

Rosslare ORE Hub

EIAR Technical Appendices

Technical Appendix 7:

Soils, Geology, Hydrogeology and Contamination

Appendix F: Geoenvironmental Soil Results



Certificate of Analysis

Certificate Number 24-11255

Issued: 13-Jun-24

Client Causeway Geotech
8 Drumahiskey Road
Ballymoney
County Antrim
BT53 7QL

Our Reference 24-11255

Client Reference ~ 23-0585

Order No ~ (not supplied)

Contract Title ~ Rosslare Europort ORE GI

Description 11 Soil samples, 11 Leachate prepared by DETS samples.

Date Received 03-Jun-24

Date Started 03-Jun-24

Date Completed 13-Jun-24

Test Procedures Identified by prefix DETSn (details on request).

Notes Opinions and interpretations are outside the laboratory's scope of ISO 17025 accreditation. This certificate is issued in accordance with the accreditation requirements of the United Kingdom Accreditation Service. The results reported herein relate only to the material supplied to the laboratory. This certificate shall not be reproduced except in full, without the prior written approval of the laboratory.

Approved By

A handwritten signature in black ink, appearing to read "K. Bridgewood".

Kirk Bridgewood
General Manager



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Summary of Chemical Analysis

Soil Samples

Our Ref 24-11255

Client Ref ~ 23-0585

Contract Title ~ Rosslare Europort ORE GI

Lab No	2345481	2345482	2345483	2345484	2345485	2345486
Sample ID ~	M-BH28	M-BH29	M-BH30	M-BH31	M-BH32	M-BH34
Depth ~	1.00	6.50	1.40	3.50	5.50	1.20
Other ID ~	100	100	100	100	100	100
Sample Type ~	ES	ES	ES	ES	ES	ES
Sampling Date ~	31/05/2024	31/05/2024	31/05/2024	31/05/2024	31/05/2024	31/05/2024
Sampling Time ~	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units						
Preparation									
Moisture Content	DETSC 1004	0.1	%	7.9	7.2	7.9	16	17	9.7
Metals									
Antimony	DETSC 2301*	1	mg/kg	2.5	1.5	1.0	< 1.0	< 1.0	< 1.0
Arsenic	DETSC 2301#	0.2	mg/kg	12	15	9.3	10	12	9.6
Beryllium	DETSC 2301#	0.2	mg/kg	1.7	1.2	1.0	0.2	0.8	0.6
Boron, Water Soluble (2.5:1)	DETSC 2311#	0.2	mg/kg	2.6	1.1	1.4	1.8	5.4	1.3
Cadmium	DETSC 2301#	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	0.3	< 0.1
Chromium III	DETSC 2301*	0.15	mg/kg	120	38	37	11	31	20
Chromium, Hexavalent	DETSC 2204*	1	mg/kg	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Copper	DETSC 2301#	0.2	mg/kg	65	44	31	11	26	19
Lead	DETSC 2301#	0.3	mg/kg	19	23	6.6	5.3	14	12
Mercury	DETSC 2325#	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Molybdenum	DETSC 2301#	0.4	mg/kg	18	0.9	0.8	< 0.4	0.6	< 0.4
Nickel	DETSC 2301#	1	mg/kg	60	42	35	11	35	23
Selenium	DETSC 2301#	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Vanadium	DETSC 2301#	0.8	mg/kg	64	33	38	17	40	23
Zinc	DETSC 2301#	1	mg/kg	120	100	110	33	79	70
Inorganics									
pH	DETSC 2008#		pH	8.6	8.0	8.9	8.7	8.5	8.3
Acid / Alkali Reserve	DETSC 2011*	1	Oh/100g	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Cyanide, Total	DETSC 2130#	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Cyanide, Free	DETSC 2130#	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Thiocyanate	DETSC 2130#	0.6	mg/kg	< 0.6	< 0.6	< 0.6	< 0.6	< 0.6	< 0.6
Organic matter	DETSC 2002#	0.1	%	0.3	0.2	0.5	0.1	0.9	0.3
Ammoniacal Nitrogen as NH3	DETSC 2119	0.5	mg/kg	4.6	0.70	0.89	3.1	2.9	2.9
Chloride	DETSC 2055	1	mg/kg	1760	1870	2060	4090	7000	3060
Nitrate as NO3	DETSC 2055	1	mg/kg	< 1.0	1.5	< 1.0	< 1.0	< 1.0	1.4
Nitrite as NO2	DETSC 2055	1	mg/kg	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Ortho Phosphate as P	DETSC 2205*	0.1	mg/kg	< 0.10	< 0.10	0.13	0.15	0.40	< 0.10
Sulphide	DETSC 2024*	10	mg/kg	< 10	< 10	< 10	20	20	20
Sulphate as SO4, Total	DETSC 2321#	100	mg/kg	494	388	347	751	1150	841
Petroleum Hydrocarbons									
Aliphatic C5-C6: HS_1D_AL	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aliphatic C6-C8: HS_1D_AL	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aliphatic C8-C10: HS_1D_AL	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aliphatic >EC10-EC12: EH_2D_AL	DETSC 3521#	1.5	mg/kg	< 1.50	< 1.50	< 1.50	< 1.50	< 1.50	< 1.50
Aliphatic >EC12-EC16: EH_2D_AL	DETSC 3521#	1.2	mg/kg	< 1.20	< 1.20	< 1.20	< 1.20	< 1.20	< 1.20
Aliphatic >EC16-EC21: EH_2D_AL	DETSC 3521#	1.5	mg/kg	< 1.50	< 1.50	< 1.50	< 1.50	< 1.50	< 1.50
Aliphatic >EC21-EC35: EH_2D_AL	DETSC 3521#	3.4	mg/kg	< 3.40	< 3.40	< 3.40	< 3.40	< 3.40	< 3.40
Aliphatic >EC35-EC40: EH_2D_AL	DETSC 3521*	3.4	mg/kg	< 3.40	< 3.40	< 3.40	< 3.40	< 3.40	< 3.40
Aliphatic >EC40-EC44: EH_2D_AL	DETSC 3521*	3.4	mg/kg	< 3.40	< 3.40	< 3.40	< 3.40	< 3.40	< 3.40

Summary of Chemical Analysis

Soil Samples

Our Ref 24-11255

Client Ref ~ 23-0585

Contract Title ~ Rosslare Europort ORE GI

Lab No	2345481	2345482	2345483	2345484	2345485	2345486
Sample ID ~	M-BH28	M-BH29	M-BH30	M-BH31	M-BH32	M-BH34
Depth ~	1.00	6.50	1.40	3.50	5.50	1.20
Other ID ~	100	100	100	100	100	100
Sample Type ~	ES	ES	ES	ES	ES	ES
Sampling Date ~	31/05/2024	31/05/2024	31/05/2024	31/05/2024	31/05/2024	31/05/2024
Sampling Time ~	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units						
Aliphatic C5-C44: EH_2D+HS_1D_AL	DETSC 3521*	10	mg/kg	< 10.00	< 10.00	< 10.00	< 10.00	< 10.00	< 10.00
Aromatic C5-C7: HS_1D_AR	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aromatic C7-C8: HS_1D_AR	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aromatic C8-C10: HS_1D_AR	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aromatic >EC10-EC12: EH_2D_AR	DETSC 3521#	0.9	mg/kg	< 0.90	< 0.90	< 0.90	< 0.90	< 0.90	< 0.90
Aromatic >EC12-EC16: EH_2D_AR	DETSC 3521#	0.5	mg/kg	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Aromatic >EC16-EC21: EH_2D_AR	DETSC 3521#	0.6	mg/kg	< 0.60	2.53	1.11	< 0.60	< 0.60	1.38
Aromatic >EC21-EC35: EH_2D_AR	DETSC 3521#	1.4	mg/kg	< 1.40	< 1.40	< 1.40	< 1.40	< 1.40	< 1.40
Aromatic >EC35-EC40: EH_2D_AR	DETSC 3521*	1.4	mg/kg	< 1.40	< 1.40	< 1.40	< 1.40	< 1.40	< 1.40
Aromatic >EC40-EC44: EH_2D_AR	DETSC 3521*	1.4	mg/kg	< 1.40	< 1.40	< 1.40	< 1.40	< 1.40	< 1.40
Aromatic C5-C44: EH_2D+HS_1D_AR	DETSC 3521*	10	mg/kg	< 10.00	< 10.00	< 10.00	< 10.00	< 10.00	< 10.00
TPH Ali/Aro C5-C44: EH_2D+HS_1D_Total	DETSC 3521*	10	mg/kg	< 10.00	< 10.00	< 10.00	< 10.00	< 10.00	< 10.00
Benzene	DETSC 3321#	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Ethylbenzene	DETSC 3321#	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Toluene	DETSC 3321#	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Xylene	DETSC 3321#	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
MTBE	DETSC 3321	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
PAHs									
Naphthalene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Acenaphthylene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Acenaphthene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Fluorene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Phenanthrene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Anthracene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Fluoranthene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Pyrene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Benzo(a)anthracene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Chrysene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Benzo(b)fluoranthene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Benzo(k)fluoranthene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Benzo(a)pyrene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Indeno(1,2,3-c,d)pyrene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Dibenzo(a,h)anthracene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Benzo(g,h,i)perylene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
PAH 16 Total	DETSC 3301	1.6	mg/kg	< 1.6	< 1.6	< 1.6	< 1.6	< 1.6	< 1.6
Phenols									
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3

