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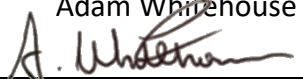
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## Certificate of Analysis Number: 5933

Project/Site name:	Ferry Road	Samples Taken:	26-07-2022
Quotation Number:	DS220404	Samples Received:	26-07-2022
Order Number:	-	Date Instructed:	26-07-2022
Sample Matrix:	Surface water, Groundwater, Treated Effluent	Analysis Complete:	12-08-2022
		Report Issued:	17-08-2022
		Sampled By:	Client

Amendment Records:

*None*

Approved by: Adam Whitehouse  
Signature:   
Title: Laboratory Manager



**4303**

Client: Cardiff City Council  
FAO: Matthew Long

# **CERTIFICATE OF ANALYSIS 5933**

Results of analysis of 29 samples received  
on the 26/07/22

Report Date  
17<sup>th</sup> August 2022

Code	Determinand	Units	*	Sample Identification			
<b>Laboratory Sample Number:</b>				<b>270722001</b>	<b>270722002</b>	-	-
<b>Client Sample Reference:</b>				Pumping Station C	Pumping Station D	-	-
<b>Sample Date:</b>				26/07/22	26/07/22	-	-
<b>Sample Matrix:</b>				Effluent Water	Effluent Water	-	-
INORG-L12	Ammonia	mg.l <sup>-1</sup> as N	A	353	287	-	-
INORG-L11	Nitrate	mg.l <sup>-1</sup> as NO <sub>3</sub>	A	4.5	4.4	-	-
INORG-L14	Nitrite	mg.l <sup>-1</sup> as NO <sub>2</sub>	A	1.0	2.1	-	-
1450	Arsenic	µg.l <sup>-1</sup>	S-A	8.5	1.9	-	-
1450	Mercury	µg.l <sup>-1</sup>	S-A	<0.05	<0.05	-	-
METALS-L	Barium	µg.l <sup>-1</sup>	A	362	137	-	-
METALS-L	Boron	µg.l <sup>-1</sup>	A	6,860	6,210	-	-
METALS-L	Cadmium	µg.l <sup>-1</sup>	A	1.1	1.0	-	-
METALS-L	Chromium	µg.l <sup>-1</sup>	A	41.9	33.1	-	-
METALS-L	Copper	µg.l <sup>-1</sup>	A	9.2	8.5	-	-
METALS-L	Iron	µg.l <sup>-1</sup>	A	1,430	428	-	-
METALS-L	Lead	µg.l <sup>-1</sup>	A	11.0	5.4	-	-
METALS-L	Manganese	µg.l <sup>-1</sup>	A	175	48.6	-	-
METALS-L	Nickel	µg.l <sup>-1</sup>	A	31.3	27.7	-	-
METALS-L	Zinc	µg.l <sup>-1</sup>	A	13.0	73.7	-	-
METALS-L	Potassium	mg.l <sup>-1</sup>	A	118	123	-	-
INORG-L37	Hexavalent Chromium	mg.l <sup>-1</sup>	N	<0.1	<0.1	-	-
INORG-L01	pH	pH units	A	7.8	7.9	-	-
INORG-L13	Chloride	mg.l <sup>-1</sup>	A	1050	494	-	-
INORG-L18	TOC	mg.l <sup>-1</sup>	A	34.6	37.9	-	-
METALS-L	Sulphate	mg.l <sup>-1</sup>	A	768	10,600	-	-
ORG-L17	Mecoprop	µg.l <sup>-1</sup>	N	40.9	14.1	-	-
ORG-L01	TPH	mg.l <sup>-1</sup>	N	0.8	0.7	-	-
ORG-L02	Naphthalene	µg.l <sup>-1</sup>	N	0.71	<0.10	-	-
ORG-L02	Acenaphthene	µg.l <sup>-1</sup>	N	1.0	<0.10	-	-
ORG-L02	Fluorene	µg.l <sup>-1</sup>	N	1.5	1.1	-	-
ORG-L02	Phenanthrene	µg.l <sup>-1</sup>	N	0.93	0.49	-	-
ORG-L02	Anthracene	µg.l <sup>-1</sup>	N	0.62	0.32	-	-
ORG-L02	Fluoranthene	µg.l <sup>-1</sup>	N	1.0	0.65	-	-
ORG-L02	Pyrene	µg.l <sup>-1</sup>	N	0.96	0.58	-	-
ORG-L02	Benza(a)anthracene	µg.l <sup>-1</sup>	N	1.3	<0.10	-	-
1630	Dissolved Methane	mg.l <sup>-1</sup>	S-N	<0.050	<0.050	-	-

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17<sup>th</sup> August 2022

Code	Determinand	Units	*	Sample Identification			
<b>Laboratory Sample Number:</b>				<b>270722001</b>	<b>270722002</b>	-	-
<b>Client Sample Reference:</b>				Pumping Station C	Pumping Station D	-	-
<b>Sample Date:</b>				26/07/22	26/07/22	-	-
<b>Sample Matrix:</b>				Effluent Water	Effluent Water	-	-
ORG-L02	Chrysene	µg.l <sup>-1</sup>	N	0.89	<0.10	-	-
ORG-L02	Benzo(b)fluoranthene	µg.l <sup>-1</sup>	N	2.3	<0.10	-	-
ORG-L02	Benzo(a)pyrene	µg.l <sup>-1</sup>	N	2.2	<0.10	-	-
ORG-L02	Indeno(123-cd)pyrene	µg.l <sup>-1</sup>	N	<0.10	<0.10	-	-
ORG-L02	Dibenza(ah)anthracene	µg.l <sup>-1</sup>	N	<0.10	<0.10	-	-
ORG-L02	Benzo(ghi)perylene	µg.l <sup>-1</sup>	N	<0.10	<0.10	-	-

