute Tox. 4	H302
						N	R50	Very toxic to aquatic organisms						Acute Acute 1	H400
														Acute Chronic 1	H410
Pyrene	Benz[<i>def</i>]phenanthrene	129-00-0	0.000008	> 200.0	Sigma Aldrich				n/a	n/a	n/a	Sigma Aldrich	Warning	Acute Acute 1	H400
						N	R50/53	Very toxic to aquatic organisms and may cause long-term effects in the aquatic environment						Acute Chronic 1	H410
Benzo(a)anthracene	Benz(a)anthracene	56-55-3	0.000008	n/a	Annex I of Directive 67/548/EEC				Carc. Cat. 2	n/a	n/a	Annex VI to Directive 1272/2008	Danger	Carc. 1B	H350
						N	R50/53	Very toxic to aquatic organisms and may cause long-term effects in the aquatic environment						Acute Acute 1	H400
														Acute Chronic 1	H410
Chrysene	Chrysene	218-01-9	0.000007	n/a	Annex I of Directive 67/548/EEC				Carc. Cat. 2	n/a	Muta. Cat. 3;	Annex VI to Directive 1272/2008	Danger	Carc. 1B	H350
														Muta. 2	H341
														Acute Acute 1	H400
														Acute Chronic 1	H410
Benzo(k)fluoranthene	benzo(k)fluoranthene	207-08-9	0.000014	n/a	Annex I of Directive 67/548/EEC				Carc. Cat. 2;	n/a	n/a	Annex VI to Directive 1272/2008	Danger	Carc. 1B	H350
														Acute Acute 1	H400
														Acute Chronic 1	H410
Benzo(a)pyrene	benzo(a)pyrene	50-32-8	0.000007	n/a	Annex I of Directive 67/548/EEC				Carc. Cat. 2;	Repr. Cat. 2	Muta. Cat. 2;	Annex VI to Directive 1272/2008	Danger	Carc. 1B	H350
														Muta. 1B	H340
														Repr. 1B	H360FD
														Skin Sens. 1	H317
														Acute Acute 1	H400
														Acute Chronic 1	H410

Hazardous Waste Classification Worksheet

Box J: Waste Composition details (revised 31st August 2004)

Classification according to EU Directives 67/548/EEC or 1999/45/EC															Classification according to Regulation (EC) No 1272/2008		
Substance	Assumed Compound	CAS No.	% w/w ^{NOTE 1}	Flash Point (°C)	Source Data	EU Hazard	Risk Phrase	Classification	Carcinogen Group No.	Toxic for Reproduction Category	Mutagenic Category	Source Data	Signal Word	Hazard Class & Category Code	Hazard Statement Code		
Indeno(1,2,3-cd)pyrene	Indeno(1,2,3-cd)pyrene	193-39-5	0.000006	n/a	Sigma Aldrich	Xn	R40	Limited evidence of a carcinogenic effect	Carc. Cat. 2;	n/a	n/a	Sigma Aldrich	Warning	Carc 2	H351		
Dibenzo(ah)anthracene	dibenz[a,h]anthracene	53-70-3	-	n/a	Annex I of Directive 67/548/EEC	T	R45	May cause cancer	Carc. Cat. 2;	n/a	n/a	Annex VI to Directive 1272/2008	Danger	Carc. 1B	H350		
						N	R50/53	Very toxic to aquatic organisms and may cause long-term effects in the aquatic environment						Aquatic Acute 1	H400		
														Aquatic Chronic 1	H410		
Benzo(ghi)perylene	Benzo(ghi)perylene	191-24-2	0.000005	n/a	Sigma Aldrich	N	R50/53	Very toxic to aquatic organisms and may cause long-term adverse effects in the aquatic environment	Carc. Cat. 3;	n/a	n/a	Sigma Aldrich	Warning	Aquatic Acute 1	H400		
						T	R45	May cause cancer						Aquatic Chronic 1	H410		
														Carc. 1B	H350		
Benzo(b)fluoranthene	Benzo(b)fluoranthene	205-99-2	0.00001	n/a	Sigma Aldrich	N	R50/53	Very toxic to aquatic organisms and may cause long-term effects in the aquatic environment	Carc. Cat. 2;	n/a	n/a	Sigma Aldrich	Danger	Aquatic Acute 1	H400		
														Aquatic Chronic 1	H410		
Benzo(k)fluoranthene	benzo(k)fluoranthene	207-08-9	0.000004	n/a	Annex I of Directive 67/548/EEC	T	R45	May cause cancer	Carc. Cat. 2;	n/a	n/a	Annex VI to Directive 1272/2008	Danger	Carc. 1B	H350		
						N	R50/53	Very toxic to aquatic organisms and may cause long-term effects in the aquatic environment						Aquatic Acute 1	H400		
														Aquatic Chronic 1	H410		
Mineral Oil (C8-C40)	Mineral Oil	8042-47-5	-	> 112 °C	Sigma Aldrich	This substance is not classified as dangerous according to Directive 67/548/EEC					Not a hazardous substance or mixture according to Regulation (EC) No. 1272/2008						
Total aromatics C5-35	Aromatic hydrocarbons	90989-41-6	-	n/a	Annex I of Directive 67/548/EEC	T	R45	May cause cancer	Carc. Cat. 2;	n/a	n/a	Annex VI to Directive 1272/2008	Danger	Carc. 1B	H350		
														Fam. Gas 1	H220		
														Press. Gas	H350		
Total aliphatics C5-35	Distillates (petroleum),	68477-35-0	-	n/a	Annex I of Directive 67/548/EEC	T	R46	May cause heritable genetic damage	Carc. Cat. 2;	n/a	Muta. Cat. 2;	Annex VI to Directive 1272/2008	Danger	Carc. 1A	H340		
														Muta. 1B			
Total 12 PCBs	polychlorobiphenyls; PCB	1336-36-3	-	n/a	Annex I of Directive 67/548/EEC	Xn	R33	Danger of cumulative effects	n/a	n/a	n/a	Annex VI to Directive 1272/2008	Warning	STOT RE 2	H373		
						N	R50/53	Very toxic to aquatic organisms and may cause long-term effects in the aquatic environment						Aquatic Acute 1	H400		
														Aquatic Chronic 1	H410		
Total 7 PCBs	polychlorobiphenyls; PCB	1336-36-3	-	n/a	Annex I of Directive 67/548/EEC	Xn	R33	Danger of cumulative effects	n/a	n/a	n/a	Annex VI to Directive 1272/2008	Warning	STOT RE 2	H373		
						N	R50/53	Very toxic to aquatic organisms and may cause long-term effects in the aquatic environment						Aquatic Acute 1	H400		
														Aquatic Chronic 1	H410		
Thiocyanate	thiocyanic acid	463-56-9	-	n/a	Annex I of Directive 67/548/EEC	Xn	R20/21/22	Harmful by inhalation, in contact with skin and if swallowed	n/a	n/a	n/a	Annex VI to Directive 1272/2008	Warning	Acute Tox. 4	H332		
														R32	Contact with acids liberates very toxic gas	Acute Tox. 4	H312
						N	R52/53	Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment						Acute Tox. 4	H302		
													Aquatic Chronic 3	H412			

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Box K: Waste Composition Details		
Properties with Thresholds (Box K1)		
Property	Threshold	Total in Waste
	(% w/w)	(% w/w)
Flash Point < 55 °C		0
Very Toxic	> 0.1	0.00018
Toxic	> 3	0.231
Harmful	> 25	4.138
Corrosive with Risk Phrase R35	>1	0.162
Corrosive with Risk Phrase R34	> 5	0.0
Irritant with Risk Phrase R41	> 10	0.0
Irritant with Risk Phrase R36, R37, R38	> 20	0.067
Carcinogen Category 1 or 2	> 0.1	0.00024
Carcinogen Category 3	> 1	0.006
Toxic for Reproduction Category 1 and 2 with Risk Phrases R60, R61	> 0.5	0.011
Toxic for Reproduction Category 3 with Risk Phrases R62, R63	> 5	0.078
Mutagenic Category 1 and 2 with Risk Phrase R46	> 0.1	0.00001
Mutagenic Category 3 with Risk Phrase R68	> 1	0.0671
Properties without thresholds (Box K2)		
Property	Total (% w/w) in waste	
Explosive	0	
Oxidising	0	
Infectious	0	
Ecotoxic	0.430	
Residuary Hazardous property	0	

Final EWC Code		
L	Final EWC Code	Possibly 10 02 01 or 10 02 02 with no hazardous components identified in the sample
M	Final EWC Description	Refer to Section 3.1 of Report

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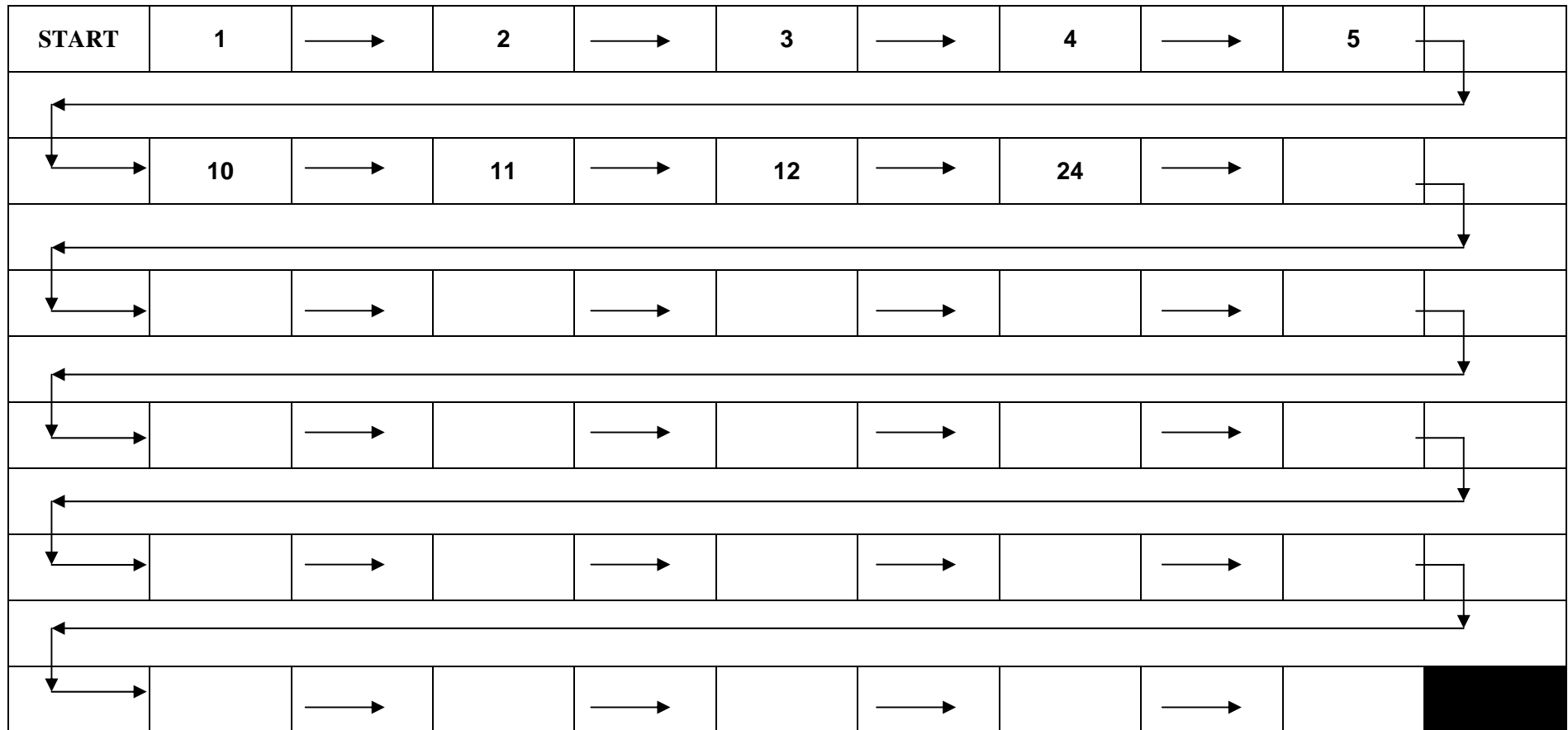
Note 1:	
Very Toxic, those with an EU Hazard Phrase of T+ under EU Directives 67/548/EEC or 1999/45/EC or those with R-phrases of R26, R27, R28 and combined risk phrases with or without R39	Beryllium, Cadmium,
Toxic, those with an EU Hazard Phrase of T under EU Directives 67/548/EEC or 1999/45/EC or those with R-phrases of R23, R24, R25 and combined risk phrases with or without R39 or R48	Beryllium, Cadmium, Selenium, Vanadium, Chloride,
Harmful, those with an EU Hazard Phrase of Xn under Directive 67/548/EEC or 1999/45/EC or those with R-phrases of R20, R21, R22, R65, R68 and combined risk phrases with or without R48	Barium, Copper, Lead, Manganese, (Nickel), Vanadium, Water Soluble Boron, Fluoroanthene, (Indeno(1,2,3-cd)pyrene),
Corrosive with Risk Phrase R35	Chloride,
Corrosive with Risk Phrase R34	Total Sulphate,
Irritant with Risk Phrase R41	No parameters identified
Irritant with Risk Phrase R36, R37, R38	Beryllium, Vanadium,
Carcinogen Category 1 or 2 are those with R-phrases R45 or R49	Beryllium, Cadmium, Phenanthrene, Benzo(a)anthracene, Chrysene, Benzo(bk)fluoranthene, Benzo(a)pyrene, Benzo(b)fluoranthene, Benzo(k)fluoranthene,
Carcinogen Category 3 are those with R-phrase R40	Nickel, Indeno(1,2,3-cd)pyrene
Toxic for Reproduction Category 1 and 2 with Risk Phrases R60, R61	Lead, Benzo(a)pyrene,
Toxic for Reproduction Category 3 with Risk Phrases R62, R63	Cadmium, Lead, Vanadium,
Mutagenic Category 1 and 2 with Risk Phrase R46	Benzo(a)pyrene
Mutagenic Category 3 with Risk Phrase R68	Cadmium, Vanadium
Explosive (with R-phrases R2, R3 or related r-phrases)	No parameters identified
Oxidising (with R-phrases R7, R8, R9)	No parameters identified
Infectious	No parameters identified
Ecotoxic (with R-phrases R50, R51, R52, R53 Aquatic Env and R54, R55, R56, R57, R58 for Non-Aquatic Env) & combined risk phrases	Cadmium, Chromium, Copper, Lead, Selenium, Vanadium, Zinc, Fluoroanthene, Pyrene, Benzo(a)anthracene, Chrysene, Benzo(bk)fluoranthene, Benzo(a)pyrene, Benzo(ghi)perylene, Benzo(b)fluoranthene, Benzo(k)fluoranthene,

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Ecotoxic (Based on Thresholds in WM2)			
R59	> 0.1 %	No parameters identified	
		Cadmium, Copper, Lead, Vanadium, Zinc, Pyrene, Benzo(a)anthracene, Chrysene, Benzo(bk)fluoranthene, Benzo(a)pyrene, Benzo(ghi)perylene, Benzo(b)fluoranthene, Benzo(k)fluoranthene,	0.088
R50-53	> 0.25%		
R51-53	> 2.5%	Vanadium	0.067
R50 or R52 or R53 or R52-53	> 25%	Chromium, Fluoranthene, Selenium	0.2749
			0.430

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Box N - Route Map - Insert the tab numbers as you are directed to them (not applicable to computer tool)



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SECOND SCHEDULE: PART III (Waste Management Act 1996)

Properties of Waste which render it hazardous

There is set out in each paragraph of this Part a general term denoting a particular property of waste which renders it hazardous, followed by an explanation of such general term by reference to a description of substances or preparations which possess the particular property.

"Explosive": substances or preparations which may explode under the effect of flame or which are more sensitive to shocks or friction than dinitrobenzene.

"Oxidizing": substances or preparations which exhibit highly exothermic reactions when in contact with other substances, particularly flammable substances.

"Highly flammable":

(a) liquid substances or preparations having a flash point below 21°C (including extremely flammable liquids), or

(b) substances or preparations which may become hot and finally catch fire in contact with air at ambient temperature without any application of energy, or

(c) solid substances or preparations which may readily catch fire after brief contact with a source of ignition and which continue to burn or to be consumed after removal of the source of ignition, or

(d) gaseous substances or preparations which are flammable in air at normal pressure, or

(e) substances or preparations which, in contact with water or damp air, evolve highly flammable gases in dangerous quantities.

"Flammable": liquid substances or preparations having a flash point of not less than 21°C and not more than 55°C.

"Irritant": non-corrosive substances or preparations which, through immediate, prolonged or repeated contact with the skin or mucous membrane, can cause inflammation.

"Harmful": substances or preparations which, if they are inhaled or ingested or if they penetrate the skin, may involve limited health risks.

"Toxic": substances or preparations (including very toxic substances or preparations) which, if they are inhaled or ingested or if they penetrate the skin, may cause serious, acute or chronic health risks or death.

"Carcinogenic": substances or preparations which, if they are inhaled or ingested or if they penetrate the skin, may induce cancer or increase its incidence.

"Corrosive": substances or preparations which may destroy living tissue on contact.

"Infectious": substances containing viable micro-organisms or their toxins which are known or reliably believed to cause disease in humans or other living organisms.

"Teratogenic": substances or preparations which, if they are inhaled or ingested or if they penetrate the skin, may induce non-hereditary congenital malformations or increase their incidence.

"Mutagenic": substances or preparations which, if they are inhaled or ingested or if they penetrate the skin, may induce hereditary genetic defects or increase their incidence.

"Ecotoxic": substances or preparations which present or may present immediate or delayed risks for one or more sectors of the environment.

"Residuary hazardous property":

(a) substances or preparations which release toxic or very toxic gases in contact with water, air or an acid, or

(b) substances or preparations capable by any means, after being disposed of, of yielding another substance which possesses any property referred to in this or any other paragraph of this Part.

Hazardous Waste Classification Worksheet (Revised 31st August 2004)

Box No.	Information Required	Information	
<i>Company Details</i>			
A	Company Name	Cork County Council	
	Company Address	Haulbowline Island, County Cork	
	Date	06/02/2013	
	IPC or Waste License Number (if applicable)	Not yet applicable	
	Contact Person	Cormac O'Suilleabhain	
	Waste Description	Slag - Borehole BH310C, 2.8m	
<i>European Waste Catalogue/Hazardous Waste List</i>			
B	Possible EWC Codes		Asterisk Yes / No <input type="checkbox"/> / <input checked="" type="checkbox"/>
		10 02 01	<input type="checkbox"/> / <input checked="" type="checkbox"/>
		10 02 02	<input type="checkbox"/> / <input checked="" type="checkbox"/>
		Refer to Section 3.1 of Report	
C	Six-Digit EWC Code	Not Applicable	Asterisk Yes / No <input type="checkbox"/> / <input type="checkbox"/>
D	EWC Description	Not Applicable	
<i>CI</i>	Mirror Entry Code (if applicable)	Not Applicable	Asterisk Yes / No <input type="checkbox"/> / <input type="checkbox"/>
<i>DI</i>	Mirror Entry Description (if applicable)	Not Applicable	
E	Is this waste classified as hazardous waste according to HWL?	Mirror Entry	<input type="checkbox"/>
		No	<input checked="" type="checkbox"/>
		Yes	<input type="checkbox"/>

Hazardous Waste Classification Worksheet (Revised 31st August 2004)

Category I Waste (Box F)

- 1. Anatomical substances, hospital or other clinical waste.
- 2. Pharmaceutical, medicinal or veterinary compounds.
- 3. Wood preservatives.
- 4. Biocides or phyto-pharmaceutical substances.
- 5. Residue from substances employed as solvents.
- 6. Halogenated organic substances not employed as solvents, excluding inert polymerized materials.
- 7. Tempering salts containing cyanides.
- 8. Mineral oils or oily substances (including cutting sludges).
- 9. Mixtures or emulsions of oil and water or hydrocarbon and water.
- 10. Substances containing polychlorinated biphenyls or polychlorinated terphenyls (including dielectrics).
- 11. Tarry materials arising from refining, distillation or any pyrolytic treatment (including still bottoms).
- 12. Inks, dyes, pigments, paints, lacquers or varnishes.
- 13. Resins, latex, plasticizers, glues or adhesives.
- 14. Chemical substances arising from research and development or teaching activities (including laboratory residues) which are not identified or are new and whose effects on humans or the environment are not known.
- 15. Pyrotechnics or other explosive materials.
- 16. Photographic chemicals or processing materials.
- 17. Any material contaminated with any congener of polychlorinated dibenzo-furan.
- 18. Any material contaminated with any congener of polychlorinated dibenzo-p-dioxin.

Category II Waste (Box G)

- 19. Animal or vegetable soaps, fats or waxes.
- 20. Non-halogenated organic substances not employed as solvents.
- 21. Inorganic substances without metals or metal compounds.
- 22. Ashes or cinders.
- 23. Soil, sand or clay (including dredging spoils).
- 24. Non-cyanidic tempering salts.
- 25. Metallic dust or powder.
- 26. Spent catalyst materials.
- 27. Liquids or sludges containing metals or metal compounds.
- 28. Residue (other than scrubber sludges, sludges from water purification plants and sewage sludges (untreated or unsuitable for use in agriculture)) from pollution control operations (including baghouse dusts).
- 29. Scrubber sludges.
- 30. Sludges from water purification plants.
- 31. Decarbonization residue.
- 32. Ion-exchange column residue.
- 33. Sewage sludges, untreated or unsuitable for use in agriculture.
- 34. Residue from cleaning of tanks or equipment.
- 35. Contaminated equipment.
- 36. Contaminated containers (including packaging and gas cylinders).
- 37. Batteries or other electrical cells.
- 38. Vegetable oils.
- 39. Materials resulting from the selective collection of waste from households.
- 40. Any other waste.

Hazardous Waste Classification Worksheet (Revised 31st August 2004)

Category II Constituents (Box H)

- | | |
|---|--|
| <input type="checkbox"/> 41. Beryllium or beryllium compounds. | <input type="checkbox"/> 71. Azides. |
| <input type="checkbox"/> 42. Vanadium compounds. | <input type="checkbox"/> 72. Polychlorinated biphenyls or polychlorinated terphenyls. |
| <input type="checkbox"/> 43. Chromium (VI) compounds. | <input type="checkbox"/> 73. Pharmaceutical or veterinary compounds. |
| <input type="checkbox"/> 44. Cobalt compounds. | <input type="checkbox"/> 74. Biocides or phyto-pharmaceutical substances (including pesticides). |
| <input type="checkbox"/> 45. Nickel compounds. | <input type="checkbox"/> 75. Infectious substances. |
| <input type="checkbox"/> 46. Copper compounds. | <input type="checkbox"/> 76. Creosotes. |
| <input type="checkbox"/> 47. Zinc compounds. | <input type="checkbox"/> 77. Isocyanates or thiocyanates. |
| <input type="checkbox"/> 48. Arsenic or arsenic compounds. | <input type="checkbox"/> 78. Organic cyanides (including nitriles). |
| <input type="checkbox"/> 49. Selenium or selenium compounds. | <input type="checkbox"/> 79. Phenols or phenol compounds. |
| <input type="checkbox"/> 50. Silver compounds. | <input type="checkbox"/> 80. Halogenated solvents. |
| <input type="checkbox"/> 51. Cadmium or cadmium compounds. | <input type="checkbox"/> 81. Organic solvents, excluding halogenated solvents. |
| <input type="checkbox"/> 52. Tin compounds. | <input type="checkbox"/> 82. Organohalogen compounds, excluding inert polymerized materials and other substances referred to in this Part. |
| <input type="checkbox"/> 53. Antimony or antimony compounds. | <input type="checkbox"/> 83. Aromatic compounds; polycyclic and heterocyclic organic compounds. |
| <input type="checkbox"/> 54. Tellurium or tellurium compounds. | <input type="checkbox"/> 84. Aliphatic amines. |
| <input type="checkbox"/> 55. Barium compounds, excluding barium sulphate. | <input type="checkbox"/> 85. Aromatic amines. |
| <input type="checkbox"/> 56. Mercury or mercury compounds. | <input type="checkbox"/> 86. Ethers. |
| <input type="checkbox"/> 57. Thallium or thallium compounds. | <input type="checkbox"/> 87. Substances of an explosive character, excluding those referred to elsewhere in this Part. |
| <input type="checkbox"/> 58. Lead or lead compounds. | <input type="checkbox"/> 88. Sulphur organic compounds. |
| <input type="checkbox"/> 59. Inorganic sulphides. | <input type="checkbox"/> 89. Any congener of polychlorinated dibenzo-furan. |
| <input type="checkbox"/> 60. Inorganic fluorine compounds, excluding calcium fluoride. | <input type="checkbox"/> 90. Any congener of polychlorinated dibenzo-p-dioxin. |
| <input type="checkbox"/> 61. Inorganic cyanides. | <input type="checkbox"/> 91. Hydrocarbons and their oxygen, nitrogen or sulphur compounds not otherwise referred to in this Part. |
| <input type="checkbox"/> 62. Any of the following alkaline or alkaline earth metals, namely, lithium, sodium, potassium, calcium, magnesium in uncombined form. | |
| <input type="checkbox"/> 63. Acidic solutions or acids in solid form. | |
| <input type="checkbox"/> 64. Basic solutions or bases in solid form. | |
| <input type="checkbox"/> 65. Asbestos (dust or fibres). | |
| <input type="checkbox"/> 66. Phosphorus: phosphorus compounds, excluding mineral phosphates. | |
| <input type="checkbox"/> 67. Metal carbonyls. | |
| <input type="checkbox"/> 68. Peroxides. | |
| <input type="checkbox"/> 69. Chlorates. | |
| <input type="checkbox"/> 70. Perchlorates. | |

Hazardous Waste Classification Worksheet (Revised 31st August 2004)

<i>Box I: Property Test Results and Waste Classification</i>					
Property	Property Testing			Waste Classification	
	Test Code	Title of Test	Results	Hazard (s)	Risk Phrase (s)
Explosive					
Oxidising					
Flammable					
Irritant/ Corrosive		NOT APPLICABLE			
Harmful/Toxic					
Carcinogenic					
Infectious	No test methods available for this property				
Toxic for Reproduction					
Mutagenic					
Ecotoxic					
Residuary hazardous property					

Hazardous Waste Classification Worksheet

Box J: Waste Composition details (revised 31st August 2004)

					Classification according to EU Directives 67/548/EEC or 1999/45/EC								Classification according to Regulation (EC) No 1272/2008			
Substance	Assumed Compound	CAS No.	% w/w ^{NOTE 1}	Flash Point (°C)	Source Data	EU Hazard	Risk Phrase	Classification	Carcinogen Group No.	Toxic for Reproduction Category	Mutagenic Category	Source Data	Signal Word	Hazard Class & Category Code	Hazard Statement Code	
Aluminium	Aluminium Powder (pyrophoric)	7429-90-5	2.204	n/a not data available as per Sigma Aldrich MSDS	Annex I of Directive 67/548/EEC	F	R15	Contact with water liberates extremely flammable gases	n/a	n/a	n/a	Annex VI to Directive 1272/2008	Danger	Water-react. 2	H261	
							R17	Spontaneously flammable in air						Pyr. Sol. 1	H250	
Antimony	Antimony Compounds	n/a	-	n/a	Annex I of Directive 67/548/EEC	N	R20/22	Harmful by inhalation and if swallowed	n/a	n/a	n/a	Annex VI to Directive 1272/2008	Warning	Acute Tox. 4	H332	
							R51/53	Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment						Acute Tox. 4	H302	
Arsenic	Arsenic	7440-38-2	-	n/a	Annex I of Directive 67/548/EEC	T	R23/25	Toxic by inhalation and if swallowed	n/a	na	n/a	Annex VI to Directive 1272/2008	Danger	Acute Tox. 3	H331	
							R50/53	Very toxic to aquatic organisms and may cause long-term effects in the aquatic environment						Acute Tox. 3	H301	
Barium	Barium Salts	n/a	0.0705	n/a	Annex I of Directive 67/548/EEC	Xn	R20/22	Harmful by inhalation and if swallowed	n/a	n/a	n/a	Annex VI to Directive 1272/2008	Warning	Acute Tox. 4	H332	
														Acute Tox. 4	H302	
Beryllium	Beryllium	7440-41-7	0.00015	n/a	Annex I of Directive 67/548/EEC	T	R49	May cause cancer by inhalation.	Carc. Cat. 2;	n/a	n/a	Annex VI to Directive 1272/2008	Danger	Carc. 1B	H350	
							R26	Also very toxic by inhalation						Acute Tox. 2 *	H330	
							R25	Also toxic if swallowed.						Acute Tox. 3 *	H301	
							R48/23	Also toxic: danger of serious damage to health by prolonged exposure through inhalation						STOT RE 1	H372	
Cadmium	cadmium (non-pyrophoric)/ cadmium oxide (nonpyrophoric)	7440-43-9/1306-19-0	0.0004	n/a	Annex I of Directive 67/548/EEC	T	R36/37/38	Irritating to eyes, respiratory system and skin	Carc. Cat. 2;	Repr. Cat. 3;	Muta. Cat. 3;	Annex VI to Directive 1272/2008	Danger	Eye Irrit. 2	H319	
							R43	May cause sensitization by skin contact						STOT SE 3	H335	
														Skin Irrit. 2	H315	
														Skin Sens. 1	H317	
Cadmium	cadmium (non-pyrophoric)/ cadmium oxide (nonpyrophoric)	7440-43-9/1306-19-0	0.0004	n/a	Annex I of Directive 67/548/EEC	T	R45	May cause cancer	Carc. Cat. 2;	Repr. Cat. 3;	Muta. Cat. 3;	Annex VI to Directive 1272/2008	Danger	Carc. 1B	H350	
							R68	Possible risk of irreversible damage						Muta. 2	H341	
							R62	Possible risk of impaired fertility						Repr. 2	H361fd	
							R63	Possible risk of harm to the unborn child						Acute Tox. 2	H330	
Calcium	Calcium	7440-70-2	20.96	n/a not data available as per Sigma Aldrich MSDS	Annex I of Directive 67/548/EEC	F	R15	Contact with water liberates extremely flammable gases	n/a	n/a	n/a	Annex VI to Directive 1272/2008	Danger	Water-react. 2	H261	
							R49	May cause cancer by inhalation.						Carc. 1B	H350	
							R43	May cause sensitization by skin contact						Skin Sens. 1	H317	
Hexavalent Chromium	Chromium (VI) compounds	n/a	0.0003	n/a	Annex I of Directive 67/548/EEC	N	R50/53	Very toxic to aquatic organisms and may cause long-term effects in the aquatic environment	Carc. Cat. 2	n/a	n/a	Annex VI to Directive 1272/2008	Danger	Acute Acute 1	H400	
														Acute Chronic 1	H410	
Chromium	Chromium	7440-47-3	0.5312	n/a	Sigma Aldrich	N	R50	Very toxic to aquatic organisms	n/a	n/a	n/a	Sigma Aldrich	Warning	Acute Acute 1	H400	
Copper	Copper (I) Oxide	1317-39-1	0.0427	n/a	Annex I of Directive 67/548/EEC	N	R22	Harmful if swallowed	n/a	n/a	n/a	Annex VI to Directive 1272/2008	Warning	Acute Tox. 4 *	H302	
							R50/53	Very toxic to aquatic organisms and may cause long-term effects in the aquatic environment						Acute Acute 1	H400	
Lead	Lead Compounds	n/a	0.0211	n/a	Annex I of Directive 67/548/EEC	Xn	R61	May cause harm to the unborn child	n/a	Repr. Cat. 1;	n/a	Annex VI to Directive 1272/2008	Danger	Acute Chronic 1	H410	
							R62	Possible risk of impaired fertility						Repr. 1A	H360Df	
Magnesium	Magnesium, powder or turnings	n/a	3.727	n/a not data available as per Sigma Aldrich MSDS	Annex I of Directive 67/548/EEC	F	R20/22	Harmful by inhalation and if swallowed	n/a	n/a	n/a	Annex VI to Directive 1272/2008	Danger	Acute Tox. 4	H332	
							R15	Contact with water liberates extremely flammable gases						STOT RE 2	H302	
Managnese	Manganese dioxide	1313-13-9	3.7	n/a	Annex I of Directive 67/548/EEC	Xn	R20/22	Harmful by inhalation and if swallowed	n/a	n/a	n/a	Annex VI to Directive 1272/2008	Warning	Acute Acute 1	H400	
Nickel	Nickel	7440-02-0	0.00618	n/a	Annex I of Directive 67/548/EEC	Xn	R40	Limited evidence of a carcinogenic effect	Carc. Cat. 3	n/a	n/a	Annex VI to Directive 1272/2008	Warning	Carc. 2	H351	
							R43	May cause sensitization by skin contact						Skin Sens. 1	H317	
Selenium	Selenium	7782-49-2	0.0015	n/a	Annex I of Directive 67/548/EEC	T	R23/25	Toxic by inhalation and if swallowed	n/a	n/a	n/a	Annex VI to Directive 1272/2008	Danger	Acute Tox. 3	H331	
							R33	Danger of cumulative effects						Acute Tox. 3	H301	
							R53	May cause long-term effects in the aquatic environment						STOT RE 2	H373	
														Acute Chronic 4	H413	

Hazardous Waste Classification Worksheet

Box J: Waste Composition details (revised 31st August 2004)

					Classification according to EU Directives 67/548/EEC or 1999/45/EC						Classification according to Regulation (EC) No 1272/2008				
Substance	Assumed Compound	CAS No.	% w/w ^{NOTE 1}	Flash Point (°C)	Source Data	EU Hazard	Risk Phrase	Classification	Carcinogen Group No.	Toxic for Reproduction Category	Mutagenic Category	Source Data	Signal Word	Hazard Class & Category Code	Hazard Statement Code
Total Sulphate	-	-	0.31	n/a	Annex I of Directive 67/548/EEC			This substance is not classified as dangerous according to Directive 67/548/EEC						Not a hazardous substance or mixture according to Regulation (EC) No. 1272/2008	
Vanadium	Vanadium pentoxide	1314-62-1	0.0462	n/a	Annex I of Directive 67/548/EEC		R63	Possible risk of harm to the unborn child	n/a	Repr. Cat. 3;	Muta. Cat. 3;	Annex VI to Directive 1272/2008	Danger	Muta. 2	H341
							R68	Possible risk of irreversible effects						Repr. 2	H361d
							T	R48/23 Toxic; danger of serious damage to health by prolonged exposure through inhalation						STOT RE 1	H372
							Xn	R20/22 Harmful by inhalation and if swallowed						Acute Tox. 4	H332
							Xi	R37 Irritating to respiratory system						Acute Tox. 4	H302
	N	R51/53 Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment	STOT SE 3	H335											
Water Soluble Boron	Boron	7440-42-8	0.00068	n/a	Sigma Aldrich	Xn	R22	Harmful if swallowed	n/a	n/a	n/a	Sigma Aldrich	Warning	Acute Tox. 4	H302
Zinc	Zinc oxide	1314-13-2	0.1177	n/a	Annex I of Directive 67/548/EEC				n/a	n/a	n/a	Annex VI to Directive 1272/2008	Warning	Aquatic Acute 1	H400
						N	R50/53	Very toxic to aquatic organisms and may cause long-term effects in the aquatic environment						Aquatic Chronic 1	H410
Chloride	Hydrogen Chloride	7647-01-0	0.0241	n/a	Annex I of Directive 67/548/EEC				n/a	n/a	n/a	Annex VI to Directive 1272/2008	Danger	Press. Gas	H331
						C	R35	Causes severe burns						Acute Tox. 3	H314
Naphthalene	Naphthalene	91-20-3	-	n/a	Annex I of Directive 67/548/EEC				Carc. Cat. 3;	n/a	n/a	Annex VI to Directive 1272/2008	Warning	Carc. 2	H351
						Xn	R22	Harmful if swallowed						Acute Tox. 4	H302
						N	R50/53	Very toxic to aquatic organisms and may cause long-term effects in the aquatic environment						Aquatic Acute 1	H400
Acenaphthylene	Acenaphthylene	208-96-8	-	122.0	Sigma Aldrich				n/a	n/a	n/a	Sigma Aldrich	Warning	Acute Tox. 4	H302
						Xn	R36/37/38	Irritating to eyes, respiratory system and skin.						Skin Irrit. 2	H315
														Eye Irrit. 2	H319
Phenanthrene	Phenanthrene, disn. Residues	122070-78-4	0.000011	n/a	Annex I of Directive 67/548/EEC				Carc. Cat. 2;	n/a	n/a	Annex VI to Directive 1272/2008	Danger	STOT SE 3	H335
						T	R45	May cause cancer						Carc. 1B	H350
						Xn	R36/37/38	Irritating to eyes, respiratory system and skin						Skin Irrit. 2	H315
Anthracene	Anthracene	120-12-7	-	121.0	Sigma Aldrich				Carc. Cat. 3;	n/a	n/a	Sigma Aldrich	Warning	Eye Irrit. 2	H319
						N	R50/53	Very toxic to aquatic organisms and may cause long-term effects in the aquatic environment						STOT SE 3	H335
														Aquatic Chronic 1	H410
Fluoranthene	Benzo[j,k]fluorene	206-44-0	0.00001	198.0	Sigma Aldrich				n/a	n/a	n/a	Sigma Aldrich	Warning	Acute Tox. 4	H302
						Xn	R22	Harmful if swallowed						Aquatic Acute 1	H400
Pyrene	Benzo[def]phenanthrene	129-00-0	0.000005	> 200.0	Sigma Aldrich				n/a	n/a	n/a	Sigma Aldrich	Warning	Aquatic Chronic 1	H410
						N	R50/53	Very toxic to aquatic organisms and may cause long-term effects in the aquatic environment						Aquatic Chronic 1	H410
Benzo(a)anthracene	Benz(a)anthracene	56-55-3	-	n/a	Annex I of Directive 67/548/EEC				Carc. Cat. 2	n/a	n/a	Annex VI to Directive 1272/2008	Danger	Carc. 1B	H350
						N	R50/53	Very toxic to aquatic organisms and may cause long-term effects in the aquatic environment						Aquatic Acute 1	H400
														Aquatic Chronic 1	H410
Chrysene	Chrysene	218-01-9	0.000004	n/a	Annex I of Directive 67/548/EEC				Carc. Cat. 2	n/a	Muta. Cat. 3;	Annex VI to Directive 1272/2008	Danger	Carc. 1B	H350
						T	R68	Possible risk of irreversible effects						Muta. 2	H341
						N	R50/53	Very toxic to aquatic organisms and may cause long-term effects in the aquatic environment						Aquatic Acute 1	H400
Benzo(bk)fluoranthene	benzo(k)fluoranthene	207-08-9	0.000008	n/a	Annex I of Directive 67/548/EEC				Carc. Cat. 2;	n/a	n/a	Annex VI to Directive 1272/2008	Danger	Aquatic Chronic 1	H410
														Carc. 1B	H350
														Muta. 1B	H340
Benzo(a)pyrene	benzo(a)pyrene	50-32-8	-	n/a	Annex I of Directive 67/548/EEC				Carc. Cat. 2;	Repr. Cat. 2	Muta. Cat. 2;	Annex VI to Directive 1272/2008	Danger	Repr. 1B	H360FD
														Skin Sens. 1	H317
														Aquatic Acute 1	H400
														Aquatic Chronic 1	H410
														Aquatic Chronic 1	H410

Hazardous Waste Classification Worksheet

Box J: Waste Composition details (revised 31st August 2004)

					Classification according to EU Directives 67/548/EEC or 1999/45/EC							Classification according to Regulation (EC) No 1272/2008				
Substance	Assumed Compound	CAS No.	% w/w ^{NOTE 1}	Flash Point (°C)	Source Data	EU Hazard	Risk Phrase	Classification	Carcinogen Group No.	Toxic for Reproduction Category	Mutagenic Category	Source Data	Signal Word	Hazard Class & Category Code	Hazard Statement Code	
Indeno(1,2,3-cd)pyrene	Indeno[1,2,3-cd]pyrene	193-39-5	-	n/a	Sigma Aldrich	Xn	R40	Limited evidence of a carcinogenic effect	Carc. Cat. 2;	n/a	n/a	Sigma Aldrich	Warning	Carc 2	H351	
Dibenzo(ah)anthracene	dibenz[a,h]anthracene	53-70-3	-	n/a	Annex I of Directive 67/548/EEC	T	R45	May cause cancer	Carc. Cat. 2;	n/a	n/a	Annex VI to Directive 1272/2008	Danger	Carc. 1B	H350	
						N	R50/53	Very toxic to aquatic organisms and may cause long-term effects in the aquatic environment						Aquatic Acute 1	H400	Aquatic Chronic 1
Benzo(ghi)perylene	Benzo(ghi)perylene	191-24-2	-	n/a	Sigma Aldrich	N	R50/53	Very toxic to aquatic organisms and may cause long-term adverse effects in the aquatic environment	Carc. Cat. 3;	n/a	n/a	Sigma Aldrich	Warning	Aquatic Acute 1	H400	
						T	R45	May cause cancer						Aquatic Chronic 1	H410	Carc. 1B
Benzo(b)fluoranthene	Benzo(b)fluoranthene	205-99-2	0.000006	n/a	Sigma Aldrich	N	R50/53	Very toxic to aquatic organisms and may cause long-term effects in the aquatic environment	Carc. Cat. 2;	n/a	n/a	Sigma Aldrich	Danger	Aquatic Acute 1	H400	
						T	R45	May cause cancer						Aquatic Chronic 1	H410	Carc. 1B
Benzo(k)fluoranthene	benzo(k)fluoranthene	207-08-9	0.000002	n/a	Annex I of Directive 67/548/EEC	T	R45	May cause cancer	Carc. Cat. 2;	n/a	n/a	Annex VI to Directive 1272/2008	Danger	Carc. 1B	H350	
						N	R50/53	Very toxic to aquatic organisms and may cause long-term effects in the aquatic environment						Aquatic Acute 1	H400	Aquatic Chronic 1
Mineral Oil (C8-C40)	Mineral Oil	8042-47-5	-	> 112 °C	Sigma Aldrich	This substance is not classified as dangerous according to Directive 67/548/EEC						Not a hazardous substance or mixture according to Regulation (EC) No. 1272/2008				
Total aromatics C5-35	Aromatic hydrocarbons	90989-41-6	-	n/a	Annex I of Directive 67/548/EEC	T	R45	May cause cancer	Carc. Cat. 2;	n/a	n/a	Annex VI to Directive 1272/2008	Danger	Carc. 1B	H350	
						T	R45	May cause cancer						Fam. Gas 1	H220	Press. Gas
Total aliphatics C5-35	Distillates (petroleum),	68477-35-0	-	n/a	Annex I of Directive 67/548/EEC	T	R46	May cause heritable genetic damage	Carc. Cat. 2;	n/a	Muta. Cat. 2;	Annex VI to Directive 1272/2008	Danger			
						Xn	R33	Danger of cumulative effects						n/a	n/a	n/a
Total 12 PCBs	polychlorobiphenyls; PCB	1336-36-3	-	n/a	Annex I of Directive 67/548/EEC	N	R50/53	Very toxic to aquatic organisms and may cause long-term effects in the aquatic environment				Annex VI to Directive 1272/2008	Warning	Aquatic Acute 1	H400	
						Xn	R33	Danger of cumulative effects	n/a	n/a	n/a	Annex VI to Directive 1272/2008	Warning	STOT RE 2	H373	
Total 7 PCBs	polychlorobiphenyls; PCB	1336-36-3	-	n/a	Annex I of Directive 67/548/EEC	N	R50/53	Very toxic to aquatic organisms and may cause long-term effects in the aquatic environment				Annex VI to Directive 1272/2008	Warning	Aquatic Acute 1	H400	
						Xn	R20/21/22	Harmful by inhalation, in contact with skin and if swallowed				Annex VI to Directive 1272/2008	Warning	Aquatic Chronic 1	H410	
						N	R32	Contact with acids liberates very toxic gas				Annex VI to Directive 1272/2008	Warning	Acute Tox. 4	H332	
Thiocyanate	thiocyanic acid	463-56-9	0.00016	n/a	Annex I of Directive 67/548/EEC	N	R52/53	Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment	n/a	n/a	n/a	Annex VI to Directive 1272/2008	Warning	Acute Tox. 4	H302	
												Annex VI to Directive 1272/2008	Warning	Acute Tox. 4	H302	
												Annex VI to Directive 1272/2008	Warning	Aquatic Chronic 3	H412	

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Box K: Waste Composition Details		
Properties with Thresholds (Box K1)		
Property	Threshold	Total in Waste
	(% w/w)	(% w/w)
Flash Point < 55 °C		0
Very Toxic	> 0.1	0.001
Toxic	> 3	0.072
Harmful	> 25	3.888
Corrosive with Risk Phrase R35	>1	0.024
Corrosive with Risk Phrase R34	> 5	0.0
Irritant with Risk Phrase R41	> 10	0.0
Irritant with Risk Phrase R36, R37, R38	> 20	0.046
Carcinogen Category 1 or 2	> 0.1	0.001
Carcinogen Category 3	> 1	0.006
Toxic for Reproduction Category 1 and 2 with Risk Phrases R60, R61	> 0.5	0.021
Toxic for Reproduction Category 3 with Risk Phrases R62, R63	> 5	0.068
Mutagenic Category 1 and 2 with Risk Phrase R46	> 0.1	0.0
Mutagenic Category 3 with Risk Phrase R68	> 1	0.0466
Properties without thresholds (Box K2)		
Property	Total (% w/w) in waste	
Explosive	0	
Oxidising	0	
Infectious	0	
Ecotoxic	0.761	
Residuary Hazardous property	0	

Final EWC Code		
L	Final EWC Code	Possibly 10 02 01 or 10 02 02 with no hazardous components identified in the sample
M	Final EWC Description	Refer to Section 3.1 of Report

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Note 1:	
Very Toxic, those with an EU Hazard Phrase of T+ under EU Directives 67/548/EEC or 1999/45/EC or those with R-phrases of R26, R27, R28 and combined risk phrases with or without R39	Beryllium, Cadmium,
Toxic, those with an EU Hazard Phrase of T under EU Directives 67/548/EEC or 1999/45/EC or those with R-phrases of R23, R24, R25 and combined risk phrases with or without R39 or R48	Beryllium, Cadmium, Selenium, Vanadium, Chloride,
Harmful, those with an EU Hazard Phrase of Xn under Directive 67/548/EEC or 1999/45/EC or those with R-phrases of R20, R21, R22, R65, R68 and combined risk phrases with or without R48	Barium, Copper, Lead, Manganese, (Nickel), Vanadium, Water Soluble Boron, Fluoroanthene, Thiocyanate
Corrosive with Risk Phrase R35	Chloride,
Corrosive with Risk Phrase R34	Total Sulphate,
Irritant with Risk Phrase R41	No parameters identified
Irritant with Risk Phrase R36, R37, R38	Beryllium, Vanadium,
Carcinogen Category 1 or 2 are those with R-phrases R45 or R49	Beryllium, Cadmium, Hexavalent Chromium, Phenanthrene, Chrysene, Benzo(bk)fluoranthene, Benzo(b)fluoranthene, Benzo(k)fluoranthene,
Carcinogen Category 3 are those with R-phrase R40	Nickel,
Toxic for Reproduction Category 1 and 2 with Risk Phrases R60, R61	Lead,
Toxic for Reproduction Category 3 with Risk Phrases R62, R63	Cadmium, Lead, Vanadium,
Mutagenic Category 1 and 2 with Risk Phrase R46	No parameters identified
Mutagenic Category 3 with Risk Phrase R68	Cadmium, Vanadium,
Explosive (with R-phrases R2, R3 or related r-phrases)	No parameters identified
Oxidising (with R-phrases R7, R8, R9)	No parameters identified
Infectious	No parameters identified
Ecotoxic (with R-phrases R50, R51, R52, R53 Aquatic Env and R54, R55, R56, R57, R58 for Non-Aquatic Env) & combined risk phrases	Cadmium, Hexavalent Chromium, Chromium, Copper, Lead, Selenium, Vanadium, Zinc, Fluoranthene, Pyrene, Chrysene, Benzo(bk)fluoranthene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Thiocyanate

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Ecotoxic (Based on Thresholds in WM2)			
R59	> 0.1 %	No parameters identified	
R50-53	> 0.25%	Cadmium, Hexavalent Chromium, Copper, Lead, Zinc, Pyrene, Chrysene, Benzo(bk)fluoranthene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Thiocyanade	0.18
R51-53	> 2.5%	Vanadium	0.0462
R50 or R52 or R53 or R52-53	> 25%	Chromium, Fluoranthene, Selenium	0.5327
			0.761

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SECOND SCHEDULE: PART III (Waste Management Act 1996)

Properties of Waste which render it hazardous

There is set out in each paragraph of this Part a general term denoting a particular property of waste which renders it hazardous, followed by an explanation of such general term by reference to a description of substances or preparations which possess the particular property.

"Explosive": substances or preparations which may explode under the effect of flame or which are more sensitive to shocks or friction than dinitrobenzene.

"Oxidizing": substances or preparations which exhibit highly exothermic reactions when in contact with other substances, particularly flammable substances.

"Highly flammable":

- (a) liquid substances or preparations having a flash point below 21°C (including extremely flammable liquids), or
- (b) substances or preparations which may become hot and finally catch fire in contact with air at ambient temperature without any application of energy, or
- (c) solid substances or preparations which may readily catch fire after brief contact with a source of ignition and which continue to burn or to be consumed after removal of the source of ignition, or
- (d) gaseous substances or preparations which are flammable in air at normal pressure, or
- (e) substances or preparations which, in contact with water or damp air, evolve highly flammable gases in dangerous quantities.

"Flammable": liquid substances or preparations having a flash point of not less than 21°C and not more than 55°C.

"Irritant": non-corrosive substances or preparations which, through immediate, prolonged or repeated contact with the skin or mucous membrane, can cause inflammation.

"Harmful": substances or preparations which, if they are inhaled or ingested or if they penetrate the skin, may involve limited health risks.

"Toxic": substances or preparations (including very toxic substances or preparations) which, if they are inhaled or ingested or if they penetrate the skin, may cause serious, acute or chronic health risks or death.

"Carcinogenic": substances or preparations which, if they are inhaled or ingested or if they penetrate the skin, may induce cancer or increase its incidence.

"Corrosive": substances or preparations which may destroy living tissue on contact.

"Infectious": substances containing viable micro-organisms or their toxins which are known or reliably believed to cause disease in humans or other living organisms.

"Teratogenic": substances or preparations which, if they are inhaled or ingested or if they penetrate the skin, may induce non-hereditary congenital malformations or increase their incidence.

"Mutagenic": substances or preparations which, if they are inhaled or ingested or if they penetrate the skin, may induce hereditary genetic defects or increase their incidence.

"Ecotoxic": substances or preparations which present or may present immediate or delayed risks for one or more sectors of the environment.

"Residuary hazardous property":

- (a) substances or preparations which release toxic or very toxic gases in contact with water, air or an acid, or
- (b) substances or preparations capable by any means, after being disposed of, of yielding another substance which possesses any property referred to in this or any other paragraph of this Part.

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Box No.	Information Required	Information	
Company Details			
A	Company Name	Cork County Council	
	Company Address	Haulbowline Island, County Cork	
	Date	06/02/2013	
	IPC or Waste License Number (if applicable)	Not yet applicable	
	Contact Person	Cormac O'Suilleabhain	
	Waste Description	Slag - Borehole BH311, 0.3m	
European Waste Catalogue/Hazardous Waste List			
B	Possible EWC Codes		Asterisk Yes / No 10 02 01 <input type="checkbox"/> / <input checked="" type="checkbox"/>
			10 02 02 <input type="checkbox"/> / <input checked="" type="checkbox"/>
			Refer to Section 3.1 of Report
C	Six-Digit EWC Code	Not Applicable	Asterisk Yes / No <input type="checkbox"/> / <input type="checkbox"/>
D	EWC Description	Not Applicable	
CI	Mirror Entry Code (if applicable)	Not Applicable	Asterisk Yes / No <input type="checkbox"/> / <input type="checkbox"/>
DI	Mirror Entry Description (if applicable)	Not Applicable	
E	Is this waste classified as hazardous waste according to HWL?	Mirror Entry	<input type="checkbox"/>
		No	<input checked="" type="checkbox"/>
		Yes	<input type="checkbox"/>

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Category I Waste (Box F)

- 1. Anatomical substances, hospital or other clinical waste.
- 2. Pharmaceutical, medicinal or veterinary compounds.
- 3. Wood preservatives.
- 4. Biocides or phyto-pharmaceutical substances.
- 5. Residue from substances employed as solvents.
- 6. Halogenated organic substances not employed as solvents, excluding inert polymerized materials.
- 7. Tempering salts containing cyanides.
- 8. Mineral oils or oily substances (including cutting sludges).
- 9. Mixtures or emulsions of oil and water or hydrocarbon and water.
- 10. Substances containing polychlorinated biphenyls or polychlorinated terphenyls (including dielectrics).
- 11. Tarry materials arising from refining, distillation or any pyrolytic treatment (including still bottoms).
- 12. Inks, dyes, pigments, paints, lacquers or varnishes.
- 13. Resins, latex, plasticizers, glues or adhesives.
- 14. Chemical substances arising from research and development or teaching activities (including laboratory residues) which are not identified or are new and whose effects on humans or the environment are not known.
- 15. Pyrotechnics or other explosive materials.
- 16. Photographic chemicals or processing materials.
- 17. Any material contaminated with any congener of polychlorinated dibenzo-furan.
- 18. Any material contaminated with any congener of polychlorinated dibenzo-p-dioxin.

Category II Waste (Box G)

- 19. Animal or vegetable soaps, fats or waxes.
- 20. Non-halogenated organic substances not employed as solvents.
- 21. Inorganic substances without metals or metal compounds.
- 22. Ashes or cinders.
- 23. Soil, sand or clay (including dredging spoils).
- 24. Non-cyanidic tempering salts.
- 25. Metallic dust or powder.
- 26. Spent catalyst materials.
- 27. Liquids or sludges containing metals or metal compounds.
- 28. Residue (other than scrubber sludges, sludges from water purification plants and sewage sludges (untreated or unsuitable for use in agriculture)) from pollution control operations (including baghouse dusts).
- 29. Scrubber sludges.
- 30. Sludges from water purification plants.
- 31. Decarbonization residue.
- 32. Ion-exchange column residue.
- 33. Sewage sludges, untreated or unsuitable for use in agriculture.
- 34. Residue from cleaning of tanks or equipment.
- 35. Contaminated equipment.
- 36. Contaminated containers (including packaging and gas cylinders).
- 37. Batteries or other electrical cells.
- 38. Vegetable oils.
- 39. Materials resulting from the selective collection of waste from households.
- 40. Any other waste.

Hazardous Waste Classification Worksheet (Revised 31st August 2004)

Category II Constituents (Box H)

- | | |
|---|--|
| <input type="checkbox"/> 41. Beryllium or beryllium compounds. | <input type="checkbox"/> 71. Azides. |
| <input type="checkbox"/> 42. Vanadium compounds. | <input type="checkbox"/> 72. Polychlorinated biphenyls or polychlorinated terphenyls. |
| <input type="checkbox"/> 43. Chromium (VI) compounds. | <input type="checkbox"/> 73. Pharmaceutical or veterinary compounds. |
| <input type="checkbox"/> 44. Cobalt compounds. | <input type="checkbox"/> 74. Biocides or phyto-pharmaceutical substances (including pesticides). |
| <input type="checkbox"/> 45. Nickel compounds. | <input type="checkbox"/> 75. Infectious substances. |
| <input type="checkbox"/> 46. Copper compounds. | <input type="checkbox"/> 76. Creosotes. |
| <input type="checkbox"/> 47. Zinc compounds. | <input type="checkbox"/> 77. Isocyanates or thiocyanates. |
| <input type="checkbox"/> 48. Arsenic or arsenic compounds. | <input type="checkbox"/> 78. Organic cyanides (including nitriles). |
| <input type="checkbox"/> 49. Selenium or selenium compounds. | <input type="checkbox"/> 79. Phenols or phenol compounds. |
| <input type="checkbox"/> 50. Silver compounds. | <input type="checkbox"/> 80. Halogenated solvents. |
| <input type="checkbox"/> 51. Cadmium or cadmium compounds. | <input type="checkbox"/> 81. Organic solvents, excluding halogenated solvents. |
| <input type="checkbox"/> 52. Tin compounds. | <input type="checkbox"/> 82. Organohalogen compounds, excluding inert polymerized materials and other substances referred to in this Part. |
| <input type="checkbox"/> 53. Antimony or antimony compounds. | <input type="checkbox"/> 83. Aromatic compounds; polycyclic and heterocyclic organic compounds. |
| <input type="checkbox"/> 54. Tellurium or tellurium compounds. | <input type="checkbox"/> 84. Aliphatic amines. |
| <input type="checkbox"/> 55. Barium compounds, excluding barium sulphate. | <input type="checkbox"/> 85. Aromatic amines. |
| <input type="checkbox"/> 56. Mercury or mercury compounds. | <input type="checkbox"/> 86. Ethers. |
| <input type="checkbox"/> 57. Thallium or thallium compounds. | <input type="checkbox"/> 87. Substances of an explosive character, excluding those referred to elsewhere in this Part. |
| <input type="checkbox"/> 58. Lead or lead compounds. | <input type="checkbox"/> 88. Sulphur organic compounds. |
| <input type="checkbox"/> 59. Inorganic sulphides. | <input type="checkbox"/> 89. Any congener of polychlorinated dibenzo-furan. |
| <input type="checkbox"/> 60. Inorganic fluorine compounds, excluding calcium fluoride. | <input type="checkbox"/> 90. Any congener of polychlorinated dibenzo-p-dioxin. |
| <input type="checkbox"/> 61. Inorganic cyanides. | <input type="checkbox"/> 91. Hydrocarbons and their oxygen, nitrogen or sulphur compounds not otherwise referred to in this Part. |
| <input type="checkbox"/> 62. Any of the following alkaline or alkaline earth metals, namely, lithium, sodium, potassium, calcium, magnesium in uncombined form. | |
| <input type="checkbox"/> 63. Acidic solutions or acids in solid form. | |
| <input type="checkbox"/> 64. Basic solutions or bases in solid form. | |
| <input type="checkbox"/> 65. Asbestos (dust or fibres). | |
| <input type="checkbox"/> 66. Phosphorus: phosphorus compounds, excluding mineral phosphates. | |
| <input type="checkbox"/> 67. Metal carbonyls. | |
| <input type="checkbox"/> 68. Peroxides. | |
| <input type="checkbox"/> 69. Chlorates. | |
| <input type="checkbox"/> 70. Perchlorates. | |

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<i>Box I: Property Test Results and Waste Classification</i>					
Property	Property Testing			Waste Classification	
	Test Code	Title of Test	Results	Hazard (s)	Risk Phrase (s)
Explosive					
Oxidising					
Flammable					
Irritant/ Corrosive		NOT APPLICABLE			
Harmful/Toxic					
Carcinogenic					
Infectious	No test methods available for this property				
Toxic for Reproduction					
Mutagenic					
Ecotoxic					
Residuary hazardous property					

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Box J: Waste Composition details (revised 31st August 2004)

					Classification according to EU Directives 67/548/EEC or 1999/45/EC								Classification according to Regulation (EC) No 1272/2008		
Substance	Assumed Compound	CAS No.	% w/w ^{NOTE 1}	Flash Point (°C)	Source Data	EU Hazard	Risk Phrase	Classification	Carcinogen Group No.	Toxic for Reproduction Category	Mutagenic Category	Source Data	Signal Word	Hazard Class & Category Code	Hazard Statement Code
Aluminium	Aluminium Powder (pyrophoric)	7429-90-5	1.763	n/a not data available as per Sigma Aldrich MSDS	Annex I of Directive 67/548/EEC	F	R15 R17	Contact with water liberates extremely flammable gases Spontaneously flammable in air	n/a	n/a	n/a	Annex VI to Directive 1272/2008	Danger	Water-react. 2	H261
						Xn	R20/22	Harmful by inhalation and if swallowed						Acute Tox. 4	H332
Antimony	Antimony Compounds	n/a	-	n/a	Annex I of Directive 67/548/EEC	N	R51/53	Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment	n/a	n/a	n/a	Annex VI to Directive 1272/2008	Warning	Acute Tox. 4	H302
														Aquatic Chronic 2	H411
Arsenic	Arsenic	7440-38-2	-	n/a	Annex I of Directive 67/548/EEC	T	R23/25	Toxic by inhalation and if swallowed	n/a	na	n/a	Annex VI to Directive 1272/2008	Danger	Acute Tox. 3	H331
						N	R50/53	Very toxic to aquatic organisms and may cause long-term effects in the aquatic environment							
Barium	Barium Salts	n/a	0.0657	n/a	Annex I of Directive 67/548/EEC	Xn	R20/22	Harmful by inhalation and if swallowed	n/a	n/a	n/a	Annex VI to Directive 1272/2008	Warning	Acute Tox. 4	H332
Beryllium	Beryllium	7440-41-7	0.00025	n/a	Annex I of Directive 67/548/EEC	T+	R49 R26	May cause cancer by inhalation. Also very toxic by inhalation.	Carc. Cat. 2;	n/a	n/a	Annex VI to Directive 1272/2008	Danger	Carc. 1B	H350i
						T	R25	Also toxic if swallowed.						Acute Tox. 2 *	H330
							R48/23	Also toxic: danger of serious damage to health by prolonged exposure through inhalation						Acute Tox. 3 *	H301
							R36/37/38	Irritating to eyes, respiratory system and skin						STOT RE 1	H372
						Xi	R43	May cause sensitization by skin contact						Eye Irrit. 2	H319
Cadmium	cadmium (non-pyrophoric)/ cadmium oxide (nonpyrophoric)	7440-43-9/ 1306-19-0	0.00016	n/a	Annex I of Directive 67/548/EEC		R45	May cause cancer	Carc. Cat. 2;	Repr. Cat. 3;	Muta. Cat. 3;	Annex VI to Directive 1272/2008	Danger	Carc. 1B	H350
							R68	Possible risk of irreversible damage						Muta. 2	H341
							R62	Possible risk of impaired fertility						Repr. 2	H361D
							R63	Possible risk of harm to the unborn child						Acute Tox. 2	H330
						T	R48/23/25	Toxic; danger or serious damage to health by prolonged exposure through inhalation and if swallowed						STOT RE 1	H372
T+	R26	Also very toxic by inhalation	Aquatic Acute 1	H400											
N	R50/53	Very toxic to aquatic organisms and may cause long-term effects in the aquatic environment	Aquatic Chronic 1	H410											
Calcium	Calcium	7440-70-2	14.21	n/a not data available as per Sigma Aldrich MSDS	Annex I of Directive 67/548/EEC	F	R15	Contact with water liberates extremely flammable gases	n/a	n/a	n/a	Annex VI to Directive 1272/2008	Danger	Water-react. 2	H261
Hexavalent Chromium	Chromium (VI) compounds	n/a	0.00012	n/a	Annex I of Directive 67/548/EEC		R49	May cause cancer by inhalation.	Carc. Cat. 2	n/a	n/a	Annex VI to Directive 1272/2008	Danger	Carc. 1B	H350i
							R43	May cause sensitization by skin contact						Skin Sens. 1	H317
						N	R50/53	Very toxic to aquatic organisms and may cause long-term effects in the aquatic environment						Aquatic Acute 1	H400
Chromium	Chromium	7440-47-3	0.4707	n/a	Sigma Aldrich	N	R50	Very toxic to aquatic organisms	n/a	n/a	n/a	Sigma Aldrich	Warning	Aquatic Chronic 1	H410
Copper	Copper (I) Oxide	1317-39-1	0.073	n/a	Annex I of Directive 67/548/EEC	Xn	R22	Harmful if swallowed	n/a	n/a	n/a	Annex VI to Directive 1272/2008	Warning	Acute Tox. 4 *	H302
						N	R50/53	Very toxic to aquatic organisms and may cause long-term effects in the aquatic environment							
Lead	Lead Compounds	n/a	0.0152	n/a	Annex I of Directive 67/548/EEC	Xn	R61 R62 R20/22	May cause harm to the unborn child Possible risk of impaired fertility Harmful by inhalation and if swallowed	n/a	Repr. Cat. 1; Repr. Cat. 3;	n/a	Annex VI to Directive 1272/2008	Danger	Acute Tox. 4	H332
							R33	Danger of cumulative effects						STOT RE 2	H302
Magnesium	Magnesium, powder or turnings	n/a	4.801	n/a not data available as per Sigma Aldrich MSDS	Annex I of Directive 67/548/EEC	F	R11 R15	Highly flammable Contact with water liberates extremely flammable gases	n/a	n/a	n/a	Annex VI to Directive 1272/2008	Danger	Flam. Sol. 1	H228
						Xn	R20/22	Harmful by inhalation and if swallowed							
Managnese	Manganese dioxide	1313-13-9	3.354	n/a	Annex I of Directive 67/548/EEC	Xn	R40	Limited evidence of a carcinogenic effect	n/a	n/a	n/a	Annex VI to Directive 1272/2008	Warning	Self-heat. 1	H252
Nickel	Nickel	7440-02-0	0.0157	n/a	Annex I of Directive 67/548/EEC	Xn	R43 R23/25	May cause sensitization by skin contact Toxic by inhalation and if swallowed	Carc. Cat. 3	n/a	n/a	Annex VI to Directive 1272/2008	Warning	Acute Tox. 4	H332
							R33	Danger of cumulative effects							
Selenium	Selenium	7782-49-2	0.0013	n/a	Annex I of Directive 67/548/EEC	T	R33 R53	Danger of cumulative effects May cause long-term effects in the aquatic environment	n/a	n/a	n/a	Annex VI to Directive 1272/2008	Danger	Car. 2	H351
														Acute Tox. 3	H301
														STOT RE 2	H373
														Aquatic Chronic 4	H413