Summary of Chemical Analysis

Soil Samples

Our Ref 24-11255

Client Ref ~ 23-0585

Contract Title ~ Rosslare Europort ORE GI

Lab No	2345487	2345488	2345489	2345490	2345491
Sample ID ~	M-BH36	M-BH37	M-BH39A	M-BH40	M-CPT32
Depth ~	2.00	0.50	1.70	1.00	1.00
Other ID ~	100	100	100	100	100
Sample Type ~	ES	ES	ES	ES	ES
Sampling Date ~	31/05/2024	31/05/2024	31/05/2024	31/05/2024	31/05/2024
Sampling Time ~	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units					
Preparation								
Moisture Content	DETSC 1004	0.1	%	18	7.5	6.6	15	5.9
Metals								
Antimony	DETSC 2301*	1	mg/kg	< 1.0	1.2	1.2	< 1.0	< 1.0
Arsenic	DETSC 2301#	0.2	mg/kg	10	17	6.1	14	12
Beryllium	DETSC 2301#	0.2	mg/kg	0.7	0.8	0.6	0.3	0.3
Boron, Water Soluble (2.5:1)	DETSC 2311#	0.2	mg/kg	5.2	1.7	2.6	1.3	1.5
Cadmium	DETSC 2301#	0.1	mg/kg	0.2	0.1	< 0.1	< 0.1	< 0.1
Chromium III	DETSC 2301*	0.15	mg/kg	26	29	29	18	18
Chromium, Hexavalent	DETSC 2204*	1	mg/kg	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Copper	DETSC 2301#	0.2	mg/kg	21	33	42	18	20
Lead	DETSC 2301#	0.3	mg/kg	11	12	13	10	7.1
Mercury	DETSC 2325#	0.05	mg/kg	< 0.05	< 0.05	< 0.05	0.08	< 0.05
Molybdenum	DETSC 2301#	0.4	mg/kg	< 0.4	< 0.4	0.4	0.5	< 0.4
Nickel	DETSC 2301#	1	mg/kg	30	29	28	16	17
Selenium	DETSC 2301#	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Vanadium	DETSC 2301#	0.8	mg/kg	34	61	36	27	27
Zinc	DETSC 2301#	1	mg/kg	72	94	77	54	54
Inorganics								
pH	DETSC 2008#		pH	8.4	8.7	8.9	8.8	8.7
Acid / Alkali Reserve	DETSC 2011*	1	Oh/100g	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Cyanide, Total	DETSC 2130#	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Cyanide, Free	DETSC 2130#	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Thiocyanate	DETSC 2130#	0.6	mg/kg	< 0.6	< 0.6	< 0.6	< 0.6	< 0.6
Organic matter	DETSC 2002#	0.1	%	1.0	5.4	0.2	0.6	0.2
Ammoniacal Nitrogen as NH3	DETSC 2119	0.5	mg/kg	1.6	2.7	0.68	< 0.50	0.86
Chloride	DETSC 2055	1	mg/kg	5670	2360	1570	1130	1530
Nitrate as NO3	DETSC 2055	1	mg/kg	< 1.0	< 1.0	4.3	< 1.0	6.5
Nitrite as NO2	DETSC 2055	1	mg/kg	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Ortho Phosphate as P	DETSC 2205*	0.1	mg/kg	0.26	0.10	0.12	< 0.10	< 0.10
Sulphide	DETSC 2024*	10	mg/kg	20	20	< 10	< 10	< 10
Sulphate as SO4, Total	DETSC 2321#	100	mg/kg	1130	792	249	332	451
Petroleum Hydrocarbons								
Aliphatic C5-C6: HS_1D_AL	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aliphatic C6-C8: HS_1D_AL	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aliphatic C8-C10: HS_1D_AL	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aliphatic >EC10-EC12: EH_2D_AL	DETSC 3521#	1.5	mg/kg	< 1.50	< 1.50	< 1.50	1.79	1.62
Aliphatic >EC12-EC16: EH_2D_AL	DETSC 3521#	1.2	mg/kg	< 1.20	< 1.20	1.52	1.70	1.33
Aliphatic >EC16-EC21: EH_2D_AL	DETSC 3521#	1.5	mg/kg	< 1.50	< 1.50	< 1.50	< 1.50	< 1.50
Aliphatic >EC21-EC35: EH_2D_AL	DETSC 3521#	3.4	mg/kg	38.90	< 3.40	< 3.40	< 3.40	< 3.40
Aliphatic >EC35-EC40: EH_2D_AL	DETSC 3521*	3.4	mg/kg	< 3.40	< 3.40	< 3.40	< 3.40	< 3.40
Aliphatic >EC40-EC44: EH_2D_AL	DETSC 3521*	3.4	mg/kg	< 3.40	< 3.40	< 3.40	< 3.40	< 3.40

Summary of Chemical Analysis

Soil Samples

Our Ref 24-11255

Client Ref ~ 23-0585

Contract Title ~ Rosslare Europort ORE GI

Lab No	2345487	2345488	2345489	2345490	2345491
Sample ID ~	M-BH36	M-BH37	M-BH39A	M-BH40	M-CPT32
Depth ~	2.00	0.50	1.70	1.00	1.00
Other ID ~	100	100	100	100	100
Sample Type ~	ES	ES	ES	ES	ES
Sampling Date ~	31/05/2024	31/05/2024	31/05/2024	31/05/2024	31/05/2024
Sampling Time ~	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units					
Aliphatic C5-C44: EH_2D+HS_1D_AL	DETSC 3521*	10	mg/kg	38.90	< 10.00	< 10.00	< 10.00	< 10.00
Aromatic C5-C7: HS_1D_AR	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aromatic C7-C8: HS_1D_AR	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aromatic C8-C10: HS_1D_AR	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aromatic >EC10-EC12: EH_2D_AR	DETSC 3521#	0.9	mg/kg	< 0.90	< 0.90	< 0.90	< 0.90	< 0.90
Aromatic >EC12-EC16: EH_2D_AR	DETSC 3521#	0.5	mg/kg	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Aromatic >EC16-EC21: EH_2D_AR	DETSC 3521#	0.6	mg/kg	0.86	0.73	< 0.60	< 0.60	< 0.60
Aromatic >EC21-EC35: EH_2D_AR	DETSC 3521#	1.4	mg/kg	< 1.40	< 1.40	< 1.40	< 1.40	< 1.40
Aromatic >EC35-EC40: EH_2D_AR	DETSC 3521*	1.4	mg/kg	< 1.40	< 1.40	< 1.40	< 1.40	< 1.40
Aromatic >EC40-EC44: EH_2D_AR	DETSC 3521*	1.4	mg/kg	< 1.40	< 1.40	< 1.40	< 1.40	< 1.40
Aromatic C5-C44: EH_2D+HS_1D_AR	DETSC 3521*	10	mg/kg	< 10.00	< 10.00	< 10.00	< 10.00	< 10.00
TPH Ali/Aro C5-C44: EH_2D+HS_1D_Total	DETSC 3521*	10	mg/kg	38.90	< 10.00	< 10.00	< 10.00	< 10.00
Benzene	DETSC 3321#	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Ethylbenzene	DETSC 3321#	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Toluene	DETSC 3321#	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Xylene	DETSC 3321#	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
MTBE	DETSC 3321	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
PAHs								
Naphthalene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Acenaphthylene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Acenaphthene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Fluorene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Phenanthrene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Anthracene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Fluoranthene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Pyrene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Benzo(a)anthracene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Chrysene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Benzo(b)fluoranthene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Benzo(k)fluoranthene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Benzo(a)pyrene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Indeno(1,2,3-c,d)pyrene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Dibenzo(a,h)anthracene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Benzo(g,h,i)perylene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
PAH 16 Total	DETSC 3301	1.6	mg/kg	< 1.6	< 1.6	< 1.6	< 1.6	< 1.6
Phenols								
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3

Summary of Chemical Analysis

Leachate Samples

Our Ref 24-11255
 Client Ref ~ 23-0585
 Contract Title ~ Rosslare Europort ORE GI

Lab No	2345492	2345493	2345494	2345495	2345496	2345497
Sample ID ~	M-BH28	M-BH29	M-BH30	M-BH31	M-BH32	M-BH34
Depth ~	1.00	6.50	1.40	3.50	5.50	1.20
Other ID ~	100	100	100	100	100	100
Sample Type ~	ES	ES	ES	ES	ES	ES
Sampling Date ~	31/05/2024	31/05/2024	31/05/2024	31/05/2024	31/05/2024	31/05/2024
Sampling Time ~	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units						
Preparation									
BS EN 12457 10:1	DETS 1009*			Y	Y	Y	Y	Y	Y
Metals									
Arsenic, Dissolved	DETS 2306	0.16	ug/l	< 0.16	1.3	0.52	0.43	0.76	0.29
Boron, Dissolved	DETS 2306*	0.012	mg/l	0.097	0.020	0.030	0.078	0.13	0.024
Cadmium, Dissolved	DETS 2306	0.03	ug/l	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Calcium, Dissolved	DETS 2306	0.09	mg/l	7.3	19	4.9	13	13	18
Chromium III, Dissolved	DETS 2306*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chromium, Hexavalent	DETS 2203	7	ug/l	< 7.0	< 7.0	< 7.0	< 7.0	< 7.0	< 7.0
Copper, Dissolved	DETS 2306	0.4	ug/l	0.9	2.3	1.0	1.0	0.9	0.9
Lead, Dissolved	DETS 2306	0.09	ug/l	< 0.09	< 0.09	< 0.09	< 0.09	< 0.09	0.31
Mercury, Dissolved	DETS 2306	0.01	ug/l	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Nickel, Dissolved	DETS 2306	0.5	ug/l	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Selenium, Dissolved	DETS 2306	0.25	ug/l	< 0.25	0.34	< 0.25	0.27	0.49	0.26
Vanadium, Dissolved	DETS 2306	0.6	ug/l	< 0.6	< 0.6	< 0.6	< 0.6	1.0	< 0.6
Zinc, Dissolved	DETS 2306	1.3	ug/l	< 1.3	2.5	< 1.3	< 1.3	< 1.3	< 1.3
Inorganics									
Conductivity	DETS 2009	1	uS/cm	371	479	392	923	1240	574
pH	DETS 2008		pH	7.0	6.5	6.8	6.9	6.9	6.7
Cyanide, Total	DETS 2130	0.04	mg/l	< 0.04	< 0.04	< 0.04	< 0.04	< 0.04	< 0.04
Cyanide, Free Low Level	DETS 2131	0.0001	mg/l	< 0.0001	< 0.0001	< 0.0001	< 0.0001	0.0001	< 0.0001
Phenol - Monohydric Low Level	DETS 2131	0.0015	mg/l	< 0.0015	< 0.0015	< 0.0015	< 0.0015	< 0.0015	< 0.0015
Thiocyanate	DETS 2130	20	ug/l	< 20	< 20	< 20	< 20	20	< 20
Dissolved Organic Carbon	DETS 2085	2	mg/l	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Un-Ionised Ammonia	*	0.02	mg/l	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
Ammoniacal Nitrogen as NH3	DETS 2207	0.0183	mg/l	< 0.018	0.14	0.074	< 0.018	0.086	0.074
Nitrate as NO3	DETS 2055	0.1	mg/l	1.8	1.3	1.2	1.8	2.1	1.2
Nitrite as NO2	DETS 2055	0.1	mg/l	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Ortho Phosphate as P	DETS 2205	0.01	mg/l	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Sulphate as SO4	DETS 2055	0.1	mg/l	46	12	17	41	52	19
Sulphide	DETS 2208	0.01	mg/l	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Sulphur as S, Total	DETS 2320*	10	mg/l	18	< 10	< 10	840	1100	580
Petroleum Hydrocarbons									
Aliphatic C5-C6: HS_1D_AL	DETS 3322	0.1	ug/l	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Aliphatic C6-C8: HS_1D_AL	DETS 3322	0.1	ug/l	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Aliphatic C8-C10: HS_1D_AL	DETS 3322	0.1	ug/l	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Aliphatic C10-C12: EH_CU_1D_AL	DETS 3072*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic C10-C44: EH_CU_1D_AL	DETS 3072*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic C12-C16: EH_CU_1D_AL	DETS 3072*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic C16-C21: EH_CU_1D_AL	DETS 3072*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic C21-C35: EH_CU_1D_AL	DETS 3072*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic C35-C44: EH_CU_1D_AL	DETS 3072*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0