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Report Date  
17<sup>th</sup> August 2022

Code	Determinand	Units	*	Sample Identification			
<b>Laboratory Sample Number:</b>				<b>270722003</b>	<b>270722004</b>	<b>270722005</b>	<b>270722006</b>
<b>Client Sample Reference:</b>				River Sample Under Bypass	River Sample Mid A	River Sample – Outfall A	River Under Rail Bridge
<b>Sample Date:</b>				26/07/22	26/07/22	26/07/22	26/07/22
<b>Sample Matrix:</b>				Surface Water	Surface Water	Surface Water	Surface Water
INORG-L12	Ammonia	mg.l <sup>-1</sup> as N	A	0.52	0.62	0.20	0.23
INORG-L11	Nitrate	mg.l <sup>-1</sup> as NO <sub>3</sub>	A	15.5	13.0	23.6	20.5
INORG-L14	Nitrite	mg.l <sup>-1</sup> as NO <sub>2</sub>	A	0.33	0.30	0.16	0.14
1450	Arsenic	µg.l <sup>-1</sup>	S-A	1.4	1.1	0.94	1.2
1450	Mercury	µg.l <sup>-1</sup>	S-A	<0.05	<0.05	<0.05	<0.05
METALS-L	Barium	µg.l <sup>-1</sup>	A	80.5	89.8	79.1	77.3
METALS-L	Boron	µg.l <sup>-1</sup>	A	58.8	62.2	33.7	24.5
METALS-L	Cadmium	µg.l <sup>-1</sup>	A	<0.9	<0.9	<0.9	0.9
METALS-L	Chromium	µg.l <sup>-1</sup>	A	9.0	2.4	6.8	8.3
METALS-L	Copper	µg.l <sup>-1</sup>	A	9.8	19.4	22.4	22.2
METALS-L	Iron	µg.l <sup>-1</sup>	A	106	345	51.8	44.1
METALS-L	Lead	µg.l <sup>-1</sup>	A	<4.1	<4.1	<4.1	<4.1
METALS-L	Manganese	µg.l <sup>-1</sup>	A	53.1	297	31.3	23.6
METALS-L	Nickel	µg.l <sup>-1</sup>	A	3.0	2.0	<1.5	<1.5
METALS-L	Zinc	µg.l <sup>-1</sup>	A	30.2	14.2	15.0	17.4
METALS-L	Potassium	mg.l <sup>-1</sup>	A	8.3	9.1	7.9	7.5
INORG-L37	Hexavalent Chromium	mg.l <sup>-1</sup>	N	<0.1	<0.1	<0.1	<0.1
INORG-L01	pH	pH units	A	7.9	7.8	7.9	7.9
INORG-L13	Chloride	mg.l <sup>-1</sup>	A	44.8	16.9	37.6	20.2
INORG-L18	TOC	mg.l <sup>-1</sup>	A	45.6	40.1	40.0	42.7
METALS-L	Sulphate	mg.l <sup>-1</sup>	A	5,100	5,000	4,500	4,700
ORG-L17	Mecoprop	µg.l <sup>-1</sup>	N	<0.1	<0.1	<0.1	<0.1
ORG-L01	TPH	mg.l <sup>-1</sup>	N	0.3	0.3	0.5	0.3
ORG-L02	Naphthalene	µg.l <sup>-1</sup>	N	<0.10	<0.10	<0.10	<0.10
ORG-L02	Acenaphthene	µg.l <sup>-1</sup>	N	<0.10	<0.10	<0.10	<0.10
ORG-L02	Fluorene	µg.l <sup>-1</sup>	N	<0.10	<0.10	<0.10	<0.10
ORG-L02	Phenanthrene	µg.l <sup>-1</sup>	N	<0.10	<0.10	<0.10	<0.10
ORG-L02	Anthracene	µg.l <sup>-1</sup>	N	<0.10	<0.10	<0.10	<0.10
ORG-L02	Fluoranthene	µg.l <sup>-1</sup>	N	<0.10	<0.10	0.63	0.43
ORG-L02	Pyrene	µg.l <sup>-1</sup>	N	0.41	<0.10	0.58	0.39
ORG-L02	Benza(a)anthracene	µg.l <sup>-1</sup>	N	<0.10	<0.10	<0.10	<0.10

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Report Date  
17<sup>th</sup> August 2022

Code	Determinand	Units	*	Sample Identification			
<b>Laboratory Sample Number:</b>				<b>270722003</b>	<b>270722004</b>	<b>270722005</b>	<b>270722006</b>
<b>Client Sample Reference:</b>				River Sample Under Bypass	River Sample Mid A	River Sample – Outfall A	River Under Rail Bridge
<b>Sample Date:</b>				26/07/22	26/07/22	26/07/22	26/07/22
<b>Sample Matrix:</b>				Surface Water	Surface Water	Surface Water	Surface Water
ORG-L02	Chrysene	µg.l <sup>-1</sup>	N	<0.10	<0.10	0.41	<0.10
ORG-L02	Benzo(b)fluoranthene	µg.l <sup>-1</sup>	N	<0.10	<0.10	<0.10	<0.10
ORG-L02	Benzo(a)pyrene	µg.l <sup>-1</sup>	N	<0.10	<0.10	<0.10	<0.10
ORG-L02	Indeno(123-cd)pyrene	µg.l <sup>-1</sup>	N	<0.10	<0.10	<0.10	<0.10
ORG-L02	Dibenza(ah)anthracene	µg.l <sup>-1</sup>	N	<0.10	<0.10	<0.10	<0.10
ORG-L02	Benzo(ghi)perylene	µg.l <sup>-1</sup>	N	<0.10	<0.10	<0.10	<0.10

