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Certificate of Analysis Number: 5126

Project/Site name:	Ferry Road		Samples Taken:	19-10-2021
Quotation Number:	DS210501		Samples Received:	20-10-2021
Order Number:	-		Date Instructed:	20-10-2021
Sample Matrix:	Surface water, Groundwater, Treated Effluent		Analysis Complete:	22-11-2021
			Report Issued:	22-11-2021
			Sampled By:	Client

Amendment Records:

None

Approved by: Adam Whitehouse
Signature:
Title: Laboratory Manager

4303

Client: Cardiff City Council
FAO: Andrew Williamson

CERTIFICATE OF ANALYSIS 5126

Results of analysis of 38 samples received on the 10/09/21

Report Date
22nd November 2021

Code	Determinand	Units	*	Sample Identification			
Laboratory Sample Number:				**201021027**	**201021028**	**201021029**	**201021030**
Client Sample Reference:				Pumping Station B	Pumping Station C	Pumping Station D	River Sample Under Bypass
Sample Date:				19/10/21	19/10/21	19/10/21	19/10/21
Sample Matrix:				Treated Effluent	Treated Effluent	Treated Effluent	Surface Water
INORG-L12	Ammonia	$mg.l^{-1}$ as N	A	29.2	82.9	206	0.16
INORG-L11	Nitrate	$mg.l^{-1}$ as NO_3	A	99.0	22.1	6.4	9.8
INORG-L14	Nitrite	$mg.l^{-1}$ as NO_2	A	8.47	3.01	0.89	0.059
1450	Arsenic	$\mu g.l^{-1}$	S-A	0.53	0.99	3.3	0.75
1450	Mercury	$\mu g.l^{-1}$	S-A	<0.05	<0.05	<0.05	<0.05
METALS-L	Barium	$\mu g.l^{-1}$	A	424	376	586	66.1
METALS-L	Boron	$\mu g.l^{-1}$	A	3,450	4,130	5,490	53.1
METALS-L	Cadmium	$\mu g.l^{-1}$	A	<0.9	<0.9	<0.9	<0.9
METALS-L	Chromium	$\mu g.l^{-1}$	A	1.6	4.4	8.1	1.9
METALS-L	Copper	$\mu g.l^{-1}$	A	2.8	4.5	1.5	3.7
METALS-L	Iron	$\mu g.l^{-1}$	A	6.9	27.6	2,310	28.1
METALS-L	Lead	$\mu g.l^{-1}$	A	8.8	7.8	10.3	<4.1
METALS-L	Manganese	$\mu g.l^{-1}$	A	770	192	115	<1.0
METALS-L	Nickel	$\mu g.l^{-1}$	A	<1.5	<1.5	6.7	<1.5
METALS-L	Zinc	$\mu g.l^{-1}$	A	28.1	8.4	88.1	1.2
METALS-L	Potassium	$mg.l^{-1}$	A	40.7	65.2	124	4.7
INORG-L37	Hexavalent Chromium	$mg.l^{-1}$	N	<0.50	<0.50	<0.50	<0.50
1300	Free Cyanide	$mg.l^{-1}$	S-A	<0.050	<0.050	<0.050	<0.050
1300	Total Cyanide	$mg.l^{-1}$	S-A	<0.050	<0.050	<0.050	<0.050
INORG-L01	pH	pH units	A	7.7	8.0	8.0	8.2
INORG-L13	Chloride	$mg.l^{-1}$	A	176	1,460	319	24.6
INORG-L18	TOC	$mg.l^{-1}$	A	126	59.4	35.1	54.3
INORG-L20	Total Phenol	$mg.l^{-1}$	A	0.14	0.69	0.75	0.02
METALS-L	Sulphate	$mg.l^{-1}$	A	13.1	33.5	22.2	26.7
ORG-L17	Mecoprop	$\mu g.l^{-1}$	N	2.5	22.4	<0.1	<0.1
ORG-L01	TPH	$mg.l^{-1}$	N	0.3	<0.2	0.4	0.4
1790	Dimethylphthalate	$\mu g.l^{-1}$	S-N	<0.50	<0.50	<0.50	<0.50
1790	Diethyl Phthalate	$\mu g.l^{-1}$	S-N	<0.50	<0.50	<0.50	<0.50
1790	Di-N-Bytul Phthalate	$\mu g.l^{-1}$	S-N	<0.50	<0.50	<0.50	<0.50
1790	Butylbenzyl Phthalate	$\mu g.l^{-1}$	S-N	<0.50	<0.50	<0.50	<0.50
1790	Bis(2-Ethylhexyl) Phthalate	$\mu g.l^{-1}$	S-N	<0.50	<0.50	<0.50	<0.50

* Accreditation Status
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Code	Determinand	Units	*	Sample Identification			
Laboratory Sample Number:				**201021027**	**201021028**	**201021029**	**201021030**
Client Sample Reference:				Pumping Station B	Pumping Station C	Pumping Station D	River Sample Under Bypass
Sample Date:				19/10/21	19/10/21	19/10/21	19/10/21
Sample Matrix:				Treated Effluent	Treated Effluent	Treated Effluent	Surface Water
1790	Di-N-Octyl Phthalate	µg.l^{-1}	S-N	<0.50	<0.50	<0.50	<0.50
ORG-L02	Naphthalene	µg.l^{-1}	A	<0.05	<0.05	<0.05	<0.05
ORG-L02	Acenaphthene	µg.l^{-1}	A	<0.05	<0.05	<0.05	<0.05
ORG-L02	4-nitrophenol	µg.l^{-1}	A	<0.05	<0.05	<0.05	<0.05
ORG-L02	2,3,4,6-tetrachlorophenol	µg.l^{-1}	A	<0.05	<0.05	<0.05	<0.05
ORG-L02	Fluorene	µg.l^{-1}	A	<0.05	<0.05	<0.05	<0.05
ORG-L02	Phenanthrene	µg.l^{-1}	A	<0.05	<0.05	<0.05	<0.05
ORG-L02	Anthracene	µg.l^{-1}	A	<0.05	<0.05	<0.05	<0.05
ORG-L02	Fluoranthene	µg.l^{-1}	A	0.08	<0.05	<0.05	<0.05
ORG-L02	Pyrene	µg.l^{-1}	A	<0.05	<0.05	<0.05	<0.05
ORG-L02	Benza(a)anthracene	µg.l^{-1}	A	<0.05	<0.05	<0.05	<0.05
ORG-L02	Chrysene	µg.l^{-1}	A	<0.05	<0.05	<0.05	<0.05
ORG-L02	Benzo(b)fluoranthene	µg.l^{-1}	A	<0.05	<0.05	<0.05	<0.05
ORG-L02	Benzo(a)pyrene	µg.l^{-1}	A	<0.05	<0.05	<0.05	<0.05
ORG-L02	Indeno(123-cd)pyrene	µg.l^{-1}	A	<0.05	<0.05	<0.05	<0.05
ORG-L02	Dibenza(ah)anthracene	µg.l^{-1}	A	<0.05	<0.05	<0.05	<0.05
ORG-L02	Benzo(ghi)perylene	µg.l^{-1}	A	<0.05	<0.05	<0.05	<0.05
ORG-L02	2-chlorophenol	µg.l^{-1}	A	<0.50	<0.50	<0.50	<0.50
ORG-L02	2-methylphenol	µg.l^{-1}	A	<0.50	<0.50	<0.50	<0.50
ORG-L02	4-methylphenol	µg.l^{-1}	A	<0.50	<0.50	<0.50	<0.50
ORG-L02	2 nitrophenol	µg.l^{-1}	A	<0.50	<0.50	<0.50	<0.50
ORG-L02	2,4-dimethylphenol	µg.l^{-1}	A	<0.50	1.3	1.3	<0.50
ORG-L02	2,4-dichlorophenol	µg.l^{-1}	A	<0.50	<0.50	<0.50	<0.50
ORG-L02	2,6-dichlorophenol	µg.l^{-1}	A	<0.50	<0.50	<0.50	<0.50
ORG-L02	4-chloro,3-methylphenol	µg.l^{-1}	A	<0.50	<0.50	<0.50	<0.50
ORG-L02	2,4,6-trichlorophenol	µg.l^{-1}	A	<0.50	<0.50	<0.50	<0.50
ORG-L02	2,4,5-trichlorophenol	µg.l^{-1}	A	<0.50	<0.50	<0.50	<0.50
1810	Alpha-BHC	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	<0.20
1810	Beta-BHC	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	<0.20
1810	Gamma-BHC	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	<0.20
1810	Delta-BHC	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	<0.20

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CERTIFICATE OF ANALYSIS 5126

Results of analysis of 38 samples received on the 10/09/21

Report Date
22nd November 2021

Code	Determinand	Units	*	Sample Identification			
Laboratory Sample Number:				**201021027**	**201021028**	**201021029**	**201021030**
Client Sample Reference:				Pumping Station B	Pumping Station C	Pumping Station D	River Sample Under Bypass
Sample Date:				19/10/21	19/10/21	19/10/21	19/10/21
Sample Matrix:				Treated Effluent	Treated Effluent	Treated Effluent	Surface Water
1810	Heptachlor	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	<0.20
1810	Aldrin	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	<0.20
1810	Heptachlor Epoxide	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	<0.20
1810	Endosulphan	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	<0.20
1810	*pp*-DDE	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	<0.20
1810	Dieidrin	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	<0.20
1810	Endosulphan-I	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	<0.20
1810	*pp*-DDD	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	<0.20
1810	Endrin Aldehyde	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	<0.20
1810	Endosulphan Sulphate	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	<0.20
1820	Demeton-O	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	<0.20
1820	Phorate	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	<0.20
1820	Demeton-S	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	<0.20
1820	Disulfoton	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	<0.20
1820	Fenthion	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	<0.20
1820	Trichloronate	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	<0.20
1820	Prothiofos	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	<0.20
1820	Fensulphothion	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	<0.20
1820	Sulprofos	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	<0.20
1820	Azinphos-Methyl	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	<0.20
1820	Coumaphos	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	<0.20
1830	Atraton	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	<0.20
1830	Prometon	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	<0.20
1830	Simazine	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	<0.20
1830	Atrazine	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	<0.20
1830	Propazine	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	<0.20
1830	Terbuthylazine	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	<0.20
1830	Secbumeton	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	<0.20
1830	Simetryn	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	<0.20
1830	Ametryn	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	<0.20
1830	Prometryn	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	<0.20
1830	Terbutryn	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	<0.20