Summary of Chemical Analysis

Leachate Samples

Our Ref 24-11255

Client Ref ~ 23-0585

Contract Title ~ Rosslare Europort ORE GI

Lab No	2345492	2345493	2345494	2345495	2345496	2345497
Sample ID ~	M-BH28	M-BH29	M-BH30	M-BH31	M-BH32	M-BH34
Depth ~	1.00	6.50	1.40	3.50	5.50	1.20
Other ID ~	100	100	100	100	100	100
Sample Type ~	ES	ES	ES	ES	ES	ES
Sampling Date ~	31/05/2024	31/05/2024	31/05/2024	31/05/2024	31/05/2024	31/05/2024
Sampling Time ~	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units						
Aromatic C5-C7: HS_1D_AR	DETSC 3322	0.1	ug/l	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Aromatic C7-C8: HS_1D_AR	DETSC 3322	0.1	ug/l	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Aromatic C8-C10: HS_1D_AR	DETSC 3322	0.1	ug/l	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Aromatic C10-C12: EH_CU_1D_AR	DETSC 3072*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic C12-C16: EH_CU_1D_AR	DETSC 3072*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic C16-C21: EH_CU_1D_AR	DETSC 3072*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic C21-C35: EH_CU_1D_AR	DETSC 3072*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic C35-C44: EH_CU_1D_AR	DETSC 3072*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic C10-C44: EH_CU_1D_AR	DETSC 3072*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Ali/Aro C10-C44: EH_CU_1D_Total	DETSC 3072*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Benzene	DETSC 3322	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Toluene	DETSC 3322	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Ethylbenzene	DETSC 3322	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Xylene	DETSC 3322	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
MTBE	DETSC 3322	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
PAHs									
Naphthalene	DETSC 3304	0.05	ug/l	< 0.05	< 0.05	0.06	0.06	0.06	0.09
Acenaphthylene	DETSC 3304	0.01	ug/l	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.01
Acenaphthene	DETSC 3304	0.01	ug/l	< 0.01	< 0.01	< 0.01	< 0.01	0.02	0.03
Fluorene	DETSC 3304	0.01	ug/l	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.02
Phenanthrene	DETSC 3304	0.01	ug/l	< 0.01	< 0.01	0.02	0.01	0.03	0.11
Anthracene	DETSC 3304	0.01	ug/l	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.03
Fluoranthene	DETSC 3304	0.01	ug/l	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.15
Pyrene	DETSC 3304	0.01	ug/l	< 0.01	< 0.01	0.02	0.02	0.05	0.15
Benzo(a)anthracene	DETSC 3304*	0.01	ug/l	< 0.01	< 0.01	< 0.01	< 0.01	0.02	0.08
Chrysene	DETSC 3304	0.01	ug/l	< 0.01	< 0.01	< 0.01	< 0.01	0.02	0.10
Benzo(b)fluoranthene	DETSC 3304	0.01	ug/l	0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.09
Benzo(k)fluoranthene	DETSC 3304	0.01	ug/l	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.02
Benzo(a)pyrene	DETSC 3304	0.01	ug/l	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.07
Indeno(1,2,3-c,d)pyrene	DETSC 3304	0.01	ug/l	< 0.01	< 0.01	< 0.01	< 0.01	0.02	0.05
Dibenzo(a,h)anthracene	DETSC 3304	0.01	ug/l	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(g,h,i)perylene	DETSC 3304	0.01	ug/l	0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.08
PAH Total	DETSC 3304	0.2	ug/l	< 0.20	< 0.20	< 0.20	< 0.20	0.23	1.1

Summary of Chemical Analysis

Leachate Samples

Our Ref 24-11255

Client Ref ~ 23-0585

Contract Title ~ Rosslare Europort ORE GI

Lab No	2345498	2345499	2345500	2345501	2345502
Sample ID ~	M-BH36	M-BH37	M-BH39A	M-BH40	M-CPT32
Depth ~	2.00	0.50	1.70	1.00	1.00
Other ID ~	100	100	100	100	100
Sample Type ~	ES	ES	ES	ES	ES
Sampling Date ~	31/05/2024	31/05/2024	31/05/2024	31/05/2024	31/05/2024
Sampling Time ~	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units					
Preparation								
BS EN 12457 10:1	DETS 1009*			Y	Y	Y	Y	Y
Metals								
Arsenic, Dissolved	DETS 2306	0.16	ug/l	0.62	0.69	0.25	0.48	0.51
Boron, Dissolved	DETS 2306*	0.012	mg/l	0.12	0.031	0.072	0.092	0.033
Cadmium, Dissolved	DETS 2306	0.03	ug/l	< 0.03	< 0.03	1.0	0.27	0.09
Calcium, Dissolved	DETS 2306	0.09	mg/l	16	7.3	7.0	16	10
Chromium III, Dissolved	DETS 2306*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chromium, Hexavalent	DETS 2203	7	ug/l	< 7.0	< 7.0	< 7.0	< 7.0	< 7.0
Copper, Dissolved	DETS 2306	0.4	ug/l	1.2	0.6	1.6	0.9	1.2
Lead, Dissolved	DETS 2306	0.09	ug/l	< 0.09	< 0.09	< 0.09	< 0.09	< 0.09
Mercury, Dissolved	DETS 2306	0.01	ug/l	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Nickel, Dissolved	DETS 2306	0.5	ug/l	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Selenium, Dissolved	DETS 2306	0.25	ug/l	0.67	1.2	0.30	0.34	< 0.25
Vanadium, Dissolved	DETS 2306	0.6	ug/l	0.7	0.6	0.7	< 0.6	0.9
Zinc, Dissolved	DETS 2306	1.3	ug/l	< 1.3	< 1.3	< 1.3	< 1.3	< 1.3
Inorganics								
Conductivity	DETS 2009	1	uS/cm	1130	566	492	1060	366
pH	DETS 2008		pH	7.2	7.2	7.4	7.0	7.2
Cyanide, Total	DETS 2130	0.04	mg/l	< 0.04	< 0.04	< 0.04	< 0.04	< 0.04
Cyanide, Free Low Level	DETS 2131	0.0001	mg/l	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Phenol - Monohydric Low Level	DETS 2131	0.0015	mg/l	0.0024	< 0.0015	< 0.0015	< 0.0015	< 0.0015
Thiocyanate	DETS 2130	20	ug/l	26	28	< 20	< 20	< 20
Dissolved Organic Carbon	DETS 2085	2	mg/l	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Un-Ionised Ammonia	*	0.02	mg/l	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
Ammoniacal Nitrogen as NH3	DETS 2207	0.0183	mg/l	0.022	0.12	0.23	0.13	0.029
Nitrate as NO3	DETS 2055	0.1	mg/l	1.7	1.2	1.2	2.0	1.1
Nitrite as NO2	DETS 2055	0.1	mg/l	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Ortho Phosphate as P	DETS 2205	0.01	mg/l	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Sulphate as SO4	DETS 2055	0.1	mg/l	35	19	11	39	17
Sulphide	DETS 2208	0.01	mg/l	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Sulphur as S, Total	DETS 2320*	10	mg/l	1100	630	290	760	310
Petroleum Hydrocarbons								
Aliphatic C5-C6: HS_1D_AL	DETS 3322	0.1	ug/l	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Aliphatic C6-C8: HS_1D_AL	DETS 3322	0.1	ug/l	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Aliphatic C8-C10: HS_1D_AL	DETS 3322	0.1	ug/l	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Aliphatic C10-C12: EH_CU_1D_AL	DETS 3072*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic C10-C44: EH_CU_1D_AL	DETS 3072*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic C12-C16: EH_CU_1D_AL	DETS 3072*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic C16-C21: EH_CU_1D_AL	DETS 3072*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic C21-C35: EH_CU_1D_AL	DETS 3072*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic C35-C44: EH_CU_1D_AL	DETS 3072*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0

Summary of Chemical Analysis

Leachate Samples

Our Ref 24-11255

Client Ref ~ 23-0585

Contract Title ~ Rosslare Europort ORE GI

Lab No	2345498	2345499	2345500	2345501	2345502
Sample ID ~	M-BH36	M-BH37	M-BH39A	M-BH40	M-CPT32
Depth ~	2.00	0.50	1.70	1.00	1.00
Other ID ~	100	100	100	100	100
Sample Type ~	ES	ES	ES	ES	ES
Sampling Date ~	31/05/2024	31/05/2024	31/05/2024	31/05/2024	31/05/2024
Sampling Time ~	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units					
Aromatic C5-C7: HS_1D_AR	DETSC 3322	0.1	ug/l	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Aromatic C7-C8: HS_1D_AR	DETSC 3322	0.1	ug/l	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Aromatic C8-C10: HS_1D_AR	DETSC 3322	0.1	ug/l	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Aromatic C10-C12: EH_CU_1D_AR	DETSC 3072*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic C12-C16: EH_CU_1D_AR	DETSC 3072*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic C16-C21: EH_CU_1D_AR	DETSC 3072*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic C21-C35: EH_CU_1D_AR	DETSC 3072*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic C35-C44: EH_CU_1D_AR	DETSC 3072*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic C10-C44: EH_CU_1D_AR	DETSC 3072*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Ali/Aro C10-C44: EH_CU_1D_Total	DETSC 3072*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Benzene	DETSC 3322	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Toluene	DETSC 3322	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Ethylbenzene	DETSC 3322	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Xylene	DETSC 3322	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
MTBE	DETSC 3322	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
PAHs								
Naphthalene	DETSC 3304	0.05	ug/l	0.06	0.06	0.07	0.06	0.07
Acenaphthylene	DETSC 3304	0.01	ug/l	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Acenaphthene	DETSC 3304	0.01	ug/l	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Fluorene	DETSC 3304	0.01	ug/l	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Phenanthrene	DETSC 3304	0.01	ug/l	0.02	0.02	0.03	0.02	0.02
Anthracene	DETSC 3304	0.01	ug/l	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Fluoranthene	DETSC 3304	0.01	ug/l	0.02	0.02	0.03	0.01	0.01
Pyrene	DETSC 3304	0.01	ug/l	0.02	0.02	0.04	0.01	0.02
Benzo(a)anthracene	DETSC 3304*	0.01	ug/l	< 0.01	0.01	0.02	< 0.01	< 0.01
Chrysene	DETSC 3304	0.01	ug/l	< 0.01	< 0.01	0.01	< 0.01	< 0.01
Benzo(b)fluoranthene	DETSC 3304	0.01	ug/l	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(k)fluoranthene	DETSC 3304	0.01	ug/l	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(a)pyrene	DETSC 3304	0.01	ug/l	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Indeno(1,2,3-c,d)pyrene	DETSC 3304	0.01	ug/l	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Dibenzo(a,h)anthracene	DETSC 3304	0.01	ug/l	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(g,h,i)perylene	DETSC 3304	0.01	ug/l	< 0.01	< 0.01	< 0.01	0.02	< 0.01
PAH Total	DETSC 3304	0.2	ug/l	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20