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Report Date  
17<sup>th</sup> August 2022

Code	Determinand	Units	*	Sample Identification			
<b>Laboratory Sample Number:</b>				<b>270722007</b>	<b>270722008</b>	<b>270722009</b>	<b>270722010</b>
<b>Client Sample Reference:</b>				FR1	OW01	OW02	OW03
<b>Sample Date:</b>				26/07/22	26/07/22	26/07/22	26/07/22
<b>Sample Matrix:</b>				Groundwater	Groundwater	Groundwater	Groundwater
INORG-L12	Ammonia	mg.l <sup>-1</sup> as N	A	4.2	62.4	22.5	365
INORG-L11	Nitrate	mg.l <sup>-1</sup> as NO <sub>3</sub>	A	20.9	3.7	2.2	0.57
INORG-L14	Nitrite	mg.l <sup>-1</sup> as NO <sub>2</sub>	A	0.063	<0.003	0.059	<0.003
1450	Arsenic	µg.l <sup>-1</sup>	S-A	1.2	1.4	0.82	0.66
1450	Mercury	µg.l <sup>-1</sup>	S-A	<0.05	<0.05	<0.05	<0.05
METALS-L	Barium	µg.l <sup>-1</sup>	A	22.7	657	767	591
METALS-L	Boron	µg.l <sup>-1</sup>	A	811	7,950	1,620	3,590
METALS-L	Cadmium	µg.l <sup>-1</sup>	A	1.0	1.2	1.2	1.2
METALS-L	Chromium	µg.l <sup>-1</sup>	A	8.9	4.6	6.7	5.7
METALS-L	Copper	µg.l <sup>-1</sup>	A	6.8	6.1	3.5	3.8
METALS-L	Iron	µg.l <sup>-1</sup>	A	191	1,800	4,260	3,410
METALS-L	Lead	µg.l <sup>-1</sup>	A	<4.1	<4.1	<4.1	<4.1
METALS-L	Manganese	µg.l <sup>-1</sup>	A	21.2	1,110	1,350	1,040
METALS-L	Nickel	µg.l <sup>-1</sup>	A	<1.5	8.8	<1.5	<1.5
METALS-L	Zinc	µg.l <sup>-1</sup>	A	4.7	10.6	1.9	19.3
METALS-L	Potassium	mg.l <sup>-1</sup>	A	27.6	83.7	18.5	62.6
INORG-L37	Hexavalent Chromium	mg.l <sup>-1</sup>	N	<0.1	<0.1	<0.1	<0.1
INORG-L01	pH	pH units	A	7.3	7.2	7.2	7.3
INORG-L13	Chloride	mg.l <sup>-1</sup>	A	289	262	18.3	316
INORG-L18	TOC	mg.l <sup>-1</sup>	A	36.7	20.6	25.3	43.6
METALS-L	Sulphate	mg.l <sup>-1</sup>	A	9,400	458	25,300	381
ORG-L17	Mecoprop	µg.l <sup>-1</sup>	N	<0.1	63.5	<0.1	9.6
ORG-L01	TPH	mg.l <sup>-1</sup>	N	0.4	<0.2	0.5	0.6
ORG-L02	Naphthalene	µg.l <sup>-1</sup>	N	<0.10	<0.10	<0.10	<0.10
ORG-L02	Acenaphthene	µg.l <sup>-1</sup>	N	<0.10	<0.10	<0.10	<0.10
ORG-L02	Fluorene	µg.l <sup>-1</sup>	N	<0.10	<0.10	2.3	<0.10
ORG-L02	Phenanthrene	µg.l <sup>-1</sup>	N	<0.10	<0.10	1.3	<0.10
ORG-L02	Anthracene	µg.l <sup>-1</sup>	N	<0.10	<0.10	0.40	<0.10
ORG-L02	Fluoranthene	µg.l <sup>-1</sup>	N	0.49	<0.10	0.60	<0.10
ORG-L02	Pyrene	µg.l <sup>-1</sup>	N	0.45	<0.10	0.46	<0.10
ORG-L02	Benza(a)anthracene	µg.l <sup>-1</sup>	N	<0.10	<0.10	<0.10	<0.10

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<b>Client Sample Reference:</b>				FR1	OW01	OW02	OW03
<b>Sample Date:</b>				26/07/22	26/07/22	26/07/22	26/07/22
<b>Sample Matrix:</b>				Groundwater	Groundwater	Groundwater	Groundwater
ORG-L02	Chrysene	µg.l <sup>-1</sup>	N	<0.10	<0.10	<0.10	<0.10
ORG-L02	Benzo(b)fluoranthene	µg.l <sup>-1</sup>	N	<0.10	<0.10	<0.10	<0.10
ORG-L02	Benzo(a)pyrene	µg.l <sup>-1</sup>	N	<0.10	<0.10	<0.10	<0.10
ORG-L02	Indeno(123-cd)pyrene	µg.l <sup>-1</sup>	N	<0.10	<0.10	<0.10	<0.10
ORG-L02	Dibenza(ah)anthracene	µg.l <sup>-1</sup>	N	<0.10	<0.10	<0.10	<0.10
ORG-L02	Benzo(ghi)perylene	µg.l <sup>-1</sup>	N	<0.10	<0.10	<0.10	<0.10