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FAO: Andrew Williamson

CERTIFICATE OF ANALYSIS 5126

Results of analysis of 38 samples received on the 10/09/21

Report Date
22nd November 2021

Code	Determinand	Units	*	Sample Identification			
Laboratory Sample Number:				**201021031**	**201021032**	**201021033**	-
Client Sample Reference:				River Sample Mid A	River Sample – Outfall A	River sample under Rail Bridge	-
Sample Date:				19/10/21	19/10/21	19/10/21	-
Sample Matrix:				Surface Water	Surface Water	Surface Water	-
INORG-L12	Ammonia	$mg.l^{-1}$ as N	A	0.15	0.59	0.45	-
INORG-L11	Nitrate	$mg.l^{-1}$ as NO_3	A	9.7	11.4	10.9	-
INORG-L14	Nitrite	$mg.l^{-1}$ as NO_2	A	0.046	0.083	0.083	-
1450	Arsenic	$\mu g.l^{-1}$	S-A	0.56	0.57	0.54	-
1450	Mercury	$\mu g.l^{-1}$	S-A	<0.05	<0.05	<0.05	-
METALS-L	Barium	$\mu g.l^{-1}$	A	72.9	77.0	80.8	-
METALS-L	Boron	$\mu g.l^{-1}$	A	30.2	36.2	26.7	-
METALS-L	Cadmium	$\mu g.l^{-1}$	A	<0.9	<0.9	<0.9	-
METALS-L	Chromium	$\mu g.l^{-1}$	A	6.9	6.1	3.1	-
METALS-L	Copper	$\mu g.l^{-1}$	A	3.2	6.2	4.4	-
METALS-L	Iron	$\mu g.l^{-1}$	A	18.3	12.5	13.5	-
METALS-L	Lead	$\mu g.l^{-1}$	A	8.2	10.5	6.7	-
METALS-L	Manganese	$\mu g.l^{-1}$	A	<1.0	<1.0	<1.0	-
METALS-L	Nickel	$\mu g.l^{-1}$	A	<1.5	<1.5	<1.5	-
METALS-L	Zinc	$\mu g.l^{-1}$	A	12.6	1.5	8.7	-
METALS-L	Potassium	$mg.l^{-1}$	A	4.3	4.6	4.5	-
INORG-L37	Hexavalent Chromium	$mg.l^{-1}$	N	<0.50	<0.50	<0.50	-
1300	Free Cyanide	$mg.l^{-1}$	S-A	<0.050	<0.050	<0.050	-
1300	Total Cyanide	$mg.l^{-1}$	S-A	<0.050	<0.050	<0.050	-
INORG-L01	pH	pH units	A	8.2	8.2	8.1	-
INORG-L13	Chloride	$mg.l^{-1}$	A	24.6	25.0	24.3	-
INORG-L18	TOC	$mg.l^{-1}$	A	40.6	44.9	30.1	-
INORG-L20	Total Phenol	$mg.l^{-1}$	A	<0.01	<0.01	<0.01	-
METALS-L	Sulphate	$mg.l^{-1}$	A	24.7	25.4	25.7	-
ORG-L17	Mecoprop	$\mu g.l^{-1}$	N	<0.1	<0.1	<0.1	-
ORG-L01	TPH	$mg.l^{-1}$	N	<0.2	0.2	1.4	-
1790	Dimethylphthalate	$\mu g.l^{-1}$	S-N	<0.50	<0.50	<0.50	-
1790	Diethyl Phthalate	$\mu g.l^{-1}$	S-N	<0.50	<0.50	<0.50	-
1790	Di-N-Bytul Phthalate	$\mu g.l^{-1}$	S-N	<0.50	<0.50	<0.50	-
1790	Butylbenzyl Phthalate	$\mu g.l^{-1}$	S-N	<0.50	<0.50	<0.50	-
1790	Bis(2-Ethylhexyl) Phthalate	$\mu g.l^{-1}$	S-N	<0.50	<0.50	<0.50	-

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Code	Determinand	Units	*	Sample Identification			
Laboratory Sample Number:				**201021031**	**201021032**	**201021033**	**-**
Client Sample Reference:				River Sample Mid A	River Sample – Outfall A	River sample under Rail Bridge	-
Sample Date:				19/10/21	19/10/21	19/10/21	-
Sample Matrix:				Surface Water	Surface Water	Surface Water	-
1790	Di-N-Octyl Phthalate	µg.l^{-1}	S-N	<0.50	<0.50	<0.50	-
ORG-L02	Naphthalene	µg.l^{-1}	N	<0.05	<0.05	<0.05	-
ORG-L02	Acenaphthene	µg.l^{-1}	N	<0.05	<0.05	<0.05	-
ORG-L02	4-nitrophenol	µg.l^{-1}	N	<0.05	<0.05	<0.05	-
ORG-L02	2,3,4,6-tetrachlorophenol	µg.l^{-1}	N	<0.05	<0.05	<0.05	-
ORG-L02	Fluorene	µg.l^{-1}	N	<0.05	<0.05	<0.05	-
ORG-L02	Phenanthrene	µg.l^{-1}	N	<0.05	<0.05	<0.05	-
ORG-L02	Anthracene	µg.l^{-1}	N	<0.05	<0.05	<0.05	-
ORG-L02	Fluoranthene	µg.l^{-1}	N	<0.05	<0.05	<0.05	-
ORG-L02	Pyrene	µg.l^{-1}	N	<0.05	<0.05	<0.05	-
ORG-L02	Benza(a)anthracene	µg.l^{-1}	N	<0.05	<0.05	<0.05	-
ORG-L02	Chrysene	µg.l^{-1}	N	<0.05	<0.05	<0.05	-
ORG-L02	Benzo(b)fluoranthene	µg.l^{-1}	N	<0.05	<0.05	<0.05	-
ORG-L02	Benzo(a)pyrene	µg.l^{-1}	N	<0.05	<0.05	<0.05	-
ORG-L02	Indeno(123-cd)pyrene	µg.l^{-1}	N	<0.05	<0.05	<0.05	-
ORG-L02	Dibenza(ah)anthracene	µg.l^{-1}	N	<0.05	<0.05	<0.05	-
ORG-L02	Benzo(ghi)perylene	µg.l^{-1}	N	<0.05	<0.05	<0.05	-
ORG-L02	2-chlorophenol	µg.l^{-1}	N	<0.50	<0.50	<0.50	-
ORG-L02	2-methylphenol	µg.l^{-1}	N	<0.50	<0.50	<0.50	-
ORG-L02	4-methylphenol	µg.l^{-1}	N	<0.50	<0.50	<0.50	-
ORG-L02	2 nitrophenol	µg.l^{-1}	N	<0.50	<0.50	<0.50	-
ORG-L02	2,4-dimethylphenol	µg.l^{-1}	N	<0.50	<0.50	<0.50	-
ORG-L02	2,4-dichlorophenol	µg.l^{-1}	N	<0.50	<0.50	<0.50	-
ORG-L02	2,6-dichlorophenol	µg.l^{-1}	N	<0.50	<0.50	<0.50	-
ORG-L02	4-chloro,3-methylphenol	µg.l^{-1}	N	<0.50	<0.50	<0.50	-
ORG-L02	2,4,6-trichlorophenol	µg.l^{-1}	N	<0.50	<0.50	<0.50	-
ORG-L02	2,4,5-trichlorophenol	µg.l^{-1}	N	<0.50	<0.50	2.0	-
1810	Alpha-BHC	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	-
1810	Beta-BHC	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	-
1810	Gamma-BHC	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	-
1810	Delta-BHC	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	-

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Code	Determinand	Units	*	Sample Identification			
Laboratory Sample Number:				**201021031**	**201021032**	**201021033**	**-**
Client Sample Reference:				River Sample Mid A	River Sample – Outfall A	River sample under Rail Bridge	-
Sample Date:				19/10/21	19/10/21	19/10/21	-
Sample Matrix:				Surface Water	Surface Water	Surface Water	-
1810	Heptachlor	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	-
1810	Aldrin	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	-
1810	Heptachlor Epoxide	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	-
1810	Endosulphan	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	-
1810	*pp*-DDE	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	-
1810	Dieidrin	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	-
1810	Endosulphan-I	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	-
1810	*pp*-DDD	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	-
1810	Endrin Aldehyde	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	-
1810	Endosulphan Sulphate	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	-
1820	Demeton-O	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	-
1820	Phorate	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	-
1820	Demeton-S	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	-
1820	Disulfoton	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	-
1820	Fenthion	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	-
1820	Trichloronate	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	-
1820	Prothiofos	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	-
1820	Fensulphothion	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	-
1820	Sulprofos	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	-
1820	Azinphos-Methyl	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	-
1820	Coumaphos	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	-
1830	Atraton	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	-
1830	Prometon	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	-
1830	Simazine	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	-
1830	Atrazine	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	-
1830	Propazine	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	-
1830	Terbuthylazine	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	-
1830	Secbumeton	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	-
1830	Simetryn	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	-
1830	Ametryn	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	-
1830	Prometryn	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	-
1830	Terbutryn	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	-

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Client: Cardiff City Council
FAO: Andrew Williamson

CERTIFICATE OF ANALYSIS 5126

Results of analysis of 38 samples received on the 10/09/21

Report Date
22nd November 2021

Code	Determinand	Units	*	Sample Identification			
Laboratory Sample Number:				**201021034**	**201021035**	**201021036**	**201021037**
Client Sample Reference:				FR1	OW02	OW09	OW14
Sample Date:				19/10/21	19/10/21	19/10/21	19/10/21
Sample Matrix:				Groundwater	Groundwater	Groundwater	Groundwater
INORG-L12	Ammonia	$mg.l^{-1}$ as N	A	0.11	40.0	227	405
INORG-L11	Nitrate	$mg.l^{-1}$ as NO_3	A	13.8	0.53	0.31	<0.3
INORG-L14	Nitrite	$mg.l^{-1}$ as NO_2	A	<0.003	<0.003	0.40	1.42
1450	Arsenic	$\mu g.l^{-1}$	S-A	0.93	0.74	1.1	<0.20
1450	Mercury	$\mu g.l^{-1}$	S-A	<0.05	<0.05	<0.05	<0.05
METALS-L	Barium	$\mu g.l^{-1}$	A	18.7	922	438	347
METALS-L	Boron	$\mu g.l^{-1}$	A	692	2,420	6,520	7,230
METALS-L	Cadmium	$\mu g.l^{-1}$	A	<0.9	<0.9	<0.9	<0.9
METALS-L	Chromium	$\mu g.l^{-1}$	A	6.3	1.7	5.8	9.5
METALS-L	Copper	$\mu g.l^{-1}$	A	3.3	2.7	<0.8	<0.8
METALS-L	Iron	$\mu g.l^{-1}$	A	54.3	666	99.6	983
METALS-L	Lead	$\mu g.l^{-1}$	A	6.5	11.7	8.9	13.9
METALS-L	Manganese	$\mu g.l^{-1}$	A	5.4	1,320	515	551
METALS-L	Nickel	$\mu g.l^{-1}$	A	<1.5	<1.5	13.8	8.0
METALS-L	Zinc	$\mu g.l^{-1}$	A	1.4	5.0	12.5	<1.1
METALS-L	Potassium	$mg.l^{-1}$	A	24.6	29.5	146	197
INORG-L37	Hexavalent Chromium	$mg.l^{-1}$	N	<0.50	<0.50	<0.50	<0.50
1300	Free Cyanide	$mg.l^{-1}$	S-A	<0.050	<0.050	<0.050	<0.050
1300	Total Cyanide	$mg.l^{-1}$	S-A	<0.050	<0.050	<0.050	<0.050
INORG-L01	pH	pH units	A	7.5	7.4	7.9	7.6
INORG-L13	Chloride	$mg.l^{-1}$	A	156	125	238	415
INORG-L18	TOC	$mg.l^{-1}$	A	42.5	61.7	74.6	111
INORG-L20	Total Phenol	$mg.l^{-1}$	A	0.19	0.19	0.82	0.77
METALS-L	Sulphate	$mg.l^{-1}$	A	86.4	33.1	165	11.6
ORG-L17	Mecoprop	$\mu g.l^{-1}$	A	<0.1	<0.1	<0.1	14.6
ORG-L01	TPH	$mg.l^{-1}$	N	<0.2	<0.2	0.4	0.3
1790	Dimethylphthalate	$\mu g.l^{-1}$	S-N	<0.50	<0.50	<0.50	<0.50
1790	Diethyl Phthalate	$\mu g.l^{-1}$	S-N	<0.50	<0.50	<0.50	<0.50
1790	Di-N-Bytul Phthalate	$\mu g.l^{-1}$	S-N	<0.50	<0.50	<0.50	<0.50
1790	Butylbenzyl Phthalate	$\mu g.l^{-1}$	S-N	<0.50	<0.50	<0.50	<0.50
1790	Bis(2-Ethylhexyl) Phthalate	$\mu g.l^{-1}$	S-N	<0.50	<0.50	<0.50	<0.50