Summary of Asbestos Analysis Soil Samples

Our Ref 24-11255

Client Ref ~ 23-0585

Contract Title ~ Rosslare Europort ORE GI

Lab No	Sample ID	Material Type	Result	Comment*	Analyst
2345481	M-BH28 100 1.00	SOIL	NAD	none	Ben Barsby
2345482	M-BH29 100 6.50	SOIL	NAD	none	Ben Barsby
2345483	M-BH30 100 1.40	SOIL	NAD	none	Ben Barsby
2345484	M-BH31 100 3.50	SOIL	NAD	none	Ben Barsby
2345485	M-BH32 100 5.50	SOIL	NAD	none	Ben Barsby
2345486	M-BH34 100 1.20	SOIL	NAD	none	Ben Barsby
2345487	M-BH36 100 2.00	SOIL	NAD	none	Ben Barsby
2345488	M-BH37 100 0.50	SOIL	NAD	none	Ben Barsby
2345489	M-BH39A 100 1.70	SOIL	NAD	none	Ben Barsby
2345490	M-BH40 100 1.00	SOIL	NAD	none	Ben Barsby
2345491	M-CPT32 100 1.00	SOIL	NAD	none	Ben Barsby

Crocidolite = Blue Asbestos, Amosite = Brown Asbestos, Chrysotile = White Asbestos. Anthophyllite, Actinolite and Tremolite are other forms of Asbestos. Samples are analysed by DETSC 1101 using polarised light microscopy in accordance with HSG248 and documented in-house methods. NAD = No Asbestos Detected. Where a sample is NAD, the result is based on analysis of at least 2 sub-samples and should be taken to mean 'no asbestos detected in sample'. Key: * -not included in laboratory scope of accreditation.

Information in Support of the Analytical Results

Our Ref 24-11255
 Client Ref ~ 23-0585
 Contract ~ Rosslare Europort ORE GI

Containers Received & Deviating Samples

Lab No	Sample ID ~	Date Sampled ~	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
2345481	M-BH28 1.00 SOIL	31/05/24	GJ 250ml, GJ 60ml, PT 1L		
2345482	M-BH29 6.50 SOIL	31/05/24	GJ 250ml, GJ 60ml, PT 1L		
2345483	M-BH30 1.40 SOIL	31/05/24	GJ 250ml, GJ 60ml, PT 1L		
2345484	M-BH31 3.50 SOIL	31/05/24	GJ 250ml, GJ 60ml, PT 1L		
2345485	M-BH32 5.50 SOIL	31/05/24	GJ 250ml, GJ 60ml, PT 1L		
2345486	M-BH34 1.20 SOIL	31/05/24	GJ 250ml, GJ 60ml, PT 1L		
2345487	M-BH36 2.00 SOIL	31/05/24	GJ 250ml, GJ 60ml, PT 1L		
2345488	M-BH37 0.50 SOIL	31/05/24	GJ 250ml, GJ 60ml, PT 1L		
2345489	M-BH39A 1.70 SOIL	31/05/24	GJ 250ml, GJ 60ml, PT 1L		
2345490	M-BH40 1.00 SOIL	31/05/24	GJ 250ml, GJ 60ml, PT 1L		
2345491	M-CPT32 1.00 SOIL	31/05/24	GJ 250ml, GJ 60ml, PT 1L		
2345492	M-BH28 1.00 LEACHATE	31/05/24	GJ 250ml, GJ 60ml, PT 1L	pH/Cond (1 days)	
2345493	M-BH29 6.50 LEACHATE	31/05/24	GJ 250ml, GJ 60ml, PT 1L	pH/Cond (1 days)	
2345494	M-BH30 1.40 LEACHATE	31/05/24	GJ 250ml, GJ 60ml, PT 1L	pH/Cond (1 days)	
2345495	M-BH31 3.50 LEACHATE	31/05/24	GJ 250ml, GJ 60ml, PT 1L	pH/Cond (1 days)	
2345496	M-BH32 5.50 LEACHATE	31/05/24	GJ 250ml, GJ 60ml, PT 1L	pH/Cond (1 days)	
2345497	M-BH34 1.20 LEACHATE	31/05/24	GJ 250ml, GJ 60ml, PT 1L	pH/Cond (1 days)	
2345498	M-BH36 2.00 LEACHATE	31/05/24	GJ 250ml, GJ 60ml, PT 1L	pH/Cond (1 days)	
2345499	M-BH37 0.50 LEACHATE	31/05/24	GJ 250ml, GJ 60ml, PT 1L	pH/Cond (1 days)	
2345500	M-BH39A 1.70 LEACHATE	31/05/24	GJ 250ml, GJ 60ml, PT 1L	pH/Cond (1 days)	
2345501	M-BH40 1.00 LEACHATE	31/05/24	GJ 250ml, GJ 60ml, PT 1L	pH/Cond (1 days)	
2345502	M-CPT32 1.00 LEACHATE	31/05/24	GJ 250ml, GJ 60ml, PT 1L	pH/Cond (1 days)	

Key: G-Glass P-Plastic J-Jar T-Tub

DETS cannot be held responsible for the integrity of samples received whereby the laboratory did not undertake the sampling. In this instance samples received may be deviating. Deviating Sample criteria are based on British and International standards and laboratory trials in conjunction with the UKAS note 'Guidance on Deviating Samples'. All samples received are listed above. However, those samples that have additional comments in relation to hold time, inappropriate containers etc are deviating due to the reasons stated. This means that the analysis is accredited where applicable, but results may be compromised due to sample deviations. If no sampled date (soils) or date+time (waters) has been supplied then samples are deviating. However, if you are able to supply a sampled date (and time for waters) this will prevent samples being reported as deviating where specific hold times are not exceeded and where the container supplied is suitable.

Soil Analysis Notes

Inorganic soil analysis was carried out on a dried sample, crushed to pass a 425µm sieve, in accordance with BS1377.

Organic soil analysis was carried out on an 'as received' sample. Organics results are corrected for moisture and expressed on a dry weight basis.

The Loss on Drying, used to express organics analysis on an air dried basis, is carried out at a temperature of 28°C +/-2°C.

Disposal

From the issue date of this test certificate, samples will be held for the following times prior to disposal :-

Soils - 1 month, Liquids - 2 weeks, Asbestos (test portion) - 6 months

Information in Support of the Analytical Results

List of HWOL Acronyms and Operators

Acronym	Description
HS	Headspace analysis
EH	Extractable Hydrocarbons - i.e. everything extracted by the solvent
CU	Clean-up - e.g. by florisil, silica gel
1D	GC - Single coil gas chromatography
2D	GC-GC - Double coil gas chromatography
Total	Aliphatics & Aromatics
AL	Aliphatics only
AR	Aromatics only
#1	EH_2D_Total but with humics mathematically subtracted
#2	EH_2D_Total but with fatty acids mathematically subtracted
_	Operator - underscore to separate acronyms (exception for +)
+	Operator to indicate cumulative eg. EH+HS_Total or EH_CU+HS_Total

Det	Acronym
Aliphatic C5-C6	HS_1D_AL
Aliphatic C6-C8	HS_1D_AL
Aliphatic C8-C10	HS_1D_AL
Aliphatic >EC10-EC12	EH_2D_AL
Aliphatic >EC12-EC16	EH_2D_AL
Aliphatic >EC16-EC21	EH_2D_AL
Aliphatic >EC21-EC35	EH_2D_AL
Aliphatic >EC35-EC40	EH_2D_AL
Aliphatic >EC40-EC44	EH_2D_AL
Aliphatic C5-C44	EH_2D+HS_1D_AL
Aromatic C5-C7	HS_1D_AR
Aromatic C7-C8	HS_1D_AR
Aromatic C8-C10	HS_1D_AR
Aromatic >EC10-EC12	EH_2D_AR
Aromatic >EC12-EC16	EH_2D_AR
Aromatic >EC16-EC21	EH_2D_AR
Aromatic >EC21-EC35	EH_2D_AR
Aromatic >EC35-EC40	EH_2D_AR
Aromatic >EC40-EC44	EH_2D_AR
Aromatic C5-C44	EH_2D+HS_1D_AR
TPH Ali/Aro C5-C44	EH_2D+HS_1D_Total
Aliphatic C10-C12	EH_CU_1D_AL
Aliphatic C10-C44	EH_CU_1D_AL
Aliphatic C12-C16	EH_CU_1D_AL
Aliphatic C16-C21	EH_CU_1D_AL
Aliphatic C21-C35	EH_CU_1D_AL
Aliphatic C35-C44	EH_CU_1D_AL
Aromatic C10-C12	EH_CU_1D_AR
Aromatic C12-C16	EH_CU_1D_AR
Aromatic C16-C21	EH_CU_1D_AR
Aromatic C21-C35	EH_CU_1D_AR

Aromatic C35-C44
Aromatic C10-C44
Ali/Aro C10-C44

EH_CU_1D_AR
EH_CU_1D_AR
EH_CU_1D_Total

Key:

~ Sample details are provided by the client and can affect the validity of the results

* -not accredited.

-MCERTS (accreditation only applies if report carries the MCERTS logo).

\$ -subcontracted.

n/s -not supplied.

I/S -insufficient sample.

U/S -unsuitable sample.

t/f -to follow.

nd -not detected.

End of Report



Certificate of Analysis

Certificate Number 24-11252-1

Issued: 14-Jun-24

Client Causeway Geotech
8 Drumahiskey Road
Ballymoney
County Antrim
BT53 7QL

Our Reference 24-11252-1

Client Reference ~ 23-0585

Order No ~ (not supplied)

Contract Title ~ Rosslare Europort ORE GI

Description 12 Soil samples, 12 Leachate prepared by DETS samples.

Date Received 03-Jun-24

Date Started 03-Jun-24

Date Completed 14-Jun-24

Test Procedures Identified by prefix DETSn (details on request).

Notes **This report supersedes 24-11252; Amendments made to Report:**

Opinions and interpretations are outside the laboratory's scope of ISO 17025 accreditation. This certificate is issued in accordance with the accreditation requirements of the United Kingdom Accreditation Service. The results reported herein relate only to the material supplied to the laboratory. This certificate shall not be reproduced except in full, without the prior written approval of the laboratory.

Approved By

A handwritten signature in black ink, appearing to read "K. Bridgewood".