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Box J: Waste Composition details (revised 31st August 2004)

					Classification according to EU Directives 67/548/EEC or 1999/45/EC							Classification according to Regulation (EC) No 1272/2008				
Substance	Assumed Compound	CAS No.	% w/w ^{NOTE 1}	Flash Point (°C)	Source Data	EU Hazard	Risk Phrase	Classification	Carcinogen Group No.	Toxic for Reproduction Category	Mutagenic Category	Source Data	Signal Word	Hazard Class & Category Code	Hazard Statement Code	
Total Sulphate	-	-	0.2386	n/a	Annex I of Directive 67/548/EEC			This substance is not classified as dangerous according to Directive 67/548/EEC						Not a hazardous substance or mixture according to Regulation (EC) No. 1272/2008		
Vanadium	Vanadium pentoxide	1314-62-1	0.037	n/a	Annex I of Directive 67/548/EEC		R63	Possible risk of harm to the unborn child	n/a	Repr. Cat. 3;	Muta. Cat. 3;	Annex VI to Directive 1272/2008	Danger	Muta. 2	H341	
							R68	Possible risk of irreversible effects						Repr. 2	H361d	
							T	R48/23						Toxic; danger of serious damage to health by prolonged exposure through inhalation	STOT RE 1	H372
							Xn	R20/22						Harmful by inhalation and if swallowed	Acute Tox. 4	H332
							Xi	R37						Irritating to respiratory system	Acute Tox. 4	H302
	N	R51/53	Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment			STOT SE 3	H335									
Water Soluble Boron	Boron	7440-42-8	0.00088	n/a	Sigma Aldrich	Xn	R22	Harmful if swallowed	n/a	n/a	n/a	Sigma Aldrich	Warning	Acute Tox. 4	H302	
Zinc	Zinc oxide	1314-13-2	0.1546	n/a	Annex I of Directive 67/548/EEC				n/a	n/a	n/a	Annex VI to Directive 1272/2008	Warning	Aquatic Acute 1	H400	
						N	R50/53	Very toxic to aquatic organisms and may cause long-term effects in the aquatic environment						Aquatic Chronic 1	H410	
Chloride	Hydrogen Chloride	7647-01-0	0.0101	n/a	Annex I of Directive 67/548/EEC				n/a	n/a	n/a	Annex VI to Directive 1272/2008	Danger	Press. Gas	H331	
						C	R35	Causes severe burns						Acute Tox. 3	H314	
Naphthalene	Naphthalene	91-20-3	-	n/a	Annex I of Directive 67/548/EEC				Carc. Cat. 3;	n/a	n/a	Annex VI to Directive 1272/2008	Warning	Carc. 2	H351	
						Xn	R22	Harmful if swallowed						Acute Tox. 4	H302	
						N	R50/53	Very toxic to aquatic organisms and may cause long-term effects in the aquatic environment						Aquatic Acute 1	H400	
Acenaphthylene	Acenaphthylene	208-96-8	-	122.0	Sigma Aldrich				n/a	n/a	n/a	Sigma Aldrich	Warning	Acute Tox. 4	H302	
						Xn	R36/37/38	Irritating to eyes, respiratory system and skin.						Skin Irrit. 2	H315	
														Eye Irrit. 2	H319	
Phenanthrene	Phenanthrene, disn. Residues	122070-78-4	0.000006	n/a	Annex I of Directive 67/548/EEC				Carc. Cat. 2;	n/a	n/a	Annex VI to Directive 1272/2008	Danger	STOT SE 3	H335	
						T	R45	May cause cancer						Carc. 1B	H350	
						Xn	R36/37/38	Irritating to eyes, respiratory system and skin						Skin Irrit. 2	H315	
Anthracene	Anthracene	120-12-7	-	121.0	Sigma Aldrich				Carc. Cat. 3;	n/a	n/a	Sigma Aldrich	Warning	Eye Irrit. 2	H319	
						N	R50/53	Very toxic to aquatic organisms and may cause long-term effects in the aquatic environment						STOT SE 3	H335	
														Aquatic Chronic 1	H410	
Fluoranthene	Benzo[k]fluorene	206-44-0	0.000023	198.0	Sigma Aldrich				n/a	n/a	n/a	Sigma Aldrich	Warning	Acute Tox. 4	H302	
						Xn	R22	Harmful if swallowed						Aquatic Acute 1	H400	
Pyrene	Benzo[def]phenanthrene	129-00-0	0.000018	> 200.0	Sigma Aldrich				n/a	n/a	n/a	Sigma Aldrich	Warning	Aquatic Chronic 1	H410	
						N	R50/53	Very toxic to aquatic organisms and may cause long-term effects in the aquatic environment						Aquatic Chronic 1	H410	
Benzo(a)anthracene	Benz(a)anthracene	56-55-3	0.000009	n/a	Annex I of Directive 67/548/EEC				Carc. Cat. 2	n/a	n/a	Annex VI to Directive 1272/2008	Danger	Carc. 1B	H350	
						N	R50/53	Very toxic to aquatic organisms and may cause long-term effects in the aquatic environment						Aquatic Acute 1	H400	
														Aquatic Chronic 1	H410	
Chrysene	Chrysene	218-01-9	0.000013	n/a	Annex I of Directive 67/548/EEC				Carc. Cat. 2	n/a	Muta. Cat. 3;	Annex VI to Directive 1272/2008	Danger	Carc. 1B	H350	
						T	R68	Possible risk of irreversible effects						Muta. 2	H341	
						N	R50/53	Very toxic to aquatic organisms and may cause long-term effects in the aquatic environment						Aquatic Acute 1	H400	
Benzo(bk)fluoranthene	benzo(k)fluoranthene	207-08-9	0.000022	n/a	Annex I of Directive 67/548/EEC				Carc. Cat. 2;	n/a	n/a	Annex VI to Directive 1272/2008	Danger	Aquatic Chronic 1	H410	
						N	R50/53	Very toxic to aquatic organisms and may cause long-term effects in the aquatic environment						Aquatic Chronic 1	H410	
														Carc. 1B	H350	
Benzo(a)pyrene	benzo(a)pyrene	50-32-8	0.000008	n/a	Annex I of Directive 67/548/EEC				Carc. Cat. 2;	Repr. Cat. 2	Muta. Cat. 2;	Annex VI to Directive 1272/2008	Danger	Aquatic Acute 1	H400	
														Carc. 1B	H350	
														Muta. 1B	H340	
														Repr. 1B	H360FD	
														Skin Sens. 1	H317	
			R43	May cause sensitisation by skin contact	Aquatic Acute 1	H400										
			N	R50/53	Very toxic to aquatic organisms and may cause long-term effects in the aquatic environment	Aquatic Chronic 1	H410									

Hazardous Waste Classification Worksheet

Box J: Waste Composition details (revised 31st August 2004)

					Classification according to EU Directives 67/548/EEC or 1999/45/EC							Classification according to Regulation (EC) No 1272/2008				
Substance	Assumed Compound	CAS No.	% w/w ^{NOTE 1}	Flash Point (°C)	Source Data	EU Hazard	Risk Phrase	Classification	Carcinogen Group No.	Toxic for Reproduction Category	Mutagenic Category	Source Data	Signal Word	Hazard Class & Category Code	Hazard Statement Code	
Indeno(1,2,3-cd)pyrene	Indeno[1,2,3-cd]pyrene	193-39-5	0.000009	n/a	Sigma Aldrich	Xn	R40	Limited evidence of a carcinogenic effect	Carc. Cat. 2;	n/a	n/a	Sigma Aldrich	Warning	Carc 2	H351	
Dibenzo(ah)anthracene	dibenz[a,h]anthracene	53-70-3	-	n/a	Annex I of Directive 67/548/EEC	T	R45	May cause cancer	Carc. Cat. 2;	n/a	n/a	Annex VI to Directive 1272/2008	Danger	Carc. 1B	H350	
						N	R50/53	Very toxic to aquatic organisms and may cause long-term effects in the aquatic environment						Aquatic Acute 1	H400	Aquatic Chronic 1
Benzo(ghi)perylene	Benzo(ghi)perylene	191-24-2	0.000006	n/a	Sigma Aldrich	N	R50/53	Very toxic to aquatic organisms and may cause long-term adverse effects in the aquatic environment	Carc. Cat. 3;	n/a	n/a	Sigma Aldrich	Warning	Aquatic Acute 1	H400	
						T	R45	May cause cancer						Aquatic Chronic 1	H410	Carc. 1B
Benzo(b)fluoranthene	Benzo(b)fluoranthene	205-99-2	0.000016	n/a	Sigma Aldrich	N	R50/53	Very toxic to aquatic organisms and may cause long-term effects in the aquatic environment	Carc. Cat. 2;	n/a	n/a	Sigma Aldrich	Danger	Aquatic Acute 1	H400	
						T	R45	May cause cancer						Aquatic Chronic 1	H410	Carc. 1B
Benzo(k)fluoranthene	benzo(k)fluoranthene	207-08-9	0.000006	n/a	Annex I of Directive 67/548/EEC	T	R45	May cause cancer	Carc. Cat. 2;	n/a	n/a	Annex VI to Directive 1272/2008	Danger	Carc. 1B	H350	
						N	R50/53	Very toxic to aquatic organisms and may cause long-term effects in the aquatic environment						Aquatic Acute 1	H400	Aquatic Chronic 1
Mineral Oil (C8-C40)	Mineral Oil	8042-47-5	0.1297	> 112 °C	Sigma Aldrich	This substance is not classified as dangerous according to Directive 67/548/EEC						Not a hazardous substance or mixture according to Regulation (EC) No. 1272/2008				
Total aromatics C5-35	Aromatic hydrocarbons	90989-41-6	0.0431	n/a	Annex I of Directive 67/548/EEC	T	R45	May cause cancer	Carc. Cat. 2;	n/a	n/a	Annex VI to Directive 1272/2008	Danger	Carc. 1B	H350	
						T	R45	May cause cancer						Fam. Gas 1	H220	Press. Gas
Total aliphatics C5-35	Distillates (petroleum),	68477-35-0	0.0876	n/a	Annex I of Directive 67/548/EEC	T	R46	May cause heritable genetic damage	Carc. Cat. 2;	n/a	Muta. Cat. 2;	Annex VI to Directive 1272/2008	Danger			
						Xn	R33	Danger of cumulative effects						n/a	n/a	n/a
Total 12 PCBs	polychlorobiphenyls; PCB	1336-36-3	-	n/a	Annex I of Directive 67/548/EEC	N	R50/53	Very toxic to aquatic organisms and may cause long-term effects in the aquatic environment				Annex VI to Directive 1272/2008	Warning	Aquatic Acute 1	H400	
						Xn	R33	Danger of cumulative effects	n/a	n/a	n/a	Annex VI to Directive 1272/2008	Warning	Aquatic Chronic 1	H410	
Total 7 PCBs	polychlorobiphenyls; PCB	1336-36-3	0.0000163	n/a	Annex I of Directive 67/548/EEC	N	R50/53	Very toxic to aquatic organisms and may cause long-term effects in the aquatic environment				Annex VI to Directive 1272/2008	Warning	STOT RE 2	H373	
						Xn	R20/21/22	Harmful by inhalation, in contact with skin and if swallowed				Annex VI to Directive 1272/2008	Warning	Aquatic Acute 1	H400	
						N	R32	Contact with acids liberates very toxic gas				Annex VI to Directive 1272/2008	Warning	Aquatic Chronic 1	H410	
Thiocyanate	thiocyanic acid	463-56-9	-	n/a	Annex I of Directive 67/548/EEC	N	R52/53	Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment	n/a	n/a	n/a	Annex VI to Directive 1272/2008	Warning	Acute Tox. 4	H332	
														Acute Tox. 4	H312	
														Acute Tox. 4	H302	
														Aquatic Chronic 3	H412	

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Box K: Waste Composition Details		
Properties with Thresholds (Box K1)		
Property	Threshold	Total in Waste
	(% w/w)	(% w/w)
Flash Point < 55 °C		
Very Toxic	> 0.1	0.0004
Toxic	> 3	0.0488
Harmful	> 25	3.5615
Corrosive with Risk Phrase R35	>1	0.0101
Corrosive with Risk Phrase R34	> 5	0.0
Irritant with Risk Phrase R41	> 10	0.0
Irritant with Risk Phrase R36, R37, R38	> 20	0.0373
Carcinogen Category 1 or 2	> 0.1	0.1313
Carcinogen Category 3	> 1	0.0157
Toxic for Reproduction Category 1 and 2 with Risk Phrases R60, R61	> 0.5	0.0152
Toxic for Reproduction Category 3 with Risk Phrases R62, R63	> 5	0.0524
Mutagenic Category 1 and 2 with Risk Phrase R46	> 0.1	0.0876
Mutagenic Category 3 with Risk Phrase R68	> 1	0.0372
Properties without thresholds (Box K2)		
Property	Total (% w/w) in waste	
Explosive	0	
Oxidising	0	
Infectious	0	
Ecotoxic	0.7522	
Residuary Hazardous property	0	

Final EWC Code		
L	Final EWC Code	Possibly 10 02 01 or 10 02 02 with hazardous components identified in the sample
M	Final EWC Description	Refer to Section 3.1 of Report

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Note 1:	
Very Toxic, those with an EU Hazard Phrase of T+ under EU Directives 67/548/EEC or 1999/45/EC or those with R-phrases of R26, R27, R28 and combined risk phrases with or without R39	Beryllium, Cadmium,
Toxic, those with an EU Hazard Phrase of T under EU Directives 67/548/EEC or 1999/45/EC or those with R-phrases of R23, R24, R25 and combined risk phrases with or without R39 or R48	Beryllium, Cadmium, Selenium, Vanadium, Chloride,
Harmful, those with an EU Hazard Phrase of Xn under Directive 67/548/EEC or 1999/45/EC or those with R-phrases of R20, R21, R22, R65, R68 and combined risk phrases with or without R48	Barium, Copper, Lead, Manganese, (Nickel), Vanadium, Water Soluble Boron, Fluoroanthene, (Indeno(1,2,3-cd)pyrene), (Total 7 PCBs),
Corrosive with Risk Phrase R35	Chloride,
Corrosive with Risk Phrase R34	Total Sulphate,
Irritant with Risk Phrase R41	No parameters identified
Irritant with Risk Phrase R36, R37, R38	Beryllium, Vanadium,
Carcinogen Category 1 or 2 are those with R-phrases R45 or R49	Beryllium, Cadmium, Hexavalent Chromium, Phenanthrene, Benzo(a)anthracene, Chrysene, Benzo(bk)fluoranthene, Benzo(a)pyrene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Total Aromatics, Total Aliphatics,
Carcinogen Category 3 are those with R-phrase R40	Nickel, Indeno(1,2,3-cd)pyrene
Toxic for Reproduction Category 1 and 2 with Risk Phrases R60, R61	Lead, Benzo(a)pyrene,
Toxic for Reproduction Category 3 with Risk Phrases R62, R63	Cadmium, Lead, Vanadium,
Mutagenic Category 1 and 2 with Risk Phrase R46	Benzo(a)pyrene, Total Aliphatics
Mutagenic Category 3 with Risk Phrase R68	Cadmium, Vanadium,
Explosive (with R-phrases R2, R3 or related r-phrases)	No parameters identified
Oxidising (with R-phrases R7, R8, R9)	No parameters identified
Infectious	No parameters identified
Ecotoxic (with R-phrases R50, R51, R52, R53 Aquatic Env and R54, R55, R56, R57, R58 for Non-Aquatic Env) & combined risk phrases	Cadmium, Hexavalent Chromium, Chromium, Copper, Lead, Selenium, Vanadium, Zinc, Fluoranthene, Pyrene, Benzo(a)anthracene, Chrysene, Benzo(bk)fluoranthene, Benzo(a)pyrene, Benzo(ghi)perylene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Total 7 PCBs,

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Ecotoxic (Based on Thresholds in WM2)			
R59	> 0.1 %	No parameters identified	
R50-53	> 0.25%	Cadmium, Hexavalent Chromium, Copper, Lead, Vanadium, Zinc, Pyrene, Benzo(a)anthracene, Chrysene, Benzo(bk)fluoranthene, Benzo(a)pyrene, Benzo(ghi)perylene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Total 7 PCBs,	0.24
R51-53	> 2.5%	Vanadium	0.037
R50 or R52 or R53 or R52-53	> 25%	Chromium, Fluoranthene, Selenium	0.4720
			0.7522

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SECOND SCHEDULE: PART III (Waste Management Act 1996)

Properties of Waste which render it hazardous

There is set out in each paragraph of this Part a general term denoting a particular property of waste which renders it hazardous, followed by an explanation of such general term by reference to a description of substances or preparations which possess the particular property.

"Explosive": substances or preparations which may explode under the effect of flame or which are more sensitive to shocks or friction than dinitrobenzene.

"Oxidizing": substances or preparations which exhibit highly exothermic reactions when in contact with other substances, particularly flammable substances.

"Highly flammable":

- (a) liquid substances or preparations having a flash point below 21°C (including extremely flammable liquids), or
- (b) substances or preparations which may become hot and finally catch fire in contact with air at ambient temperature without any application of energy, or
- (c) solid substances or preparations which may readily catch fire after brief contact with a source of ignition and which continue to burn or to be consumed after removal of the source of ignition, or
- (d) gaseous substances or preparations which are flammable in air at normal pressure, or
- (e) substances or preparations which, in contact with water or damp air, evolve highly flammable gases in dangerous quantities.

"Flammable": liquid substances or preparations having a flash point of not less than 21°C and not more than 55°C.

"Irritant": non-corrosive substances or preparations which, through immediate, prolonged or repeated contact with the skin or mucous membrane, can cause inflammation.

"Harmful": substances or preparations which, if they are inhaled or ingested or if they penetrate the skin, may involve limited health risks.

"Toxic": substances or preparations (including very toxic substances or preparations) which, if they are inhaled or ingested or if they penetrate the skin, may cause serious, acute or chronic health risks or death.

"Carcinogenic": substances or preparations which, if they are inhaled or ingested or if they penetrate the skin, may induce cancer or increase its incidence.

"Corrosive": substances or preparations which may destroy living tissue on contact.

"Infectious": substances containing viable micro-organisms or their toxins which are known or reliably believed to cause disease in humans or other living organisms.

"Teratogenic": substances or preparations which, if they are inhaled or ingested or if they penetrate the skin, may induce non-hereditary congenital malformations or increase their incidence.

"Mutagenic": substances or preparations which, if they are inhaled or ingested or if they penetrate the skin, may induce hereditary genetic defects or increase their incidence.

"Ecotoxic": substances or preparations which present or may present immediate or delayed risks for one or more sectors of the environment.

"Residuary hazardous property":

- (a) substances or preparations which release toxic or very toxic gases in contact with water, air or an acid, or
- (b) substances or preparations capable by any means, after being disposed of, of yielding another substance which possesses any property referred to in this or any other paragraph of this Part.

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Box No.	Information Required	Information	
<i>Company Details</i>			
A	Company Name	Cork County Council	
	Company Address	Haulbowline Island, County Cork	
	Date	06/02/2013	
	IPC or Waste License Number (if applicable)	Not yet applicable	
	Contact Person	Cormac O'Suilleabhain	
	Waste Description	Slag - Borehole BH313, 1.0m	
<i>European Waste Catalogue/Hazardous Waste List</i>			
B	Possible EWC Codes		Asterisk Yes / No <input type="checkbox"/> / <input checked="" type="checkbox"/>
		10 02 01	<input type="checkbox"/> / <input checked="" type="checkbox"/>
		10 02 02	<input type="checkbox"/> / <input checked="" type="checkbox"/>
		Refer to Section 3.1 of Report	
C	Six-Digit EWC Code	Not Applicable	Asterisk Yes / No <input type="checkbox"/> / <input type="checkbox"/>
D	EWC Description	Not Applicable	
<i>CI</i>	Mirror Entry Code (if applicable)	Not Applicable	Asterisk Yes / No <input type="checkbox"/> / <input type="checkbox"/>
<i>DI</i>	Mirror Entry Description (if applicable)	Not Applicable	
E	Is this waste classified as hazardous waste according to HWL?	Mirror Entry	<input type="checkbox"/>
		No	<input checked="" type="checkbox"/>
		Yes	<input type="checkbox"/>

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Category I Waste (Box F)

- 1. Anatomical substances, hospital or other clinical waste.
- 2. Pharmaceutical, medicinal or veterinary compounds.
- 3. Wood preservatives.
- 4. Biocides or phyto-pharmaceutical substances.
- 5. Residue from substances employed as solvents.
- 6. Halogenated organic substances not employed as solvents, excluding inert polymerized materials.
- 7. Tempering salts containing cyanides.
- 8. Mineral oils or oily substances (including cutting sludges).
- 9. Mixtures or emulsions of oil and water or hydrocarbon and water.
- 10. Substances containing polychlorinated biphenyls or polychlorinated terphenyls (including dielectrics).
- 11. Tarry materials arising from refining, distillation or any pyrolytic treatment (including still bottoms).
- 12. Inks, dyes, pigments, paints, lacquers or varnishes.
- 13. Resins, latex, plasticizers, glues or adhesives.
- 14. Chemical substances arising from research and development or teaching activities (including laboratory residues) which are not identified or are new and whose effects on humans or the environment are not known.
- 15. Pyrotechnics or other explosive materials.
- 16. Photographic chemicals or processing materials.
- 17. Any material contaminated with any congener of polychlorinated dibenzo-furan.
- 18. Any material contaminated with any congener of polychlorinated dibenzo-p-dioxin.

Category II Waste (Box G)

- 19. Animal or vegetable soaps, fats or waxes.
- 20. Non-halogenated organic substances not employed as solvents.
- 21. Inorganic substances without metals or metal compounds.
- 22. Ashes or cinders.
- 23. Soil, sand or clay (including dredging spoils).
- 24. Non-cyanidic tempering salts.
- 25. Metallic dust or powder.
- 26. Spent catalyst materials.
- 27. Liquids or sludges containing metals or metal compounds.
- 28. Residue (other than scrubber sludges, sludges from water purification plants and sewage sludges (untreated or unsuitable for use in agriculture)) from pollution control operations (including baghouse dusts).
- 29. Scrubber sludges.
- 30. Sludges from water purification plants.
- 31. Decarbonization residue.
- 32. Ion-exchange column residue.
- 33. Sewage sludges, untreated or unsuitable for use in agriculture.
- 34. Residue from cleaning of tanks or equipment.
- 35. Contaminated equipment.
- 36. Contaminated containers (including packaging and gas cylinders).
- 37. Batteries or other electrical cells.
- 38. Vegetable oils.
- 39. Materials resulting from the selective collection of waste from households.
- 40. Any other waste.

Hazardous Waste Classification Worksheet (Revised 31st August 2004)

Category II Constituents (Box H)

- | | |
|---|--|
| <input type="checkbox"/> 41. Beryllium or beryllium compounds. | <input type="checkbox"/> 71. Azides. |
| <input type="checkbox"/> 42. Vanadium compounds. | <input type="checkbox"/> 72. Polychlorinated biphenyls or polychlorinated terphenyls. |
| <input type="checkbox"/> 43. Chromium (VI) compounds. | <input type="checkbox"/> 73. Pharmaceutical or veterinary compounds. |
| <input type="checkbox"/> 44. Cobalt compounds. | <input type="checkbox"/> 74. Biocides or phyto-pharmaceutical substances (including pesticides). |
| <input type="checkbox"/> 45. Nickel compounds. | <input type="checkbox"/> 75. Infectious substances. |
| <input type="checkbox"/> 46. Copper compounds. | <input type="checkbox"/> 76. Creosotes. |
| <input type="checkbox"/> 47. Zinc compounds. | <input type="checkbox"/> 77. Isocyanates or thiocyanates. |
| <input type="checkbox"/> 48. Arsenic or arsenic compounds. | <input type="checkbox"/> 78. Organic cyanides (including nitriles). |
| <input type="checkbox"/> 49. Selenium or selenium compounds. | <input type="checkbox"/> 79. Phenols or phenol compounds. |
| <input type="checkbox"/> 50. Silver compounds. | <input type="checkbox"/> 80. Halogenated solvents. |
| <input type="checkbox"/> 51. Cadmium or cadmium compounds. | <input type="checkbox"/> 81. Organic solvents, excluding halogenated solvents. |
| <input type="checkbox"/> 52. Tin compounds. | <input type="checkbox"/> 82. Organohalogen compounds, excluding inert polymerized materials and other substances referred to in this Part. |
| <input type="checkbox"/> 53. Antimony or antimony compounds. | <input type="checkbox"/> 83. Aromatic compounds; polycyclic and heterocyclic organic compounds. |
| <input type="checkbox"/> 54. Tellurium or tellurium compounds. | <input type="checkbox"/> 84. Aliphatic amines. |
| <input type="checkbox"/> 55. Barium compounds, excluding barium sulphate. | <input type="checkbox"/> 85. Aromatic amines. |
| <input type="checkbox"/> 56. Mercury or mercury compounds. | <input type="checkbox"/> 86. Ethers. |
| <input type="checkbox"/> 57. Thallium or thallium compounds. | <input type="checkbox"/> 87. Substances of an explosive character, excluding those referred to elsewhere in this Part. |
| <input type="checkbox"/> 58. Lead or lead compounds. | <input type="checkbox"/> 88. Sulphur organic compounds. |
| <input type="checkbox"/> 59. Inorganic sulphides. | <input type="checkbox"/> 89. Any congener of polychlorinated dibenzo-furan. |
| <input type="checkbox"/> 60. Inorganic fluorine compounds, excluding calcium fluoride. | <input type="checkbox"/> 90. Any congener of polychlorinated dibenzo-p-dioxin. |
| <input type="checkbox"/> 61. Inorganic cyanides. | <input type="checkbox"/> 91. Hydrocarbons and their oxygen, nitrogen or sulphur compounds not otherwise referred to in this Part. |
| <input type="checkbox"/> 62. Any of the following alkaline or alkaline earth metals, namely, lithium, sodium, potassium, calcium, magnesium in uncombined form. | |
| <input type="checkbox"/> 63. Acidic solutions or acids in solid form. | |
| <input type="checkbox"/> 64. Basic solutions or bases in solid form. | |
| <input type="checkbox"/> 65. Asbestos (dust or fibres). | |
| <input type="checkbox"/> 66. Phosphorus: phosphorus compounds, excluding mineral phosphates. | |
| <input type="checkbox"/> 67. Metal carbonyls. | |
| <input type="checkbox"/> 68. Peroxides. | |
| <input type="checkbox"/> 69. Chlorates. | |
| <input type="checkbox"/> 70. Perchlorates. | |

Hazardous Waste Classification Worksheet (Revised 31st August 2004)

<i>Box I: Property Test Results and Waste Classification</i>					
Property	Property Testing			Waste Classification	
	Test Code	Title of Test	Results	Hazard (s)	Risk Phrase (s)
Explosive					
Oxidising					
Flammable					
Irritant/ Corrosive		NOT APPLICABLE			
Harmful/Toxic					
Carcinogenic					
Infectious	No test methods available for this property				
Toxic for Reproduction					
Mutagenic					
Ecotoxic					
Residuary hazardous property					

Hazardous Waste Classification Worksheet

Box J: Waste Composition details (revised 31st August 2004)

Classification according to EU Directives 67/548/EEC or 1999/45/EC															Classification according to Regulation (EC) No 1272/2008			
Substance	Assumed Compound	CAS No.	% w/w ^{NOTE 1}	Flash Point (°C)	Source Data	EU Hazard	Risk Phrase	Classification	Carcinogen Group No.	Toxic for Reproduction Category	Mutagenic Category	Source Data	Signal Word	Hazard Class & Category Code	Hazard Statement Code			
Aluminium	Aluminium Powder (pyrophoric)	7429-90-5	2.094	n/a not data available as per Sigma Aldrich MSDS	Annex I of Directive 67/548/EEC	F	R15	Contact with water liberates extremely flammable gases	n/a	n/a	n/a	Annex VI to Directive 1272/2008	Danger	Water-react. 2	H261			
							R17	Spontaneously flammable in air						Pyr. Sol. 1	H250			
Antimony	Antimony Compounds	n/a	-	n/a	Annex I of Directive 67/548/EEC	N	Xn	R20/22	Harmful by inhalation and if swallowed	n/a	n/a	n/a	Annex VI to Directive 1272/2008	Warning	Acute Tox. 4	H332		
							R51/53	Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment	Acute Tox. 4						H302			
Arsenic	Arsenic	7440-38-2	-	n/a	Annex I of Directive 67/548/EEC	T	R23/25	Toxic by inhalation and if swallowed	n/a	na	n/a	Annex VI to Directive 1272/2008	Danger	Acute Tox. 3	H331			
							R50/53	Very toxic to aquatic organisms and may cause long-term effects in the aquatic environment						Acute Tox. 3	H301			
Barium	Barium Salts	n/a	0.0731	n/a	Annex I of Directive 67/548/EEC	Xn	R20/22	Harmful by inhalation and if swallowed	n/a	n/a	n/a	Annex VI to Directive 1272/2008	Warning	Acute Tox. 4	H332			
														Acute Tox. 4	H302			
Beryllium	Beryllium	7440-41-7	0.00019	n/a	Annex I of Directive 67/548/EEC	T	R49	May cause cancer by inhalation.	Carc. Cat. 2;	n/a	n/a	Annex VI to Directive 1272/2008	Danger	Carc. 1B	H350			
							R26	Also very toxic by inhalation						Acute Tox. 2 *	H330			
							R25	Also toxic if swallowed.						Acute Tox. 3 *	H301			
							R48/23	Also toxic: danger of serious damage to health by prolonged exposure through inhalation						STOT RE 1	H372			
							R36/37/38	Irritating to eyes, respiratory system and skin						Eye Irrit. 2	H335			
Cadmium	cadmium (non-pyrophoric) cadmium oxide (nonpyrophoric)	7440-43-9/1306-19-0	0.00026	n/a	Annex I of Directive 67/548/EEC	T	R43	May cause sensitization by skin contact	Carc. Cat. 2;	Repr. Cat. 3;	Muta. Cat. 3;	Annex VI to Directive 1272/2008	Danger	STOT SE 3	H335			
							R45	May cause cancer						Skin Irrit. 2	H315			
							R68	Possible risk of irreversible damage						Skin Sens. 1	H317			
							R62	Possible risk of impaired fertility						Carc. 1B	H350			
							R63	Possible risk of harm to the unborn child						Muta. 2	H341			
Calcium	Calcium	7440-70-2	17.33	n/a not data available as per Sigma Aldrich MSDS	Annex I of Directive 67/548/EEC	F	R15	Contact with water liberates extremely flammable gases	n/a	n/a	n/a	Annex VI to Directive 1272/2008	Danger	Repr. 2	H361D			
							R48/23/25	Toxic: danger of serious damage to health by prolonged exposure through inhalation and if swallowed.						Acute Tox. 2	H330			
							R26	Also very toxic by inhalation						STOT RE 1	H372			
							R50/53	Very toxic to aquatic organisms and may cause long-term effects in the aquatic environment						Acute Tox. 1	H400			
														Acute Tox. 2 *	H302			
Hexavalent Chromium	Chromium (VI) compounds	n/a	0.0003	n/a	Annex I of Directive 67/548/EEC	N	R49	May cause cancer by inhalation.	Carc. Cat. 2	n/a	n/a	Annex VI to Directive 1272/2008	Danger	Acute Tox. 1	H400			
							R43	May cause sensitization by skin contact						Acute Tox. 4 *	H302			
							R50/53	Very toxic to aquatic organisms and may cause long-term effects in the aquatic environment						Acute Tox. 1	H400			
Chromium	Chromium	7440-47-3	0.4069	n/a	Sigma Aldrich	N	R50	Very toxic to aquatic organisms	n/a	n/a	n/a	Sigma Aldrich	Warning	Acute Tox. 1	H400			
							R22	Harmful if swallowed						Acute Tox. 4 *	H302			
Copper	Copper (I) Oxide	1317-39-1	0.063	n/a	Annex I of Directive 67/548/EEC	N	R50/53	Very toxic to aquatic organisms and may cause long-term effects in the aquatic environment	n/a	n/a	n/a	Annex VI to Directive 1272/2008	Warning	Acute Tox. 1	H400			
														Acute Tox. 1	H400			
Lead	Lead Compounds	n/a	0.0161	n/a	Annex I of Directive 67/548/EEC	Xn	R61	May cause harm to the unborn child	n/a	Repr. Cat. 1; Repr. Cat. 3;	n/a	Annex VI to Directive 1272/2008	Danger	Acute Tox. 1	H410			
							R62	Possible risk of impaired fertility						Repr. 1A	H360DF			
							R20/22	Harmful by inhalation and if swallowed						Acute Tox. 4	H332			
							R33	Danger of cumulative effects						STOT RE 2	H302			
Magnesium	Magnesium, powder or turnings	n/a	3.369	n/a not data available as per Sigma Aldrich MSDS	Annex I of Directive 67/548/EEC	F	R11	Highly flammable	n/a	n/a	n/a	Annex VI to Directive 1272/2008	Danger	Acute Tox. 1	H302			
							R15	Contact with water liberates extremely flammable gases						Acute Tox. 4	H332			
Manganese	Manganese dioxide	1313-13-9	4.044	n/a	Annex I of Directive 67/548/EEC	Xn	R20/22	Harmful by inhalation and if swallowed	n/a	n/a	n/a	Annex VI to Directive 1272/2008	Warning	Acute Tox. 4	H332			
							R40	Limited evidence of a carcinogenic effect						Acute Tox. 4	H302			
Nickel	Nickel	7440-02-0	0.01207	n/a	Annex I of Directive 67/548/EEC	Xn	R43	May cause sensitization by skin contact	Carc. Cat. 3	n/a	n/a	Annex VI to Directive 1272/2008	Warning	Carc. 2	H351			
							R23/25	Toxic by inhalation and if swallowed						Skin Sens. 1	H317			
Selenium	Selenium	7782-49-2	0.0014	n/a	Annex I of Directive 67/548/EEC	T	R33	Danger of cumulative effects	n/a	n/a	n/a	Annex VI to Directive 1272/2008	Danger	Acute Tox. 3	H331			
							R53	May cause long-term effects in the aquatic environment						Acute Tox. 3	H301			
														STOT RE 2	H373			
													Acute Tox. 4	H413				

Hazardous Waste Classification Worksheet

Box J: Waste Composition details (revised 31st August 2004)

					Classification according to EU Directives 67/548/EEC or 1999/45/EC						Classification according to Regulation (EC) No 1272/2008				
Substance	Assumed Compound	CAS No.	% w/w ^{NOTE 1}	Flash Point (°C)	Source Data	EU Hazard	Risk Phrase	Classification	Carcinogen Group No.	Toxic for Reproduction Category	Mutagenic Category	Source Data	Signal Word	Hazard Class & Category Code	Hazard Statement Code
Total Sulphate	-	-	0.2196	n/a	Annex I of Directive 67/548/EEC			This substance is not classified as dangerous according to Directive 67/548/EEC						Not a hazardous substance or mixture according to Regulation (EC) No. 1272/2008	
Vanadium	Vanadium pentoxide	1314-62-1	0.0409	n/a	Annex I of Directive 67/548/EEC		R63	Possible risk of harm to the unborn child	n/a	Repr. Cat. 3;	Muta. Cat. 3;	Annex VI to Directive 1272/2008	Danger	Muta. 2	H341
							R68	Possible risk of irreversible effects						Repr. 2	H361d
							T	R48/23 Toxic; danger of serious damage to health by prolonged exposure through inhalation						STOT RE 1	H372
							Xn	R20/22 Harmful by inhalation and if swallowed						Acute Tox. 4	H332
							Xi	R37 Irritating to respiratory system						Acute Tox. 4	H302
	N	R51/53 Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment	STOT SE 3	H335											
Water Soluble Boron	Boron	7440-42-8	0.00067	n/a	Sigma Aldrich	Xn	R22	Harmful if swallowed	n/a	n/a	n/a	Sigma Aldrich	Warning	Acute Tox. 4	H302
Zinc	Zinc oxide	1314-13-2	0.1073	n/a	Annex I of Directive 67/548/EEC				n/a	n/a	n/a	Annex VI to Directive 1272/2008	Warning	Aquatic Acute 1	H400
						N	R50/53	Very toxic to aquatic organisms and may cause long-term effects in the aquatic environment						Aquatic Chronic 1	H410
Chloride	Hydrogen Chloride	7647-01-0	0.0065	n/a	Annex I of Directive 67/548/EEC				n/a	n/a	n/a	Annex VI to Directive 1272/2008	Danger	Press. Gas	H331
						C	R35	Causes severe burns						Acute Tox. 3	H314
Naphthalene	Naphthalene	91-20-3	-	n/a	Annex I of Directive 67/548/EEC				Carc. Cat. 3;	n/a	n/a	Annex VI to Directive 1272/2008	Warning	Carc. 2	H351
						Xn	R22	Harmful if swallowed						Acute Tox. 4	H302
						N	R50/53	Very toxic to aquatic organisms and may cause long-term effects in the aquatic environment						Aquatic Acute 1	H400
Acenaphthylene	Acenaphthylene	208-96-8	-	122.0	Sigma Aldrich				n/a	n/a	n/a	Sigma Aldrich	Warning	Acute Tox. 4	H302
						Xn	R36/37/38	Irritating to eyes, respiratory system and skin.						Skin Irrit. 2	H315
														Eye Irrit. 2	H319
Phenanthrene	Phenanthrene, disn. Residues	122070-78-4	0.000007	n/a	Annex I of Directive 67/548/EEC				Carc. Cat. 2;	n/a	n/a	Annex VI to Directive 1272/2008	Danger	STOT SE 3	H335
						T	R45	May cause cancer						Carc. 1B	H350
						Xn	R36/37/38	Irritating to eyes, respiratory system and skin						Skin Irrit. 2	H315
Anthracene	Anthracene	120-12-7	-	121.0	Sigma Aldrich				Carc. Cat. 3;	n/a	n/a	Sigma Aldrich	Warning	Eye Irrit. 2	H319
						N	R50/53	Very toxic to aquatic organisms and may cause long-term effects in the aquatic environment						STOT SE 3	H335
														Aquatic Chronic 1	H410
Fluoranthene	Benzo[k]fluorene	206-44-0	0.000007	198.0	Sigma Aldrich				n/a	n/a	n/a	Sigma Aldrich	Warning	Acute Tox. 4	H302
						Xn	R22	Harmful if swallowed						Aquatic Acute 1	H400
Pyrene	Benzo[def]phenanthrene	129-00-0	0.000007	> 200.0	Sigma Aldrich				n/a	n/a	n/a	Sigma Aldrich	Warning	Aquatic Chronic 1	H410
						N	R50/53	Very toxic to aquatic organisms and may cause long-term effects in the aquatic environment						Aquatic Chronic 1	H410
Benzo(a)anthracene	Benz(a)anthracene	56-55-3	-	n/a	Annex I of Directive 67/548/EEC				Carc. Cat. 2	n/a	n/a	Annex VI to Directive 1272/2008	Danger	Carc. 1B	H350
						N	R50/53	Very toxic to aquatic organisms and may cause long-term effects in the aquatic environment						Aquatic Acute 1	H400
														Aquatic Chronic 1	H410
Chrysene	Chrysene	218-01-9	0.000005	n/a	Annex I of Directive 67/548/EEC				Carc. Cat. 2	n/a	Muta. Cat. 3;	Annex VI to Directive 1272/2008	Danger	Carc. 1B	H350
						T	R68	Possible risk of irreversible effects						Muta. 2	H341
						N	R50/53	Very toxic to aquatic organisms and may cause long-term effects in the aquatic environment						Aquatic Acute 1	H400
Benzo(bk)fluoranthene	benzo(k)fluoranthene	207-08-9	0.000007	n/a	Annex I of Directive 67/548/EEC				Carc. Cat. 2;	n/a	n/a	Annex VI to Directive 1272/2008	Danger	Aquatic Chronic 1	H410
														Carc. 1B	H350
														Aquatic Chronic 1	H410
Benzo(a)pyrene	benzo(a)pyrene	50-32-8	-	n/a	Annex I of Directive 67/548/EEC				Carc. Cat. 2;	Repr. Cat. 2	Muta. Cat. 2;	Annex VI to Directive 1272/2008	Danger	Carc. 1B	H350
														Repr. 1B	H360FD
														Skin Sens. 1	H317
						T	R43	May cause sensitisation by skin contact						Aquatic Acute 1	H400
						N	R50/53	Very toxic to aquatic organisms and may cause long-term effects in the aquatic environment						Aquatic Chronic 1	H410

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Box J: Waste Composition details (revised 31st August 2004)

					Classification according to EU Directives 67/548/EEC or 1999/45/EC							Classification according to Regulation (EC) No 1272/2008			
Substance	Assumed Compound	CAS No.	% w/w ^{NOTE 1}	Flash Point (°C)	Source Data	EU Hazard	Risk Phrase	Classification	Carcinogen Group No.	Toxic for Reproduction Category	Mutagenic Category	Source Data	Signal Word	Hazard Class & Category Code	Hazard Statement Code
Indeno(1,2,3-cd)pyrene	Indeno[1,2,3-cd]pyrene	193-39-5	-	n/a	Sigma Aldrich	Xn	R40	Limited evidence of a carcinogenic effect	Carc. Cat. 2;	n/a	n/a	Sigma Aldrich	Warning	Carc 2	H351
Dibenzo(ah)anthracene	dibenz[a,h]anthracene	53-70-3	-	n/a	Annex I of Directive 67/548/EEC	T	R45	May cause cancer	Carc. Cat. 2;	n/a	n/a	Annex VI to Directive 1272/2008	Danger	Carc. 1B	H350
						N	R50/53	Very toxic to aquatic organisms and may cause long-term effects in the aquatic environment						Aquatic Acute 1	H400
Benzo(ghi)perylene	Benzo(ghi)perylene	191-24-2	-	n/a	Sigma Aldrich	N	R50/53	Very toxic to aquatic organisms and may cause long-term adverse effects in the aquatic environment	Carc. Cat. 3;	n/a	n/a	Sigma Aldrich	Warning	Aquatic Acute 1	H400
						T	R45	May cause cancer						Aquatic Chronic 1	H410
Benzo(b)fluoranthene	Benzo(b)fluoranthene	205-99-2	0.000005	n/a	Sigma Aldrich	N	R50/53	Very toxic to aquatic organisms and may cause long-term effects in the aquatic environment	Carc. Cat. 2;	n/a	n/a	Sigma Aldrich	Danger	Carc. 1B	H350
						T	R45	May cause cancer						Aquatic Acute 1	H400
Benzo(k)fluoranthene	benzo(k)fluoranthene	207-08-9	-	n/a	Annex I of Directive 67/548/EEC	T	R45	May cause cancer	Carc. Cat. 2;	n/a	n/a	Annex VI to Directive 1272/2008	Danger	Carc. 1B	H350
						N	R50/53	Very toxic to aquatic organisms and may cause long-term effects in the aquatic environment						Aquatic Acute 1	H400
Mineral Oil (C8-C40)	Mineral Oil	8042-47-5	0.0324	> 112 °C	Sigma Aldrich	This substance is not classified as dangerous according to Directive 67/548/EEC						Not a hazardous substance or mixture according to Regulation (EC) No. 1272/2008			
Total aromatics C5-35	Aromatic hydrocarbons	90989-41-6	0.0031	n/a	Annex I of Directive 67/548/EEC	T	R45	May cause cancer	Carc. Cat. 2;	n/a	n/a	Annex VI to Directive 1272/2008	Danger	Carc. 1B	H350
Total aliphatics C5-35	Distillates (petroleum),	68477-35-0	0.0251	n/a	Annex I of Directive 67/548/EEC	T	R46	May cause heritable genetic damage						Carc. Cat. 2;	n/a
						N	R50/53	Very toxic to aquatic organisms and may cause long-term effects in the aquatic environment	Press. Gas	H350					
Total 12 PCBs	polychlorobiphenyls; PCB	1336-36-3	-	n/a	Annex I of Directive 67/548/EEC	Xn	R33	Danger of cumulative effects	n/a	n/a	n/a	Annex VI to Directive 1272/2008	Warning	STOT RE 2	H373
						N	R50/53	Very toxic to aquatic organisms and may cause long-term effects in the aquatic environment						Aquatic Acute 1	H400
Total 7 PCBs	polychlorobiphenyls; PCB	1336-36-3	0.0000065	n/a	Annex I of Directive 67/548/EEC	Xn	R33	Danger of cumulative effects	n/a	n/a	n/a	Annex VI to Directive 1272/2008	Warning	STOT RE 2	H373
						N	R50/53	Very toxic to aquatic organisms and may cause long-term effects in the aquatic environment						Aquatic Acute 1	H400
Thiocyanate	thiocyanic acid	463-56-9	-	n/a	Annex I of Directive 67/548/EEC	Xn	R20/21/22	Harmful by inhalation, in contact with skin and if swallowed	n/a	n/a	n/a	Annex VI to Directive 1272/2008	Warning	Acute Tox. 4	H332
						N	R32	Contact with acids liberates very toxic gas						Acute Tox. 4	H312
						N	R52/53	Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment						Acute Tox. 4	H302
														Aquatic Chronic 3	H412

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Box K: Waste Composition Details		
Properties with Thresholds (Box K1)		
Property	Threshold	Total in Waste
	(% w/w)	(% w/w)
Flash Point < 55 °C		0
Very Toxic	> 0.1	0.0005
Toxic	> 3	0.049
Harmful	> 25	4.250
Corrosive with Risk Phrase R35	>1	0.007
Corrosive with Risk Phrase R34	> 5	0.0
Irritant with Risk Phrase R41	> 10	0.0
Irritant with Risk Phrase R36, R37, R38	> 20	0.0411
Carcinogen Category 1 or 2	> 0.1	0.0290
Carcinogen Category 3	> 1	0.012
Toxic for Reproduction Category 1 and 2 with Risk Phrases R60, R61	> 0.5	0.0161
Toxic for Reproduction Category 3 with Risk Phrases R62, R63	> 5	0.0573
Mutagenic Category 1 and 2 with Risk Phrase R46	> 0.1	0.0251
Mutagenic Category 3 with Risk Phrase R68	> 1	0.0412
Properties without thresholds (Box K2)		
Property	Total (% w/w) in waste	
Explosive	0	
Oxidising	0	
Infectious	0	
Ecotoxic	0.6362	
Residuary Hazardous property	0	

Final EWC Code		
L	Final EWC Code	Possibly 10 02 01 or 10 02 02 with no hazardous components identified in the sample
M	Final EWC Description	Refer to Section 3.1 of Report

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Note 1:	
Very Toxic, those with an EU Hazard Phrase of T+ under EU Directives 67/548/EEC or 1999/45/EC or those with R-phrases of R26, R27, R28 and combined risk phrases with or without R39	Beryllium, Cadmium,
Toxic, those with an EU Hazard Phrase of T under EU Directives 67/548/EEC or 1999/45/EC or those with R-phrases of R23, R24, R25 and combined risk phrases with or without R39 or R48	Beryllium, Cadmium, Selenium, Vanadium, Chloride,
Harmful, those with an EU Hazard Phrase of Xn under Directive 67/548/EEC or 1999/45/EC or those with R-phrases of R20, R21, R22, R65, R68 and combined risk phrases with or without R48	Barium, Copper, Lead, Manganese, (Nickel), Vanadium, Water Soluble Boron, Fluoroanthene, (Total 7 PCBs),
Corrosive with Risk Phrase R35	Chloride,
Corrosive with Risk Phrase R34	No parameters identified
Irritant with Risk Phrase R41	No parameters identified
Irritant with Risk Phrase R36, R37, R38	Beryllium, Vanadium,
Carcinogen Category 1 or 2 are those with R-phrases R45 or R49	Beryllium, Cadmium, Hexavalent Chromium, Phenanthrene, Chrysene, Benzo(bk)fluoranthene, Benzo(b)fluoranthene, Total Aromatics, Total Aliphatics,
Carcinogen Category 3 are those with R-phrase R40	Nickel
Toxic for Reproduction Category 1 and 2 with Risk Phrases R60, R61	Lead
Toxic for Reproduction Category 3 with Risk Phrases R62, R63	Cadmium, Lead, Vanadium,
Mutagenic Category 1 and 2 with Risk Phrase R46	Total Aliphatics
Mutagenic Category 3 with Risk Phrase R68	Cadmium, Vanadium,
Explosive (with R-phrases R2, R3 or related r-phrases)	No parameters identified
Oxidising (with R-phrases R7, R8, R9)	No parameters identified
Infectious	No parameters identified
Ecotoxic (with R-phrases R50, R51, R52, R53 Aquatic Env and R54, R55, R56, R57, R58 for Non-Aquatic Env) & combined risk phrases	Cadmium, Hexavalent Chromium, Chromium, Copper, Lead, Selenium, Vanadium, Zinc, Fluoranthene, Pyrene, Chrysene, Benzo(bk)fluoranthene, Benzo(b)fluoranthene, Total 7 PCBs,

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Ecotoxic (Based on Thresholds in WM2)			
R59	> 0.1 %	No parameters identified	
R50-53	> 0.25%	Cadmium, Hexavalent Chromium, Copper, Lead, Vanadium, Zinc, Pyrene, Chrysene, Benzo(bk)fluoranthene, Benzo(b)fluoranthene, Total 7 PCBs,	0.187
R51-53	> 2.5%	Vanadium	0.0409
R50 or R52 or R53 or R52-53	> 25%	Chromium, Fluoranthene, Selenium	0.4083
			0.6362

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SECOND SCHEDULE: PART III (Waste Management Act 1996)

Properties of Waste which render it hazardous

There is set out in each paragraph of this Part a general term denoting a particular property of waste which renders it hazardous, followed by an explanation of such general term by reference to a description of substances or preparations which possess the particular property.

"Explosive": substances or preparations which may explode under the effect of flame or which are more sensitive to shocks or friction than dinitrobenzene.

"Oxidizing": substances or preparations which exhibit highly exothermic reactions when in contact with other substances, particularly flammable substances.

"Highly flammable":

- (a) liquid substances or preparations having a flash point below 21°C (including extremely flammable liquids), or
- (b) substances or preparations which may become hot and finally catch fire in contact with air at ambient temperature without any application of energy, or
- (c) solid substances or preparations which may readily catch fire after brief contact with a source of ignition and which continue to burn or to be consumed after removal of the source of ignition, or
- (d) gaseous substances or preparations which are flammable in air at normal pressure, or
- (e) substances or preparations which, in contact with water or damp air, evolve highly flammable gases in dangerous quantities.

"Flammable": liquid substances or preparations having a flash point of not less than 21°C and not more than 55°C.

"Irritant": non-corrosive substances or preparations which, through immediate, prolonged or repeated contact with the skin or mucous membrane, can cause inflammation.

"Harmful": substances or preparations which, if they are inhaled or ingested or if they penetrate the skin, may involve limited health risks.

"Toxic": substances or preparations (including very toxic substances or preparations) which, if they are inhaled or ingested or if they penetrate the skin, may cause serious, acute or chronic health risks or death.

"Carcinogenic": substances or preparations which, if they are inhaled or ingested or if they penetrate the skin, may induce cancer or increase its incidence.

"Corrosive": substances or preparations which may destroy living tissue on contact.

"Infectious": substances containing viable micro-organisms or their toxins which are known or reliably believed to cause disease in humans or other living organisms.

"Teratogenic": substances or preparations which, if they are inhaled or ingested or if they penetrate the skin, may induce non-hereditary congenital malformations or increase their incidence.

"Mutagenic": substances or preparations which, if they are inhaled or ingested or if they penetrate the skin, may induce hereditary genetic defects or increase their incidence.

"Ecotoxic": substances or preparations which present or may present immediate or delayed risks for one or more sectors of the environment.

"Residuary hazardous property":

- (a) substances or preparations which release toxic or very toxic gases in contact with water, air or an acid, or
- (b) substances or preparations capable by any means, after being disposed of, of yielding another substance which possesses any property referred to in this or any other paragraph of this Part.

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Box No.	Information Required	Information	
Company Details			
A	Company Name	Cork County Council	
	Company Address	Haulbowline Island, County Cork	
	Date	06/02/2013	
	IPC or Waste License Number (if applicable)	Not yet applicable	
	Contact Person	Cormac O'Suilleabhain	
	Waste Description	Slag - Borehole BH315, 5.0m	
European Waste Catalogue/Hazardous Waste List			
B	Possible EWC Codes		Asterisk Yes / No 10 02 01 <input type="checkbox"/> / <input checked="" type="checkbox"/>
			10 02 02 <input type="checkbox"/> / <input checked="" type="checkbox"/>
			Refer to Section 3.1 of Report
C	Six-Digit EWC Code	Not Applicable	Asterisk Yes / No <input type="checkbox"/> / <input type="checkbox"/>
D	EWC Description	Not Applicable	
CI	Mirror Entry Code (if applicable)	Not Applicable	Asterisk Yes / No <input type="checkbox"/> / <input type="checkbox"/>
DI	Mirror Entry Description (if applicable)	Not Applicable	
E	Is this waste classified as hazardous waste according to HWL?	Mirror Entry	<input type="checkbox"/>
		No	<input checked="" type="checkbox"/>
		Yes	<input type="checkbox"/>

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Category I Waste (Box F)

- 1. Anatomical substances, hospital or other clinical waste.
- 2. Pharmaceutical, medicinal or veterinary compounds.
- 3. Wood preservatives.
- 4. Biocides or phyto-pharmaceutical substances.
- 5. Residue from substances employed as solvents.
- 6. Halogenated organic substances not employed as solvents, excluding inert polymerized materials.
- 7. Tempering salts containing cyanides.
- 8. Mineral oils or oily substances (including cutting sludges).
- 9. Mixtures or emulsions of oil and water or hydrocarbon and water.
- 10. Substances containing polychlorinated biphenyls or polychlorinated terphenyls (including dielectrics).
- 11. Tarry materials arising from refining, distillation or any pyrolytic treatment (including still bottoms).
- 12. Inks, dyes, pigments, paints, lacquers or varnishes.
- 13. Resins, latex, plasticizers, glues or adhesives.
- 14. Chemical substances arising from research and development or teaching activities (including laboratory residues) which are not identified or are new and whose effects on humans or the environment are not known.
- 15. Pyrotechnics or other explosive materials.
- 16. Photographic chemicals or processing materials.
- 17. Any material contaminated with any congener of polychlorinated dibenzo-furan.
- 18. Any material contaminated with any congener of polychlorinated dibenzo-p-dioxin.

Category II Waste (Box G)

- 19. Animal or vegetable soaps, fats or waxes.
- 20. Non-halogenated organic substances not employed as solvents.
- 21. Inorganic substances without metals or metal compounds.
- 22. Ashes or cinders.
- 23. Soil, sand or clay (including dredging spoils).
- 24. Non-cyanidic tempering salts.
- 25. Metallic dust or powder.
- 26. Spent catalyst materials.
- 27. Liquids or sludges containing metals or metal compounds.
- 28. Residue (other than scrubber sludges, sludges from water purification plants and sewage sludges (untreated or unsuitable for use in agriculture)) from pollution control operations (including baghouse dusts).
- 29. Scrubber sludges.
- 30. Sludges from water purification plants.
- 31. Decarbonization residue.
- 32. Ion-exchange column residue.
- 33. Sewage sludges, untreated or unsuitable for use in agriculture.
- 34. Residue from cleaning of tanks or equipment.
- 35. Contaminated equipment.
- 36. Contaminated containers (including packaging and gas cylinders).
- 37. Batteries or other electrical cells.
- 38. Vegetable oils.
- 39. Materials resulting from the selective collection of waste from households.
- 40. Any other waste.

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Category II Constituents (Box H)

- | | |
|---|--|
| <input type="checkbox"/> 41. Beryllium or beryllium compounds. | <input type="checkbox"/> 71. Azides. |
| <input type="checkbox"/> 42. Vanadium compounds. | <input type="checkbox"/> 72. Polychlorinated biphenyls or polychlorinated terphenyls. |
| <input type="checkbox"/> 43. Chromium (VI) compounds. | <input type="checkbox"/> 73. Pharmaceutical or veterinary compounds. |
| <input type="checkbox"/> 44. Cobalt compounds. | <input type="checkbox"/> 74. Biocides or phyto-pharmaceutical substances (including pesticides). |
| <input type="checkbox"/> 45. Nickel compounds. | <input type="checkbox"/> 75. Infectious substances. |
| <input type="checkbox"/> 46. Copper compounds. | <input type="checkbox"/> 76. Creosotes. |
| <input type="checkbox"/> 47. Zinc compounds. | <input type="checkbox"/> 77. Isocyanates or thiocyanates. |
| <input type="checkbox"/> 48. Arsenic or arsenic compounds. | <input type="checkbox"/> 78. Organic cyanides (including nitriles). |
| <input type="checkbox"/> 49. Selenium or selenium compounds. | <input type="checkbox"/> 79. Phenols or phenol compounds. |
| <input type="checkbox"/> 50. Silver compounds. | <input type="checkbox"/> 80. Halogenated solvents. |
| <input type="checkbox"/> 51. Cadmium or cadmium compounds. | <input type="checkbox"/> 81. Organic solvents, excluding halogenated solvents. |
| <input type="checkbox"/> 52. Tin compounds. | <input type="checkbox"/> 82. Organohalogen compounds, excluding inert polymerized materials and other substances referred to in this Part. |
| <input type="checkbox"/> 53. Antimony or antimony compounds. | <input type="checkbox"/> 83. Aromatic compounds; polycyclic and heterocyclic organic compounds. |
| <input type="checkbox"/> 54. Tellurium or tellurium compounds. | <input type="checkbox"/> 84. Aliphatic amines. |
| <input type="checkbox"/> 55. Barium compounds, excluding barium sulphate. | <input type="checkbox"/> 85. Aromatic amines. |
| <input type="checkbox"/> 56. Mercury or mercury compounds. | <input type="checkbox"/> 86. Ethers. |
| <input type="checkbox"/> 57. Thallium or thallium compounds. | <input type="checkbox"/> 87. Substances of an explosive character, excluding those referred to elsewhere in this Part. |
| <input type="checkbox"/> 58. Lead or lead compounds. | <input type="checkbox"/> 88. Sulphur organic compounds. |
| <input type="checkbox"/> 59. Inorganic sulphides. | <input type="checkbox"/> 89. Any congener of polychlorinated dibenzo-furan. |
| <input type="checkbox"/> 60. Inorganic fluorine compounds, excluding calcium fluoride. | <input type="checkbox"/> 90. Any congener of polychlorinated dibenzo-p-dioxin. |
| <input type="checkbox"/> 61. Inorganic cyanides. | <input type="checkbox"/> 91. Hydrocarbons and their oxygen, nitrogen or sulphur compounds not otherwise referred to in this Part. |
| <input type="checkbox"/> 62. Any of the following alkaline or alkaline earth metals, namely, lithium, sodium, potassium, calcium, magnesium in uncombined form. | |
| <input type="checkbox"/> 63. Acidic solutions or acids in solid form. | |
| <input type="checkbox"/> 64. Basic solutions or bases in solid form. | |
| <input type="checkbox"/> 65. Asbestos (dust or fibres). | |
| <input type="checkbox"/> 66. Phosphorus: phosphorus compounds, excluding mineral phosphates. | |
| <input type="checkbox"/> 67. Metal carbonyls. | |
| <input type="checkbox"/> 68. Peroxides. | |
| <input type="checkbox"/> 69. Chlorates. | |
| <input type="checkbox"/> 70. Perchlorates. | |

Hazardous Waste Classification Worksheet (Revised 31st August 2004)

<i>Box I: Property Test Results and Waste Classification</i>					
Property	Property Testing			Waste Classification	
	Test Code	Title of Test	Results	Hazard (s)	Risk Phrase (s)
Explosive					
Oxidising					
Flammable					
Irritant/ Corrosive		NOT APPLICABLE			
Harmful/Toxic					
Carcinogenic					
Infectious	No test methods available for this property				
Toxic for Reproduction					
Mutagenic					
Ecotoxic					
Residuary hazardous property					

Hazardous Waste Classification Worksheet

Box J: Waste Composition details (revised 31st August 2004)

					Classification according to EU Directives 67/548/EEC or 1999/45/EC								Classification according to Regulation (EC) No 1272/2008					
Substance	Assumed Compound	CAS No.	% w/w ^{NOTE 1}	Flash Point (°C)	Source Data	EU Hazard	Risk Phrase	Classification			Carcinogen Group No.	Toxic for Reproduction Category	Mutagenic Category	Source Data	Signal Word	Hazard Class & Category Code	Hazard Statement	
Aluminium	Aluminium Powder (pyrophoric)	7429-90-5	2.337	n/a not data available as per Sigma Aldrich MSDS	Annex I of Directive 67/548/EEC	F	R15	Contact with water liberates extremely flammable gases			n/a	n/a	n/a	Annex VI to Directive 1272/2008	Danger	Water-react. 2	H261	
							R17	Spontaneously flammable in air								Pyr. Sol. 1	H250	
Antimony	Antimony Compounds	n/a	-	n/a	Annex I of Directive 67/548/EEC	N	R20/22	Harmful by inhalation and if swallowed			n/a	n/a	n/a	Annex VI to Directive 1272/2008	Warning	Acute Tox. 4	H332	
							R51/53	Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment								Acute Tox. 4	H302	
Arsenic	Arsenic	7440-38-2	-	n/a	Annex I of Directive 67/548/EEC	T	R23/25	Toxic by inhalation and if swallowed			n/a	na	n/a	Annex VI to Directive 1272/2008	Danger	Acute Tox. 3	H331	
							N	R50/53	Very toxic to aquatic organisms and may cause long-term effects in the aquatic environment							Acute Tox. 3	H301	
																Aquatic Acute 1	H400	
																Aquatic Chronic 1	H410	
Barium	Barium Salts	n/a	0.0951	n/a	Annex I of Directive 67/548/EEC	Xn	R20/22	Harmful by inhalation and if swallowed			n/a	n/a	n/a	Annex VI to Directive 1272/2008	Warning	Acute Tox. 4	H332	
										Acute Tox. 4						H302		
Beryllium	Beryllium	7440-41-7	0.00017	n/a	Annex I of Directive 67/548/EEC	T+	R49	May cause cancer by inhalation.			Carc. Cat. 2;	n/a	n/a	Annex VI to Directive 1272/2008	Danger	Carc. 1B	H350	
							R26	Also very toxic by inhalation.								Acute Tox. 2 *	H330	
							R25	Also toxic if swallowed.								Acute Tox. 3 *	H301	
							R48/23	Also toxic: danger of serious damage to health by prolonged exposure through inhalation								STOT RE 1	H372	
							R36/37/38	Irritating to eyes, respiratory system and skin								Eye Irrit. 2	H335	
							R43	May cause sensitization by skin contact								STOT SE 3	H335	
Cadmium	cadmium (non-pyrophoric) cadmium oxide (nonpyrophoric)	7440-43-9/1306-19-0	0.0001	n/a	Annex I of Directive 67/548/EEC	T	R45	May cause cancer			Carc. Cat. 2;	Repr. Cat. 3;	Muta. Cat. 3;	Annex VI to Directive 1272/2008	Danger	Carc. 1B	H350	
							N	R50/53	Very toxic to aquatic organisms and may cause long-term effects in the aquatic environment							Muta. 2	H341	
																Repr. 2	H361FD	
																Acute Tox. 2	H330	
																STOT RE 1	H372	
																Aquatic Acute 1	H400	
Calcium	Calcium	7440-70-2	17.73	n/a not data available as per Sigma Aldrich MSDS	Annex I of Directive 67/548/EEC	F	R15	Contact with water liberates extremely flammable gases			n/a	n/a	n/a	Annex VI to Directive 1272/2008	Danger	Water-react. 2	H261	
Hexavalent Chromium	Chromium (VI) compounds	n/a	0.00008	n/a	Annex I of Directive 67/548/EEC	N	R49	May cause cancer by inhalation.			Carc. Cat. 2	n/a	n/a	Annex VI to Directive 1272/2008	Danger	Carc. 1B	H350	
							R43	May cause sensitization by skin contact								Skin Sens. 1	H317	
							R50/53	Very toxic to aquatic organisms and may cause long-term effects in the aquatic environment								Aquatic Acute 1	H400	
Chromium	Chromium	7440-47-3	0.4737	n/a	Sigma Aldrich	N	R50	Very toxic to aquatic organisms			n/a	n/a	n/a	Sigma Aldrich	Warning	Aquatic Acute 1	H400	
							Xn	R22	Harmful if swallowed							Acute Tox. 4 *	H302	
Copper	Copper (I) Oxide	1317-39-1	0.0526	n/a	Annex I of Directive 67/548/EEC	N	R50/53	Very toxic to aquatic organisms and may cause long-term effects in the aquatic environment			n/a	n/a	n/a	Annex VI to Directive 1272/2008	Warning	Aquatic Acute 1	H400	
										Aquatic Chronic 1						H410		
Lead	Lead Compounds	n/a	0.0094	n/a	Annex I of Directive 67/548/EEC	Xn	R61	May cause harm to the unborn child			n/a	Repr. Cat. 1; Repr. Cat. 3;	n/a	Annex VI to Directive 1272/2008	Danger	Repr. 1A	H360DF	
							R62	Possible risk of impaired fertility								Acute Tox. 4	H332	
							R20/22	Harmful by inhalation and if swallowed								STOT RE 2	H302	
							R33	Danger of cumulative effects								Aquatic Acute 1	H373	
Magnesium	Magnesium, powder or turnings	n/a	4.92	n/a not data available as per Sigma Aldrich MSDS	Annex I of Directive 67/548/EEC	F	R11	Highly flammable			n/a	n/a	n/a	Annex VI to Directive 1272/2008	Danger	Flam. Sol. 1	H228	
							R15	Contact with water liberates extremely flammable gases								Water-react. 2	H261	
Manganese	Manganese dioxide	1313-13-9	3.764	n/a	Annex I of Directive 67/548/EEC	Xn	R20/22	Harmful by inhalation and if swallowed			n/a	n/a	n/a	Annex VI to Directive 1272/2008	Warning	Acute Tox. 4	H332	
							R40	Limited evidence of a carcinogenic effect								Acute Tox. 4	H302	
Nickel	Nickel	7440-02-0	0.0063	n/a	Annex I of Directive 67/548/EEC	Xn	R43	May cause sensitization by skin contact			Carc. Cat. 3	n/a	n/a	Annex VI to Directive 1272/2008	Warning	Carc. 2	H351	
							R23/25	Toxic by inhalation and if swallowed								Skin Sens. 1	H317	
Selenium	Selenium	7782-49-2	0.0013	n/a	Annex I of Directive 67/548/EEC	T	R33	Danger of cumulative effects			n/a	n/a	n/a	Annex VI to Directive 1272/2008	Danger	Acute Tox. 3	H331	
							R53	May cause long-term effects in the aquatic environment								Acute Tox. 3	H301	
										STOT RE 2						H373		
															Aquatic Chronic 4	H413		

