

Pat Mcgrath
Cardiff City Council
Waste Management
Lamby Way
Rumney
Cardiff
CF3 2HP

Decus Research Limited
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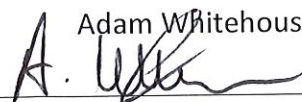
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Certificate of Analysis Number: 2684

Project/Site name:	Lamby Way	Samples Taken:	25-10-2018 to 29-10-2018
Job Number:	-	Samples Received:	31-10-2018
Order Number:	-	Date Instructed:	31-10-2018
Quotation Number:	DS 170612	Analysis Complete:	25-11-2018
Sample Matrix:	Groundwater, Surface Water, Leachate Water	Report Issued:	29-11-2018
		Sampled By:	Client

Disposal Times:

All water samples will be retained for a period of two weeks and all soil samples retained for a period of one month following the date of the issued certificate.

Approved by: Adam Whitehouse
Signature: 
Title: Quality Manager



4303

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FAO: Pat Mcgrath

CERTIFICATE OF ANALYSIS 2684
Results of analysis of 28 samples received
on the 31/10/18

Report Date
29th November 2018

Code	Determinand	Units	*	Sample Identification			
Laboratory Sample Number:				311018004	-	-	-
Client Sample Reference:				L7	-	-	-
Sample Date:				25/10/18	-	-	-
Sample Matrix:				Leachate	-	-	-
INORG-L12	Ammonia	mg.l ⁻¹ as NH ₄	A	273	-	-	-
INORG-L13	Chloride	mg.l ⁻¹	A	17.3	-	-	-
INORG-L31	Cyanide	mg.l ⁻¹	N	<0.1	-	-	-
INORG-L20	Mono Phenols	mg.l ⁻¹	A	1.3	-	-	-
INORG-L21	Ortho-Phosphate	mg.l ⁻¹ P	A	18	-	-	-
METALS-L	Sulphate	mg.l ⁻¹	A	85.7	-	-	-
INORG-L10	Suspended Solids	mg.l ⁻¹	A	12.8	-	-	-
INORG-L05	COD	mg.l ⁻¹ O ₂	A	398	-	-	-
1450	Arsenic	µg.l ⁻¹	S-N	31	-	-	-
METALS-L	Chromium	µg.l ⁻¹	A	28.5	-	-	-
METALS-L	Copper	µg.l ⁻¹	A	9.5	-	-	-
METALS-L	Nickel	µg.l ⁻¹	A	41.8	-	-	-
METALS-L	Zinc	µg.l ⁻¹	A	6.1	-	-	-
METALS-L	Sulphur	mg.l ⁻¹	A	28.6	-	-	-
1630	Dissolved Methane	mg.l ⁻¹	S-N	<0.050	-	-	-
INORG-L01	pH	pH units	A	6.9	-	-	-
INORG-L06.1	BOD	mg.l ⁻¹ as O ₂	A	32.6	-	-	-

* Accreditation Status

Tests marked 'A' hold UKAS accreditation

Tests marked 'N' do not hold UKAS accreditation

Tests marked 'S - A' were sub-contracted to an approved laboratory with accreditation on the specific method

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Code	Determinand	Units	*	Sample Identification			
Laboratory Sample Number:				311018005	311018006	311018007	311018008
Client Sample Reference:				L2	L4	SL4	SL5
Sample Date:				25/10/18	25/10/18	25/10/18	25/10/18
Sample Matrix:				Leachate	Leachate	Leachate	Leachate
INORG-L12	Ammonia	mg.l ⁻¹ as NH ₄	A	1,248	1,768	221	234
INORG-L13	Chloride	mg.l ⁻¹	A	43.8	39.5	17.0	17.5
METALS-L	Nickel	µg.l ⁻¹	A	217	164	9.9	12.3
1450	Cadmium	µg.l ⁻¹	S-N	2.5	0.30	0.17	0.14
ORG0L17	Mecoprop	µg.l ⁻¹	A	<0.1	<0.1	<0.1	<0.1
ORG-L05	Xylene	µg.l ⁻¹	N	2.1	3.3	<1.0	<1.0
1630	Dissolved Methane	mg.l ⁻¹	S-N	-	0.26	-	-

Code	Determinand	Units	*	Sample Identification			
Laboratory Sample Number:				311018009	311018010	311018011	-
Client Sample Reference:				SL6	SL7	SL8	-
Sample Date:				25/10/18	25/10/18	25/10/18	-
Sample Matrix:				Leachate	Leachate	Leachate	-
INORG-L12	Ammonia	mg.l ⁻¹ as NH ₄	A	221	1,157	1,222	-
INORG-L13	Chloride	mg.l ⁻¹	A	20.8	12.3	17.2	-
METALS-L	Nickel	µg.l ⁻¹	A	10.9	19.9	87.2	-
1450	Cadmium	µg.l ⁻¹	S-N	<0.080	<0.080	0.10	-
ORG0L17	Mecoprop	µg.l ⁻¹	A	<0.1	<0.1	12.6	-
ORG-L05	Xylene	µg.l ⁻¹	N	<1.0	3.6	1.7	-

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Code	Determinand	Units	*	Sample Identification			
Laboratory Sample Number:				311018012	311018013	-	-
Client Sample Reference:				SW6	LTP1	-	-
Sample Date:				25/10/18	25/10/18	-	-
Sample Matrix:				Surface Water	Surface Water	-	-
INORG-L12	Ammonia	mg.l ⁻¹ as NH ₄	A	0.88	2,002	-	-
INORG-L13	Chloride	mg.l ⁻¹	A	31.1	41.7	-	-
INORG-L01	pH	pH units	A	8.0	7.9	-	-
INORG-L06.1	BOD	mg.l ⁻¹ as O ₂	A	7.5	47.6	-	-