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Code	Determinand	Units	*	Sample Identification			
<b>Laboratory Sample Number:</b>				<b>270722011</b>	<b>270722012</b>	<b>270722013</b>	<b>270722014</b>
<b>Client Sample Reference:</b>				LW4	OW05	OW06	OW07
<b>Sample Date:</b>				26/07/22	26/07/22	26/07/22	26/07/22
<b>Sample Matrix:</b>				Groundwater	Groundwater	Groundwater	Groundwater
INORG-L12	Ammonia	mg.l <sup>-1</sup> as N	A	3550	201	363	470
INORG-L11	Nitrate	mg.l <sup>-1</sup> as NO <sub>3</sub>	A	4.8	12.7	0.57	0.57
INORG-L14	Nitrite	mg.l <sup>-1</sup> as NO <sub>2</sub>	A	0.040	0.36	0.71	0.89
1450	Arsenic	µg.l <sup>-1</sup>	S-A	1.2	1.8	2.6	2.5
1450	Mercury	µg.l <sup>-1</sup>	S-A	<0.05	<0.05	<0.05	<0.05
METALS-L	Barium	µg.l <sup>-1</sup>	A	965	728	470	447
METALS-L	Boron	µg.l <sup>-1</sup>	A	3,490	3,370	6,080	8,780
METALS-L	Cadmium	µg.l <sup>-1</sup>	A	1.2	1.3	1.2	1.1
METALS-L	Chromium	µg.l <sup>-1</sup>	A	6.4	5.1	5.3	6.8
METALS-L	Copper	µg.l <sup>-1</sup>	A	12.2	10.9	8.4	19.3
METALS-L	Iron	µg.l <sup>-1</sup>	A	2,210	2,150	1,860	1,730
METALS-L	Lead	µg.l <sup>-1</sup>	A	<4.1	<4.1	<4.1	<4.1
METALS-L	Manganese	µg.l <sup>-1</sup>	A	711	1,120	366	494
METALS-L	Nickel	µg.l <sup>-1</sup>	A	37.5	15.7	11.7	9.5
METALS-L	Zinc	µg.l <sup>-1</sup>	A	51.3	52.1	20.2	25.8
METALS-L	Potassium	mg.l <sup>-1</sup>	A	71.0	78.0	120	146
INORG-L37	Hexavalent Chromium	mg.l <sup>-1</sup>	N	<0.1	<0.1	<0.1	<0.1
INORG-L01	pH	pH units	A	7.3	7.3	7.3	7.4
INORG-L13	Chloride	mg.l <sup>-1</sup>	A	6910	2070	1210	805
INORG-L18	TOC	mg.l <sup>-1</sup>	A	47.8	44.4	45.6	46.7
METALS-L	Sulphate	mg.l <sup>-1</sup>	A	443	378	771	937
ORG-L17	Mecoprop	µg.l <sup>-1</sup>	N	46.5	40.2	73.2	52.7
ORG-L01	TPH	mg.l <sup>-1</sup>	N	0.9	0.2	2.7	1.5
ORG-L02	Naphthalene	µg.l <sup>-1</sup>	N	3.6	1.4	<0.10	1.2
ORG-L02	Acenaphthene	µg.l <sup>-1</sup>	N	4.5	5.5	5.0	6.9
ORG-L02	Fluorene	µg.l <sup>-1</sup>	N	1.5	2.9	2.6	4.4
ORG-L02	Phenanthrene	µg.l <sup>-1</sup>	N	1.1	1.6	1.2	3.9
ORG-L02	Anthracene	µg.l <sup>-1</sup>	N	0.33	0.56	0.37	0.80
ORG-L02	Fluoranthene	µg.l <sup>-1</sup>	N	0.54	0.75	0.67	0.75
ORG-L02	Pyrene	µg.l <sup>-1</sup>	N	0.41	0.50	0.49	0.51
ORG-L02	Benza(a)anthracene	µg.l <sup>-1</sup>	N	<0.10	<0.10	<0.10	<0.10

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4303



Client: Cardiff City Council  
FAO: Matthew Long

**CERTIFICATE OF ANALYSIS 5933**  
Results of analysis of 29 samples received  
on the 26/07/22

Report Date  
17<sup>th</sup> August 2022

Code	Determinand	Units	*	Sample Identification			
<b>Laboratory Sample Number:</b>				<b>270722011</b>	<b>270722012</b>	<b>270722013</b>	<b>270722014</b>
<b>Client Sample Reference:</b>				LW4	OW05	OW06	OW07
<b>Sample Date:</b>				26/07/22	26/07/22	26/07/22	26/07/22
<b>Sample Matrix:</b>				Groundwater	Groundwater	Groundwater	Groundwater
ORG-L02	Chrysene	µg.l <sup>-1</sup>	N	<0.10	<0.10	<0.10	<0.10
ORG-L02	Benzo(b)fluoranthene	µg.l <sup>-1</sup>	N	<0.10	<0.10	<0.10	<0.10
ORG-L02	Benzo(a)pyrene	µg.l <sup>-1</sup>	N	<0.10	<0.10	<0.10	<0.10
ORG-L02	Indeno(123-cd)pyrene	µg.l <sup>-1</sup>	N	<0.10	<0.10	<0.10	<0.10
ORG-L02	Dibenza(ah)anthracene	µg.l <sup>-1</sup>	N	<0.10	<0.10	<0.10	<0.10
ORG-L02	Benzo(ghi)perylene	µg.l <sup>-1</sup>	N	<0.10	<0.10	<0.10	<0.10

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Results of analysis of 29 samples received  
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Report Date  
17<sup>th</sup> August 2022