Kirk Bridgewood
General Manager



Normec DETS Limited

Unit 2, Park Road Industrial Estate South, Consett, Co Durham, DH8 5PY

Symbol key at end of report Tel: 01207 582333 • email: info@dets.co.uk • www.dets.co.uk

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Summary of Chemical Analysis

Soil Samples

Our Ref 24-11252-1

Client Ref ~ 23-0585

Contract Title ~ Rosslare Europort ORE GI

Lab No	2345448	2345449	2345450	2345451	2345452	2345453
Sample ID ~	L-BH01	L-BH03	L-BH04	M-BH11	M-BH12	M-BH13
Depth ~	0.00	1.20	0.00	2.00	4.50	0.50
Other ID ~	100	100	100	100	100	100
Sample Type ~	ES	ES	ES	ES	ES	ES
Sampling Date ~	31/05/2024	31/05/2024	31/05/2024	31/05/2024	31/05/2024	31/05/2024
Sampling Time ~	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units						
Preparation									
Moisture Content	DETSC 1004	0.1	%	17	16	15	15	27	5.5
Metals									
Antimony	DETSC 2301*	1	mg/kg	1.2	1.2	< 1.0	1.3	< 1.0	1.7
Arsenic	DETSC 2301#	0.2	mg/kg	9.3	13	4.2	10	9.1	8.9
Beryllium	DETSC 2301#	0.2	mg/kg	0.6	0.7	< 0.2	0.5	0.5	0.5
Boron, Water Soluble (2.5:1)	DETSC 2311#	0.2	mg/kg	5.3	5.3	4.2	3.2	11	1.7
Cadmium	DETSC 2301#	0.1	mg/kg	0.2	0.2	< 0.1	< 0.1	0.1	0.2
Chromium III	DETSC 2301*	0.15	mg/kg	23	27	9.9	23	21	69
Chromium, Hexavalent	DETSC 2204*	1	mg/kg	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Copper	DETSC 2301#	0.2	mg/kg	21	25	5.9	19	15	35
Lead	DETSC 2301#	0.3	mg/kg	11	13	5.8	10	17	6.6
Mercury	DETSC 2325#	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Molybdenum	DETSC 2301#	0.4	mg/kg	0.4	0.6	0.7	< 0.4	0.5	< 0.4
Nickel	DETSC 2301#	1	mg/kg	26	29	7.9	25	16	42
Selenium	DETSC 2301#	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Vanadium	DETSC 2301#	0.8	mg/kg	32	36	16	32	30	67
Zinc	DETSC 2301#	1	mg/kg	62	72	38	66	67	75
Inorganics									
pH	DETSC 2008#		pH	8.8	8.6	8.8	7.1	8.1	9.1
Acid / Alkali Reserve	DETSC 2011*	1	Oh/100g	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Cyanide, Total	DETSC 2130#	0.1	mg/kg	0.1	< 0.1	< 0.1	< 0.1	0.1	< 0.1
Cyanide, Free	DETSC 2130#	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Thiocyanate	DETSC 2130#	0.6	mg/kg	0.6	< 0.6	< 0.6	< 0.6	0.9	< 0.6
Organic matter	DETSC 2002#	0.1	%	0.4	1.5	0.6	0.5	2.3	0.3
Ammoniacal Nitrogen as NH3	DETSC 2119	0.5	mg/kg	6.2	6.9	7.0	11	8.3	1.7
Chloride	DETSC 2055	1	mg/kg	4060	3470	4960	3690	10200	1410
Nitrate as NO3	DETSC 2055	1	mg/kg	12	4.8	4.4	4.7	1.5	< 1.0
Nitrite as NO2	DETSC 2055	1	mg/kg	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Ortho Phosphate as P	DETSC 2205*	0.1	mg/kg	0.42	0.32	< 0.10	0.13	< 0.10	< 0.10
Sulphide	DETSC 2024*	10	mg/kg	16	< 10	< 10	< 10	16	< 10
Sulphate as SO4, Total	DETSC 2321#	100	mg/kg	1530	934	2360	1010	3990	354
Petroleum Hydrocarbons									
Aliphatic C5-C6: HS_1D_AL	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aliphatic C6-C8: HS_1D_AL	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aliphatic C8-C10: HS_1D_AL	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aliphatic >EC10-EC12: EH_2D_AL	DETSC 3521#	1.5	mg/kg	< 1.50	< 1.50	1.94	< 1.50	< 1.50	1.65
Aliphatic >EC12-EC16: EH_2D_AL	DETSC 3521#	1.2	mg/kg	< 1.20	< 1.20	1.49	< 1.20	< 1.20	< 1.20
Aliphatic >EC16-EC21: EH_2D_AL	DETSC 3521#	1.5	mg/kg	< 1.50	< 1.50	< 1.50	< 1.50	< 1.50	< 1.50
Aliphatic >EC21-EC35: EH_2D_AL	DETSC 3521#	3.4	mg/kg	< 3.40	< 3.40	< 3.40	< 3.40	< 3.40	< 3.40
Aliphatic >EC35-EC40: EH_2D_AL	DETSC 3521*	3.4	mg/kg	< 3.40	< 3.40	< 3.40	< 3.40	< 3.40	< 3.40
Aliphatic >EC40-EC44: EH_2D_AL	DETSC 3521*	3.4	mg/kg	< 3.40	< 3.40	< 3.40	< 3.40	< 3.40	< 3.40

Summary of Chemical Analysis

Soil Samples

Our Ref 24-11252-1

Client Ref ~ 23-0585

Contract Title ~ Rosslare Europort ORE GI

Lab No	2345448	2345449	2345450	2345451	2345452	2345453
Sample ID ~	L-BH01	L-BH03	L-BH04	M-BH11	M-BH12	M-BH13
Depth ~	0.00	1.20	0.00	2.00	4.50	0.50
Other ID ~	100	100	100	100	100	100
Sample Type ~	ES	ES	ES	ES	ES	ES
Sampling Date ~	31/05/2024	31/05/2024	31/05/2024	31/05/2024	31/05/2024	31/05/2024
Sampling Time ~	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units						
Aliphatic C5-C44: EH_2D+HS_1D_AL	DETSC 3521*	10	mg/kg	< 10.00	< 10.00	< 10.00	< 10.00	< 10.00	< 10.00
Aromatic C5-C7: HS_1D_AR	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aromatic C7-C8: HS_1D_AR	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aromatic C8-C10: HS_1D_AR	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aromatic >EC10-EC12: EH_2D_AR	DETSC 3521#	0.9	mg/kg	< 0.90	< 0.90	< 0.90	< 0.90	< 0.90	< 0.90
Aromatic >EC12-EC16: EH_2D_AR	DETSC 3521#	0.5	mg/kg	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Aromatic >EC16-EC21: EH_2D_AR	DETSC 3521#	0.6	mg/kg	< 0.60	< 0.60	< 0.60	< 0.60	< 0.60	< 0.60
Aromatic >EC21-EC35: EH_2D_AR	DETSC 3521#	1.4	mg/kg	< 1.40	< 1.40	< 1.40	< 1.40	< 1.40	< 1.40
Aromatic >EC35-EC40: EH_2D_AR	DETSC 3521*	1.4	mg/kg	< 1.40	< 1.40	< 1.40	< 1.40	< 1.40	< 1.40
Aromatic >EC40-EC44: EH_2D_AR	DETSC 3521*	1.4	mg/kg	< 1.40	< 1.40	< 1.40	< 1.40	< 1.40	< 1.40
Aromatic C5-C44: EH_2D+HS_1D_AR	DETSC 3521*	10	mg/kg	< 10.00	< 10.00	< 10.00	< 10.00	< 10.00	< 10.00
TPH Ali/Aro C5-C44: EH_2D+HS_1D_Total	DETSC 3521*	10	mg/kg	< 10.00	< 10.00	< 10.00	< 10.00	< 10.00	< 10.00
Benzene	DETSC 3321#	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Ethylbenzene	DETSC 3321#	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Toluene	DETSC 3321#	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Xylene	DETSC 3321#	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
MTBE	DETSC 3321	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
PAHs									
Naphthalene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Acenaphthylene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Acenaphthene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Fluorene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Phenanthrene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Anthracene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Fluoranthene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Pyrene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Benzo(a)anthracene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Chrysene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Benzo(b)fluoranthene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Benzo(k)fluoranthene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Benzo(a)pyrene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Indeno(1,2,3-c,d)pyrene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Dibenzo(a,h)anthracene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Benzo(g,h,i)perylene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
PAH 16 Total	DETSC 3301	1.6	mg/kg	< 1.6	< 1.6	< 1.6	< 1.6	< 1.6	< 1.6
Phenols									
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3