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Code	Determinand	Units	*	Sample Identification			
Laboratory Sample Number:				**201021034**	**201021035**	**201021036**	**201021037**
Client Sample Reference:				FR1	OW02	OW09	OW14
Sample Date:				19/10/21	19/10/21	19/10/21	19/10/21
Sample Matrix:				Groundwater	Groundwater	Groundwater	Groundwater
1790	Di-N-Octyl Phthalate	µg.l^{-1}	S-N	<0.50	<0.50	<0.50	<0.50
ORG-L02	Naphthalene	µg.l^{-1}	A	<0.05	<0.05	<0.05	0.38
ORG-L02	Acenaphthene	µg.l^{-1}	A	<0.05	<0.05	<0.05	2.5
ORG-L02	4-nitrophenol	µg.l^{-1}	N	<0.05	<0.05	<0.05	<0.05
ORG-L02	2,3,4,6-tetrachlorophenol	µg.l^{-1}	N	<0.05	<0.05	<0.05	<0.05
ORG-L02	Fluorene	µg.l^{-1}	A	<0.05	<0.05	<0.05	1.4
ORG-L02	Phenanthrene	µg.l^{-1}	A	<0.05	<0.05	<0.05	0.20
ORG-L02	Anthracene	µg.l^{-1}	A	<0.05	<0.05	<0.05	<0.05
ORG-L02	Fluoranthene	µg.l^{-1}	A	<0.05	<0.05	<0.05	0.48
ORG-L02	Pyrene	µg.l^{-1}	A	<0.05	<0.05	<0.05	<0.05
ORG-L02	Benza(a)anthracene	µg.l^{-1}	A	<0.05	<0.05	<0.05	<0.05
ORG-L02	Chrysene	µg.l^{-1}	A	<0.05	<0.05	<0.05	<0.05
ORG-L02	Benzo(b)fluoranthene	µg.l^{-1}	A	<0.05	<0.05	<0.05	<0.05
ORG-L02	Benzo(a)pyrene	µg.l^{-1}	A	<0.05	<0.05	<0.05	<0.05
ORG-L02	Indeno(123-cd)pyrene	µg.l^{-1}	A	<0.05	<0.05	<0.05	<0.05
ORG-L02	Dibenza(ah)anthracene	µg.l^{-1}	A	<0.05	<0.05	<0.05	<0.05
ORG-L02	Benzo(ghi)perylene	µg.l^{-1}	A	<0.05	<0.05	<0.05	<0.05
ORG-L02	2-chlorophenol	µg.l^{-1}	N	<0.50	<0.50	<0.50	<0.50
ORG-L02	2-methylphenol	µg.l^{-1}	N	<0.50	<0.50	<0.50	<0.50
ORG-L02	4-methylphenol	µg.l^{-1}	N	<0.50	<0.50	<0.50	<0.50
ORG-L02	2 nitrophenol	µg.l^{-1}	N	<0.50	<0.50	<0.50	<0.50
ORG-L02	2,4-dimethylphenol	µg.l^{-1}	N	<0.50	<0.50	2.2	2.5
ORG-L02	2,4-dichlorophenol	µg.l^{-1}	N	<0.50	<0.50	<0.50	<0.50
ORG-L02	2,6-dichlorophenol	µg.l^{-1}	N	<0.50	<0.50	<0.50	<0.50
ORG-L02	4-chloro,3-methylphenol	µg.l^{-1}	N	<0.50	<0.50	<0.50	<0.50
ORG-L02	2,4,6-trichlorophenol	µg.l^{-1}	N	<0.50	<0.50	<0.50	<0.50
ORG-L02	2,4,5-trichlorophenol	µg.l^{-1}	N	<0.50	2.0	<0.50	<0.50
1810	Alpha-BHC	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	<0.20
1810	Beta-BHC	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	<0.20
1810	Gamma-BHC	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	<0.20
1810	Delta-BHC	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	<0.20

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Code	Determinand	Units	*	Sample Identification			
Laboratory Sample Number:				**201021034**	**201021035**	**201021036**	**201021037**
Client Sample Reference:				FR1	OW02	OW09	OW14
Sample Date:				19/10/21	19/10/21	19/10/21	19/10/21
Sample Matrix:				Groundwater	Groundwater	Groundwater	Groundwater
1810	Heptachlor	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	<0.20
1810	Aldrin	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	<0.20
1810	Heptachlor Epoxide	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	<0.20
1810	Endosulphan	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	<0.20
1810	*pp*-DDE	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	<0.20
1810	Dieidrin	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	<0.20
1810	Endosulphan-I	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	<0.20
1810	*pp*-DDD	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	<0.20
1810	Endrin Aldehyde	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	<0.20
1810	Endosulphan Sulphate	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	<0.20
1820	Demeton-O	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	<0.20
1820	Phorate	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	<0.20
1820	Demeton-S	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	<0.20
1820	Disulfoton	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	<0.20
1820	Fenthion	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	<0.20
1820	Trichloronate	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	<0.20
1820	Prothiofos	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	<0.20
1820	Fensulphothion	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	<0.20
1820	Sulprofos	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	<0.20
1820	Azinphos-Methyl	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	<0.20
1820	Coumaphos	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	<0.20
1830	Atraton	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	<0.20
1830	Prometon	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	<0.20
1830	Simazine	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	<0.20
1830	Atrazine	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	<0.20
1830	Propazine	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	<0.20
1830	Terbuthylazine	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	<0.20
1830	Secbumeton	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	<0.20
1830	Simetryn	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	<0.20
1830	Ametryn	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	<0.20
1830	Prometryn	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	<0.20
1830	Terbutryn	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	<0.20

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Code	Determinand	Units	*	Sample Identification			
Laboratory Sample Number:				**201021038**	**201021039**	**201021040**	**201021041**
Client Sample Reference:				OW18	Outfall A – Ferry Court	OW03	OW05
Sample Date:				19/10/21	19/10/21	19/10/21	19/10/21
Sample Matrix:				Groundwater	Surface water	Groundwater	Groundwater
INORG-L12	Ammonia	$mg.l^{-1}$ as N	A	235	21.4	164	45.0
INORG-L11	Nitrate	$mg.l^{-1}$ as NO_3	A	5.3	3.4	1.3	7.2
INORG-L14	Nitrite	$mg.l^{-1}$ as NO_2	A	0.21	0.30	0.48	0.19
1450	Arsenic	$\mu g.l^{-1}$	S-A	1.1	0.70	0.83	1.6
1450	Mercury	$\mu g.l^{-1}$	S-A	<0.05	<0.05	<0.05	<0.05
METALS-L	Barium	$\mu g.l^{-1}$	A	330	250	448	467
METALS-L	Boron	$\mu g.l^{-1}$	A	1,800	983	5,930	1,560
METALS-L	Cadmium	$\mu g.l^{-1}$	A	<0.9	<0.9	<0.9	<0.9
METALS-L	Chromium	$\mu g.l^{-1}$	A	4.3	<1.0	5.1	2.9
METALS-L	Copper	$\mu g.l^{-1}$	A	<0.8	1.7	<0.8	5.7
METALS-L	Iron	$\mu g.l^{-1}$	A	242	69.6	157	55.9
METALS-L	Lead	$\mu g.l^{-1}$	A	4.2	<4.1	7.6	4.6
METALS-L	Manganese	$\mu g.l^{-1}$	A	885	88.5	1,040	1,150
METALS-L	Nickel	$\mu g.l^{-1}$	A	32.7	<1.5	<1.5	7.9
METALS-L	Zinc	$\mu g.l^{-1}$	A	6.1	<1.1	2.7	24.4
METALS-L	Potassium	$mg.l^{-1}$	A	128	15.4	99.3	53.1
INORG-L37	Hexavalent Chromium	$mg.l^{-1}$	N	<0.50	<0.50	<0.50	<0.50
1300	Free Cyanide	$mg.l^{-1}$	S-A	<0.050	<0.050	<0.050	<0.050
1300	Total Cyanide	$mg.l^{-1}$	S-A	<0.050	<0.050	<0.050	<0.050
INORG-L01	pH	pH units	A	7.7	7.8	7.7	7.7
INORG-L13	Chloride	$mg.l^{-1}$	A	195	114	481	723
INORG-L18	TOC	$mg.l^{-1}$	A	123	71.4	40.0	28.9
INORG-L20	Total Phenol	$mg.l^{-1}$	A	0.75	0.13	0.59	0.23
METALS-L	Sulphate	$mg.l^{-1}$	A	63.6	7.1	16.2	71.0
ORG-L17	Mecoprop	$\mu g.l^{-1}$	A	<0.1	<0.1	24.0	<0.1
ORG-L01	TPH	$mg.l^{-1}$	N	0.4	0.6	0.3	0.4
1790	Dimethylphthalate	$\mu g.l^{-1}$	S-N	<0.50	<0.50	<0.50	<0.50
1790	Diethyl Phthalate	$\mu g.l^{-1}$	S-N	<0.50	<0.50	<0.50	<0.50
1790	Di-N-Bytul Phthalate	$\mu g.l^{-1}$	S-N	<0.50	<0.50	<0.50	<0.50
1790	Butylbenzyl Phthalate	$\mu g.l^{-1}$	S-N	<0.50	<0.50	<0.50	<0.50
1790	Bis(2-Ethylhexyl) Phthalate	$\mu g.l^{-1}$	S-N	<0.50	<0.50	<0.50	<0.50

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Code	Determinand	Units	*	Sample Identification			
Laboratory Sample Number:				**201021038**	**201021039**	**201021040**	**201021041**
Client Sample Reference:				OW18	Outfall A – Ferry Court	OW03	OW05
Sample Date:				19/10/21	19/10/21	19/10/21	19/10/21
Sample Matrix:				Groundwater	Surface water	Groundwater	Groundwater
1790	Di-N-Octyl Phthalate	µg.l^{-1}	S-N	<0.50	<0.50	<0.50	<0.50
ORG-L02	Naphthalene	µg.l^{-1}	A	<0.05	<0.05	1.4	<0.05
ORG-L02	Acenaphthene	µg.l^{-1}	A	<0.05	<0.05	<0.05	<0.05
ORG-L02	4-nitrophenol	µg.l^{-1}	N	<0.05	<0.05	<0.05	<0.05
ORG-L02	2,3,4,6-tetrachlorophenol	µg.l^{-1}	N	<0.05	<0.05	<0.05	<0.05
ORG-L02	Fluorene	µg.l^{-1}	A	<0.05	<0.05	<0.05	<0.05
ORG-L02	Phenanthrene	µg.l^{-1}	A	<0.05	<0.05	<0.05	<0.05
ORG-L02	Anthracene	µg.l^{-1}	A	<0.05	<0.05	<0.05	<0.05
ORG-L02	Fluoranthene	µg.l^{-1}	A	<0.05	<0.05	<0.05	<0.05
ORG-L02	Pyrene	µg.l^{-1}	A	<0.05	<0.05	<0.05	<0.05
ORG-L02	Benza(a)anthracene	µg.l^{-1}	A	<0.05	<0.05	<0.05	<0.05
ORG-L02	Chrysene	µg.l^{-1}	A	<0.05	<0.05	<0.05	<0.05
ORG-L02	Benzo(b)fluoranthene	µg.l^{-1}	A	<0.05	<0.05	<0.05	<0.05
ORG-L02	Benzo(a)pyrene	µg.l^{-1}	A	<0.05	<0.05	<0.05	<0.05
ORG-L02	Indeno(123-cd)pyrene	µg.l^{-1}	A	<0.05	<0.05	<0.05	<0.05
ORG-L02	Dibenza(ah)anthracene	µg.l^{-1}	A	<0.05	<0.05	<0.05	<0.05
ORG-L02	Benzo(ghi)perylene	µg.l^{-1}	A	<0.05	<0.05	<0.05	<0.05
ORG-L02	2-chlorophenol	µg.l^{-1}	N	<0.50	<0.50	<0.50	<0.50
ORG-L02	2-methylphenol	µg.l^{-1}	N	<0.50	<0.50	<0.50	<0.50
ORG-L02	4-methylphenol	µg.l^{-1}	N	<0.50	<0.50	<0.50	<0.50
ORG-L02	2 nitrophenol	µg.l^{-1}	N	<0.50	<0.50	<0.50	<0.50
ORG-L02	2,4-dimethylphenol	µg.l^{-1}	N	<0.50	<0.50	<0.50	<0.50
ORG-L02	2,4-dichlorophenol	µg.l^{-1}	N	<0.50	<0.50	<0.50	<0.50
ORG-L02	2,6-dichlorophenol	µg.l^{-1}	N	<0.50	<0.50	<0.50	<0.50
ORG-L02	4-chloro,3-methylphenol	µg.l^{-1}	N	<0.50	<0.50	<0.50	<0.50
ORG-L02	2,4,6-trichlorophenol	µg.l^{-1}	N	<0.50	<0.50	<0.50	<0.50
ORG-L02	2,4,5-trichlorophenol	µg.l^{-1}	N	<0.50	<0.50	3.3	<0.50
1810	Alpha-BHC	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	<0.20
1810	Beta-BHC	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	<0.20
1810	Gamma-BHC	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	<0.20
1810	Delta-BHC	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	<0.20