Code	Determinand	Units	*	Sample Identification			
<b>Laboratory Sample Number:</b>				<b>270722015</b>	<b>270722016</b>	<b>270722017</b>	<b>270722018</b>
<b>Client Sample Reference:</b>				OW08	OW09	OW10	OW11
<b>Sample Date:</b>				26/07/22	26/07/22	26/07/22	26/07/22
<b>Sample Matrix:</b>				Groundwater	Groundwater	Groundwater	Groundwater
INORG-L12	Ammonia	mg.l <sup>-1</sup> as N	A	464	441	517	539
INORG-L11	Nitrate	mg.l <sup>-1</sup> as NO <sub>3</sub>	A	1.7	0.84	5.1	1.1
INORG-L14	Nitrite	mg.l <sup>-1</sup> as NO <sub>2</sub>	A	<0.003	0.40	0.24	0.17
1450	Arsenic	µg.l <sup>-1</sup>	S-A	2.0	3.2	3.0	3.1
1450	Mercury	µg.l <sup>-1</sup>	S-A	<0.05	<0.05	<0.05	<0.05
METALS-L	Barium	µg.l <sup>-1</sup>	A	497	419	434	517
METALS-L	Boron	µg.l <sup>-1</sup>	A	8,700	8,790	9,630	11,200
METALS-L	Cadmium	µg.l <sup>-1</sup>	A	0.9	1.0	1.3	1.0
METALS-L	Chromium	µg.l <sup>-1</sup>	A	7.7	6.4	7.0	6.9
METALS-L	Copper	µg.l <sup>-1</sup>	A	18.0	15.5	7.0	6.0
METALS-L	Iron	µg.l <sup>-1</sup>	A	1,630	1,330	1,630	1,810
METALS-L	Lead	µg.l <sup>-1</sup>	A	<4.1	<4.1	<4.1	<4.1
METALS-L	Manganese	µg.l <sup>-1</sup>	A	536	790	403	493
METALS-L	Nickel	µg.l <sup>-1</sup>	A	28.1	25.1	10.3	7.4
METALS-L	Zinc	µg.l <sup>-1</sup>	A	64.7	24.2	13.0	1.2
METALS-L	Potassium	mg.l <sup>-1</sup>	A	164	137	170	178
INORG-L37	Hexavalent Chromium	mg.l <sup>-1</sup>	N	<0.1	<0.1	<0.1	<0.1
INORG-L01	pH	pH units	A	7.4	7.4	7.4	7.4
INORG-L13	Chloride	mg.l <sup>-1</sup>	A	689	450	432	430
INORG-L18	TOC	mg.l <sup>-1</sup>	A	40.7	41.1	41.2	40.6
METALS-L	Sulphate	mg.l <sup>-1</sup>	A	1138	849	1040	1150
ORG-L17	Mecoprop	µg.l <sup>-1</sup>	N	20.5	11.4	19.3	9.6
ORG-L01	TPH	mg.l <sup>-1</sup>	N	1.0	1.7	0.9	0.9
ORG-L02	Naphthalene	µg.l <sup>-1</sup>	N	0.58	0.51	0.63	1.1
ORG-L02	Acenaphthene	µg.l <sup>-1</sup>	N	2.5	2.3	3.5	5.2
ORG-L02	Fluorene	µg.l <sup>-1</sup>	N	0.88	0.82	1.5	1.7
ORG-L02	Phenanthrene	µg.l <sup>-1</sup>	N	0.50	0.53	0.56	0.40
ORG-L02	Anthracene	µg.l <sup>-1</sup>	N	0.15	0.16	0.30	0.20
ORG-L02	Fluoranthene	µg.l <sup>-1</sup>	N	<0.10	<0.10	0.55	<0.10
ORG-L02	Pyrene	µg.l <sup>-1</sup>	N	<0.10	<0.10	<0.10	<0.10
ORG-L02	Benza(a)anthracene	µg.l <sup>-1</sup>	N	<0.10	<0.10	<0.10	<0.10

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on the 26/07/22

Report Date  
17<sup>th</sup> August 2022

Code	Determinand	Units	*	Sample Identification			
<b>Laboratory Sample Number:</b>				<b>270722015</b>	<b>270722016</b>	<b>270722017</b>	<b>270722018</b>
<b>Client Sample Reference:</b>				OW08	OW09	OW10	OW11
<b>Sample Date:</b>				26/07/22	26/07/22	26/07/22	26/07/22
<b>Sample Matrix:</b>				Groundwater	Groundwater	Groundwater	Groundwater
ORG-L02	Chrysene	µg.l <sup>-1</sup>	N	<0.10	<0.10	<0.10	<0.10
ORG-L02	Benzo(b)fluoranthene	µg.l <sup>-1</sup>	N	<0.10	<0.10	<0.10	<0.10
ORG-L02	Benzo(a)pyrene	µg.l <sup>-1</sup>	N	<0.10	<0.10	<0.10	<0.10
ORG-L02	Indeno(123-cd)pyrene	µg.l <sup>-1</sup>	N	<0.10	<0.10	<0.10	<0.10
ORG-L02	Dibenza(ah)anthracene	µg.l <sup>-1</sup>	N	<0.10	<0.10	<0.10	<0.10
ORG-L02	Benzo(ghi)perylene	µg.l <sup>-1</sup>	N	<0.10	<0.10	<0.10	<0.10

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Report Date  
17<sup>th</sup> August 2022