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Box J: Waste Composition details (revised 31st August 2004)

					Classification according to EU Directives 67/548/EEC or 1999/45/EC							Classification according to Regulation (EC) No 1272/2008				
Substance	Assumed Compound	CAS No.	% w/w ^{NOTE 1}	Flash Point (°C)	Source Data	EU Hazard	Risk Phrase	Classification	Carcinogen Group No.	Toxic for Reproduction Category	Mutagenic Category	Source Data	Signal Word	Hazard Class & Category Code	Hazard Statement Code	
Total Sulphate	-	-	0.4673	n/a	Annex I of Directive 67/548/EEC			This substance is not classified as dangerous according to Directive 67/548/EEC						Not a hazardous substance or mixture according to Regulation (EC) No. 1272/2008		
Vanadium	Vanadium pentoxide	1314-62-1	0.0574	n/a	Annex I of Directive 67/548/EEC		R63	Possible risk of harm to the unborn child	n/a	Repr. Cat. 3;	Muta. Cat. 3;	Annex VI to Directive 1272/2008	Danger	Muta. 2	H341	
							R68	Possible risk of irreversible effects						Repr. 2	H361d	
							T	R48/23						Toxic; danger of serious damage to health by prolonged exposure through inhalation	STOT RE 1	H372
							Xn	R20/22						Harmful by inhalation and if swallowed	Acute Tox. 4	H332
							Xi	R37						Irritating to respiratory system	Acute Tox. 4	H302
	N	R51/53	Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment	STOT SE 3	H335											
Water Soluble Boron	Boron	7440-42-8	0.00156	n/a	Sigma Aldrich	Xn	R22	Harmful if swallowed	n/a	n/a	n/a	Sigma Aldrich	Warning	Acute Tox. 4	H302	
Zinc	Zinc oxide	1314-13-2	0.1337	n/a	Annex I of Directive 67/548/EEC				n/a	n/a	n/a	Annex VI to Directive 1272/2008	Warning	Aquatic Acute 1	H400	
						N	R50/53	Very toxic to aquatic organisms and may cause long-term effects in the aquatic environment						Aquatic Chronic 1	H410	
Chloride	Hydrogen Chloride	7647-01-0	0.1236	n/a	Annex I of Directive 67/548/EEC				n/a	n/a	n/a	Annex VI to Directive 1272/2008	Danger	Press. Gas	H331	
						C	R35	Causes severe burns						Acute Tox. 3	H314	
Naphthalene	Naphthalene	91-20-3	-	n/a	Annex I of Directive 67/548/EEC				Carc. Cat. 3;	n/a	n/a	Annex VI to Directive 1272/2008	Warning	Carc. 2	H351	
						Xn	R22	Harmful if swallowed						Acute Tox. 4	H302	
						N	R50/53	Very toxic to aquatic organisms and may cause long-term effects in the aquatic environment						Aquatic Acute 1	H400	
Acenaphthylene	Acenaphthylene	208-96-8	-	122.0	Sigma Aldrich				n/a	n/a	n/a	Sigma Aldrich	Warning	Acute Tox. 4	H302	
						Xn	R36/37/38	Irritating to eyes, respiratory system and skin.						Skin Irrit. 2	H315	
														Eye Irrit. 2	H319	
Phenanthrene	Phenanthrene, disn. Residues	122070-78-4	0.000011	n/a	Annex I of Directive 67/548/EEC				Carc. Cat. 2;	n/a	n/a	Annex VI to Directive 1272/2008	Danger	STOT SE 3	H335	
						T	R45	May cause cancer						Carc. 1B	H350	
						Xn	R36/37/38	Irritating to eyes, respiratory system and skin						Skin Irrit. 2	H315	
Anthracene	Anthracene	120-12-7	-	121.0	Sigma Aldrich				Carc. Cat. 3;	n/a	n/a	Sigma Aldrich	Warning	Eye Irrit. 2	H319	
						N	R50/53	Very toxic to aquatic organisms and may cause long-term effects in the aquatic environment						STOT SE 3	H335	
														Aquatic Chronic 1	H410	
Fluoranthene	Benzo[k]fluorene	206-44-0	0.000014	198.0	Sigma Aldrich				n/a	n/a	n/a	Sigma Aldrich	Warning	Acute Tox. 4	H302	
						Xn	R22	Harmful if swallowed						Aquatic Acute 1	H400	
Pyrene	Benzo[def]phenanthrene	129-00-0	0.000012	> 200.0	Sigma Aldrich				n/a	n/a	n/a	Sigma Aldrich	Warning	Aquatic Acute 1	H400	
						N	R50/53	Very toxic to aquatic organisms and may cause long-term effects in the aquatic environment						Aquatic Chronic 1	H410	
Benzo(a)anthracene	Benz(a)anthracene	56-55-3	0.000008	n/a	Annex I of Directive 67/548/EEC				Carc. Cat. 2	n/a	n/a	Annex VI to Directive 1272/2008	Danger	Carc. 1B	H350	
						N	R50/53	Very toxic to aquatic organisms and may cause long-term effects in the aquatic environment						Aquatic Acute 1	H400	
														Aquatic Chronic 1	H410	
Chrysene	Chrysene	218-01-9	0.000008	n/a	Annex I of Directive 67/548/EEC				Carc. Cat. 2	n/a	Muta. Cat. 3;	Annex VI to Directive 1272/2008	Danger	Carc. 1B	H350	
						T	R68	Possible risk of irreversible effects						Muta. 2	H341	
						N	R50/53	Very toxic to aquatic organisms and may cause long-term effects in the aquatic environment						Aquatic Acute 1	H400	
Benzo(bk)fluoranthene	benzo(k)fluoranthene	207-08-9	0.000016	n/a	Annex I of Directive 67/548/EEC				Carc. Cat. 2;	n/a	n/a	Annex VI to Directive 1272/2008	Danger	Aquatic Chronic 1	H410	
														Carc. 1B	H350	
														Muta. 1B	H340	
Benzo(a)pyrene	benzo(a)pyrene	50-32-8	0.000006	n/a	Annex I of Directive 67/548/EEC				Carc. Cat. 2;	Repr. Cat. 2	Muta. Cat. 2;	Annex VI to Directive 1272/2008	Danger	Repr. 1B	H360FD	
														Skin Sens. 1	H317	
														Aquatic Acute 1	H400	
						N	R50/53	Very toxic to aquatic organisms and may cause long-term effects in the aquatic environment						Aquatic Chronic 1	H410	

Hazardous Waste Classification Worksheet

Box J: Waste Composition details (revised 31st August 2004)

					Classification according to EU Directives 67/548/EEC or 1999/45/EC							Classification according to Regulation (EC) No 1272/2008					
Substance	Assumed Compound	CAS No.	% w/w ^{NOTE 1}	Flash Point (°C)	Source Data	EU Hazard	Risk Phrase	Classification	Carcinogen Group No.	Toxic for Reproduction Category	Mutagenic Category	Source Data	Signal Word	Hazard Class & Category Code	Hazard Statement Code		
Indeno(1,2,3-cd)pyrene	Indeno[1,2,3-cd]pyrene	193-39-5	0.000004	n/a	Sigma Aldrich	Xn	R40	Limited evidence of a carcinogenic effect	Carc. Cat. 2;	n/a	n/a	Sigma Aldrich	Warning	Carc 2	H351		
Dibenzo(ah)anthracene	dibenz[a,h]anthracene	53-70-3	-	n/a	Annex I of Directive 67/548/EEC	T	R45	May cause cancer	Carc. Cat. 2;	n/a	n/a	Annex VI to Directive 1272/2008	Danger	Carc. 1B	H350		
						N	R50/53	Very toxic to aquatic organisms and may cause long-term effects in the aquatic environment						Aquatic Acute 1	H400		
														Aquatic Chronic 1	H410		
Benzo(ghi)perylene	Benzo(ghi)perylene	191-24-2	0.000004	n/a	Sigma Aldrich	N	R50/53	Very toxic to aquatic organisms and may cause long-term adverse effects in the aquatic environment	Carc. Cat. 3;	n/a	n/a	Sigma Aldrich	Warning	Aquatic Acute 1	H400		
						T	R45	May cause cancer						Aquatic Chronic 1	H410		
Benzo(b)fluoranthene	Benzo(b)fluoranthene	205-99-2	0.000012	n/a	Sigma Aldrich	N	R50/53	Very toxic to aquatic organisms and may cause long-term effects in the aquatic environment	Carc. Cat. 2;	n/a	n/a	Sigma Aldrich	Danger	Carc. 1B	H350		
														Aquatic Acute 1	H400		
Benzo(k)fluoranthene	benzo(k)fluoranthene	207-08-9	0.000004	n/a	Annex I of Directive 67/548/EEC	T	R45	May cause cancer	Carc. Cat. 2;	n/a	n/a	Annex VI to Directive 1272/2008	Danger	Carc. 1B	H350		
						N	R50/53	Very toxic to aquatic organisms and may cause long-term effects in the aquatic environment						Aquatic Acute 1	H400		
														Aquatic Chronic 1	H410		
Mineral Oil (C8-C40)	Mineral Oil	8042-47-5	-	> 112 °C	Sigma Aldrich	This substance is not classified as dangerous according to Directive 67/548/EEC						Not a hazardous substance or mixture according to Regulation (EC) No. 1272/2008					
Total aromatics C5-35	Aromatic hydrocarbons	90989-41-6	-	n/a	Annex I of Directive 67/548/EEC	T	R45	May cause cancer	Carc. Cat. 2;	n/a	n/a	Annex VI to Directive 1272/2008	Danger	Carc. 1B	H350		
								R45						May cause cancer	Fam. Gas 1	H220	
Total aliphatics C5-35	Distillates (petroleum),	68477-35-0	-	n/a	Annex I of Directive 67/548/EEC	T	R46	May cause heritable genetic damage	Carc. Cat. 2;	n/a	Muta. Cat. 2;	Annex VI to Directive 1272/2008	Danger	Press. Gas	H350		
														Carc. 1A	H340		
														Muta. 1B	H360		
Total 12 PCBs	polychlorobiphenyls; PCB	1336-36-3	0.0000063	n/a	Annex I of Directive 67/548/EEC	Xn	R33	Danger of cumulative effects	n/a	n/a	n/a	Annex VI to Directive 1272/2008	Warning	STOT RE 2	H373		
						N	R50/53	Very toxic to aquatic organisms and may cause long-term effects in the aquatic environment						Aquatic Acute 1	H400		
														Aquatic Chronic 1	H410		
Total 7 PCBs	polychlorobiphenyls; PCB	1336-36-3	0.0000187	n/a	Annex I of Directive 67/548/EEC	Xn	R33	Danger of cumulative effects	n/a	n/a	n/a	Annex VI to Directive 1272/2008	Warning	STOT RE 2	H373		
						N	R50/53	Very toxic to aquatic organisms and may cause long-term effects in the aquatic environment						Aquatic Acute 1	H400		
														Aquatic Chronic 1	H410		
Thiocyanate	thiocyanic acid	463-56-9	-	n/a	Annex I of Directive 67/548/EEC	Xn	R20/21/22	Harmful by inhalation, in contact with skin and if swallowed	n/a	n/a	n/a	Annex VI to Directive 1272/2008	Warning	Acute Tox. 4	H332		
														R32	Contact with acids liberates very toxic gas	Acute Tox. 4	H312
						N	R52/53	Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment						Acute Tox. 4	H302		
														Aquatic Chronic 3	H412		

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Box K: Waste Composition Details		
Properties with Thresholds (Box K1)		
Property	Threshold	Total in Waste
	(% w/w)	(% w/w)
Flash Point < 55 °C		0
Very Toxic	> 0.1	0.0003
Toxic	> 3	0.1826
Harmful	> 25	3.9864
Corrosive with Risk Phrase R35	>1	0.1236
Corrosive with Risk Phrase R34	> 5	0.0
Irritant with Risk Phrase R41	> 10	0.0
Irritant with Risk Phrase R36, R37, R38	> 20	0.0576
Carcinogen Category 1 or 2	> 0.1	0.0004
Carcinogen Category 3	> 1	0.0063
Toxic for Reproduction Category 1 and 2 with Risk Phrases R60, R61	> 0.5	0.0094
Toxic for Reproduction Category 3 with Risk Phrases R62, R63	> 5	0.0669
Mutagenic Category 1 and 2 with Risk Phrase R46	> 0.1	0.00001
Mutagenic Category 3 with Risk Phrase R68	> 1	0.0575
Properties without thresholds (Box K2)		
Property	Total (% w/w) in waste	
Explosive	0	
Oxidising	0	
Infectious	0	
Ecotoxic	0.7284	
Residuary Hazardous property	0	

Final EWC Code		
L	Final EWC Code	Possibly 10 02 01 or 10 02 02 with no hazardous components identified in the sample
M	Final EWC Description	Refer to Section 3.1 of Report

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Note 1:	
Very Toxic, those with an EU Hazard Phrase of T+ under EU Directives 67/548/EEC or 1999/45/EC or those with R-phrases of R26, R27, R28 and combined risk phrases with or without R39	Beryllium, Cadmium,
Toxic, those with an EU Hazard Phrase of T under EU Directives 67/548/EEC or 1999/45/EC or those with R-phrases of R23, R24, R25 and combined risk phrases with or without R39 or R48	Beryllium, Cadmium, Selenium, Vanadium, Chloride,
Harmful, those with an EU Hazard Phrase of Xn under Directive 67/548/EEC or 1999/45/EC or those with R-phrases of R20, R21, R22, R65, R68 and combined risk phrases with or without R48	Barium, Copper, Lead, Manganese, (Nickel), Vanadium, Water Soluble Boron, Fluoroanthene, (Indeno(1,2,3-cd)pyrene), (Total 12 PCBs & Total 7 PCBs),
Corrosive with Risk Phrase R35	Chloride,
Corrosive with Risk Phrase R34	No parameters identified
Irritant with Risk Phrase R41	No parameters identified
Irritant with Risk Phrase R36, R37, R38	Beryllium, Vanadium
Carcinogen Category 1 or 2 are those with R-phrases R45 or R49	Beryllium, Cadmium, Hexavalent Chromium, Phenanthrene, Benzo(a)anthracene, Chrysene, Benzo(bk)fluoranthene, Benzo(a)pyrene, Benzo(b)fluoranthene, Benzo(k)fluoranthene,
Carcinogen Category 3 are those with R-phrase R40	Nickel, Indeno(1,2,3-cd)pyrene
Toxic for Reproduction Category 1 and 2 with Risk Phrases R60, R61	Lead, Benzo(a)pyrene,
Toxic for Reproduction Category 3 with Risk Phrases R62, R63	Cadmium, Lead, Vanadium,
Mutagenic Category 1 and 2 with Risk Phrase R46	Benzo(a)pyrene,
Mutagenic Category 3 with Risk Phrase R68	Cadmium, Vanadium
Explosive (with R-phrases R2, R3 or related r-phrases)	No parameters identified
Oxidising (with R-phrases R7, R8, R9)	No parameters identified
Infectious	No parameters identified
Ecotoxic (with R-phrases R50, R51, R52, R53 Aquatic Env and R54, R55, R56, R57, R58 for Non-Aquatic Env) & combined risk phrases	Cadmium, Hexavalent Chromium, Chromium, Copper, Lead, Selenium, Vanadium, Zinc, Fluoranthene, Pyrene, Benzo(a)anthracene, Chrysene, Benzo(bk)fluoranthene, Benzo(a)pyrene, Benzo(ghi)perylene, Benzo(b)fluoranthene, Benzo(k)fluoranthene,, Total 12 PCBs, Total 7 PCBs,

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Ecotoxic (Based on Thresholds in WM2)			
R59	> 0.1 %	No parameters identified	
		Cadmium, Hexavalent Chromium, Copper, Lead, Zinc, Pyrene, Benzo(a)anthracene, Chrysene, Benzo(bk)fluoranthene, Benzo(a)pyrene, Benzo(ghi)perylene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Total 12 PCBs, Total 7 PCBs,	0.1960
R50-53	> 0.25%		
R51-53	> 2.5%	Vanadium	0.0574
R50 or R52 or R53 or R52-53	> 25%	Chromium, Fluoranthene, Selenium	0.4750
			0.7284

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SECOND SCHEDULE: PART III (Waste Management Act 1996)

Properties of Waste which render it hazardous

There is set out in each paragraph of this Part a general term denoting a particular property of waste which renders it hazardous, followed by an explanation of such general term by reference to a description of substances or preparations which possess the particular property.

"Explosive": substances or preparations which may explode under the effect of flame or which are more sensitive to shocks or friction than dinitrobenzene.

"Oxidizing": substances or preparations which exhibit highly exothermic reactions when in contact with other substances, particularly flammable substances.

"Highly flammable":

- (a) liquid substances or preparations having a flash point below 21°C (including extremely flammable liquids), or
- (b) substances or preparations which may become hot and finally catch fire in contact with air at ambient temperature without any application of energy, or
- (c) solid substances or preparations which may readily catch fire after brief contact with a source of ignition and which continue to burn or to be consumed after removal of the source of ignition, or
- (d) gaseous substances or preparations which are flammable in air at normal pressure, or
- (e) substances or preparations which, in contact with water or damp air, evolve highly flammable gases in dangerous quantities.

"Flammable": liquid substances or preparations having a flash point of not less than 21°C and not more than 55°C.

"Irritant": non-corrosive substances or preparations which, through immediate, prolonged or repeated contact with the skin or mucous membrane, can cause inflammation.

"Harmful": substances or preparations which, if they are inhaled or ingested or if they penetrate the skin, may involve limited health risks.

"Toxic": substances or preparations (including very toxic substances or preparations) which, if they are inhaled or ingested or if they penetrate the skin, may cause serious, acute or chronic health risks or death.

"Carcinogenic": substances or preparations which, if they are inhaled or ingested or if they penetrate the skin, may induce cancer or increase its incidence.

"Corrosive": substances or preparations which may destroy living tissue on contact.

"Infectious": substances containing viable micro-organisms or their toxins which are known or reliably believed to cause disease in humans or other living organisms.

"Teratogenic": substances or preparations which, if they are inhaled or ingested or if they penetrate the skin, may induce non-hereditary congenital malformations or increase their incidence.

"Mutagenic": substances or preparations which, if they are inhaled or ingested or if they penetrate the skin, may induce hereditary genetic defects or increase their incidence.

"Ecotoxic": substances or preparations which present or may present immediate or delayed risks for one or more sectors of the environment.

"Residuary hazardous property":

- (a) substances or preparations which release toxic or very toxic gases in contact with water, air or an acid, or
- (b) substances or preparations capable by any means, after being disposed of, of yielding another substance which possesses any property referred to in this or any other paragraph of this Part.

Hazardous Waste Classification Worksheet (Revised 31st August 2004)

Box No.	Information Required	Information	
Company Details			
A	Company Name	Cork County Council	
	Company Address	Haulbowline Island, County Cork	
	Date	06/02/2013	
	IPC or Waste License Number (if applicable)	Not yet applicable	
	Contact Person	Cormac O'Suilleabhain	
	Waste Description	Slag - Borehole BH316, 5.0m - 5.5m	
European Waste Catalogue/Hazardous Waste List			
B	Possible EWC Codes		Asterisk Yes / No <input type="checkbox"/> / <input checked="" type="checkbox"/>
		10 02 01	<input type="checkbox"/> / <input checked="" type="checkbox"/>
		10 02 02	<input type="checkbox"/> / <input checked="" type="checkbox"/>
		Refer to Section 3.1 of Report	
C	Six-Digit EWC Code	Not Applicable	Asterisk Yes / No <input type="checkbox"/> / <input type="checkbox"/>
D	EWC Description	Not Applicable	
<i>CI</i>	Mirror Entry Code (if applicable)	Not Applicable	Asterisk Yes / No <input type="checkbox"/> / <input type="checkbox"/>
<i>DI</i>	Mirror Entry Description (if applicable)	Not Applicable	
E	Is this waste classified as hazardous waste according to HWL?	Mirror Entry	<input type="checkbox"/>
		No	<input checked="" type="checkbox"/>
		Yes	<input type="checkbox"/>

Hazardous Waste Classification Worksheet (Revised 31st August 2004)

Category I Waste (Box F)

- 1. Anatomical substances, hospital or other clinical waste.
- 2. Pharmaceutical, medicinal or veterinary compounds.
- 3. Wood preservatives.
- 4. Biocides or phyto-pharmaceutical substances.
- 5. Residue from substances employed as solvents.
- 6. Halogenated organic substances not employed as solvents, excluding inert polymerized materials.
- 7. Tempering salts containing cyanides.
- 8. Mineral oils or oily substances (including cutting sludges).
- 9. Mixtures or emulsions of oil and water or hydrocarbon and water.
- 10. Substances containing polychlorinated biphenyls or polychlorinated terphenyls (including dielectrics).
- 11. Tarry materials arising from refining, distillation or any pyrolytic treatment (including still bottoms).
- 12. Inks, dyes, pigments, paints, lacquers or varnishes.
- 13. Resins, latex, plasticizers, glues or adhesives.
- 14. Chemical substances arising from research and development or teaching activities (including laboratory residues) which are not identified or are new and whose effects on humans or the environment are not known.
- 15. Pyrotechnics or other explosive materials.
- 16. Photographic chemicals or processing materials.
- 17. Any material contaminated with any congener of polychlorinated dibenzo-furan.
- 18. Any material contaminated with any congener of polychlorinated dibenzo-p-dioxin.

Category II Waste (Box G)

- 19. Animal or vegetable soaps, fats or waxes.
- 20. Non-halogenated organic substances not employed as solvents.
- 21. Inorganic substances without metals or metal compounds.
- 22. Ashes or cinders.
- 23. Soil, sand or clay (including dredging spoils).
- 24. Non-cyanidic tempering salts.
- 25. Metallic dust or powder.
- 26. Spent catalyst materials.
- 27. Liquids or sludges containing metals or metal compounds.
- 28. Residue (other than scrubber sludges, sludges from water purification plants and sewage sludges (untreated or unsuitable for use in agriculture)) from pollution control operations (including baghouse dusts).
- 29. Scrubber sludges.
- 30. Sludges from water purification plants.
- 31. Decarbonization residue.
- 32. Ion-exchange column residue.
- 33. Sewage sludges, untreated or unsuitable for use in agriculture.
- 34. Residue from cleaning of tanks or equipment.
- 35. Contaminated equipment.
- 36. Contaminated containers (including packaging and gas cylinders).
- 37. Batteries or other electrical cells.
- 38. Vegetable oils.
- 39. Materials resulting from the selective collection of waste from households.
- 40. Any other waste.

Hazardous Waste Classification Worksheet (Revised 31st August 2004)

Category II Constituents (Box H)

- | | |
|---|--|
| <input type="checkbox"/> 41. Beryllium or beryllium compounds. | <input type="checkbox"/> 71. Azides. |
| <input type="checkbox"/> 42. Vanadium compounds. | <input type="checkbox"/> 72. Polychlorinated biphenyls or polychlorinated terphenyls. |
| <input type="checkbox"/> 43. Chromium (VI) compounds. | <input type="checkbox"/> 73. Pharmaceutical or veterinary compounds. |
| <input type="checkbox"/> 44. Cobalt compounds. | <input type="checkbox"/> 74. Biocides or phyto-pharmaceutical substances (including pesticides). |
| <input type="checkbox"/> 45. Nickel compounds. | <input type="checkbox"/> 75. Infectious substances. |
| <input type="checkbox"/> 46. Copper compounds. | <input type="checkbox"/> 76. Creosotes. |
| <input type="checkbox"/> 47. Zinc compounds. | <input type="checkbox"/> 77. Isocyanates or thiocyanates. |
| <input type="checkbox"/> 48. Arsenic or arsenic compounds. | <input type="checkbox"/> 78. Organic cyanides (including nitriles). |
| <input type="checkbox"/> 49. Selenium or selenium compounds. | <input type="checkbox"/> 79. Phenols or phenol compounds. |
| <input type="checkbox"/> 50. Silver compounds. | <input type="checkbox"/> 80. Halogenated solvents. |
| <input type="checkbox"/> 51. Cadmium or cadmium compounds. | <input type="checkbox"/> 81. Organic solvents, excluding halogenated solvents. |
| <input type="checkbox"/> 52. Tin compounds. | <input type="checkbox"/> 82. Organohalogen compounds, excluding inert polymerized materials and other substances referred to in this Part. |
| <input type="checkbox"/> 53. Antimony or antimony compounds. | <input type="checkbox"/> 83. Aromatic compounds; polycyclic and heterocyclic organic compounds. |
| <input type="checkbox"/> 54. Tellurium or tellurium compounds. | <input type="checkbox"/> 84. Aliphatic amines. |
| <input type="checkbox"/> 55. Barium compounds, excluding barium sulphate. | <input type="checkbox"/> 85. Aromatic amines. |
| <input type="checkbox"/> 56. Mercury or mercury compounds. | <input type="checkbox"/> 86. Ethers. |
| <input type="checkbox"/> 57. Thallium or thallium compounds. | <input type="checkbox"/> 87. Substances of an explosive character, excluding those referred to elsewhere in this Part. |
| <input type="checkbox"/> 58. Lead or lead compounds. | <input type="checkbox"/> 88. Sulphur organic compounds. |
| <input type="checkbox"/> 59. Inorganic sulphides. | <input type="checkbox"/> 89. Any congener of polychlorinated dibenzo-furan. |
| <input type="checkbox"/> 60. Inorganic fluorine compounds, excluding calcium fluoride. | <input type="checkbox"/> 90. Any congener of polychlorinated dibenzo-p-dioxin. |
| <input type="checkbox"/> 61. Inorganic cyanides. | <input type="checkbox"/> 91. Hydrocarbons and their oxygen, nitrogen or sulphur compounds not otherwise referred to in this Part. |
| <input type="checkbox"/> 62. Any of the following alkaline or alkaline earth metals, namely, lithium, sodium, potassium, calcium, magnesium in uncombined form. | |
| <input type="checkbox"/> 63. Acidic solutions or acids in solid form. | |
| <input type="checkbox"/> 64. Basic solutions or bases in solid form. | |
| <input type="checkbox"/> 65. Asbestos (dust or fibres). | |
| <input type="checkbox"/> 66. Phosphorus: phosphorus compounds, excluding mineral phosphates. | |
| <input type="checkbox"/> 67. Metal carbonyls. | |
| <input type="checkbox"/> 68. Peroxides. | |
| <input type="checkbox"/> 69. Chlorates. | |
| <input type="checkbox"/> 70. Perchlorates. | |

Hazardous Waste Classification Worksheet (Revised 31st August 2004)

<i>Box I: Property Test Results and Waste Classification</i>					
Property	Property Testing			Waste Classification	
	Test Code	Title of Test	Results	Hazard (s)	Risk Phrase (s)
Explosive					
Oxidising					
Flammable					
Irritant/ Corrosive		NOT APPLICABLE			
Harmful/Toxic					
Carcinogenic					
Infectious	No test methods available for this property				
Toxic for Reproduction					
Mutagenic					
Ecotoxic					
Residuary hazardous property					

Hazardous Waste Classification Worksheet

Box J: Waste Composition details (revised 31st August 2004)

Classification according to EU Directives 67/548/EEC or 1999/45/EC														Classification according to Regulation (EC) No 1272/2008			
Substance	Assumed Compound	CAS No.	% w/w ^{NOTE 1}	Flash Point (°C)	Source Data	EU Hazard	Risk Phrase	Classification	Carcinogen Group No.	Toxic for Reproduction Category	Mutagenic Category	Source Data	Signal Word	Hazard Class & Category Code	Hazard Statement Code		
Aluminium	Aluminium Powder (pyrophoric)	7429-90-5	2.524	n/a not data available as per Sigma Aldrich MSDS	Annex I of Directive 67/548/EEC	F	R15	Contact with water liberates extremely flammable gases	n/a	n/a	n/a	Annex VI to Directive 1272/2008	Danger	Water-react. 2	H261		
							R17	Spontaneously flammable in air						Pyr. Sol. 1	H250		
Antimony	Antimony Compounds	n/a	-	n/a	Annex I of Directive 67/548/EEC	N	R20/22	Harmful by inhalation and if swallowed	n/a	n/a	n/a	Annex VI to Directive 1272/2008	Warning	Acute Tox. 4	H332		
							R51/53	Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment						Acute Tox. 4	H302		
Arsenic	Arsenic	7440-38-2	0.00048	n/a	Annex I of Directive 67/548/EEC	T	R23/25	Toxic by inhalation and if swallowed	n/a	na	n/a	Annex VI to Directive 1272/2008	Danger	Acute Tox. 3	H331		
							R50/53	Very toxic to aquatic organisms and may cause long-term effects in the aquatic environment						Acute Tox. 3	H301		
														Aquatic Acute 1	H400		
Barium	Barium Salts	n/a	0.0785	n/a	Annex I of Directive 67/548/EEC	Xn	R20/22	Harmful by inhalation and if swallowed	n/a	n/a	n/a	Annex VI to Directive 1272/2008	Warning	Aquatic Chronic 1	H410		
														Acute Tox. 4	H332		
Beryllium	Beryllium	7440-41-7	0.00016	n/a	Annex I of Directive 67/548/EEC	T	R49	May cause cancer by inhalation.	Carc. Cat. 2;	n/a	n/a	Annex VI to Directive 1272/2008	Danger	Carc. 1B	H350		
							R26	Also very toxic by inhalation						Acute Tox. 2 *	H330		
							R25	Also toxic if swallowed.						Acute Tox. 3 *	H301		
							R48/23	Also toxic: danger of serious damage to health by prolonged exposure through inhalation						STOT RE 1	H372		
							R36/37/38	Irritating to eyes, respiratory system and skin						Eye Irrit. 2	H319		
							R43	May cause sensitization by skin contact						STOT SE 3	H335		
Cadmium	cadmium (non-pyrophoric)/ cadmium oxide (nonpyrophoric)	7440-43-9/ 1306-19-0	0.00032	n/a	Annex I of Directive 67/548/EEC	T	R45	May cause cancer	Carc. Cat. 2;	Repr. Cat. 3;	Muta. Cat. 3;	Annex VI to Directive 1272/2008	Danger	Carc. 1B	H350		
							R68	Possible risk of irreversible damage						Muta. 2	H341		
							R62	Possible risk of impaired fertility						Repr. 2	H361fd		
							R63	Possible risk of harm to the unborn child						Acute Tox. 2	H330		
							R48/23/25	Toxic: danger of serious damage to health by prolonged exposure through inhalation and if swallowed						STOT RE 1	H372		
							R26	Also very toxic by inhalation						Aquatic Acute 1	H400		
Calcium	Calcium	7440-70-2	16.61	n/a not data available as per Sigma Aldrich MSDS	Annex I of Directive 67/548/EEC	F	R15	Contact with water liberates extremely flammable gases	n/a	n/a	n/a	Annex VI to Directive 1272/2008	Danger	Water-react. 2	H261		
Hexavalent Chromium	Chromium (VI) compounds	n/a	-	n/a	Annex I of Directive 67/548/EEC	N	R49	May cause cancer by inhalation.	Carc. Cat. 2	n/a	n/a	Annex VI to Directive 1272/2008	Danger	Carc. 1B	H350		
							R43	May cause sensitization by skin contact						Skin Sens. 1	H317		
							R50/53	Very toxic to aquatic organisms and may cause long-term effects in the aquatic environment						Aquatic Acute 1	H400		
Chromium	Chromium	7440-47-3	0.3195	n/a	Sigma Aldrich	N	R50	Very toxic to aquatic organisms	n/a	n/a	n/a	Sigma Aldrich	Warning	Aquatic Chronic 1	H410		
							R22	Harmful if swallowed						Acute Tox. 4 *	H302		
Copper	Copper (I) Oxide	1317-39-1	0.0534	n/a	Annex I of Directive 67/548/EEC	N	R50/53	Very toxic to aquatic organisms and may cause long-term effects in the aquatic environment	n/a	n/a	n/a	Annex VI to Directive 1272/2008	Warning	Aquatic Acute 1	H400		
														Aquatic Chronic 1	H410		
Lead	Lead Compounds	n/a	0.0209	n/a	Annex I of Directive 67/548/EEC	Xn	R61	May cause harm to the unborn child	n/a	Repr. Cat. 1;	n/a	Annex VI to Directive 1272/2008	Danger	Repr. 1A	H360Df		
							R62	Possible risk of impaired fertility						Acute Tox. 4	H332		
							R20/22	Harmful by inhalation and if swallowed						STOT RE 2	H302		
							R33	Danger of cumulative effects						Aquatic Acute 1	H373		
Magnesium	Magnesium, powder or turnings	n/a	5.967	n/a not data available as per Sigma Aldrich MSDS	Annex I of Directive 67/548/EEC	F	R11	Highly flammable	n/a	n/a	n/a	Annex VI to Directive 1272/2008	Danger	Flam. Sol. 1	H228		
							R15	Contact with water liberates extremely flammable gases						Water-react. 2	H261		
Manganese	Manganese dioxide	1313-13-9	3.599	n/a	Annex I of Directive 67/548/EEC	Xn	R20/22	Harmful by inhalation and if swallowed	n/a	n/a	n/a	Annex VI to Directive 1272/2008	Warning	Self-heat. 1	H252		
														Acute Tox. 4	H332		
Nickel	Nickel	7440-02-0	0.02318	n/a	Annex I of Directive 67/548/EEC	Xn	R40	Limited evidence of a carcinogenic effect	Carc. Cat. 3	n/a	n/a	Annex VI to Directive 1272/2008	Warning	Acute Tox. 4	H302		
							R43	May cause sensitization by skin contact						Carc. 2	H351		
Selenium	Selenium	7782-49-2	0.0013	n/a	Annex I of Directive 67/548/EEC	T	R23/25	Toxic by inhalation and if swallowed	n/a	n/a	n/a	Annex VI to Directive 1272/2008	Danger	Skin Sens. 1	H317		
							R33	Danger of cumulative effects						Acute Tox. 3	H301		
							R53	May cause long-term effects in the aquatic environment						STOT RE 2	H373		
													Aquatic Chronic 4	H413			

Hazardous Waste Classification Worksheet

Box J: Waste Composition details (revised 31st August 2004)

					Classification according to EU Directives 67/548/EEC or 1999/45/EC						Classification according to Regulation (EC) No 1272/2008					
Substance	Assumed Compound	CAS No.	% w/w ^{NOTE 1}	Flash Point (°C)	Source Data	EU Hazard	Risk Phrase	Classification	Carcinogen Group No.	Toxic for Reproduction Category	Mutagenic Category	Source Data	Signal Word	Hazard Class & Category Code	Hazard Statement Code	
Total Sulphate	-	-	0.4399	n/a	Annex I of Directive 67/548/EEC			This substance is not classified as dangerous according to Directive 67/548/EEC						Not a hazardous substance or mixture according to Regulation (EC) No. 1272/2008		
Vanadium	Vanadium pentoxide	1314-62-1	0.0205	n/a	Annex I of Directive 67/548/EEC		R63	Possible risk of harm to the unborn child	n/a	Repr. Cat. 3;	Muta. Cat. 3;	Annex VI to Directive 1272/2008	Danger	Muta. 2	H341	
							R68	Possible risk of irreversible effects						Repr. 2	H361d	
							T	R48/23						Toxic; danger of serious damage to health by prolonged exposure through inhalation	STOT RE 1	H372
							Xn	R20/22						Harmful by inhalation and if swallowed	Acute Tox. 4	H332
							Xi	R37						Irritating to respiratory system	Acute Tox. 4	H302
	N	R51/53	Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment	STOT SE 3	H335											
Water Soluble Boron	Boron	7440-42-8	0.00161	n/a	Sigma Aldrich	Xn	R22	Harmful if swallowed	n/a	n/a	n/a	Sigma Aldrich	Warning	Acute Tox. 4	H302	
Zinc	Zinc oxide	1314-13-2	0.1369	n/a	Annex I of Directive 67/548/EEC				n/a	n/a	n/a	Annex VI to Directive 1272/2008	Warning	Aquatic Acute 1	H400	
						N	R50/53	Very toxic to aquatic organisms and may cause long-term effects in the aquatic environment						Aquatic Chronic 1	H410	
Chloride	Hydrogen Chloride	7647-01-0	0.1645	n/a	Annex I of Directive 67/548/EEC				n/a	n/a	n/a	Annex VI to Directive 1272/2008	Danger	Press. Gas	H331	
						C	R35	Causes severe burns						Acute Tox. 3	H314	
Naphthalene	Naphthalene	91-20-3	-	n/a	Annex I of Directive 67/548/EEC				Carc. Cat. 3;	n/a	n/a	Annex VI to Directive 1272/2008	Warning	Carc. 2	H351	
						Xn	R22	Harmful if swallowed						Acute Tox. 4	H302	
						N	R50/53	Very toxic to aquatic organisms and may cause long-term effects in the aquatic environment						Aquatic Acute 1	H400	
Acenaphthylene	Acenaphthylene	208-96-8	-	122.0	Sigma Aldrich				n/a	n/a	n/a	Sigma Aldrich	Warning	Acute Tox. 4	H302	
						Xn	R36/37/38	Irritating to eyes, respiratory system and skin.						Skin Irrit. 2	H315	
														Eye Irrit. 2	H319	
Phenanthrene	Phenanthrene, disn. Residues	122070-78-4	-	n/a	Annex I of Directive 67/548/EEC				Carc. Cat. 2;	n/a	n/a	Annex VI to Directive 1272/2008	Danger	STOT SE 3	H335	
						T	R45	May cause cancer						Carc. 1B	H350	
						Xn	R36/37/38	Irritating to eyes, respiratory system and skin						Skin Irrit. 2	H315	
Anthracene	Anthracene	120-12-7	-	121.0	Sigma Aldrich				Carc. Cat. 3;	n/a	n/a	Sigma Aldrich	Warning	Eye Irrit. 2	H319	
						N	R50/53	Very toxic to aquatic organisms and may cause long-term effects in the aquatic environment						STOT SE 3	H335	
														Aquatic Chronic 1	H410	
Fluoranthene	Benzo[k]fluorene	206-44-0	0.000003	198.0	Sigma Aldrich				n/a	n/a	n/a	Sigma Aldrich	Warning	Acute Tox. 4	H302	
						Xn	R22	Harmful if swallowed						Aquatic Acute 1	H400	
Pyrene	Benzo[def]phenanthrene	129-00-0	0.000003	> 200.0	Sigma Aldrich				n/a	n/a	n/a	Sigma Aldrich	Warning	Aquatic Chronic 1	H410	
						N	R50/53	Very toxic to aquatic organisms and may cause long-term effects in the aquatic environment						Aquatic Chronic 1	H410	
Benzo(a)anthracene	Benz(a)anthracene	56-55-3	-	n/a	Annex I of Directive 67/548/EEC				Carc. Cat. 2	n/a	n/a	Annex VI to Directive 1272/2008	Danger	Carc. 1B	H350	
						N	R50/53	Very toxic to aquatic organisms and may cause long-term effects in the aquatic environment						Aquatic Acute 1	H400	
														Aquatic Chronic 1	H410	
Chrysene	Chrysene	218-01-9	0.000002	n/a	Annex I of Directive 67/548/EEC				Carc. Cat. 2	n/a	Muta. Cat. 3;	Annex VI to Directive 1272/2008	Danger	Carc. 1B	H350	
						T	R68	Possible risk of irreversible effects						Muta. 2	H341	
						N	R50/53	Very toxic to aquatic organisms and may cause long-term effects in the aquatic environment						Aquatic Acute 1	H400	
Benzo(bk)fluoranthene	benzo(k)fluoranthene	207-08-9	-	n/a	Annex I of Directive 67/548/EEC				Carc. Cat. 2;	n/a	n/a	Annex VI to Directive 1272/2008	Danger	Aquatic Chronic 1	H410	
														Carc. 1B	H350	
														Muta. 1B	H340	
Benzo(a)pyrene	benzo(a)pyrene	50-32-8	-	n/a	Annex I of Directive 67/548/EEC				Carc. Cat. 2;	Repr. Cat. 2	Muta. Cat. 2;	Annex VI to Directive 1272/2008	Danger	Repr. 1B	H360FD	
														Skin Sens. 1	H317	
														Aquatic Acute 1	H400	
														Aquatic Chronic 1	H410	
						N	R50/53	Very toxic to aquatic organisms and may cause long-term effects in the aquatic environment						Aquatic Chronic 1	H410	

Hazardous Waste Classification Worksheet

Box J: Waste Composition details (revised 31st August 2004)

					Classification according to EU Directives 67/548/EEC or 1999/45/EC							Classification according to Regulation (EC) No 1272/2008			
Substance	Assumed Compound	CAS No.	% w/w ^{NOTE 1}	Flash Point (°C)	Source Data	EU Hazard	Risk Phrase	Classification	Carcinogen Group No.	Toxic for Reproduction Category	Mutagenic Category	Source Data	Signal Word	Hazard Class & Category Code	Hazard Statement Code
Indeno(1,2,3-cd)pyrene	Indeno[1,2,3-cd]pyrene	193-39-5	-	n/a	Sigma Aldrich	Xn	R40	Limited evidence of a carcinogenic effect	Carc. Cat. 2;	n/a	n/a	Sigma Aldrich	Warning	Carc 2	H351
Dibenzo(ah)anthracene	dibenz[a,h]anthracene	53-70-3	-	n/a	Annex I of Directive 67/548/EEC	T	R45	May cause cancer	Carc. Cat. 2;	n/a	n/a	Annex VI to Directive 1272/2008	Danger	Carc. 1B	H350
						N	R50/53	Very toxic to aquatic organisms and may cause long-term effects in the aquatic environment						Aquatic Acute 1	H400
Benzo(ghi)perylene	Benzo(ghi)perylene	191-24-2	-	n/a	Sigma Aldrich	N	R50/53	Very toxic to aquatic organisms and may cause long-term adverse effects in the aquatic environment	Carc. Cat. 3;	n/a	n/a	Sigma Aldrich	Warning	Aquatic Acute 1	H400
						T	R45	May cause cancer						Aquatic Chronic 1	H410
Benzo(b)fluoranthene	Benzo(b)fluoranthene	205-99-2	-	n/a	Sigma Aldrich	N	R50/53	Very toxic to aquatic organisms and may cause long-term effects in the aquatic environment	Carc. Cat. 2;	n/a	n/a	Sigma Aldrich	Danger	Aquatic Acute 1	H400
						T	R45	May cause cancer						Aquatic Chronic 1	H410
Benzo(k)fluoranthene	benzo(k)fluoranthene	207-08-9	-	n/a	Annex I of Directive 67/548/EEC	T	R45	May cause cancer	Carc. Cat. 2;	n/a	n/a	Annex VI to Directive 1272/2008	Danger	Carc. 1B	H350
						N	R50/53	Very toxic to aquatic organisms and may cause long-term effects in the aquatic environment						Aquatic Acute 1	H400
Mineral Oil (C8-C40)	Mineral Oil	8042-47-5	-	> 112 °C	Sigma Aldrich	This substance is not classified as dangerous according to Directive 67/548/EEC						Not a hazardous substance or mixture according to Regulation (EC) No. 1272/2008			
Total aromatics C5-35	Aromatic hydrocarbons	90989-41-6	-	n/a	Annex I of Directive 67/548/EEC	T	R45	May cause cancer	Carc. Cat. 2;	n/a	n/a	Annex VI to Directive 1272/2008	Danger	Carc. 1B	H350
						T	R45	May cause cancer						Fam. Gas 1	H220
Total aliphatics C5-35	Distillates (petroleum),	68477-35-0	0.0029	n/a	Annex I of Directive 67/548/EEC	T	R46	May cause heritable genetic damage	Carc. Cat. 2;	n/a	Muta. Cat. 2;	Annex VI to Directive 1272/2008	Danger	Press. Gas	H350
Total 12 PCBs	polychlorobiphenyls; PCB	1336-36-3	-	n/a	Annex I of Directive 67/548/EEC	Xn	R33	Danger of cumulative effects	n/a	n/a	n/a	Annex VI to Directive 1272/2008	Warning	STOT RE 2	H373
						N	R50/53	Very toxic to aquatic organisms and may cause long-term effects in the aquatic environment						Aquatic Acute 1	H400
Total 7 PCBs	polychlorobiphenyls; PCB	1336-36-3	-	n/a	Annex I of Directive 67/548/EEC	Xn	R33	Danger of cumulative effects	n/a	n/a	n/a	Annex VI to Directive 1272/2008	Warning	STOT RE 2	H373
						N	R50/53	Very toxic to aquatic organisms and may cause long-term effects in the aquatic environment						Aquatic Acute 1	H400
Thiocyanate	thiocyanic acid	463-56-9	-	n/a	Annex I of Directive 67/548/EEC	Xn	R20/21/22	Harmful by inhalation, in contact with skin and if swallowed	n/a	n/a	n/a	Annex VI to Directive 1272/2008	Warning	Acute Tox. 4	H332
							R32	Contact with acids liberates very toxic gas						Acute Tox. 4	H312
						N	R52/53	Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment						Acute Tox. 4	H302

Hazardous Waste Classification Worksheet (Revised 31st August 2004)

Box K: Waste Composition Details		
Properties with Thresholds (Box K1)		
Property	Threshold	Total in Waste
	(% w/w)	(% w/w)
Flash Point < 55 °C		0
Very Toxic	> 0.1	0.0005
Toxic	> 3	0.1873
Harmful	> 25	3.7971
Corrosive with Risk Phrase R35	>1	0.1645
Corrosive with Risk Phrase R34	> 5	0.0
Irritant with Risk Phrase R41	> 10	0.0
Irritant with Risk Phrase R36, R37, R38	> 20	0.0207
Carcinogen Category 1 or 2	> 0.1	0.003
Carcinogen Category 3	> 1	0.023
Toxic for Reproduction Category 1 and 2 with Risk Phrases R60, R61	> 0.5	0.021
Toxic for Reproduction Category 3 with Risk Phrases R62, R63	> 5	0.042
Mutagenic Category 1 and 2 with Risk Phrase R46	> 0.1	0.003
Mutagenic Category 3 with Risk Phrase R68	> 1	0.0208
Properties without thresholds (Box K2)		
Property	Total (% w/w) in waste	
Explosive	0	
Oxidising	0	
Infectious	0	
Ecotoxic	0.553	
Residuary Hazardous property	0	

Final EWC Code		
L	Final EWC Code	Possibly 10 02 01 or 10 02 02 with no hazardous components identified in the sample
M	Final EWC Description	Refer to Section 3.1 of Report

Hazardous Waste Classification Worksheet (Revised 31st August 2004)

Note 1:	
Very Toxic, those with an EU Hazard Phrase of T+ under EU Directives 67/548/EEC or 1999/45/EC or those with R-phrases of R26, R27, R28 and combined risk phrases with or without R39	Beryllium, Cadmium,
Toxic, those with an EU Hazard Phrase of T under EU Directives 67/548/EEC or 1999/45/EC or those with R-phrases of R23, R24, R25 and combined risk phrases with or without R39 or R48	Arsenic, Beryllium, Cadmium, Selenium, Vanadium, Chloride,
Harmful, those with an EU Hazard Phrase of Xn under Directive 67/548/EEC or 1999/45/EC or those with R-phrases of R20, R21, R22, R65, R68 and combined risk phrases with or without R48	Barium, Copper, Lead, Manganese, (Nickel), Vanadium, Water Soluble Boron, Fluoroanthene,
Corrosive with Risk Phrase R35	Chloride,
Corrosive with Risk Phrase R34	No parameters identified
Irritant with Risk Phrase R41	No parameters identified
Irritant with Risk Phrase R36, R37, R38	Beryllium, Vanadium,
Carcinogen Category 1 or 2 are those with R-phrases R45 or R49	Beryllium, Cadmium, Chrysene, Total Aliphatics,
Carcinogen Category 3 are those with R-phrase R40	Nickel,
Toxic for Reproduction Category 1 and 2 with Risk Phrases R60, R61	Lead,
Toxic for Reproduction Category 3 with Risk Phrases R62, R63	Cadmium, Lead, Vanadium,
Mutagenic Category 1 and 2 with Risk Phrase R46	Total Aliphatics
Mutagenic Category 3 with Risk Phrase R68	Cadmium, Vanadium
Explosive (with R-phrases R2, R3 or related r-phrases)	No parameters identified
Oxidising (with R-phrases R7, R8, R9)	No parameters identified
Infectious	No parameters identified
Ecotoxic (with R-phrases R50, R51, R52, R53 Aquatic Env and R54, R55, R56, R57, R58 for Non-Aquatic Env) & combined risk phrases	Arsenic, Cadmium, Chromium, Copper, Lead, Selenium, Vanadium, Zinc, Fluoranthene, Pyrene, Chrysene

Hazardous Waste Classification Worksheet (Revised 31st August 2004)

Ecotoxic (Based on Thresholds in WM2)			
R59	> 0.1 %	No parameters identified	
		Arsenic, Cadmium, Copper, Lead, Vanadium, Zinc, Pyrene, Chrysene,	0.212
R50-53	> 0.25%		
R51-53	> 2.5%	Vanadium	0.0205
R50 or R52 or R53 or R52-53	> 25%	Chromium, Fluoranthene, Selenium	0.3208
			0.553

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SECOND SCHEDULE: PART III (Waste Management Act 1996)

Properties of Waste which render it hazardous

There is set out in each paragraph of this Part a general term denoting a particular property of waste which renders it hazardous, followed by an explanation of such general term by reference to a description of substances or preparations which possess the particular property.

"Explosive": substances or preparations which may explode under the effect of flame or which are more sensitive to shocks or friction than dinitrobenzene.

"Oxidizing": substances or preparations which exhibit highly exothermic reactions when in contact with other substances, particularly flammable substances.

"Highly flammable":

- (a) liquid substances or preparations having a flash point below 21°C (including extremely flammable liquids), or
- (b) substances or preparations which may become hot and finally catch fire in contact with air at ambient temperature without any application of energy, or
- (c) solid substances or preparations which may readily catch fire after brief contact with a source of ignition and which continue to burn or to be consumed after removal of the source of ignition, or
- (d) gaseous substances or preparations which are flammable in air at normal pressure, or
- (e) substances or preparations which, in contact with water or damp air, evolve highly flammable gases in dangerous quantities.

"Flammable": liquid substances or preparations having a flash point of not less than 21°C and not more than 55°C.

"Irritant": non-corrosive substances or preparations which, through immediate, prolonged or repeated contact with the skin or mucous membrane, can cause inflammation.

"Harmful": substances or preparations which, if they are inhaled or ingested or if they penetrate the skin, may involve limited health risks.

"Toxic": substances or preparations (including very toxic substances or preparations) which, if they are inhaled or ingested or if they penetrate the skin, may cause serious, acute or chronic health risks or death.

"Carcinogenic": substances or preparations which, if they are inhaled or ingested or if they penetrate the skin, may induce cancer or increase its incidence.

"Corrosive": substances or preparations which may destroy living tissue on contact.

"Infectious": substances containing viable micro-organisms or their toxins which are known or reliably believed to cause disease in humans or other living organisms.

"Teratogenic": substances or preparations which, if they are inhaled or ingested or if they penetrate the skin, may induce non-hereditary congenital malformations or increase their incidence.

"Mutagenic": substances or preparations which, if they are inhaled or ingested or if they penetrate the skin, may induce hereditary genetic defects or increase their incidence.

"Ecotoxic": substances or preparations which present or may present immediate or delayed risks for one or more sectors of the environment.

"Residuary hazardous property":

- (a) substances or preparations which release toxic or very toxic gases in contact with water, air or an acid, or
- (b) substances or preparations capable by any means, after being disposed of, of yielding another substance which possesses any property referred to in this or any other paragraph of this Part.

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Box No.	Information Required	Information	
Company Details			
A	Company Name	Cork County Council	
	Company Address	Haulbowline Island, County Cork	
	Date	06/02/2013	
	IPC or Waste License Number (if applicable)	Not yet applicable	
	Contact Person	Cormac O'Suilleabhain	
	Waste Description	Stockpile Sample SS306	
European Waste Catalogue/Hazardous Waste List			
B	Possible EWC Codes		Asterisk Yes / No
		10 02 01	<input type="checkbox"/> / <input checked="" type="checkbox"/>
		10 02 02	<input type="checkbox"/> / <input checked="" type="checkbox"/>
		Refer to Section 3.1 of Report	
C	Six-Digit EWC Code	Not Applicable	Asterisk Yes / No <input type="checkbox"/> / <input type="checkbox"/>
D	EWC Description	Not Applicable	
CI	Mirror Entry Code (if applicable)	Not Applicable	Asterisk Yes / No <input type="checkbox"/> / <input type="checkbox"/>
DI	Mirror Entry Description (if applicable)	Not Applicable	
E	Is this waste classified as hazardous waste according to HWL?	Mirror Entry	<input type="checkbox"/>
		No	<input checked="" type="checkbox"/>
		Yes	<input type="checkbox"/>

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Category I Waste (Box F)

- 1. Anatomical substances, hospital or other clinical waste.
- 2. Pharmaceutical, medicinal or veterinary compounds.
- 3. Wood preservatives.
- 4. Biocides or phyto-pharmaceutical substances.
- 5. Residue from substances employed as solvents.
- 6. Halogenated organic substances not employed as solvents, excluding inert polymerized materials.
- 7. Tempering salts containing cyanides.
- 8. Mineral oils or oily substances (including cutting sludges).
- 9. Mixtures or emulsions of oil and water or hydrocarbon and water.
- 10. Substances containing polychlorinated biphenyls or polychlorinated terphenyls (including dielectrics).
- 11. Tarry materials arising from refining, distillation or any pyrolytic treatment (including still bottoms).
- 12. Inks, dyes, pigments, paints, lacquers or varnishes.
- 13. Resins, latex, plasticizers, glues or adhesives.
- 14. Chemical substances arising from research and development or teaching activities (including laboratory residues) which are not identified or are new and whose effects on humans or the environment are not known.
- 15. Pyrotechnics or other explosive materials.
- 16. Photographic chemicals or processing materials.
- 17. Any material contaminated with any congener of polychlorinated dibenzo-furan.
- 18. Any material contaminated with any congener of polychlorinated dibenzo-p-dioxin.

Category II Waste (Box G)

- 19. Animal or vegetable soaps, fats or waxes.
- 20. Non-halogenated organic substances not employed as solvents.
- 21. Inorganic substances without metals or metal compounds.
- 22. Ashes or cinders.
- 23. Soil, sand or clay (including dredging spoils).
- 24. Non-cyanidic tempering salts.
- 25. Metallic dust or powder.
- 26. Spent catalyst materials.
- 27. Liquids or sludges containing metals or metal compounds.
- 28. Residue (other than scrubber sludges, sludges from water purification plants and sewage sludges (untreated or unsuitable for use in agriculture)) from pollution control operations (including baghouse dusts).
- 29. Scrubber sludges.
- 30. Sludges from water purification plants.
- 31. Decarbonization residue.
- 32. Ion-exchange column residue.
- 33. Sewage sludges, untreated or unsuitable for use in agriculture.
- 34. Residue from cleaning of tanks or equipment.
- 35. Contaminated equipment.
- 36. Contaminated containers (including packaging and gas cylinders).
- 37. Batteries or other electrical cells.
- 38. Vegetable oils.
- 39. Materials resulting from the selective collection of waste from households.
- 40. Any other waste.