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UKAS TESTING
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Code	Determinand	Units	*	Sample Identification			
Laboratory Sample Number:				**201021038**	**201021039**	**201021040**	**201021041**
Client Sample Reference:				OW18	Outfall A – Ferry Court	OW03	OW05
Sample Date:				19/10/21	19/10/21	19/10/21	19/10/21
Sample Matrix:				Groundwater	Surface water	Groundwater	Groundwater
1810	Heptachlor	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	<0.20
1810	Aldrin	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	<0.20
1810	Heptachlor Epoxide	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	<0.20
1810	Endosulphan	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	<0.20
1810	*pp*-DDE	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	<0.20
1810	Dieidrin	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	<0.20
1810	Endosulphan-I	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	<0.20
1810	*pp*-DDD	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	<0.20
1810	Endrin Aldehyde	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	<0.20
1810	Endosulphan Sulphate	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	<0.20
1820	Demeton-O	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	<0.20
1820	Phorate	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	<0.20
1820	Demeton-S	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	<0.20
1820	Disulfoton	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	<0.20
1820	Fenthion	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	<0.20
1820	Trichloronate	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	<0.20
1820	Prothiofos	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	<0.20
1820	Fensulphothion	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	<0.20
1820	Sulprofos	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	<0.20
1820	Azinphos-Methyl	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	<0.20
1820	Coumaphos	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	<0.20
1830	Atraton	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	<0.20
1830	Prometon	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	<0.20
1830	Simazine	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	<0.20
1830	Atrazine	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	<0.20
1830	Propazine	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	<0.20
1830	Terbuthylazine	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	<0.20
1830	Secbumeton	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	<0.20
1830	Simetryn	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	<0.20
1830	Ametryn	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	<0.20
1830	Prometryn	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	<0.20
1830	Terbutryn	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	<0.20

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Code	Determinand	Units	*	Sample Identification			
Laboratory Sample Number:				**201021038**	**201021039**	**201021040**	**201021041**
Client Sample Reference:				OW18	Outfall A – Ferry Court	OW03	OW05
Sample Date:				19/10/21	19/10/21	19/10/21	19/10/21
Sample Matrix:				Groundwater	Surface water	Groundwater	Groundwater
-	Non-Ionic Surfactants	$\mu g.l^{-1}$	S-N	-	<5.0	-	-
1770	Surfactants as MBAS	$\mu g.l^{-1}$	S-N	-	0.024	-	-

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Client: Cardiff City Council
FAO: Andrew Williamson

CERTIFICATE OF ANALYSIS 5126

Results of analysis of 38 samples received on the 10/09/21

Report Date
22nd November 2021

Code	Determinand	Units	*	Sample Identification			
Laboratory Sample Number:				**201021042**	**201021043**	**201021044**	**201021045**
Client Sample Reference:				OW06	OW19	FR5	W01
Sample Date:				19/10/21	19/10/21	19/10/21	19/10/21
Sample Matrix:				Groundwater	Groundwater	Groundwater	Groundwater
INORG-L12	Ammonia	$mg.l^{-1}$ as N	A	223	3.6	80.1	66.4
INORG-L11	Nitrate	$mg.l^{-1}$ as NO_3	A	<0.3	150	0.44	<0.3
INORG-L14	Nitrite	$mg.l^{-1}$ as NO_2	A	0.38	1.98	0.010	<0.003
1450	Arsenic	$\mu g.l^{-1}$	S-A	0.79	0.59	2.2	2.4
1450	Mercury	$\mu g.l^{-1}$	S-A	<0.05	<0.05	<0.05	<0.05
METALS-L	Barium	$\mu g.l^{-1}$	A	527	59.6	301	58.6
METALS-L	Boron	$\mu g.l^{-1}$	A	5,040	407	2,550	1,040
METALS-L	Cadmium	$\mu g.l^{-1}$	A	<0.9	<0.9	<0.9	<0.9
METALS-L	Chromium	$\mu g.l^{-1}$	A	8.0	4.2	6.6	4.2
METALS-L	Copper	$\mu g.l^{-1}$	A	<0.8	3.5	<0.8	<0.8
METALS-L	Iron	$\mu g.l^{-1}$	A	5,430	21.5	279	6,060
METALS-L	Lead	$\mu g.l^{-1}$	A	7.8	14.7	7.1	7.4
METALS-L	Manganese	$\mu g.l^{-1}$	A	549	20.1	177	6,250
METALS-L	Nickel	$\mu g.l^{-1}$	A	3.5	<1.5	<1.5	<1.5
METALS-L	Zinc	$\mu g.l^{-1}$	A	<1.1	2.9	<1.1	<1.1
METALS-L	Potassium	$mg.l^{-1}$	A	124	20.0	76.1	47.2
INORG-L37	Hexavalent Chromium	$mg.l^{-1}$	N	<0.50	<0.50	<0.50	<0.50
1300	Free Cyanide	$mg.l^{-1}$	S-A	<0.050	<0.050	<0.050	<0.050
1300	Total Cyanide	$mg.l^{-1}$	S-A	<0.050	<0.050	<0.050	<0.050
INORG-L01	pH	pH units	A	7.6	7.1	7.8	7.2
INORG-L13	Chloride	$mg.l^{-1}$	A	589	89.0	2,430	139
INORG-L18	TOC	$mg.l^{-1}$	A	51.6	76.4	125	60.2
INORG-L20	Total Phenol	$mg.l^{-1}$	A	0.36	0.01	0.33	<0.01
METALS-L	Sulphate	$mg.l^{-1}$	A	13.1	43.2	54.1	1,520
ORG-L17	Mecoprop	$\mu g.l^{-1}$	A	28.8	<0.1	2.4	10.2
ORG-L01	TPH	$mg.l^{-1}$	N	0.5	<0.2	<0.2	0.2
1790	Dimethylphthalate	$\mu g.l^{-1}$	S-N	<0.50	<0.50	<0.50	<0.50
1790	Diethyl Phthalate	$\mu g.l^{-1}$	S-N	<0.50	<0.50	<0.50	<0.50
1790	Di-N-Bytul Phthalate	$\mu g.l^{-1}$	S-N	<0.50	<0.50	<0.50	<0.50
1790	Butylbenzyl Phthalate	$\mu g.l^{-1}$	S-N	<0.50	<0.50	<0.50	<0.50
1790	Bis(2-Ethylhexyl) Phthalate	$\mu g.l^{-1}$	S-N	<0.50	<0.50	<0.50	<0.50

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Code	Determinand	Units	*	Sample Identification			
Laboratory Sample Number:				**201021042**	**201021043**	**201021044**	**201021045**
Client Sample Reference:				OW06	OW19	FR5	W01
Sample Date:				19/10/21	19/10/21	19/10/21	19/10/21
Sample Matrix:				Groundwater	Groundwater	Groundwater	Groundwater
1790	Di-N-Octyl Phthalate	µg.l^{-1}	S-N	<0.50	<0.50	<0.50	<0.50
ORG-L02	Naphthalene	µg.l^{-1}	A	2.3	<0.05	<0.05	<0.05
ORG-L02	Acenaphthene	µg.l^{-1}	A	0.7	<0.05	<0.05	<0.05
ORG-L02	4-nitrophenol	µg.l^{-1}	N	<0.05	<0.05	<0.05	<0.05
ORG-L02	2,3,4,6-tetrachlorophenol	µg.l^{-1}	N	<0.05	<0.05	<0.05	<0.05
ORG-L02	Fluorene	µg.l^{-1}	A	0.71	<0.05	<0.05	<0.05
ORG-L02	Phenanthrene	µg.l^{-1}	A	0.19	<0.05	<0.05	<0.05
ORG-L02	Anthracene	µg.l^{-1}	A	<0.05	<0.05	<0.05	<0.05
ORG-L02	Fluoranthene	µg.l^{-1}	A	<0.05	<0.05	<0.05	<0.05
ORG-L02	Pyrene	µg.l^{-1}	A	<0.05	<0.05	<0.05	<0.05
ORG-L02	Benza(a)anthracene	µg.l^{-1}	A	<0.05	<0.05	<0.05	<0.05
ORG-L02	Chrysene	µg.l^{-1}	A	<0.05	<0.05	<0.05	<0.05
ORG-L02	Benzo(b)fluoranthene	µg.l^{-1}	A	<0.05	<0.05	<0.05	<0.05
ORG-L02	Benzo(a)pyrene	µg.l^{-1}	A	<0.05	<0.05	<0.05	<0.05
ORG-L02	Indeno(123-cd)pyrene	µg.l^{-1}	A	<0.05	<0.05	<0.05	<0.05
ORG-L02	Dibenza(ah)anthracene	µg.l^{-1}	A	<0.05	<0.05	<0.05	<0.05
ORG-L02	Benzo(ghi)perylene	µg.l^{-1}	A	<0.05	<0.05	<0.05	<0.05
ORG-L02	2-chlorophenol	µg.l^{-1}	N	<0.50	<0.50	<0.50	<0.50
ORG-L02	2-methylphenol	µg.l^{-1}	N	<0.50	<0.50	<0.50	<0.50
ORG-L02	4-methylphenol	µg.l^{-1}	N	<0.50	<0.50	<0.50	<0.50
ORG-L02	2 nitrophenol	µg.l^{-1}	N	<0.50	<0.50	<0.50	<0.50
ORG-L02	2,4-dimethylphenol	µg.l^{-1}	N	<0.50	<0.50	<0.50	<0.50
ORG-L02	2,4-dichlorophenol	µg.l^{-1}	N	<0.50	<0.50	<0.50	<0.50
ORG-L02	2,6-dichlorophenol	µg.l^{-1}	N	<0.50	<0.50	<0.50	<0.50
ORG-L02	4-chloro,3-methylphenol	µg.l^{-1}	N	<0.50	<0.50	<0.50	<0.50
ORG-L02	2,4,6-trichlorophenol	µg.l^{-1}	N	<0.50	<0.50	<0.50	<0.50
ORG-L02	2,4,5-trichlorophenol	µg.l^{-1}	N	2.1	<0.50	<0.50	<0.50
1810	Alpha-BHC	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	<0.20
1810	Beta-BHC	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	<0.20
1810	Gamma-BHC	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	<0.20
1810	Delta-BHC	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	<0.20

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Code	Determinand	Units	*	Sample Identification			
Laboratory Sample Number:				**201021042**	**201021043**	**201021044**	**201021045**
Client Sample Reference:				OW06	OW19	FR5	W01
Sample Date:				19/10/21	19/10/21	19/10/21	19/10/21
Sample Matrix:				Groundwater	Groundwater	Groundwater	Groundwater
1810	Heptachlor	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	<0.20
1810	Aldrin	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	<0.20
1810	Heptachlor Epoxide	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	<0.20
1810	Endosulphan	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	<0.20
1810	*pp*-DDE	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	<0.20
1810	Dieidrin	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	<0.20
1810	Endosulphan-I	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	<0.20
1810	*pp*-DDD	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	<0.20
1810	Endrin Aldehyde	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	<0.20
1810	Endosulphan Sulphate	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	<0.20
1820	Demeton-O	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	<0.20
1820	Phorate	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	<0.20
1820	Demeton-S	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	<0.20
1820	Disulfoton	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	<0.20
1820	Fenthion	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	<0.20
1820	Trichloronate	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	<0.20
1820	Prothiofos	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	<0.20
1820	Fensulphothion	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	<0.20
1820	Sulprofos	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	<0.20
1820	Azinphos-Methyl	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	<0.20
1820	Coumaphos	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	<0.20
1830	Atraton	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	<0.20
1830	Prometon	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	<0.20
1830	Simazine	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	<0.20
1830	Atrazine	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	<0.20
1830	Propazine	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	<0.20
1830	Terbuthylazine	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	<0.20
1830	Secbumeton	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	<0.20
1830	Simetryn	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	<0.20
1830	Ametryn	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	<0.20
1830	Prometryn	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	<0.20
1830	Terbutryn	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	<0.20