Code	Determinand	Units	*	Sample Identification			
Laboratory Sample Number:				311018014	311018015	311018016	311018017
Client Sample Reference:				C18	C19	C20	C21
Sample Date:				29/10/18	29/10/18	29/10/18	29/10/18
Sample Matrix:				Groundwater	Groundwater	Groundwater	Groundwater
INORG-L12	Ammonia	mg.l ⁻¹ as NH ₄	A	27.3	0.18	1.7	0.75
INORG-L13	Chloride	mg.l ⁻¹	A	4.5	26.9	5.3	5.2
INORG-L01	pH	pH units	A	7.6	7.8	7.2	7.4

Code	Determinand	Units	*	Sample Identification			
Laboratory Sample Number:				311018018	311018019	311018020	311018021
Client Sample Reference:				C22	SW2	SW3	SW4
Sample Date:				29/10/18	29/10/18	29/10/18	29/10/18
Sample Matrix:				Groundwater	Surface Water	Surface Water	Surface Water
INORG-L12	Ammonia	mg.l ⁻¹ as NH ₄	A	9.4	0.03	<0.01	0.05
INORG-L13	Chloride	mg.l ⁻¹	A	4.2	33.7	18.0	31.3
INORG-L01	pH	pH units	A	7.1	8.3	7.6	7.3
INORG-L06.1	BOD	mg.l ⁻¹ as O ₂	A	-	1.4	1.4	5.4

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Code	Determinand	Units	*	Sample Identification			
Laboratory Sample Number:				311018022	311018023	311018024	311018025
Client Sample Reference:				SW5	C1	C2	C3
Sample Date:				29/10/18	25/10/18	25/10/18	25/10/18
Sample Matrix:				Surface Water	Groundwater	Groundwater	Groundwater
INORG-L12	Ammonia	mg.l ⁻¹ as NH ₄	A	0.03	0.75	0.04	9.1
INORG-L13	Chloride	mg.l ⁻¹	A	29.9	30.6	30.3	20.7
INORG-L01	pH	pH units	A	7.4	7.4	7.7	7.2
INORG-L06.1	BOD	mg.l ⁻¹ as O ₂	A	1.1	-	-	-
1630	Dissolved Methane	mg.l ⁻¹	S-N	-	-	<0.050	1.3

Code	Determinand	Units	*	Sample Identification			
Laboratory Sample Number:				311018026	311018027	311018028	311018029
Client Sample Reference:				C5	C6	C8	C12
Sample Date:				29/10/18	29/10/18	29/10/18	29/10/18
Sample Matrix:				Groundwater	Groundwater	Groundwater	Groundwater
INORG-L12	Ammonia	mg.l ⁻¹ as NH ₄	A	8.2	1.6	6.9	89.7
INORG-L13	Chloride	mg.l ⁻¹	A	8.8	4.3	4.3	3.6
INORG-L01	pH	pH units	A	7.3	7.1	7.1	7.2

Code	Determinand	Units	*	Sample Identification			
Laboratory Sample Number:				311018030	311018031	-	-
Client Sample Reference:				C13	C16	-	-
Sample Date:				29/10/18	29/10/18	-	-
Sample Matrix:				Groundwater	Groundwater	-	-
INORG-L12	Ammonia	mg.l ⁻¹ as NH ₄	A	11.1	10.7	-	-
INORG-L13	Chloride	mg.l ⁻¹	A	9.1	2.9	-	-
INORG-L01	pH	pH units	A	7.5	7.2	-	-

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Analytical Method	Method Code	Accreditation Status
Determination of pH in waters by electrode probe meter (In-house method)	INORG-L01	ISO 17025
Determination of ammonia in waters by colorimetric photometer (In-house method)	INORG-L12	ISO 17025
Determination of chloride by colorimetric photometer (In-house method)	INORG-L13	ISO 17025
Determination of BOD in waters by titration (In-house method)	INORG-L06.1	ISO 17025
Determination of metals (Cr, Ni, Cu, Zn, S) in waters by ICP-OES (In-house method)	METALS-L	ISO 17025
Determination of metals (As, Cd) in waters by colorimetric analysis (In-house method)	1450	None
Determination of Cyanide in water by colorimetric analysis (In-house method)	INORG-L31	None
Determination of COD in waters by colorimetric photometer (In-house method)	INORG-L05	ISO 17025
Determination of Ortho-Phosphates in waters by colorimetric photometer (In-house method)	INORG-L21.1	ISO 17025
Determination of suspended solids in waters by gravimetric (In-house method)	INORG-L10	ISO 17025
Determination of Dissolved Methane in waters by GC-MS (Sub-Contracted method)	1630	None

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All results only relate to the items tested.

This report supersedes any previous versions issued by the laboratory.

A full list of determinants relating to abbreviations such as PAHs, VOCs, SVOCs, PCBs etc. is available upon request.

Where results have been labelled as deviating for any reason, the data may not be representative of the sample at the point of sampling:

[I/S]: Insufficient Sample

[U/S]: Unsuitable Sample

[A]: Date of Sampling not supplied

[B]: Sample age exceeds recommended storage time

[C]: Samples not received in appropriate containers

[D]: Broken Container

< "Less Than"

> "Greater Than"

Where any sub-contracted results have been noted as deviating by the laboratory in question, their deviations codes will be applied and detailed.

Accreditation statements are correct at the time of issue.

This report shall not be reproduced in part without the approval of Decus Research Ltd, nor used in any way as to lead to misrepresentation of the results or their implications.

*****END OF REPORT*****

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