Hazardous Waste Classification Worksheet (Revised 31st August 2004)

Category II Constituents (Box H)

- | | |
|---|--|
| <input type="checkbox"/> 41. Beryllium or beryllium compounds. | <input type="checkbox"/> 71. Azides. |
| <input type="checkbox"/> 42. Vanadium compounds. | <input type="checkbox"/> 72. Polychlorinated biphenyls or polychlorinated terphenyls. |
| <input type="checkbox"/> 43. Chromium (VI) compounds. | <input type="checkbox"/> 73. Pharmaceutical or veterinary compounds. |
| <input type="checkbox"/> 44. Cobalt compounds. | <input type="checkbox"/> 74. Biocides or phyto-pharmaceutical substances (including pesticides). |
| <input type="checkbox"/> 45. Nickel compounds. | <input type="checkbox"/> 75. Infectious substances. |
| <input type="checkbox"/> 46. Copper compounds. | <input type="checkbox"/> 76. Creosotes. |
| <input type="checkbox"/> 47. Zinc compounds. | <input type="checkbox"/> 77. Isocyanates or thiocyanates. |
| <input type="checkbox"/> 48. Arsenic or arsenic compounds. | <input type="checkbox"/> 78. Organic cyanides (including nitriles). |
| <input type="checkbox"/> 49. Selenium or selenium compounds. | <input type="checkbox"/> 79. Phenols or phenol compounds. |
| <input type="checkbox"/> 50. Silver compounds. | <input type="checkbox"/> 80. Halogenated solvents. |
| <input type="checkbox"/> 51. Cadmium or cadmium compounds. | <input type="checkbox"/> 81. Organic solvents, excluding halogenated solvents. |
| <input type="checkbox"/> 52. Tin compounds. | <input type="checkbox"/> 82. Organohalogen compounds, excluding inert polymerized materials and other substances referred to in this Part. |
| <input type="checkbox"/> 53. Antimony or antimony compounds. | <input type="checkbox"/> 83. Aromatic compounds; polycyclic and heterocyclic organic compounds. |
| <input type="checkbox"/> 54. Tellurium or tellurium compounds. | <input type="checkbox"/> 84. Aliphatic amines. |
| <input type="checkbox"/> 55. Barium compounds, excluding barium sulphate. | <input type="checkbox"/> 85. Aromatic amines. |
| <input type="checkbox"/> 56. Mercury or mercury compounds. | <input type="checkbox"/> 86. Ethers. |
| <input type="checkbox"/> 57. Thallium or thallium compounds. | <input type="checkbox"/> 87. Substances of an explosive character, excluding those referred to elsewhere in this Part. |
| <input type="checkbox"/> 58. Lead or lead compounds. | <input type="checkbox"/> 88. Sulphur organic compounds. |
| <input type="checkbox"/> 59. Inorganic sulphides. | <input type="checkbox"/> 89. Any congener of polychlorinated dibenzo-furan. |
| <input type="checkbox"/> 60. Inorganic fluorine compounds, excluding calcium fluoride. | <input type="checkbox"/> 90. Any congener of polychlorinated dibenzo-p-dioxin. |
| <input type="checkbox"/> 61. Inorganic cyanides. | <input type="checkbox"/> 91. Hydrocarbons and their oxygen, nitrogen or sulphur compounds not otherwise referred to in this Part. |
| <input type="checkbox"/> 62. Any of the following alkaline or alkaline earth metals, namely, lithium, sodium, potassium, calcium, magnesium in uncombined form. | |
| <input type="checkbox"/> 63. Acidic solutions or acids in solid form. | |
| <input type="checkbox"/> 64. Basic solutions or bases in solid form. | |
| <input type="checkbox"/> 65. Asbestos (dust or fibres). | |
| <input type="checkbox"/> 66. Phosphorus: phosphorus compounds, excluding mineral phosphates. | |
| <input type="checkbox"/> 67. Metal carbonyls. | |
| <input type="checkbox"/> 68. Peroxides. | |
| <input type="checkbox"/> 69. Chlorates. | |
| <input type="checkbox"/> 70. Perchlorates. | |

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<i>Box I: Property Test Results and Waste Classification</i>					
Property	Property Testing			Waste Classification	
	Test Code	Title of Test	Results	Hazard (s)	Risk Phrase (s)
Explosive					
Oxidising					
Flammable					
Irritant/ Corrosive		NOT APPLICABLE			
Harmful/Toxic					
Carcinogenic					
Infectious	No test methods available for this property				
Toxic for Reproduction					
Mutagenic					
Ecotoxic					
Residuary hazardous property					

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Box J: Waste Composition details (revised 31st August 2004)															
					Classification according to EU Directives 67/548/EEC or 1999/45/EC					Classification according to Regulation (EC) No 1272/2008					
Substance	Assumed Compound	CAS No.	% w/w ^{NOTE 1}	Flash Point (°C)	Source Data	EU Hazard	Risk Phrase	Classification	Carcinogen Group No.	Toxic for Reproduction Category	Mutagenic Category	Source Data	Signal Word	Hazard Class & Category Code	Hazard Statement Code
Aluminium	Aluminium Powder (pyrophoric)	7429-90-5	3.087		Annex I of Directive 67/548/EEC	F	R15 R17	Contact with water liberates extremely flammable gases Spontaneously flammable in air	n/a	n/a	n/a	Annex VI to Directive 1272/2008	Danger	Water-react. 2	H261
					Xn	R20/22	Harmful by inhalation and if swallowed				Acute Tox. 4	H332			
Antimony	Antimony Compounds	n/a	<0.0005		Annex I of Directive 67/548/EEC	N	R51/53	Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment	n/a	n/a	n/a	Annex VI to Directive 1272/2008	Warning	Acute Tox. 4	H302
											Aquatic Chronic 2	H411			
Arsenic	Arsenic	7440-38-2	<0.00005		Annex I of Directive 67/548/EEC	T	R23/25	Toxic by inhalation and if swallowed	n/a	na	n/a	Annex VI to Directive 1272/2008	Danger	Acute Tox. 3	H331
					N	R50/53	Very toxic to aquatic organisms and may cause long-term effects in the aquatic environment	Acute Tox. 3						H301	
								Aquatic Acute 1						H400	
													Aquatic Chronic 1	H410	
Barium	Barium Salts	n/a	0.072		Annex I of Directive 67/548/EEC	Xn	R20/22	Harmful by inhalation and if swallowed	n/a	n/a	n/a	Annex VI to Directive 1272/2008	Warning	Acute Tox. 4	H332
Beryllium	Beryllium	7440-41-7	0.00022		Annex I of Directive 67/548/EEC	T+	R49 R26 R25	May cause cancer by inhalation. Also very toxic by inhalation Also toxic if swallowed.	Carc. Cat. 2;	n/a	n/a	Annex VI to Directive 1272/2008	Danger	Acute Tox. 2 *	H330
					T	R48/23	Also toxic: danger of serious damage to health by prolonged exposure through inhalation	Acute Tox. 3 *						H301	
					Xi	R36/37/38 R43	Irritating to eyes, respiratory system and skin May cause sensitization by skin contact	STOT RE 1						H372	
								Eye Irrit. 2						H319	
								STOT SE 3						H335	
								Skin Irrit. 2						H315	
				Skin Sens. 1	H317										
Cadmium	cadmium (non-pyrophoric)/ cadmium oxide (nonpyrophoric)	7440-43-9/ 1306-19-0	<0.0001		Annex I of Directive 67/548/EEC		R45	May cause cancer	Carc. Cat. 2;	Repr. Cat. 3;	Muta. Cat. 3;	Annex VI to Directive 1272/2008	Danger	Carc. 1B	H350
								Muta. 2						H341	
								Repr. 2						H361fd	
					T	R48/23/25	Toxic: danger or serious damage to health by prolonged exposure through inhalation and if swallowed	Acute Tox. 2						H330	
					T+	R26	Also very toxic by inhalation	STOT RE 1						H372	
					N	R50/53	Very toxic to aquatic organisms and may cause long-term effects in the aquatic environment	Aquatic Acute 1						H400	
			Aquatic Chronic 1	H410											
Calcium	Calcium	7440-70-2	19.7		Annex I of Directive 67/548/EEC	F	R15	Contact with water liberates extremely flammable gases	n/a	n/a	n/a	Annex VI to Directive 1272/2008	Danger	Water-react. 2	H261
Hexavalent Chromium	Chromium (VI) compounds	n/a	0.00003		Annex I of Directive 67/548/EEC		R49	May cause cancer by inhalation.	Carc. Cat. 2	n/a	n/a	Annex VI to Directive 1272/2008	Danger	Carc. 1B	H350i
								Skin Sens. 1						H317	
					N	R50/53	Very toxic to aquatic organisms and may cause long-term effects in the aquatic environment	Aquatic Acute 1						H400	
													Aquatic Chronic 1	H410	
Chromium	Chromium	7440-47-3	0.3565		Sigma Aldrich	N	R50	Very toxic to aquatic organisms	n/a	n/a	n/a	Sigma Aldrich	Warning	Aquatic Acute 1	H400
Copper	Copper (I) Oxide	1317-39-1	0.2038		Annex I of Directive 67/548/EEC	Xn	R22	Harmful if swallowed	n/a	n/a	n/a	Annex VI to Directive 1272/2008	Warning	Acute Tox. 4 *	H302
					N	R50/53	Very toxic to aquatic organisms and may cause long-term effects in the aquatic environment	Aquatic Acute 1						H400	
														Aquatic Chronic 1	H410
Lead	Lead Compounds	n/a	0.0044		Annex I of Directive 67/548/EEC		R61 R62	May cause harm to the unborn child Possible risk of impaired fertility	n/a	Repr. Cat. 1; Repr. Cat. 3;	n/a	Annex VI to Directive 1272/2008	Danger	Repr. 1A	H360Df
					Xn	R20/22 R33	Harmful by inhalation and if swallowed Danger of cumulative effects	Acute Tox. 4						H332	
					N	R50/53	Very toxic to aquatic organisms and may cause long-term effects in the aquatic environment	STOT RE 2						H302	
								Aquatic Acute 1						H373	
													Aquatic Chronic 1	H410	
Magnesium	Magnesium, powder or turnings	n/a	2.957		Annex I of Directive 67/548/EEC	F	R11 R15	Highly flammable Contact with water liberates extremely flammable gases	n/a	n/a	n/a	Annex VI to Directive 1272/2008	Danger	Flam. Sol. 1	H228
								Water-react. 2						H261	
														Self-heat. 1	H252
Managnese	Manganese dioxide	1313-13-9	4.568		Annex I of Directive 67/548/EEC	Xn	R20/22	Harmful by inhalation and if swallowed	n/a	n/a	n/a	Annex VI to Directive 1272/2008	Warning	Acute Tox. 4	H332
														Acute Tox. 4	H302
Mercury	Mercury	7439-97-6	<0.0001		Annex I of Directive 67/548/EEC	T	R23 R33	Toxic by inhalation Danger of cumulative effects	n/a	n/a	n/a	Annex VI to Directive 1272/2008	Danger	Acute Tox. 3	H331
					N	R50/53	Very toxic to aquatic organisms and may cause long-term effects in the aquatic environment	STOT RE 2						H373	
								Aquatic Acute 1						H400	
													Aquatic Chronic 1	H410	

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Box J: Waste Composition details (revised 31st August 2004)															
					Classification according to EU Directives 67/548/EEC or 1999/45/EC					Classification according to Regulation (EC) No 1272/2008					
Substance	Assumed Compound	CAS No.	% w/w ^{NOTE 1}	Flash Point (°C)	Source Data	EU Hazard	Risk Phrase	Classification	Carcinogen Group No.	Toxic for Reproduction Category	Mutagenic Category	Source Data	Signal Word	Hazard Class & Category Code	Hazard Statement Code
Nickel	Nickel	7440-02-0	0.00663		Annex I of Directive 67/548/EEC	Xn	R40 R43	Limited evidence of a carcinogenic effect May cause sensitization by skin contact	Carc. Cat. 3	n/a	n/a	Annex VI to Directive 1272/2008	Warning	Carc. 2 Skin Sens. 1	H351 H317
Selenium	Selenium	7782-49-2	0.0016		Annex I of Directive 67/548/EEC	T	R23/25 R33 R53	Toxic by inhalation and if swallowed Danger of cumulative effects May cause long-term effects in the aquatic environment	n/a	n/a	n/a	Annex VI to Directive 1272/2008	Danger	Acute Tox. 3 STOT RE 2 Aquatic Chronic 4	H301 H373 H413
Total Sulphate	-	-	0.1037	n/a	Annex I of Directive 67/548/EEC	This substance is not classified as dangerous according to Directive 67/548/EEC						Not a hazardous substance or mixture according to Regulation (EC) No 1272/2008			
Vanadium	Vanadium pentoxide	1314-62-1	0.0549		Annex I of Directive 67/548/EEC		R63 R66	Possible risk of harm to the unborn child Possible risk of irreversible effects	n/a	Repr. Cat. 3;	Muta. Cat. 3;	Annex VI to Directive 1272/2008	Danger	Muta. 2 Repr. 2	H341 H361d
						Xn	R48/23 R20/22	Toxic: danger of serious damage to health by prolonged exposure through inhalation Harmful by inhalation and if swallowed						STOT RE 1 Acute Tox. 4	H372 H332
						Xi	R37	Irritating to respiratory system						Acute Tox. 4	H302
						N	R51/53	Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment						STOT SE 3 Aquatic Chronic 2	H335 H411
Water Soluble Boron	Boron	7440-42-8	0.0004	n/a	Sigma Aldrich	Xn	R22	Harmful if swallowed	n/a	n/a	n/a	Sigma Aldrich	Warning	Aquatic Chronic 2 Acute Tox. 4	H411 H302
Zinc	Zinc oxide	1314-13-2	0.0259		Annex I of Directive 67/548/EEC	N	R50/53	Very toxic to aquatic organisms and may cause long-term effects in the aquatic environment	n/a	n/a	n/a	Annex VI to Directive 1272/2008	Warning	Aquatic Acute 1 Aquatic Chronic 1	H400 H410
Chloride	Hydrogen Chloride	7647-01-0	0.0357		Annex I of Directive 67/548/EEC	T	R23	Toxic by inhalation	n/a	n/a	n/a	Annex VI to Directive 1272/2008	Danger	Press. Gas Acute Tox. 3	H331 H314
						C	R35	Causes severe burns						Skin Corr. 1A	

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Box K: Waste Composition Details		
Properties with Thresholds (Box K1)		
Property	Threshold	Total in Waste
	(% w/w)	(% w/w)
Flash Point < 55 °C		
Very Toxic	> 0.1	0.0003
Toxic	> 3	0.0927
Harmful	> 25	4.9109
Corrosive with Risk Phrase R35	>1	0.0357
Corrosive with Risk Phrase R34	> 5	0
Irritant with Risk Phrase R41	> 10	0
Irritant with Risk Phrase R36, R37, R38	> 20	0.0551
Carcinogen Category 1 or 2	> 0.1	0.0004
Carcinogen Category 3	> 1	0.0066
Toxic for Reproduction Category 1 and 2 with Risk Phrases R60, R61	> 0.5	0.0044
Toxic for Reproduction Category 3 with Risk Phrases R62, R63	> 5	0.0594
Mutagenic Category 1 and 2 with Risk Phrase R46	> 0.1	0
Mutagenic Category 3 with Risk Phrase R68	> 1	0.055
Properties without thresholds (Box K2)		
Property	Total (% w/w) in waste	
Explosive	0	
Oxidising	0	
Infectious	0	
Ecotoxic	0.6479	
Residuary Hazardous property	0	

Final EWC Code		
L	Final EWC Code	Possibly 10 02 01 or 10 02 02 with no hazardous components identified in the sample
M	Final EWC Description	Refer to Section 3.1 of Report

Hazardous Waste Classification Worksheet (Revised 31st August 2004)

Note 1:	
Very Toxic, those with an EU Hazard Phrase of T+ under EU Directives 67/548/EEC or 1999/45/EC or those with R-phrases of R26, R27, R28 and combined risk phrases with or without R39	Beryllium, Cadmium
Toxic, those with an EU Hazard Phrase of T under EU Directives 67/548/EEC or 1999/45/EC or those with R-phrases of R23, R24, R25 and combined risk phrases with or without R39 or R48	Arsenic, Beryllium, Cadmium, Mercury, Selenium, Vanadium & Chloride,
Harmful, those with an EU Hazard Phrase of Xn under Directive 67/548/EEC or 1999/45/EC or those with R-phrases of R20, R21, R22, R65, R68 and combined risk phrases with or without R48	Antimony, Barium, Beryllium, Copper, Lead, Manganese, Nickel & Vanadium
Corrosive with Risk Phrase R35	Chloride, Water Soluble Boron
Corrosive with Risk Phrase R34	No parameters identified
Irritant with Risk Phrase R41	No parameters identified
Irritant with Risk Phrase R36, R37, R38	Beryllium & Vanadium
Carcinogen Category 1 or 2 are those with R-phrases R45 or R49	Beryllium, Cadmium, Hexavalent Chromium,
Carcinogen Category 3 are those with R-phrase R40	Nickel
Toxic for Reproduction Category 1 and 2 with Risk Phrases R60, R61	Lead
Toxic for Reproduction Category 3 with Risk Phrases R62, R63	Cadmium, Lead & Vanadium
Mutagenic Category 1 and 2 with Risk Phrase R46	No parameters identified
Mutagenic Category 3 with Risk Phrase R68	Cadmium & Vanadium
Explosive (with R-phrases R2, R3 or related r-phrases)	No parameters identified
Oxidising (with R-phrases R7, R8, R9)	No parameters identified
Infectious	No parameters identified
Ecotoxic (with R-phrases R50, R51, R52, R53 Aquatic Env and R54, R55, R56, R57, R58 for Non-Aquatic Env) & combined risk phrases	Antimony, Arsenic, Cadmium, Copper, Lead, Mercury, Selenium, Vanadium, Hexavalent Chromium & Zinc, Chromium

Hazardous Waste Classification Worksheet (Revised 31st August 2004)

Ecotoxic (Based on Thresholds in WM2)			
R59	> 0.1 %	No parameters Identified	
R50-53	> 0.25%	Arsenic, Cadmium, Copper, Lead, Mercury, Zinc, Hexavalent Chromium	0.234
R51-53	> 2.5%	Antimony & Vanadium	0.0554
R50 or R52 or R53 or R52-53	> 25%	Selenium, Chromium	0.3581
			0.6479

Hazardous Waste Classification Worksheet (Revised 31st August 2004)

SECOND SCHEDULE: PART III (Waste Management Act 1996)

Properties of Waste which render it hazardous

There is set out in each paragraph of this Part a general term denoting a particular property of waste which renders it hazardous, followed by an explanation of such general term by reference to a description of substances or preparations which possess the particular property.

"Explosive": substances or preparations which may explode under the effect of flame or which are more sensitive to shocks or friction than dinitrobenzene.

"Oxidizing": substances or preparations which exhibit highly exothermic reactions when in contact with other substances, particularly flammable substances.

"Highly flammable":

- (a) liquid substances or preparations having a flash point below 21°C (including extremely flammable liquids), or
- (b) substances or preparations which may become hot and finally catch fire in contact with air at ambient temperature without any application of energy, or
- (c) solid substances or preparations which may readily catch fire after brief contact with a source of ignition and which continue to burn or to be consumed after removal of the source of ignition, or
- (d) gaseous substances or preparations which are flammable in air at normal pressure, or
- (e) substances or preparations which, in contact with water or damp air, evolve highly flammable gases in dangerous quantities.

"Flammable": liquid substances or preparations having a flash point of not less than 21°C and not more than 55°C.

"Irritant": non-corrosive substances or preparations which, through immediate, prolonged or repeated contact with the skin or mucous membrane, can cause inflammation.

"Harmful": substances or preparations which, if they are inhaled or ingested or if they penetrate the skin, may involve limited health risks.

"Toxic": substances or preparations (including very toxic substances or preparations) which, if they are inhaled or ingested or if they penetrate the skin, may cause serious, acute or chronic health risks or death.

"Carcinogenic": substances or preparations which, if they are inhaled or ingested or if they penetrate the skin, may induce cancer or increase its incidence.

"Corrosive": substances or preparations which may destroy living tissue on contact.

"Infectious": substances containing viable micro-organisms or their toxins which are known or reliably believed to cause disease in humans or other living organisms.

"Teratogenic": substances or preparations which, if they are inhaled or ingested or if they penetrate the skin, may induce non-hereditary congenital malformations or increase their incidence.

"Mutagenic": substances or preparations which, if they are inhaled or ingested or if they penetrate the skin, may induce hereditary genetic defects or increase their incidence.

"Ecotoxic": substances or preparations which present or may present immediate or delayed risks for one or more sectors of the environment.

"Residuary hazardous property":

- (a) substances or preparations which release toxic or very toxic gases in contact with water, air or an acid, or
- (b) substances or preparations capable by any means, after being disposed of, of yielding another substance which possesses any property referred to in this or any other paragraph of this Part.

Hazardous Waste Classification Worksheet (Revised 31st August 2004)

Box No.	Information Required	Information	
Company Details			
A	Company Name	Cork County Council	
	Company Address	Haulbowline Island, County Cork	
	Date	06/02/2013	
	IPC or Waste License Number (if applicable)	Not yet applicable	
	Contact Person	Cormac O'Suilleabhain	
	Waste Description	Stockpile Sample SS310	
European Waste Catalogue/Hazardous Waste List			
B	Possible EWC Codes		Asterisk Yes / No 10 02 01 <input type="checkbox"/> / <input checked="" type="checkbox"/>
			10 02 02 <input type="checkbox"/> / <input checked="" type="checkbox"/>
		Refer to Section 3.1 of Report	
C	Six-Digit EWC Code	Not Applicable	Asterisk Yes / No <input type="checkbox"/> / <input type="checkbox"/>
D	EWC Description	Not Applicable	
CI	Mirror Entry Code (if applicable)	Not Applicable	Asterisk Yes / No <input type="checkbox"/> / <input type="checkbox"/>
DI	Mirror Entry Description (if applicable)	Not Applicable	
E	Is this waste classified as hazardous waste according to HWL?	Mirror Entry	<input type="checkbox"/>
		No	<input checked="" type="checkbox"/>
		Yes	<input type="checkbox"/>

Hazardous Waste Classification Worksheet (Revised 31st August 2004)

Category I Waste (Box F)

- 1. Anatomical substances, hospital or other clinical waste.
- 2. Pharmaceutical, medicinal or veterinary compounds.
- 3. Wood preservatives.
- 4. Biocides or phyto-pharmaceutical substances.
- 5. Residue from substances employed as solvents.
- 6. Halogenated organic substances not employed as solvents, excluding inert polymerized materials.
- 7. Tempering salts containing cyanides.
- 8. Mineral oils or oily substances (including cutting sludges).
- 9. Mixtures or emulsions of oil and water or hydrocarbon and water.
- 10. Substances containing polychlorinated biphenyls or polychlorinated terphenyls (including dielectrics).
- 11. Tarry materials arising from refining, distillation or any pyrolytic treatment (including still bottoms).
- 12. Inks, dyes, pigments, paints, lacquers or varnishes.
- 13. Resins, latex, plasticizers, glues or adhesives.
- 14. Chemical substances arising from research and development or teaching activities (including laboratory residues) which are not identified or are new and whose effects on humans or the environment are not known.
- 15. Pyrotechnics or other explosive materials.
- 16. Photographic chemicals or processing materials.
- 17. Any material contaminated with any congener of polychlorinated dibenzo-furan.
- 18. Any material contaminated with any congener of polychlorinated dibenzo-p-dioxin.

Category II Waste (Box G)

- 19. Animal or vegetable soaps, fats or waxes.
- 20. Non-halogenated organic substances not employed as solvents.
- 21. Inorganic substances without metals or metal compounds.
- 22. Ashes or cinders.
- 23. Soil, sand or clay (including dredging spoils).
- 24. Non-cyanidic tempering salts.
- 25. Metallic dust or powder.
- 26. Spent catalyst materials.
- 27. Liquids or sludges containing metals or metal compounds.
- 28. Residue (other than scrubber sludges, sludges from water purification plants and sewage sludges (untreated or unsuitable for use in agriculture)) from pollution control operations (including baghouse dusts).
- 29. Scrubber sludges.
- 30. Sludges from water purification plants.
- 31. Decarbonization residue.
- 32. Ion-exchange column residue.
- 33. Sewage sludges, untreated or unsuitable for use in agriculture.
- 34. Residue from cleaning of tanks or equipment.
- 35. Contaminated equipment.
- 36. Contaminated containers (including packaging and gas cylinders).
- 37. Batteries or other electrical cells.
- 38. Vegetable oils.
- 39. Materials resulting from the selective collection of waste from households.
- 40. Any other waste.

Hazardous Waste Classification Worksheet (Revised 31st August 2004)

Category II Constituents (Box H)

- | | |
|---|--|
| <input type="checkbox"/> 41. Beryllium or beryllium compounds. | <input type="checkbox"/> 71. Azides. |
| <input type="checkbox"/> 42. Vanadium compounds. | <input type="checkbox"/> 72. Polychlorinated biphenyls or polychlorinated terphenyls. |
| <input type="checkbox"/> 43. Chromium (VI) compounds. | <input type="checkbox"/> 73. Pharmaceutical or veterinary compounds. |
| <input type="checkbox"/> 44. Cobalt compounds. | <input type="checkbox"/> 74. Biocides or phyto-pharmaceutical substances (including pesticides). |
| <input type="checkbox"/> 45. Nickel compounds. | <input type="checkbox"/> 75. Infectious substances. |
| <input type="checkbox"/> 46. Copper compounds. | <input type="checkbox"/> 76. Creosotes. |
| <input type="checkbox"/> 47. Zinc compounds. | <input type="checkbox"/> 77. Isocyanates or thiocyanates. |
| <input type="checkbox"/> 48. Arsenic or arsenic compounds. | <input type="checkbox"/> 78. Organic cyanides (including nitriles). |
| <input type="checkbox"/> 49. Selenium or selenium compounds. | <input type="checkbox"/> 79. Phenols or phenol compounds. |
| <input type="checkbox"/> 50. Silver compounds. | <input type="checkbox"/> 80. Halogenated solvents. |
| <input type="checkbox"/> 51. Cadmium or cadmium compounds. | <input type="checkbox"/> 81. Organic solvents, excluding halogenated solvents. |
| <input type="checkbox"/> 52. Tin compounds. | <input type="checkbox"/> 82. Organohalogen compounds, excluding inert polymerized materials and other substances referred to in this Part. |
| <input type="checkbox"/> 53. Antimony or antimony compounds. | <input type="checkbox"/> 83. Aromatic compounds; polycyclic and heterocyclic organic compounds. |
| <input type="checkbox"/> 54. Tellurium or tellurium compounds. | <input type="checkbox"/> 84. Aliphatic amines. |
| <input type="checkbox"/> 55. Barium compounds, excluding barium sulphate. | <input type="checkbox"/> 85. Aromatic amines. |
| <input type="checkbox"/> 56. Mercury or mercury compounds. | <input type="checkbox"/> 86. Ethers. |
| <input type="checkbox"/> 57. Thallium or thallium compounds. | <input type="checkbox"/> 87. Substances of an explosive character, excluding those referred to elsewhere in this Part. |
| <input type="checkbox"/> 58. Lead or lead compounds. | <input type="checkbox"/> 88. Sulphur organic compounds. |
| <input type="checkbox"/> 59. Inorganic sulphides. | <input type="checkbox"/> 89. Any congener of polychlorinated dibenzo-furan. |
| <input type="checkbox"/> 60. Inorganic fluorine compounds, excluding calcium fluoride. | <input type="checkbox"/> 90. Any congener of polychlorinated dibenzo-p-dioxin. |
| <input type="checkbox"/> 61. Inorganic cyanides. | <input type="checkbox"/> 91. Hydrocarbons and their oxygen, nitrogen or sulphur compounds not otherwise referred to in this Part. |
| <input type="checkbox"/> 62. Any of the following alkaline or alkaline earth metals, namely, lithium, sodium, potassium, calcium, magnesium in uncombined form. | |
| <input type="checkbox"/> 63. Acidic solutions or acids in solid form. | |
| <input type="checkbox"/> 64. Basic solutions or bases in solid form. | |
| <input type="checkbox"/> 65. Asbestos (dust or fibres). | |
| <input type="checkbox"/> 66. Phosphorus: phosphorus compounds, excluding mineral phosphates. | |
| <input type="checkbox"/> 67. Metal carbonyls. | |
| <input type="checkbox"/> 68. Peroxides. | |
| <input type="checkbox"/> 69. Chlorates. | |
| <input type="checkbox"/> 70. Perchlorates. | |

Hazardous Waste Classification Worksheet (Revised 31st August 2004)

<i>Box I: Property Test Results and Waste Classification</i>					
Property	Property Testing			Waste Classification	
	Test Code	Title of Test	Results	Hazard (s)	Risk Phrase (s)
Explosive					
Oxidising					
Flammable					
Irritant/ Corrosive		NOT APPLICABLE			
Harmful/Toxic					
Carcinogenic					
Infectious	No test methods available for this property				
Toxic for Reproduction					
Mutagenic					
Ecotoxic					
Residuary hazardous property					

Hazardous Waste Classification Worksheet

Box J: Waste Composition details (revised 31st August 2004)															
					Classification according to EU Directives 67/548/EEC or 1999/45/EC							Classification according to Regulation (EC) No 1272/2008			
Substance	Assumed Compound	CAS No.	% w/w ^{NOTE 1}	Flash Point (°C)	Source Data	EU Hazard	Risk Phrase	Classification	Carcinogen Group No.	Toxic for Reproduction Category	Mutagenic Category	Source Data	Signal Word	Hazard Class & Category Code	Hazard Statement Code
Aluminium	Aluminium Powder (pyrophoric)	7429-90-5	3.173		Annex I of Directive 67/548/EEC	F	R15	Contact with water liberates extremely flammable gases	n/a	n/a	n/a	Annex VI to Directive 1272/2008	Danger	Water-react. 2	H261
						Xn	R20/22	Harmful by inhalation and if swallowed							
Antimony	Antimony Compounds	n/a	<0.0005		Annex I of Directive 67/548/EEC	N	R51/53	Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment	n/a	n/a	n/a	Annex VI to Directive 1272/2008	Warning	Acute Tox. 4	H302
Arsenic	Arsenic	7440-38-2	<0.00005		Annex I of Directive 67/548/EEC	T	R23/25	Toxic by inhalation and if swallowed	n/a	na	n/a	Annex VI to Directive 1272/2008	Danger	Acute Tox. 3	H331
						N	R50/53	Very toxic to aquatic organisms and may cause long-term effects in the aquatic environment						Acute Tox. 3	H301
														Aquatic Acute 1	H400
													Aquatic Chronic 1	H410	
Barium	Barium Salts	n/a	0.0798		Annex I of Directive 67/548/EEC	Xn	R20/22	Harmful by inhalation and if swallowed	n/a	n/a	n/a	Annex VI to Directive 1272/2008	Warning	Acute Tox. 4	H332
Beryllium	Beryllium	7440-41-7	0.00024		Annex I of Directive 67/548/EEC		R49	May cause cancer by inhalation.	Carc. Cat. 2;	n/a	n/a	Annex VI to Directive 1272/2008	Danger	Acute Tox. 4	H302
						T+	R26	Also very toxic by inhalation						Carc. 1B	H350
						T	R25	Also toxic if swallowed.						Acute Tox. 2 *	H330
							R48/23	Also toxic; danger of serious damage to health by prolonged exposure through inhalation						Acute Tox. 3 *	H301
							R36/37/38	Irritating to eyes, respiratory system and skin						STOT RE 1	H372
							R43	May cause sensitization by skin contact						Eye Irrit. 2	H319
			STOT SE 3	H335											
													Skin Irrit. 2	H315	
														Skin Sens. 1	H317
Cadmium	cadmium (non-pyrophoric)/ cadmium oxide (nonpyrophoric)	7440-43-9/ 1306-19-0	<0.0001		Annex I of Directive 67/548/EEC		R45	May cause cancer	Carc. Cat. 2;	Repr. Cat. 3;	Muta. Cat. 3;	Annex VI to Directive 1272/2008	Danger	Carc. 1B	H350
							R68	Possible risk of irreversible damage						Muta. 2	H341
							R62	Possible risk of impaired fertility						Repr. 2	H361fd
							R63	Possible risk of harm to the unborn child						Acute Tox. 2	H330
						T	R48/23/25	Toxic; danger or serious damage to health to prolonged exposure through inhalation and if swallowed						STOT RE 1	H372
						T+	R26	Also very toxic by inhalation						Aquatic Acute 1	H400
	N	R50/53	Very toxic to aquatic organisms and may cause long-term effects in the aquatic environment										Aquatic Chronic 1	H410	
Calcium	Calcium	7440-70-2	20.94		Annex I of Directive 67/548/EEC	F	R15	Contact with water liberates extremely flammable gases	n/a	n/a	n/a	Annex VI to Directive 1272/2008	Danger	Water-react. 2	H261
Hexavalent Chromium	Chromium (VI) compounds	n/a	0.00003		Annex I of Directive 67/548/EEC		R49	May cause cancer by inhalation.	Carc. Cat. 2	n/a	n/a	Annex VI to Directive 1272/2008	Danger	Carc. 1B	H350i
							R43	May cause sensitization by skin contact						Skin Sens. 1	H317
						N	R50/53	Very toxic to aquatic organisms and may cause long-term effects in the aquatic environment						Aquatic Acute 1	H400
													Aquatic Chronic 1	H410	
Chromium	Chromium	7440-47-3	0.3776		Sigma Aldrich	N	R50	Very toxic to aquatic organisms	n/a	n/a	n/a	Sigma Aldrich	Warning	Aquatic Acute 1	H400
						Xn	R22	Harmful if swallowed						Acute Tox. 4 *	H302
Copper	Copper (I) Oxide	1317-39-1	0.0437		Annex I of Directive 67/548/EEC	N	R50/53	Very toxic to aquatic organisms and may cause long-term effects in the aquatic environment	n/a	n/a	n/a	Annex VI to Directive 1272/2008	Warning	Aquatic Acute 1	H400
														Aquatic Chronic 1	H410
Lead	Lead Compounds	n/a	0.0031		Annex I of Directive 67/548/EEC		R61	May cause harm to the unborn child	n/a	Repr. Cat. 1; Repr. Cat. 3;	n/a	Annex VI to Directive 1272/2008	Danger	Repr. 1A	H360Df
							R62	Possible risk of impaired fertility						Acute Tox. 4	H332
						Xn	R20/22	Harmful by inhalation and if swallowed						STOT RE 2	H302
							R33	Danger of cumulative effects						Aquatic Acute 1	H373
	N	R50/53	Very toxic to aquatic organisms and may cause long-term effects in the aquatic environment										Aquatic Chronic 1	H410	
Magnesium	Magnesium, powder or turnings	n/a	2.554		Annex I of Directive 67/548/EEC	F	R11	Highly flammable	n/a	n/a	n/a	Annex VI to Directive 1272/2008	Danger	Flam. Sol. 1	H228
							R15	Contact with water liberates extremely flammable gases						Water-react. 2	H261
														Self-heat. 1	H252
Managnese	Manganese dioxide	1313-13-9	4.193		Annex I of Directive 67/548/EEC	Xn	R20/22	Harmful by inhalation and if swallowed	n/a	n/a	n/a	Annex VI to Directive 1272/2008	Warning	Acute Tox. 4	H332
														Acute Tox. 4	H302
Mercury	Mercury	7439-97-6	<0.0001		Annex I of Directive 67/548/EEC	T	R23	Toxic by inhalation	n/a	n/a	n/a	Annex VI to Directive 1272/2008	Danger	Acute Tox. 3	H331
							R33	Danger of cumulative effects						STOT RE 2	H373
						N	R50/53	Very toxic to aquatic organisms and may cause long-term effects in the aquatic environment						Aquatic Acute 1	H400
														Aquatic Chronic 1	H410

Hazardous Waste Classification Worksheet

Box J: Waste Composition details (revised 31st August 2004)															
					Classification according to EU Directives 67/548/EEC or 1999/45/EC						Classification according to Regulation (EC) No 1272/2008				
Substance	Assumed Compound	CAS No.	% w/w ^{NOTE 1}	Flash Point (°C)	Source Data	EU Hazard	Risk Phrase	Classification	Carcinogen Group No.	Toxic for Reproduction Category	Mutagenic Category	Source Data	Signal Word	Hazard Class & Category Code	Hazard Statement Code
Nickel	Nickel	7440-02-0	0.00616		Annex I of Directive 67/548/EEC	Xn	R40 R43	Limited evidence of a carcinogenic effect May cause sensitization by skin contact	Carc. Cat. 3	n/a	n/a	Annex VI to Directive 1272/2008	Warning	Carc. 2 Skin Sens. 1	H351 H317
Selenium	Selenium	7782-49-2	0.0015		Annex I of Directive 67/548/EEC	T	R23/25 R33 R53	Toxic by inhalation and if swallowed Danger of cumulative effects May cause long-term effects in the aquatic environment	n/a	n/a	n/a	Annex VI to Directive 1272/2008	Danger	Acute Tox. 3 Acute Tox. 3 STOT RE 2 Aquatic Chronic 4	H331 H301 H373 H413
Total Sulphate	-	-	0.1219	n/a	Annex I of Directive 67/548/EEC			This substance is not classified as dangerous according to Directive 67/548/EEC						Not a hazardous substance or mixture according to Regulation (EC) No. 1272	
Vanadium	Vanadium pentoxide	1314-62-1	0.1149		Annex I of Directive 67/548/EEC		R63 R68 R48/23 Xn Xi N	Possible risk of harm to the unborn child Possible risk of irreversible effects Toxic: danger of serious damage to health by prolonged exposure through inhalation Harmful by inhalation and if swallowed Irritating to respiratory system Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment	n/a	Repr. Cat. 3;	Muta. Cat. 3;	Annex VI to Directive 1272/2008	Danger	Muta. 2 Repr. 2 STOT RE 1 Acute Tox. 4 Acute Tox. 4 STOT SE 3 Aquatic Chronic 2	H341 H361d H372 H332 H302 H335 H411
Water Soluble Boron	Boron	7440-42-8	0.00028	n/a	Sigma Aldrich	Xn	R22	Harmful if swallowed	n/a	n/a	n/a	Sigma Aldrich	Warning	Acute Tox. 4	H302
Zinc	Zinc oxide	1314-13-2	0.0241		Annex I of Directive 67/548/EEC	N	R50/53	Very toxic to aquatic organisms and may cause long-term effects in the aquatic environment	n/a	n/a	n/a	Annex VI to Directive 1272/2008	Warning	Aquatic Acute 1 Aquatic Chronic 1	H400 H410
Chloride	Hydrogen Chloride	7647-01-0	0.01		Annex I of Directive 67/548/EEC	T C	R23 R35	Toxic by inhalation Causes severe burns	n/a	n/a	n/a	Annex VI to Directive 1272/2008	Danger	Press. Gas Acute Tox. 3 Skin Corr. 1A	H331 H314

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Box K: Waste Composition Details		
Properties with Thresholds (Box K1)		
Property	Threshold	Total in Waste
	(% w/w)	(% w/w)
Flash Point < 55 °C		
Very Toxic	> 0.1	0.0003
Toxic	> 3	0.1269
Harmful	> 25	4.4417
Corrosive with Risk Phrase R35	>1	0.010
Corrosive with Risk Phrase R34	> 5	0.0000
Irritant with Risk Phrase R41	> 10	0.0000
Irritant with Risk Phrase R36, R37, R38	> 20	0.1153
Carcinogen Category 1 or 2	> 0.1	0.0004
Carcinogen Category 3	> 1	0.0062
Toxic for Reproduction Category 1 and 2 with Risk Phrases R60, R61	> 0.5	0.0031
Toxic for Reproduction Category 3 with Risk Phrases R62, R63	> 5	0.1181
Mutagenic Category 1 and 2 with Risk Phrase R46	> 0.1	0.0000
Mutagenic Category 3 with Risk Phrase R68	> 1	0.1150
Properties without thresholds (Box K2)		
Property	Total (% w/w) in waste	
Explosive	0	
Oxidising	0	
Infectious	0	
Ecotoxic	0.5657	
Residuary Hazardous property	0	

Final EWC Code		
L	Final EWC Code	Possibly 10 02 01 or 10 02 02 with no hazardous components identified in the sample
M	Final EWC Description	Refer to Section 3.1 of Report

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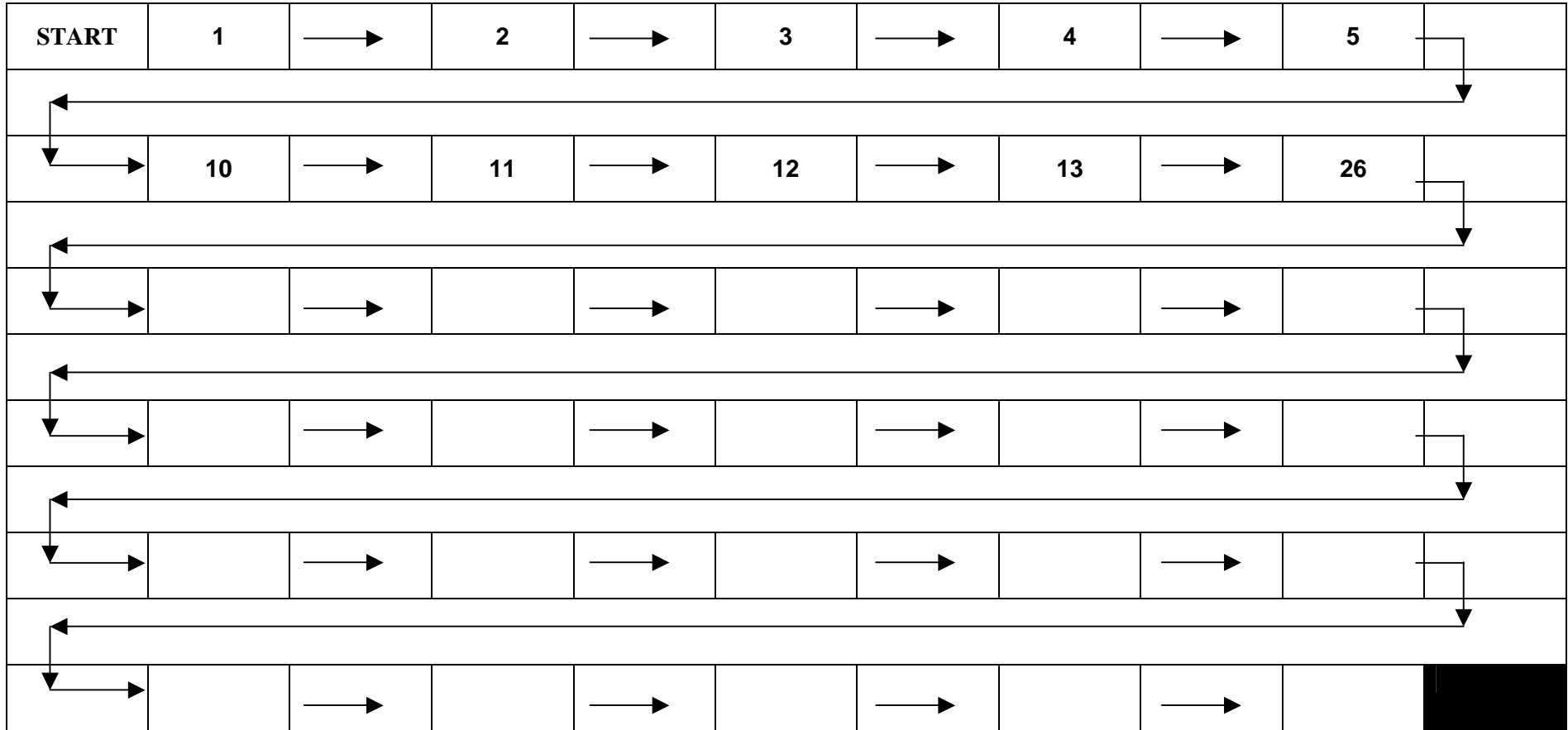
Note 1:	
Very Toxic, those with an EU Hazard Phrase of T+ under EU Directives 67/548/EEC or 1999/45/EC or those with R-phrases of R26, R27, R28 and combined risk phrases with or without R39	Beryllium, Cadmium
Toxic, those with an EU Hazard Phrase of T under EU Directives 67/548/EEC or 1999/45/EC or those with R-phrases of R23, R24, R25 and combined risk phrases with or without R39 or R48	Arsenic, Beryllium, Cadmium, Mercury, Selenium, Vanadium & Chloride,
Harmful, those with an EU Hazard Phrase of Xn under Directive 67/548/EEC or 1999/45/EC or those with R-phrases of R20, R21, R22, R65, R68 and combined risk phrases with or without R48	Antimony, Barium, Beryllium, Copper, Lead, Manganese, Nickel & Vanadium, Water Soluble Boron
Corrosive with Risk Phrase R35	Chloride, Water Soluble Boron
Corrosive with Risk Phrase R34	No parameters identified
Irritant with Risk Phrase R41	No parameters identified
Irritant with Risk Phrase R36, R37, R38	Beryllium & Vanadium
Carcinogen Category 1 or 2 are those with R-phrases R45 or R49	Beryllium, Cadmium, Hexavalent Chromium, Total Sulphate
Carcinogen Category 3 are those with R-phrase R40	Nickel
Toxic for Reproduction Category 1 and 2 with Risk Phrases R60, R61	Lead
Toxic for Reproduction Category 3 with Risk Phrases R62, R63	Cadmium, Lead & Vanadium
Mutagenic Category 1 and 2 with Risk Phrase R46	No parameters identified
Mutagenic Category 3 with Risk Phrase R68	Cadmium & Vanadium
Explosive (with R-phrases R2, R3 or related r-phrases)	No parameters identified
Oxidising (with R-phrases R7, R8, R9)	No parameters identified
Infectious	No parameters identified
Ecotoxic (with R-phrases R50, R51, R52, R53 Aquatic Env and R54, R55, R56, R57, R58 for Non-Aquatic Env) & combined risk phrases	Antimony, Arsenic, Cadmium, Copper, Lead, Mercury, Selenium, Vanadium, Hexavalent Chromium & Zinc, Chromium

Hazardous Waste Classification Worksheet (Revised 31st August 2004)

Ecotoxic (Based on Thresholds in WM2)			
R59	> 0.1 %	No parameters Identified	
R50-53	> 0.25%	Arsenic, Cadmium, Copper, Lead, Mercury, Zinc, Hexavalent Chromium	0.07
R51-53	> 2.5%	Antimony & Vanadium	0.1154
R50 or R52 or R53 or R52-53	> 25%	Selenium, Chromium	0.3791
			0.5657

Hazardous Waste Classification Worksheet (Revised 31st August 2004)

Box N - Route Map - Insert the tab numbers as you are directed to them (not applicable to computer tool)



Hazardous Waste Classification Worksheet (Revised 31st August 2004)

SECOND SCHEDULE: PART III (Waste Management Act 1996)

Properties of Waste which render it hazardous

There is set out in each paragraph of this Part a general term denoting a particular property of waste which renders it hazardous, followed by an explanation of such general term by reference to a description of substances or preparations which possess the particular property.

"Explosive": substances or preparations which may explode under the effect of flame or which are more sensitive to shocks or friction than dinitrobenzene.

"Oxidizing": substances or preparations which exhibit highly exothermic reactions when in contact with other substances, particularly flammable substances.

"Highly flammable":

(a) liquid substances or preparations having a flash point below 21°C (including extremely flammable liquids), or

(b) substances or preparations which may become hot and finally catch fire in contact with air at ambient temperature without any application of energy, or

(c) solid substances or preparations which may readily catch fire after brief contact with a source of ignition and which continue to burn or to be consumed after removal of the source of ignition, or

(d) gaseous substances or preparations which are flammable in air at normal pressure, or

(e) substances or preparations which, in contact with water or damp air, evolve highly flammable gases in dangerous quantities.

"Flammable": liquid substances or preparations having a flash point of not less than 21°C and not more than 55°C.

"Irritant": non-corrosive substances or preparations which, through immediate, prolonged or repeated contact with the skin or mucous membrane, can cause inflammation.

"Harmful": substances or preparations which, if they are inhaled or ingested or if they penetrate the skin, may involve limited health risks.

"Toxic": substances or preparations (including very toxic substances or preparations) which, if they are inhaled or ingested or if they penetrate the skin, may cause serious, acute or chronic health risks or death.

"Carcinogenic": substances or preparations which, if they are inhaled or ingested or if they penetrate the skin, may induce cancer or increase its incidence.

"Corrosive": substances or preparations which may destroy living tissue on contact.

"Infectious": substances containing viable micro-organisms or their toxins which are known or reliably believed to cause disease in humans or other living organisms.

"Teratogenic": substances or preparations which, if they are inhaled or ingested or if they penetrate the skin, may induce non-hereditary congenital malformations or increase their incidence.

"Mutagenic": substances or preparations which, if they are inhaled or ingested or if they penetrate the skin, may induce hereditary genetic defects or increase their incidence.

"Ecotoxic": substances or preparations which present or may present immediate or delayed risks for one or more sectors of the environment.

"Residuary hazardous property":

(a) substances or preparations which release toxic or very toxic gases in contact with water, air or an acid, or

(b) substances or preparations capable by any means, after being disposed of, of yielding another substance which possesses any property referred to in this or any other paragraph of this Part.

Hazardous Waste Classification Worksheet (Revised 31st August 2004)

Box No.	Information Required	Information	
Company Details			
A	Company Name	Cork County Council	
	Company Address	Haulbowline Island, County Cork	
	Date	06/02/2013	
	IPC or Waste License Number (if applicable)	Not yet applicable	
	Contact Person	Cormac O'Suilleabhain	
	Waste Description	Stockpile Sample SS313	
European Waste Catalogue/Hazardous Waste List			
B	Possible EWC Codes		Asterisk Yes / No
		10 02 01	<input type="checkbox"/> / <input checked="" type="checkbox"/>
		10 02 02	<input type="checkbox"/> / <input checked="" type="checkbox"/>
		Refer to Section 3.1 of Report	
C	Six-Digit EWC Code	Not Applicable	Asterisk Yes / No <input type="checkbox"/> / <input type="checkbox"/>
D	EWC Description	Not Applicable	
CI	Mirror Entry Code (if applicable)	Not Applicable	Asterisk Yes / No <input type="checkbox"/> / <input type="checkbox"/>
DI	Mirror Entry Description (if applicable)	Not Applicable	
E	Is this waste classified as hazardous waste according to HWL?	Mirror Entry	<input type="checkbox"/>
		No	<input checked="" type="checkbox"/>
		Yes	<input type="checkbox"/>

Hazardous Waste Classification Worksheet (Revised 31st August 2004)

Category I Waste (Box F)

- 1. Anatomical substances, hospital or other clinical waste.
- 2. Pharmaceutical, medicinal or veterinary compounds.
- 3. Wood preservatives.
- 4. Biocides or phyto-pharmaceutical substances.
- 5. Residue from substances employed as solvents.
- 6. Halogenated organic substances not employed as solvents, excluding inert polymerized materials.
- 7. Tempering salts containing cyanides.
- 8. Mineral oils or oily substances (including cutting sludges).
- 9. Mixtures or emulsions of oil and water or hydrocarbon and water.
- 10. Substances containing polychlorinated biphenyls or polychlorinated terphenyls (including dielectrics).
- 11. Tarry materials arising from refining, distillation or any pyrolytic treatment (including still bottoms).
- 12. Inks, dyes, pigments, paints, lacquers or varnishes.
- 13. Resins, latex, plasticizers, glues or adhesives.
- 14. Chemical substances arising from research and development or teaching activities (including laboratory residues) which are not identified or are new and whose effects on humans or the environment are not known.
- 15. Pyrotechnics or other explosive materials.
- 16. Photographic chemicals or processing materials.
- 17. Any material contaminated with any congener of polychlorinated dibenzo-furan.
- 18. Any material contaminated with any congener of polychlorinated dibenzo-p-dioxin.

Category II Waste (Box G)

- 19. Animal or vegetable soaps, fats or waxes.
- 20. Non-halogenated organic substances not employed as solvents.
- 21. Inorganic substances without metals or metal compounds.
- 22. Ashes or cinders.
- 23. Soil, sand or clay (including dredging spoils).
- 24. Non-cyanidic tempering salts.
- 25. Metallic dust or powder.
- 26. Spent catalyst materials.
- 27. Liquids or sludges containing metals or metal compounds.
- 28. Residue (other than scrubber sludges, sludges from water purification plants and sewage sludges (untreated or unsuitable for use in agriculture)) from pollution control operations (including baghouse dusts).
- 29. Scrubber sludges.
- 30. Sludges from water purification plants.
- 31. Decarbonization residue.
- 32. Ion-exchange column residue.
- 33. Sewage sludges, untreated or unsuitable for use in agriculture.
- 34. Residue from cleaning of tanks or equipment.
- 35. Contaminated equipment.
- 36. Contaminated containers (including packaging and gas cylinders).
- 37. Batteries or other electrical cells.
- 38. Vegetable oils.
- 39. Materials resulting from the selective collection of waste from households.
- 40. Any other waste.

Hazardous Waste Classification Worksheet (Revised 31st August 2004)

Category II Constituents (Box H)

- | | |
|---|--|
| <input type="checkbox"/> 41. Beryllium or beryllium compounds. | <input type="checkbox"/> 71. Azides. |
| <input type="checkbox"/> 42. Vanadium compounds. | <input type="checkbox"/> 72. Polychlorinated biphenyls or polychlorinated terphenyls. |
| <input type="checkbox"/> 43. Chromium (VI) compounds. | <input type="checkbox"/> 73. Pharmaceutical or veterinary compounds. |
| <input type="checkbox"/> 44. Cobalt compounds. | <input type="checkbox"/> 74. Biocides or phyto-pharmaceutical substances (including pesticides). |
| <input type="checkbox"/> 45. Nickel compounds. | <input type="checkbox"/> 75. Infectious substances. |
| <input type="checkbox"/> 46. Copper compounds. | <input type="checkbox"/> 76. Creosotes. |
| <input type="checkbox"/> 47. Zinc compounds. | <input type="checkbox"/> 77. Isocyanates or thiocyanates. |
| <input type="checkbox"/> 48. Arsenic or arsenic compounds. | <input type="checkbox"/> 78. Organic cyanides (including nitriles). |
| <input type="checkbox"/> 49. Selenium or selenium compounds. | <input type="checkbox"/> 79. Phenols or phenol compounds. |
| <input type="checkbox"/> 50. Silver compounds. | <input type="checkbox"/> 80. Halogenated solvents. |
| <input type="checkbox"/> 51. Cadmium or cadmium compounds. | <input type="checkbox"/> 81. Organic solvents, excluding halogenated solvents. |
| <input type="checkbox"/> 52. Tin compounds. | <input type="checkbox"/> 82. Organohalogen compounds, excluding inert polymerized materials and other substances referred to in this Part. |
| <input type="checkbox"/> 53. Antimony or antimony compounds. | <input type="checkbox"/> 83. Aromatic compounds; polycyclic and heterocyclic organic compounds. |
| <input type="checkbox"/> 54. Tellurium or tellurium compounds. | <input type="checkbox"/> 84. Aliphatic amines. |
| <input type="checkbox"/> 55. Barium compounds, excluding barium sulphate. | <input type="checkbox"/> 85. Aromatic amines. |
| <input type="checkbox"/> 56. Mercury or mercury compounds. | <input type="checkbox"/> 86. Ethers. |
| <input type="checkbox"/> 57. Thallium or thallium compounds. | <input type="checkbox"/> 87. Substances of an explosive character, excluding those referred to elsewhere in this Part. |
| <input type="checkbox"/> 58. Lead or lead compounds. | <input type="checkbox"/> 88. Sulphur organic compounds. |
| <input type="checkbox"/> 59. Inorganic sulphides. | <input type="checkbox"/> 89. Any congener of polychlorinated dibenzo-furan. |
| <input type="checkbox"/> 60. Inorganic fluorine compounds, excluding calcium fluoride. | <input type="checkbox"/> 90. Any congener of polychlorinated dibenzo-p-dioxin. |
| <input type="checkbox"/> 61. Inorganic cyanides. | <input type="checkbox"/> 91. Hydrocarbons and their oxygen, nitrogen or sulphur compounds not otherwise referred to in this Part. |
| <input type="checkbox"/> 62. Any of the following alkaline or alkaline earth metals, namely, lithium, sodium, potassium, calcium, magnesium in uncombined form. | |
| <input type="checkbox"/> 63. Acidic solutions or acids in solid form. | |
| <input type="checkbox"/> 64. Basic solutions or bases in solid form. | |
| <input type="checkbox"/> 65. Asbestos (dust or fibres). | |
| <input type="checkbox"/> 66. Phosphorus: phosphorus compounds, excluding mineral phosphates. | |
| <input type="checkbox"/> 67. Metal carbonyls. | |
| <input type="checkbox"/> 68. Peroxides. | |
| <input type="checkbox"/> 69. Chlorates. | |
| <input type="checkbox"/> 70. Perchlorates. | |

Hazardous Waste Classification Worksheet (Revised 31st August 2004)

<i>Box I: Property Test Results and Waste Classification</i>					
Property	Property Testing			Waste Classification	
	Test Code	Title of Test	Results	Hazard (s)	Risk Phrase (s)
Explosive					
Oxidising					
Flammable					
Irritant/ Corrosive		NOT APPLICABLE			
Harmful/Toxic					
Carcinogenic					
Infectious	No test methods available for this property				
Toxic for Reproduction					
Mutagenic					
Ecotoxic					
Residuary hazardous property					

Hazardous Waste Classification Worksheet

Box J: Waste Composition details (revised 31st August 2004)

					Classification according to EU Directives 67/548/EEC or 1999/45/EC						Classification according to Regulation (EC) No 1272/2008				
Substance	Assumed Compound	CAS No.	% w/w ^{NOTE 1}	Flash Point (°C)	Source Data	EU Hazard	Risk Phrase	Classification	Carcinogen Group No.	Toxic for Reproduction Category	Mutagenic Category	Source Data	Signal Word	Hazard Class & Category Code	Hazard Statement Code
Aluminium	Aluminium Powder (pyrophoric)	7429-90-5	3.154		Annex I of Directive 67/548/EEC	F	R15 R17	Contact with water liberates extremely flammable gases Spontaneously flammable in air	n/a	n/a	n/a	Annex VI to Directive 1272/2008	Danger	Water-react. 2 Pyr. Sol. 1	H261 H250
Antimony	Antimony Compounds	n/a	<0.0005		Annex I of Directive 67/548/EEC	Xn N	R20/22 R51/53	Harmful by inhalation and if swallowed Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment	n/a	n/a	n/a	Annex VI to Directive 1272/2008	Warning	Acute Tox. 4 Acute Tox. 4 Aquatic Chronic 2	H332 H302 H411
Arsenic	Arsenic	7440-38-2	<0.00005		Annex I of Directive 67/548/EEC	T N	R23/25 R50/53	Toxic by inhalation and if swallowed Very toxic to aquatic organisms and may cause long-term effects in the aquatic environment	n/a	na	n/a	Annex VI to Directive 1272/2008	Danger	Acute Tox. 3 Acute Tox. 3 Aquatic Acute 1 Aquatic Chronic 1	H331 H301 H400 H410
Barium	Barium Salts	n/a	0.0796		Annex I of Directive 67/548/EEC	Xn	R20/22	Harmful by inhalation and if swallowed	n/a	n/a	n/a	Annex VI to Directive 1272/2008	Warning	Acute Tox. 4 Acute Tox. 4	H332 H302
Beryllium	Beryllium	7440-41-7	0.00018		Annex I of Directive 67/548/EEC	T Xi	R49 R26 R25 R48/23 R36/37/38 R43	May cause cancer by inhalation. Also very toxic by inhalation Also toxic if swallowed. Also toxic: danger of serious damage to health by prolonged exposure through inhalation Irritating to eyes, respiratory system and skin May cause sensitization by skin contact	Carc. Cat. 2;	n/a	n/a	Annex VI to Directive 1272/2008	Danger	Acute Tox. 2 * Acute Tox. 3 * STOT RE 1 Eye Irrit. 2 STOT SE 3 Skin Irrit. 2 Skin Sens. 1	H350i H330 H301 H372 H319 H335 H315 H317
Cadmium	cadmium (non-pyrophoric)/ cadmium oxide (nonpyrophoric)	7440-43-9/ 1306-19-0	<0.0001		Annex I of Directive 67/548/EEC	T T+ N	R45 R68 R62 R63 R48/23/25 R26 R50/53	May cause cancer Possible risk of irreversible damage Possible risk of impaired fertility Possible risk of harm to the unborn child Toxic: danger or serious damage to health by prolonged exposure through inhalation and if swallowed Also very toxic by inhalation Very toxic to aquatic organisms and may cause long-term effects in the aquatic environment	Carc. Cat. 2;	Repr. Cat. 3;	Muta. Cat. 3;	Annex VI to Directive 1272/2008	Danger	Carc. 1B Muta. 2 Repr. 2 Acute Tox. 2 STOT RE 1 Aquatic Acute 1 Aquatic Chronic 1	H350 H341 H361fd H330 H372 H400 H410
Calcium	Calcium	7440-70-2	19.35		Annex I of Directive 67/548/EEC	F	R15	Contact with water liberates extremely flammable gases	n/a	n/a	n/a	Annex VI to Directive 1272/2008	Danger	Water-react. 2	H261
Hexavalent Chromium	Chromium (VI) compounds	n/a	0.00003		Annex I of Directive 67/548/EEC		R49 R43 R50/53	May cause cancer by inhalation. May cause sensitization by skin contact Very toxic to aquatic organisms and may cause long-term effects in the aquatic environment	Carc. Cat. 2	n/a	n/a	Annex VI to Directive 1272/2008	Danger	Carc. 1B Skin Sens. 1 Aquatic Acute 1 Aquatic Chronic 1	H350i H317 H400 H410
Chromium	Chromium	7440-47-3	0.4001		Sigma Aldrich	N Xn	R50 R22	Very toxic to aquatic organisms Harmful if swallowed	n/a	n/a	n/a	Sigma Aldrich	Warning	Aquatic Acute 1 Acute Tox. 4 *	H400 H302
Copper	Copper (I) Oxide	1317-39-1	0.0309		Annex I of Directive 67/548/EEC	N	R50/53	Very toxic to aquatic organisms and may cause long-term effects in the aquatic environment	n/a	n/a	n/a	Annex VI to Directive 1272/2008	Warning	Aquatic Acute 1 Aquatic Chronic 1	H400 H410
Lead	Lead Compounds	n/a	0.0028		Annex I of Directive 67/548/EEC	Xn N	R61 R62 R20/22 R33 R50/53	May cause harm to the unborn child Possible risk of impaired fertility Harmful by inhalation and if swallowed Danger of cumulative effects Very toxic to aquatic organisms and may cause long-term effects in the aquatic environment	n/a	Repr. Cat. 1; Repr. Cat. 3;	n/a	Annex VI to Directive 1272/2008	Danger	Repr. 1A Acute Tox. 4 STOT RE 2 Aquatic Acute 1 Aquatic Chronic 1	H360DF H332 H302 H373 H410
Magnesium	Magnesium, powder or turnings	n/a	2.709		Annex I of Directive 67/548/EEC	F	R11 R15	Highly flammable Contact with water liberates extremely flammable gases	n/a	n/a	n/a	Annex VI to Directive 1272/2008	Danger	Flam. Sol. 1 Water-react. 2 Self-heat. 1	H228 H261 H252
Managnese	Manganese dioxide	1313-13-9	4.492		Annex I of Directive 67/548/EEC	Xn	R20/22	Harmful by inhalation and if swallowed	n/a	n/a	n/a	Annex VI to Directive 1272/2008	Warning	Acute Tox. 4 Acute Tox. 4 Acute Tox. 3	H332 H302 H331
Mercury	Mercury	7439-97-6	<0.0001		Annex I of Directive 67/548/EEC	T N	R23 R33 R50/53	Toxic by inhalation Danger of cumulative effects Very toxic to aquatic organisms and may cause long-term effects in the aquatic environment	n/a	n/a	n/a	Annex VI to Directive 1272/2008	Danger	Acute Tox. 3 STOT RE 2 Aquatic Acute 1 Aquatic Chronic 1	H373 H373 H400 H410

Hazardous Waste Classification Worksheet

Box J: Waste Composition details (revised 31st August 2004)

					Classification according to EU Directives 67/548/EEC or 1999/45/EC					Classification according to Regulation (EC) No 1272/2008					
Substance	Assumed Compound	CAS No.	% w/w ^{NOTE 1}	Flash Point (°C)	Source Data	EU Hazard	Risk Phrase	Classification	Carcinogen Group No.	Toxic for Reproduction Category	Mutagenic Category	Source Data	Signal Word	Hazard Class & Category Code	Hazard Statement Code
Nickel	Nickel	7440-02-0	0.00448		Annex I of Directive 67/548/EEC	Xn	R40 R43	Limited evidence of a carcinogenic effect May cause sensitization by skin contact	Carc. Cat. 3	n/a	n/a	Annex VI to Directive 1272/2008	Warning	Carc. 2 Skin Sens. 1	H351 H317
Selenium	Selenium	7782-49-2	0.0018		Annex I of Directive 67/548/EEC	T	R23/25 R33 R53	Toxic by inhalation and if swallowed Danger of cumulative effects May cause long-term effects in the aquatic environment	n/a	n/a	n/a	Annex VI to Directive 1272/2008	Danger	Acute Tox. 3 Acute Tox. 3 STOT RE 2 Aquatic Chronic 4	H331 H301 H373 H413
Total Sulphate	-	-	0.1075	n/a	Annex I of Directive 67/548/EEC		This substance is not classified as dangerous according to Directive 67/548/EEC					Not a hazardous substance or mixture according to Regulation (EC) No. 1272/2008			
Vanadium	Vanadium pentoxide	1314-62-1	0.0698		Annex I of Directive 67/548/EEC		R63 R68 T Xn Xi N	Possible risk of harm to the unborn child Possible risk of irreversible effects Toxic: danger of serious damage to health by prolonged exposure through inhalation Harmful by inhalation and if swallowed Irritating to respiratory system Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment	n/a	Repr. Cat. 3;	Muta. Cat. 3;	Annex VI to Directive 1272/2008	Danger	Muta. 2 Repr. 2 STOT RE 1 Acute Tox. 4 Acute Tox. 4 STOT SE 3 Aquatic Chronic 2	H341 H361d H372 H332 H302 H335 H411
Water Soluble Boron	Boron	7440-42-8	0.00042	n/a	Sigma Aldrich	Xn	R22	Harmful if swallowed	n/a	n/a	n/a	Sigma Aldrich	Warning	Acute Tox. 4	H302
Zinc	Zinc oxide	1314-13-2	0.0214		Annex I of Directive 67/548/EEC	N	R50/53	Very toxic to aquatic organisms and may cause long-term effects in the aquatic environment	n/a	n/a	n/a	Annex VI to Directive 1272/2008	Warning	Aquatic Acute 1 Aquatic Chronic 1	H400 H410
Chloride	Hydrogen Chloride	7647-01-0	0.0054		Annex I of Directive 67/548/EEC	T C	R23 R35	Toxic by inhalation Causes severe burns	n/a	n/a	n/a	Annex VI to Directive 1272/2008	Danger	Press. Gas Acute Tox. 3 Skin Corr. 1A	H331 H314

Hazardous Waste Classification Worksheet (Revised 31st August 2004)

Box K: Waste Composition Details		
Properties with Thresholds (Box K1)		
Property	Threshold	Total in Waste
	(% w/w)	(% w/w)
Flash Point < 55 °C		
Very Toxic	> 0.1	0.0003
Toxic	> 3	0.1849
Harmful	> 25	4.6807
Corrosive with Risk Phrase R35	>1	0.0054
Corrosive with Risk Phrase R34	> 5	0.0
Irritant with Risk Phrase R41	> 10	0.0
Irritant with Risk Phrase R36, R37, R38	> 20	0.0700
Carcinogen Category 1 or 2	> 0.1	0.0003
Carcinogen Category 3	> 1	0.0045
Toxic for Reproduction Category 1 and 2 with Risk Phrases R60, R61	> 0.5	0.0028
Toxic for Reproduction Category 3 with Risk Phrases R62, R63	> 5	0.0727
Mutagenic Category 1 and 2 with Risk Phrase R46	> 0.1	0.0000
Mutagenic Category 3 with Risk Phrase R68	> 1	0.0699
Properties without thresholds (Box K2)		
Property	Total (% w/w) in waste	
Explosive	0	
Oxidising	0	
Infectious	0	
Ecotoxic	0.5276	
Residuary Hazardous property	0	

Final EWC Code		
L	Final EWC Code	Possibly 10 02 01 or 10 02 02 with no hazardous components identified in the sample
M	Final EWC Description	Refer to Section 3.1 of Report

Hazardous Waste Classification Worksheet (Revised 31st August 2004)

Note 1:	
Very Toxic, those with an EU Hazard Phrase of T+ under EU Directives 67/548/EEC or 1999/45/EC or those with R-phrases of R26, R27, R28 and combined risk phrases with or without R39	Beryllium, Cadmium
Toxic, those with an EU Hazard Phrase of T under EU Directives 67/548/EEC or 1999/45/EC or those with R-phrases of R23, R24, R25 and combined risk phrases with or without R39 or R48	Arsenic, Beryllium, Cadmium, Mercury, Selenium, Vanadium & Chloride,
Harmful, those with an EU Hazard Phrase of Xn under Directive 67/548/EEC or 1999/45/EC or those with R-phrases of R20, R21, R22, R65, R68 and combined risk phrases with or without R48	Antimony, Barium, Beryllium, Copper, Lead, Manganese, Nickel & Vanadium, Water Soluble Boron
Corrosive with Risk Phrase R35	Chloride, Water Soluble Boron
Corrosive with Risk Phrase R34	No parameters identified
Irritant with Risk Phrase R41	No parameters identified
Irritant with Risk Phrase R36, R37, R38	Beryllium & Vanadium
Carcinogen Category 1 or 2 are those with R-phrases R45 or R49	Beryllium, Cadmium, Hexavalent Chromium,
Carcinogen Category 3 are those with R-phrase R40	Nickel
Toxic for Reproduction Category 1 and 2 with Risk Phrases R60, R61	Lead
Toxic for Reproduction Category 3 with Risk Phrases R62, R63	Cadmium, Lead & Vanadium
Mutagenic Category 1 and 2 with Risk Phrase R46	No parameters identified
Mutagenic Category 3 with Risk Phrase R68	Cadmium & Vanadium
Explosive (with R-phrases R2, R3 or related r-phrases)	No parameters identified
Oxidising (with R-phrases R7, R8, R9)	No parameters identified
Infectious	No parameters identified
Ecotoxic (with R-phrases R50, R51, R52, R53 Aquatic Env and R54, R55, R56, R57, R58 for Non-Aquatic Env) & combined risk phrases	Antimony, Arsenic, Cadmium, Copper, Lead, Mercury, Selenium, Vanadium, Hexavalent Chromium & Zinc, Chromium

Hazardous Waste Classification Worksheet (Revised 31st August 2004)

Ecotoxic (Based on Thresholds in WM2)			
R59	> 0.1 %	No parameters Identified	
R50-53	> 0.25%	Arsenic, Cadmium, Copper, Lead, Mercury, Zinc, Hexavalent Chromium	0.06
R51-53	> 2.5%	Antimony & Vanadium	0.070
R50 or R52 or R53 or R52-53	> 25%	Selenium, Chromium	0.4019
			0.5276

Hazardous Waste Classification Worksheet (Revised 31st August 2004)

SECOND SCHEDULE: PART III (Waste Management Act 1996)

Properties of Waste which render it hazardous

There is set out in each paragraph of this Part a general term denoting a particular property of waste which renders it hazardous, followed by an explanation of such general term by reference to a description of substances or preparations which possess the particular property.

"Explosive": substances or preparations which may explode under the effect of flame or which are more sensitive to shocks or friction than dinitrobenzene.

"Oxidizing": substances or preparations which exhibit highly exothermic reactions when in contact with other substances, particularly flammable substances.

"Highly flammable":

- (a) liquid substances or preparations having a flash point below 21°C (including extremely flammable liquids), or
- (b) substances or preparations which may become hot and finally catch fire in contact with air at ambient temperature without any application of energy, or
- (c) solid substances or preparations which may readily catch fire after brief contact with a source of ignition and which continue to burn or to be consumed after removal of the source of ignition, or
- (d) gaseous substances or preparations which are flammable in air at normal pressure, or
- (e) substances or preparations which, in contact with water or damp air, evolve highly flammable gases in dangerous quantities.

"Flammable": liquid substances or preparations having a flash point of not less than 21°C and not more than 55°C.

"Irritant": non-corrosive substances or preparations which, through immediate, prolonged or repeated contact with the skin or mucous membrane, can cause inflammation.

"Harmful": substances or preparations which, if they are inhaled or ingested or if they penetrate the skin, may involve limited health risks.

"Toxic": substances or preparations (including very toxic substances or preparations) which, if they are inhaled or ingested or if they penetrate the skin, may cause serious, acute or chronic health risks or death.

"Carcinogenic": substances or preparations which, if they are inhaled or ingested or if they penetrate the skin, may induce cancer or increase its incidence.

"Corrosive": substances or preparations which may destroy living tissue on contact.

"Infectious": substances containing viable micro-organisms or their toxins which are known or reliably believed to cause disease in humans or other living organisms.

"Teratogenic": substances or preparations which, if they are inhaled or ingested or if they penetrate the skin, may induce non-hereditary congenital malformations or increase their incidence.

"Mutagenic": substances or preparations which, if they are inhaled or ingested or if they penetrate the skin, may induce hereditary genetic defects or increase their incidence.

"Ecotoxic": substances or preparations which present or may present immediate or delayed risks for one or more sectors of the environment.

"Residuary hazardous property":

- (a) substances or preparations which release toxic or very toxic gases in contact with water, air or an acid, or
- (b) substances or preparations capable by any means, after being disposed of, of yielding another substance which possesses any property referred to in this or any other paragraph of this Part.