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UKAS TESTING
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Client: Cardiff City Council
FAO: Andrew Williamson

CERTIFICATE OF ANALYSIS 5126

Results of analysis of 38 samples received on the 10/09/21

Report Date
22nd November 2021

Code	Determinand	Units	*	Sample Identification			
Laboratory Sample Number:				**201021046**	**201021047**	**201021048**	**201021049**
Client Sample Reference:				W02	W28	W88	Pumping Station T1
Sample Date:				19/10/21	19/10/21	19/10/21	19/10/21
Sample Matrix:				Groundwater	Groundwater	Groundwater	Groundwater
INORG-L12	Ammonia	$mg.l^{-1}$ as N	A	189	8.4	153	146
INORG-L11	Nitrate	$mg.l^{-1}$ as NO_3	A	<0.3	7.7	1.0	2.6
INORG-L14	Nitrite	$mg.l^{-1}$ as NO_2	A	0.49	0.17	0.34	0.79
1450	Arsenic	$\mu g.l^{-1}$	S-A	4.0	1.1	1.2	1.4
1450	Mercury	$\mu g.l^{-1}$	S-A	<0.05	<0.05	<0.05	<0.05
METALS-L	Barium	$\mu g.l^{-1}$	A	531	111	554	550
METALS-L	Boron	$\mu g.l^{-1}$	A	4,330	427	1,520	5,270
METALS-L	Cadmium	$\mu g.l^{-1}$	A	<0.9	<0.9	<0.9	<0.9
METALS-L	Chromium	$\mu g.l^{-1}$	A	6.9	2.7	3.4	4.2
METALS-L	Copper	$\mu g.l^{-1}$	A	<0.8	5.3	3.3	<0.8
METALS-L	Iron	$\mu g.l^{-1}$	A	2,390	2,200	140	342
METALS-L	Lead	$\mu g.l^{-1}$	A	9.4	13.0	8.9	8.0
METALS-L	Manganese	$\mu g.l^{-1}$	A	592	658	1,630	573
METALS-L	Nickel	$\mu g.l^{-1}$	A	5.2	6.7	<1.5	<1.5
METALS-L	Zinc	$\mu g.l^{-1}$	A	<1.1	4.7	4.8	5.6
METALS-L	Potassium	$mg.l^{-1}$	A	90.1	14.8	65.6	84.2
INORG-L37	Hexavalent Chromium	$mg.l^{-1}$	N	<0.50	<0.50	<0.50	<0.50
1300	Free Cyanide	$mg.l^{-1}$	S-A	<0.050	<0.050	<0.050	<0.050
1300	Total Cyanide	$mg.l^{-1}$	S-A	<0.050	<0.050	<0.050	<0.050
INORG-L01	pH	pH units	A	7.7	7.4	7.3	7.8
INORG-L13	Chloride	$mg.l^{-1}$	A	254	35.4	162	2,060
INORG-L18	TOC	$mg.l^{-1}$	A	36.4	41.1	110	122
INORG-L20	Total Phenol	$mg.l^{-1}$	A	0.74	0.74	0.54	1.4
METALS-L	Sulphate	$mg.l^{-1}$	A	96.3	162	14.2	8.9
ORG-L17	Mecoprop	$\mu g.l^{-1}$	A	13.9	<0.1	<0.1	27.5
ORG-L01	TPH	$mg.l^{-1}$	N	0.4	0.6	1.7	0.3
1790	Dimethylphthalate	$\mu g.l^{-1}$	S-N	<0.50	<0.50	<0.50	<0.50
1790	Diethyl Phthalate	$\mu g.l^{-1}$	S-N	<0.50	<0.50	<0.50	<0.50
1790	Di-N-Bytul Phthalate	$\mu g.l^{-1}$	S-N	<0.50	<0.50	<0.50	<0.50
1790	Butylbenzyl Phthalate	$\mu g.l^{-1}$	S-N	<0.50	<0.50	<0.50	<0.50
1790	Bis(2-Ethylhexyl) Phthalate	$\mu g.l^{-1}$	S-N	<0.50	<0.50	<0.50	<0.50

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Code	Determinand	Units	*	Sample Identification			
Laboratory Sample Number:				**201021046**	**201021047**	**201021048**	**201021049**
Client Sample Reference:				W02	W28	W88	Pumping Station T1
Sample Date:				19/10/21	19/10/21	19/10/21	19/10/21
Sample Matrix:				Groundwater	Groundwater	Groundwater	Groundwater
1790	Di-N-Octyl Phthalate	µg.l^{-1}	S-N	<0.50	<0.50	<0.50	<0.50
ORG-L02	Naphthalene	µg.l^{-1}	A	<0.05	<0.05	<0.05	<0.05
ORG-L02	Acenaphthene	µg.l^{-1}	A	<0.05	<0.05	<0.05	2.4
ORG-L02	4-nitrophenol	µg.l^{-1}	N	<0.05	<0.05	<0.05	<0.05
ORG-L02	2,3,4,6-tetrachlorophenol	µg.l^{-1}	N	<0.05	<0.05	<0.05	<0.05
ORG-L02	Fluorene	µg.l^{-1}	A	0.18	<0.05	<0.05	0.58
ORG-L02	Phenanthrene	µg.l^{-1}	A	<0.05	<0.05	<0.05	<0.05
ORG-L02	Anthracene	µg.l^{-1}	A	<0.05	<0.05	<0.05	<0.05
ORG-L02	Fluoranthene	µg.l^{-1}	A	<0.05	<0.05	<0.05	0.20
ORG-L02	Pyrene	µg.l^{-1}	A	<0.05	<0.05	<0.05	<0.05
ORG-L02	Benza(a)anthracene	µg.l^{-1}	A	<0.05	<0.05	<0.05	<0.05
ORG-L02	Chrysene	µg.l^{-1}	A	<0.05	<0.05	<0.05	<0.05
ORG-L02	Benzo(b)fluoranthene	µg.l^{-1}	A	<0.05	<0.05	<0.05	<0.05
ORG-L02	Benzo(a)pyrene	µg.l^{-1}	A	<0.05	<0.05	<0.05	<0.05
ORG-L02	Indeno(123-cd)pyrene	µg.l^{-1}	A	<0.05	<0.05	<0.05	<0.05
ORG-L02	Dibenza(ah)anthracene	µg.l^{-1}	A	<0.05	<0.05	<0.05	<0.05
ORG-L02	Benzo(ghi)perylene	µg.l^{-1}	A	<0.05	<0.05	<0.05	<0.05
ORG-L02	2-chlorophenol	µg.l^{-1}	N	<0.50	<0.50	<0.50	<0.50
ORG-L02	2-methylphenol	µg.l^{-1}	N	<0.50	<0.50	<0.50	<0.50
ORG-L02	4-methylphenol	µg.l^{-1}	N	<0.50	<0.50	<0.50	<0.50
ORG-L02	2 nitrophenol	µg.l^{-1}	N	<0.50	<0.50	<0.50	<0.50
ORG-L02	2,4-dimethylphenol	µg.l^{-1}	N	2.5	<0.50	1.7	1.6
ORG-L02	2,4-dichlorophenol	µg.l^{-1}	N	<0.50	<0.50	<0.50	<0.50
ORG-L02	2,6-dichlorophenol	µg.l^{-1}	N	<0.50	<0.50	<0.50	<0.50
ORG-L02	4-chloro,3-methylphenol	µg.l^{-1}	N	<0.50	<0.50	<0.50	<0.50
ORG-L02	2,4,6-trichlorophenol	µg.l^{-1}	N	<0.50	<0.50	<0.50	<0.50
ORG-L02	2,4,5-trichlorophenol	µg.l^{-1}	N	<0.50	<0.50	<0.50	<0.50
1810	Alpha-BHC	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	<0.20
1810	Beta-BHC	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	<0.20
1810	Gamma-BHC	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	<0.20
1810	Delta-BHC	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	<0.20

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Code	Determinand	Units	*	Sample Identification			
Laboratory Sample Number:				**201021046**	**201021047**	**201021048**	**201021049**
Client Sample Reference:				W02	W28	W88	Pumping Station T1
Sample Date:				19/10/21	19/10/21	19/10/21	19/10/21
Sample Matrix:				Groundwater	Groundwater	Groundwater	Groundwater
1810	Heptachlor	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	<0.20
1810	Aldrin	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	<0.20
1810	Heptachlor Epoxide	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	<0.20
1810	Endosulphan	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	<0.20
1810	*pp*-DDE	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	<0.20
1810	Dieidrin	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	<0.20
1810	Endosulphan-I	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	<0.20
1810	*pp*-DDD	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	<0.20
1810	Endrin Aldehyde	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	<0.20
1810	Endosulphan Sulphate	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	<0.20
1820	Demeton-O	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	<0.20
1820	Phorate	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	<0.20
1820	Demeton-S	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	<0.20
1820	Disulfoton	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	<0.20
1820	Fenthion	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	<0.20
1820	Trichloronate	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	<0.20
1820	Prothiofos	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	<0.20
1820	Fensulphothion	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	<0.20
1820	Sulprofos	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	<0.20
1820	Azinphos-Methyl	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	<0.20
1820	Coumaphos	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	<0.20
1830	Atraton	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	<0.20
1830	Prometon	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	<0.20
1830	Simazine	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	<0.20
1830	Atrazine	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	<0.20
1830	Propazine	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	<0.20
1830	Terbuthylazine	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	<0.20
1830	Secbumeton	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	<0.20
1830	Simetryn	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	<0.20
1830	Ametryn	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	<0.20
1830	Prometryn	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	<0.20
1830	Terbutryn	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	<0.20

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UKAS TESTING
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Code	Determinand	Units	*	Sample Identification			
Laboratory Sample Number:				**201021046**	**201021047**	**201021048**	**201021049**
Client Sample Reference:				W02	W28	W88	Pumping Station T1
Sample Date:				19/10/21	19/10/21	19/10/21	19/10/21
Sample Matrix:				Groundwater	Groundwater	Groundwater	Groundwater
-	Non-Ionic Surfactants	µg.l^{-1}	S-N	-	-	-	<5.0
1770	Surfactants as MBAS	µg.l^{-1}	S-N	-	-	-	0.18