Code	Determinand	Units	*	Sample Identification			
<b>Laboratory Sample Number:</b>				<b>270722019</b>	<b>270722020</b>	<b>270722021</b>	<b>270722022</b>
<b>Client Sample Reference:</b>				OW12	OW13	OW14	LW14
<b>Sample Date:</b>				26/07/22	26/07/22	26/07/22	26/07/22
<b>Sample Matrix:</b>				Groundwater	Groundwater	Groundwater	Groundwater
INORG-L12	Ammonia	mg.l <sup>-1</sup> as N	A	553	413	569	587
INORG-L11	Nitrate	mg.l <sup>-1</sup> as NO <sub>3</sub>	A	0.57	0.62	1.2	2.7
INORG-L14	Nitrite	mg.l <sup>-1</sup> as NO <sub>2</sub>	A	0.38	0.44	<0.003	3.6
1450	Arsenic	µg.l <sup>-1</sup>	S-A	3.1	3.0	7.0	4.1
1450	Mercury	µg.l <sup>-1</sup>	S-A	<0.05	<0.05	<0.05	<0.05
METALS-L	Barium	µg.l <sup>-1</sup>	A	595	495	439	526
METALS-L	Boron	µg.l <sup>-1</sup>	A	11,300	13,800	7,000	9,000
METALS-L	Cadmium	µg.l <sup>-1</sup>	A	1.3	1.0	1.3	1.4
METALS-L	Chromium	µg.l <sup>-1</sup>	A	7.5	5.8	8.3	9.2
METALS-L	Copper	µg.l <sup>-1</sup>	A	25.0	4.8	3.5	32.7
METALS-L	Iron	µg.l <sup>-1</sup>	A	1,840	1,700	1,350	1,580
METALS-L	Lead	µg.l <sup>-1</sup>	A	<4.1	<4.1	<4.1	<4.1
METALS-L	Manganese	µg.l <sup>-1</sup>	A	487	421	511	362
METALS-L	Nickel	µg.l <sup>-1</sup>	A	12.7	4.6	5.5	20.6
METALS-L	Zinc	µg.l <sup>-1</sup>	A	68.4	1.8	<1.1	49.6
METALS-L	Potassium	mg.l <sup>-1</sup>	A	200	141	165	214
INORG-L37	Hexavalent Chromium	mg.l <sup>-1</sup>	N	<0.1	<0.1	<0.1	<0.1
INORG-L01	pH	pH units	A	7.3	7.3	7.4	7.5
INORG-L13	Chloride	mg.l <sup>-1</sup>	A	594	293	488	680
INORG-L18	TOC	mg.l <sup>-1</sup>	A	44.7	48.7	49.0	76.7
METALS-L	Sulphate	mg.l <sup>-1</sup>	A	1560	1030	1050	1450
ORG-L17	Mecoprop	µg.l <sup>-1</sup>	N	55.4	51.7	27.6	46.4
ORG-L01	TPH	mg.l <sup>-1</sup>	N	2.8	1.4	<0.2	1.0
ORG-L02	Naphthalene	µg.l <sup>-1</sup>	N	0.76	0.75	1.1	1.2
ORG-L02	Acenaphthene	µg.l <sup>-1</sup>	N	3.9	5.9	6.7	6.5
ORG-L02	Fluorene	µg.l <sup>-1</sup>	N	1.4	3.1	3.7	2.6
ORG-L02	Phenanthrene	µg.l <sup>-1</sup>	N	0.51	1.4	2.1	0.74
ORG-L02	Anthracene	µg.l <sup>-1</sup>	N	0.24	0.56	0.57	0.34
ORG-L02	Fluoranthene	µg.l <sup>-1</sup>	N	0.54	0.89	0.89	0.58
ORG-L02	Pyrene	µg.l <sup>-1</sup>	N	<0.10	0.71	0.69	<0.10
ORG-L02	Benza(a)anthracene	µg.l <sup>-1</sup>	N	<0.10	<0.10	<0.10	<0.10

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on the 26/07/22

Report Date  
17<sup>th</sup> August 2022

Code	Determinand	Units	*	Sample Identification			
<b>Laboratory Sample Number:</b>				<b>270722019</b>	<b>270722020</b>	<b>270722021</b>	<b>270722022</b>
<b>Client Sample Reference:</b>				OW12	OW13	OW14	LW14
<b>Sample Date:</b>				26/07/22	26/07/22	26/07/22	26/07/22
<b>Sample Matrix:</b>				Groundwater	Groundwater	Groundwater	Groundwater
ORG-L02	Chrysene	µg.l <sup>-1</sup>	N	<0.10	<0.10	<0.10	<0.10
ORG-L02	Benzo(b)fluoranthene	µg.l <sup>-1</sup>	N	<0.10	<0.10	<0.10	<0.10
ORG-L02	Benzo(a)pyrene	µg.l <sup>-1</sup>	N	<0.10	<0.10	<0.10	<0.10
ORG-L02	Indeno(123-cd)pyrene	µg.l <sup>-1</sup>	N	<0.10	<0.10	<0.10	<0.10
ORG-L02	Dibenza(ah)anthracene	µg.l <sup>-1</sup>	N	<0.10	<0.10	<0.10	<0.10
ORG-L02	Benzo(ghi)perylene	µg.l <sup>-1</sup>	N	<0.10	<0.10	<0.10	<0.10