APPENDIX E

Analytical Results - Dioxins and Furans



Marchwood Scientific Services

**371 Millbrook Rd West
Southampton
SO15 0HW**

Tel: 02380 669126

Name of Client : JonesEnvironmental

Test Certificate No: 112-8534

Address : Unit 3, Deeside Point, Deeside Industrial Park, Deeside, CH5 2UA
0

ANALYSIS OF PCDDs and PCDFs

Job Reference: 0

Sample Identifier : 8458 Sample 44

Date of Receipt : 01/11/12

Sample No: 112-8534

Date of Analysis : 15/11/12

Order No: 2009

Date of Report : 16/11/12

Sample Condition : normal

Instrument : Micromass Ultima NT

Sample Condition : normal

GC Column : DB5

Calibration File : 121112

Test Method : 1122

Blank : 0

Sample Size : 2.0

expressed as ng / g

Congener	Conc	DL	Rec %	Congener	Conc	DL	Rec %
2378-TCDF	0.0115	0.0019	46	2378-TCDD	0.0000	0.0033	49
12378-PCDF	0.0048	0.0010	112	12378-PCDD	0.0029	0.0007	55
23478-PCDF	0.0096	0.0009	56	123478-HxCDD	0.0034	0.0008	83
123478-HxCDF	0.0076	0.0004	83	123678-HxCDD	0.0132	0.0008	82
123678-HxCDF	0.0076	0.0004	88	123789-HxCDD	0.0073	0.0007	
234678-HxCDF	0.0077	0.0004	83	1234678-HpCDD	0.0993	0.0012	75
123789-HxCDF	0.0017	0.0005	78	OCDD	0.1809	0.0009	66
1234678-HpCDF	0.0218	0.0004	77				
1234789-HpCDF	0.0022	0.0004	82				
OCDF	0.0113	0.0005	66				
Total2,3,7,8-Furans	0.0857			Total2,3,7,8-Dioxins	0.3070		
		TEQ¹	TEQ²			TEQ¹	TEQ²
TEQ (Nato)		0.0139	0.0139	TEQ (WHO)- Mammals		0.0132	0.0132
				TEQ (WHO)- Fish		0.0132	0.0132
				TEQ (WHO)- Birds		0.0283	0.0283

* Isomer Not detected
 TEQ Toxic Equivalent Value
 TEF Toxic Equivalent Factor
 Conc Concentration
 DL Detection Value

Concentration of Non Detected
 Congeners at Detection Limit
 Concentration of Non Detected
 Congeners at Zero

TEQ¹

TEQ²



Karl Pettit

Signature :

1668

Reported by : K Pettit
Position : TechnicalManager



Marchwood Scientific Services

**371 Millbrook Rd West
Southampton
SO15 0HW**

Tel: 02380 669126

Name of Client : JonesEnvironmental

Test Certificate No: 112-8533

Address : Unit 3, Deeside Point, Deeside Industrial Park, Deeside, CH5 2UA
0

ANALYSIS OF PCDDs and PCDFs

Job Reference: 0

Sample Identifier : 8458 Sample 38

Date of Receipt : 01/11/12

Sample No: 112-8533

Date of Analysis : 15/11/12

Order No: 2009

Date of Report : 16/11/12

Sample Condition : normal

Instrument : Micromass Ultima NT

Sample Condition : normal

GC Column : DB5

Calibration File : 121112

Test Method : 1122

Blank : 0

Sample Size : 2.0

expressed as ng / g

Congener	Conc	DL	Rec %	Congener	Conc	DL	Rec %
2378-TCDF	0.0274	0.0020	53	2378-TCDD	0.0000	0.0020	59
12378-PCDF	0.0106	0.0006	110	12378-PCDD	0.0024	0.0009	60
23478-PCDF	0.0211	0.0005	61	123478-HxCDD	0.0032	0.0004	84
123478-HxCDF	0.0131	0.0005	86	123678-HxCDD	0.0116	0.0005	85
123678-HxCDF	0.0116	0.0004	93	123789-HxCDD	0.0063	0.0004	
234678-HxCDF	0.0180	0.0004	84	1234678-HpCDD	0.0724	0.0010	77
123789-HxCDF	0.0059	0.0005	70	OCDD	0.1788	0.0006	66
1234678-HpCDF	0.0375	0.0013	76				
1234789-HpCDF	0.0057	0.0016	79				
OCDF	0.0218	0.0004	62				
Total2,3,7,8-Furans	0.1728			Total2,3,7,8-Dioxins	0.2746		
		TEQ ¹	TEQ ²		TEQ ¹	TEQ ²	
TEQ (Nato)		0.0234	0.0234	TEQ (WHO)- Mammals	0.0200	0.0200	
				TEQ (WHO)- Fish	0.0220	0.0220	
				TEQ (WHO)- Birds	0.0583	0.0583	

* Isomer Not detected
 TEQ Toxic Equivalent Value
 TEF Toxic Equivalent Factor
 Conc Concentration
 DL Detection Value

Concentration of Non Detected
 Congeners at Detection Limit
 Concentration of Non Detected
 Congeners at Zero

TEQ¹

TEQ²



Karl Pettit

Signature :

1668

Reported by : K Pettit
Position : TechnicalManager



Marchwood Scientific Services

**371 Millbrook Rd West
Southampton
SO15 0HW**

Tel: 02380 669126

Name of Client : JonesEnvironmental

Test Certificate No: 112-8532

Address : Unit 3, Deeside Point, Deeside Industrial Park, Deeside, CH5 2UA
0

ANALYSIS OF PCDDs and PCDFs

Job Reference: 0

Sample Identifier : 8458 Sample 3

Date of Receipt : 01/11/12

Sample No: 112-8532

Date of Analysis : 15/11/12

Order No: 2009

Date of Report : 16/11/12

Sample Condition : normal

Instrument : Micromass Ultima NT

Sample Condition : normal

GC Column : DB5

Calibration File : 121112

Test Method : 1122

Blank : 0

Sample Size : 2.0

expressed as ng / g

Congener	Conc	DL	Rec %	Congener	Conc	DL	Rec %
2378-TCDF	0.0088	0.0031	47	2378-TCDD	0.0000	0.0026	51
12378-PCDF	0.0041	0.0012	114	12378-PCDD	0.0000	0.0012	69
23478-PCDF	0.0093	0.0011	67	123478-HxCDD	0.0010	0.0005	90
123478-HxCDF	0.0139	0.0005	86	123678-HxCDD	0.0031	0.0005	87
123678-HxCDF	0.0056	0.0005	88	123789-HxCDD	0.0017	0.0005	
234678-HxCDF	0.0060	0.0005	83	1234678-HpCDD	0.0510	0.0008	88
123789-HxCDF	0.0052	0.0005	78	OCDD	0.2083	0.0006	79
1234678-HpCDF	0.0159	0.0010	82				
1234789-HpCDF	0.0041	0.0012	88				
OCDF	0.0114	0.0005	82				
Total2,3,7,8-Furans	0.0842			Total2,3,7,8-Dioxins	0.2652		
		TEQ¹	TEQ²		TEQ¹	TEQ²	
TEQ (Nato)		0.0103	0.0103	TEQ (WHO)- Mammals	0.0082	0.0082	
				TEQ (WHO)- Fish	0.0092	0.0092	
				TEQ (WHO)- Birds	0.0221	0.0221	

* Isomer Not detected
 TEQ Toxic Equivalent Value
 TEF Toxic Equivalent Factor
 Conc Concentration
 DL Detection Value

Concentration of Non Detected
 Congeners at Detection Limit
 Concentration of Non Detected
 Congeners at Zero

TEQ¹

TEQ²



1668

Reported by : K Pettit
 Position : TechnicalManager

Karl Pettit
 Signature :

APPENDIX D

PLANNING CONTEXT

APPENDIX D - PLANNING AND LICENSING HISTORY (OTHER THAN EAST TIP)

A. Planning History

Main Steelworks Complex, Haulbowline

The following applications relate to the main steelworks site on Haulbowline Island, which is separated from the East Tip by the Naval Dockyard.

Cork County Council Reg. Ref. 01/1854

Irish ISPAT Ltd. was granted retention permission for 3 no. two-storey and 1 no. single storey temporary office units on 4th July 2001. These portacabins were located close to the western boundary of the main steelworks site, proximate to the Irish Naval Services site.

Cork County Council Reg. Ref. 97/2379 (PL.04.103950)

Irish ISPAT Ltd. was granted planning permission by An Bord Pleanála for a 13m high environmental noise abatement barrier on the main steelworks site. The application was made in response to complaints about night-time noise from the plant. Conditions attached to the permission set out the abated night-time noise levels that the barrier should achieve when measured at the closest noise sensitive residential locations to the north and north-west of the site (at Cobh).

Cork County Council Reg. Ref. 91/1344

Irish Steel Ltd. was granted planning permission on 26th July 1991 for an extension to a baghouse, installation of new monitor and alterations to a canopy on melt¹ shop roof. The only condition attached to this permission related to access to the point of discharge to the atmosphere from the baghouse and to electrical power points in this area.

Cork County Council Reg. Ref. 81/1111

Irish Steel Ltd. was granted planning permission for an extension to a shipping building on 15th May 1981.

Cork County Council Reg. Ref. 77/1907 (also discussed in Chapter 2 of EIS)

Irish Steel Holdings Ltd. was granted permission for extensions and modifications to the steel making plant on 1st January 1979. Conditions of note which were attached to the permission are as follows:-

5. Mill scale and other suspended matter shall be recovered by cyclones or lagoon system. The extracted matter shall be disposed of on the company's disposal dump.
6. The following solid waste materials which have been heated to a maximum of 1000 degrees C and which are non-toxic and cannot be leached by fresh or salt water shall be disposed of on the company's disposal dump in the area licensed by the Minister for Transport and Power –
 - a) melting furnace slag
 - b) re-heating furnace slag (clinker scale)
 - c) cyclone scale
 - d) demolition rubble from furnaces and ladles
9. Dust collected by the bag filters shall be –
 - a) Removed off site in sealed containers for export by sea or road, or
 - b) Pelletised on site and thereafter shipped by sea in bulk, or,
 - c) Dumped in a location in Cork County, details of which shall be agreed with the planning authority within 6 months of the grant of permission.

¹ Taken directly as per text of planning file. Smelt?

Condition 13 specifies that air quality monitoring locations are required at the naval base, Cobh, Monkstown and Ringaskiddy Village.

A report submitted with the application specified that solid waste would be disposed of by dumping to reclaim land at the eastern side of the island – Appendix G9 areas A and B specifically, where a licence for dumping² was granted by the Department of Transport and Power in 1959. Areas A and B are shown as the northern and southern parts of the East Tip.

Cork County Council Reg. Ref. 70/1570

Irish Steel Holdings Ltd. was granted permission for a steel plant on 4th January 1971. The proposed development included structures just west of the southern end of the Naval Dock and included for fill works at the southern end of the island. The application detail advises that these works were to consist of a rock embankment up to low water level with concrete facing. The area behind was to be filled and surfaced with hard core to carry a concrete roadway. The river side of the roadway was to be protected by heavy concrete upstands, carrying a steel hand rail. The area in question appears to be adjacent the bridge but is unclear from the detail available.

Cork County Council Reg. Ref. 70/941

Irish Steel Holdings Ltd. was granted permission for the erection of an industrial building on 26th August 1970. This building was to be located just northwest of the area where the bridge meets the island and comprised a roll turning shop of 8910 sq.ft. within an existing industrial site.

Paddy's Point/Ringaskiddy Lands

In addition to lands at Haulbowline, Irish Steel also lodged planning applications for development on lands on the mainland at Ringaskiddy. Planning permissions referenced in Cork County Council's Factual Report 2012 include 5 no. permissions which are located on the mainland. These are as follows.

Cork County Council Reg. Ref. 82/2945: Irish Steel Ltd. was granted permission for an extension of extraction work at their site south of the county road, Ringaskiddy on 22nd November 1982.

Cork County Council Reg. Ref. 81/1028: Irish Steel Ltd. was granted permission for the excavation of land and reclamation of foreshore at Ringaskiddy on 15th May 1981. The area to be excavated was south of the county road near the Haulbowline access road; the area to be filled was west of the same access road but north of the county road. A letter submitted with the application advised that the works were to facilitate a lorry marshalling area and to eliminate a pond of stagnant water. Conditions attached related to land grading, drainage, landscaping and contributions.

Cork County Council Reg. Ref. 68/428: Irish Steel Holdings Ltd. was granted permission for excavation and removal of fill from the hillside on their lands south of the county road at Ringaskiddy on 28th June 1968. Conditions related to landscaping and the reinstatement of the excavated area.

Cork County Council Reg. Ref. 67/1064: Irish Steel Holdings Ltd. Was granted permission for the erection of a warehouse, weighbridge and weighbridge house at Paddy's Point on 12th January 1968. The site was located just west of the Haulbowline access road opposite the industrial gases facility; conditions related to sewage disposal and visual impact of the proposed building design.

Cork County Council Reg. Ref. 64/427: Industrial Gases (IFS) Ltd. received planning permission on April 27th 1964 for the erection of a depot at Paddy's Point, east of the Haulbowline access road. The purpose of the development was to facilitate the steelwork's operations in connection with the 40 acre site owned by the company to the south of the county road; Irish Steel Holdings Ltd. submitted an observation to the planning authority confirming that the development was of paramount importance to the industry. Issues raised by the local authority in assessing the application included the flooding of the public road during high seas and maintaining access to the public beach adjacent the site.

² See clarification in Chapter 2 of EIS

Other Planning History On/Adjacent Haulbowline

Department of Defence Lands: M29/80P – Cork County Council confirmed to the Department of Defence that it had no objections to the construction of a naval billet building on Haulbowline Island.

Haulbowline Bridge: 64/1246 – Messrs. O’Connell and Harley of Cork Harbour were granted permission for the erection of a bridge on August 21st 1964. Fifteen piers were indicated to be provided in the channels north and south of Rocky Island to connect Haulbowline Island to the new approach road ‘recently installed at Paddy’s Point’, via Rocky Island.

Rocky Island

05/4080 (PI.04.214319): Strikemount Ltd. was granted conditional permission for the conversion of an industrial storage facility in a former magazine building to a crematorium, with associated site works, on February 14th 2006, on Rocky Island. The building is a recorded monument.

Condition 2 requires that the crematorium be constructed and managed in accordance with the United Kingdom Secretary of State’s Process Guidance Note 5/2(04) on Crematoria. Emissions standards shall comply with those put forward in this document, particularly with regard to emission limits and controls. Air emissions shall be monitored during cremation in accordance with the Guidance Note.

Condition 5 states as follows:

In the event of a rise in sea level, the sea wall surrounding the building shall be increased in height to protect the crematorium from the possibility of flooding. In this regard, details of all construction works shall be submitted to and agreed with the planning authority prior to commencement of any works.

Condition 7 required details of public access, including public parking areas, to enable access to a historic site, were to be agreed with the planning authority prior to the commencement of development.

The Inspector’s Report, in discussing sea level issues, states as follows:-

***Sea level / tidal issues.** The Council’s senior engineer advises that during a storm surge in 1962, a maximum level of 6.26mO.D. Poolebeg was reached at Irish steel in Cork Harbour. As a result, a ground floor level of 6.7mO.D. Poolebeg is recommended for new developments in the lower Harbour area. The proposed floor level for the crematorium is 5.87mO.D. Poolebeg. The level at the base of the ramp under the bridge to the car park is 5.15m, whilst the car park itself is no higher than 5.51m. The tidal flooding issue is dealt with in a report from ARUP – consulting engineers, submitted August 2005. The 5.87mO.D. level equates to a Malin Head level of 3.15m. The recommended finished floor level (FFL) in Cork City is 3.1mO.D. Malin and therefore the proposed FFL is 50mm above that. In addition, tide levels in Cobh are 0.4m lower than in the city area. It is concluded that the finished floor level of the facility is 0.49m higher than the recorded flood level in Cobh and in the event of a rise in sea level, the northern wall can be increased in height.*

Noise levels are limited by condition 10 and condition 11 requires that no nuisance from odour or dust occurs beyond the boundaries of the site.

Prior to the commencement of development, a demolition and construction waste management plan was required to be submitted under condition 12.

An Environmental Report accompanied the application.

B. Waste Licensing: Main Steelworks Complex

The following Licences were issued to the steelworks facility (west of the subject site):

1. Radiological Protection Act Licence

The Radiological Protection Institute of Ireland issued a Licence under the Radiological Protection Act 1991 for the storage of radioactive materials such as pipe sections.

2. Radiological Protection Act Licence

The Radiological Protection Institute of Ireland issued a Licence under the Radiological Protection Act 1991 for the custody, use and transportation of density gauges and level gauges.

3. Water Pollution Act Licence (WP(W) 11/83)

The Cork County Council issued a water pollution licence was issued to Irish Steel in 1983 to allow the discharge of cooling water and sewage to Lower Cork Harbour.

APPENDIX E
CONSULTATION

APPENDIX E.1

**STATUTORY AND NON-STATUTORY CONSULTEES
EIS SCOPING LETTER TEMPLATE**

Appendix E.1 Statutory and Non-Statutory Consultees EIS Scoping Letter Template

Address

28th September 2012.

Our Ref: MCE0734LT0003COR

File Ref:

Re: Remediation of the East Tip on Haulbowline Island: Scoping of Environmental Impact Statement/Invitation to Make Submissions

Dear Sir or Madam,

RPS has been appointed by Cork County Council (who are acting on behalf of the Irish State) to complete an Environmental Impact Statement (EIS) for the remediation of East Tip at Haulbowline Island, Co. Cork. The EIS will accompany a Waste Licence Application (for submission to the Environmental Protection Agency), a Planning Application (for submission to An Bord Pleanála) and a Foreshore Licence Application (for submission to the Department of the Environment, Community & Local). It is envisaged that the respective applications will be lodged in December 2012.

Haulbowline Island is located within Cork Harbour and is connected to the mainland at Ringaskiddy via a bridge which traverses Rocky Island. The headquarters of the Irish Naval Services is situated on the western portion of the Island with the Naval Dockyard to the east. Separating these is the site of the former Irish ISPAT Steelworks. To the east of the Naval Dockyard is the East Tip, an area of land reclaimed from the Spit Bank by infilling with processing waste from the steelworks a (see enclosed figure).

The primary objective of this project is to remediate the East Tip thereby ensuring that potential risks to humans and the wider environment are minimised. It is proposed that the waste at the site will be contained by constructing an engineered capping system with an outer barrier around the waste body. Once the remediation solution has been constructed, it is proposed that the site will be used for amenity and recreational purposes.

The EIS will address the likely impacts of the proposed development during the construction stage and the end use of the site. At this stage of the project, it is considered that the majority of potential impacts will be of a temporary nature and restricted to the construction stage only. Consequently, the EIS will consider the following possible effects on the local community and surrounding environment:

- Air quality impacts arising from construction activities
- The increase in traffic (arising from the requirement to import materials for the capping system) on the surrounding road network and any resulting impacts on air quality and the community (in terms of noise and disturbance).
- Noise disturbance associated with construction activities on the community and surrounding environment.
- Direct or indirect impacts associated with the release of contaminants into the surrounding environment including designated areas of conservation (SAC, SPA, NHA).
- Visual impacts associated with the construction of the remediation works.
- Potential impacts to archaeology.

The EIS will also address possible effects associated with the end use of the site, which will be of a positive nature as a result of the remediation and landscaping of the site. Any likely impacts associated with the use of the site as an amenity and recreational area will also be addressed. An assessment of the alternatives examined will also be included.

The design of the capping and barrier system will be developed over the coming months in parallel with the preparation of the EIS and relevant application documents.

Given the timeframe of December 2012 for submission of the required applications we would welcome your views on the scoping of the EIS and the project in writing to the above address, by email to haulbowline@rpsgroup.com or by contacting the undersigned.

A public consultation forum will be held on Thursday October 11th in the Commodore Hotel, Cobh, further details of which will be advertised locally prior to the event. The purpose of the forum is to provide information on the remediation of the East Tip and to give stakeholders an opportunity to meet the Project Team, who will be available to answer questions.

Yours sincerely,

Aileen Fitzgerald
For and on behalf of RPS

AF/AT

Encl.

APPENDIX E.2

**STATUTORY CONSULTEES CONSULTED AS
PART OF EIS SCOPING**

Appendix E.2 Statutory Consultees Consulted as part of EIS Scoping

Statutory and Non-Statutory Bodies			
An Taisce	Department of Defence	Inland Fisheries Ireland	South West Regional Authority
Bat Conservation Ireland	Department of Arts, Heritage and the Gaeltacht	Institute of Geologists of Ireland	South Western River Basin District Authority
Birdwatch Ireland	Department of Agriculture, Food and the Marine	Irish Federation of Sea Anglers	Southern Regional Fisheries Board
Bord Gáis Energy	Dept. of Communications, Energy and Natural Resources	Irish Georgian Society	The Arts Council
Cobh Town Council	Eircom	Irish Heritage Trust	The Heritage Council
Cork City Council	Enterprise Ireland	Irish Whale and Dolphin Group	The Meteorological Service (MET Eireann)
Cork Airport	Fáilte Ireland	Irish Planning Institute	Voice of Irish Concern for the Environment
Cork County Council	Friends of the Earth Ireland	Irish Wildlife Trust	Waterways Ireland Headquarters
Cork County Council	Geological Survey of Ireland	Landscape Alliance Ireland	Coastwatch Europe
Cork County Council		National Roads Authority	Irish Coast Guard
County Development Board	Health and Safety Authority	National Transport Authority	Commissioner for Irish Lights
Department of Transport		Royal National Lifeboat Institution	Sea Fisheries Protection Agency
Department of the Environment, Community and Local Government	Health Service Executive	Office of Public Works	Bord Iascaigh Mhara
Department of Health		Royal Town Planning Institute (Ireland)	Marine Institute

(Source: R:\MCE0734 Haulbowline EIS\3.0 Letters\27 Sept Final Scoping Consultation – Mail Merge Contacts)

APPENDIX E.3

**LOCAL STAKEHOLDER GROUP EIS
SCOPING LETTER TEMPLATE**

Appendix E.3 Local Stakeholder Groups EIS Scoping Letter Template

«AddressBlock»

28th September 2012.

Our Ref: MCE0734LT0002COR

File Ref:

Re: Remediation of the East Tip on Haulbowline Island: Scoping of Environmental Impact Statement/Invitation to Make Submissions

«GreetingLine»

RPS has been appointed by Cork County Council (who are acting on behalf of the Irish State) to complete an Environmental Impact Statement (EIS) for the remediation of East Tip at Haulbowline Island, Co. Cork. The EIS will accompany a Waste Licence Application (for submission to the Environmental Protection Agency), a Planning Application (for submission to An Bord Pleanála) and a Foreshore Licence Application (for submission to the Department of the Environment, Community & Local). It is envisaged that the respective applications will be lodged in December 2012.

Haulbowline Island is located within Cork Harbour and is connected to the mainland at Ringaskiddy via a bridge which traverses Rocky Island. The headquarters of the Irish Naval Services is situated on the western portion of the Island with the Naval Dockyard to the east. Separating these is the site of the former Irish ISPAT Steelworks. To the east of the Naval Dockyard is the East Tip, an area of land reclaimed from the Spit Bank by infilling with processing waste from the steelworks a (see enclosed figure).

The primary objective of this project is to remediate the East Tip thereby ensuring that potential risks to humans and the wider environment are minimised. It is proposed that the waste at the site will be contained by constructing an engineered capping system with an outer barrier around the waste body. Once the remediation solution has been constructed, it is proposed that the site will be used for amenity and recreational purposes.

The design of the capping and barrier system will be developed over the coming months in parallel with the preparation of the EIS and relevant application documents.

A public consultation forum will be held on Thursday October 11th in the Commodore Hotel, Cobh, further details of which will be advertised locally prior to the event. The purpose of the forum is to:

- Provide information on the remediation of the East Tip and how it will minimise risks to the surrounding communities and environment

- Give you an opportunity to meet the Project Team who will be available to answer your questions and to hear your views on the project
- Explain what happens next in terms of the development of the project design and the preparation of the EIS to accompany the applications.

In the event you cannot attend the public forum, we would welcome your views on the project in writing to:

RPS, Innishmore, Ballincollig, Co Cork or alternatively by email to haulbowline@rpsgroup.com

Yours sincerely,

Aileen Fitzgerald
For and on behalf of RPS

AF/AT

Encl.

APPENDIX E.4
LOCAL STAKEHOLDER GROUPS CONSULTED

Appendix E.4 Local Stakeholder Groups Consulted

Local Businesses			
Brittany Ferries	Cork Business Association	Irish Business and Employers Confederation	Ringaskiddy & District Residents Association
Cork Harbour Alliance for a Safe Environment	Cork Chamber of Commerce	Lee Rowing Club	Rostellan Development Association
	Cork Environmental Forum	Meitheal Mara	Rushbrooke Rowing Club
Coastal and Marine Research Centre	Cork Harbour Lobster Association	IMERC (Irish Maritime and Energy Resource Cluster)	SailCork
Cobh & Harbour Chamber	Cork Institute of Technology	Monkstown Amenity Association	South and East Cork Area Development
Cobh & Harbour Chamber	Cork/Kerry Tourism	Monkstown Bay Sailing Club	Shandon Boat Club
Cobh Chamber of Commerce	Crosshaven Community Association	Monkstown and District Residents Association	Spike Island and Titanic Trails Harbour Tours
Cobh Fisherman Association	Crosshaven Development Committee	National Maritime College of Ireland	Spike to Cobh Swim
Cobh Fishermans Rowing Club	Fastnet Line	Irish Naval Service	The Island Crematorium
Cobh Marketing Partnership	Cork Harbour Management Focus Group	Ocean to City Race	Cobh Tradsail
Cobh Sailing Club	Cork Harbour Open Day	Passage West Area Development and Environment Association	UCC Rowing Club
Cobh Sea Scouts	Haulbowline Industries Ltd.	Passage West Town Council	University College Cork
Cobh Tourism	Hydraulics and Maritime Research Centre	Port of Cork Company	Friends of the Irish Environment
Cobh Triathlon Organising Committee	HSE South	Royal Cork Yacht Club	Cork Draft Net Fisherman's Association

(Source: R:\MCE0734 Haulbowline EIS\3.0 Letters\27 Sept Final Scoping Consultation – Mail Merge Contacts)

APPENDIX E.5

SCOPING LETTERS ISSUED TO AN BORD PLEANALA, EPA AND NPWS



West Pier Business Campus, Dun Laoghaire, Co. Dublin, Ireland
T +353 (0)1 488 2900 F +353 (0)1 283 5676 E ireland@rpsgroup.com W rpsgroup.com/ireland

Brian Meaney,
Inspector
Environmental Protection Agency
Johnstown Castle
Wexford

1st October 2012

Our Ref: MCE0734LT0004COR
File Ref: 310

**Re: Remediation of the East Tip on Haulbowline Island
Scoping of the Environmental Impact Statement**

Dear Mr Meaney,

RPS has been appointed by Cork County Council (who are acting on behalf of the Irish State) to complete an Environmental Impact Statement (EIS) for the remediation of East Tip at Haulbowline Island, Co. Cork. The EIS will accompany a Waste Licence Application (for submission to the Environmental Protection Agency), a Planning Application (for submission to An Bord Pleanála) and a Foreshore Licence Application (for submission to the Department of the Environment, Community & Local). It is envisaged that the respective applications will be lodged in December 2012 (in accordance with the programme imposed by the European Commission).

The primary objective of this project is to address the ruling of the ECJ (Case C 494/01) to remediate the East Tip thereby ensuring that potential risks to humans and the wider environment are minimised. It is proposed that the waste at the site will be contained by constructing an engineered capping system with an outer barrier around the waste body. Once the remediation solution has been constructed, it is proposed that the site will be used for amenity and recreational purposes.

The EIS will address the likely impacts of the proposed development during the construction stage and the end use of the site. At this stage of the project, it is considered that the majority of potential impacts will be of a temporary nature and restricted to the construction stage only. Consequently, the EIS will consider the following possible effects on the local community and surrounding environment:

- Air quality impacts arising from construction activities
- The increase in traffic (arising from the requirement to import materials for the capping system) on the surrounding road network and any resulting impacts on air quality and the community (in terms of noise and disturbance).
- Noise disturbance associated with construction activities on the community and surrounding environment.
- Direct or indirect impacts associated with the release of contaminants into the surrounding environment including designated areas of conservation (SAC, SPA, NHA).
- Visual impacts associated with the construction of the remediation works.
- Potential impacts to archaeology.



The EIS will also address possible effects associated with the end use of the site, which will be of a positive nature as a result of the remediation and landscaping of the site. Any likely impacts associated with the use of the site as an amenity and recreational area will also be addressed. An assessment of the alternatives examined will also be included.

The design of the capping and barrier system will be developed over the coming months in parallel with the preparation of the EIS and relevant application documents. A detailed Quantified Risk Assessment is expected to be completed shortly, which will outline the design solution for the remediation of the site. RPS would welcome the opportunity to present to the EPA, details of the proposed outline design and to discuss and obtain the Agency's view on the proposed scope of assessments to be included in the EIS. We will contact the Agency in the coming days regarding this request.

In the meantime if you have any queries regarding the project, please do not hesitate to contact the undersigned.

Yours sincerely,

A handwritten signature in black ink, appearing to read 'Cahill'.

Cathriona Cahill
For and on behalf of RPS

cc: Cormac O'Suilleabhain, Cork County Council



West Pier Business Campus, Dun Laoghaire, Co. Dublin, Ireland
T +353 (0)1 488 2900 F +353 (0)1 283 5676 E ireland@rpsgroup.com W rpsgroup.com/ireland

Development Applications Unit
Department of the Environment, Heritage and Local Government
Newtown Road
Wexford

1st October 2012.

Our Ref: MCE0734LT0004COR
File Ref: 310

**Re: Remediation of the East Tip on Haulbowline Island
Scoping of the Environmental Impact Statement**

To Whom it May Concern,

We refer to the above, previous correspondence issued by Cork County Council on 5th September to the Development Applications Unit and our meeting with the NPWS Southern Divisional Ecologist regarding the project on 17th September 2012.

RPS has been appointed by Cork County Council (who are acting on behalf of the Irish State) to complete an Environmental Impact Statement (EIS) for the remediation of East Tip at Haulbowline Island, Co. Cork. The EIS will accompany a Waste Licence Application (for submission to the Environmental Protection Agency), a Planning Application (for submission to An Bord Pleanála) and a Foreshore Licence Application (for submission to the Department of the Environment, Community & Local). It is envisaged that the respective applications will be lodged in December 2012.

The primary objective of this project is to address the ruling of the ECJ (Case C 494/01) to remediate the East Tip thereby ensuring that potential risks to humans and the wider environment are minimised. It is proposed that the waste at the site will be contained by constructing an engineered capping system with an outer barrier around the waste body. Once the remediation solution has been constructed, it is proposed that the site will be used for amenity and recreational purposes.

The EIS will address the likely impacts of the proposed development during the construction stage and the end use of the site. At this stage of the project, it is considered that the majority of potential impacts will be of a temporary nature and restricted to the construction stage only. Consequently, the EIS will consider the following possible effects on the local community and surrounding environment:

- Air quality impacts arising from construction activities
- The increase in traffic (arising from the requirement to import materials for the capping system) on the surrounding road network and any resulting impacts on air quality and the community (in terms of noise and disturbance).
- Noise disturbance associated with construction activities on the community and surrounding environment.
- Direct or indirect impacts associated with the release of contaminants into the surrounding environment including designated areas of conservation (SAC, SPA, NHA).
- Visual impacts associated with the construction of the remediation works.
- Potential impacts to archaeology.

The EIS will also address possible effects associated with the end use of the site, which will be of a positive nature as a result of the remediation and landscaping of the site. Any likely impacts associated with the use of the site as an amenity and recreational area will also be addressed. An assessment of the alternatives examined will also be included.

The design of the capping and barrier system will be developed over the coming months in parallel with the preparation of the EIS, relevant application documents including the preparation of an Appropriate Assessment Screening Statement (and if required, a Natura Impact Statement).

Given the programme to submit applications in December 2012 (imposed by the European Commission), we would welcome your views on the scoping of the EIS in writing to the above address, by email to haulbowline@rpsgroup.com or by contacting the undersigned.

Yours sincerely,



Cathriona Cahill
For and on behalf of RPS

cc: Cormac O'Suilleabhain, Cork County Council



West Pier Business Campus, Dun Laoghaire, Co. Dublin, Ireland
T +353 (0)1 488 2900 F +353 (0)1 283 5676 E ireland@rpsgroup.com W rpsgroup.com/ireland

The Secretary
An Bord Pleanála
64-67 Marlborough St
Dublin 1

27th September, 2012.

Our Ref: MCE0734LT0001COR

Re: Request for a Written Opinion under the provisions of s.226 (3) and s.175(11) of the Planning & Development Acts 2000-2010 in relation to the EIS for the Remediation of East Tip on Haulbowline Island

Dear Secretary,

RPS has been appointed by Cork County Council (who are acting on behalf of the Irish State) to complete an Environmental Impact Statement (EIS) for the remediation of East Tip, Haulbowline Island, Co. Cork. In accordance with European Council requirements, further to European Court of Justice Ruling 494/01, the necessary applications for planning approval, waste licensing and foreshore licensing are required to be lodged with the relevant authorities during December 2012. The EIS must be completed to accompany the planning approval and other applications. It is intended to lodge an application for approval to the Board under s226 of the Planning & Development Acts 2000-2010 given that development will occur on the foreshore. The provisions of s175 of the Acts will also apply (as per s226(3)) given the requirement to prepare an EIS. Given this stringent timeframe, we request that An Bord Pleanála issues notice of this scoping request to the relevant prescribed bodies as a matter of urgency, to ensure that the timeframes set out in Article 95 of the Planning & Development Regulations 2001-2012 commence as soon as may be and our client receives a timely response that can contribute to the preparation of a comprehensive EIS.

At the outset, and in compliance with the provisions of Article 95 of the Planning & Development Regulations 2001-2012, RPS wishes to confirm the following details.

Details of Local Authority making this Scoping Request:

Name: Cork County Council
Address: Environment Directorate, Inniscarra, Co. Cork.
Telephone Number: 021-4532700
Email Address: cormac.osuilleabain@corkcoco.ie

Details of Agent Acting on Behalf of Cork County Council:

Name: RPS
Address: Innishmore, Ballincollig, Co Cork
Telephone Number: 021 4665900
Email Address: michelle.bennett@rpsgroup.com

Site Location/Address: The site address is East Tip, Haulbowline Island, Co. Cork. Haulbowline Island is located within Cork Harbour and is connected to the mainland at Ringaskiddy via a bridge which traverses Rocky Island. The headquarters of the Irish Naval Services is situated on the western portion of

the island with the Naval Dockyard to the east. Separating these is the site of the former Irish ISPAT Steelworks. To the east of the Naval Dockyard is the East Tip, an area of land reclaimed from the Spit Bank by infilling with processing waste from the steelworks. (see enclosed Figure 1).

At this juncture, the proposed red line boundary indicated is the expected site boundary for future statutory consent applications (see Figure 1). This correlates to the ownership of the site, which is predominantly vested in the Department of Finance. Part of the site is owned by the Department of Defence and lands immediately adjacent the site, to the west are also under the control of the Department of Defence, which is reflected in the blue line boundary. There may be some alterations to the proposed red line boundary as the design progresses, however these are not expected to be significant.

Brief Description of the Proposed Development: The primary objective of this project is to remediate the East Tip to ensure potential risks to humans and the wider environment are minimised. It is proposed that the waste at the site will be contained by constructing an engineered capping system with an outer barrier around the waste body. Once the remediation solution has been constructed, it is proposed that the site will be used for amenity and recreational purposes. Facilities such as sports areas, recreational use areas, walks and designated viewing points will be incorporated into the design for the end use of the site.

The design for the remediation and end use is currently being developed by RPS in parallel with the preparation of the EIS. These details will accompany the applications for planning approval (for submission to An Bord Pleanála), Foreshore Licence (to be submitted to the Department of the Environment, Community and Local Government) and, which in accordance with Article 95(1)(d) is necessary to confirm at this point, a **Waste Licence Application (for submission to the Environmental Protection Agency)**.

Possible Effects of the Proposed Development on the Environment: The EIS will address the likely impacts of the proposed development during the construction stage and the end use of the site. At this stage of the project, it is considered that the majority of potential impacts will be of a temporary nature and restricted to the construction stage only. Consequently, the EIS will consider the following possible effects on the local community and surrounding environment:

- Air quality impacts arising from construction activities
- The increase in traffic (arising from the requirement to import materials for the capping system) on the surrounding road network and any resulting impacts on air quality and the community (in terms of noise and disturbance).
- Noise disturbance associated with construction activities on the community and surrounding environment.
- Direct or indirect impacts associated with the release of contaminants into the surrounding environment including designated areas of conservation (SAC, SPA, NHA).
- Visual impacts associated with the construction of the remediation works.
- Potential impacts to archaeology.

The EIS will also address possible effects associated with the end use of the site, which will be of a positive nature as a result of the remediation and landscaping of the site. Any likely impacts associated with the use of the site as an amenity and recreational area will also be addressed. An assessment of the alternatives examined will also be included.

Proposed EIA Process and Content: The EIS will be prepared by RPS in accordance with the requirements of the European Communities (Environmental Impact Assessment) Regulations, 1989 to 2006 and the Planning and Development Act 2000 (as amended) and associated Planning and Development Regulations. Guidelines on the Information to be Contained in Environmental Impact Statements, 2002 and Advice Notes on Current Practice (in the Preparation of Environmental Impact Statements), 2003 as prepared by the EPA, will also be followed in the preparation of the EIS. All EU



Directives and national legislation relating to specialist areas will be considered as part of the process. The current scope of the assessments that will be undertaken for the EIS is outlined in Table 1. These assessments will be used to inform the baseline conditions and assist in identifying mitigation measures. This will be reviewed as the design progresses.

As the design is progressed, RPS will review the scoping for the EIS to ensure all likely impacts are addressed. However, it is in this context of the EIS scoping stage for the proposed development that RPS on behalf of Cork County Council seek a **written opinion** on the information to be contained in the EIS and in this regard enclose a cheque in the sum of €5,000.

Yours sincerely,

A handwritten signature in black ink, appearing to read 'Cathriona Cahill'.

Cathriona Cahill
For and on behalf of RPS

Table 1: Potential Impacts & Scope of Assessments for EIS for Remediation of East Tip, Haulbowline, Co. Cork.

Environmental Discipline	Potential Impacts (at EIS Scoping stage)	Scope of Survey & Assessment
<p>Human Environment & Community</p>	<p>Potential air quality impacts arising from construction activities The increase in traffic (arising from the requirement to import materials for the capping system) on the surrounding road network and any resulting impacts on air quality and the community (in terms of noise and disturbance). Potential noise disturbance associated with construction activities on the community and surrounding environment. Visual impacts associated with the construction of the remediation works. Potential impacts to users of Cork Harbour during the construction phase.</p>	<p>The focus of the assessment is on establishing the potential for socio-economic impact on population and employment in the area and on impacts on the community, including the resident, working and visiting community. Land use will be considered in addressing impacts on the resident and working community. In this regard, any particularly sensitive land uses will be identified and considered in the assessment.</p> <p>Information on the demographic and employment characteristics of the resident population will be sourced from the Census of Population and The Live Register. Identification of sensitive communities and land uses in the vicinity of the site will be undertaken by a mix of site visits, review of aerial photography and Development Plan mapping. Information on tourists / leisure activities will be obtained as appropriate from Fáilte Ireland or directly from local clubs.</p> <p>Consultation in the form of website updates, letter correspondence and open days will also assist in informing this assessment.</p>
<p>Flora and Fauna</p>	<p>Potential short term disturbance to fauna in the surrounding environment (birds, otters, etc) during the construction stage. Potential spread of invasive species through imported material. Potential direct or indirect impacts associated with the release of contaminants into the surrounding environment including designated areas of conservation (SAC, SPA, NHA).</p>	<p>Terrestrial: Extended Phase 1 Habitat Survey: a. the terrestrial habitat types present, including Annex I habitats; b. the presence of any rare flora species; or the presence of habitats that may support rare flora species; c. the presence of any features that may be used by bats or other mammals; d. the likely breeding bird community based upon the habitats present; e. the presence of otter (Annex II) signs; an assessment of otter usage of the shoreline; determination of possible locations of otter holts inland of the shoreline; f. the possibility that the site might support any other terrestrial flora or fauna features of local or higher value (invertebrates, reptiles, other Annex II species, etc); g. the presence of any non-native invasive terrestrial plant species, as listed under the 2011 Birds and Natural Habitat Regulations, this includes Japanese Knotweed.</p> <p>Marine: Intertidal survey consisting of JNCC Phase I survey to assess habitats present and to confirm previous mapping undertaken in 2008. Recording of any Annex I habitats and Annex II species.</p>

Environmental Discipline	Potential Impacts (at EIS Scoping stage)	Scope of Survey & Assessment
		<p>Review of existing sediment analysis results and undertaking additional surveys in key areas if required. Otter/seal presence.</p> <p>Other: Liaison with the NPWS Appropriate Assessment to determine likely significant effects to Natura 2000 sites.</p>
Hydrology & Water Quality	<p>Potential impacts to water quality resulting in indirect impacts to groundwater & marine environment</p>	<p>Review of previous and ongoing water quality monitoring and sediment analysis results and comparison in accordance with relevant standards including European Communities Environmental Objectives (surface waters and groundwater) Regulations. A flood risk assessment will also be undertaken for the proposed development.</p>
Landscape and Visual	<p>Visual impacts associated with the construction of the remediation works and end use on sensitive receptors.</p>	<p>The viewpoints from the key residential areas such as Cobh and Ringaskiddy will be the main focus of the assessment. It is proposed that these viewpoints will be photographed in a drive by survey of the local road network surrounding the site and a Visual Envelope for the proposed development will be identified and presented on appropriate mapping. IEMA Landscape and Visual Assessment Guidelines 2001 and DoEHLG Landscape and Landscape Character Assessment Guidelines 2000 will be adhered to.</p>
Air Quality and Climate	<p>Potential air quality impacts arising from construction activities and traffic along the haul route. Indirect impacts to the marine environment.</p>	<p>A review will be undertaken of the existing extensive historic data and up to date baseline monitoring results available for the site.</p> <p>Prediction of impacts will be undertaken based on the proposed design option and construction methodologies using US EPA approved AERMOD Prime Air Dispersion model. An assessment of the impact of construction traffic and potential for dust using the Local Model of the UK Highways Agency DMRB will also be undertaken.</p>
Noise and Vibration	<p>Potential noise and vibration disturbance associated with construction activities and traffic (along haul route) on the community and surrounding environment. Indirect impacts to the marine environment.</p>	<p>Baseline noise monitoring (day and night) will be undertaken at sensitive receptors including on Haulbowline Island, Cobh and Ringaskiddy.</p> <p>Noise modelling will be undertaken to predict impacts during the construction stage in accordance with BS5228 Noise and Vibration Control on Construction and Operation Sites and EPA Guidance Notes for Noise; Licence Applications, Surveys and Assessments in relation to Scheduled Activities (NG4).</p>
Archaeology	<p>Potential for impacts on unrecorded archaeology monuments within the study area</p>	<p>A walkover survey of the site will be undertaken to address the existing above ground features (cultural heritage features) and the archaeological potential of the site. All</p>

Environmental Discipline	Potential Impacts (at EIS Scoping stage)	Scope of Survey & Assessment
Traffic	<p>Increased HGV movement and potential for traffic disruption during the construction stage.</p> <p>Increased traffic on local road network due to provision of amenity area as end use for the site.</p>	<p>features will be noted, described and photographed.</p> <p>Unrecorded archaeological sites have potential to be recorded on the Foreshore. Therefore, the EIS team will consult with the Underwater Archaeological Unit of the National Monuments Service during the design of the proposed scheme in order to agree appropriate underwater archaeological assessment and mitigation strategies if required.</p> <p>RPS will undertake a baseline study of the N28 route as this route is the primary road to the only bridge which accesses Haulbowline Island. The baseline study will include assessing current traffic data, accident data and network inventory data for the N28 through the villages of Ringaskiddy and Shanbally, the Shannonpark Roundabout and onwards to the N40 South Ring Road.</p> <p>The assessment will also include a review of the existing link capacity of the N28 and the capacity of the key junctions along the route (Shannonpark Roundabout, roundabout junction in Shanbally, junctions in Ringaskiddy etc).</p> <p>RPS will undertake an assessment of the traffic impact during construction phase on the haul route, which is expected to be the N28 and the access road to Haulbowline Island via the bridge which traverses Rocky Island. The impact assessment will focus in on a link and junction capacity analysis during daily and peak periods.</p> <p>This assessment will also focus on the impact that construction vehicles could have on the vulnerable road users (especially pedestrian movement) in the villages of Ringaskiddy and Shanbally. This includes assessing the impact on potential sensitive locations such as adjacent schools and sports/leisure facilities. RPS will also carry out an assessment of the impact during operational phase on the local road network. Cumulative impacts from other committed developments in the area will also be addressed.</p>
Soils, Geology and Hydrogeology	<p>Potential for groundwater contamination and indirect impacts to the surrounding community and the marine environment.</p>	<p>A detailed review will be undertaken of the extensive historical and recent data sets with regards to soils, geology and hydrogeology for the site. This will include recent site investigation works completed and a detailed Quantified Risk Assessment, which is being completed to assist in the identification of the most appropriate remedial design solution. A review of all source-pathway-receptor linkages will be undertaken and any mitigation measures will be incorporated into the design of the remedial solution.</p>

EIS Remediation of East Tip, Haulbowline, Co. Cork

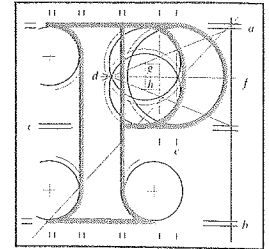
Environmental Discipline	Potential Impacts (at EIS Scoping stage)	Scope of Survey & Assessment
Material Assets	Disturbance to services Use of natural resources Waste management requirements	This will be a desk top assessment, which will examine requirements such as use of natural resources (e.g. subsoil, topsoil), energy requirements for the construction and operational stages, waste management and any issues relating to hazardous materials.
Interactions & Cumulative Impacts	Potential cumulative impacts arising from overlap of construction programme with other planned projects in the surrounding area.	The cumulative impact section of the EIS will be prepared broadly in accordance with the 'Guidelines for the Assessment of Indirect and Cumulative Impacts as well as Impact Interactions', prepared for the European Commission and the EPA Advice Notes on Current Practice.

APPENDIX E.6
SCOPING CONSULTATION RESPONSES

Our Ref: 04.YS0001

Your Ref: MCE0734LT0001COR

An Bord Pleanála



Recipient	FM
Reference No.	10
RPS	64 JAN 2013
File No.	
File Ref.	
PM	

Cathriona Cahill
RPS Planning and Environment,
Innishmore,
Ballincollig,
Co. Cork.

3rd January 2013

Re: Remediation of East Tip, Haulbowline Island, Co. Cork.

Dear Sir/Madam,

I have been asked by An Bord Pleanála to refer to the above-mentioned scoping request.

In response to the said request, please now be advised that the following constitutes the Board's written opinion on the information to be contained in the environmental impact statement to be prepared in respect of the proposed development:

General

The description of the proposed development supplied is a very general one - one which can cover a very wide variety of remediation techniques, including encapsulation of material, removal and replacement of materials, in situ and ex situ on site treatment of materials, removal and treatment of material, and a variety of techniques including sorting, compaction, chemical, biochemical and thermal treatments, including the construction of a wide variety of forms of impoundment or controlled biodegradation structures. Ideally, the EIS should describe precisely the nature of the works, however the Board notes that at this stage of the design proposal such matters as how much material will have to be taken off site for disposal, and the quantities and source of fresh cover material may not be fully identifiable until the works are underway.

Notwithstanding this, the EIS should state specifically which techniques and methods are being excluded from consideration, and clearly (and quantitatively) outline the primary assumptions about the nature and extent of the works.

The EIS should also have a comprehensive and systematic overview of the alternatives to the proposed works, including the 'do nothing' option. The alternatives section should not just address the primary options, but should also address specific elements, such as the choice and design of impermeable top cover (and whether this is necessary), and the alternatives to the creation of a semi-permeable bund along the sea boundary. A comprehensive set of alternatives for post-remediation uses for the site (with an analysis of the health and safety implications of these alternatives) should be an integral part of the EIS.

The EIS should address all statutory requirements, but it is considered that the areas of greatest concern, and the ones which should be addressed in most details are the potential impact on water quality and fish/shellfish in Cork Harbour; the potential impact of dust on human health; the visual impact of the works from key viewpoints (in particular in Cobh) and traffic impacts arising from the import of materials to the site.

The EIS must clearly specify all baseline information and its sources, in addition to setting out clearly any issues of scientific uncertainty or gaps in data.

The EIS must clarify the precise boundaries of the site (including that part of what is now shoreline which may be incorporated into the site by the construction of the external barrier) and include all areas which will be covered by any planning applications, foreshore license applications and the EPA waste licence.

The EIS should include an outline construction management plan to address all required mitigation measures, which would include such matters as hours of work, construction time period, phasing details and proposals for materials stockpiles, temporary buildings, etc.

The EIS shall include plans, elevations, sections and layouts for the existing and for the final proposed landform of the restored site. These plans shall have regard to any possible long term settlement of the site post-restoration, in particular where this may alter surface water drainage patterns.

Humans

Dust impacts: The existing baseline information provides a reasonably detailed overview of the nature of dust arisings from the site and the impacts on nearby receptors. The EIS should focus on mitigation measures and techniques to minimise the generation of dust before, during and after the works, and to protect receptors from such dust arisings.

Noise: The EIS should identify possible receptors for noise impacts from construction works - this should include consultations with the Naval Service to identify if there are any noise-sensitive receptors on the island.

Recreational benefits, use of the site: The EIA should address how engineering requirements for the final landform can be reconciled with providing the highest level of design amenity for the probable recreational after uses and what health and safety requirements will be applied to ensure it can be used safely by the public.

The EIS shall address impacts on the tourism and recreational use of adjoining areas of Cork Harbour, and the potential of impacts on shellfish and other sea fish intended for human consumption or sport fishing.

The EIS shall use clear quantitative models for risk assessment modelling in line with statutory and regulatory requirements - where quality standards are not proscribed in applicable legislation and guidance the EIS should clearly set out the basis for its modelling.

Flora and Fauna

The EIS shall have full regard to existing information on the ecological status of surrounding waters and the impact of heavy metals and other toxins on sea life. An assessment shall be made of the potential for the bioconcentration of toxins (specifically heavy metals and dioxins/PCB's) from the site within the harbour area and how this may impact on species higher up the food chain, in particular those species identified in the conservation objectives for the nearby SAC's and SPA's. All statutory procedures and requirements in relation to Appropriate Assessment under Article 6(3) of the Habitats Directive 92/43/EEC shall be complied with.

The EIS shall address any impacts of the construction works on wintering bird populations within Cork Harbour, in particular those listed under the conservation objectives for the Cork Harbour SPA 004030. Impacts addressed shall include the impact of different options for landscaping the site post-remediation.

Mitigation measures shall include a consideration of the final landform and use of the site and its potential as a wildlife habitat to enhance the existing matrix of habitats in Cork Harbour, both designated and undesignated. A full programme for measuring impacts during and after reclamation on wildlife shall be included - this shall build upon existing baseline information.

Full regard should be had to any potential impact on EU designated sites within Cork Harbour and on migrating birdlife, in addition to impacts on designated shellfish waters.

Soil

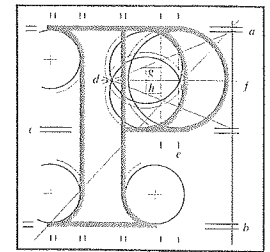
The EIA shall set out requirements for capping materials with regard to reasonable predictions for landscaping and/or natural regeneration of the surface. This shall include details of the hydraulic and drainage characteristics of the final landform and any restrictions which may be required on its recreational uses. The long term stability of any soil cover shall be assessed with regard to both surface water drainage and sea water ingress, in addition to storm and flood damage.

Water

It appears that there is only one monitoring borehole for groundwater, although this is acceptable as the aquifer is partially saline and has no use human consumption. The EIS should include baseline information, modelling information

on the impact of the works (including the impact of an impermeable top layer) and proposals for longer term monitoring.

An Bord Pleanála



The EIS shall have regard to alterations to drainage of the site during construction and following the finishing of an impermeable cover, and shall include provision to reduce run-off from the site to prevent excess silt or other materials entering the sea. It shall include an assessment for management of drainage from the site, including the robustness of the top cover and barriers to erosion or storm damage or sea inundation.

The EIS shall address storm water run-off to the sea during works with particular regard to the potential impact of major rainfall during the works when areas of hazardous materials may be exposed.

If an impermeable top layer is proposed, the EIS shall address the issue of permanent drainage for the site, which shall take account of such issues as erosion or settlement over time.

The EIS shall include modelling data for tidal waterflow within the tip area (i.e. when sea water percolates into the site during high tides), and the interactions of water within the body of the tip and the sea.

Landscape

Different options for the final landform, and the visual impact of differing landscaping/finishing options should be assessed fully.

Cultural Heritage

Haulbowline has a number of interesting buildings and has a rich history associated with its naval past. The East Tip area has little direct relevance to this, but remnants of the Irish Steel plant have cultural importance for the industrial history of Cork and proposals for ensuring that all trace of this history will not be obliterated as part of the remediation works should be assessed. As an example, the EIS may wish to address the possibility of incorporating some material on site (such as the partially smelted metal tipped on the land) into some type of artistic memorial to the industrial history of the island - this would of course be subject to a health and safety assessment of the material - as mitigation for the covering and loss of historic material within the tip. The visual impact and final landform should enhance the overall setting of the harbour and views from Cobh Cathedral.

Material Assets

Roads impact. A reasonable worst case scenario for HGV movements for the importation of top-fill and other material should be made as the basis for an assessment of the impacts on the public road system. Probable proposed routes for materials arising outside the immediate environs of Cork City and Harbour area shall be identified, and an initial traffic impact assessment shall be made to identify maximum capacities for potential haul routes. An assessment should be made of any requirements to upgrade or alter roads (including the access bridge) onto the site, and other possible requirements for minimising dust and noise from additional traffic. The EIS should have regard to requirements under the NRA policy guidance in the Design Manual for Roads and Bridges, the Manual of Contract Documents for Road Works, the Environmental Assessment and Construction Guidelines and the Traffic and Transport Assessment Guidelines (2007), and should indicate if a Road Safety Audit is required.

An assessment is required on the impact of the proposals on the hydraulic and sedimentation pattern of the Harbour with particular regard to existing dredging and navigation requirements by the Port of Cork Company.

Please also find enclosed copies of submissions received by the Board from the following prescribed bodies in respect of the scoping request:

- * National Roads Authority
- * Port of Cork Company
- * Inland Fisheries Ireland
- * Environmental Protection Agency

Acknowledgements of the Board's request for comments were also received from the Minister for Agriculture, Food and the Marine and the Department of Communications, Energy and Natural Resources with no comments to make.

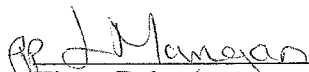
Teil (01) 858 8100 Tel
Glaó Áitiúil 1890 275 175 LoCall
Facs (01) 872 2684 Fax
Láithreán Gréasáin www.pleanala.ie Web
Ríomhphost bord@pleanala.ie Email

I trust that the foregoing is of assistance to you.

If you have any queries in relation to the matter please contact the undersigned officer of the Board.

Please quote the above-mentioned An Bord Pleanála reference number in any correspondence or telephone contact with the Board.

Yours faithfully,

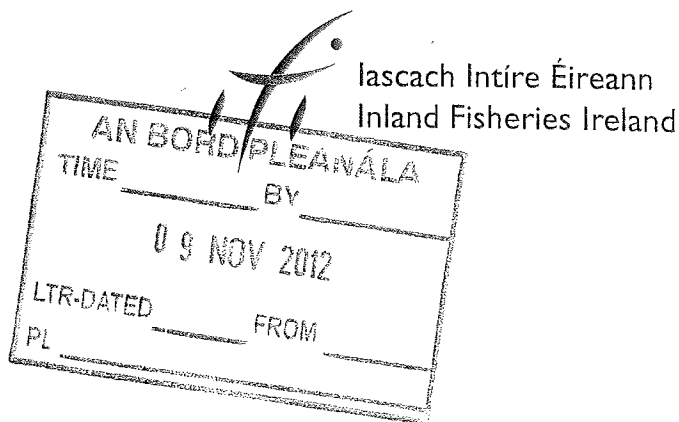


Kieran Doherty
Executive Officer
Direct Line:01-8737248

ch08.ltr

An Bord Pleanála
64 Marlborough Street
Dublin 1

8 November 2012



RE: Remediation of East Tip, Haulbowline Island, Co.Cork- 04.YS0001

A chara,

Thank you for your letter dated 22nd October.

Cork Harbour in general and the waters in the immediate vicinity of Haulbowline Island are significant both as commercial and leisure fisheries. Therefore in the context of the proposed works both habitat protection and the entry of catches from the area into the food chain need careful consideration.

IFI considers that the EIS should address the following

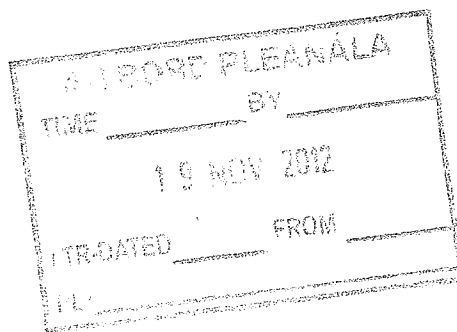
- Impact of escapement from the tip on aquatic life. This should involve pre works, during construction and post construction sampling of fish and other aquatic life and testing for bio accumulation. Control populations from outside the Cork Harbour environs would be needed for comparison purposes.
- Sampling and analysis of tidal muds and waters in the vicinity of the sites pre works, during construction and post construction
- Control measures to be put in place during construction to prevent any escapement to waters from the site as a result of the works combined with a water monitoring programme during the construction phase.
- An assessment of the impact of the construction phase on local usage of the fishery.

Should you require any clarification please contact the undersigned

Yours sincerely,

Michael McPartland
Environmental Officer.

An Bord Pleanála
64 Marlborough St
Dublin 1




Environmental Protection Agency
An Ghníomhaireacht um Chaomnú, Coimhshao

Headquarters, PO Box 3000
Johnstown Castle Estate
County Wexford, Ireland

Ceanncheathrú, Bosca Poist 3000
Eastát Chaisleán Bhaile Sheáin
Contae Loch Garman, Éire

T: +353 53 9160600
F: +353 53 9160699
E: info@epa.ie
W: www.epa.ie

LoCall: 1890 33 55 99

15 November 2012

Re: 04 YS0001

Remediation of East Tip, Haulbowline, Co. Cork

For the attention of Kieran Doherty

Dear Mr Doherty

I refer to your letter dated 22 October 2012 in relation to remediation of the East Tip at Haulbowline, Co. Cork and to your request for a submission on the scoping of an Environmental Impact Statement for the development.

The Agency has engaged with Cork County Council in relation to its ongoing work in preparing for this development. The following comments are offered for the Board's consideration:

1. It is apparent that the site boundaries for planning permission and waste licence applications will be different. It appears that the planning application will include an area outside the waste disposal site that will be used for access to the area to be remediated. The EIS should set out clearly the differences between these bounded areas and explain any such differences to ensure that there is no confusion in what is and is not to be regulated by way of waste licence.
2. Environmental impacts associated with the activity proposed to be authorised under a waste licence will predominantly arise during the construction phase of the works. The EIS should address these impacts and should also assess and address the consequential impact of carrying out the proposed remedial and construction works.
3. The EIS should identify the environmental monitoring that will be carried out:
 - a. during construction works; and
 - b. after completion of works.

It should be the objective of post-works monitoring to demonstrate that the objectives of the remedial works have been achieved and, on an on-going basis into the future, continue to be effective in preventing environmental pollution.

4. The selection of environmental quality standards to be used in the quantitative risk assessment should be described. The reasons for using certain standards and not using

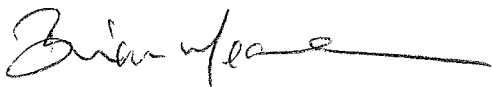


others should be clearly set out, in particular where quality standards are not prescribed in applicable legislation.

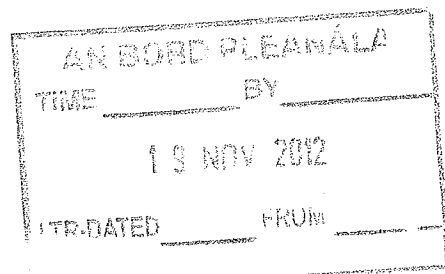
5. The area where the deposited waste meets the sea wall of the island (at the western edge of the East Tip) and the potential for pollutants to move across this barrier towards the naval dockyard should be the subject of assessment in the EIS.
6. The fate of groundwater within the waste body once the existing tidal inflow/outflow pattern has been retarded should be described in terms of the potential for pollutants to become more concentrated within this groundwater and the potential pathways of pollutants to receptors.
7. Any air dispersion modelling should be carried out in accordance with relevant legislation and guidance including *Air Dispersion Modelling from Industrial Installations Guidance Note* (AG4), EPA, 2010. The EIS should distinguish between those modelled emissions arising from the area that will be the subject of a waste licence application and those emissions arising from other aspects of the development to be assessed in the EIS.
8. It is noted that dust is the principal emission to air anticipated from the construction phase of the development. The potential for odorous emissions to arise should be addressed in the EIS.
9. The EIS should describe the alternative approaches that were considered for remediation of the landfill and explain the rationale for the chosen approach.

I trust the above assists. Should you require clarification on any of these points or on other points as may arise, please contact

Yours sincerely



Brian Meaney
Environmental Licensing Programme





Mr. Kieran Doherty
Executive Officer
An Bord Pleanála
64 Marlborough Street
Dublin 1

AN BORD PLEANÁLA	
TIME _____	BY _____
Teach Naomh Máirtín / Bóthar Waterloo / Baile Átha Cliath 4 St. Martin's House / Waterloo Road / Dublin 4	
Tel: Tel: + 353 1 660 2511 Facs: / Fax: + 353 1 668 0009	
LTR-DATED _____	FROM _____
PL _____	

Dáta | Date **31 October, 2012** Ár dTag. | Our Ref. **NRA12-86354** Bhur dTag. | Your Ref.

Re.: Remediation of East Tip, Haulbowline Island, Co. Cork

EIS Scoping referral (case reference 04. YS0001)

Dear Mr. Doherty,

With reference to your correspondence of 22 October, 2012, concerning the above, the Authority outlines the following for the Boards consideration;

The Authority has previously received a similar scoping request from RPS on behalf of Cork County Council. A copy of the NRA scoping response to RPS is attached for the Boards information. The Authority's position remains as set out in the attached scoping submission.

The Authority trusts that the foregoing comments prove of assistance to the Board in dealing with this matter.

Yours sincerely,

Michael McCormack
Policy Advisor (Planning)

Ms. Aileen Fitzgerald,
RPS,
Innishmore,
Ballincollig,
Co. Cork.

Teach Naomh Máirtín / Bóthar Waterloo / Baile Átha Cliath 4
St. Martin's House / Waterloo Road / Dublin 4
Teil: / Tel: + 353 1 660 2511 Facs: / Fax: + 353 1 668 0009

Dáta | Date

Ár dTag. | Our Ref.

Bhur dTag. | Your Ref.

22 October, 2012

MCE0734LT0003COR

Re: Remediation of the East Tip on Haulbowline Island: Scoping of Environmental Impact Statement / Invitation to Make Submissions.

AN BORD PLEANÁLA	
TIME	BY
01 NOV 2012	
LTR-DATED	FROM

Dear Ms. Fitzgerald,

The Authority wishes to advise that it is not in a position to Engage directly with planning applicants in respect to proposed developments. The Authority will endeavour to consider and respond to planning applications referred to it given its status and duties as a statutory consultee under the Planning Acts. The approach to be adopted by the Authority in making such submissions or comments will seek to uphold official policy and guidelines as outlined in the Spatial Planning and National Roads Guidelines for Planning Authorities (DoECLG, 2012). Regard should also be had to other relevant guidance and circulars available at www.nra.ie.

The issuing of this correspondence is provided as best practice guidance only and does not prejudice the NRA's statutory right to make any observations, requests for further information, objections or appeals following the examination of any valid planning application referred.

With respect to EIS scoping issues, the recommendations indicated below provide only general guidance for the preparation of EIS, which may affect the National Roads Network.

The developer should have regard, *inter alia*, to the following;

- Consultations should be had with the relevant Local Authority/National Roads Design Office with regard to locations of existing and future national road schemes,
- The Authority would be specifically concerned as to potential significant impacts the development would have on any national roads in the proximity of the proposed development,
- The developer should assess visual impacts from existing national roads,
- The developer should have regard to any Environmental Impact Statement and all conditions and/or modifications imposed by An Bord Pleanála regarding road schemes in the area. The developer should in particular have regard to any potential cumulative impacts,
- The developer, in conducting Environmental Impact Assessment, should have regard to the NRA DMRB and the NRA Manual of Contract Documents for Road Works,
- The developer, in conducting Environmental Impact Assessment, should have regard to the NRA's Environmental Assessment and Construction Guidelines, including the

Guidelines for the Treatment of Air Quality During the Planning and Construction of National Road Schemes (National Roads Authority, 2006),

- The EIS should consider the Environmental Noise Regulations 2006 (SI 140 of 2006) and, in particular, how the development will affect future action plans by the relevant competent authority. The developer may need to consider the incorporation of noise barriers to reduce noise impacts (see *Guidelines for the Treatment of Noise and Vibration in National Road Schemes* (1st Rev., National Roads Authority, 2004)),
- It would be important that, where appropriate, subject to meeting the appropriate thresholds and criteria and having regard to best practice, a Traffic and Transport Assessment be carried out in accordance with relevant guidelines, noting traffic volumes attending the site and traffic routes to/from the site with reference to impacts on the national road network and junctions of lower category roads with national roads. The Authority's Traffic and Transport Assessment Guidelines (2007) should be referred to in this regard. The scheme promoter is also advised to have regard to Section 2.2 of the NRA TTA Guidelines which addresses requirements for sub-threshold TTA.
- The designers are asked to consult the National Roads Authority's DMRB *Road Safety Audit* (NRA HD 19/09) to determine whether a Road Safety Audit is required,
- In the interests of maintaining the safety and standard of the national road network, the EIS should identify the methods/techniques proposed for any works traversing/in proximity to the national road network.