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Code	Determinand	Units	*	Sample Identification			
Laboratory Sample Number:				**201021050**	**201021051**	**201021052**	**201021053**
Client Sample Reference:				Unknown A	OW07	OW12	OW13
Sample Date:				19/10/21	19/10/21	19/10/21	19/10/21
Sample Matrix:				Groundwater	Groundwater	Groundwater	Groundwater
INORG-L12	Ammonia	$mg.l^{-1}$ as N	A	274	311	274	235
INORG-L11	Nitrate	$mg.l^{-1}$ as NO_3	A	<0.3	17.1	<0.3	142
INORG-L14	Nitrite	$mg.l^{-1}$ as NO_2	A	0.70	0.34	0.98	3.1
1450	Arsenic	$\mu g.l^{-1}$	S-A	<0.20	0.70	0.34	1.5
1450	Mercury	$\mu g.l^{-1}$	S-A	<0.05	<0.05	<0.05	<0.05
METALS-L	Barium	$\mu g.l^{-1}$	A	738	386	465	272
METALS-L	Boron	$\mu g.l^{-1}$	A	10,960	5,140	7,580	13,820
METALS-L	Cadmium	$\mu g.l^{-1}$	A	<0.9	<0.9	<0.9	<0.9
METALS-L	Chromium	$\mu g.l^{-1}$	A	12.4	7.1	7.1	5.0
METALS-L	Copper	$\mu g.l^{-1}$	A	<0.8	1.1	<0.8	<0.8
METALS-L	Iron	$\mu g.l^{-1}$	A	2,110	86.3	1,430	80.6
METALS-L	Lead	$\mu g.l^{-1}$	A	<4.1	4.8	<4.1	4.8
METALS-L	Manganese	$\mu g.l^{-1}$	A	1,080	470	428	321
METALS-L	Nickel	$\mu g.l^{-1}$	A	18.7	6.8	16.6	15.6
METALS-L	Zinc	$\mu g.l^{-1}$	A	<1.1	22.9	3.9	42.0
METALS-L	Potassium	$mg.l^{-1}$	A	180	155	175	167
INORG-L37	Hexavalent Chromium	$mg.l^{-1}$	N	<0.50	<0.50	<0.50	<0.50
1300	Free Cyanide	$mg.l^{-1}$	S-A	<0.050	<0.050	<0.050	<0.050
1300	Total Cyanide	$mg.l^{-1}$	S-A	<0.050	<0.050	<0.050	<0.050
INORG-L01	pH	pH units	A	7.7	7.7	7.4	7.7
INORG-L13	Chloride	$mg.l^{-1}$	A	602	360	304	250
INORG-L18	TOC	$mg.l^{-1}$	A	60.5	42.9	50.7	46.4
INORG-L20	Total Phenol	$mg.l^{-1}$	A	0.93	0.91	0.71	0.34
METALS-L	Sulphate	$mg.l^{-1}$	A	212	153	66.2	120
ORG-L17	Mecoprop	$\mu g.l^{-1}$	A	25.0	7.3	59.2	5.3
ORG-L01	TPH	$mg.l^{-1}$	N	0.7	0.3	1.5	0.3
1790	Dimethylphthalate	$\mu g.l^{-1}$	S-N	<0.50	<0.50	<0.50	<0.50
1790	Diethyl Phthalate	$\mu g.l^{-1}$	S-N	<0.50	<0.50	<0.50	<0.50
1790	Di-N-Bytul Phthalate	$\mu g.l^{-1}$	S-N	<0.50	<0.50	<0.50	<0.50
1790	Butylbenzyl Phthalate	$\mu g.l^{-1}$	S-N	<0.50	<0.50	<0.50	<0.50
1790	Bis(2-Ethylhexyl) Phthalate	$\mu g.l^{-1}$	S-N	<0.50	<0.50	<0.50	<0.50

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Code	Determinand	Units	*	Sample Identification			
Laboratory Sample Number:				**201021050**	**201021051**	**201021052**	**201021053**
Client Sample Reference:				Unknown A	OW07	OW12	OW13
Sample Date:				19/10/21	19/10/21	19/10/21	19/10/21
Sample Matrix:				Groundwater	Groundwater	Groundwater	Groundwater
1790	Di-N-Octyl Phthalate	µg.l^{-1}	S-N	<0.50	<0.50	<0.50	<0.50
ORG-L02	Naphthalene	µg.l^{-1}	A	0.24	<0.05	0.36	<0.05
ORG-L02	Acenaphthene	µg.l^{-1}	A	0.23	<0.05	2.5	<0.05
ORG-L02	4-nitrophenol	µg.l^{-1}	N	<0.05	<0.05	<0.05	<0.05
ORG-L02	2,3,4,6-tetrachlorophenol	µg.l^{-1}	N	<0.05	<0.05	<0.05	<0.05
ORG-L02	Fluorene	µg.l^{-1}	A	<0.05	<0.05	1.1	<0.05
ORG-L02	Phenanthrene	µg.l^{-1}	A	<0.05	<0.05	<0.05	<0.05
ORG-L02	Anthracene	µg.l^{-1}	A	<0.05	<0.05	<0.05	<0.05
ORG-L02	Fluoranthene	µg.l^{-1}	A	<0.05	<0.05	0.40	0.17
ORG-L02	Pyrene	µg.l^{-1}	A	<0.05	<0.05	<0.05	<0.05
ORG-L02	Benza(a)anthracene	µg.l^{-1}	A	<0.05	<0.05	<0.05	<0.05
ORG-L02	Chrysene	µg.l^{-1}	A	<0.05	<0.05	<0.05	<0.05
ORG-L02	Benzo(b)fluoranthene	µg.l^{-1}	A	<0.05	<0.05	<0.05	<0.05
ORG-L02	Benzo(a)pyrene	µg.l^{-1}	A	<0.05	<0.05	<0.05	<0.05
ORG-L02	Indeno(123-cd)pyrene	µg.l^{-1}	A	<0.05	<0.05	<0.05	<0.05
ORG-L02	Dibenza(ah)anthracene	µg.l^{-1}	A	<0.05	<0.05	<0.05	<0.05
ORG-L02	Benzo(ghi)perylene	µg.l^{-1}	A	<0.05	<0.05	<0.05	<0.05
ORG-L02	2-chlorophenol	µg.l^{-1}	N	<0.50	<0.50	<0.50	<0.50
ORG-L02	2-methylphenol	µg.l^{-1}	N	<0.50	<0.50	<0.50	<0.50
ORG-L02	4-methylphenol	µg.l^{-1}	N	<0.50	<0.50	<0.50	<0.50
ORG-L02	2 nitrophenol	µg.l^{-1}	N	<0.50	<0.50	<0.50	<0.50
ORG-L02	2,4-dimethylphenol	µg.l^{-1}	N	2.1	2.4	2.2	1.7
ORG-L02	2,4-dichlorophenol	µg.l^{-1}	N	<0.50	<0.50	<0.50	<0.50
ORG-L02	2,6-dichlorophenol	µg.l^{-1}	N	<0.50	<0.50	<0.50	<0.50
ORG-L02	4-chloro,3-methylphenol	µg.l^{-1}	N	<0.50	<0.50	<0.50	<0.50
ORG-L02	2,4,6-trichlorophenol	µg.l^{-1}	N	<0.50	<0.50	<0.50	<0.50
ORG-L02	2,4,5-trichlorophenol	µg.l^{-1}	N	2.0	<0.50	2.0	<0.50
1810	Alpha-BHC	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	<0.20
1810	Beta-BHC	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	<0.20
1810	Gamma-BHC	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	<0.20
1810	Delta-BHC	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	<0.20

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Code	Determinand	Units	*	Sample Identification			
Laboratory Sample Number:				**201021050**	**201021051**	**201021052**	**201021053**
Client Sample Reference:				Unknown A	OW07	OW12	OW13
Sample Date:				19/10/21	19/10/21	19/10/21	19/10/21
Sample Matrix:				Groundwater	Groundwater	Groundwater	Groundwater
1810	Heptachlor	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	<0.20
1810	Aldrin	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	<0.20
1810	Heptachlor Epoxide	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	<0.20
1810	Endosulphan	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	<0.20
1810	*pp*-DDE	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	<0.20
1810	Dieidrin	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	<0.20
1810	Endosulphan-I	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	<0.20
1810	*pp*-DDD	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	<0.20
1810	Endrin Aldehyde	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	<0.20
1810	Endosulphan Sulphate	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	<0.20
1820	Demeton-O	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	<0.20
1820	Phorate	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	<0.20
1820	Demeton-S	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	<0.20
1820	Disulfoton	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	<0.20
1820	Fenthion	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	<0.20
1820	Trichloronate	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	<0.20
1820	Prothiofos	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	<0.20
1820	Fensulphothion	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	<0.20
1820	Sulprofos	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	<0.20
1820	Azinphos-Methyl	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	<0.20
1820	Coumaphos	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	<0.20
1830	Atraton	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	<0.20
1830	Prometon	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	<0.20
1830	Simazine	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	<0.20
1830	Atrazine	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	<0.20
1830	Propazine	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	<0.20
1830	Terbuthylazine	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	<0.20
1830	Secbumeton	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	<0.20
1830	Simetryn	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	<0.20
1830	Ametryn	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	<0.20
1830	Prometryn	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	<0.20
1830	Terbutry	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	<0.20

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4303

Client: Cardiff City Council
FAO: Andrew Williamson

CERTIFICATE OF ANALYSIS 5126

Results of analysis of 38 samples received on the 10/09/21

Report Date
22nd November 2021

Code	Determinand	Units	*	Sample Identification			
Laboratory Sample Number:				**201021054**	**201021055**	**201021056**	**201021057**
Client Sample Reference:				OW 17	LW4	LW14	W07
Sample Date:				19/10/21	19/10/21	19/10/21	19/10/21
Sample Matrix:				Groundwater	Groundwater	Groundwater	Groundwater
INORG-L12	Ammonia	$mg.l^{-1}$ as N	A	65.7	14.8	15.4	6.6
INORG-L11	Nitrate	$mg.l^{-1}$ as NO_3	A	37.4	<0.3	32.5	3.4
INORG-L14	Nitrite	$mg.l^{-1}$ as NO_2	A	0.12	<0.003	4.5	0.31
1450	Arsenic	$\mu g.l^{-1}$	S-A	0.30	0.32	6.6	4.8
1450	Mercury	$\mu g.l^{-1}$	S-A	<0.05	<0.05	<0.05	<0.05
METALS-L	Barium	$\mu g.l^{-1}$	A	586	373	238	306
METALS-L	Boron	$\mu g.l^{-1}$	A	8,960	800	2,420	3,270
METALS-L	Cadmium	$\mu g.l^{-1}$	A	<0.9	<0.9	<0.9	<0.9
METALS-L	Chromium	$\mu g.l^{-1}$	A	7.5	3.5	8.8	1.1
METALS-L	Copper	$\mu g.l^{-1}$	A	18.2	<0.8	22.4	3.8
METALS-L	Iron	$\mu g.l^{-1}$	A	72.4	132	24.5	23.1
METALS-L	Lead	$\mu g.l^{-1}$	A	<4.1	<4.1	9.0	7.0
METALS-L	Manganese	$\mu g.l^{-1}$	A	561	1,380	56.3	358
METALS-L	Nickel	$\mu g.l^{-1}$	A	38.6	<1.5	12.6	<1.5
METALS-L	Zinc	$\mu g.l^{-1}$	A	347	<1.1	52.8	22.4
METALS-L	Potassium	$mg.l^{-1}$	A	203	14.1	192	17.5
INORG-L37	Hexavalent Chromium	$mg.l^{-1}$	N	<0.50	<0.50	<0.50	<0.50
1300	Free Cyanide	$mg.l^{-1}$	S-A	<0.050	<0.050	<0.050	<0.050
1300	Total Cyanide	$mg.l^{-1}$	S-A	<0.050	<0.050	<0.050	<0.050
INORG-L01	pH	pH units	A	6.9	7.6	8.0	7.7
INORG-L13	Chloride	$mg.l^{-1}$	A	930	697	399	49.8
INORG-L18	TOC	$mg.l^{-1}$	A	40.8	22.1	27.5	62.3
INORG-L20	Total Phenol	$mg.l^{-1}$	A	0.44	0.62	0.15	0.24
METALS-L	Sulphate	$mg.l^{-1}$	A	39.0	18.2	35.3	148
ORG-L17	Mecoprop	$\mu g.l^{-1}$	A	<0.1	<0.1	<0.1	9.9
ORG-L01	TPH	$mg.l^{-1}$	N	0.5	0.4	0.6	<0.2
1790	Dimethylphthalate	$\mu g.l^{-1}$	S-N	<0.50	<0.50	<0.50	<0.50
1790	Diethyl Phthalate	$\mu g.l^{-1}$	S-N	<0.50	<0.50	<0.50	<0.50
1790	Di-N-Bytul Phthalate	$\mu g.l^{-1}$	S-N	<0.50	<0.50	<0.50	<0.50
1790	Butylbenzyl Phthalate	$\mu g.l^{-1}$	S-N	<0.50	<0.50	<0.50	<0.50
1790	Bis(2-Ethylhexyl) Phthalate	$\mu g.l^{-1}$	S-N	<0.50	<0.50	<0.50	<0.50

* 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
Tests marked 'S - N' were sub-contracted to an approved laboratory without accreditation on the specific method
Any comments or interpretations are beyond the scope of UKAS accreditation