Summary of Chemical Analysis

Soil Samples

Our Ref 24-11252-1

Client Ref ~ 23-0585

Contract Title ~ Rosslare Europort ORE GI

Lab No	2345454	2345455	2345456	2345457	2345458	2345459
Sample ID ~	M-BH16	M-BH18	M-BH21	M-BH22	M-BH25	M-BH27
Depth ~	0.50	5.00	3.60	10.00	5.20	1.30
Other ID ~	100	100	100	100	100	100
Sample Type ~	ES	ES	ES	ES	ES	ES
Sampling Date ~	31/05/2024	31/05/2024	31/05/2024	31/05/2024	31/05/2024	31/05/2024
Sampling Time ~	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units						
Preparation									
Moisture Content	DETSC 1004	0.1	%	10	13	12	9.1	8.5	7.4
Metals									
Antimony	DETSC 2301*	1	mg/kg	2.4	< 1.0	< 1.0	1.5	2.1	< 1.0
Arsenic	DETSC 2301#	0.2	mg/kg	6.1	6.9	10	12	20	7.5
Beryllium	DETSC 2301#	0.2	mg/kg	0.7	0.4	0.4	0.8	1.0	0.4
Boron, Water Soluble (2.5:1)	DETSC 2311#	0.2	mg/kg	3.2	0.8	1.8	1.2	1.6	0.7
Cadmium	DETSC 2301#	0.1	mg/kg	< 0.1	< 0.1	0.1	< 0.1	0.2	< 0.1
Chromium III	DETSC 2301*	0.15	mg/kg	69	20	23	29	34	29
Chromium, Hexavalent	DETSC 2204*	1	mg/kg	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Copper	DETSC 2301#	0.2	mg/kg	40	22	23	37	40	20
Lead	DETSC 2301#	0.3	mg/kg	6.8	12	14	25	23	5.3
Mercury	DETSC 2325#	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Molybdenum	DETSC 2301#	0.4	mg/kg	< 0.4	< 0.4	0.9	< 0.4	1.0	< 0.4
Nickel	DETSC 2301#	1	mg/kg	52	20	24	31	36	22
Selenium	DETSC 2301#	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Vanadium	DETSC 2301#	0.8	mg/kg	60	27	29	43	33	36
Zinc	DETSC 2301#	1	mg/kg	99	55	65	90	99	58
Inorganics									
pH	DETSC 2008#		pH	8.6	8.2	8.2	8.3	8.3	8.9
Acid / Alkali Reserve	DETSC 2011*	1	Oh/100g	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Cyanide, Total	DETSC 2130#	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Cyanide, Free	DETSC 2130#	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Thiocyanate	DETSC 2130#	0.6	mg/kg	< 0.6	< 0.6	< 0.6	< 0.6	< 0.6	< 0.6
Organic matter	DETSC 2002#	0.1	%	0.8	1.9	0.8	< 0.1	0.4	0.3
Ammoniacal Nitrogen as NH3	DETSC 2119	0.5	mg/kg	0.87	1.7	1.3	2.7	3.3	1.4
Chloride	DETSC 2055	1	mg/kg	3340	2130	3220	1370	975	829
Nitrate as NO3	DETSC 2055	1	mg/kg	1.8	< 1.0	< 1.0	< 1.0	< 1.0	1.5
Nitrite as NO2	DETSC 2055	1	mg/kg	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Ortho Phosphate as P	DETSC 2205*	0.1	mg/kg	< 0.10	0.12	< 0.10	0.15	0.37	0.11
Sulphide	DETSC 2024*	10	mg/kg	43	24	24	35	20	< 10
Sulphate as SO4, Total	DETSC 2321#	100	mg/kg	1090	608	1260	613	216	461
Petroleum Hydrocarbons									
Aliphatic C5-C6: HS_1D_AL	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aliphatic C6-C8: HS_1D_AL	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aliphatic C8-C10: HS_1D_AL	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aliphatic >EC10-EC12: EH_2D_AL	DETSC 3521#	1.5	mg/kg	< 1.50	< 1.50	< 1.50	< 1.50	< 1.50	< 1.50
Aliphatic >EC12-EC16: EH_2D_AL	DETSC 3521#	1.2	mg/kg	< 1.20	< 1.20	< 1.20	< 1.20	< 1.20	< 1.20
Aliphatic >EC16-EC21: EH_2D_AL	DETSC 3521#	1.5	mg/kg	< 1.50	< 1.50	< 1.50	< 1.50	< 1.50	< 1.50
Aliphatic >EC21-EC35: EH_2D_AL	DETSC 3521#	3.4	mg/kg	< 3.40	< 3.40	< 3.40	< 3.40	< 3.40	< 3.40
Aliphatic >EC35-EC40: EH_2D_AL	DETSC 3521*	3.4	mg/kg	< 3.40	< 3.40	< 3.40	< 3.40	< 3.40	< 3.40
Aliphatic >EC40-EC44: EH_2D_AL	DETSC 3521*	3.4	mg/kg	< 3.40	< 3.40	< 3.40	< 3.40	< 3.40	< 3.40

Summary of Chemical Analysis

Soil Samples

Our Ref 24-11252-1

Client Ref ~ 23-0585

Contract Title ~ Rosslare Europort ORE GI

Lab No	2345454	2345455	2345456	2345457	2345458	2345459
Sample ID ~	M-BH16	M-BH18	M-BH21	M-BH22	M-BH25	M-BH27
Depth ~	0.50	5.00	3.60	10.00	5.20	1.30
Other ID ~	100	100	100	100	100	100
Sample Type ~	ES	ES	ES	ES	ES	ES
Sampling Date ~	31/05/2024	31/05/2024	31/05/2024	31/05/2024	31/05/2024	31/05/2024
Sampling Time ~	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units						
Aliphatic C5-C44: EH_2D+HS_1D_AL	DETSC 3521*	10	mg/kg	< 10.00	< 10.00	< 10.00	< 10.00	< 10.00	< 10.00
Aromatic C5-C7: HS_1D_AR	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aromatic C7-C8: HS_1D_AR	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aromatic C8-C10: HS_1D_AR	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aromatic >EC10-EC12: EH_2D_AR	DETSC 3521#	0.9	mg/kg	< 0.90	< 0.90	< 0.90	< 0.90	< 0.90	< 0.90
Aromatic >EC12-EC16: EH_2D_AR	DETSC 3521#	0.5	mg/kg	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Aromatic >EC16-EC21: EH_2D_AR	DETSC 3521#	0.6	mg/kg	< 0.60	< 0.60	< 0.60	< 0.60	< 0.60	< 0.60
Aromatic >EC21-EC35: EH_2D_AR	DETSC 3521#	1.4	mg/kg	< 1.40	< 1.40	< 1.40	< 1.40	< 1.40	< 1.40
Aromatic >EC35-EC40: EH_2D_AR	DETSC 3521*	1.4	mg/kg	< 1.40	< 1.40	< 1.40	< 1.40	< 1.40	< 1.40
Aromatic >EC40-EC44: EH_2D_AR	DETSC 3521*	1.4	mg/kg	< 1.40	< 1.40	< 1.40	< 1.40	< 1.40	< 1.40
Aromatic C5-C44: EH_2D+HS_1D_AR	DETSC 3521*	10	mg/kg	< 10.00	< 10.00	< 10.00	< 10.00	< 10.00	< 10.00
TPH Ali/Aro C5-C44: EH_2D+HS_1D_Total	DETSC 3521*	10	mg/kg	< 10.00	< 10.00	< 10.00	< 10.00	< 10.00	< 10.00
Benzene	DETSC 3321#	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Ethylbenzene	DETSC 3321#	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Toluene	DETSC 3321#	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Xylene	DETSC 3321#	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
MTBE	DETSC 3321	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
PAHs									
Naphthalene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Acenaphthylene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Acenaphthene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Fluorene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Phenanthrene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	0.1	< 0.1	< 0.1	< 0.1
Anthracene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Fluoranthene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Pyrene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Benzo(a)anthracene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Chrysene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Benzo(b)fluoranthene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Benzo(k)fluoranthene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Benzo(a)pyrene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Indeno(1,2,3-c,d)pyrene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Dibenzo(a,h)anthracene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Benzo(g,h,i)perylene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
PAH 16 Total	DETSC 3301	1.6	mg/kg	< 1.6	< 1.6	< 1.6	< 1.6	< 1.6	< 1.6
Phenols									
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3

Summary of Chemical Analysis

Leachate Samples

Our Ref 24-11252-1

Client Ref ~ 23-0585

Contract Title ~ Rosslare Europort ORE GI

Lab No	2345460	2345461	2345462	2345463	2345464	2345465
Sample ID ~	L-BH01	L-BH03	L-BH04	M-BH11	M-BH12	M-BH13
Depth ~	0.00	1.20	0.00	2.00	4.50	0.50
Other ID ~	100	100	100	100	100	100
Sample Type ~	ES	ES	ES	ES	ES	ES
Sampling Date ~	31/05/2024	31/05/2024	31/05/2024	31/05/2024	31/05/2024	31/05/2024
Sampling Time ~	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units						
Preparation									
BS EN 12457 10:1	DETS 1009*			Y	Y	Y	Y	Y	Y
Metals									
Arsenic, Dissolved	DETS 2306	0.16	ug/l	2.1	1.2	0.71	0.61	0.89	0.57
Boron, Dissolved	DETS 2306*	0.012	mg/l	0.13	0.094	0.16	0.059	0.23	0.054
Cadmium, Dissolved	DETS 2306	0.03	ug/l	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Calcium, Dissolved	DETS 2306	0.09	mg/l	15	12	33	14	21	7.8
Chromium III, Dissolved	DETS 2306*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chromium, Hexavalent	DETS 2203	7	ug/l	< 7.0	< 7.0	< 7.0	< 7.0	< 7.0	< 7.0
Copper, Dissolved	DETS 2306	0.4	ug/l	1.2	1.2	1.1	0.8	0.8	1.6
Lead, Dissolved	DETS 2306	0.09	ug/l	< 0.09	< 0.09	< 0.09	< 0.09	< 0.09	< 0.09
Mercury, Dissolved	DETS 2306	0.01	ug/l	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Nickel, Dissolved	DETS 2306	0.5	ug/l	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Selenium, Dissolved	DETS 2306	0.25	ug/l	0.48	0.70	< 0.25	< 0.25	< 0.25	< 0.25
Vanadium, Dissolved	DETS 2306	0.6	ug/l	1.6	1.9	1.5	1.0	0.6	1.0
Zinc, Dissolved	DETS 2306	1.3	ug/l	< 1.3	< 1.3	< 1.3	< 1.3	< 1.3	< 1.3
Inorganics									
Conductivity	DETS 2009	1	uS/cm	976	751	1480	763	1450	570
pH	DETS 2008		pH	7.8	8.2	7.5	8.2	7.5	7.6
Cyanide, Total	DETS 2130	0.04	mg/l	< 0.04	< 0.04	< 0.04	< 0.04	< 0.04	< 0.04
Cyanide, Free Low Level	DETS 2131	0.0001	mg/l	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Phenol - Monohydric Low Level	DETS 2131	0.0015	mg/l	< 0.0015	< 0.0015	< 0.0015	0.0020	< 0.0015	0.0022
Thiocyanate	DETS 2130	20	ug/l	< 20	51	< 20	< 20	< 20	< 20
Dissolved Organic Carbon	DETS 2085	2	mg/l	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Un-Ionised Ammonia	*	0.02	mg/l	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
Ammoniacal Nitrogen as NH3	DETS 2207	0.0183	mg/l	0.034	< 0.018	< 0.018	< 0.018	< 0.018	< 0.018
Nitrate as NO3	DETS 2055	0.1	mg/l	1.8	1.6	2.2	1.5	2.8	1.2
Nitrite as NO2	DETS 2055	0.1	mg/l	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Ortho Phosphate as P	DETS 2205	0.01	mg/l	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Sulphate as SO4	DETS 2055	0.1	mg/l	94	30	96	29	59	19
Sulphide	DETS 2208	0.01	mg/l	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Sulphur as S, Total	DETS 2320*	10	mg/l	36	12	53	11	31	< 10
Petroleum Hydrocarbons									
Aliphatic C5-C6: HS_1D_AL	DETS 3322	0.1	ug/l	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Aliphatic C6-C8: HS_1D_AL	DETS 3322	0.1	ug/l	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Aliphatic C8-C10: HS_1D_AL	DETS 3322	0.1	ug/l	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Aliphatic C10-C12: EH_CU_1D_AL	DETS 3072*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic C10-C44: EH_CU_1D_AL	DETS 3072*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic C12-C16: EH_CU_1D_AL	DETS 3072*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic C16-C21: EH_CU_1D_AL	DETS 3072*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic C21-C35: EH_CU_1D_AL	DETS 3072*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic C35-C44: EH_CU_1D_AL	DETS 3072*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0