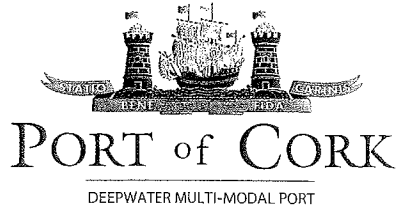
Notwithstanding, any of the above, the developer should be aware that this list is non-exhaustive, thus site and development specific issues should be addressed in accordance with best practise.

I hope that the above comments are of use in your scoping process.

Yours sincerely,

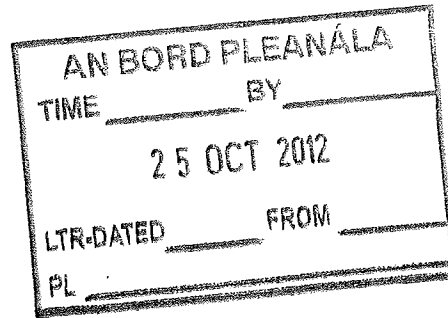
Ray Foley,
Programme & Regulatory Unit.

AN BORD PLEANÁLA	
TIME _____	BY _____
01 NOV 2012	
LTR-DATED _____	FROM _____
PL _____	



An Bord Pleanála,
64, Marlborough Street,
Dublin 1

24th October 2012



Your Ref: 04.YS001

Re: Remediation of East Tip, Haulbowline Island, Co.Cork

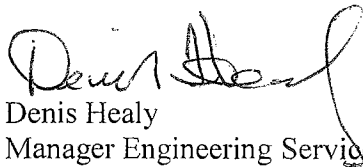
Dear Sir / Madam,

We refer to your letter of 22nd October 2012 in relation to the request from Cork County Council for a written opinion on the information to be contained in an environmental impact statement.

Please see attached a copy of an email of 9th October submitted to RPS in response to its invitation to make a submission in relation to the scoping of the environmental impact statement. We have subsequently met with RPS / Cork County Council and have been given a tour of the site. On that basis we do not see the need to add any further issues to those raised in to our original email.

Kind Regards,

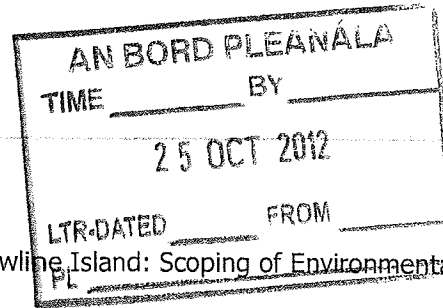
Yours Sincerely,



Denis Healy
Manager Engineering Services

Marguerite O'Connor

Subject: FW: Re Remediation of the East Tip on Haulbowline Island: Scoping of Environmental Impact Statement / Invitation to make Submissions



From: Denis Healy

Sent: 23 October 2012 17:26

To: Marguerite O'Connor

Subject: FW: Re Remediation of the East Tip on Haulbowline Island: Scoping of Environmental Impact Statement / Invitation to make Submissions

From: Denis Healy

Sent: 09 October 2012 16:04

To: 'haulbowline@rpsgroup.com'

Subject: Re Remediation of the East Tip on Haulbowline Island: Scoping of Environmental Impact Statement / Invitation to make Submissions

Hi

I refer to the above and in particular to the notification dated 28th September from Ms Aileen Fitzgerald on behalf of RPS.

At the outset I wish to confirm that the Port of Cork Company welcomes and supports this initiative wholeheartedly. To this end we have already met with Cormac O Suilleabhain and have provided both himself and RPS subsequently with information which may be of assistance in executing this phase of the project.

In specific terms perhaps the following 5 points may be relevant to this EIS Scoping Phase.

1. The Port has a strong presence in the Cobh area which is also the location for its Cruise Terminal. The cruise business is a big economic contributor to the region and the Port has managed to grow the business significantly over recent years. The Port is working with Failte Ireland, Local Authorities and other Tourism interests in promoting the Harbour for Leisure, Cultural, Heritage and Amenity interests. The removal of the eyesore and hazard that is the existing tip will be hugely beneficial to this end.
2. The Port's Strategic Development Plan, which has been endorsed in all regional and local planning frameworks, envisages the relocation in time of all commercial port activities to the Lower Harbour and primarily to Ringaskiddy. The restoration of the Eastern Tip to recreational and amenity uses will compliment port and other industrial uses in the Lower Harbour.
3. On a technical point we note that the works will include containment of the waste "*by constructing an engineered capping system with an outer barrier around the waste body*". In evaluating and advancing the design of such a proposal we request that due regard be had to the local hydraulic and sedimentation impacts of the proposal. The works could potentially impact on the current sedimentation patterns, for instance in the Turning Basin upstream of the Cobh Cruise Terminal. We would wish to be consulted in due course on this issue as the design proceeds and would wish to have any concern addressed at the outset.
4. The Port is authorised to carry out its maintenance dredging requirements in accordance with a Dredging and Dumping Permit now issued by the EPA. Under the permit terms we are obliged to carry out from time to time some testing of the sediments to be dredged and disposed of at the Dumping Grounds off Roche's Point. It goes without saying that there should be no deterioration in the quality of any sediments to be

dredged – temporarily or otherwise - while the works are being carried out. When the design and instruction sequence has been fully defined we would appreciate if we could be consulted on this matter.

5. During a recent discussion with Cormac reference was made to the source of the capping fill. We would be anxious to know what quantity is required and whether it will be sourced on land and brought to the site either by road or barge transport or recovered as marine fill from the adjacent sandbanks. As the scheme develops we might be kept apprised on this matter please.

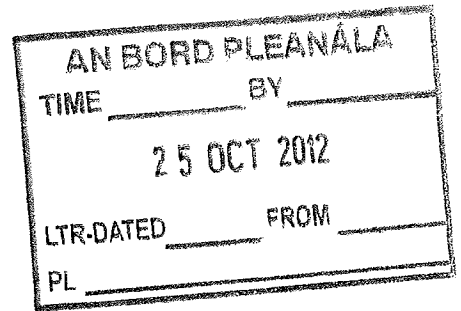
Best of Luck with the Project.


Kind Regards,

Denis

Denis Healy
Manager Engineering Services
Port of Cork Company

Tel: +353 (0)21 4273125
Fax: +353 (0)21 4276484
Mob: +353 (0)86 2253934
Email: dhealy@portofcork.ie
Web: www.portofcork.ie



 Ná chur páipéar amú - an gá duit é seo a clóbhuaileadh ?
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**Cork
Environmental
Forum**

www.cef.ie



c/o Bernie Connolly, Mount Carmel, Kilcolman, Enniskeane, Co.Cork
Tel: (023) 8839700/ 086 8216726 email: bernadette@cef.ie

Submission on East Tip Haulbowline Remediation Link Project

Cork Environmental Forum welcomes the opportunity to respond to the initial consultation on the East Tip Remediation Project at Haulbowline.

CEF would like to submit the following comments:

1. **Appropriate Assessment:** We would like to emphasise the need to comply with Appropriate Assessment in relation to the European Communities (Birds and Natural Habitats) Regulations 2011. As per the Report "Lee Catchment Flood Risk Assessment and Management Study" the area of remediation is within Cork Harbour which is a Natura 2000 SPA site. The ecological importance of the site would imply that a Natura Impact Statement is also required.
2. **Factory Site:** As was mentioned at the consultation meeting it would seem to be more prudent and a better use of the resources and synergies required for the remediation project to also include the factory site. Clearly there are environmental issues with the factory site and through the European Court of Justice ruling did not include the site surely the precautionary principle must take precedence. It seems short-sighted and a waste of resources not to extend the project to address the deficiencies of the whole site.

Remediation of the East Tip on Haulbowline Island: Scoping for EIS

Sophie Preteseille [Sophie.Preteseille@gsi.ie]

Sent: 16 November 2012 16:54

To: haulbowline

Cc: Sophie Preteseille [Sophie.Preteseille@gsi.ie]

Re: Remediation of the East Tip on Haulbowline Island, Co. Cork : Scoping for EIS**Your Ref: MCE0734LT0003COR****File Ref: 310****GSI Ref: 12/99**

Dear Ms Fitzgerald,

With reference to your letter of the 28th September 2012, in relation to the above, I would like to make the following comments on behalf of the Geological Survey of Ireland (GSI).

All relevant datasets and viewers for the "Soils and Geology" and "Hydrology and Hydrogeology" chapters of the EIS are available on GSI website at: www.gsi.ie/mapping.

Geological heritage data is not available yet as national coverage, but counties are gradually being surveyed. Background information and completed county data for geological heritage is available at: <http://www.gsi.ie/Programmes/Heritage+and+Planning/County+Geological+Sites+Audits/>

However Cork has yet to be done, but no site of geological interest is so far listed in our provisional database, therefore no impact is anticipated on geological heritage features. For information, the closest site of interest lies in Ringaskiddy at (grid reference 179000, 064000).

At a later stage, should the project go ahead, GSI would much appreciate a copy of reports detailing any site investigations carried out. The data would be added to GSI's national database of site investigation boreholes into the geotechnical viewer: <http://spatial.dcenr.gov.ie/GeologicalSurvey/GeoTechnicalViewer/index.html>, implemented to provide a better service to the civil engineering sector. Data can be sent to Beatriz Mozo (beatriz.mozo@gsi.ie, 01-678 2795).

I hope you'll find these comments useful and if the GSI can be of help, do not hesitate to contact me.

Regards,
Sophie

Sophie Pr teseille
Geologist
Heritage and Planning Programme

Geological Survey of Ireland
Beggars Bush
Haddington Road
Dublin 4
Ireland

T. +353 (0)1 678 2741

Geological Survey of Ireland: www.gsi.ie
GSI Webmapping: www.gsi.ie/Mapping.htm
County Geological Sites Audits: www.gsi.ie/Programmes/Heritage+and+Planning/County+Geological+Sites+Audits/
Irish historical geological maps: www.geologicalmaps.net
GSI Newsletters: www.gsi.ie/Newsletters/
Events Diary: www.gsi.ie/Events+Diary/

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Tá eolas sa teachtaireacht leictreonach seo (agus b'fhéidir sa chomhaid ceangailte leis) a d'fhéadfadh bheith príobháideach nó faoi rún. Is le h-aghaidh an duine/na ndaoine nó le h-aghaidh an aonáin atá ainmnithe thuas agus le haghaidh an duine/na ndaoine sin amháin atá an t-eolas. Murab ionann tusa agus an té a bhfuil an teachtaireacht ceaptha dó bíodh a fhios agat nach gceadaítear nochtadh, cóipeáil, scaipeadh nó úsáid an eolais agus/nó an chomhaid seo. Más trí earráid a fuair tú an teachtaireacht leictreonach seo cuir, más é do thoil é, an té ar sheol an teachtaireacht ar an eolas láithreach. Deimhnítear leis seo freisin nár aims odh víreas sa phost seo tar éis a scanadh.



UCC

Coláiste na hOllscoile Corcaigh, Éire
University College Cork, Ireland

Recipient	AF
Register No.	01
RPS	09/11/2012
	NCE0703
	Aileen Fitzgerald

Oifig na bhFoirgneamh agus na nEastát
Buildings and Estates Office

University College Cork,
Cork, Ireland

T +353 (0)21 4902480
F +353 (0)21 4903104
E BEReception@ucc.ie
www.ucc.ie/en/build

Ms. Aileen Fitzgerald,
RPS
Innishmore
Ballincollig
Co. Cork

05 November 2012

Dear Aileen,

We acknowledge receipt of your correspondence of 28th September 2012.

We welcome the initiative by Cork County Council to remediate the East tip as outlined.

The University has a presence in Haulbowline where the Coastal and Maritime Research Centre is currently based and we have planning approval to construct a new research facility, the Beaufort Laboratory adjacent to the NMCI at Ringaskiddy.

In this context and for the environmental benefit of the area the University wishes to confirm its support for the remediation proposal.

Regards,

Niall McAuliffe
Capital Projects Officer

Mark Poland
BE, MEngSc, DipMechEng, DipMgtMktg, CEng, FIEI, MCIQB
Director of Buildings and Estates

Evelyn Conway
Administrative Officer

Niall McAuliffe
BE, MEngSc, CDipAF, DipPM, Cong, MIEI
Capital Projects Officer

Paul Prendergast, BE, CEng, MIEI
Buildings Officer

Ollscoil na hÉireann, Corcaigh
National University of Ireland, Cork



North Lee Environmental Health

Feidhmeannacht na Seirbhíse Sláinte
Health Service Executive

HSE South
Floor 3
26 South Mall
Cork
Tel: 021 4921801
Fax: 021 4921824
Email: ehonl@hse.ie

Aileen Fitzgerald,
RPS Group,
Innishmore,
Ballincollig,
Co. Cork

26th October 2012

Your Ref: MCE0734LT0003COR

Recipient	AF
Register No.	3
RPS	31 OCT 2012
Project No.	MCE0734
File Ref.	
PM	Aileen Fitzgerald

Dear Madame

Please find attached the HSE scoping report re the proposed Remediation of the East Tip on Haulbowline Island.

The HSE is keen to ensure the EIA process adequately identifies and assesses impacts of the proposed development on humans and human health.

The Environmental Health Department of the HSE South has outlined comments related to the following areas:

Public Consultation, Noise and Vibration, Air Quality/Dust Generation, Water Quality, Waste Management, Traffic Movement, Construction Staff Facilities.

If you have any further queries in relation to any aspect of this report please contact Miriam Cashell, A/Principal Environmental Health Officer, HSE South, Floor 3, 26 South Mall, Cork.

Yours Sincerely,

Miriam Cashell
A/Principal Environmental Health Officer

North Lee Environmental Health

HSE EIA SCOPING REPORT

Environmental Health Service Consultation Report
*(as a Statutory Consultee (Planning and Development Acts 2000,
& Regs made there under).*

<u>Date:</u>	26th October 2012
<u>Type of consultation:</u>	Scoping
<u>Planning Authority:</u>	An Bord Pleanala
<u>Reference Number:</u>	MCE0734LT0003COR
<u>Applicant:</u>	RPS Group/Cork County Council
<u>Proposed Development:</u>	Remediation of the East Tip on Haulbowline Island.

General Introduction.

This report only comments on Environmental Health (EH) impacts of the proposed development. The HSE is keen to ensure the EIA process adequately identifies and assesses impacts of the proposed development on humans and human health. To this effect, the following matters need to be included in your assessment.

1. Public Consultation

An early, intensive and efficient public consultation exercise should be carried out as per relevant guidance documents. There should be absolute clarity provided on the proposed project for the parties affected. There should be an identification within the EIS as to how the public consultation has influenced the decision making and what outcomes were achieved by the consultation process. It is noted from your correspondence that a public consultation forum was held in Cobh. It is the view of this department that consultation should also be held in the Ringaskiddy area which is closer to the development.

2. Noise and Vibration

To ensure noise assessment modelling is appropriate, site assessment should identify the noise sensitive locations. The baseline monitoring and impact predictions at noise sensitive locations should be as per the relevant BS and ISO standards. Particular attention shall be given to construction noise with impact and mitigation measures specific to the Haulbowline site and surrounding areas. The moving of metal, if it is on site, has been known to cause serious noise issues and should be assessed.

North Lee Environmental Health

3. Air Quality/Dust Generation

Remediation of the site will involve disturbance of soil that may be contaminated.

The impact of dust generation from excavation, construction machinery and general construction traffic should be assessed and a dust minimisation plan or similar mitigation measures should be put in place that meet relevant standards for construction sites.

There may be real health effects of contaminated dust in this area due to the waste on site. Predictive modelling on the possible human health impacts of dust on the local community and the Naval base should be carried out.

The possible impacts of NO_x levels on human health from diesel machinery during construction should also be assessed.

4. Water Quality

The potential impacts of the direct or indirect release of contaminants into the adjacent water body should be assessed with particular reference to the construction phase of the development. A thorough Hydrogeological assessment of the site should be carried out in relation to this matter.

A water quality report should also be provided. Local compositional and microbiological sampling should be carried out to determine baseline data. Ongoing monitoring of the water quality in the surrounding area should also be carried out throughout the term of the remediation of the site.

5. Waste Management.

An assessment of the type and volume of waste on site is essential. The design of the capping and barrier system should be developed in such a way as to ensure the human health of those using the site as an end use amenity is not going to be impacted. Any possibly harmful contaminants should be removed from the site and disposed of in the correct manner prior to the capping and barrier system being installed.

The positioning and zoning of the different types of waste is important so as if there was a fire on site the products of combustion are known.

6. Traffic Movement

The additional impact of traffic movement on humans in and around the local area should be assessed and mitigated against.

North Lee Environmental Health

7. Construction Staff Facilities

The location of the construction yard(s) should be clearly identified and consideration given to waste water, sanitary facilities and drinking water for the site.

A pest control system for the site may be necessary and should be implemented where necessary.

As per your correspondence, I trust these matters will be fully considered in your EIA on the proposed development.

If you have any further queries please do not hesitate to contact this department by your preferred means.



Miriam Cashell

A/Principal Environmental Health Officer.

All correspondence or any queries with regard to this report including acknowledgement of this report should be forwarded to Miriam Cashell A/PEHO, HSE, North Lee Environmental Health Department, Floor 3, 26 South Mall, Cork.

Merchants Quay
Kilrush,
County Clare

Tel: 00 353 86 8545450
Fax: 00 353 65 9052326
Email: Simon.Berrow@iwdg.ie

Recipient	AF
Register No.	1
RPS	25 OCT 2012
Project No.	1000734
File Ref.	1000734
PM	Aileen Fitzgibbon

24 October 2012

RE: Haulbowline Island

Dear Aileen,

Many thanks for your letter regarding the proposed remediation on Haulbowline Island in Cork Harbour.

The IWDG welcome the remediation proposal and would request the potential impact on cetaceans (whales, dolphins and porpoise) is considered. Cork Harbour is an important habitat for cetaceans. We have many records of a wide range of species including both species on Annex II of the Habitats Directive (harbour porpoise and bottlenose dolphin) as well as common, striped and Risso's dolphin and killer whales.

More specifically we have been monitoring a group of 6-10 bottlenose dolphins in the mouth of Cork harbour since February 2006. These dolphins have been largely resident in the area and have attracted a lot of local attention. They could be particularly vulnerable to this development and are entitled to strict protection under Annex II of the EU Habitats Directive..

As there is no detail on the remediation process we can only flag this as an issue and request you keep us informed when the methodology is developed.

Yours sincerely,



Dr Simon Berrow
IWDG Executive Officer

**Ms. Aileen Fitzgerald,
 RPS,
 Innishmore,
 Ballincollig,
 Co. Cork.**

Recipient	AF
Register No.	4
RPS	24 OCT 2012
Project No.	MCE 0734
File Ref.	MCE0734
PM	Aileen Fitzgerald

Teach Naomh Máirtín / Bóthar Waterloo / Baile Átha Cliath 4
 St. Martin's House / Waterloo Road / Dublin 4
 Teil: / Tel: + 353 1 660 2511 Facs: / Fax: + 353 1 668 0009

Dáta | Date
22 October, 2012

Ár dTag. | Our Ref.

Bhur dTag. | Your Ref.
MCE0734LT0003COR

Re: Remediation of the East Tip on Haulbowline Island: Scoping of Environmental Impact Statement / Invitation to Make Submissions.

Dear Ms. Fitzgerald,

The Authority wishes to advise that it is not in a position to engage directly with planning applicants in respect to proposed developments. The Authority will endeavour to consider and respond to planning applications referred to it given its status and duties as a statutory consultee under the Planning Acts. The approach to be adopted by the Authority in making such submissions or comments will seek to uphold official policy and guidelines as outlined in the Spatial Planning and National Roads Guidelines for Planning Authorities (DoECLG, 2012). Regard should also be had to other relevant guidance and circulars available at www.nra.ie.

The issuing of this correspondence is provided as best practice guidance only and does not prejudice the NRA's statutory right to make any observations, requests for further information, objections or appeals following the examination of any valid planning application referred.

With respect to EIS scoping issues, the recommendations indicated below provide only general guidance for the preparation of EIS, which may affect the National Roads Network.

The developer should have regard, *inter alia*, to the following;

- Consultations should be had with the relevant Local Authority/National Roads Design Office with regard to locations of existing and future national road schemes,
- The Authority would be specifically concerned as to potential significant impacts the development would have on any national roads in the proximity of the proposed development,
- The developer should assess visual impacts from existing national roads,
- The developer should have regard to any Environmental Impact Statement and all conditions and/or modifications imposed by An Bord Pleanála regarding road schemes in the area. The developer should in particular have regard to any potential cumulative impacts,
- The developer, in conducting Environmental Impact Assessment, should have regard to the NRA DMRB and the NRA Manual of Contract Documents for Road Works,
- The developer, in conducting Environmental Impact Assessment, should have regard to the NRA's Environmental Assessment and Construction Guidelines, including the

Guidelines for the Treatment of Air Quality During the Planning and Construction of National Road Schemes (National Roads Authority, 2006),

- The EIS should consider the Environmental Noise Regulations 2006 (SI 140 of 2006) and, in particular, how the development will affect future action plans by the relevant competent authority. The developer may need to consider the incorporation of noise barriers to reduce noise impacts (see *Guidelines for the Treatment of Noise and Vibration in National Road Schemes* (1st Rev., National Roads Authority, 2004)),
- It would be important that, where appropriate, subject to meeting the appropriate thresholds and criteria and having regard to best practice, a Traffic and Transport Assessment be carried out in accordance with relevant guidelines, noting traffic volumes attending the site and traffic routes to/from the site with reference to impacts on the national road network and junctions of lower category roads with national roads. The Authority's Traffic and Transport Assessment Guidelines (2007) should be referred to in this regard. The scheme promoter is also advised to have regard to Section 2.2 of the NRA TTA Guidelines which addresses requirements for sub-threshold TTA.
- The designers are asked to consult the National Roads Authority's DMRB *Road Safety Audit* (NRA HD 19/09) to determine whether a Road Safety Audit is required,
- In the interests of maintaining the safety and standard of the national road network, the EIS should identify the methods/techniques proposed for any works traversing/in proximity to the national road network.

Notwithstanding, any of the above, the developer should be aware that this list is non-exhaustive, thus site and development specific issues should be addressed in accordance with best practise.

I hope that the above comments are of use in your scoping process.

Yours sincerely,



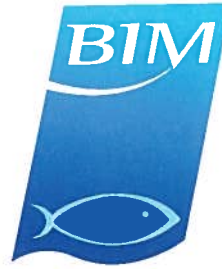
Ray Foley,
Programme & Regulatory Unit.

P.O. Box No. 12
Crofton Road
Dun Laoghaire
Co. Dublin, Ireland.

Tel +353 1 214 4100
Fax +353 1 284 1123
<http://www.bim.ie>

Bosca OP 12
Bóthar Crofton
Dún Laoghaire
Co. Bhaile Átha Cliath, Éire.

Teil +353 1 214 4100
Facs +353 1 284 1123
<http://www.bim.ie>



Bord Iascaigh Mhara
Irish Sea Fisheries Board

Ms Aileen Fitzgerald
RPS Consulting Engineers
Ballincollig
Co Cork
Ireland

22nd October 2012

Dear Ms Fitzgerald

Re: Remediation of the East Tip on Hawbowline Island: Scoping of Environmental Impact Statement to make submissions.

I refer to your letter of 28th September 2012. The Aquaculture Development Section of Bord Iascaigh Mhara welcomes the opportunity to respond to this proposal and has the following comments to make:

- Licenced Aquaculture does take place in Cork Harbour. There is no current aquaculture within the vicinity of Hawbowline, but there are a number of applications for the culture of Oysters. I enclose a map of the areas under application for your information.
- Any impacts on the water quality of the area as a consequence of the remediation works will potentially impact on aquaculture operations within the area and should be taken into consideration within the EIA process. There are a number of designated shellfish waters located east of Hawbowline in the Rostellan area. Details of these designations, maps and accompanying Pollution Reduction Programmes can be obtained from the DECLG website: <http://www.environ.ie/en/Environment/Water/WaterQuality/ShellfishWaterDirective/>. Impacts are only likely to arise in the construction phase when the actual remediation is being undertaken. Long term redevelopment and re-utilisation of the site as an amenity / recreation area should include appropriate sanitary services to protect water quality at discharge points.

I hope that you will take time to consider our submission. Please do not hesitate to contact me should you require any further information.

Yours Sincerely

Grainne O'Brien
Environment Officer
Encl.

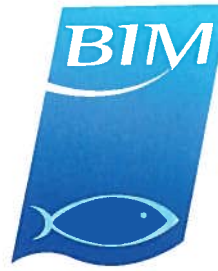
Recipient	AF
Register No.	4
RPS	23 OCT 2012
Project No.	Z
File Ref.	NEE 0734
PM	<i>Aileen</i>

P.O. Box No. 12
Crofton Road
Dun Laoghaire
Co. Dublin, Ireland.

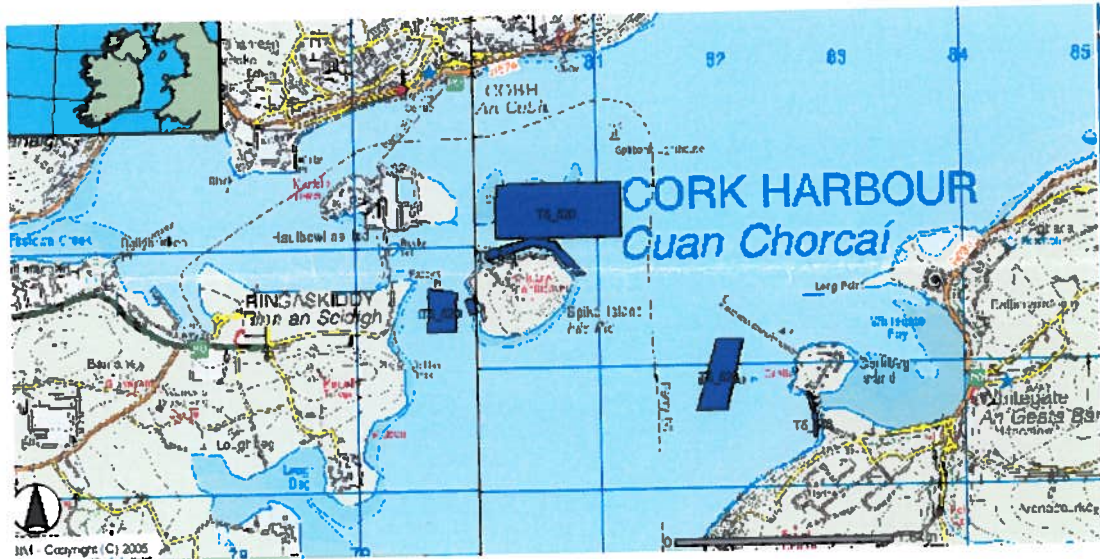
Tel +353 1 214 4100
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<http://www.bim.ie>

Bosca OP 12
Bóthar Crofton
Dún Laoghaire
Co. Bhaile Átha Cliath, Éire.

Teil +353 1 214 4100
Facs +353 1 284 1123
<http://www.bim.ie>



Bord Iascaigh Mhara
Irish Sea Fisheries Board



Aquaculture Licence applications in the Hawbowline Area of Cork Harbour.

National Fisheries College, Greencastle, Co. Donegal
Regional Fisheries Centre: Castletownbere, Co. Cork

Regional offices:

Killybegs, Co. Donegal; Galway; Howth, Co. Dublin

International offices:

Paris: France; Madrid; Spain.

FAO Ms Aileen Fitzgerald

Dr. Mary T. O'Mahony (Specialist in Public Health Medicine) [MaryT.OMahony@hse.ie]

Sent: 18 October 2012 15:42**To:** haulbowline**Cc:** Dr. Elizabeth Keane (Director of Public Health) [Elizabeth.Keane@hse.ie]; Kelleher, Kevin [kevin.kelleher@hse.ie]**Attachments:** HIA Desktop Interactive Tool.doc (2 MB)

Dear Ms Fitzgerald / Aileen

I have reviewed the RPS correspondence dated 28th September 2012, received by email of 3rd inst. The EIS scoping request concerns remediation of the East Tip hazardous waste site on Haulbowline Island by Cork County Council who has appointed RPS to do the Environmental Impact Statement for the planning application for a waste licence. This hazardous waste site on Haulbowline Island has been the subject of public concern as represented inter alia by the Cork Harbour Alliance for a Safe Environment (CHASE) Group. It is prudent to address potential public concerns at the outset. I note that RPS planned to hold a public meeting in Cobh on Thursday 11th October.

Much has already been documented about this site. The Department of the Environment, Community and Local Government (DoE) previously commissioned White Young Green Environmental Ltd to investigate and report on the site. The White Young Green Reports are available on the DoE's website. In addition, there is extensive air monitoring data for the Cork Harbour area available from the UCC Dept of Chemistry studies for the EPA funded ELIPSE project, available on the EPA website STRIVE reports section.

I note the RPS undertaking to address "likely impacts of the proposed development during the construction stage and the end use of the site as an amenity and recreational area" and that "an assessment of the alternatives examined will also be included". That RPS has provided an appropriate list of potential impacts for examination is noted.

While the Health Service Executive has a responsibility to monitor public health status, the formal responsibility for environmental impact assessment rests with the Local Authorities, An Bórd Pleanála, and the Environmental Protection Agency (EPA).

The Environmental Protection Agency's "Advice Notes on Current Practice in the preparation of Environmental Impact Statements" advises *that the description and analysis of impacts on human beings should describe human beings in the existing environment: its context, character, significance and sensitivities: the potential impacts on human beings and the proposed mitigation measures to prevent adverse impacts on human beings.*

I advocate that attention be given to a. the examination of potential impacts (economic opportunities, health effects, nuisance, and risks/hazards) on human beings and b. the provision of user-friendly information on this issue in the Environmental Impact Statement. At a minimum, the impacts on human beings might be subject to a desk based assessment using the results of environmental tests already available. One such tool is attached for information.

Yours sincerely

Dr. Mary T O'Mahony
Specialist in Public Health Medicine, MCRN 00299

*Department of Public Health,
HSE South (Cork & Kerry),
Floor 2, Block 8,
St. Finbarr's Hospital, Douglas Road, Cork
Tel: 021 4927601
E-mail: MaryT.OMahony@hse.ie
<http://www.hse.ie/publichealth>*

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Re Remediation of the East Tip on Haulbowline Island: Scoping of Environmental Impact Statement / Invitation to make Submissions

Denis Healy [dhealy@portofcork.ie]

Sent: 09 October 2012 16:04

To: haulbowline

Hi

I refer to the above and in particular to the notification dated 28th September from Ms Aileen Fitzgerald on behalf of RPS.

At the outset I wish to confirm that the Port of Cork Company welcomes and supports this initiative wholeheartedly. To this end we have already met with Cormac O Suilleabhain and have provided both himself and RPS subsequently with information which may be of assistance in executing this phase of the project.

In specific terms perhaps the following 5 points may be relevant to this EIS Scoping Phase.

1. The Port has a strong presence in the Cobh area which is also the location for its Cruise Terminal. The cruise business is a big economic contributor to the region and the Port has managed to grow the business significantly over recent years. The Port is working with Failte Ireland, Local Authorities and other Tourism interests in promoting the Harbour for Leisure, Cultural, Heritage and Amenity interests. The removal of the eyesore and hazard that is the existing tip will be hugely beneficial to this end.
2. The Port's Strategic Development Plan, which has been endorsed in all regional and local planning frameworks, envisages the relocation in time of all commercial port activities to the Lower Harbour and primarily to Ringaskiddy. The restoration of the Eastern Tip to recreational and amenity uses will compliment port and other industrial uses in the Lower Harbour.
3. On a technical point we note that the works will include containment of the waste "*by constructing an engineered capping system with an outer barrier around the waste body*". In evaluating and advancing the design of such a proposal we request that due regard be had to the local hydraulic and sedimentation impacts of the proposal. The works could potentially impact on the current sedimentation patterns, for instance in the Turning Basin upstream of the Cobh Cruise Terminal. We would wish to be consulted in due course on this issue as the design proceeds and would wish to have any concern addressed at the outset.
4. The Port is authorised to carry out its maintenance dredging requirements in accordance with a Dredging and Dumping Permit now issued by the EPA. Under the permit terms we are obliged to carry out from time to time some testing of the sediments to be dredged and disposed of at the Dumping Grounds off Roche's Point. It goes without saying that there should be no deterioration in the quality of any sediments to be dredged – temporarily or otherwise - while the works are being carried out. When the design and construction sequence has been fully defined we would appreciate if we could be consulted on this matter.
5. During a recent discussion with Cormac reference was made to the source of the capping fill. We would be anxious to know what quantity is required and whether it will be sourced on land and brought to the site either by road or barge transport or recovered as marine fill from the adjacent sandbanks. As the scheme develops we might be kept apprised on this matter please.

Best of Luck with the Project.

Kind Regards,

Denis

Denis Healy
Manager Engineering Services
Port of Cork Company

Tel: +353 (0)21 4273125

Fax: +353 (0)21 4276484

Mob: +353 (0)86 2253934

Email: dhealy@portofcork.ie

Web: www.portofcork.ie

 Ná chur páipéar amú - an gá duit é seo a clóbhuaileadh ?
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Oifig an Aire

44 Sráid Chill Dara, Baile Átha Cliath 2, Éire.

Office of the Minister

44 Kildare Street, Dublin 2, Ireland.



An Roinn Iompair,
Turasóireachta agus Spóirt

Department of Transport, Tourism and Sport



Tel: +353 1 670 7444 Local: 1890 443311 Fax: +353 1 604 1183 Web: www.dttas.ie Email: minister@dttas.ie

Recipient	AF.
Register No.	01
RPS	04 OCT 2012
Project No.	MCE0734
File Ref.	lt
PM	Aileen Fitzgerald

2 October 2012

Our Ref: MLVC12/2707

Your Ref: MCE0734LT0003COR

Ms. Aileen Fitzgerald
RPS Group Limited
Innishmore
Ballincollig
Co. Cork

Dear Ms. Fitzgerald,

On behalf of the Minister for Transport, Tourism & Sport, Mr. Leo Varadkar, T.D., I wish to acknowledge receipt of your letter dated 28th September 2012 regarding the remediation of the East Tip on Haulbowline Island: scoping of Environmental Impact Statement/ invitation to make submissions.

I have forwarded your letter to the relevant officials within the Department for their attention and direct reply to you, if appropriate.

Yours sincerely,

Chris Smith
Private Secretary to Minister Varadkar



Ms Aileen Fitzgerald
RPS
Innishmore
Ballincollig
Co Cork

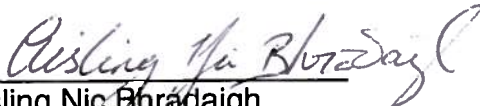
Rec'd:	AF
Ref:	6
RPS	63 OCT 2012
Pr:	MCC0734
File Ref:	MCC0734-03
P/A	Aileen Fitzgerald

1st October 2012

Dear Ms Fitzgerald

On behalf of Mr Pat Rabbitte, T.D., Minister for Communications, Energy and Natural Resources, I wish to acknowledge receipt of your recent letter dated 28th September 2012, regarding Remediation of the East Tip on Haulbowline Island : Scoping of Environmental Impact Statement / Invitation to Make Submissions.

Yours sincerely


Aisling Nic Bhrádaigh
Minister Pat Rabbitte's Office

Fáilte Ireland EIS and Tourism Guidelines 2011

Jill Stewart [Jill.Stewart@failteireland.ie]

Sent: 03 October 2012 14:25**To:** haulbowline**Attachments:** EIS and Tourism Guidelines~1.doc (534 KB) ; ATT00001.txt (640 B) ; ATT00002.htm (669 B)

Dear Ms Fitzgerald,

I wish to acknowledge receipt of your recent letter to Paddy Mathews, Fáilte Ireland in relation to Remediation of the East Tip on Haulbowline Island: Scoping of Environmental Impact Statement,

I attach a copy of Fáilte Ireland Guidelines for the treatment of tourism in an EIS, which we recommend should be taken into account in preparing the EIS.

Yours sincerely,

Jill Stewart.

Jill Stewart
Destinations Development
Fáilte Ireland
88-95 Amiens Street
Dublin 1
Tel: 01 8847202
Jill.Stewart@failteireland.ie
www.failteireland.ie

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Fáilte Ireland

National Tourism Development Authority

Guidelines on the treatment of tourism in an Environmental Impact Statement

1. Introduction

Tourism is a significant component of the Irish Economy – estimated to employ approximately 190,000 people – and contributing over €5.3 billion in spending to the economy in 2009. The environment is one of the main resources upon which this activity depends – so it is important that the EIS evaluates whether and how the interacting impacts of a project are likely to affect tourism resources.

The purpose of this short note is to provide guidance on how these impacts can be assessed through the existing EIA process. Undertaking an EIA is governed by the EIA Advice Notes published by the EPA. These Advice Notes contain detailed guidance on how to describe and evaluate the effects arising from a range of projects, including tourism projects.

These guidelines were written with the assistance of Conor Skehan, Head of Department of Environment and Planning, Dublin Institute of Technology.

2. Tourism and the Environment

There are two interactions between tourism and the environment.

1. Impacts caused by Tourism Projects
2. Impacts affecting Tourism (e.g. the quality of a destination or a tourism activity)

Impacts caused by Tourism Projects

Tourism projects can give rise to effects on the environment. These are specifically dealt with under a number of Project Types in the Advice Notes, specifically:

12 TOURISM AND LEISURE

- a. Ski-runs, ski-lifts and cable-cars where the length would exceed 500 metres and associated developments. Project Type 20
- b. Sea water marinas where the number of berths would exceed 300 and fresh water marinas where the number of berths would exceed 100. Project Type 10
- c. Holiday villages which would consist of more than 100 holiday homes outside built-up areas; hotel complexes outside built-up areas which would have an area of 20 hectares or more or an accommodation capacity exceeding 300 bedrooms. Project Type 28
- d. Permanent camp sites and caravan sites where the number of pitches would be greater than 100. Project Type 28
- e. Theme parks occupying an area greater than 5 hectares. Project Type 29

Figure 1 The Advice Notes contain detailed descriptions on how to describe and evaluate the effects arising from a range of tourism projects.

Impacts affecting Tourism

Environmental effects of other projects on tourism are not specifically addressed in the Advice Notes. Taking account of the significance of tourism to the Irish economy a specialist topic of 'Tourism' has been prepared to facilitate a systematic evaluation of effects on this sector within the format laid down for other parts of the Environmental Impact Statement.

It is not intended that the assessment of effects on tourism should become a separate section of the Impact Statement, instead it is intended to become a specialist sub-section of the topic 'Human Beings' which is currently described in Section 2 of the Advice Notes

3. Tourism in the Existing Environment

Introduction

Visitor attitude surveys reveal that the following factors – in order of priority – are the reasons that tourists visit and enjoy Ireland:

- Beautiful scenery
- Friendly & hospitable people
- Safe & Secure
- Easy, relaxed pace of life
- Unspoilt environment
- Nature, wildlife, flora
- Interesting history & culture
- Plenty of things to see and do
- Good range of natural attractions

It is noteworthy that over half of the factors listed are environmental and that all others are related to the way of life of the people. The following describes how these factors are considered within an EIS, set out under EIA topic headings, and how they interact with tourism.

Beautiful scenery

This is covered in the '*Landscape*' Section. Particular attention needs to be paid to effects on views from existing purpose-built tourism facilities, especially hotels, as well as views from touring routes and walking trails. It is important to note that there appears to be evidence that the visitor's expectations of 'beautiful' scenery does not exclude an admiration of new modern developments – such as windfarms – which appear to be seen as indicative of an modern, informed and responsible attitude to the environment.

Friendly & hospitable people

This is not an environmental factor though it is indirectly covered under the '*Human Beings*' section of the EIS. The principal factor is the ratio of visitors to residents. This is of less significance in areas with long-established patterns of tourism.

Safe & Secure

This is not an environmental issue – though some of the factors that are sometimes covered under the heading of '*Human Beings*' – such as social inclusion or poverty – can point to likely effects and interactions.

Easy, relaxed pace of life

This is not an environmental issue though it is partially covered under '*Human Beings*' – see comments above.

Unspoilt environment

This is covered under the sections dealing with '*Landscape*', '*Flora*' and '*Fauna*' and to a lesser extent under emissions to '*Water*' and '*Air*'. In some instances traffic congestion, especially in rural areas, can be an issue, this is usually covered within '*Material Assets*'.

Nature, wildlife, flora

This is principally covered under the headings of '*Flora*' and '*Fauna*' and to a lesser extent by '*Landscape*', '*Water*' and '*Air*'. The principal issues being to avoid any effects that might reduce the health or extent of the habitats. This can occur either directly, by impinging on the site, or indirectly, through emission, that can affect the natural resources, like clean water, which the habitat depends on. It also considers effect on physical access to and visibility of these sites. Occasionally there are concerns about the disturbance or wear and tear of visitor numbers to such sites.

Interesting history & culture

This is principally covered under '*Cultural Heritage*' and, to a lesser extent, under '*Human Beings*'. The principal issues being to avoid damage to sites and structures of cultural, historical, archaeological or architectural significance – and to their contexts or settings. It also considers effect on physical access to and visibility of these sites. Occasionally there are concerns about the wear and tear of visitor numbers to such sites.

Plenty of things to see and do.

This is not an environmental issue though it is partially covered by the '*Human Beings*' section, where the tourism resources of an area are described and assessed.

Good range of natural attractions

This is covered by the '*Landscape*', '*Flora*', '*Fauna*', and '*Cultural Heritage*' sections of the EIS.

4. Project factors affecting Tourism

Introduction

Tourism can be affected both by the structures or emissions of new developments as well as by interactions between new activities and tourism activities – for example the effects of high volumes of heavy goods vehicles passing through hitherto quiet, scenic, rural areas. Tourism can be affected by a number of the characteristics of the new project such as:

- New Developments
 - Social Considerations
 - Land-uses and Activities
-
- *New Developments* - will the development stimulate or suppress demand for additional tourism development in the area? If so, what type, how much and where? Marinas, golf courses, other major sporting facilities as well as theme parks and larger conference facilities can all stimulate the emergence of new accommodation, catering and leisure facilities often within an extensive area around a new primary visitor facility. Extensive urbanisation and large scale infrastructure as well as certain processing and extractive industries all have the potential to suppress demand for additional tourism – but usually only in the immediate locality of the new development. It should be noted however, that some types of new or improved large scale infrastructure – such as roads – can improve the visitor experience – by increasing safety and comfort or can convey a sense of environmental responsibility – such as wind turbines.
 - *Social Consideration* - will the development change patterns and types of activity and land use? Will it affect the demographics, economy or social dynamics of the locality?
 - *Land-use* - will there be severance, loss of rights of way or amenities, conflicts, or other changes likely to ultimately alter the character and use of the tourism resources in the surrounding area?

Existing Tourism

In the area likely to be affected by the proposed development, the following attributes of tourism, or the resources that sustain tourism, should be described under the following headings.

Note that the detailed description and analysis will usually be covered in the section dealing with the relevant environmental topic – such as '*Landscape*'. Only the relevant finding as to the likely significance to, or effect on, tourism needs to be summarised in this section.

Context

Indicate the location of sensitive neighbouring tourism resources that are likely to be directly affected, and other premises which although located elsewhere, may be the subject of secondary impacts such as alteration of traffic flows or increased urban development. The following should be noted in particular:

- Hotels, conference centres, holiday accommodation – including holiday villages, holiday homes, and caravan parks.
- Visitor centres, Interpretive centres and theme parks
- Golf courses, adventure sport centres and other visitor sporting facilities
- Marinas and boating facilities
- Angling facilities
- Equestrian facilities
- Tourism-related specialist retailers and visitor facilities
- Historic and Cultural Sites
- Pedestrian, cycling, equestrian, vehicular and coach touring routes

Indicate the numbers of premises and visitors likely to be directly affected directly and indirectly.

Identify and quantify, where possible, their potential receptors of impacts, noting in particular transient populations, such as drivers, walkers, seasonal and other non-resident groups.

Describe any significant trends evident in the overall growth or decline of these numbers, or of any changes in the proportion of one type of activity relative to any other.

Indicate any commercial tourism activity which likely to be directly affected, with resultant environmental impacts.

Character

Indicate the occupations, activities or interests of principal types of tourism in the area. – Where relevant, describe the specific environmental resources or attributes in the existing environment which each group uses or values; where relevant, indicate the time, duration or seasonality of any of those activities. For example describe the number of guides, boats and anglers who use a salmon fishery and the duration of the salmon season as well as the quantity and type of local accommodation that is believed to be used by the anglers.

Significance

Indicate the significance of the principal tourism assets or activities likely to be affected. Refer to any existing formal or published designation or recognition of such significance. Where possible provide an estimate of the contribution of such tourism activities to the local economy. For instance refer to the number of annual visitors to a tourism attraction or to the grading of a hotel.

Sensitivity

Describe any significant concerns, fears or opposition to the development known to exist among tourism interests. Identify, where possible, the particular aspect of the development which is of concern, together with the part of the existing tourism resource which may be threatened. For instance describe the extent of a potential visual intrusion onto a site of historic significance which is the main local tourist attraction.

5. Impacts on Tourism

"Do Nothing" Impact;

Describe how trends evident in the existing environment will continue and how these trends will affect tourism.

Predicted impact;

- Describe the location, type, significance, magnitude/extent of the tourism activities or assets that are likely to be affected.

- Describe how the new development will affect the balance between long-established and new dwellers in an area and its affect on the cultural or linguistic distinctiveness of an area. For example describe the effect of a new multi-national population required for an international call-centre located in a Gaeltacht area.

- Describe how changes in patterns of employment, land use and economic activity arising from the proposed development will affect tourism, for example, illustrating how a new industrial development will diversify local employment opportunities thereby reducing the area's unsustainable over-reliance on seasonal tourism.

- Describe the consequences of change, referring to indirect, secondary and cumulative impacts on tourism; Examples can include describing how the new development may lead to a reduced assimilative capacity for traffic or water during the peak of the tourism season or how new urbanism combined with existing patterns of tourism may lead to unsustainable levels of pedestrian traffic through a sensitive habitat.

- Describe the potential for interaction between changes induced in tourism and other uses that may affect the environment – for instance increasing new tourism-related housing affecting water resources or structures

- Describe the worst case for tourism if all mitigation measures fail.

6. Mitigating adverse impact on Tourism

Describe the mitigation measures proposed to:

- *avoid* sensitive tourism resources – such as views, access, and amenity areas including habitats as well as historical or cultural sites and structures.
- *reduce* the exposure of sensitive resources to excessive environmental burdens arising from the development's emissions or volumes of traffic [pedestrian and vehicular], and/or losses of amenity arising from visually conspicuous elements of the development – for example by prioritizing visual screening of views from a hotel towards a quarry.
- *reduce* the adverse effects to tourism land uses and patterns of activities – especially through interactions arising from significant changes in the intensity of use or contrasts of character or appearance – for example by separating traffic routes for industrial and tourism traffic.
- *remedy* any unavoidable significant residual adverse effects on tourism resources or activities, for example by providing alternative access to tourism amenities – such as waterways or monuments.



Office of the Minister for Agriculture, Food and the Marine, Dublin 2.

Oifig an Aire Talmhaíochta, Bia agus Mara, Baile Átha Cliath 2.

3 October 2012

Ms Aileen Fitzgerald
RPS
Innishmore
Ballincollig
Co Cork

Recipient:	AF
Ref No.	1
RPS	05 OCT 2012
No.	
Ref.	MCE0734
File	Aileen P

PLEASE QUOTE REF NUMBER ON ALL CORRESPONDENCE.

Our Ref: 2012/44876N /JC HO

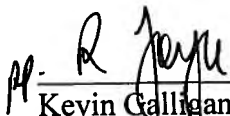
Your Ref: MCE0734LT0003COR

Dear Ms Fitzgerald

I wish to acknowledge receipt of your recent correspondence addressed to the Minister for Agriculture, Food and the Marine, Simon Coveney, TD concerning Remediation of the East Tip on Haulbowline Island: Scoping of Environmental Impact Statement/Invitation to make submissions.

I will undertake to bring your correspondence to the Minister's attention at the next practical juncture. In the interim, I have forwarded a copy of your correspondence for the attention of relevant Department officials.

Yours sincerely,


Kevin Galligan
Private Secretary



An Taisce
The National Trust for Ireland

An Taisce – The National Trust for Ireland
Tailor's Hall, Back Lane, Dublin 8

**Aileen Fitzgerald,
RPS
Innishmore,
Ballincollig,
Co. Cork,
Ireland.**

03.10.2012

RE: Haulbowline Island Environmental Impact Statement

Dear Ms Fitzgerald

Thank you for referring this Environmental Impact Statement for the remediation of East Tip at Haulbowline Island, Co. Cork to An Taisce for comment.

We would appreciate information on the red lined area, within which the proposed barrier is to be located.

Yours sincerely,


Ian Lumley
Heritage Officer

Recipient	AF.
Register No.	3
RPS	05 OCT 2012
Project No.	
File Ref.	
PM	

FW: Acknowledgement: G Pre00382/2012 Haulbowline Island - EIS Scoping

Manager Dau [Manager.Dau@ahg.gov.ie]

Sent: 02 October 2012 10:38**To:** haulbowline**Cc:** Cormac.OSuilleabhain@CorkCoCo.ie**Importance:** High**Attachments:** 1 10 2012 RPS.pdf (466 KB) ; ATT00001.txt (965 B) ; ATT00002.htm (999 B)

FAO: Cathriona Cahill,
FAO: Aileen Fitzgerald, RPS
cc: Cormac O Suilleabhain

Dear Ms Cahill, Ms Fitzgerald, Mr O Suilleabhain,

I refer to my email of yesterday below and to the attached letter. As of today, DAU has received three notifications of the above EIS Scoping:

5/9/2012 from C O Suilleabhain by email
28/9/2012 from A Fitzgerald by letter MCE0734LTR003COR
1/10/2012 from C Cahill by letter MCE0734LTR0004COR

This is because of incorrect addresses on RPS contact list. In the interest of efficiency, please amend addresses in your records now.

- On letter of 28/9/2012 the address needs correction to: **Development Applications Unit, Department of Arts, Heritage and the Gaeltacht, Newtown Road, Wexford**
- On letter of 1/10/2012 the entire address should be deleted. (As Development Applications Unit (DAU) is now in the Department of Arts, Heritage and the Gaeltacht (previously in the Department of the Environment, Heritage & Local Government).

Development Applications Unit is a central co-ordinating unit for all inputs/observations of the heritage sections (**architecture, archaeology, NPWS**) of the Department on behalf of the **Minister for Arts, Heritage & the Gaeltacht**.

It is sufficient to send ONE copy of any item. There is no need to send a copy to any other area of the this Department or to the Department of the Environment, Community & Local Government. **Also, there is no need to also email a communication that you send by hard copy.**

Email correspondence may be sent to manager.dau@ahg.gov.ie

Thanks and regards,
Patricia O'Leary
Development Applications Unit
Department of Arts, Heritage and the Gaeltacht
Newtown Road
Wexford
T: 053-911 7482
E: manager.dau@ahg.gov.ie



*An Roinn
Ealaíon, Oidhreachta agus Gaeltachta
Department of
Arts, Heritage and the Gaeltacht*

-----Original Message-----

From: Manager Dau

Sent: 01 October 2012 15:29

To: ireland@rpsgroup.com

Cc: Cormac.OSuilleabhain@CorkCoCo.ie

Subject: Acknowledgement: G Pre00382/2012 Haulbowline Island - EIS Scoping

Importance: High

FAO: Aileen Fitzgerald, RPS
cc: Cormac O Suilleabhain

Cork County Council ref: EIS Scoping email dated 05 September 2012 from Cormac O Suilleabhain,
Cork County Council

RPS ref: 330

Our ref: G Pre00382/2012

Dear Ms. Fitzgerald,

Your letter dated 28/9/2012 with regard to the EIS Scoping is now in our system. Observations, if any, will issue in due course.

Regards,
Patricia O'Leary

Architectural Policy & Development Applications Unit Built Heritage & Architectural Policy Section
Department of Arts, Heritage and the Gaeltacht Newtown Road Wexford

T: 053-911 7482

E: manager.dau@ahg.gov.ie

Haulbowline remedial measures

Carol & Donal Collins [insemor@eircom.net]

Sent: 01 October 2012 20:13

To: haulbowline

Dear Sir ,Madam,

I have a keen interest in the above project and have submitted a port folio on the proposal for the works.

I am available to participate in the project in either the undertaking or supervision.

I see Haulbowline as a proposed development that could lead to other associated projects.

I am an interested party and look forward to being involved in some capacity.

Regards, Donal Collins. Associate Engineer MIEI.

RSVP and documentation for meeting

Admin [admin@friendsoftheirishenvironment.org]

Sent: 08 October 2012 00:08

To: haulbowline

Hi there -

Just to say I hope to be there for the consultation forum Thursday - if you have any documentation in electronic format relating to this we would be grateful for copies in advance.

We note that the link you provide on the website

<http://www.corkcoco.ie/co/pdf/526937724.pdf>

says 'Follow the progress of the project in the latest news section at www.corkcoco.ie/haulbowline'

but this leads to <http://www.corkcoco.ie/co/web/Cork%20County%20Council/Departments/Environment%20%26%20Waste/Haulbowline>

which has no information or links.

What's the latest in regard to the AA Screening?

Kind regards,

Tony Lowes

Friends of the Irish Environment is a non-profit company limited by guarantee registered in Ireland. It is a member of the European Environmental Bureau and the Irish Environmental Network. Registered Office: Kilcatherine, Eyeries, Co Cork, Ireland. Company No. 326985. Tel & Fax: 353 (0)27 74771 Email: admin@friendsoftheirishenvironment.org Directors: Caroline Lewis, Tony Lowes

south
western
river basin district



www.swrbd.ie

South Western River Basin District
Cork County Council
Inniscarra
Co. Cork
Ireland

Phone: 021 4532748
michael.ryan@corkcoco.ie

Aileen Fitzgerald,
RPS Consulting Engineers,
Innishmore,
Ballincollig,
Co. Cork.

Recipient	A. Fitzgerald
Register No.	02
RPS	08 OCT 2012
File Ref.	04 th October 2012
PM	

Reference: Remediation of the East Tip on Haulbowline Island: Scoping of Environmental Impact Statement/Invitation to make Submissions

Your Ref: MCE0734T0003COR

Dear Ms. Fitzgerald,

Thank you, for your letter dated 28th September 2012.

The South Western River Basin District (SWRBD) Management Plan was adopted by all Local Authorities in the SWRBD prior to the 30th April 2010, as stipulated in the European Communities (Water Policy) Regulations 2003 (S.I. 722 of 2003 as amended). The SWRBD plan came into effect on the 15th July 2010.

The South Western River Basin Management Plan (2009-2015) objectives should be considered and integrated as appropriate with the Remediation of the East Tip on Haulbowline Island /EIS (See Section 6 of the SWRBD Plan). The Scheme should comply with the Water Framework Directive.

The main objectives of the **Water Framework Directive** are:

- Prevent deterioration and maintain high status where it already exists
- Protect, enhance and restore all waters with aim to achieve at least good status by 2015
- Ensure waters in protected areas meet requirements
- Progressively reduce chemical pollution

The SWRBD Management Plan is available on the website www.wfdireland.ie with all the background documents. (Composite SWRBD Management plan version is available on www.swrbd.ie – this includes Ministerial amendments)

The following sections of the SWRBD plan should be noted:

- Section 4.2.3 of the SWRBD plan refers to **New modifications or sustainable development** and this should be taken into consideration in your development of the Remediation of the East Tip on Haulbowline Island /EIS.
- Section 6.1.1 – **Land use planning** - Any potential impacts from future development on waters can be mitigated by properly incorporating the objectives established in this (SWRBD) plan into development plans to ensure sustainable development.

Attached The South Western River Basin Management Plan (2009-2015) which is currently in operation.

If you require further information, please don't hesitate to contact me.

Yours Sincerely



Fergal O'Sullivan,
SWRBD Executive Engineer,

cc: File

EIS and Tourism Guidelines 2011

Jill Stewart [Jill.Stewart@failteireland.ie]

Sent: 12 February 2013 15:49**To:** haulbowline**Attachments:** EIS and Tourism Guidelines~1.doc (534 KB)

Dear Ms Fitzgerald,

I wish to acknowledge receipt of your recent letter to Paddy Mathews, Fáilte Ireland in relation to Environmental Impact Statement for Remediation of the East Tip on Haulbowline Island, Co Cork.

I attach a copy of Fáilte Ireland Guidelines for the treatment of tourism in an EIS, which we recommend should be taken into account in preparing the EIS.

Yours sincerely,

Jill Stewart.

Jill Stewart
Destinations Development
Fáilte Ireland
88-95 Amiens Street
Dublin 1
Tel: 01 8847202
Jill.Stewart@failteireland.ie
www.failteireland.ie
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Remediation of East Tip - Public Consultation - Aileen Fitzgerald

TONY Friends [tony@friendsoftheirishenvironment.org]

Sent: 31 January 2013 12:51

To: haulbowline

Dear Aileen;

Thank you for your invitation to tonight's meeting on the East Tip Remediation.

We regret we will be unable to send a representative to tonight's meeting but would be grateful for copies of any information distributed.

We would also reiterate our complaint expressed at the last meeting that it is not scientifically justified to suggest that a clean up of the East Tip can be undertaken without addressing the documented contamination on the site of the steel plant itself.

Kind regards,

Tony Lowes

Environment agencies must ensure that the environmental protection does not share the fate of religion; good and vital in theory, but largely ignored and set aside in day to day practice.

Ludwig Kramer

Friends of the Irish Environment is a non-profit company limited by guarantee registered in Ireland. It is a member of the European Environmental Bureau and the Irish Environmental Network. Registered Office: Kilcatherine, Eyeries, Co Cork, Ireland. Company No. 326985. Tel & Fax: 353 (0)27 74771 Email: admin@friendsoftheirishenvironment.org Directors: Caroline Lewis, Tony Lowes

Aileen Fitzgerald,
RPS,
Inishmore,
Ballincollig,
County Cork

Your ref: MCE0734LT0006
File ref: 330

28th February, 2013

Dear Aileen,

Recipient	A. Fitzgerald
Register No.	JB
RPS	04 MAR 2013
Project No.	
File Ref.	
PM	

Remediation of East Tip on Haulbowline Island

Thank you for your letter dated 23rd January, 2013 in which you invited comments on the proposed remediation solution for the East Tip on Haulbowline.

I enclose a submission on behalf of Meitheal Mara, in which we request that the capping and perimeter structures:

- Provide a new destination for small boats cruising in Cork Harbour and visiting Haulbowline.
- Allow for access to Spike Island, in accordance with the Spike Island Masterplan (adopted by Cork Co. Council in December, 2013).

Yours sincerely,

Cathy Buchanan
General Manager

Culture of river
and sea
Na báid agus saol na
ndaoinne



Meitheal Mara Teo.
Crosses Green House
Crosses Green
Cork
Ireland

Tel & fax: + 353 21 4316813
Email: office@meithealmara.ie
Web: www.meithealmara.ie

- Researchers and builders of the Irish currach
- Youth rowing and boat building programmes
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Joan Dinneen
Mary Doran
Marianne Keane
Pádraig Leahy
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Donagh MacArtain

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Funded by: FÁS
City of Cork VEC
Pobal
Department of Education & Science



Remediation of the East Tip of Haulbowline Island: Consultation on Proposed Remediation Solution

Amy Hastings [a.hastings@ipi.ie]

Sent: 05 February 2013 21:31

To: haulbowline

Dear Ms Fitzgerald,

Thank you so much for your letter inviting the Institute to engage as part of the consultation on the proposed remediation solution for the east tip of Haulbowline Island.

As the Institute represents planning professionals both in the planning authorities and in the private sector, it considers that it would not be appropriate to engage in consultation regarding specific studies, plans or projects at a local level. On behalf of the Institute, I must, therefore, respectfully decline the offer to engage with RPS Consulting Engineers in relation to the the proposed remediation solution for the east tip of Haulbowline Island.

Should you have any queries in relation to the above or in relation to any other matter, please do not hesitate to contact us.

Yours sincerely,

Amy Hastings
Hon. Secretary
Irish Planning Institute

Boat Access For Haulbowline

Tim Buckley [tjmbuckley@gmail.com]

Sent: 02 February 2013 11:57

To: sinead.sheppard@gmail.com; jquinlan09@gmail.com; johncobhtownouncil@gmail.com; seanyoconnor@eircom.net; padwhit@oceanfree.net; jimhalligan@eircom.net; paddyhilton@yahoo.ie; info@cobh.ie

Cc: haulbowline; simon.coveney@oir.ie

Dear Councillor

I am writing to ask you to make submissions to Cork County Council and Minister Simon Coveney to include a BOAT ACCESS facility in the design for Haulbowline East Tip. The benefits of such a boat access are obvious to most people who are members of the harbour community and particularly residents of Cobh. Even the current Cobh town development plan refers to benefits from the development at Haulbowline, these benefits to Cobh will be hugely minimised if there is no boat access

“3.7.16 Cobh has the capacity to act as a gateway for a tourism development at Haulbowline and for Spike Island. Furthermore the town could benefit from the promotion of coastal fortification on Spike and Haulbowline Islands in coordination with other coastal fortifications in the harbour.”
Cobh town development plan 2013

Cobh cannot possibly act as a gateway to this new development in Haulbowline unless there is BOAT ACCESS at Haulbowline.

The Council/Project team dealt with questions on this matter at the public consultation meeting and a summary of the answers they gave are

1. BOAT ACCESS is not within the scope of the design team
2. The Navy might accommodate boat access.
3. BOAT ACCESS could be considered after the current development is finished.
4. With the current design only very skilled boatmen would be able to attempt a landing- but there could be issues with insurance.

As members of the council you could address these matters as follows

1. Lobby the Minister for the marine to make BOAT ACCESS part of the plans
2. Write to the Navy to confirm that they will not act as a receptionist for all visiting craft, as the chairman of the meeting suggested
3. If we wait until after the remediation is complete then it is hugely unlikely that a BOAT ACCESS will be developed because
 - a. It could be claimed that a BOAT ACCESS structure would affect the integrity of the perimeter structure.
 - b. Funding for inclusion may not be made available
4. With minor modifications even the recreational boatman would be able to access the island.

I realise that the top priority is that Haulbowline is made a safe and clean place and I do not want to impede progress of the work.

The Historical links between Cobh and Haulbowline are enormous and to maintain these links it is vital that BOAT ACCESS is included, why build a public facility, on an Island, in a Harbour with no boat access ??

Yours Sincerely

Tim Buckley



Meitheal Mara Submission on Remediation of the East Tip on Haulbowline Island

To request that the capping and perimeter structures:

- Provide a new destination for small boats cruising in Cork Harbour and visiting Haulbowline
- Allow for access to Spike Island, in accordance with the Spike Island Masterplan [adopted by Cork Co. Council Dec. 2013]



www.mmara.ie

Document Control Sheet

Document Reference:

Filename: Submission on
Haulbowline land-fill

Document Name: Meitheal Mara Submission on Remediation of the East Tip
on Haulbowline Island

Prepared by: DL

Date: 13/02/2013

Approved by:

Date

Issue History

Rev.	Date	By	Chk	App	Description
1	11/02/2013	DL			Approved by MM Board

Review

Prepared by:

Date:

Approved by:

Date:

Meitheal Mara Submission on Remediation of the East Tip on Haulbowline Island

Background & History

Cork is one of Ireland's oldest cities located at the lowest crossing point of the River Lee; Cork Harbour has been a maritime trading centre since earliest times. And presents a wonderfully intact mosaic of original, authentic and surprisingly complete sites and structures that testify to its heritage as a provisioning, emigrant and naval port. In the past, Cork Harbour was the last port before ships on the sea routes from Britain left the coast to head out into the open Atlantic. An enormously large, safe, natural harbour with a rich agricultural hinterland gave the city and harbour a unique role in provisioning ships from Europe from the late 17th to the early 20th centuries as well as a long history as a passenger and naval port, including its associations with the Lusitania and the Titanic. The harbour also has a rich natural heritage of land and seascapes, wild-life and islands.

Meitheal Mara & Cork Harbour

Meitheal Mara has as one of its core interests the development of Cork Harbour for social, community, environmental and recreational purposes. In particular it encourages and promotes on-the-water activities in the harbour, especially for small boats and with a special concentration on those extensive parts of the harbour which are not subject to high levels of commercial shipping traffic and are otherwise under-utilised or unknown.

Meitheal Mara's long-established commitment to the harbour is best known through the Ocean to City Race, now in its 9th year and expanded to a week-long Ocean to City Festival which includes the Cork Harbour Summer School.
[\[http://www.oceantocity.com\]](http://www.oceantocity.com)

Less well known is the constant use of the waters of the harbour and estuary by its curachs and those of its sister club Naomhóga Chorcaí, numbering up to 50, the Bantry Long-boat Fionnbarra and the Dragon-boats. This fleet delivers Meitheal Mara's on-the-water programmes to a clientele numbering some 400 persons each year.

Less well known again are the stream of submissions, publications, studies and reports produced by Meitheal Mara dealing with the estuary and harbour. They range from submissions to City and County Development Plans to the production of the pamphlet '*New Destinations in Cork Harbour*¹ to contributions to the Spike Island Masterplan as a design team member. Most of them are concerned with the key issue of improving access to the waters of the harbour for boats and people. A listing is given in Appendix 1.²

¹ See Appendix 1: *New Destinations in Cork Harbour*

² See Appendix 2 for Meitheal Mara Submissions and Reports on Cork Harbour

Access

Meitheal Mara has campaigned for improved access to the river and harbour over a number of years. Access to the water has two principal aspects:

- Access for boats to go on the water – mainly via slips.
- Access for people going onto boats, via piers, quays, ramps, pontoons and steps.