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Report Date  
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Code	Determinand	Units	*	Sample Identification			
<b>Laboratory Sample Number:</b>				<b>270722023</b>	<b>270722024</b>	<b>270722025</b>	<b>270722026</b>
<b>Client Sample Reference:</b>				OW15	OW16	OW17	OW18
<b>Sample Date:</b>				26/07/22	26/07/22	26/07/22	26/07/22
<b>Sample Matrix:</b>				Groundwater	Groundwater	Groundwater	Groundwater
INORG-L12	Ammonia	mg.l <sup>-1</sup> as N	A	413	638	579	399
INORG-L11	Nitrate	mg.l <sup>-1</sup> as NO <sub>3</sub>	A	0.53	0.57	0.71	<0.3
INORG-L14	Nitrite	mg.l <sup>-1</sup> as NO <sub>2</sub>	A	0.11	<0.003	<0.003	<0.003
1450	Arsenic	µg.l <sup>-1</sup>	S-A	2.0	5.8	2.2	2.8
1450	Mercury	µg.l <sup>-1</sup>	S-A	<0.05	<0.05	<0.05	<0.05
METALS-L	Barium	µg.l <sup>-1</sup>	A	793	681	611	470
METALS-L	Boron	µg.l <sup>-1</sup>	A	4,900	11,500	12,500	8,300
METALS-L	Cadmium	µg.l <sup>-1</sup>	A	1.4	1.4	1.4	1.3
METALS-L	Chromium	µg.l <sup>-1</sup>	A	7.1	8.2	9.1	5.1
METALS-L	Copper	µg.l <sup>-1</sup>	A	7.5	23.5	10.7	4.4
METALS-L	Iron	µg.l <sup>-1</sup>	A	1,600	1,500	1,500	2,000
METALS-L	Lead	µg.l <sup>-1</sup>	A	<4.1	<4.1	<4.1	<4.1
METALS-L	Manganese	µg.l <sup>-1</sup>	A	674	267	385	467
METALS-L	Nickel	µg.l <sup>-1</sup>	A	6.8	19.9	16.8	5.6
METALS-L	Zinc	µg.l <sup>-1</sup>	A	92.1	20.1	30.9	2.3
METALS-L	Potassium	mg.l <sup>-1</sup>	A	125	239	208	145
INORG-L37	Hexavalent Chromium	mg.l <sup>-1</sup>	N	<0.1	<0.1	<0.1	<0.1
INORG-L01	pH	pH units	A	7.6	7.6	7.5	7.6
INORG-L13	Chloride	mg.l <sup>-1</sup>	A	361	1220	780	453
INORG-L18	TOC	mg.l <sup>-1</sup>	A	56.7	55.8	41.3	40.6
METALS-L	Sulphate	mg.l <sup>-1</sup>	A	906	1600	1260	716
ORG-L17	Mecoprop	µg.l <sup>-1</sup>	N	17.2	48.5	37.3	73.3
ORG-L01	TPH	mg.l <sup>-1</sup>	N	1.6	0.8	1.9	3.2
ORG-L02	Naphthalene	µg.l <sup>-1</sup>	N	0.95	7.9	1.5	0.93
ORG-L02	Acenaphthene	µg.l <sup>-1</sup>	N	2.6	6.1	3.4	3.4
ORG-L02	Fluorene	µg.l <sup>-1</sup>	N	0.97	2.4	1.4	1.6
ORG-L02	Phenanthrene	µg.l <sup>-1</sup>	N	0.54	2.4	0.85	0.91
ORG-L02	Anthracene	µg.l <sup>-1</sup>	N	0.22	0.52	0.19	0.26
ORG-L02	Fluoranthene	µg.l <sup>-1</sup>	N	<0.10	0.67	0.54	0.58
ORG-L02	Pyrene	µg.l <sup>-1</sup>	N	<0.10	0.48	<0.10	<0.10
ORG-L02	Benza(a)anthracene	µg.l <sup>-1</sup>	N	<0.10	<0.10	<0.10	<0.10

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Report Date  
17<sup>th</sup> August 2022

Code	Determinand	Units	*	Sample Identification			
<b>Laboratory Sample Number:</b>				<b>270722023</b>	<b>270722024</b>	<b>270722025</b>	<b>270722026</b>
<b>Client Sample Reference:</b>				OW15	OW16	OW17	OW18
<b>Sample Date:</b>				26/07/22	26/07/22	26/07/22	26/07/22
<b>Sample Matrix:</b>				Groundwater	Groundwater	Groundwater	Groundwater
ORG-L02	Chrysene	µg.l <sup>-1</sup>	N	<0.10	<0.10	<0.10	<0.10
ORG-L02	Benzo(b)fluoranthene	µg.l <sup>-1</sup>	N	<0.10	<0.10	<0.10	<0.10
ORG-L02	Benzo(a)pyrene	µg.l <sup>-1</sup>	N	<0.10	<0.10	<0.10	<0.10
ORG-L02	Indeno(123-cd)pyrene	µg.l <sup>-1</sup>	N	<0.10	<0.10	<0.10	<0.10
ORG-L02	Dibenza(ah)anthracene	µg.l <sup>-1</sup>	N	<0.10	<0.10	<0.10	<0.10
ORG-L02	Benzo(ghi)perylene	µg.l <sup>-1</sup>	N	<0.10	<0.10	<0.10	<0.10