Summary of Chemical Analysis

Leachate Samples

Our Ref 24-11252-1

Client Ref ~ 23-0585

Contract Title ~ Rosslare Europort ORE GI

Lab No	2345460	2345461	2345462	2345463	2345464	2345465
Sample ID ~	L-BH01	L-BH03	L-BH04	M-BH11	M-BH12	M-BH13
Depth ~	0.00	1.20	0.00	2.00	4.50	0.50
Other ID ~	100	100	100	100	100	100
Sample Type ~	ES	ES	ES	ES	ES	ES
Sampling Date ~	31/05/2024	31/05/2024	31/05/2024	31/05/2024	31/05/2024	31/05/2024
Sampling Time ~	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units						
Aromatic C5-C7: HS_1D_AR	DETSC 3322	0.1	ug/l	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Aromatic C7-C8: HS_1D_AR	DETSC 3322	0.1	ug/l	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Aromatic C8-C10: HS_1D_AR	DETSC 3322	0.1	ug/l	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Aromatic C10-C12: EH_CU_1D_AR	DETSC 3072*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic C12-C16: EH_CU_1D_AR	DETSC 3072*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic C16-C21: EH_CU_1D_AR	DETSC 3072*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic C21-C35: EH_CU_1D_AR	DETSC 3072*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic C35-C44: EH_CU_1D_AR	DETSC 3072*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic C10-C44: EH_CU_1D_AR	DETSC 3072*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Ali/Aro C10-C44: EH_CU_1D_Total	DETSC 3072*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Benzene	DETSC 3322	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Toluene	DETSC 3322	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Ethylbenzene	DETSC 3322	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Xylene	DETSC 3322	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
MTBE	DETSC 3322	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
PAHs									
Naphthalene	DETSC 3304	0.05	ug/l	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Acenaphthylene	DETSC 3304	0.01	ug/l	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Acenaphthene	DETSC 3304	0.01	ug/l	< 0.01	< 0.01	0.03	< 0.01	< 0.01	< 0.01
Fluorene	DETSC 3304	0.01	ug/l	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Phenanthrene	DETSC 3304	0.01	ug/l	0.02	< 0.01	0.03	0.02	0.02	0.02
Anthracene	DETSC 3304	0.01	ug/l	< 0.01	< 0.01	0.01	< 0.01	< 0.01	< 0.01
Fluoranthene	DETSC 3304	0.01	ug/l	0.03	< 0.01	0.04	0.05	0.06	0.03
Pyrene	DETSC 3304	0.01	ug/l	0.03	< 0.01	0.04	0.06	0.08	0.03
Benzo(a)anthracene	DETSC 3304*	0.01	ug/l	0.02	< 0.01	0.03	0.04	0.05	0.02
Chrysene	DETSC 3304	0.01	ug/l	0.01	< 0.01	0.07	0.05	0.06	0.02
Benzo(b)fluoranthene	DETSC 3304	0.01	ug/l	0.03	< 0.01	0.04	0.17	0.23	0.03
Benzo(k)fluoranthene	DETSC 3304	0.01	ug/l	0.01	< 0.01	0.01	0.05	0.06	0.01
Benzo(a)pyrene	DETSC 3304	0.01	ug/l	0.02	< 0.01	0.02	0.09	0.13	0.02
Indeno(1,2,3-c,d)pyrene	DETSC 3304	0.01	ug/l	0.02	< 0.01	0.02	0.12	0.14	0.02
Dibenzo(a,h)anthracene	DETSC 3304	0.01	ug/l	< 0.01	< 0.01	< 0.01	0.02	0.03	< 0.01
Benzo(g,h,i)perylene	DETSC 3304	0.01	ug/l	0.02	< 0.01	0.03	0.13	0.16	0.03
PAH Total	DETSC 3304	0.2	ug/l	0.23	< 0.20	0.38	0.79	1.0	0.23

Summary of Chemical Analysis

Leachate Samples

Our Ref 24-11252-1

Client Ref ~ 23-0585

Contract Title ~ Rosslare Europort ORE GI

Lab No	2345466	2345467	2345468	2345469	2345470	2345471
Sample ID ~	M-BH16	M-BH18	M-BH21	M-BH22	M-BH25	M-BH27
Depth ~	0.50	5.00	3.60	10.00	5.20	1.30
Other ID ~	100	100	100	100	100	100
Sample Type ~	ES	ES	ES	ES	ES	ES
Sampling Date ~	31/05/2024	31/05/2024	31/05/2024	31/05/2024	31/05/2024	31/05/2024
Sampling Time ~	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units						
Preparation									
BS EN 12457 10:1	DETS 1009*			Y	Y	Y	Y	Y	Y
Metals									
Arsenic, Dissolved	DETS 2306	0.16	ug/l	0.74	0.41	0.42	0.29	0.46	0.71
Boron, Dissolved	DETS 2306*	0.012	mg/l	0.059	0.029	0.050	0.023	0.046	0.031
Cadmium, Dissolved	DETS 2306	0.03	ug/l	0.12	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Calcium, Dissolved	DETS 2306	0.09	mg/l	7.3	41	26	23	8.3	9.3
Chromium III, Dissolved	DETS 2306*	1	ug/l	1.4	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chromium, Hexavalent	DETS 2203	7	ug/l	< 7.0	< 7.0	< 7.0	< 7.0	< 7.0	< 7.0
Copper, Dissolved	DETS 2306	0.4	ug/l	2.5	1.1	0.9	0.8	0.9	1.2
Lead, Dissolved	DETS 2306	0.09	ug/l	1.2	0.12	< 0.09	< 0.09	< 0.09	< 0.09
Mercury, Dissolved	DETS 2306	0.01	ug/l	0.02	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Nickel, Dissolved	DETS 2306	0.5	ug/l	1.2	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Selenium, Dissolved	DETS 2306	0.25	ug/l	1.5	0.80	0.46	0.62	1.7	0.70
Vanadium, Dissolved	DETS 2306	0.6	ug/l	2.5	0.6	< 0.6	< 0.6	< 0.6	2.6
Zinc, Dissolved	DETS 2306	1.3	ug/l	1.7	1.8	1.3	< 1.3	< 1.3	< 1.3
Inorganics									
Conductivity	DETS 2009	1	uS/cm	695	849	1040	444	321	476
pH	DETS 2008		pH	8.4	7.4	6.3	6.4	6.6	6.9
Cyanide, Total	DETS 2130	0.04	mg/l	< 0.04	< 0.04	< 0.04	< 0.04	< 0.04	< 0.04
Cyanide, Free Low Level	DETS 2131	0.0001	mg/l	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Phenol - Monohydric Low Level	DETS 2131	0.0015	mg/l	< 0.0015	< 0.0015	< 0.0015	< 0.0015	< 0.0015	< 0.0015
Thiocyanate	DETS 2130	20	ug/l	29	< 20	< 20	< 20	26	27
Dissolved Organic Carbon	DETS 2085	2	mg/l	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Un-Ionised Ammonia	*	0.02	mg/l	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
Ammoniacal Nitrogen as NH3	DETS 2207	0.0183	mg/l	< 0.018	0.12	0.26	0.19	0.17	0.071
Nitrate as NO3	DETS 2055	0.1	mg/l	1.5	1.8	2.0	1.4	1.2	1.2
Nitrite as NO2	DETS 2055	0.1	mg/l	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Ortho Phosphate as P	DETS 2205	0.01	mg/l	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Sulphate as SO4	DETS 2055	0.1	mg/l	29	28	50	23	12	11
Sulphide	DETS 2208	0.01	mg/l	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Sulphur as S, Total	DETS 2320*	10	mg/l	12	12	20	< 10	< 10	< 10
Petroleum Hydrocarbons									
Aliphatic C5-C6: HS_1D_AL	DETS 3322	0.1	ug/l	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Aliphatic C6-C8: HS_1D_AL	DETS 3322	0.1	ug/l	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Aliphatic C8-C10: HS_1D_AL	DETS 3322	0.1	ug/l	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Aliphatic C10-C12: EH_CU_1D_AL	DETS 3072*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic C10-C44: EH_CU_1D_AL	DETS 3072*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic C12-C16: EH_CU_1D_AL	DETS 3072*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic C16-C21: EH_CU_1D_AL	DETS 3072*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic C21-C35: EH_CU_1D_AL	DETS 3072*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic C35-C44: EH_CU_1D_AL	DETS 3072*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0

Summary of Chemical Analysis

Leachate Samples

Our Ref 24-11252-1

Client Ref ~ 23-0585

Contract Title ~ Rosslare Europort ORE GI

Lab No	2345466	2345467	2345468	2345469	2345470	2345471
Sample ID ~	M-BH16	M-BH18	M-BH21	M-BH22	M-BH25	M-BH27
Depth ~	0.50	5.00	3.60	10.00	5.20	1.30
Other ID ~	100	100	100	100	100	100
Sample Type ~	ES	ES	ES	ES	ES	ES
Sampling Date ~	31/05/2024	31/05/2024	31/05/2024	31/05/2024	31/05/2024	31/05/2024
Sampling Time ~	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units						
Aromatic C5-C7: HS_1D_AR	DETSC 3322	0.1	ug/l	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Aromatic C7-C8: HS_1D_AR	DETSC 3322	0.1	ug/l	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Aromatic C8-C10: HS_1D_AR	DETSC 3322	0.1	ug/l	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Aromatic C10-C12: EH_CU_1D_AR	DETSC 3072*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic C12-C16: EH_CU_1D_AR	DETSC 3072*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic C16-C21: EH_CU_1D_AR	DETSC 3072*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic C21-C35: EH_CU_1D_AR	DETSC 3072*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic C35-C44: EH_CU_1D_AR	DETSC 3072*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic C10-C44: EH_CU_1D_AR	DETSC 3072*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Ali/Aro C10-C44: EH_CU_1D_Total	DETSC 3072*	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Benzene	DETSC 3322	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Toluene	DETSC 3322	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Ethylbenzene	DETSC 3322	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Xylene	DETSC 3322	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
MTBE	DETSC 3322	1	ug/l	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
PAHs									
Naphthalene	DETSC 3304	0.05	ug/l	< 0.05	< 0.05	< 5.00	< 0.05	< 0.05	< 0.05
Acenaphthylene	DETSC 3304	0.01	ug/l	0.02	< 0.01	< 1.00	< 0.01	< 0.01	< 0.01
Acenaphthene	DETSC 3304	0.01	ug/l	< 0.01	0.01	< 1.00	< 0.01	< 0.01	< 0.01
Fluorene	DETSC 3304	0.01	ug/l	< 0.01	< 0.01	< 1.00	< 0.01	< 0.01	< 0.01
Phenanthrene	DETSC 3304	0.01	ug/l	0.03	0.05	2.0	0.05	0.01	0.06
Anthracene	DETSC 3304	0.01	ug/l	0.02	0.02	< 1.00	0.02	< 0.01	< 0.01
Fluoranthene	DETSC 3304	0.01	ug/l	0.08	0.12	1.4	0.18	0.02	0.04
Pyrene	DETSC 3304	0.01	ug/l	0.09	0.13	1.3	0.18	0.02	0.03
Benzo(a)anthracene	DETSC 3304*	0.01	ug/l	0.05	0.10	< 1.00	0.10	0.01	0.01
Chrysene	DETSC 3304	0.01	ug/l	0.06	0.12	< 1.00	0.11	0.02	0.01
Benzo(b)fluoranthene	DETSC 3304	0.01	ug/l	0.13	0.30	< 1.00	0.23	0.04	0.03
Benzo(k)fluoranthene	DETSC 3304	0.01	ug/l	0.04	0.08	< 1.00	0.06	0.01	< 0.01
Benzo(a)pyrene	DETSC 3304	0.01	ug/l	0.09	0.16	< 1.00	0.16	0.03	< 0.01
Indeno(1,2,3-c,d)pyrene	DETSC 3304	0.01	ug/l	0.09	0.16	< 1.00	0.10	0.02	0.01
Dibenzo(a,h)anthracene	DETSC 3304	0.01	ug/l	0.02	0.03	< 1.00	0.02	< 0.01	< 0.01
Benzo(g,h,i)perylene	DETSC 3304	0.01	ug/l	0.11	0.19	< 1.00	0.13	0.04	0.02
PAH Total	DETSC 3304	0.2	ug/l	0.82	1.5	< 20.00	1.3	0.22	0.21