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Code	Determinand	Units	*	Sample Identification			
Laboratory Sample Number:				**201021054**	**201021055**	**201021056**	**201021057**
Client Sample Reference:				OW 17	LW4	LW14	W07
Sample Date:				19/10/21	19/10/21	19/10/21	19/10/21
Sample Matrix:				Groundwater	Groundwater	Groundwater	Groundwater
1790	Di-N-Octyl Phthalate	µg.l^{-1}	S-N	<0.50	<0.50	<0.50	<0.50
ORG-L02	Naphthalene	µg.l^{-1}	A	<0.05	<0.05	<0.05	<0.05
ORG-L02	Acenaphthene	µg.l^{-1}	A	0.47	<0.05	<0.05	<0.05
ORG-L02	4-nitrophenol	µg.l^{-1}	N	<0.05	<0.05	<0.05	<0.05
ORG-L02	2,3,4,6-tetrachlorophenol	µg.l^{-1}	N	<0.05	<0.05	<0.05	<0.05
ORG-L02	Fluorene	µg.l^{-1}	A	<0.05	<0.05	<0.05	<0.05
ORG-L02	Phenanthrene	µg.l^{-1}	A	0.08	<0.05	<0.05	<0.05
ORG-L02	Anthracene	µg.l^{-1}	A	<0.05	<0.05	<0.05	<0.05
ORG-L02	Fluoranthene	µg.l^{-1}	A	<0.05	<0.05	<0.05	<0.05
ORG-L02	Pyrene	µg.l^{-1}	A	<0.05	<0.05	<0.05	<0.05
ORG-L02	Benza(a)anthracene	µg.l^{-1}	A	<0.05	<0.05	<0.05	<0.05
ORG-L02	Chrysene	µg.l^{-1}	A	<0.05	<0.05	<0.05	<0.05
ORG-L02	Benzo(b)fluoranthene	µg.l^{-1}	A	<0.05	<0.05	<0.05	<0.05
ORG-L02	Benzo(a)pyrene	µg.l^{-1}	A	<0.05	<0.05	<0.05	<0.05
ORG-L02	Indeno(123-cd)pyrene	µg.l^{-1}	A	<0.05	<0.05	<0.05	<0.05
ORG-L02	Dibenza(ah)anthracene	µg.l^{-1}	A	<0.05	<0.05	<0.05	<0.05
ORG-L02	Benzo(ghi)perylene	µg.l^{-1}	A	<0.05	<0.05	<0.05	<0.05
ORG-L02	2-chlorophenol	µg.l^{-1}	N	<0.50	<0.50	<0.50	<0.50
ORG-L02	2-methylphenol	µg.l^{-1}	N	<0.50	<0.50	<0.50	<0.50
ORG-L02	4-methylphenol	µg.l^{-1}	N	<0.50	<0.50	<0.50	<0.50
ORG-L02	2 nitrophenol	µg.l^{-1}	N	<0.50	<0.50	<0.50	<0.50
ORG-L02	2,4-dimethylphenol	µg.l^{-1}	N	<0.50	<0.50	<0.50	<0.50
ORG-L02	2,4-dichlorophenol	µg.l^{-1}	N	<0.50	<0.50	<0.50	<0.50
ORG-L02	2,6-dichlorophenol	µg.l^{-1}	N	<0.50	<0.50	<0.50	<0.50
ORG-L02	4-chloro,3-methylphenol	µg.l^{-1}	N	<0.50	<0.50	<0.50	<0.50
ORG-L02	2,4,6-trichlorophenol	µg.l^{-1}	N	<0.50	<0.50	<0.50	<0.50
ORG-L02	2,4,5-trichlorophenol	µg.l^{-1}	N	<0.50	<0.50	<0.50	<0.50
1810	Alpha-BHC	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	<0.20
1810	Beta-BHC	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	<0.20
1810	Gamma-BHC	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	<0.20
1810	Delta-BHC	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	<0.20

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Client Sample Reference:				OW 17	LW4	LW14	W07
Sample Date:				19/10/21	19/10/21	19/10/21	19/10/21
Sample Matrix:				Groundwater	Groundwater	Groundwater	Groundwater
1810	Heptachlor	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	<0.20
1810	Aldrin	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	<0.20
1810	Heptachlor Epoxide	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	<0.20
1810	Endosulphan	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	<0.20
1810	*pp*-DDE	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	<0.20
1810	Dieidrin	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	<0.20
1810	Endosulphan-I	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	<0.20
1810	*pp*-DDD	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	<0.20
1810	Endrin Aldehyde	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	<0.20
1810	Endosulphan Sulphate	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	<0.20
1820	Demeton-O	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	<0.20
1820	Phorate	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	<0.20
1820	Demeton-S	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	<0.20
1820	Disulfoton	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	<0.20
1820	Fenthion	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	<0.20
1820	Trichloronate	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	<0.20
1820	Prothiofos	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	<0.20
1820	Fensulphothion	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	<0.20
1820	Sulprofos	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	<0.20
1820	Azinphos-Methyl	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	<0.20
1820	Coumaphos	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	<0.20
1830	Atraton	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	<0.20
1830	Prometon	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	<0.20
1830	Simazine	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	<0.20
1830	Atrazine	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	<0.20
1830	Propazine	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	<0.20
1830	Terbuthylazine	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	<0.20
1830	Secbumeton	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	<0.20
1830	Simetryn	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	<0.20
1830	Ametryn	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	<0.20
1830	Prometryn	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	<0.20
1830	Terbutry	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	<0.20

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UKAS TESTING
4303

Client: Cardiff City Council
FAO: Andrew Williamson

CERTIFICATE OF ANALYSIS 5126

Results of analysis of 38 samples received on the 10/09/21

Report Date
22nd November 2021

Code	Determinand	Units	*	Sample Identification			
Laboratory Sample Number:				**201021058**	**201021059**	**201021060**	**201021061**
Client Sample Reference:				W16	W18	W20	LW18
Sample Date:				19/10/21	19/10/21	19/10/21	19/10/21
Sample Matrix:				Groundwater	Groundwater	Groundwater	Groundwater
INORG-L12	Ammonia	$mg.l^{-1}$ as N	A	14.8	126	200	87.9
INORG-L11	Nitrate	$mg.l^{-1}$ as NO_3	A	11.7	1.7	2.2	33.3
INORG-L14	Nitrite	$mg.l^{-1}$ as NO_2	A	42.2	0.026	0.013	2.2
1450	Arsenic	$\mu g.l^{-1}$	S-A	0.42	0.57	0.51	1.1
1450	Mercury	$\mu g.l^{-1}$	S-A	<0.05	<0.05	<0.05	<0.05
METALS-L	Barium	$\mu g.l^{-1}$	A	486	1,070	663	442
METALS-L	Boron	$\mu g.l^{-1}$	A	1,090	1,670	8,240	2,560
METALS-L	Cadmium	$\mu g.l^{-1}$	A	<0.9	<0.9	<0.9	<0.9
METALS-L	Chromium	$\mu g.l^{-1}$	A	2.2	3.5	5.9	4.9
METALS-L	Copper	$\mu g.l^{-1}$	A	0.9	<0.8	3.7	12.1
METALS-L	Iron	$\mu g.l^{-1}$	A	19.0	459	795	28.8
METALS-L	Lead	$\mu g.l^{-1}$	A	<4.1	9.9	14.4	<4.1
METALS-L	Manganese	$\mu g.l^{-1}$	A	1,210	933	831	327
METALS-L	Nickel	$\mu g.l^{-1}$	A	<1.5	<1.5	8.3	12.4
METALS-L	Zinc	$\mu g.l^{-1}$	A	21.7	<1.1	6.0	41.4
METALS-L	Potassium	$mg.l^{-1}$	A	20.7	57.9	133	130
INORG-L37	Hexavalent Chromium	$mg.l^{-1}$	N	<0.50	<0.50	<0.50	<0.50
1300	Free Cyanide	$mg.l^{-1}$	S-A	<0.050	<0.050	<0.050	<0.050
1300	Total Cyanide	$mg.l^{-1}$	S-A	<0.050	<0.050	<0.050	<0.050
INORG-L01	pH	pH units	A	7.8	7.6	7.7	7.9
INORG-L13	Chloride	$mg.l^{-1}$	A	1,150	170	602	215
INORG-L18	TOC	$mg.l^{-1}$	A	78.9	120	90.7	60.5
INORG-L20	Total Phenol	$mg.l^{-1}$	A	0.54	0.86	0.29	0.72
METALS-L	Sulphate	$mg.l^{-1}$	A	23.0	5.0	32.2	55.1
ORG-L17	Mecoprop	$\mu g.l^{-1}$	A	<0.1	<0.1	<0.1	7.0
ORG-L01	TPH	$mg.l^{-1}$	N	<0.2	0.3	0.3	1.2
1790	Dimethylphthalate	$\mu g.l^{-1}$	S-N	<0.50	<0.50	<0.50	<0.50
1790	Diethyl Phthalate	$\mu g.l^{-1}$	S-N	<0.50	<0.50	<0.50	<0.50
1790	Di-N-Bytul Phthalate	$\mu g.l^{-1}$	S-N	<0.50	<0.50	<0.50	<0.50
1790	Butylbenzyl Phthalate	$\mu g.l^{-1}$	S-N	<0.50	<0.50	<0.50	<0.50
1790	Bis(2-Ethylhexyl) Phthalate	$\mu g.l^{-1}$	S-N	<0.50	<0.50	<0.50	<0.50

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Code	Determinand	Units	*	Sample Identification			
Laboratory Sample Number:				**201021058**	**201021059**	**201021060**	**201021061**
Client Sample Reference:				W16	W18	W20	LW18
Sample Date:				19/10/21	19/10/21	19/10/21	19/10/21
Sample Matrix:				Groundwater	Groundwater	Groundwater	Groundwater
1790	Di-N-Octyl Phthalate	µg.l^{-1}	S-N	<0.50	<0.50	<0.50	<0.50
ORG-L02	Naphthalene	µg.l^{-1}	A	<0.05	<0.05	<0.05	0.21
ORG-L02	Acenaphthene	µg.l^{-1}	A	<0.05	<0.05	<0.05	<0.05
ORG-L02	4-nitrophenol	µg.l^{-1}	N	<0.05	<0.05	<0.05	<0.05
ORG-L02	2,3,4,6-tetrachlorophenol	µg.l^{-1}	N	<0.05	<0.05	<0.05	<0.05
ORG-L02	Fluorene	µg.l^{-1}	A	<0.05	<0.05	<0.05	<0.05
ORG-L02	Phenanthrene	µg.l^{-1}	A	<0.05	<0.05	<0.05	<0.05
ORG-L02	Anthracene	µg.l^{-1}	A	<0.05	<0.05	<0.05	<0.05
ORG-L02	Fluoranthene	µg.l^{-1}	A	<0.05	<0.05	<0.05	<0.05
ORG-L02	Pyrene	µg.l^{-1}	A	<0.05	<0.05	<0.05	<0.05
ORG-L02	Benza(a)anthracene	µg.l^{-1}	A	<0.05	<0.05	<0.05	<0.05
ORG-L02	Chrysene	µg.l^{-1}	A	<0.05	<0.05	<0.05	<0.05
ORG-L02	Benzo(b)fluoranthene	µg.l^{-1}	A	<0.05	<0.05	<0.05	<0.05
ORG-L02	Benzo(a)pyrene	µg.l^{-1}	A	<0.05	<0.05	<0.05	<0.05
ORG-L02	Indeno(123-cd)pyrene	µg.l^{-1}	A	<0.05	<0.05	<0.05	<0.05
ORG-L02	Dibenza(ah)anthracene	µg.l^{-1}	A	<0.05	<0.05	<0.05	<0.05
ORG-L02	Benzo(ghi)perylene	µg.l^{-1}	A	<0.05	<0.05	<0.05	<0.05
ORG-L02	2-chlorophenol	µg.l^{-1}	N	<0.50	<0.50	<0.50	<0.50
ORG-L02	2-methylphenol	µg.l^{-1}	N	<0.50	<0.50	<0.50	<0.50
ORG-L02	4-methylphenol	µg.l^{-1}	N	<0.50	<0.50	<0.50	<0.50
ORG-L02	2 nitrophenol	µg.l^{-1}	N	<0.50	<0.50	<0.50	<0.50
ORG-L02	2,4-dimethylphenol	µg.l^{-1}	N	<0.50	1.9	1.9	2.3
ORG-L02	2,4-dichlorophenol	µg.l^{-1}	N	<0.50	<0.50	<0.50	<0.50
ORG-L02	2,6-dichlorophenol	µg.l^{-1}	N	<0.50	<0.50	<0.50	<0.50
ORG-L02	4-chloro,3-methylphenol	µg.l^{-1}	N	<0.50	<0.50	<0.50	<0.50
ORG-L02	2,4,6-trichlorophenol	µg.l^{-1}	N	<0.50	<0.50	<0.50	<0.50
ORG-L02	2,4,5-trichlorophenol	µg.l^{-1}	N	<0.50	<0.50	<0.50	2.0
1810	Alpha-BHC	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	<0.20
1810	Beta-BHC	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	<0.20
1810	Gamma-BHC	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	<0.20
1810	Delta-BHC	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	<0.20