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Code	Determinand	Units	*	Sample Identification			
<b>Laboratory Sample Number:</b>				<b>270722027</b>	<b>270722028</b>	<b>270722029</b>	-
<b>Client Sample Reference:</b>				OW19	Pumping Station T1	Outfall A – Ferry Court	-
<b>Sample Date:</b>				26/07/22	26/07/22	26/07/22	-
<b>Sample Matrix:</b>				Groundwater	Effluent	Surface Water	-
INORG-L12	Ammonia	mg.l <sup>-1</sup> as N	A	156	287	15.6	-
INORG-L11	Nitrate	mg.l <sup>-1</sup> as NO <sub>3</sub>	A	<0.3	0.71	8.2	-
INORG-L14	Nitrite	mg.l <sup>-1</sup> as NO <sub>2</sub>	A	<0.003	0.063	0.16	-
1450	Arsenic	µg.l <sup>-1</sup>	S-A	1.7	2.0	0.84	-
1450	Mercury	µg.l <sup>-1</sup>	S-A	<0.05	<0.05	<0.05	-
METALS-L	Barium	µg.l <sup>-1</sup>	A	366	613	414	-
METALS-L	Boron	µg.l <sup>-1</sup>	A	1,800	6,100	544	-
METALS-L	Cadmium	µg.l <sup>-1</sup>	A	1.0	1.3	<0.9	-
METALS-L	Chromium	µg.l <sup>-1</sup>	A	3.3	7.0	5.8	-
METALS-L	Copper	µg.l <sup>-1</sup>	A	7.0	5.1	12.2	-
METALS-L	Iron	µg.l <sup>-1</sup>	A	3,060	1,500	2,900	-
METALS-L	Lead	µg.l <sup>-1</sup>	A	<4.1	<4.1	<4.1	-
METALS-L	Manganese	µg.l <sup>-1</sup>	A	1,000	769	111	-
METALS-L	Nickel	µg.l <sup>-1</sup>	A	4.2	2.6	<1.5	-
METALS-L	Zinc	µg.l <sup>-1</sup>	A	7.4	9.0	29.6	-
METALS-L	Potassium	mg.l <sup>-1</sup>	A	75.0	103	5.9	-
INORG-L37	Hexavalent Chromium	mg.l <sup>-1</sup>	N	<0.1	<0.1	<0.1	-
INORG-L01	pH	pH units	A	7.3	7.7	7.7	-
INORG-L13	Chloride	mg.l <sup>-1</sup>	A	219	2240	72.6	-
INORG-L18	TOC	mg.l <sup>-1</sup>	A	39.7	38.7	30.7	-
METALS-L	Sulphate	mg.l <sup>-1</sup>	A	277	620	1180	-
ORG-L17	Mecoprop	µg.l <sup>-1</sup>	N	37.3	52.2	7.0	-
ORG-L01	TPH	mg.l <sup>-1</sup>	N	0.8	1.1	0.4	-
ORG-L02	Naphthalene	µg.l <sup>-1</sup>	N	0.53	1.2	<0.10	-
ORG-L02	Acenaphthene	µg.l <sup>-1</sup>	N	2.7	4.6	1.9	-
ORG-L02	Fluorene	µg.l <sup>-1</sup>	N	1.3	2.3	<0.10	-
ORG-L02	Phenanthrene	µg.l <sup>-1</sup>	N	0.58	1.5	<0.10	-
ORG-L02	Anthracene	µg.l <sup>-1</sup>	N	0.17	0.36	<0.10	-
ORG-L02	Fluoranthene	µg.l <sup>-1</sup>	N	<0.10	0.64	<0.10	-
ORG-L02	Pyrene	µg.l <sup>-1</sup>	N	<0.10	0.47	<0.10	-
ORG-L02	Benza(a)anthracene	µg.l <sup>-1</sup>	N	<0.10	<0.10	<0.10	-

\* Accreditation Status

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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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Any comments or interpretations are beyond the scope of UKAS accreditation



4303



Client: Cardiff City Council  
FAO: Matthew Long

**CERTIFICATE OF ANALYSIS 5933**  
Results of analysis of 29 samples received  
on the 26/07/22

Report Date  
17<sup>th</sup> August 2022

Code	Determinand	Units	*	Sample Identification			
<b>Laboratory Sample Number:</b>				<b>270722027</b>	<b>270722028</b>	<b>270722029</b>	-
<b>Client Sample Reference:</b>				OW19	Pumping Station T1	Outfall A – Ferry Court	-
<b>Sample Date:</b>				26/07/22	26/07/22	26/07/22	-
<b>Sample Matrix:</b>				Groundwater	Effluent	Surface Water	-
ORG-L02	Chrysene	µg.l <sup>-1</sup>	N	<0.10	<0.10	<0.10	-
ORG-L02	Benzo(b)fluoranthene	µg.l <sup>-1</sup>	N	<0.10	<0.10	<0.10	-
ORG-L02	Benzo(a)pyrene	µg.l <sup>-1</sup>	N	<0.10	<0.10	<0.10	-
ORG-L02	Indeno(123-cd)pyrene	µg.l <sup>-1</sup>	N	<0.10	<0.10	<0.10	-
ORG-L02	Dibenza(ah)anthracene	µg.l <sup>-1</sup>	N	<0.10	<0.10	<0.10	-
ORG-L02	Benzo(ghi)perylene	µg.l <sup>-1</sup>	N	<0.10	<0.10	<0.10	-

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Analytical Method	Method Code	Accreditation Status
Determination of pH in waters by discrete analyser ECM unit (In-house method)	INORG-L01	ISO 17025
Determination of ammonia in waters by discrete analyser (In-house method)	INORG-L12	ISO 17025
Determination of chloride by discrete analyser (In-house method)	INORG-L13	ISO 17025
Determination of metals in waters by ICP-OES (In-house method)	METALS-L	ISO 17025
Determination of mecoprop in waters by GS-MS (In-house method)	ORG-L17	None
Determination of total organic carbon in waters by photometer (In-house method)	INORG-L18	ISO 17025
Determination of PAHs in water by GC-MS (In-house method)	ORG-L02	None
Determination of TPH in Water by GC-MS (In-house method)	ORG-L01	None
Determination of metals in waters by ICP-MS (Sub-Contracted method)	1450	None
Determination of nitrate in water by discrete analyser (In-house method)	INORG-L11	ISO 17025
Determination of nitrite in water by discrete analyser (In-house method)	INORG-L14	ISO 17025

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**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.

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.

Uncertainties of measurement values are available upon request.

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

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