Spike Island

Meitheal Mara is a member of the design team for the Spike Island Masterplan, led by STW Architects, which was adopted by Cork County Council in December 2012. A key section of the Masterplan addresses access to Spike Island:

1. for small boats
2. for regular visitors
3. for construction traffic
4. for large crowds attending concerts and major events

The (reclaimed) East Tip is the favoured jumping-off point for access to the island, particularly for 3 & 4 above. The range of possible solutions include a roll-on: roll-off ferry, a low-tide causeway and a single-lane bridge with opening span.

Construction of any one of these would impact on the containment structure in particular, with significant cost implications, if not provided for in advance. There is an opportunity to future-proof the design in this respect by making a study of the likely impacts of access structures and facilities on the capping and perimeter engineered structures for the East Tip and modifying the design accordingly.

Argument

The civil engineering solutions for the capping and perimeter engineered structures of the East Tip remediation can have a significant direct impact on the feasibility and cost of providing access to and from the waters of the harbour and Spike Island. There is the potential to demonstrate joined-up thinking and achieve beneficial outcomes for both developments.

Meitheal Mara would propose that a multi-functional slip be provided, or provided for, in the design of the capping and the retention structure of the East Tip.

The slip could serve as:

- A landing place for small boats visiting Haulbowline from Cobh (as requested at the public consultation in Cobh)
- A launching place for boats wishing to go to Spike Island or cruise on the harbour (see Appendix 1: New Destinations in Cork Harbour)
- A 'new destination' in Cork Harbour for small boats (see Appendix 1)
- A vehicular slip for launching small boats on trailers
- A ferry slip to provide access to Spike Island for construction traffic and large crowds for concerts (see Spike Island Masterplan)

Note: A suitable type and scale of slip to fulfil all these functions would be the Cross-Harbour Ferry slips at Glenbrook and Carrigaloe

A study could be carried out to determine the likely implications of the slip and other access structures and facilities on the capping and perimeter engineered structures, with the object of future-proofing the design and minimising the possibilities of future disruption or alternatively of including the construction of the slip in the civil engineering works contract.

Appendix 1

New Destinations in Cork Harbour

Improved access for users of small boats in Cork Harbour

The size and variety of Cork Harbour makes it ideal for day or weekend cruising under sail, oar, paddle or power. Better facilities for launching boats and suitable destinations where boats can berth and crew go ashore in an attractive environment are however needed. The present list of such launching slips and destinations is small and launching of boats, berthing and going ashore are beset with difficulty.

New Destinations

Berthing pontoons or small boat harbours could be easily and cheaply provided at a number of locations. The table and map below [New Destinations in Cork Harbour] show where, with modest investment, a substantial network of recreational berths might be developed. Some locations – colour coded – have already developed such facilities. The most recent example is Aghada Pier, where a community grouping has installed a pontoon and ramp, with assistance from Cork County Council and the Port of Cork. More such facilities are needed, and at an accelerated rate compared with the past.

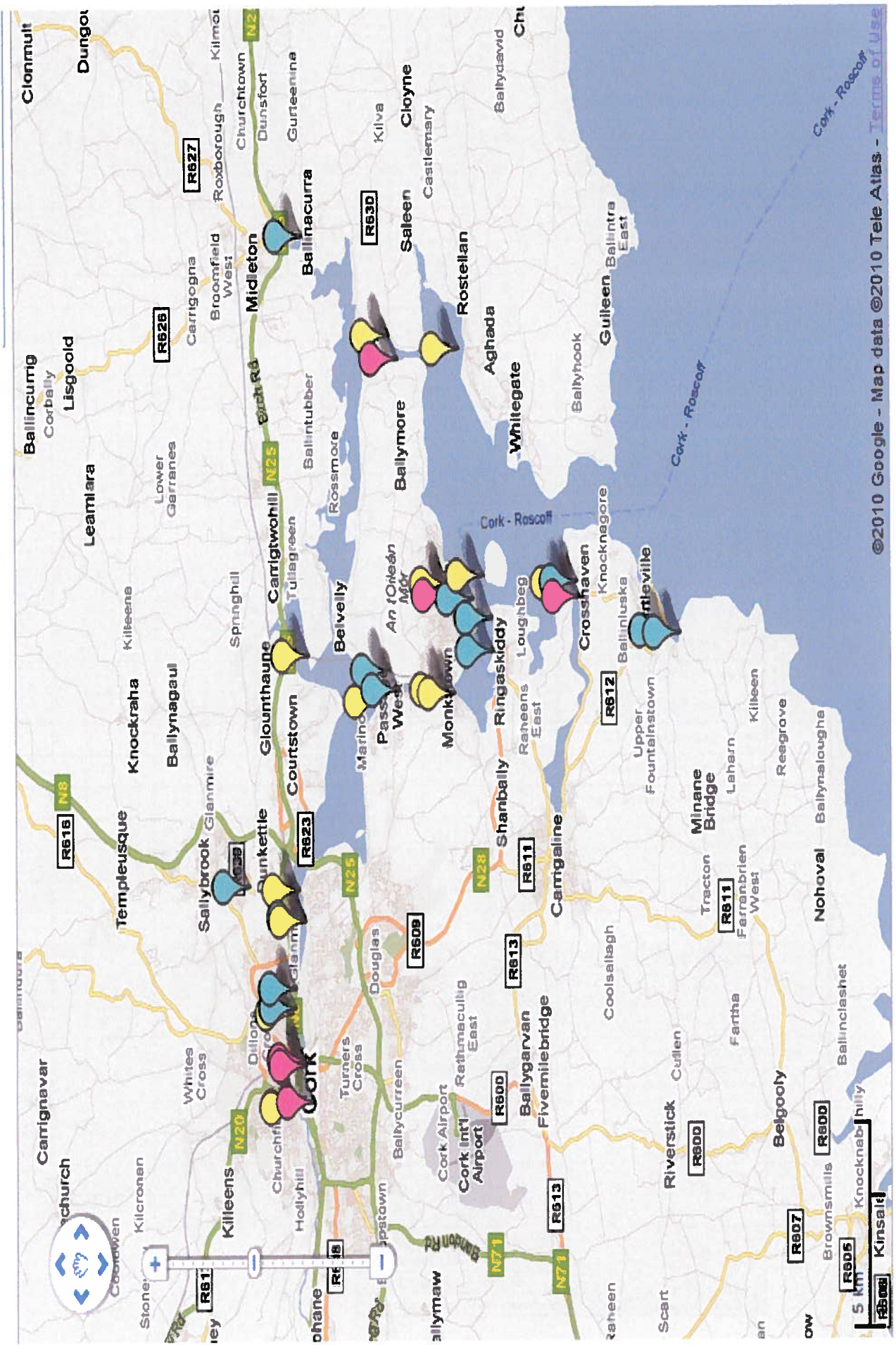
The Lee Estuary & Cork Harbour should be correctly defined as a 'waterway' as opposed to a 'watercourse' because of the level of interventions for navigation. The capacity of the harbour and estuary for small boat use are underexploited. In comparison, the Shannon Waterway holds circa 9,000 private recreational craft, while Cork Harbour has under 1000.

Cork Harbour and the estuary of the River Lee should claim access to available funds for development of social, recreational & tourism infrastructure. Pontoons for access and a welcome ashore at the places shown on the 'New Destinations in Cork City and Harbour' table following would be a step on the way to achieving this.

List of Destinations in Cork City and Harbour		Existing Facilities						Ashore					Required				
		Pier Jetty	Slip	Dingy Hbr	Ramp	Pontoon	Steps	Town Village	Public Transport	Hotel	Café Restaurant	Bar	Touristic	Development	Pontoon	Ramp	Steps
Category	Destination Name and location																
A	Boardwalk Lapp's Quay, Cork	•			•	•		•	•	•	•	•					
A	Port of Cork Bonded Warehouses	•		•	•	•	•	•	•	•	•	•					
B	Cornmarket St./Shandon Footbridge		•				•	•	•		•	•	•	•			•
A	Proby's Quay, Cork		•					•	•		•	•	•				
B	Lower Glanmire Road, Cork		•										•				•
P	Shandon Rowing Club Marina, Cork		•			•											
B	Lee Rowing Club, Marina		•										•				
P	Cork Boat Club, Blackrock		•										•				•
B	Blackrock Pier & Harbour	•	•	•			•	•	•		•	•	•	•			•
B	Blackrock Castle		•								•		•	•			•
P	Fota Wildlife Park, House & Gardens	•	•	•			•	•		•	•	•		•			
B	Passage West Quay	•					•	•	•		•	•		•	•		•
C	Ferry Inn, Passage West			•				•	•		•			•			•
C	Carrigaloe	•	•						•			•		•			•
B	Monkstown Pier	•					•	•	•		•	•		•			
B	Monkstown, Sand Quay	•	•				•	•	•		•	•		•			
B	Ringaskiddy Slip, Port of Cork	•	•				•	•	•		•	•		•			
P	CMAC, Ringaskiddy	•	•														
P	Haulbowl, Naval Basin	•	•	•	•	•											
P	Quays Bar & Restaurant, Cobh			•	•			•	•		•	•					
B	Cobh Harbour	•	•	•			•	•	•	•	•	•	•	•	•		•
B	Spike Island	•											•	•	•		•
B	Currabinny Pier	•					•					•		•			
P	RCYC, Crosshaven	•	•	•	•	•		•		•	•	•					
A	Crosshaven Pier	•	•		•	•	•	•	•	•	•	•					
C	Castle Point, Crosshaven		•					•	•	•	•	•		•			•
A	Aghada Pier	•	•				•	•	•		•	•		•		•	•
B	East Ferry, Mainland side	•	•	•			•				•	•		•			
A	East Ferry, Marlogue	•	•	•	•	•				•	•	•					
C	Bailinacurra							•	•		•	•		•			
C	Fountainstown							•									
C	Ringabella										•	•					
C	Glanmire							•	•		•	•		•			

Categories:

- A: Developed Destinations.
- B: Destinations with Potential.
- C: Undeveloped Destinations.
- P: Private (Restricted Access)



Appendix 2

Submissions and Reports [some unpublished] by Meitheal Mara on Cork Harbour and the estuary of the River Lee:

Date	to	Summary of Submission/Report	Type
Dec. 2005	DOEHLG	Response on National Countryside Recreational Strategy	RQ
Dec. 2006	Cork City Council	Submission on Cork City Heritage Plan 2007	S
May 2007	Cork City Council	Response on Cork South Docks Local Area Plan	RQ
Aug. 2007	Cork City Council	Submission on Cork South Docks Local Area Plan	S
Sept. 2008	Cork City Council	Response on River Users Management Plan	RQ
Jan. 2009	DOEHLG	Proposal to include Cork Harbour on the tentative list of World Heritage Sites	Pr
Aug. 2009	Cork Co. Council	Response to Marine Leisure Infrastructure Strategy for South Cork	RQ
Aug. 2009		<i>A Slip for Cork</i> – Pamphlet calling for a slip for Cork city	Pa
Dec. 2009	Cork City Council	Submission on South parish Area Action Plan	S
May 2010		<i>New Destinations in Cork Harbour</i> – Pamphlet with table and map showing destinations for small boats	Pa
2010	Cork City Council	Observation on planning submission for development of Beamish & Crawford site [ref: 10/34698]	Pl.Ob
Aug. 2010	Cork City Council	<i>Survey of Slips, Steps and Access points along the River Lee in Cork City</i> [with Horganlynch and JCA]	R
Nov. 2010	Heritage Council	<i>CORKUMNAVIGATION</i> – a guide to navigating the river Lee around Cork city [with CCAE]	G
Dec. 2010	Cork Co. Council	Submissions on Local Area Plans for Carrigaline, Blarney & Midleton [contiguous to Cork harbour]	S
June 2011		1 st Cork Harbour Summer School <i>Recreation in a Working Port</i>	C
Oct. 2011	Heritage Council	Proposal for Cork Harbour Water Trails	Pr
Jan. 2011	Cork City Council	Observation on Part 8 planning submission for proposed public pontoon at Marina	Pl.Ob
Mar. 2012		Pamphlet on Cork Harbour Cycle Trail [with CMRC]	Pa
June 2012		2 nd Cork Harbour Summer School <i>Looking Out – Looking In</i>	C
Nov. 2012	Cork Co. Council	Spike Island Masterplan [adopted 12/11/2012] team member under STW Architects [Access, Museum, Bothy]	R
Dec. 2012	WIP	Cork Harbour Water Trails report	P
June 2013	WIP	3 rd Cork Harbour Summer School <i>Communities and the Sea</i>	C

Key: RQ - Response to Questionnaire; S – Submission; Pa – Pamphlet; Pr - Proposal
Pl.Ob – Observation on Planning Submission; R – Commissioned Report/Study;
G – Guide; C – Conference/Summer School



HEALTH IMPACT ASSESSMENT

Desktop Interactive Tool

Adapted from 'Health Impact Assessment: a practical guidance manual, The Institute of Public Health in Ireland, 2003'.

Date:	Time:	
Carried out by:		
	Name	Organisation/Role
1		
2		
3		
4		
5		
6		

1 Title of the policy, project or programme	
2 Description of policy, project or programme	
3 Geographical area	
4 Time period	
5 Population Affected	

Which of the following sections of the population will be affected?

	Positive Effect	Negative Effect	No Effect	Number of People Affected (if known)
Whole population	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Sub-populations:				
Children [0-11 years]	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Adolescents [12-17 years]	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Chronically ill	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Economically disadvantaged people	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Gender: Male	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Female	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Homeless	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Lesbian, gay and bisexual people	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
People with disabilities	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Racial and ethnic minority groups	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Rural population	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Urban population	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Older people	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Unemployed	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Others (specify):	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

(Note - there may be other population groups specific to the proposal or policy area being considered not included here. Additional sub-groups can be added above.)

6 Health Determinants

(See Appendix for Model of Health Determinants)

Is the policy, project or programme affecting any of the following determinants of health?

In the final column indicate the risk of the impact, is it:

Definite (D)

Probable (P)

Speculative (S)

Lifestyle	Positive Effect	Negative Effect	No Effect	Risk of Impact
<i>Diet (including access to food)</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<i>Physical activity</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<i>Substance use: alcohol, tobacco, illegal substances</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<i>Safe sex</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<i>Other:</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

(Note - If there is likely to be a positive or negative effect on lifestyle factors, note briefly in the box below what those effects may be.)

Comments:

Psychological Factors	Positive Effect	Negative Effect	No Effect	Risk of Impact
<i>Self esteem</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<i>Relationship building</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<i>Communication skills</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<i>Body image</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<i>Motivation</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<i>Feel good</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<i>Other:</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

(Note - If there is likely to be a positive or negative effect on psychological factors, note briefly in the box below what those effects may be.)

Comments:

Physical Environment	Positive Effect	Negative Effect	No Effect	Risk of Impact
<i>Air</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<i>Built environment and land use</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<i>Noise</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

<i>Waste</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>Water</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>Other:</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

(Note - If there is likely to be a positive or negative effect on the physical environment, note briefly in the box below what those effects may be.)

Comments:

Socio-economic Environment	Positive Effect	Negative Effect	No Effect	Risk of Impact
<i>Crime</i> – will the proposal have an effect on crime or the fear of crime?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<i>Education</i> – will the proposal have an effect on educational opportunities?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<i>Employment</i> - will the proposal have an effect on Employment opportunities? The working environment?	<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>	
<i>Family cohesion</i> – will the proposal have an effect on levels of family contact?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<i>Housing</i> - will the proposal affect the opportunity to live in a decent affordable home?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<i>Income</i> - will the proposal have an effect on poverty levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<i>Recreation</i> - will the proposal have an effect on recreational opportunities such as exercise, social contact, cultural activities and other areas?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<i>Social cohesion</i> - will the proposal have an effect on levels of community interaction?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<i>Transport</i> - will the proposal have an effect on: Pollution levels? Exercise levels? Accident levels?	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	
<i>Other:</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

(Note - If there is likely to be a positive or negative effect on socio-economic factors, note briefly in the box below what those effects may be.)

Comments:

Access to Services	Positive Effect	Negative Effect	No Effect	Risk of Impact
<i>Access to health services</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<i>Access to amenities</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

(**Note** - If there is likely to be a positive or negative effect on services, note briefly in the box below what those effects may be.)

Comments:

HEALTH IMPACT ASSESSMENT REPORT

Date

Compiled By

Introduction

The Proposal

Background of Policy (Project or Programme)

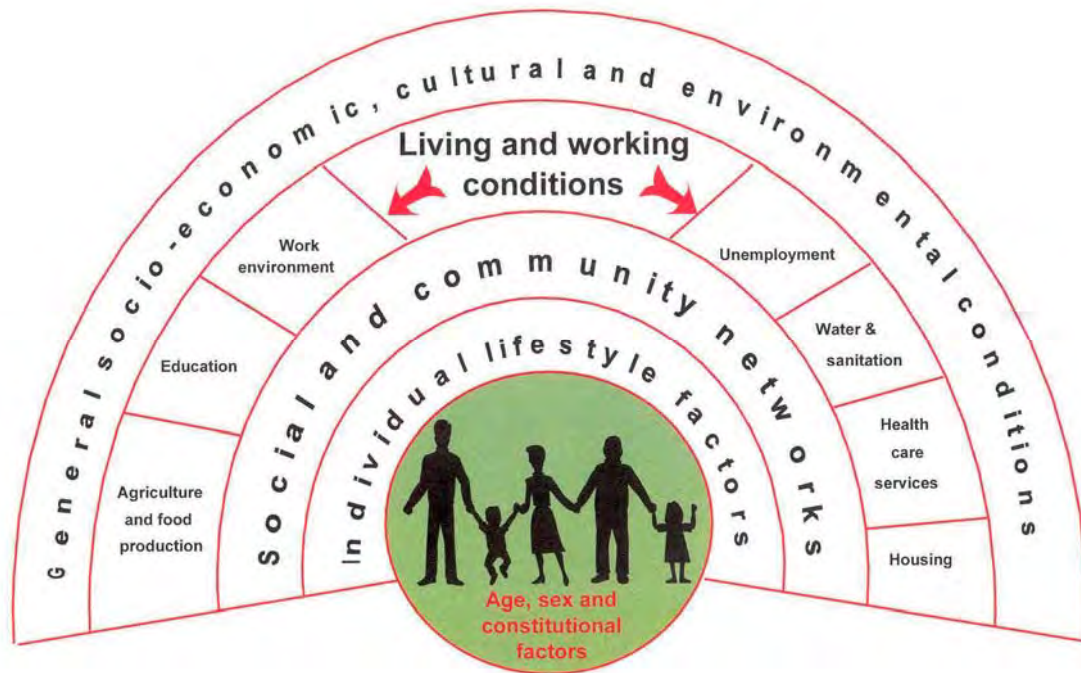
Summary Table of Health Impacts and Recommendations

Refer to summary table in HIA tool.

Conclusion

Appendix

Model of Health Determinants



Source: Dahlgren, G. and Whitehead, M., Policies and strategies to promote social equity in health. 1991. Stockholm, Institute for Future Studies.

APPENDIX E.7

**PUBLIC OPEN DAYS FEEDBACK FORMS
TEMPLATE**



East Tip, Haulbowline Remediation Project Public Consultation

Contact us in one of the following ways by February 22nd 2013:

Write: East Tip Remediation Project, RPS, Innishmore, Ballincollig, Co. Cork.

Email: haulbowline@rpsgroup.com

See: www.corkcoco.ie/haulbowline

Feedback Form

Name

Address

Email

Organisation (if any);

What Are Your Views?

Please return completed Feedback Form to the above postal address or place in the Q&A Box situated at the entrance/exit.

Feedback will be reviewed by the Project Team and responded to on www.corkcoco.ie/haulbowline

APPENDIX F

TECH DIALOGUE REPORT



Haulbowline East Tip Technical Dialogue Report

DOCUMENT CONTROL SHEET

Client:	Cork County Council					
Project Title:	Haulbowline East Tip – Outline Design					
Document Title:	Technical Dialogue Report					
Document No:	MCE0736RP006F01					
This Document Comprises:	DCS	TOC	Text	List of Tables	List of Figures	No. of Appendices
	1	2	6	0	1	0

Rev.	Status	Author(s)	Reviewed By	Approved By	Office of Origin	Issue Date
F01	Final	D. Sutton	Cora Plant	Frank Maguire	West Pier	3/4/2013

Confidentiality statement;

The information disclosed in this proposal should be treated as being **strictly private and confidential** and you are requested to take all reasonable precautions to maintain its status as such. You are requested to use and apply the information solely for the purpose of evaluating this proposal and are asked **not at any time to disclose or otherwise make available the information to any third party** except for those officers, employees and professional advisers who are required by you in the course of such evaluation to receive and consider the information and who agree to be bound by these non-disclosure terms.

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1 INTRODUCTION

Cork County Council, on behalf of the Irish State, is currently managing the regularisation of the East Tip on Haulbowline Island in Co. Cork. The East Tip Contains approximately 650,000m³ of steelworks waste that was deposited on a sand spit over a 40 year period. Site investigations were completed in June 2012 and a Detailed Quantitative Risk Assessment (DQRA) has been prepared with respect to the site. The remediation solution* for the site shall include:

- A perimeter engineered structure (permeable).
- A low permeability horizontal cap.

Cork County Council is endeavouring to ensure that any outline design specification and environmental assessments take account of all pertinent technical issues. Therefore, the Council engaged RPS to conduct a technical dialogue with specialist earthworks, dredging, foundation contractors and other parties with relevant expertise to determine what solutions exist in the marketplace to achieve an effective remediation of the site. In addition to this Cork County Council were keen to engage in relation to any environmental and health and safety risks, perceived or otherwise, which may arise during the construction of the remedial solution. This dialogue included both the discussion of possible design solutions and the practical issues associated with the construction of same. It is expected the remediation works will commence in 2014 once the requisite regulatory consents have been obtained.

*It should be noted that this remediation solution had not been finalised, nor was the final DQRA available at the time of commencing the Technical Dialogue.



Figure 1: Site Layout

2 BACKGROUND

Haulbowline Island is located within Cork Harbour, between Cobh to the North and Ringaskiddy to the South. It is connected to the mainland at Ringaskiddy via a bridge which transverses Rocky island. The entire East Tip area (any land reclaimed or otherwise above low tide mark) is owned by the Irish State.

The Headquarters of the Irish Naval Service is situated on the western portion of the Island with the Naval Dockyard to the east of the naval service property. Separating the Naval Service HQ and the dockyard is the site of former Irish Ispat Steelworks. The majority of buildings associated with the steel production have been demolished and cleared from the site since 2005. A number of listed buildings were retained. To the east of the Naval Dockyard is the East Tip, an area of land reclaimed from the Spit bank by infilling with processing waste from the steelworks.

The original island was 11.5ha but, due to the operation of steelworks, by 1998 it had grown to 33.5ha with the East Tip having a total area of 7.6ha. By 2002 the East Tip had increased in size by 1.4ha thus encompassing an area of approximately 9ha in total. It may therefore be concluded that the area of the island was 23.5ha when steel processing started in 1938 and 34.9ha when production ceased in 2001. It is thought that the deposition of steel making waste on the East Tip has been taking place since the 1940's but intensified in the late 1970's. In 1984, a section along the western perimeter of the East Tip was reclaimed by the Navy as a football pitch.

3 SUMMARY OF THE TECHNICAL DIALOGUE

3.1 ISSUE OF THE PRIOR INFORMATION NOTICE AND CONTACTING SUITABLE COMPANIES

A Prior Information Notice was published on e-Tenders on the 10th of August 2012. This notice was also posted on the Official Journal of European Union website (OJEU). Interested parties were invited to revert with a short company profile, relevant experience in the realisation of containment works of a comparable nature to Haulbowline Island and other information deemed necessary by 12 noon on the 31st of August 2012. By the date of return a total of 9 submissions were received.

As part of the technical dialogue process RPS contacted various companies to inform them of the publication of the PIN notice on eTenders and OJEU. A total of eleven companies were contacted. Eight declared interest and three declared no interest.

3.2 TECHNICAL DIALOGUE WEBSITE AND SUPPORTING DOCUMENTATION

As part of the technical dialogue process it was deemed vital to disclose detailed information in relation to the East Tip to the contractors at an early stage. Interested parties were requested to review all available information and revert with any queries prior to site visits. To facilitate the informing phase of the process, a secure website was set up to provide access to the information pack which contained seven supporting documents.

Supporting documents made available as part of the technical dialogue process:

1. Introduction to the Technical Dialogue Process with Respect to Possible Containment Solutions -RP0001A01
2. Cork County Council Factual Report
 - 2.1 Cork County Council Factual Report, Appendices
 - 2.2 Cork County Council Factual Report, Addendum
3. White Young Green – Interpretative Geo-Environmental Report (2005)
 - 3.1 White Young Green – Interpretative Geo-Environmental Report (2005), Tables & Figures
 - 3.2 White Young Green – Interpretative Geo-Environmental Report (2005), Appendices
4. White Young Green – Environmental Assessment of the impact of waste materials deposited at the former Irish Steel Site on Haulbowline Island (2008)
 - 4.1 White Young Green – Environmental Assessment of the impact of waste materials deposited at the former Irish Steel Site on Haulbowline Island (2008), Appendices
5. Apex – Geophysics Survey (2011)
6. Hydrographic Surveys – Bathymetric & Geophysical Survey Report (2012)
 - 6.1 Hydrographic Surveys – Bathymetric & Geophysical Survey Report (2012), Figures
7. Priority Geotechnical Ltd. - Exploratory Ground Investigation (2012)
 - 7.1 Priority Geotechnical Ltd. - Exploratory Ground Investigation (2012), Appendices

Within the information pack which was prepared to support the Technical Dialogue a number of questions were provided to support the overall process. These questions were as follows:

1. What is the participants suggested permanent solution for the perimeter engineered structure?
2. What is the participants suggested permanent solution for the horizontal system?
3. What temporary works are required to facilitate the construction of the perimeter engineered structure?
4. How are the issues associated with working within a tidal area addressed as part of the works associated with the perimeter engineered structure?
5. What would be the working arrangements to reduce impact on the foreshore area?
6. What are the innovative methods / specialist materials that perimeter engineered structure incorporates?
7. What are the access requirements for a) the perimeter engineered structure and b) the horizontal system?
8. Where would the majority of works be constructed from for the perimeter engineered structure? The foreshore or the land area?
9. What would be the perceived Health and Safety risks for working on a) the perimeter engineered structure and b) the horizontal system?
10. What Environmental Controls would be proposed as part of the works?
11. How is it proposed to integrate the perimeter engineered structure with the balance of the horizontal system?
12. What would be the estimated programme of works for the perimeter engineered structure?
13. With reference to the Capital Works Management Framework documents, which Contract would be preferable – Traditional Contract or Design & Build Contract?
14. Are there any reference sites where the perimeter engineered structure specified has been installed?
15. Is there any additional information that would be required in order to inform the design for the preferred remediation system other than the information that has been provided to participants as part of this technical dialogue process?

3.3 HAULBOWLINE EAST TIP SITE VISIT

Site visits were conducted on Haulbowline East Tip on the 17th & 18th of October and 14th of November. 16 interested parties attended the site visit. Some of the parties consisted of a consortium of companies. In total 22 companies from 5 different countries attended the site visit. Logistics and Time constraints dictated that site visits were held with groups of up to 4 interested parties.

Site visits consisted of the following format:

1. An introductory presentation on the background to the East Tip and the anticipated remediation programme.
2. A general question and answer session between the contractors, Cork County Council and RPS.
3. A site safety induction before visiting the East Tip.
4. A detailed site tour of the East Tip. This included ongoing dialogue between the contractors, Cork County Council and RPS.
5. A final question and answer session between the contractors, Cork County Council and RPS.



Figure 2: Site Visit

3.4 RESPONSE TO TECHNICAL DIALOGUE

Given the commercially sensitive nature of the material discussed on the site visits and submitted as part of the technical dialogue process it is not possible to provide comprehensive details of these discussions and submissions as part of this report which is intended for the public domain.

The majority of the questions posed in the report which was prepared to support the process, as detailed in Section 3.2 of this report, were addressed through on site discussion, formal submission and follow-up meetings and contact calls.

The main heading items addressed were:

- Proposed solutions and innovations for the perimeter engineered structure
- Proposed solutions and innovations for the horizontal system
- Environmental controls
- Health and Safety
- Materials requirement
- Contract preferences
- Scrap metal.


The information obtained as part of the Technical Dialogue has informed the preferred remediation solution, the anticipated construction methods and the identification of mitigation measures to reduce/negate any potential impact from the works. This information has been incorporated where relevant within the East Tip Remediation EIS. Particular reference is made to Chapter 6 “Project Construction” of the EIS, Section 6.3.7 which details a non-exhaustive list of temporary works which could be installed to facilitate the construction of the preferred remediation solution.

3.5 IDENTIFICATION OF REFERENCE SITES

As part of the technical dialogue process a number of reference sites which were similar to the East Tip were identified. It should be noted that while these sites were similar there was no site which was considered an exact match in terms of the nature of the waste present in the East Tip and the siting of same. Information regarding the remediation of these sites was also used to inform the relevant sections of the EIS.

APPENDIX G

INVENTORY OF TECHNICAL STRUCTURES TO BE DEMOLISHED

Item/ Map ref.	Description	Photo
01	Steel lighting mast: Mild steel structural hollow section with ladder access to lighting mountings at top.	 <p>(Photo 01-1)</p>

02

Steel "Blacksmith's Hammer".



(Photo 02-1)

03

Steel heat exchangers (2 No.)



(Photo 03-1)



(Photo 03-2)

04 Storage tank: Contents unknown. Steel storage tank is supported on masonry walls founded on spread footings.



(Photo 04-1)

05

Mobile conveyor belt



(Photo 05-1)

06

Steel trailer



(Photo 06-1)

07

Steel trailers (2 No.)



(Photo 07-1)

08

Steel slag screener



(Photo 08-1)

09

Steel conveyer belt



(Photo 09-1)

10

Steel container. Contents include:

- Hydraulic oil storage tank (Photo 10-2), empty at time of inspection;
- Miscellaneous metalwork/scrap.



(Photo 10-1)



(Photo 10-2)

11

Steel retaining walls



(Photo 11-1)

12

Diesel storage tank, empty at time of inspection



(Photo 12-1)

13

Diesel pump & reinforced concrete spread footing



(Photo 13-1)

14

Derelict steel framed two-storey structure, contents include miscellaneous metalwork/scrap



(Photo 14-1)

15

Engine parts



(Photo 15-1)

16	Articulated trailer		(Photo 16-1)
17	<p>Steel portal framed shed – was used as a garage to service vehicles. Contents include:</p> <ul style="list-style-type: none">• Caravan (Photo 17-2);• Oil storage tank (Photo 17-3), 50mm approx of oil left in tank;• Truck (Photo 17-4);• Overhead steel gantry crane (Photo 17-5) with 2t Safe Working Load (SWL);• Miscellaneous metalwork/scrap.		(Photo 17-1)



(Photo 17-2)



(Photo 17-3)



(Photo 17-4)



(Photo 17-5)

18

Truck



(Photo 18-1)

19

Steel gantry crane, capable of uni-directional movement on rail tracks (Photo 19-2).



(Photo 19-1)



(Photo 19-2)

20 Steel storage tank, empty at time of inspection



(Photo 20-1)

21

Steel gantry crane:

- Overhead steel gantry crane;
- Supporting structural steel frame;
- Steel cabin & conveyor belt (Photo 21-3);
- Hydraulic oil storage tank (Photo 21-4), full at time of inspection;
- Piston operated shearing machine (Photo 21-5);
- Reinforced concrete pad footings (Photo 21-6).



(Photo 21-1)



(Photo 21-2)



(Photo 21-3)



(Photo 21-4)



(Photo 21-5)



(Photo 21-6)

22

Steel container



(Photo 22-1)

23

Masonry single-storey building



(Photo 23-1)

24

Masonry two-storey building



(Photo 24-1)

25

Steel lighting mast: Mild steel structural hollow section with ladder access to lighting mountings at top.



(Photo 25-1)



- 11-Steel retaining walls
- 10-Steel container
- 09-Steel conveyor belt
- 08-Steel slag screener
- 07-Steel trailers (2 No.)

- Derelict two-storey steel structure
- 13-Diesel pump
- 12-Diesel storage tank
- 15-Engine parts

- 25-Steel lighting mast
- 17-Steel portal framed shed
- 16-Articulated trailer
- 18-Truck
- 19-Steel gantry crane

- 23-Masonry two-storey building
- 20-Steel storage tank

- 23-Masonry single-storey building
- 21-Steel gantry crane
- 03-Steel heat exchangers
- 22-Steel container

- 04-Storage tank
- 01-Steel lighting mast
- 02-Steel "Blacksmith's Hammer"

- 06-Steel trailer
- 05-Mobile conveyor belt

APPENDIX H

NAVAL SERVICE SUPPORT IN EVENT OF FLOODING



NHQ/A8/2

16th Jan 2013

SEE – East Tip Licensing Project,
Environment Directorate,
Inniscarra,
Co. Cork

To whom it concerns,

NAVAL SERVICE SUPPORT - EVENT OF FLOODING

In the unfortunate event of flooding in the Haulbowline/Ringaskiddy area, the Naval Service will provide support, on top of other Emergency Services, to any personnel stranded in the East Tip area of Haulbowline Island.

Due to the planned East Tip development and the location of the Naval Base adjacent to the site, it seems prudent of the Naval Service to facilitate/ accommodate any personnel stranded in such an event.

This letter is submitted in support of the planning application for the development of the East Tip site.

Kind Regards,


B. W. FITZGERALD
COMMANDER
OiC PLANNING & POLICY



APPENDIX I
OUTLINE CEMP

OUTLINE CONSTRUCTION ENVIRONMENTAL MANAGEMENT PLAN (CEMP)
CHAPTER 1 - INTRODUCTION
Background to Report
Background to the Project
Planning History
CHAPTER 2 - SCOPE OF CEMP
Scope of CEMP
Objectives and targets of CEMP
Best Practice Guidance notes to be followed
Environmental Policy Statement
CHAPTER 3 – STRUCTURE, ROLES AND RESPONSIBILITIES
Management Structure
Client/and or Site Agent
Contractor etc
Health and Safety
Environmental Clerk of Works and Archaeologist
Liaison with Public
CHAPTER 4 - CONSTRUCTION PROGRAMME
Phasing of Works
Working Hours
Liaison with Public
CHAPTER 5 - CONSTRUCTION MANAGEMENT PROCEDURES AND METHODOLOGIES (TO INCLUDE METHOD STATEMENTS AND RELEVANT MITIGATION MEASURES)
Removal/demolition of Structures
Perimeter Engineered Structure
Capping System
Site Access, Internal Access Roads, Public Roads and Traffic Management (Traffic Management Plan)
Contractor Welfare Facilities
Drainage Design
Temporary Works
Re-Use of Slag
Hot Spots
CHAPTER 6 - ENVIRONMENTAL MANAGEMENT PLAN (TO INCLUDE MITIGATION MEASURES FROM EIS, WL, PLANNING AND FORESHORE CONSENT CONDITIONS)
Air and Climate (Dust Management Plan, Asbestos Management Plan, Odour Management Plan)
Noise and Vibration (Noise Management Plan)
Drainage (Surface Water Drainage Plan)
Marine
Groundwater
Ecological Protection (Invasive species Management Plan) and Ecological Enhancement
Road Surface reinstatement
Health and Safety
Resource Management
Landscaping
Energy (Energy Management System)
Communications Plan
Non-conformance, Corrective and Prevention Action Plan
Accident Prevention and Emergency Response Plan
Records Procedure
Audit and Review Procedure
CHAPTER 7 – MONITORING (TO INCLUDE EIS, WL, PLANNING AND FORESHORE CONSENT REQUIREMENTS)
Objectives
Monitoring Requirements
CHAPTER 8 - END-USE, AFERECARE AND MAINTENANCE
Landscape Maintenance Requirements (Landscape Management Plans)

APPENDIX J

TRAFFIC IMPACT ASSESSMENT

APPENDIX J - TRAFFIC IMPACT ASSESSMENT

This annex describes the modelling work undertaken to assess the traffic impacts on the surrounding road network arising from the proposed remediation works at the East Tip development. It provides more detailed information to supplement Chapter 8 'Traffic and Transport' of the EIS.

J.1 GUIDELINES

This work was carried out with reference to NRA "Traffic and Transport Assessment Guidelines" (Sept 2007).

These guidelines note that:-

- the study area should include all road links and associated junctions where traffic to and from the development will exceed 10% of the existing traffic movements, or 5% in congested or other sensitive locations, including junctions with national roads.
- links and junctions should also be considered for inclusion where various sub-threshold criteria apply; the most relevant of these is whether the development may *"generate traffic at peak times in a congested area or near a junction with a main traffic route"*
- scoping work should be carried out to establish the need for inclusion and extent of treatment of each of a number of aspects.

J.2 SCOPE

Due to the location of the East Tip site, there is no passing traffic. At the scoping stage, it was identified that the most likely traffic impacts are as follows:

- At construction stage, there will be HGV movements accessing the site along the N28, over an extended period.
- When the proposed leisure use of the site is operational, there may be occasional summer evenings when flows inbound to the site in the evening peak hour are locally significant

J.3 AVAILABLE TRAFFIC DATA

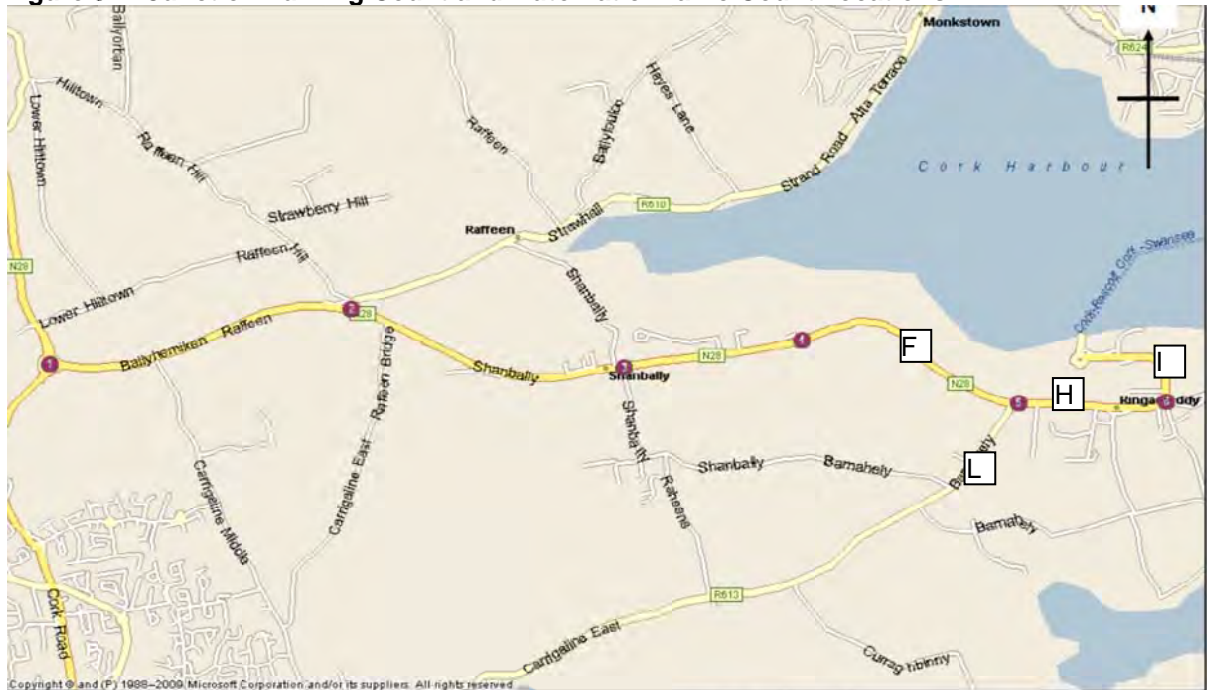
The specific traffic data available was collected by Nationwide Data Collection in May 2012, as part of work for Port of Cork, used for this TIA by kind permission.

Survey locations are shown in figures J.1 to J.3.

Journey time surveys were undertaken as four runs in each direction in morning and evening 2-hour peak periods on 15th May. Junction turning counts were undertaken for morning and evening 3-hour peak periods on 15th May. Automatic Traffic Counts (ATCs) were undertaken for a 2-week period 14th May to 27th May.

Cork County Council kindly provided ATC data for the Jack Lynch Tunnel.

Figure J.1: Junction Turning Count and Automatic Traffic Count Locations




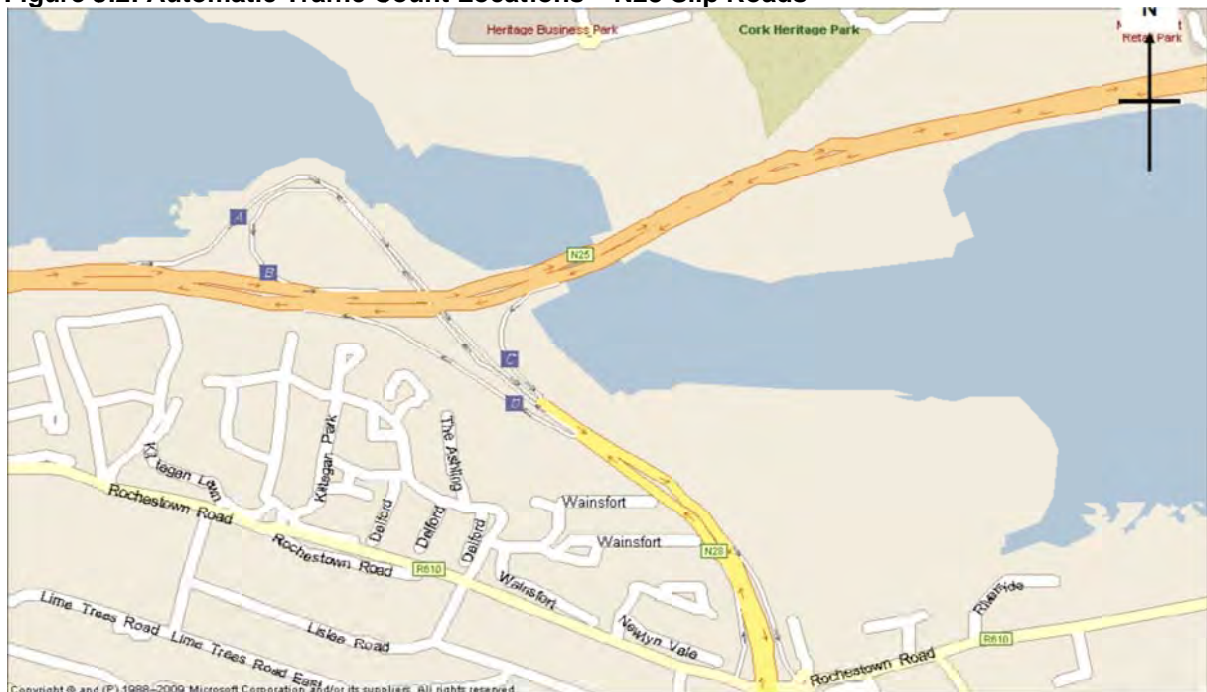
	Sites / Location:	1 to 6 / Cork	Project No:	2047	Diagram No:	2047-01	Drawn By:	AC
	Survey Date:	Tuesday 15th May 2012	Project Name:	N28, CORK				
	Survey Times:	07:00 to 10:00 & 15:00 to 19:00	Diagram Title:	General Location Plan - JTC				

Figure J.2: Automatic Traffic Count Locations – N28 Slip Roads




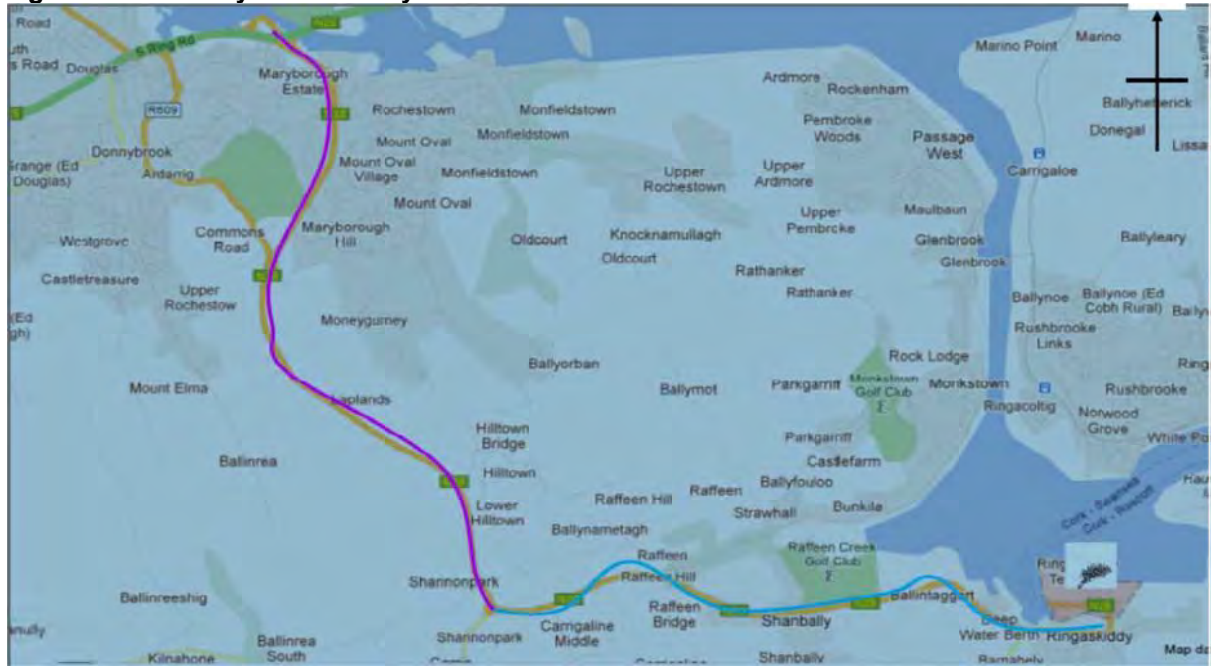
	Sites / Location:	ATC Sites A to D	Project No:	2047	Diagram No:	2047-03	Drawn By:	AC
	Survey Date:	Monday 14th May to Sunday 27th May 2012	Project Name:	N28, CORK				
	Survey Times:	00:00 to 00(24):00	Diagram Title:	General Location Plan - ATC				

Figure J.3: Journey Time Survey Extent



J.4 MODEL DEVELOPMENT

A cordon was taken from the CASP traffic model, corresponding to the study area as shown in Figure J.4. This model runs on OmniTrans software, and covers AM peak and PM peak hours, with a base of 2008, for three user classes - cars, light goods (treated as 1.2 pcus) and heavy goods vehicles (treated as 1.8 pcus).

The traffic in the model was factored to 2012 levels by multiplying all matrices by the ratio of counted May 2012 weekday peak hour flows at the Jack Lynch Tunnel to modelled 2008 flows at the same location.

Some zones of the model – principally covering the Ringaskiddy peninsula – were subdivided into smaller zones. Demand for travel to and from those zones was allocated in proportion to the number of Geodirectory addresses within each subzone.

Small changes were made to the network, principally coding additional junctions within the model, to improve the fit to observed data.

A matrix estimation procedure was used to fit modelled traffic levels to a series of traffic counts, comprising:-

- Counts already in the CASP model, factored to 2012 in the same way as the matrices.
- Counts on each arm of the surveyed junctions.
- Automatic counts on the N28 slip roads.

The CASP model takes AADT flows to be 5 times greater than the sum of AM peak hour and PM peak hour flows; the same assumption has been adopted for the current study.

Figure J.4: Modelled Area

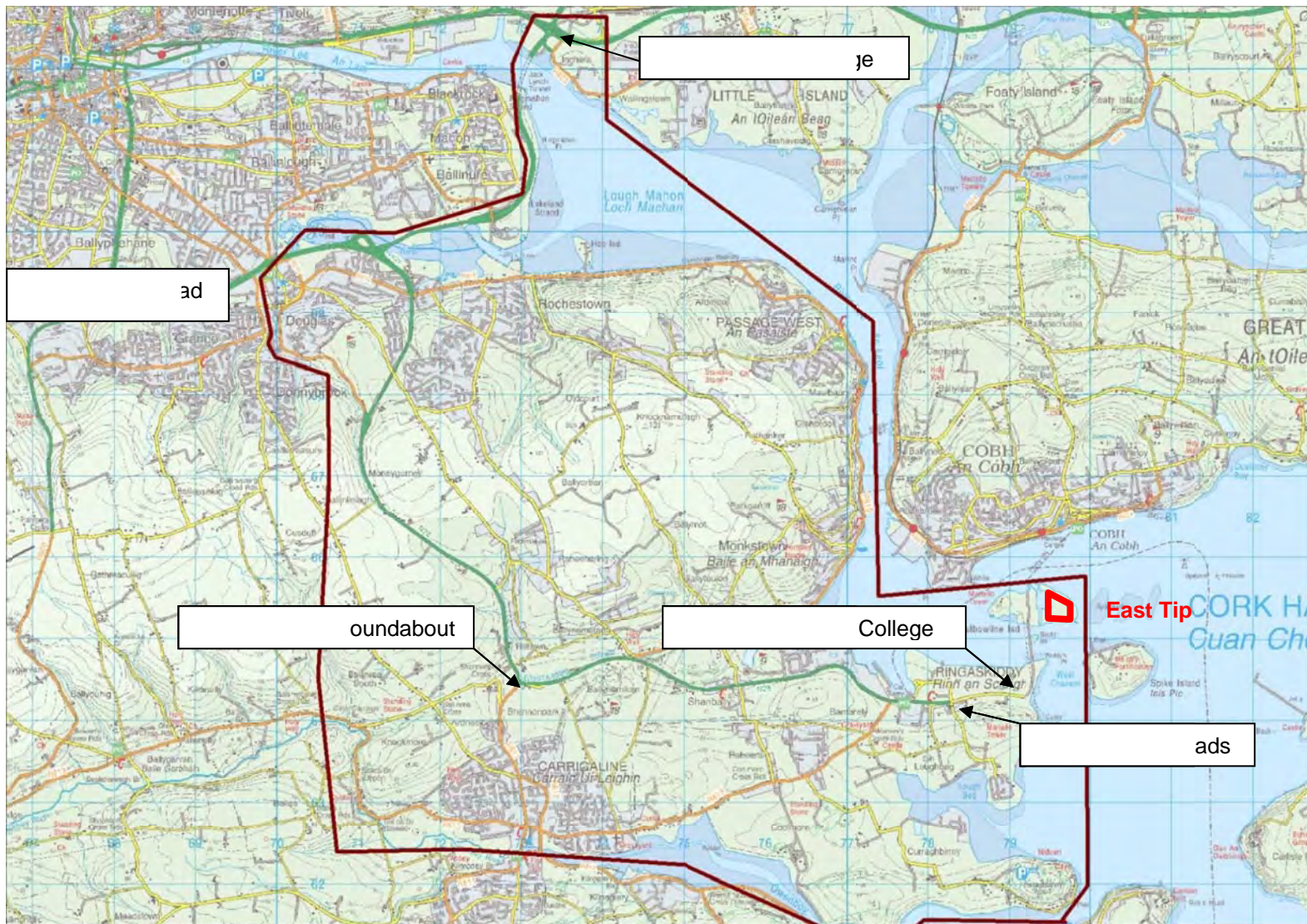


Table J.1 – GEH Statistics for Calibration Counts

countnr	Count Site	MP Light Count	MP Light Flow	EP Light Count	EP Light Flow	MP Heavy Count	MP Heavy Flow	EP Heavy Count	EP Heavy Flow	MP Light GEH	EP Light GEH	MP Heavy GEH	EP Heavy GEH
104	CS121_A_1	280.0	332.6	193.1	173.4	6.6	13.3	2.5	4.3	3.0	1.5	2.1	1.0
105	CS121_B_1	163.8	182.9	127.9	135.7	4.4	4.1	1.8	3.0	1.5	0.7	0.2	0.8
106	CS121_C_1	393.4	346.6	706.3	629.6	9.5	14.3	6.2	7.5	2.4	3.0	1.4	0.5
219	site5Din	160.0	221.0	398.0	559.8	11.0	26.9	3.0	5.1	4.4	7.4	3.6	1.0
220	site5Cin	123.0	106.2	187.0	166.8	6.0	13.2	0.0	4.8	1.6	1.5	2.3	3.1
221	site5Bin	705.0	599.6	101.0	112.0	32.0	59.8	5.0	5.1	4.1	1.1	4.1	0.0
256	CS24_B_1	154.1	156.4	228.6	247.4	3.7	7.4	1.8	3.4	0.2	1.2	1.6	1.0
258	CS24_D_1	246.1	179.2	139.0	142.0	1.5	2.8	1.2	2.2	4.6	0.3	0.9	0.8
259	CS24_F_1	282.0	297.8	259.4	222.7	3.7	5.7	4.3	7.7	0.9	2.4	0.9	1.4
260	CS25_A_1	521.4	553.2	143.7	167.3	1.5	3.5	2.5	4.5	1.4	1.9	1.3	1.1
261	CS25_B_1	33.9	31.5	127.8	136.9	0.0	0.0	1.2	1.6	0.4	0.8	0.2	0.4
262	CS25_C_1	178.3	136.4	259.4	276.8	9.5	17.2	4.3	7.5	3.3	1.1	2.1	1.3
263	site2Cin	282.0	311.5	845.0	911.4	34.0	72.1	9.0	14.3	1.7	2.2	5.2	1.5
264	site2Bin	1030.0	841.9	317.0	357.8	43.0	67.0	3.0	5.4	6.2	2.2	3.2	1.2
265	site2Ain	369.0	481.3	155.0	202.2	8.0	14.3	1.0	3.8	5.4	3.5	1.9	1.8
266	site1Cin	425.1	611.5	701.0	770.2	35.0	69.4	10.0	9.8	8.2	2.6	4.8	0.1
267	site1Bin	1055.0	916.2	777.0	687.6	32.0	53.6	20.0	38.3	4.4	3.3	3.3	3.4
268	site1Ain	1234.0	1122.5	1267.0	1572.8	57.0	91.6	14.0	22.8	3.2	8.1	4.0	2.1
269	CS28_A_1	183.1	214.0	155.9	179.3	2.9	9.5	3.7	4.0	2.2	1.8	2.7	0.1
270	CS28_B_1	332.4	394.5	180.0	232.2	1.5	4.4	2.5	3.6	3.3	3.6	1.7	0.6
271	CS28_C_1	274.2	227.8	278.0	260.8	13.1	19.8	3.1	3.5	2.9	1.0	1.7	0.2
272	CS28_D_1	196.7	230.6	172.6	188.7	1.5	5.0	1.8	2.6	2.3	1.2	2.0	0.5
273	CS29_A_1	364.3	340.4	151.2	186.6	13.1	28.9	5.5	11.6	1.3	2.7	3.4	2.1
274	CS29_B_1	353.7	235.7	629.8	564.3	19.0	33.8	6.8	12.9	6.9	2.7	2.9	1.9
275	CS29_C_1	301.4	292.4	131.5	158.0	4.4	9.5	3.7	5.9	0.5	2.2	1.9	1.0
367	CS55_A_1	401.2	326.8	251.0	254.2	6.6	17.5	0.6	8.1	3.9	0.2	3.1	3.6

countnr	Count Site	MP Light Count	MP Light Flow	EP Light Count	EP Light Flow	MP Heavy Count	MP Heavy Flow	EP Heavy Count	EP Heavy Flow	MP Light GEH	EP Light GEH	MP Heavy GEH	EP Heavy GEH
368	CS55_B_1	221.9	245.2	234.2	320.1	6.6	12.5	1.8	2.9	1.5	5.2	1.9	0.7
369	CS55_C_1	307.1	350.8	179.1	169.2	2.9	7.4	1.8	2.5	2.4	0.7	2.0	0.5
370	CS56_A_1	0.0	2.7	39.2	60.8	0.7	6.7	0.6	1.1	2.3	3.1	3.1	0.5
371	CS56_B_1	117.3	181.9	201.5	239.0	2.2	4.7	0.0	27.7	5.3	2.5	1.4	7.4
372	CS56_C_1	170.6	175.7	306.0	289.8	3.7	7.6	1.2	2.7	0.4	0.9	1.6	1.1
373	CS56_D_1	143.4	276.9	83.0	107.1	0.7	5.1	0.0	7.5	9.2	2.5	2.6	3.9
377	CS58_A_1	358.5	384.8	502.9	544.5	2.9	8.3	1.8	5.3	1.4	1.8	2.3	1.9
378	CS58_B_1	628.9	661.7	558.0	508.6	14.6	29.3	6.2	9.9	1.3	2.1	3.1	1.3
379	CS58_C_1	268.4	216.1	292.0	497.8	2.9	9.9	1.2	3.0	3.4	10.4	2.8	1.3
380	CS58_D_1	410.9	184.2	368.5	105.9	15.3	1.2	4.3	1.0	13.1	17.1	4.9	2.0
383	CS59_C_1	280.1	241.9	489.8	518.2	10.2	21.7	6.2	14.4	2.4	1.3	2.9	2.6
498	CS94_A_1	521.3	482.7	265.0	278.3	3.7	6.4	0.0	3.1	1.7	0.8	1.2	2.5
499	CS94_B_1	409.8	420.0	387.2	370.2	3.7	13.7	0.6	1.2	0.5	0.9	3.4	0.7
500	CS94_C_1	302.4	312.9	508.5	505.4	4.4	7.5	1.8	3.1	0.6	0.1	1.3	0.8
501	CS94_D_1	426.3	498.0	810.8	828.9	10.2	19.8	1.2	2.1	3.3	0.6	2.5	0.7
502	CS94_E_1	593.1	482.2	393.7	425.1	12.4	7.9	0.0	0.1	4.8	1.6	1.4	0.4
504	CS95_B_1	619.1	773.1	810.7	802.0	10.2	33.3	1.8	3.1	5.8	0.3	4.9	0.8
505	CS96_A_1	958.3	1128.7	519.7	454.0	11.7	26.6	5.5	8.5	5.3	3.0	3.4	1.1
507	CS96_C_1	185.1	187.0	479.5	490.4	2.9	4.6	1.8	3.0	0.1	0.5	0.9	0.8
508	CS96_D_1	544.6	599.9	417.0	800.5	16.8	16.8	1.8	15.3	2.3	15.5	0.0	4.6
510	CS97_A_1	504.9	515.2	251.9	281.9	1.5	2.9	0.6	1.4	0.5	1.8	1.0	0.8
511	CS97_B_1	139.6	109.6	189.4	175.6	2.9	6.7	0.0	63.0	2.7	1.0	1.7	11.2
620	CS121_A_2	190.8	179.4	448.7	419.7	8.0	12.9	4.3	7.4	0.8	1.4	1.5	1.3
621	CS121_B_2	219.0	219.0	266.8	209.9	2.9	1.5	2.5	0.1	0.0	3.7	1.0	2.1
622	CS121_C_2	427.3	463.7	311.6	309.0	9.5	17.4	3.7	7.3	1.7	0.1	2.2	1.5
736	site5Dout	605.0	646.1	111.0	225.2	9.0	26.7	3.0	5.4	1.6	8.8	4.2	1.2
737	site5Cout	259.0	153.8	109.0	109.1	8.0	10.1	1.0	1.0	7.3	0.0	0.7	0.0
738	site5Bout	111.0	116.3	496.0	536.7	36.0	64.5	7.0	13.2	0.5	1.8	4.0	2.0

countnr	Count Site	MP Light Count	MP Light Flow	EP Light Count	EP Light Flow	MP Heavy Count	MP Heavy Flow	EP Heavy Count	EP Heavy Flow	MP Light GEH	EP Light GEH	MP Heavy GEH	EP Heavy GEH
771	CS24_B_2	310.1	334.1	221.1	238.4	2.9	5.7	4.3	8.1	1.3	1.1	1.3	1.5
773	CS24_D_2	114.3	95.5	133.4	110.8	1.5	2.4	0.6	1.0	1.8	2.0	0.7	0.5
774	CS24_E_2	272.3	203.9	284.6	263.0	4.4	7.8	2.5	4.2	4.4	1.3	1.4	0.9
775	CS25_A_2	193.8	167.7	377.8	413.7	9.5	17.2	5.5	9.1	1.9	1.8	2.1	1.3
776	CS25_B_2	208.3	151.5	24.2	23.4	0.0	0.0	0.6	0.8	4.2	0.2	0.0	0.3
777	CS25_C_2	331.4	401.9	128.7	143.9	1.5	3.5	1.8	3.7	3.7	1.3	1.3	1.1
778	site2Cout	1111.0	999.8	219.0	287.0	40.0	70.0	4.0	6.5	3.4	4.3	4.0	1.1
779	site2Bout	345.0	386.2	701.0	763.8	37.0	63.5	8.0	8.0	2.2	2.3	3.7	0.0
780	site2Aout	225.1	248.7	397.0	420.6	8.0	19.8	1.0	8.8	1.5	1.2	3.2	3.5
781	site1Cout	1045.0	958.2	464.0	807.7	40.0	69.5	5.0	11.1	2.7	13.6	4.0	2.1
782	site1Bout	672.0	601.6	1163.0	1056.4	36.0	50.4	12.0	18.5	2.8	3.2	2.2	1.7
783	site1Aout	997.0	1090.4	1118.0	1166.5	48.0	94.6	27.0	41.4	2.9	1.4	5.5	2.5
784	CS28_A_2	199.6	188.5	155.9	163.7	11.7	21.0	3.1	3.6	0.8	0.6	2.3	0.3
785	CS28_B_2	187.1	163.2	271.5	283.5	1.5	3.8	1.2	2.4	1.8	0.7	1.4	0.9
786	CS28_C_2	288.8	292.4	140.9	158.0	2.9	9.5	3.7	5.9	0.2	1.4	2.7	1.0
787	CS28_D_2	311.1	422.8	218.3	255.8	2.9	4.5	3.1	1.8	5.8	2.4	0.8	0.8
788	CS29_A_2	145.4	140.8	369.5	386.9	8.0	17.4	3.7	10.1	0.4	0.9	2.6	2.4
789	CS29_B_2	590.1	499.9	253.8	261.2	17.5	34.9	9.2	16.8	3.9	0.5	3.4	2.1
790	CS29_C_2	283.9	227.8	289.2	260.8	11.0	19.8	3.1	3.5	3.5	1.7	2.3	0.2
882	CS55_A_2	158.0	250.8	149.3	207.2	2.9	5.2	2.5	3.5	6.5	4.3	1.1	0.6
883	CS55_B_2	658.9	559.7	349.9	332.4	7.3	23.1	1.8	10.0	4.0	0.9	4.1	3.4
884	CS55_C_2	113.3	112.3	165.2	204.0	5.8	9.1	0.0	0.0	0.1	2.9	1.2	0.3
885	CS56_A_2	0.0	38.7	0.9	49.2	0.0	5.2	0.0	9.9	8.8	9.6	3.2	4.5
886	CS56_B_2	140.5	189.6	289.3	279.9	2.9	5.3	1.8	3.2	3.8	0.6	1.2	0.9
887	CS56_C_2	217.1	379.4	180.0	179.2	2.9	5.9	0.0	1.9	9.4	0.1	1.4	2.0
888	CS56_D_2	73.7	29.5	159.5	188.4	1.5	7.7	0.0	23.9	6.2	2.2	2.9	6.9
892	CS58_A_2	508.7	433.2	314.5	423.2	8.0	21.7	0.6	1.5	3.5	5.7	3.6	0.9
893	CS58_B_2	471.9	333.7	721.2	685.2	16.1	11.2	4.9	8.8	6.9	1.4	1.3	1.5

countnr	Count Site	MP Light Count	MP Light Flow	EP Light Count	EP Light Flow	MP Heavy Count	MP Heavy Flow	EP Heavy Count	EP Heavy Flow	MP Light GEH	EP Light GEH	MP Heavy GEH	EP Heavy GEH
894	CS58_C_2	285.9	281.5	315.4	179.2	4.4	11.0	1.8	0.6	0.3	8.7	2.4	1.1
895	CS58_D_2	400.2	398.4	370.4	369.1	7.3	4.7	6.2	8.4	0.1	0.1	1.0	0.8
898	CS59_C_2	643.5	544.6	462.8	359.7	13.1	24.6	8.0	15.7	4.1	5.1	2.7	2.2
1012	CS94_A_2	290.7	300.6	497.3	615.1	11.7	24.6	1.2	4.8	0.6	5.0	3.0	2.1
1013	CS94_B_2	579.4	562.4	559.8	595.3	8.8	14.3	0.6	2.7	0.7	1.5	1.6	1.6
1014	CS94_D_2	937.0	873.8	502.9	562.1	8.8	13.1	0.0	1.2	2.1	2.6	1.3	1.5
1015	CS94_E_2	444.8	459.0	804.2	635.3	5.1	3.2	1.8	0.9	0.7	6.3	0.9	0.7
1017	CS95_B_2	497.1	508.8	636.3	692.3	9.5	7.9	2.5	4.4	0.5	2.2	0.5	1.0
1018	CS95_C_2	1209.3	1636.9	627.0	571.9	16.8	52.4	4.9	5.8	11.3	2.2	6.1	0.4
1019	CS96_A_2	482.5	437.8	468.3	792.2	12.4	17.0	1.8	16.6	2.1	12.9	1.2	4.9
1021	CS96_C_2	1272.3	1559.6	932.1	952.7	19.0	31.7	7.4	10.1	7.6	0.7	2.5	0.9
1023	CS97_B_2	502.9	515.2	251.9	281.9	1.5	2.9	0.6	1.4	0.5	1.8	1.0	0.8
1024	CS97_C_2	141.5	109.6	189.4	175.6	2.9	6.7	0.0	63.0	2.8	1.0	1.7	11.2
1056	CS174_A_1	416.7	255.9	163.3	134.6	0.0	1.7	0.0	1.0	8.8	2.4	1.8	1.4
1057	CS174_B_1	138.5	148.5	280.8	232.7	4.4	7.4	1.8	3.0	0.8	3.0	1.2	0.8
1144	CS227_A_1	1008.7	1287.1	636.3	856.3	19.7	44.1	4.9	12.9	8.2	8.1	4.3	2.7
1145	CS227_B_1	592.0	596.2	653.1	1026.4	17.5	31.9	19.7	34.0	0.2	12.9	2.9	2.8
1286	CS255_A_2	320.7	356.0	701.7	587.3	9.5	13.9	6.8	16.7	1.9	4.5	1.3	2.9
1289	CS255_C_1	723.8	703.7	720.2	532.1	12.4	19.5	5.5	6.0	0.8	7.5	1.8	0.2
1292	CS256_A_1	635.7	616.1	507.5	458.6	11.7	17.4	11.1	5.0	0.8	2.2	1.5	2.1
1293	CS256_B_1	109.5	124.2	39.2	62.5	2.2	7.2	1.8	1.9	1.4	3.3	2.3	0.1
1294	CS256_B_2	28.1	33.0	114.7	134.6	1.5	1.3	1.8	7.3	0.9	1.8	0.2	2.6
1295	CS256_C_2	355.7	364.1	641.9	501.4	11.0	16.7	4.9	10.0	0.4	5.9	1.5	1.9
1296	CS256_D_1	306.2	334.7	715.6	620.9	12.4	18.0	6.2	17.3	1.6	3.7	1.4	3.2
1297	CS256_D_2	667.7	677.8	505.7	506.1	13.9	24.6	12.3	6.9	0.4	0.0	2.4	1.7
1390	site3Ain	1159.0	968.5	169.0	190.1	36.0	58.9	5.0	8.9	5.8	1.6	3.3	1.5
1391	site3Aout	219.0	232.9	853.0	893.3	34.0	60.4	9.0	14.6	0.9	1.4	3.8	1.6
1392	site3Bin	121.0	130.3	201.0	237.3	1.0	2.2	1.0	2.2	0.8	2.5	0.9	0.9

countnr	Count Site	MP Light Count	MP Light Flow	EP Light Count	EP Light Flow	MP Heavy Count	MP Heavy Flow	EP Heavy Count	EP Heavy Flow	MP Light GEH	EP Light GEH	MP Heavy GEH	EP Heavy GEH
1393	site3Bout	312.0	236.7	51.0	105.5	2.0	2.8	1.0	1.8	4.5	6.2	0.5	0.7
1394	site3Cin	137.0	109.8	645.0	658.0	33.0	58.3	8.0	12.4	2.4	0.5	3.7	1.4
1395	site3Cout	886.0	739.0	111.0	86.6	34.0	56.2	4.0	7.1	5.2	2.5	3.3	1.3
1396	site4Ain	34.0	36.4	138.0	166.1	2.0	4.4	1.0	2.0	0.4	2.3	1.3	0.8
1397	site4Aout	192.0	182.3	9.0	19.3	2.0	7.0	0.0	4.8	0.7	2.7	2.3	3.1
1398	site4Bin	880.0	739.0	98.0	86.6	35.0	56.2	4.0	7.1	5.0	1.2	3.1	1.3
1399	site4Bout	138.0	109.8	637.0	658.0	35.0	58.3	7.0	12.4	2.5	0.8	3.4	1.7
1400	site4Cin	125.1	116.3	512.0	536.7	33.0	64.5	6.0	13.2	0.8	1.1	4.5	2.3
1401	site4Cout	709.0	599.6	102.0	112.0	33.0	59.8	4.0	5.1	4.3	1.0	3.9	0.5
1402	site5Aout	16.0	16.8	4.0	8.9	22.0	35.8	1.0	1.8	0.2	1.9	2.6	0.7
1403	site5Ain	3.0	6.2	34.0	41.3	26.0	37.1	4.0	6.5	1.5	1.2	2.0	1.1
1404	site6Ain	1.0	0.8	22.0	28.2	3.0	3.4	0.0	5.8	0.2	1.2	0.2	3.4
1405	site6Aout	6.0	5.7	16.0	20.4	3.0	5.1	1.0	2.1	0.1	1.0	1.0	0.9
1406	site6Bin	575.1	450.6	57.0	76.7	8.0	5.5	2.0	3.5	5.5	2.4	1.0	0.9
1407	site6Bout	71.0	64.2	369.0	366.4	5.0	6.7	1.0	1.9	0.8	0.1	0.7	0.7
1408	site6Cin	34.0	36.9	261.0	258.9	0.0	9.1	1.0	1.7	0.5	0.1	4.3	0.6
1409	site6Cout	272.0	212.9	20.0	22.2	2.0	3.5	1.0	1.9	3.8	0.5	0.9	0.7
1410	site6DEin	39.0	27.1	92.0	86.7	2.0	3.8	0.0	5.5	2.1	0.6	1.1	3.3
1411	site6DEout	300.0	232.6	27.0	41.5	3.0	6.3	0.0	10.6	4.1	2.5	1.5	4.6
1412	siteA	654.1	674.3	1265.9	1246.7	27.1	55.4	11.9	20.2	0.8	0.5	4.4	2.1
1413	siteB	1317.5	1302.7	967.4	1000.7	38.7	64.9	17.7	33.9	0.4	1.1	3.6	3.2
1414	siteC	822.9	853.3	1228.8	1178.2	34.1	71.7	11.6	19.3	1.0	1.5	5.2	2.0
1415	siteD	1475.3	1452.4	704.8	767.2	43.3	85.5	12.9	25.2	0.6	2.3	5.3	2.8

Table J.2 – GEH Statistics for Validation Counts

countnr	Count Site	MP Light Count	MP Light Flow	EP Light Count	EP Light Flow	MP Heavy Count	MP Heavy Flow	EP Heavy Count	EP Heavy Flow	MP Light GEH	EP Light GEH	MP Heavy GEH	EP Heavy GEH
1420	siteF_ebd	656.3	599.6	89.25	112.0	47.8	59.79	9	5.09	2.3	2.3	1.6	1.5
1421	siteF_wbd	115	116.3	479.8	536.7	28.75	64.46	20.75	13.23	0.1	2.5	5.2	1.8
1422	siteL_nbd	118.3	106.2	175.5	166.8	9	13.24	5	4.83	1.1	0.7	1.3	0.1
1423	siteL_sbd	222.3	153.8	102.8	109.1	14	10.11	2.5	1.01	5.0	0.6	1.1	1.1
1424	siteH_ebd	568	646.1	96.25	225.2	30	26.67	8.25	5.40	3.2	10.2	0.6	1.1
1425	siteH_wbd	139.5	221.0	394.8	559.8	15	26.88	7.25	5.05	6.1	7.6	2.6	0.9
1426	siteL_nbd	8	5.7	13.25	20.4	1.25	5.10	2.5	2.12	0.9	1.7	2.2	0.3
1427	siteL_sbd	2	0.8	18	28.2	1.75	3.37	1.5	5.84	1.0	2.1	1.0	2.3

J.5 LEVEL OF FIT

Table J.1 shows the level of fit to the calibration counts. Published guidance suggests that for a sound model, the GEH statistic – a measure of fit that takes account of both relative and absolute differences between modelled and observed flows - should be less than 5 for 85% or more of count locations. For this model, GEH is less than 5 at better than 90% of locations, with higher levels of fit at the N28 count sites (sites 1-6), and poorer fit in the built-up areas of Douglas and Carrigaline.