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Code	Determinand	Units	*	Sample Identification			
Laboratory Sample Number:				**201021058**	**201021059**	**201021060**	**201021061**
Client Sample Reference:				W16	W18	W20	LW18
Sample Date:				19/10/21	19/10/21	19/10/21	19/10/21
Sample Matrix:				Groundwater	Groundwater	Groundwater	Groundwater
1810	Heptachlor	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	<0.20
1810	Aldrin	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	<0.20
1810	Heptachlor Epoxide	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	<0.20
1810	Endosulphan	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	<0.20
1810	*pp*-DDE	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	<0.20
1810	Dieidrin	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	<0.20
1810	Endosulphan-I	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	<0.20
1810	*pp*-DDD	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	<0.20
1810	Endrin Aldehyde	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	<0.20
1810	Endosulphan Sulphate	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	<0.20
1820	Demeton-O	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	<0.20
1820	Phorate	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	<0.20
1820	Demeton-S	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	<0.20
1820	Disulfoton	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	<0.20
1820	Fenthion	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	<0.20
1820	Trichloronate	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	<0.20
1820	Prothiofos	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	<0.20
1820	Fensulphothion	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	<0.20
1820	Sulprofos	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	<0.20
1820	Azinphos-Methyl	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	<0.20
1820	Coumaphos	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	<0.20
1830	Atraton	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	<0.20
1830	Prometon	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	<0.20
1830	Simazine	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	<0.20
1830	Atrazine	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	<0.20
1830	Propazine	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	<0.20
1830	Terbuthylazine	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	<0.20
1830	Secbumeton	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	<0.20
1830	Simetryn	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	<0.20
1830	Ametryn	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	<0.20
1830	Prometryn	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	<0.20
1830	Terbutry	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	<0.20

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Code	Determinand	Units	*	Sample Identification			
Laboratory Sample Number:				**201021062**	**201021063**	**201021064**	-
Client Sample Reference:				W17	W24	LW16	-
Sample Date:				19/10/21	19/10/21	19/10/21	-
Sample Matrix:				Groundwater	Groundwater	Groundwater	-
INORG-L12	Ammonia	$mg.l^{-1}$ as N	A	205	239	228	-
INORG-L11	Nitrate	$mg.l^{-1}$ as NO_3	A	0.49	3.8	<0.3	-
INORG-L14	Nitrite	$mg.l^{-1}$ as NO_2	A	0.17	0.23	<0.003	-
1450	Arsenic	$\mu g.l^{-1}$	S-A	1.5	1.4	1.4	-
1450	Mercury	$\mu g.l^{-1}$	S-A	<0.05	<0.05	<0.05	-
METALS-L	Barium	$\mu g.l^{-1}$	A	489	497	490	-
METALS-L	Boron	$\mu g.l^{-1}$	A	7,400	7,400	3,960	-
METALS-L	Cadmium	$\mu g.l^{-1}$	A	<0.9	<0.9	<0.9	-
METALS-L	Chromium	$\mu g.l^{-1}$	A	4.8	4.4	6.5	-
METALS-L	Copper	$\mu g.l^{-1}$	A	<0.8	4.3	<0.8	-
METALS-L	Iron	$\mu g.l^{-1}$	A	485	383	388	-
METALS-L	Lead	$\mu g.l^{-1}$	A	4.2	<4.1	9.2	-
METALS-L	Manganese	$\mu g.l^{-1}$	A	277	282	838	-
METALS-L	Nickel	$\mu g.l^{-1}$	A	3.4	5.4	2.6	-
METALS-L	Zinc	$\mu g.l^{-1}$	A	5.1	9.0	1.4	-
METALS-L	Potassium	$mg.l^{-1}$	A	141	138	120	-
INORG-L37	Hexavalent Chromium	$mg.l^{-1}$	N	<0.50	<0.50	<0.50	-
1300	Free Cyanide	$mg.l^{-1}$	S-A	<0.050	<0.050	<0.050	-
1300	Total Cyanide	$mg.l^{-1}$	S-A	<0.050	<0.050	<0.050	-
INORG-L01	pH	pH units	A	7.8	7.5	7.4	-
INORG-L13	Chloride	$mg.l^{-1}$	A	961	929	252	-
INORG-L18	TOC	$mg.l^{-1}$	A	35.9	40.7	51.1	-
INORG-L20	Total Phenol	$mg.l^{-1}$	A	0.74	0.64	0.54	-
METALS-L	Sulphate	$mg.l^{-1}$	A	9.0	9.7	7.5	-
ORG-L17	Mecoprop	$\mu g.l^{-1}$	A	3.8	<0.1	<0.1	-
ORG-L01	TPH	$mg.l^{-1}$	N	0.3	0.3	0.6	-
1790	Dimethylphthalate	$\mu g.l^{-1}$	S-N	<0.50	<0.50	<0.50	-
1790	Diethyl Phthalate	$\mu g.l^{-1}$	S-N	<0.50	<0.50	<0.50	-
1790	Di-N-Bytul Phthalate	$\mu g.l^{-1}$	S-N	<0.50	<0.50	<0.50	-
1790	Butylbenzyl Phthalate	$\mu g.l^{-1}$	S-N	<0.50	<0.50	<0.50	-
1790	Bis(2-Ethylhexyl) Phthalate	$\mu g.l^{-1}$	S-N	<0.50	<0.50	<0.50	-

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Code	Determinand	Units	*	Sample Identification			
Laboratory Sample Number:				**201021062**	**201021063**	**201021064**	-
Client Sample Reference:				W16	W18	LW16	-
Sample Date:				19/10/21	19/10/21	19/10/21	-
Sample Matrix:				Groundwater	Groundwater	Groundwater	-
1790	Di-N-Octyl Phthalate	µg.l^{-1}	S-N	<0.50	<0.50	<0.50	-
ORG-L02	Naphthalene	µg.l^{-1}	A	<0.05	<0.05	<0.05	-
ORG-L02	Acenaphthene	µg.l^{-1}	A	<0.05	<0.05	<0.05	-
ORG-L02	4-nitrophenol	µg.l^{-1}	N	<0.05	<0.05	<0.05	-
ORG-L02	2,3,4,6-tetrachlorophenol	µg.l^{-1}	N	<0.05	<0.05	<0.05	-
ORG-L02	Fluorene	µg.l^{-1}	A	<0.05	<0.05	<0.05	-
ORG-L02	Phenanthrene	µg.l^{-1}	A	<0.05	<0.05	<0.05	-
ORG-L02	Anthracene	µg.l^{-1}	A	<0.05	<0.05	<0.05	-
ORG-L02	Fluoranthene	µg.l^{-1}	A	<0.05	<0.05	<0.05	-
ORG-L02	Pyrene	µg.l^{-1}	A	0.85	<0.05	<0.05	-
ORG-L02	Benza(a)anthracene	µg.l^{-1}	A	<0.05	<0.05	<0.05	-
ORG-L02	Chrysene	µg.l^{-1}	A	<0.05	<0.05	<0.05	-
ORG-L02	Benzo(b)fluoranthene	µg.l^{-1}	A	<0.05	<0.05	<0.05	-
ORG-L02	Benzo(a)pyrene	µg.l^{-1}	A	<0.05	<0.05	<0.05	-
ORG-L02	Indeno(123-cd)pyrene	µg.l^{-1}	A	<0.05	<0.05	<0.05	-
ORG-L02	Dibenza(ah)anthracene	µg.l^{-1}	A	<0.05	<0.05	<0.05	-
ORG-L02	Benzo(ghi)perylene	µg.l^{-1}	A	<0.05	<0.05	<0.05	-
ORG-L02	2-chlorophenol	µg.l^{-1}	N	<0.50	<0.50	<0.50	-
ORG-L02	2-methylphenol	µg.l^{-1}	N	<0.50	<0.50	<0.50	-
ORG-L02	4-methylphenol	µg.l^{-1}	N	<0.50	<0.50	<0.50	-
ORG-L02	2 nitrophenol	µg.l^{-1}	N	<0.50	<0.50	<0.50	-
ORG-L02	2,4-dimethylphenol	µg.l^{-1}	N	1.4	<0.50	2.2	-
ORG-L02	2,4-dichlorophenol	µg.l^{-1}	N	<0.50	<0.50	<0.50	-
ORG-L02	2,6-dichlorophenol	µg.l^{-1}	N	<0.50	<0.50	<0.50	-
ORG-L02	4-chloro,3-methylphenol	µg.l^{-1}	N	<0.50	<0.50	<0.50	-
ORG-L02	2,4,6-trichlorophenol	µg.l^{-1}	N	<0.50	<0.50	<0.50	-
ORG-L02	2,4,5-trichlorophenol	µg.l^{-1}	N	<0.50	<0.50	<0.50	-
1810	Alpha-BHC	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	-
1810	Beta-BHC	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	-
1810	Gamma-BHC	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	-
1810	Delta-BHC	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	-

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Code	Determinand	Units	*	Sample Identification			
Laboratory Sample Number:				**201021062**	**201021063**	**201021064**	-
Client Sample Reference:				W16	W18	LW16	-
Sample Date:				19/10/21	19/10/21	19/10/21	-
Sample Matrix:				Groundwater	Groundwater	Groundwater	-
1810	Heptachlor	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	-
1810	Aldrin	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	-
1810	Heptachlor Epoxide	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	-
1810	Endosulphan	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	-
1810	*pp*-DDE	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	-
1810	Dieidrin	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	-
1810	Endosulphan-I	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	-
1810	*pp*-DDD	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	-
1810	Endrin Aldehyde	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	-
1810	Endosulphan Sulphate	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	-
1820	Demeton-O	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	-
1820	Phorate	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	-
1820	Demeton-S	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	-
1820	Disulfoton	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	-
1820	Fenthion	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	-
1820	Trichloronate	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	-
1820	Prothiofos	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	-
1820	Fensulphothion	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	-
1820	Sulprofos	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	-
1820	Azinphos-Methyl	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	-
1820	Coumaphos	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	-
1830	Atraton	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	-
1830	Prometon	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	-
1830	Simazine	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	-
1830	Atrazine	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	-
1830	Propazine	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	-
1830	Terbuthylazine	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	-
1830	Secbumeton	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	-
1830	Simetryn	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	-
1830	Ametryn	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	-
1830	Prometryn	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	-
1830	Terbutry	µg.l^{-1}	S-N	<0.20	<0.20	<0.20	-

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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	ISO 17025
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	ISO 17025
Determination of Mineral Oil in Water by GC-MS (In-house method)	ORG-L01	None
Determination of Cyanide in water by discrete analyser (Sub-contracted method)	1300	ISO 17025
Determination of Phenol in water by discrete analyser (In-house method)	INORG-L20	ISO 17025
Determination of metals in waters by ICP-MS (Sub-Contracted method)	1450	None
Determination of Phenol(SVOC) in water by GC-MS (In-house method)	ORG-L02	ISO 17025
Determination of TPH in Water by GC-MS (In-house method)	ORG-L01	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
Determination of VOCs in waters by GC-MS (Sub-Contracted method)	1760	None

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Client: Cardiff City Council
FAO: Andrew Williamson

CERTIFICATE OF ANALYSIS 5126

Results of analysis of 38 samples received on the 10/09/21

Report Date
22nd November 2021

Analytical Method	Method Code	Accreditation Status
Determination of Organochlorine Pesticides in Water by GC-MS (In-house method)	ORG-L19	None
Determination of Organo-N,P-Pesticides in Water by GC-MS (Sub-contracted method)	1820, 1830	None

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.

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

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