Summary of Asbestos Analysis

Soil Samples

Our Ref ~ 24-11252-1

Client Ref ~ 23-0585

Contract Title ~ Rosslare Europort ORE GI

Lab No	Sample ID	Material Type	Result	Comment*	Analyst
2345448	L-BH01 100 0.00	SOIL	NAD	none	Josh Best
2345449	L-BH03 100 1.20	SOIL	NAD	none	Josh Best
2345450	L-BH04 100 0.00	SOIL	NAD	none	Josh Best
2345451	M-BH11 100 2.00	SOIL	NAD	none	Josh Best
2345452	M-BH12 100 4.50	SOIL	NAD	none	Josh Best
2345453	M-BH13 100 0.50	SOIL	NAD	none	Josh Best
2345454	M-BH16 100 0.50	SOIL	NAD	none	Josh Best
2345455	M-BH18 100 5.00	SOIL	NAD	none	Josh Best
2345456	M-BH21 100 3.60	SOIL	NAD	none	Josh Best
2345457	M-BH22 100 10.00	SOIL	NAD	none	Josh Best
2345458	M-BH25 100 5.20	SOIL	NAD	none	Josh Best
2345459	M-BH27 100 1.30	SOIL	NAD	none	Josh Best

Crocidolite = Blue Asbestos, Amosite = Brown Asbestos, Chrysotile = White Asbestos. Anthophyllite, Actinolite and Tremolite are other forms of Asbestos. Samples are analysed by DETSC 1101 using polarised light microscopy in accordance with HSG248 and documented in-house methods. NAD = No Asbestos Detected. Where a sample is NAD, the result is based on analysis of at least 2 sub-samples and should be taken to mean 'no asbestos detected in sample'. Key: * -not included in laboratory scope of accreditation.

Information in Support of the Analytical Results

Our Ref 24-11252-1
 Client Ref ~ 23-0585
 Contract ~ Rosslare Europort ORE GI

Containers Received & Deviating Samples

Lab No	Sample ID ~	Date Sampled ~	Containers Received	Holding time exceeded for tests	Inappropriat e container for tests
2345448	L-BH01 0.00 SOIL	31/05/24	GJ 250ml, GJ 60ml, PT 1L		
2345449	L-BH03 1.20 SOIL	31/05/24	GJ 250ml, GJ 60ml, PT 1L		
2345450	L-BH04 0.00 SOIL	31/05/24	GJ 250ml, GJ 60ml, PT 1L		
2345451	M-BH11 2.00 SOIL	31/05/24	GJ 250ml, GJ 60ml, PT 1L		
2345452	M-BH12 4.50 SOIL	31/05/24	GJ 250ml, GJ 60ml, PT 1L		
2345453	M-BH13 0.50 SOIL	31/05/24	GJ 250ml, GJ 60ml, PT 1L		
2345454	M-BH16 0.50 SOIL	31/05/24	GJ 250ml, GJ 60ml, PT 1L		
2345455	M-BH18 5.00 SOIL	31/05/24	GJ 250ml, GJ 60ml, PT 1L		
2345456	M-BH21 3.60 SOIL	31/05/24	GJ 250ml, GJ 60ml, PT 1L		
2345457	M-BH22 10.00 SOIL	31/05/24	GJ 250ml, GJ 60ml, PT 1L		
2345458	M-BH25 5.20 SOIL	31/05/24	GJ 250ml, GJ 60ml, PT 1L		
2345459	M-BH27 1.30 SOIL	31/05/24	GJ 250ml, GJ 60ml, PT 1L		
2345460	L-BH01 0.00 LEACHATE	31/05/24	GJ 250ml, GJ 60ml, PT 1L	pH/Cond (1 days)	
2345461	L-BH03 1.20 LEACHATE	31/05/24	GJ 250ml, GJ 60ml, PT 1L	pH/Cond (1 days)	
2345462	L-BH04 0.00 LEACHATE	31/05/24	GJ 250ml, GJ 60ml, PT 1L	pH/Cond (1 days)	
2345463	M-BH11 2.00 LEACHATE	31/05/24	GJ 250ml, GJ 60ml, PT 1L	pH/Cond (1 days)	
2345464	M-BH12 4.50 LEACHATE	31/05/24	GJ 250ml, GJ 60ml, PT 1L	pH/Cond (1 days)	
2345465	M-BH13 0.50 LEACHATE	31/05/24	GJ 250ml, GJ 60ml, PT 1L	pH/Cond (1 days)	
2345466	M-BH16 0.50 LEACHATE	31/05/24	GJ 250ml, GJ 60ml, PT 1L	pH/Cond (1 days)	
2345467	M-BH18 5.00 LEACHATE	31/05/24	GJ 250ml, GJ 60ml, PT 1L	pH/Cond (1 days)	
2345468	M-BH21 3.60 LEACHATE	31/05/24	GJ 250ml, GJ 60ml, PT 1L	pH/Cond (1 days)	
2345469	M-BH22 10.00 LEACHATE	31/05/24	GJ 250ml, GJ 60ml, PT 1L	pH/Cond (1 days)	
2345470	M-BH25 5.20 LEACHATE	31/05/24	GJ 250ml, GJ 60ml, PT 1L	pH/Cond (1 days)	
2345471	M-BH27 1.30 LEACHATE	31/05/24	GJ 250ml, GJ 60ml, PT 1L	pH/Cond (1 days)	

Key: G-Glass P-Plastic J-Jar T-Tub

DETS cannot be held responsible for the integrity of samples received whereby the laboratory did not undertake the sampling. In this instance samples received may be deviating. Deviating Sample criteria are based on British and International standards and laboratory trials in conjunction with the UKAS note 'Guidance on Deviating Samples'. All samples received are listed above. However, those samples that have additional comments in relation to hold time, inappropriate containers etc are deviating due to the reasons stated. This means that the analysis is accredited where applicable, but results may be compromised due to sample deviations. If no sampled date (soils) or date+time (waters) has been supplied then samples are deviating. However, if you are able to supply a sampled date (and time for waters) this will prevent samples being reported as deviating where specific hold times are not exceeded and where the container supplied is suitable.

Information in Support of the Analytical Results

Our Ref 24-11252-1

Client Ref ~ 23-0585

Contract ~ Rosslare Europort ORE GI

Soil Analysis Notes

Inorganic soil analysis was carried out on a dried sample, crushed to pass a 425µm sieve, in accordance with BS1377.

Organic soil analysis was carried out on an 'as received' sample. Organics results are corrected for moisture and expressed on a dry weight basis.

The Loss on Drying, used to express organics analysis on an air dried basis, is carried out at a temperature of 28°C +/-2°C.

Disposal

From the issue date of this test certificate, samples will be held for the following times prior to disposal :-

Soils - 1 month, Liquids - 2 weeks, Asbestos (test portion) - 6 months

Information in Support of the Analytical Results

List of HWOL Acronyms and Operators

Acronym	Description
HS	Headspace analysis
EH	Extractable Hydrocarbons - i.e. everything extracted by the solvent
CU	Clean-up - e.g. by florisil, silica gel
1D	GC - Single coil gas chromatography
2D	GC-GC - Double coil gas chromatography
Total	Aliphatics & Aromatics
AL	Aliphatics only
AR	Aromatics only
#1	EH_2D_Total but with humics mathematically subtracted
#2	EH_2D_Total but with fatty acids mathematically subtracted
_	Operator - underscore to separate acronyms (exception for +)
+	Operator to indicate cumulative eg. EH+HS_Total or EH_CU+HS_Total

Det	Acronym
Aliphatic C5-C6	HS_1D_AL
Aliphatic C6-C8	HS_1D_AL
Aliphatic C8-C10	HS_1D_AL
Aliphatic >EC10-EC12	EH_2D_AL
Aliphatic >EC12-EC16	EH_2D_AL
Aliphatic >EC16-EC21	EH_2D_AL
Aliphatic >EC21-EC35	EH_2D_AL
Aliphatic >EC35-EC40	EH_2D_AL
Aliphatic >EC40-EC44	EH_2D_AL
Aliphatic C5-C44	EH_2D+HS_1D_AL
Aromatic C5-C7	HS_1D_AR
Aromatic C7-C8	HS_1D_AR
Aromatic C8-C10	HS_1D_AR
Aromatic >EC10-EC12	EH_2D_AR
Aromatic >EC12-EC16	EH_2D_AR
Aromatic >EC16-EC21	EH_2D_AR
Aromatic >EC21-EC35	EH_2D_AR
Aromatic >EC35-EC40	EH_2D_AR
Aromatic >EC40-EC44	EH_2D_AR
Aromatic C5-C44	EH_2D+HS_1D_AR
TPH Ali/Aro C5-C44	EH_2D+HS_1D_Total
Aliphatic C10-C12	EH_CU_1D_AL
Aliphatic C10-C44	EH_CU_1D_AL
Aliphatic C12-C16	EH_CU_1D_AL
Aliphatic C16-C21	EH_CU_1D_AL
Aliphatic C21-C35	EH_CU_1D_AL
Aliphatic C35-C44	EH_CU_1D_AL

Aromatic C10-C12	EH_CU_1D_AR
Aromatic C12-C16	EH_CU_1D_AR
Aromatic C16-C21	EH_CU_1D_AR
Aromatic C21-C35	EH_CU_1D_AR
Aromatic C35-C44	EH_CU_1D_AR
Aromatic C10-C44	EH_CU_1D_AR
Ali/Aro C10-C44	EH_CU_1D_Total

Key:

~ Sample details are provided by the client and can affect the validity of the results

* -not accredited.

-MCERTS (accreditation only applies if report carries the MCERTS logo).

\$ -subcontracted.

n/s -not supplied.

I/S -insufficient sample.

U/S -unsuitable sample.

t/f -to follow.

nd -not detected.

End of Report