Table J.2 shows the level of fit to the validation counts – independent data that was not used in the calibration. GEH statistics are less than 5 for 28 out of 32 (87.5%) of counts.

Table J.3 compares modelled and observed journey times. For 15 out of the 16 route sections, the modelled time is either within 10% of the observed for at least one time period, or is under-predicting in one time period and over-predicting in the other, indicating that the network coding is likely to be appropriate. The sixteenth section may relate to lack of observance of the existing speed limit west of Shanbally village.

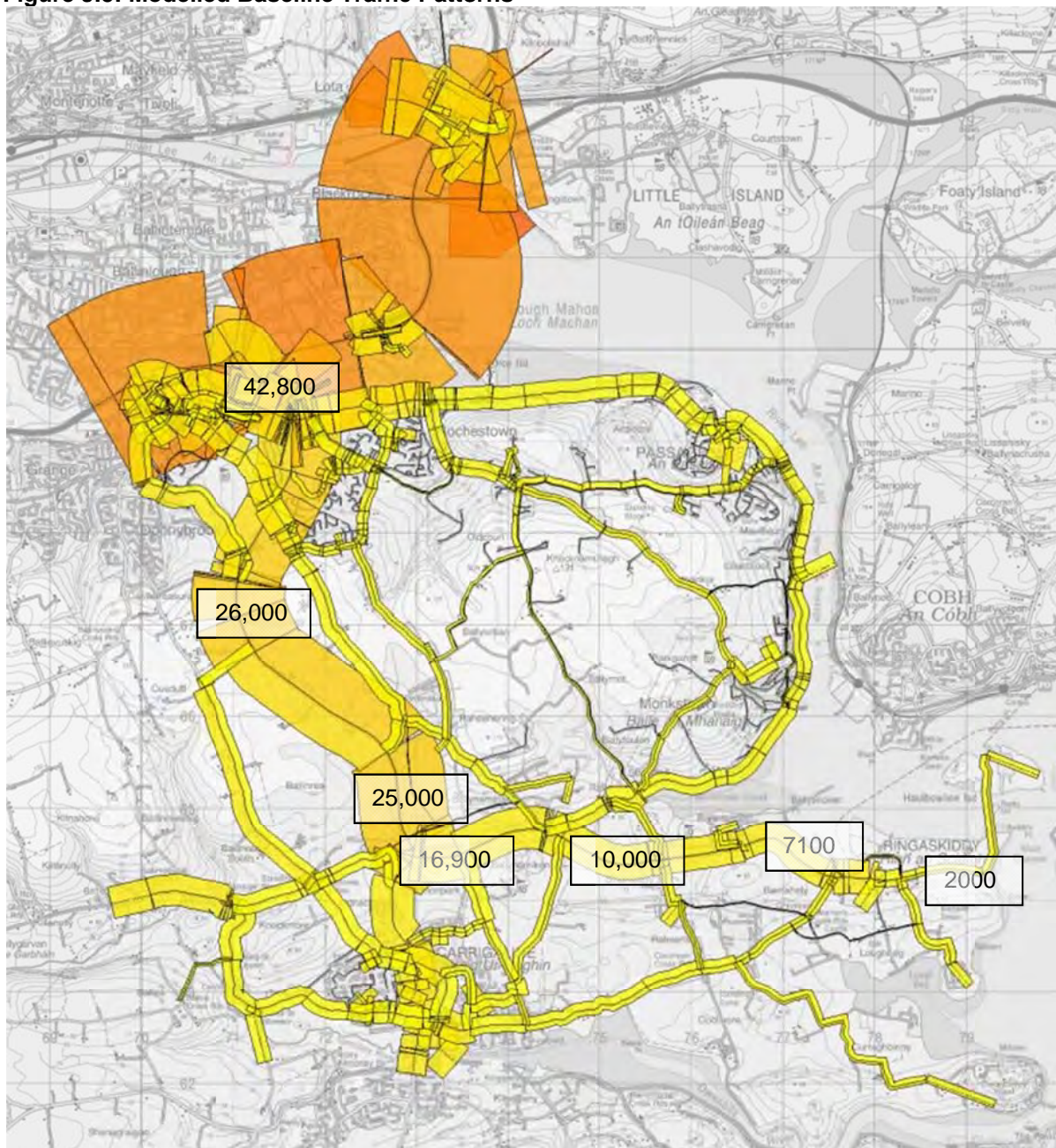
Table J.3 – Comparison with Observed Journey Times

	AM observed Minutes	AM modelled Minutes	<i>% diff</i>	PM observed Minutes	PM modelled Minutes	<i>% diff</i>
<u>N28 Southbound</u>						
N28/N25 merge to Kelbrook	4.15	4.43	6.7%	5.05	4.48	-11.3%
Kelbrook to Shannonpark	1.15	1.32	14.8%	1.52	1.62	6.8%
<u>N28 Northbound</u>						
Shannonpark to R609 offslip	4.68	3.8	-18.9%	3.45	3.94	14.2%
R609 offslip to Maryborough onslip	3.10	1.01	-67.4%	0.85	1.22	43.5%
Maryborough to Rochestown Rd onslip	1.72	1.4	-18.4%	0.83	1.43	71.6%
Rochestown Rd to N28/N25 merge	0.68	0.96	40.5%	0.75	0.78	4.0%
TOTAL	15.48	12.92	-16.6%	12.45	13.47	8.2%
	AM observed Minutes	AM modelled minutes	<i>% diff</i>	PM observed minutes	PM modelled minutes	<i>% diff</i>
<u>N28 Eastbound</u>						
Shannonpark to Raffeen Bridge	1.25	1.32	5.6%	1.17	1.12	-4.0%
Raffeen Bridge to Shanbally	1.22	1.97	61.9%	1.10	1.44	30.9%
Shanbally to Pfizers	1.12	1.15	3.0%	1.08	0.99	-8.6%
Pfizers to R613 jn	1.25	1.15	-8.0%	1.27	1.04	-17.9%
R613 jn to Oratory Crossroads	0.93	1.14	22.1%	0.93	0.88	-5.7%
<u>N28 Westbound</u>						
Oratory Crossroads to R613jn	1.00	0.89	-11.0%	0.98	1.06	7.8%
R613jn to Pfizers	1.23	1.24	0.5%	1.20	1.37	14.2%
Pfizers to Shanbally	1.07	1	-6.3%	1.07	1.09	2.2%
Shanbally to Raffeen Bridge	1.52	1.21	-20.2%	1.45	1.51	4.1%
Raffeen Bridge to Shannonpark	1.32	1.35	2.5%	2.25	1.51	-32.9%
TOTAL	11.90	12.42	4.4%	12.50	12.01	-3.9%

J.6 MODEL RESULTS

Figure J.5 demonstrates the model results, with traffic levels quoted as AADT. The diagram shows that traffic levels generally increase travelling along N28/N40 from Haulbowline towards Dunkettle interchange.

Figure J.5: Modelled Baseline Traffic Patterns



These modelled flows were used as baseline traffic levels for the assessment of congestion. Observed flows from the traffic surveys were used as baseline traffic levels for the assessment of noise impacts through villages.

Applying the 5% criterion from NRA guidelines, it would be concluded that a two-way construction traffic flow of up to 30 vehicles per hour is only significant where flows are less than 700 vehicles per peak hour (approx 6000 AADT), implying that the area of significant impact is restricted to the local access road and Ringaskiddy village.

J.7 ESTIMATE OF CONSTRUCTION TRAFFIC

Total HGV Movements

Table J.4 below sets out the estimated weights and volumes of material to be taken to/from site as part of the construction works, and the calculation of the resulting numbers of HGV movements.

This is a worst case assumption in terms of requirements, and assumes no backloading.

Assumptions regarding average capacity of each HGV are as follows:-

Truck Capacity Assumptions:	10 cubic metres
or	20 tonnes
or	5 rolls of membrane

Based on the draft construction programme presented in chapter 6, a simplified description is as follows:-

- The first month of construction will see all surplus material removed from the site, and stockpile areas created for managing the process of bringing material to the site.
- The construction of the PES and placement of the capping layers and subsoil will take place in months 2 to 10; we have assumed for traffic purposes that delivery of subsoil will be complete by end of month 9.
- Months 11 to 18 will be devoted to construction of the surface water drainage system, placement of topsoil, landscaping, and construction of surface features such as car parks. We have assumed for traffic purposes that related deliveries will be spread over months 10-15.

Each category of generated HGV movements in Table J.4 has thus been allocated to one of these three time periods.

Table J.4 – Calculation of HGV Movements

Item	Dimensions	Estimated Quantities	Estimated number of Truck Movements	Programmed for
Engineered Capping System:				
Clay layer	0.6m x 90,000m ²	54,000m ³	5,400	Months 2-9
Regulation Layer	0.3m x 90,000m ²	27,000m ³	2,700	
1mm LLDPE Liner	Roll 237.7m x 6.8m = 1616.36m ²	Approx. 60 rolls	12	
Drainage layer (stone)	0.3mx90,000m ²	27,000m ³	2,700	
Subsoil + Topsoil	1m x 90,000m ²	90,000m ³	9,000	Subsoil Months 2-9 Topsoil Months 10-15
Fill for anchor trenches	0.3m x 1,200m x 0.9m	324m ³	33	Months 10-15
Surface water drains	-	500m ³	50	
Perimeter Engineered Structure:				
Engineering Fill material (max. permeability 1x10 ⁻⁵ m/s):	-			Months 2-9
If 1:3 Slope constructed		35,000m ³		
If 1:1.5 Slope constructed		45,000m ³	4500	
Rock Armour:	-			
1:3 Slope		35,000t	1,750	
1:1.5 Slope		25,000t		
Western Boundary of the Navy site				
Engineering Fill material (max. permeability 1x10 ⁻⁵ m/s)		1,750m ³	175	Months 2-9
Landscaping (excluding subsoil and topsoil)				
Landscape Mounds	-	12,000m ³	1,200	Months 10-15
Footpaths & walkways	-	100m ³	10	
Road & Pathway Improvements				
Access Road Widening	-			Months 10-15
Car park				
Access road improvements				
Footpath improvements		7,000m ³	700	
Drainage fill	-	2,500m ³	250	
Material to be removed from site				
Scrap waste		1500m ³	150	Month 1
Demolition		200m ³	20	
Stockpiles		400m ³	40	
Contingency		500m ³	50	
TOTAL			28,740	

HGVS Traffic Intensity

Resulting intensities of HGVS traffic are as follows:

Table J.5 – Calculation of HGVS intensity

Month	Loaded HGVS Movements	Loaded HGVS Movements per Month	Loaded HGVS Movements per Hour
1	260	260	1.2
2-9	23987	2998	14.3
10-15	4493	749	3.6

It is proposed that the site will be operational for 12 hours (07:00 to 19:00) on weekdays and 7 hours (09:00 to 16:00) on Saturdays. It is considered likely that no deliveries will be scheduled for the final hour of each working day (to avoid disruption of working hours from late arrivals).

The proposed schedule assumes that no deliveries will take place before 09:30 on weekdays, to avoid adding to morning peak traffic congestion. The hours during which deliveries will take place are thus:

09:30 to 18:00 for 5 days a week and 09:00 to 15:00 on Saturdays.

This gives 48.5 hours of deliveries per week (210 hours per month). Assuming an even spread, this means that over the main delivery period (months 2-9) there will be 14.3 loaded HGVS arriving in a typical hour, and a similar number of empty vehicles travelling in the opposite direction.

Commuting Traffic

In addition to the HGVS movements, the proposed development will cause additional commuting traffic from workers travelling to the site. However, the number of workers involved at any particular time is likely to be small (<20).

The proposal to operate the site between 07:00 and 19:00 means that such trips will occur outside the busiest hours on the road network. Thus the impact of these trips can be taken to be negligible.

J.8 ESTIMATE OF RESULTING CONGESTION – CONSTRUCTION PHASE

In order to estimate peak hour traffic congestion, the traffic model was re-run with additional flows of 14.3 heavy goods vehicles each way between Haulbowline and the M8.

The results show that average end-to-end journey times between Haulbowline and the M8 will increase by around 19 seconds in the PM peak.

At no junction does the modelled increase in average delay per vehicle exceed one second.

This average level of delay is not considered to be perceptible on a baseline time of approximately 23 minutes.

No forecasting was undertaken, as construction is assumed to take place in the near future and encounter 2012 traffic levels (to within the accuracy of available data).

J.9 ESTIMATE OF OPERATIONAL TRAFFIC

Due to the variety of low-traffic-intensity land uses proposed, car trips attracted to the site will generally be small in number, and spread over the day.

The greatest flows of associated traffic are likely to occur on a summer evening either:-

- Around dusk as the site empties of people, or
- As people arrive to spend leisure time after the working day has ended.

At the outside, such flows are unlikely to exceed the 54-car proposed parking capacity, and no significant increase in traffic congestion is likely.

J.10 ESTIMATES OF AVAILABLE ROAD CAPACITY

Data from NRA permanent counters suggests that 2012 traffic levels in the Cork City area are around 10% lower than those observed in 2008. Thus in general there is capacity available on the road network.

An assessment of junction capacity was carried out at the two key junctions which regulate flow on the east-west section of the N28 – the roundabouts at Shannonpark and Shanbally. This assessment used the standard ARCADY software. Flows were taken directly from the May 2012 traffic count data referred to above, and input at 15-minute intervals. The busiest hours were identified as 07:30 to 08:30 in the AM peak and 16:30 to 17:30 in the PM peak.

The baseline results are shown in Table J.6 below.

Table J.6 – Estimates of Available Capacity

Shannonpark Roundabout						
Arm	AM Peak			PM Peak		
	RFC	Max Q	Delay	RFC	Max Q	Delay
N28 North	0.538	1.2	0.04	0.489	1.0	0.04
Cork Road	0.800	3.8	0.11	0.374	0.6	0.04
N28 East	0.347	0.5	0.06	0.591	1.4	0.07
Shanbally Roundabout						
Arm	AM Peak			PM Peak		
	RFC	Max Q	Delay	RFC	Max Q	Delay
N28 West	1.016	28.2	0.85	0.132	0.2	0.05
to Shanbally	0.309	0.2	0.13	0.394	0.6	0.08
N28 East	0.158	0.2	0.06	0.794	3.6	0.15

The results show that despite the much higher flows at Shannonpark, the limitation on N28 capacity occurs at Shanbally. At Shanbally in the AM peak, the traffic demand exceeds capacity in the peak direction, whereas in the PM peak the demand in the peak direction is less than 80% of capacity.

Using the rule of thumb that significant delays only start to occur when the flow-to-capacity ratio reaches 0.85, PM peak flows could increase by around 7% (equivalent to approximately 29 HGVs per hour one-way) without causing any significant congestion.

Thus at the height of the PM peak, capacity easily exists for the proposed construction traffic of around 14 HGVs per hour, without adding significantly to congestion.

J.11 CONCLUSION

Volumes of construction traffic will be locally significant in the area of Ringaskiddy village and on the approach road to Haulbowline Island.

Neither the leisure uses of the site once remediation is completed nor the construction traffic during the remediation works is likely to have a significant impact on the operation of national roads.

APPENDIX K

**ASBESTOS CONSTRUCTION
MANAGEMENT PLAN**

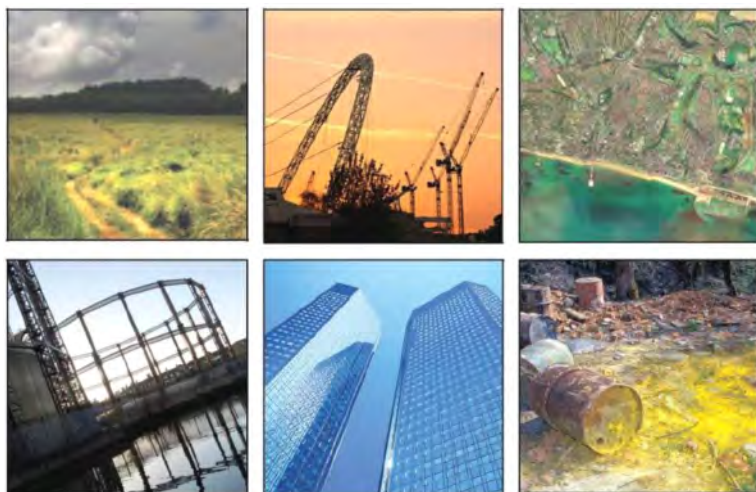
RPS

**EAST TIP REMEDIATION
HAULBOWLINE ISLAND, CORK**

ASBESTOS CONSTRUCTION MANAGEMENT PLAN

FOR

CORK COUNTY COUNCIL



February 2013

Our Ref: HLEI24331/005R

RPS Health, Safety & Environment
14 Cornhill
London
EC3V 3ND

Tel: 020 7280 3200

Email: rpslon@rpsgroup.com



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Appendix A Asbestos Analysis Results and Sample Location Plan



1 INTRODUCTION

1.1 Background

East Tip is an area of land (approx. 9 hectares) reclaimed from the sea by infilling with processing waste from a former steelworks site. The majority of the waste is made up of slag (64%), refractories (15%), millscale (13%) and scrap metal (7%). The site is located on Haulbowline Island in Cork Harbour. The Headquarters of the Irish Naval Service is situated on the western portion of the Island with the Naval Dockyard to the east. Separating these is the site of former Irish Ispat Steelworks. To the east of the Naval Dockyard is the East Tip, an area of land reclaimed from the Spit Bank by infilling with processing waste from the steelworks. It is proposed to remediate East Tip so that the site can be used for amenity and recreational purposes.

Previous site investigation carried out at the site has identified asbestos in a number of samples analysed from the waste material at the East Tip (typically in the 0.003%-0.006% range). This has included free fibre asbestos which would have the potential to become airborne where disturbed. The development of the site is likely to result in significant disturbance of the waste material resulting in a potentially significant risk to construction workers, site users and neighbouring land users through the inhalation of asbestos fibres.

The Safety, Health and Welfare at Work (Exposure to Asbestos) Regulations 2006 state that where there is, or is likely to be, an exposure of employees at the place of work to dust arising from either or both asbestos or materials containing asbestos, the employer concerned shall reduce such exposure to a minimum. Measures to be taken to reduce the exposure to a minimum are also detailed within these regulations.

This Asbestos Construction Management Plan (ACMP) should be read in conjunction with the Health Risk Assessment report for Haulbowline Island East Tip – Draft (RPS reference MHS0365RP0002, dated 30th September 2011).

1.2 Proposed Development

Cork County Council, on behalf of the Irish State, is currently managing the regularisation of the East Tip on Haulbowline Island in accordance with the Waste Framework Directive licensing requirements. Further to European Court of Justice Ruling 494/01, the necessary applications for planning approval, waste licensing and foreshore licensing are proposed to be lodged with the relevant authorities in early 2013. It is proposed that the waste at the site will be contained by constructing an engineered capping system on top of the waste and an outer perimeter engineered structure. Prior to construction



of the capping system, pre construction activities such as reprofiling of the site and processing of material from the site will be required, which has the potential to create dust. Once the remediation solution has been constructed, it is proposed that the East Tip will be landscaped for amenity and recreational purposes.

1.3 Objective

The objective of this report is to examine the level of risk arising from construction activities that may give rise to dust and recommend measures to reduce the risk exposure of site workers and neighbours to dust arising from either or both asbestos or materials containing asbestos. Section 4 contains an ACMP, which outlines the strategy, standards, control measures and monitoring procedures that should be observed during redevelopment of the East Tip to minimise and manage any potentially adverse human health impacts with regards to asbestos in accordance with the Safety, Health and Welfare at Work (Exposure to Asbestos) Regulations 2006 and the Safety, Health and Welfare at Work (Exposure to Asbestos) (Amendment) Regulations 2010.



2 PREVIOUS ASBESTOS ASSESSMENT

White Young Green was appointed by Cork County Council in January 2012 for the site investigation and draft Detailed Quantitative Risk Assessment (DQRA) of the East Tip. A comprehensive review of asbestos detected in ground materials beneath the site during previous intrusive investigations is provided within this assessment. The results of asbestos analysis and a sample location plan, as provided within this report, are presented in Appendix A. The following is an extract from the draft DQRA report regarding the sampling and analysis of asbestos at the site to date:

In total 94No. numbers samples were analysed by Alcontrol to identify asbestos fibres. The results are presented in the attached table. Out of the 94No. analysed 57No. tested positive for the presence of asbestos. Typically these comprised of loose chrysotile fibres, however asbestos cement material was also observed in 7No. samples (BH302 8mbgl, BH306b 6.5mbgl, BH312a 2-2.1mbgl and 3.6-3.8mbgl, BH314 0-0.5mbgl, BH315 3mbgl and BH315 6mbgl.) Amosite asbestos was identified in 6No. samples and crocidolite in 2no. samples. BH312a 3.6-2.8 contained all three forms of asbestos. With the exception of 5No. samples, asbestos was mainly identified in slag and to a lesser extent sludge, millscale and demolition and construction type waste material. Further examination has identified that the asbestos fibres had not been subjected to a heat treatment and as a result are not considered to originate from the slag or raw scrap metal that was used by the steelworks.

5No. samples from natural underlying soils have been identified as containing asbestos including:

- BH301a 7.5mbgl with chrysotile loose fibres in silt (0.4m beneath base of waste material);*
- BH309 13.5-14mbgl with chrysotile loose fibres in silt (6.1m beneath base of waste material);*
- BH312a 6-6.1mbgl with trace chrysotile loose fibres in silt (0.2m beneath base of waste material);*
- BH312b 5mbgl chrysotile loose fibres in silt (at the interface between waste and silt); and*
- BH312b 5.5mbgl trace chrysotile loose fibres in silt (0.5m beneath base of waste material).*

With the exception of BH309, all positive asbestos identifications were within natural soils immediately underlying the waste material and as a result it is considered likely that the sample has been cross contaminated.

It should be noted that the analysed samples were obtained from waste material in situ rather than any above ground stockpiles. The observed waste is heterogeneous and mixed and as a result the samples generally comprised of a mixture of different waste types as opposed to "pure wastes."

A second phase of asbestos analysis was completed in August 2012 by Alcontrol laboratories to provide further confidence on asbestos identified at the East Tip. Alcontrol were instructed to take a further subsample from the original samples that had tested positive for asbestos for analysis purposes. Generally this confirmed the original analysis results. Out of the 55No. that previously tested positive for asbestos, 51No. tested positive again. 6No. samples previously not identified with asbestos were analysed a second time, with the analysis results testing negative for asbestos.

As outlined above, during the first phase of testing, a sample obtained from BH309 13.5-14mbgl, 6.1m below the base of the waste material was identified as containing chrysotile loose fibres. The analysis of the second subsample did not identify asbestos and additionally asbestos has not been identified in samples taken from the overlying silt (7.5-8mbgl) and waste (5.5-6mbgl and 7.5-8mbgl) which would indicate that cross contamination could have occurred during the site investigation. Furthermore, analysis of a duplicate sample from this location by IOM laboratories also did not identify asbestos. As a result it is considered likely that the original identification of asbestos in this sample is an error.

8No. samples identified as containing asbestos were scheduled to quantify the amount of asbestos present. 5No. did not identify asbestos within the sample and therefore returned quantification results of less than 0.001%. Very low quantities of asbestos were identified in the other 3No. samples with percentages ranging from 0.0011% to 0.0028%.

IOM Analysis

Upon receiving the first phase of asbestos analysis results, duplicate samples were retrieved from the bulk bags and sent to IOM laboratories for asbestos identification and quantification. IOM were selected as a preferred laboratory due to their expertise in the field of asbestos analysis and given that their consultancy department has been appointed to develop Asbestos Risk Assessment Guidance and Best Practice document on behalf of CL:AIRE.

The samples that were selected were those that had been previously identified by Alcontrol laboratories as containing asbestos. In total 73No. samples were submitted to IOM for asbestos analysis with 24No. testing positive for asbestos. This equates to 33% compared to the 61% previously identified by Alcontrol as containing asbestos. Typically the samples were identified as containing chrysotile with the exception of 3No. samples which contained amosite. Predominantly asbestos was present as free fibres with the exception of 2No. samples, 1No. was bound in insulation and 1no. in bitumen. IOM completed quantification analysis on all samples which tested positive for asbestos with percentages ranging from 0.003% to 0.056%. Typically the results returned concentrations of 0.003% to 0.006%. Very low quantities of asbestos are considered to be present.

Potential Asbestos Source

As the asbestos has been identified as free fibres, generally not bound in asbestos containing material (ACM) it is difficult to determine an exact source. IOM have confirmed that the identified asbestos has not undergone any heat treatment and therefore did not pass through the steelworks process. On this basis it can be concluded that the slag waste (or other steelworks waste which would have been subject to high temperatures) were not the primary source of the contamination Construction and demolition type waste is the most likely to be the source and it is assumed that during deposition of this waste, cross contamination to other waste types such as the slag waste occurred. Two refractory bricks and a piece of green cement with wire re-enforcing were submitted to IOM laboratories to examine for asbestos content. The refractory bricks did not contain asbestos however the green cement with re-enforcing wire contained amosite. Additionally it is considered that the asbestos observed in natural soils may be due to cross contamination.

Conclusion

Asbestos has been identified in a number of samples analysed from the waste material at the East Tip. However quantification analysis has shown this to be in very low quantities typically in the 0.003%-0.006% range. Typically the lower risk chrysotile has been identified, as loose fibres which will have the potential to become airborne where they are at the surface and could cause risks to the users of the site through inhalation of asbestos fibres. The most likely source of the asbestos is considered to be Construction and Demolition Type waste as opposed to steelworks waste as it has been shown that the asbestos has not been subjected to heat. As a result this is considered to be a pollutant linkage and further assessment works are recommended to more accurately characterise the risks.

On this basis, RPS undertook an assessment of the risk associated with the proposed development and associated construction activities as outlined in Section 3.



3 RISK ASSESSMENT

The analysis carried out to date indicates the presence of asbestos contamination (predominantly free fibres) within ground materials at the site. It is proposed that these ground materials will be contained by constructing an engineered capping system on top of the waste and an outer perimeter engineered structure system. The measures will mitigate any risks to site end users from asbestos upon completion of the development. In view of the proposed measures, no further asbestos assessment is deemed necessary with regards to site end users. However, potential risks from asbestos within these ground materials remain to ground / construction workers during the development. Additional risks to neighbouring site users following the airborne migration of fibres off-site have also been considered here. For the purposes of this report, a conservative approach has been taken and it has been assumed that asbestos is present in all ground materials beneath the site at percentages equal to or greater than those encountered thus far.

The following pre-construction activities are to be carried out at the site, which may result in potentially adverse human health impacts with regards to asbestos:

- Re-profiling of the existing waste body to facilitate the capping of the site and its use as a potential amenity. This will require the excavating of waste including rock breaking to create the new profile for any amenity end use; and
- Potential on site processing of slag waste using crushers and on site storage of this material for re-use in the construction of the perimeter engineered structure.

It is understood that no material requires removal from the site and off-site disposal under the current development proposals. If, during construction this situation changes, this plan should be updated to include an asbestos waste management strategy to ensure appropriate handling and disposal.

The clearance indicator level for asbestos fibres (level of quantification) - as defined within the Safety, Health and Welfare at Work (Exposure to Asbestos) Regulations 2006 - is 0.1 f/cm³ (fibres per cubic centimetre) as an eight hour time weighted average. Above this level mitigation measures will need to be employed. Due to the nature of the asbestos contamination encountered beneath the site it is deemed appropriate to implement the mitigation measures outlined within the ACMP presented in Section 4 regardless of whether this level of quantification is being exceeded.

Potential risks from asbestos within ground materials remain to ground/construction workers & neighbouring sites during the proposed construction of the remediation development from airborne migration of fibres on and off-site. However, with the implementation of the measures outlined in



Section 4, the risk to human health receptors from asbestos within ground materials on site (and therefore off-site) will be minimised to safe levels. Construction activities that have the potential to result in dust generation can therefore proceed with the implementation of these measures.



4 ASBESTOS CONSTRUCTION MANAGEMENT PLAN

The following measures will be put in place during the construction phase of the development in order to minimise the risk to identified human health receptors from asbestos within ground materials at the site. All works will conform to the Safety, Health and Welfare at Work (Exposure to Asbestos) Regulations 2006 and the Safety, Health and Welfare at Work (Exposure to Asbestos) (Amendment) Regulations 2010.

4.1 Roles and Responsibilities

Contractors will abide by the principles set out in this ACMP. In working terms, contractors will appoint their own representative to enforce the requirements that are set out within this document. Representatives will keep daily logs, monitor site activities and ensure that good housekeeping practices are followed at all times. This will ensure that the required measures and standards are in place.

This ACMP has been prepared to ensure that all works are compliant with current regulations and to provide guidance with regard to environmental best practice for construction works. The works will be completed to best practice guidance and standards where appropriate. This ACMP should be updated as further construction detail is provided.

4.2 Training

All site operatives will be asbestos awareness trained by a certified instructor prior to working at the site. This training shall include the risks associated with asbestos, the appropriate use of Personal Protective Equipment (PPE) and monitoring equipment and the effective implementation of mitigation measures. In addition, all site workers should attend weekly asbestos awareness briefings with support arranged from a specialist asbestos contractor on a call-out basis. These briefings should include identification of “hotspot” areas of asbestos contamination at the site and address any issues / queries with regards to the ACMP as the development progresses.

4.3 Personal Protective Equipment

The developer will provide workers with the appropriate PPE and suitable welfare facilities as stated within the Health Risk Assessment report for Haulbowline Island East Tip – (RPS reference MHS0365RP0002, September 2011). Operatives should be prohibited from eating, drinking or smoking within asbestod contaminated areas. In addition to these measures, all workers will be provided with additional PPE in the form of asbestos fitted masks (with at least P3 rated filters),



disposable overalls, gloves and a personal asbestos monitor. Overalls, gloves and mask filters will be disposed of at the end of each working day as asbestos waste.

4.4 Watching Brief

An asbestos watching brief will be in place during the development works. Any suspected asbestos containing materials visually identified by construction / ground workers during the development will be collected by designated handlers, double bagged and disposed of off-site in accordance with the Safety, Health and Welfare at Work (Exposure to Asbestos) Regulations 2006 and the Safety, Health and Welfare at Work (Exposure to Asbestos)(Amendment) Regulations 2010. Any hotspots of visually identified asbestos containing materials will be logged and mapped within the ACMP. The likely source of these materials will be investigated and requirements for any additional mitigation measures assessed. The effectiveness of additional mitigation measures will be monitored with these measures modified where required.

4.5 Airborne Fibre Minimisation Methods

A number of working practices will be implemented during the development in order to minimise the potential for asbestos fibres within the material to become airborne upon disturbance. These are to include:

- Dampening of soils using misting spray heads prior to excavation so as to minimise dust generation;
- Cessation of material movement during conditions that promote dust generation (i.e dry with high wind);
- Limitation on stockpile height for asbestos contaminated soils to minimise wind entrainment of asbestos fibres;
- Minimisation of drop height of material being transferred / processed; and
- Reduction of speed for vehicles operating at the site (see restriction set out in Health Risk Assessment report for Haulbowline Island East Tip – (RPS reference MHS0365RP0002, September 2011).)

The above requirements shall be relayed to site operatives as part of the asbestos awareness training and enforced by the principal contractor. A daily observation log shall be maintained by the principal contractor to ensure that the minimisation methods are being adhered to and effectively employed. Recommendations for improvements in these methods will be made during the asbestos awareness briefings.



4.6 Waste Processing

Waste material that is to be crushed and re-used on site will undergo mechanical screening to separate out fines and oversized material. The various material streams will also be subject to visual inspection and handpicking, in order to remove any visually evident Asbestos Containing Materials and render it suitable for reprocessing. There will be a residual risk that asbestos contamination remains in the fill and the crushing process will require careful management, with misting sprays to knock out any airborne fibres and decontamination of the crushing equipment.

4.7 Services

Service corridors or development features that penetrate the proposed capping layer should be over excavated and a marker layer installed. This is to protect future ground workers from inhaling any residual asbestos fibres within the re-processed capping layer. The location of service corridors should be recorded within the on site health and safety file.



5 MONITORING

Environmental air monitoring will be carried out by a specialist contractor in accordance with the Safety, Health and Welfare at Work (Exposure to Asbestos) Regulations 2006 and the Safety, Health and Welfare at Work (Exposure to Asbestos) (Amendment) Regulations 2010 as follows:

- Reassurance air tests shall be run at four monitoring points to be located within 20m of the working area. Testing should be undertaken daily during the project. At the beginning of the proposed works, should there be any significant change in the weather (i.e. any significant wind change / the initial air testing was conducted during wet weather), or if the contractor's method statement changes during the works, then the testing will be repeated. Increased sampling frequency may also be required (i.e. if a different form of asbestos is detected during the works which may be more friable, thus increasing the potential for fibre release). All static reassurance air tests will be run for a period no less than one hour, and no more than four hours, with a minimum of 480 litres of air sampled; and
- Personal asbestos monitor air tests will be run for a period of at least one hour and no more than two hours, with a minimum of 480 litres of air sampled.

For the purpose of measuring asbestos in the air, only fibres with a length of more than 5 micrometres and a breadth of less than 3 micrometres and a length/breadth ratio greater than 3:1 shall be taken into consideration.

All monitoring results will be logged by the specialist contractor with any significant detection of asbestos fibres (i.e. above the 0.1 f/cm³ level of quantification) flagged immediately. The locations of these detections will be mapped and likely source investigated. Works within the identified source area will be stopped immediately and only continue upon sufficient removal of the asbestos source (through hand-picking) or once abatement measures outlined in Section 4 have been modified to such an extent that the level of quantification is no longer exceeded. Monitoring results, identified source areas and follow-up actions will be relayed to site operatives during the regular asbestos awareness briefings.



6 RECORDS

The ACMP will be kept on site and treated as an active document that will undergo regular review. The following records will be kept as part of the ACMP:

- Asbestos awareness training attendance and PPE issue;
- Air monitoring results (reassurance air testing and personal testing);
- Log of location, source and action plan for any hotspots identified through monitoring;
- Log of location, source and action plan for visually identifiable hotspots;
- Monitoring of action plan measures;
- Asbestos awareness briefing attendance and minutes; and
- Alterations to this ACMP document as part of the regular review.



APPENDIX A

Borehole Number	BH301a						BH302					BH303				
	Sample REF	E3	E6	E17			E8	E27	E30	E32	E3	E9	E19	E21		
Sample Depth	0.2-0.3	0.6-1	4	7.5	14	16.5	2	5	8.0	11.0	14.0	1	3	8	10	
Date Sampled	15-May	15-May	15-May	15-May	15-May	18-May	17-May	17-May	25-May	05-Jun	05-Jun	08/05/2012	08/05/2012	14/05/2012	19/05/2012	
Material	Slag occ RB	Mill Scale	Slag occ RB	SILT	SILT	CLAY	CLAY / C&D	SLAG	SLAG	SILT	SILT	SLAG	SLAG & RB 5%	SILT	SILT	
Lab Schedule #	Schedule #6			Schedule #7			Schedule #6		Schedule #7		Schedule #9		Schedule #4		Schedule #6	
Lab Schedule date	23-May			01-Jun			23-May		01-Jun		08-Jun		14-May		23-May	
Soil Analysis - Primary Contaminants																
Asbestos - Screen All Samples	11.24			Chrysotile LFS	Chrysotile LFS		Chrysotile LFS	Chrysotile LFS	Chrysotile ACM			Chrysotile LFS	Chrysotile LFS			
Asbestos - Screen All Samples - August				Chrysotile	Chrysotile		Chrysotile	Chrysotile	Chrysotile			Chrysotile	Chrysotile			
AIControl Quantitative Result - Asbestos				0.0011%										<0.001		
IOM Results (Quantitative where positive)																
IOM Schedule 270812									Bound Chrysotile 0.012%							

Borehole Number	BH304					BH305			BH306a				BH306b			BH306d		
	Sample REF	E3	E9	E15	E22	E45	E3	E15	E6	E15	E17	E20	E3	E12	E22	E8	E10	
Sample Depth	0.3	2.0	4.2	6.5 - 7	16.5 - 17	0.3	4 - 4.5	7.5-8	2	5	7	9	1	4	6.5	14.0	18.0	
Date Sampled	25-May	25-May	25-May	06-Jun	07-Jun	24-May	24-May	31-May	01/05/2012	01/05/2012	01/05/2012	08/05/2012	24/04/2012	24/04/2012	26/04/2012	11-Jun	13-Jun	
Material	Topsoil	SLAG	SLAG	SILT	CLAY	Topsoil	SLAG + RB 20%	SILT	SLAG	SLAG	SLAG	SLAG	SLAG	SLAG	SLAG	SILT	SILT	
Lab Schedule #	Schedule #7			Schedule #9			Schedule #7		Schedule #1 / #2		Schedule #3		Schedule #4		Schedule #1/#2		Schedule #12	
Lab Schedule date	01-Jun			08-Jun			01-Jun		02-May		09-May		14-May		02-May		15-Jun	
Soil Analysis - Primary Contaminants																		
Asbestos - Screen All Samples	11.24			Crocidolite LFS	Amosite LFS				Chrysotile LFS	Chrysotile LFS	Chrysotile LFS	Chrysotile LFS	Chrysotile LFS	Chrysotile LFS	Chrysotile LFS & ACM			
Asbestos - Screen All Samples 2nd Time					Amosite				Trace Chrysotile	Chrysotile	Chrysotile	Chrysotile	Chrysotile	Chrysotile	Chrysotile			
AIControl Quantitative Result - Asbestos															<0.001			
IOM Results (Quantitative where positive)																		
IOM Schedule 270812								Chrysotile loose insulation 0.008%				Chrysotile 0.003%	Chrysotile loose insulation 0.004%		Bitumen - Chrysotile 0.004%			

Borehole Number	BH307					BH308					BH309					BH310a						
	Sample REF	E3	E9	E15	E19	E3	E7	E17	E25	E37	E19	E25	E40	Dup #3 (15.5-16)	E45	E52	E3	E10	E19	E23		
Sample Depth	0.6	2.5-3	7.0	12.0	30-May	0.3	0.7 - 0.9	3.5 - 4	7 - 7.5	11.5 - 12	5.5 - 6	7.5 - 8	13.5 - 14		15.5 - 16	19.5	1	3	6	9		
Date Sampled	21/05/2012	21/05/2012	29-May	30-May	25-May	21/05/2012	25-May	29-May	29-May	29-May	06-Jun	06-Jun	07-Jun		07-Jun	08-Jun	26/04/2012	26/04/2012	26/04/2012	01/05/2012		
Material	SLAG	SLAG & RB 10%	SLAG	SILT	Topsoil	SLAG	SLAG	CLAY	SILT	SILT	SLAG	SILT	SILT		SILT	SILT	SLAG	SLAG	SLAG	SLAG		
Lab Schedule #	Schedule #6			Schedule #7			Schedule #7			Schedule #9			Schedule #11		Schedule #12		Schedule #11		Schedule #1 / #2			
Lab Schedule date	23-May			01-Jun			01-Jun			08-Jun			12-Jun		15-Jun		02-May		02-May			
Soil Analysis - Primary Contaminants																						
Asbestos - Screen All Samples	11.24			Chrysotile LFS		amosite							Chrysotile LFS				Chrysotile LFS	Chrysotile Trace LFS	Chrysotile LFS	Chrysotile LFS		
Asbestos - Screen All Samples 2nd Time				Chrysotile													Chrysotile		Chrysotile	Chrysotile		
AIControl Quantitative Result - Asbestos																				0.0014%		
IOM Results (Quantitative where positive)																						
IOM Schedule 270812						Free Chrysotile fibres 0.003%														Not Available		

Borehole Number	BH310b				BH310c		BH311			BH312a				BH312b								
	Sample REF	E6	E15	E25	E29	E3	E12	E6	Duplicate	E13	E1	E7	E11	E20	E3	E9	E14	E17	E20	E36		
Sample Depth	2	5	8	11	0.6-0.8	4.0	0.5-0.6	0.5-0.6	3.5	0.5 - 0.6	2 - 2.1	3.6 - 3.8	6 - 6.1	1	2.5	4.5	5	5.5	11.5			
Date Sampled	04/05/2012	04/05/2012	10/05/2012	11/05/2012	21/05/2012	22/05/2012	23/05/2012	23/05/2012	23/05/2012	25/04/2012	25/04/2012	25/04/2012	25/04/2012	30/04/2012	30/04/2012	30/04/2012	30/04/2012	01/05/2012	01/05/2012			
Material	SLAG	SLAG	SLAG	SILT	SLAG	SLAG	SLAG	SLAG	SLAG	SLUDGE	C&D	SLUDGE	SILT	Mill Scale	Millscale	TAR	SILT	SILT	SILT			
Lab Schedule #	Schedule #3		Schedule #4		Schedule #6		Schedule #7		Schedule #7				Schedule #1 / #2		Schedule #1 / #2		Schedule #3					
Lab Schedule date	09-May		14-May		23-May		01-Jun		01-Jun				02-May		02-May		09-May					
Soil Analysis - Primary Contaminants																						
Asbestos - Screen All Samples	11.24			Chrysotile LFS	Chrysotile Trace LFS	Chrysotile LFS		Chrysotile LFS	Chrysotile LFS	amosite	Chrysotile LFS	Chrysotile LFS	Chrysotile LFS	Chrysotile ACM	Chrysotile, amosite and crocidolite LFS & ACM	Chrysotile Trace LFS	Chrysotile	Chrysotile & Amosite LFS		Chrysotile LFS	Chrysotile Trace LFS	
Asbestos - Screen All Samples 2nd Time				Chrysotile	Chrysotile	Chrysotile		Trace Chrysotile	Chrysotile	Chrysotile	Chrysotile	Chrysotile	Chrysotile	Chrysotile	Chrysotile**	Chrysotile	Chrysotile	Chrysotile	Chrysotile	Chrysotile	Chrysotile	
AIControl Quantitative Result - Asbestos															0.006%						0.0028%	
IOM Results (Quantitative where positive)																					0.005%	0.056%
IOM Schedule 270812				Free Chrysotile Fibres 0.003%				Free Chrysotile fibres 0.003%	Free Amosite fibres 0.004%							Free Chrysotile fibres 0.003%	Free Chrysotile Fibres 0.003%	Free Amosite fibres 0.003%				

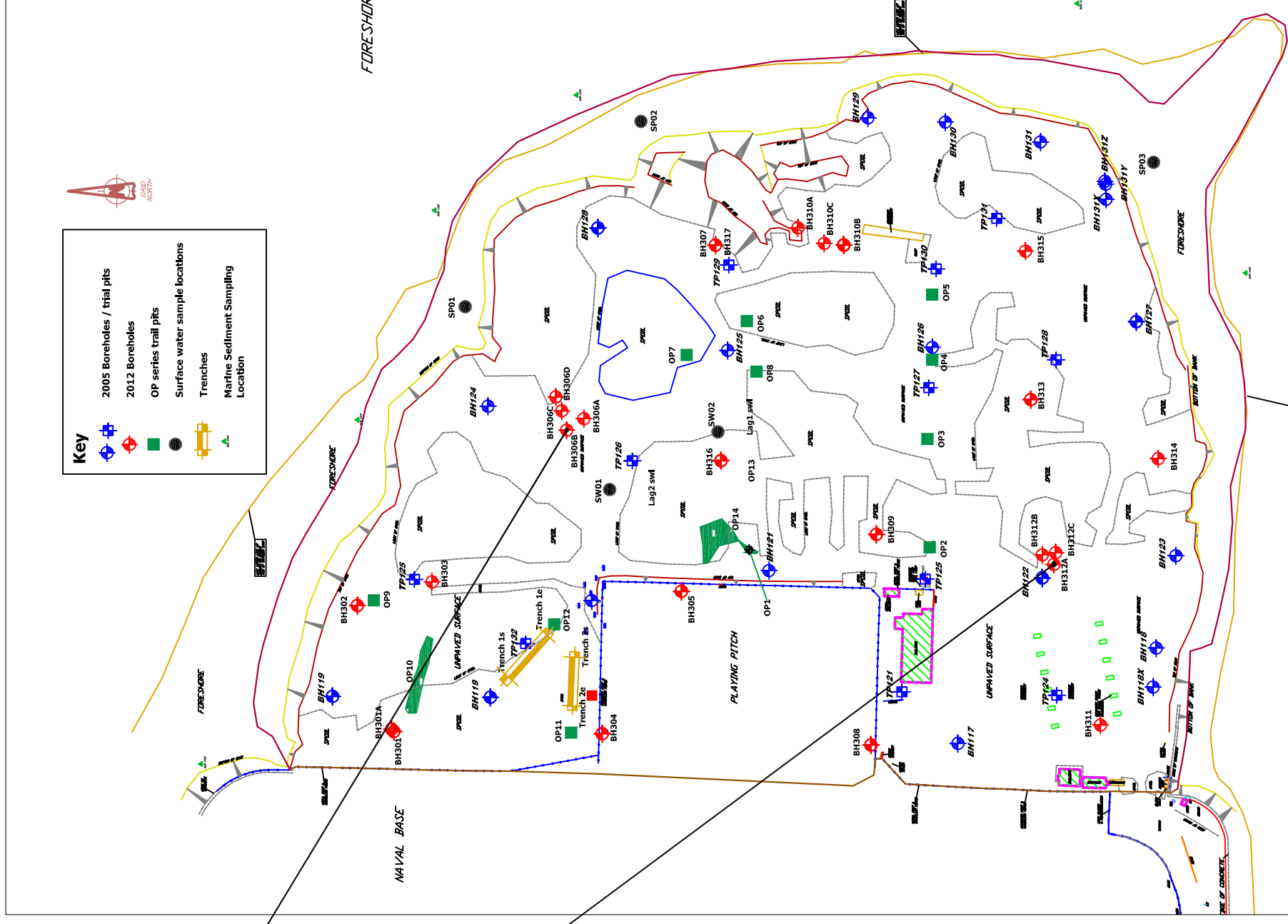
Borehole Number	BH312c			BH313			BH314				BH315			BH316							
	Sample REF	E3	E6	E10	E6	E14	E18	E3	E10	E14	E15	E22	E3	E9	E19	E3	E10	E15	E17	E20	E29
Sample Depth	1	2.3	3.5	2	5	8	0-0.5	2.2	3.2	3.2	5.3	1	3	6.0	0.2 - 0.5	4.0	5 - 5.5	6.5 - 7	10.5 - 11		
Date Sampled	10/05/2012	10/05/2012	10/05/2012	16/05/2012	17/05/2012	18/05/2012	26/04/2012	26/04/2012	27/04/2012	27/04/2012	27/04/2012	16/05/2012	16/05/2012	22/05/2012	06-Jun	06-Jun	11-Jun	12-Jun	12-Jun		
Material	SLAG	SLAG	SLAG	SLAG	SLAG	SILT	SLAG	SLAG	SLAG	Duplicate	C&D	SLAG	SLAG	SLAG	SLAG / waste	SLAG	SLAG	SILT	SILT		
Lab Schedule #	Schedule #4			Schedule #6			Schedule #1 / #2				Schedule #6			Schedule #7		Schedule #9		Schedule #11		Schedule #12	
Lab Schedule date	14-May			23-May			02-May				23-May			01-Jun		08-Jun		12-Jun		15-Jun	
Soil Analysis - Primary Contaminants																					
Asbestos - Screen All Samples	11.24			Chrysotile LFS	Chrysotile LFS	Chrysotile LFS	Chrysotile LFS	Chrysotile ACM	Chrysotile LFS	Chrysotile LFS	Chrysotile LFS	Chrysotile LFS	Chrysotile LFS	Chrysotile LFS & ACM	Chrysotile LFS & ACM	amosite	Chrysotile LFS	Chrysotile LFS			
Asbestos - Screen All Samples 2nd Time				Chrysotile	Chrysotile	Chrysotile	Chrysotile	Chrysotile	Chrysotile	Trace Chrysotile	Chrysotile	Chrysotile	Chrysotile	Chrysotile	Chrysotile	Trace Amosite	Chrysotile	Chrysotile			
AIControl Quantitative Result - Asbestos								<0.001						<0.001							
IOM Results (Quantitative where positive)				0.006%		0.006%		0.006%						0.006%		0.006%					
IOM Schedule 270812					Free Amosite fibres 0.004%			Loose Chrysotile insulation 0.038%				Not Available		Free Chrysotile fibres 0.003%	Loose Chrysotile insulation 0.023%						

Borehole Number	OP10			OP14	
	Sample REF	E1	E3	E5	E3
Sample Depth	0.8	2.0	1.1	1.1 - 1.6	1.7
Date Sampled	05-Jun	05-Jun	05-Jun	07-Jun	07-Jun
Material	SLAG/Millscale	Flue Dust	SLAG	Millscale	SLAG
Lab Schedule #	Schedule #9			Schedule #9	
Lab Schedule date	08-Jun			08-Jun	
Soil Analysis - Primary Contaminants					
Asbestos - Screen All Samples	11.24			Chrysotile	Chrysotile
Asbestos - Screen All Samples 2nd Time					
AIControl Quantitative Result - Asbestos					
IOM Sample reference					
IOM Results (Quantitative where positive)					
IOM Schedule 270812				Not Available	Not Available

IOM Sample Ref	Misc Items	location	result
S17140	Green cement with wire re-inforcing	BH306b @ 6.5m	Amosite
S17141	Yellow Refractory Brick	BH305 @ 4-4.5m	
S17142	Yellow Refractory Brick	BH310b - SP	

** The screening of the sample from BH312a (3.6-3.8m) also detected amosite & crocidolite
 Sample screened positive for Asbestos like fibres / minerals
 Sample screened negative for Asbestos like fibres / minerals
 ACM asbestos containing material
 LFS Loose fibres

Sludge Waste



Location	Depth (m)	Description
BH306B	0-0.5	Slag with possible weathered sludge

Location	Depth (m)	Description
BH312A	0.5-0.6	Black sludge with 20% glass, gravels or fine sand
BH312A	3.6	Black iridescent sludge surrounded by metal (possible old barrel)
BH312A	4.8-5.8	Sludge (50%) , possible demolition material (25%) (steel wire, concrete, red brick & fabric) cream ash like material with refractory bricks (25%) becoming oily in appearance from 4.8-5.8

REV	DESCRIPTION	BY	CHK/APP	DATE
Client/Arch				
X				
X				
X				

1 LOCKSLEY BUSINESS PARK
 MONTGOMERY ROAD
 BELFAST
 BT6 9UP
 TEL: +44 (0)28 9070 6000
 FAX: +44 (0)28 9070 6050
 e-mail: belfast@wyg.com



Project	X
Drawing Title:	X

Scale	A3	Drawn	Date	Checked	Date	Approved	Date
@	X	X	X	X	X	X	X
Project No.	36	Office Type	X	Drawing No.	X	Revision	X

APPENDIX L

NOISE SURVEY RESULTS

APPENDIX L – NOISE SURVEY RESULTS

Location	Period	Time	LAeq	Field Notes
N1	Day	12:41	58	Firing range dominant intermittent noise, small wall mounted fan on side of hospital building dominant continuous noise source, intermittent hammering noise in distance, some leaves blowing in wind.
N1	Day	13:56	48	Angle grinder and hammering in distance dominant intermittent noise, small wall mounted fan on side of hospital building dominant continuous noise source, intermittent onsite traffic, bell ringing at 14:00.
N1	Day	15:09	51	Man dragging bucket near meter dominant intermittent noise, small wall mounted fan on side of hospital building dominant continuous noise source, intermittent onsite traffic.
N1	Evening	20:56	41	Small wall mounted fan on side of hospital building dominant continuous noise source, road traffic noise audible at low levels, church bell chiming intermittently.
N1	Evening	22:36	40	Small wall mounted fan on side of hospital building dominant continuous noise source, road traffic noise audible at low levels, dogs barking in distance.
N1	Night	23:00	41	Small wall mounted fan on side of hospital building dominant continuous noise source, road traffic noise audible at low levels, dogs barking in distance.
N1	Night	0:05	38	Ship engine or generators dominant continuous noise source, road traffic noise audible at low levels, Pfizer PA audible intermittently
N1	Night	0:21	38	Ship engine or generators dominant continuous noise source, dogs barking in distance.
N2	Day	13:11	47	Firing range from base dominant intermittent noise, wastewater treatment pump dominant continuous noise source, flag pole rope snapping against pole.
N2	Day	14:19	48	Firing range from base dominant intermittent noise, wastewater treatment pump dominant continuous noise source, flag pole rope snapping against pole.
N2	Day	15:33	45	Flag pole rope snapping against pole dominant intermittent noise, wastewater treatment pump dominant continuous noise, angle grinder audible in distance.
N2	Evening	21:18	42	Water lapping against shore dominant continuous noise, local road traffic dominant intermittent noise source, road traffic from city audible at low levels, fog horn sounding, waste water treatment pump audible at low levels
N2	Night	23:21	42	Water lapping against shore dominant continuous noise, local road traffic dominant intermittent noise source, road traffic from city audible at low levels, fog horn sounding, waste water treatment pump audible at low levels
N2	Night	0:44	41	Water lapping against shore dominant continuous noise, local road traffic dominant intermittent noise source, road traffic from city audible at low levels, fog horn sounding, waste water treatment pump audible at low levels, ship entering harbour.
N3	Day	13:33	63	Local road traffic dominant intermittent noise source, intermittent truck movement from Pfizer.
N3	Day	14:42	63	Local road traffic dominant intermittent noise source.

Location	Period	Time	LAeq	Field Notes
N3	Day	15:55	64	Local road traffic dominant intermittent noise source, intermittent vehicle movement from car depot across road.
N3	Evening	21:41	55	Street lamp buzzing dominant continuous noise, local road traffic dominant intermittent noise source, road traffic from city audible at low levels, dragging and moving containers also audible at low levels.
N3	Night	23:42	51	Street lamp buzzing dominant continuous noise, local road traffic dominant intermittent noise source, road traffic from city audible at low levels, plant noise (AHUs and vehicle movement) from Pfizer also audible.
N3	Night	1:04	38	Street lamp buzzing dominant continuous noise, road traffic from city audible at low levels, plant noise (AHUs and vehicle movement) from Pfizer also audible.
N4	Day	12:16	48	Firing range on naval base dominant intermittent noise, angle grinder in distance also audible intermittently, waves lapping against shore dominant continuous noise source.
N4	Day	13:06	46	Firing range on naval base dominant intermittent noise, angle grinder in distance also audible intermittently, waves lapping against shore dominant continuous noise source.
N4	Day	13:56	46	Angle grinder in distance audible intermittently, waves lapping against shore dominant continuous noise source, cruise liner engines audible at low levels.
N4	Day	14:12	45	Angle grinder in distance audible intermittently, waves lapping against shore dominant continuous noise source, cruise liner engines audible at low levels.
N4	Evening	21:35	45	Waves lapping against shore dominant continuous noise source, road traffic from city audible at low levels.
N4	Evening	22:23	51	Waves lapping against shore dominant continuous noise source, road traffic from city audible at low levels.
N4	Night	23:14	47	Waves lapping against shore dominant continuous noise source, distant hum from ship engine or generator, road traffic from city audible at low levels.
N4	Night	0:11	41	Waves lapping against shore dominant continuous noise source, distant hum from ship engine or generator, road traffic from city audible at low levels.
N5	Day	11:43	53	Firing range on naval base dominant intermittent noise, hum from cruise liner engine dominant continuous noise source, waves lapping against shore also audible, occasional noise from nearby moored tub boats.
N5	Day	12:42	52	Firing range on naval base dominant intermittent noise, hum from cruise liner engine dominant continuous noise source, waves lapping against shore also audible, occasional noise from nearby moored tub boats.
N5	Day	13:33	50	Hum from cruise liner engine dominant continuous noise source, waves lapping against shore also audible, occasional noise from nearby moored tub boats.
N5	Evening	21:10	47	Hum from tug boat engine dominant continuous noise source, waves lapping against shore also audible, local traffic audible intermittently.
N5	Evening	22:00	43	Hum from tug boat engine dominant continuous noise source, waves lapping against shore also audible, local traffic audible intermittently.
N5	Evening	22:46	44	Hum from tug boat engine dominant continuous noise source, waves lapping against shore also audible, local traffic audible intermittently.

Location	Period	Time	LAeq	Field Notes
N5	Night	23:45	54	Hum from tug boat engine dominant continuous noise source, waves lapping against shore also audible, local traffic audible intermittently, people talking near meter.
N5	Night	0:34	49	Hum from tug boat engine dominant continuous noise source, waves lapping against shore also audible, local traffic audible intermittently, road traffic from city audible at low levels.
N5	Night	0:50	44	Hum from tug boat engine dominant continuous noise source, waves lapping against shore also audible, local traffic audible intermittently, road traffic from city audible at low levels.

APPENDIX M

PHOTOMONTAGES

VIEWPOINT 1 LAKE ROAD EXISTING VIEW

Recommended viewing distance when viewed with both eyes: 45 cm



Lens Focal Length: 50 mm
Camera Sensor: Full Frame 14.8 mm x 22.2 mm
Camera Height: 1.7 m above ground level
Camera: Canon EOS 1100D digital SLR

Date: 10-Jan-13
Time: 15:22



VIEWPOINT 1 LAKE ROAD PROPOSED VIEW
Recommended viewing distance when viewed with both eyes: 45 cm



Lens Focal Length: 50 mm
Camera Sensor: Full Frame 14.8 mm x 22.2 mm
Camera Height: 1.7 m above ground level
Camera: Canon EOS 1100D digital SLR

Date: 10-Jan-13
Time: 15:22



VIEWPOINT 2 ROCKY ISLAND EXISTING VIEW
Recommended viewing distance when viewed with both eyes: 45 cm



Lens Focal Length: 50 mm
Camera Sensor: Full Frame 14.8 mm x 22.2 mm
Camera Height: 1.7 m above ground level
Camera: Canon EOS 1100D digital SLR

Date: 10-Jan-13
Time: 15:22



VIEWPOINT 2 ROCKY ISLAND PROPOSED VIEW
Recommended viewing distance when viewed with both eyes: 45 cm



Lens Focal Length: 50 mm
Camera Sensor: Full Frame 14.8 mm x 22.2 mm
Camera Height: 1.7 m above ground level
Camera: Canon EOS 1100D digital SLR

Date: 10-Jan-13
Time: 15:22

