

Castlepollard Quarry, Deerpark, Castlepollard, Co. Westmeath

Castlepollard Quarry

Environmental Impact Assessment Report

Appendix 7.3

Laboratory Certificates of Analysis

February 2022



Part of the Breedon Group

Prepared by:

J Sheils Planning & Environmental Ltd

31 Athlumney Castle, Navan, Co. Meath

Westmeath County Council Planning Authority - Inspection Purposes Only!



ALS Environmental Ltd

Torrington Avenue
Coventry
CV4 9GU

T: +44 (0)24 7642 1213
F: +44 (0)24 7685 6575
www.alsenvironmental.co.uk

Mr Breheny
Envirologic
Envirologic Ltd.
78 St Peters Terrace
Howth
Dublin D13 H008
South Dublin

12 August 2021

Test Report: COV/2173281/2021

Dear Mr Breheny

Analysis of your sample(s) received on 29 July 2021 is now complete and we have pleasure in enclosing the appropriate test report(s).

An invoice for the analysis carried out will be sent under separate cover.

Should you have any queries regarding this report(s) or any part of our service, please contact Customer Services on +44 (0)24 7642 1213 who will be happy to discuss your requirements.

If you would like to arrange any further analysis, please contact Customer Services. To arrange container delivery or sample collection, please call the Couriers Department directly on 024 7685 6562.

Thank you for using ALS Environmental Ltd and we look forward to receiving your next samples.

Yours Sincerely,

Signed:

Name:

D. Lewis

Title:

Technical Inorganic Manager



EMS 675527

OHS 542058

Report Summary

Mr Patrick Breheny
Envirologic
Envirologic Ltd.
78 St Peters Terrace
Howth
Dublin
South Dublin
D13 H008

ANALYSED BY



Date of Issue: **12 August 2021**

Report Number: **COV/2173281/2021**

Issue **1**

This issue replaces
all previous issues

Job Description: Micro analysis

Number of Samples
included in this report **4**

Job Received: **29 July 2021**

Number of Test Results
included in this report **284**

Analysis Commenced: **31 July 2021**

Signed: 

Name: **D. Lewis**

Date: **12 August 2021**

Title: **Technical Inorganic Manager**

ALS Environmental Ltd was not responsible for sampling unless otherwise stated.

Information on the methods of analysis and performance characteristics are available on request.

Opinions and interpretations expressed herein are outside the scope of UKAS accreditation. The results relate only to the items tested and where relevant sampled.

Tests marked 'Not UKAS Accredited' in this Report/Certificate are not included in the UKAS Accreditation Schedule for our laboratory.

This test report is not a statement of conformity to any specification or standard.

This communication has been sent to you by ALS Environmental Ltd. Registered in England and Wales. Registration No. 02148934. Registered Office: ALS Environmental Limited, Torrington Avenue, Coventry, CV4 9GU.

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Certificate of Analysis

ANALYSED BY



Report Number: **COV/2173281/2021**
 Laboratory Number: **20690184**
 Sample Source: **Envirologic**
 Sample Point Description:
 Sample Description: **MW2**
 Sample Matrix: **Ground Water**
 Sample Date/Time: **29 July 2021**
 Sample Received: **29 July 2021**
 Analysis Complete: **12 August 2021**

Issue **1**
 Sample **1** of **4**

Test Description	Result	Units	Analysis Date	Accreditation	Method
Phosphate, Ortho as P LL	<0.02	mg/l	31/07/2021	N Cov	WAS067
Magnesium, Total as Mg	7630	ug/l	05/08/2021	Y Cov	WAS049
Potassium, Total as K	1280	ug/l	05/08/2021	Y Cov	WAS049
Sodium, Total as Na	7780	ug/l	05/08/2021	Y Cov	WAS049
Calcium, Total as Ca	116000	ug/l	05/08/2021	Y Cov	WAS049
Ethylbenzene	<1	ug/l	03/08/2021	N Cov	GEO45
Benzene	<1	ug/l	03/08/2021	N Cov	GEO45
Toluene	<1	ug/l	03/08/2021	N Cov	GEO45
m&p-Xylene	<1	ug/l	03/08/2021	N Cov	GEO45
o-Xylene	<1	ug/l	03/08/2021	N Cov	GEO45
BODS + ATU	3	mg/l O2	05/08/2021	N S	SUBCON
Total Coliforms (Colilert)	10	mpn/100ml	02/08/2021	N S	SUBCON
Faecal Coliforms (Colilert)	0	mpn/100ml	02/08/2021	N S	SUBCON
Aluminium , Total as Al	227	ug/l	05/08/2021	Y Cov	WAS049
Cadmium , Total as Cd	<0.600	ug/l	05/08/2021	Y Cov	WAS049
Chromium , Total as Cr	3.70	ug/l	05/08/2021	Y Cov	WAS049
Iron, Total as Fe	3600	ug/l	05/08/2021	Y Cov	WAS049
Manganese , Total as Mn	499	ug/l	05/08/2021	Y Cov	WAS049
Mercury, Total as Hg	0.03	ug/l	10/08/2021	Y Cov	WAS013
Zinc , Total as Zn	2640	ug/l	05/08/2021	Y Cov	WAS049
Alkalinity as CaCO3	300	mg/l	31/07/2021	Y Cov	WAS025
Bicarbonate Alkalinity	300	mg/l	31/07/2021	N Cov	WAS025
Total Hardness as CaCO3	321	mg/l	05/08/2021	Y Cov	WAS049

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Report Number: **COV/2173281/2021**
Laboratory Number: **20690184**
Sample Source: **Envirologic**
Sample Point Description:
Sample Description: **MW2**
Sample Matrix: **Ground Water**
Sample Date/Time: **29 July 2021**
Sample Received: **29 July 2021**
Analysis Complete: **12 August 2021**

Issue **1**
Sample **1** of **4**

Test Description	Result	Units	Analysis Date	Accreditation	Method
Chloride as Cl	16.2	mg/l	05/08/2021	N Cov	WAS036
Nitrite as N	<0.08	mg/l	05/08/2021	N Cov	WAS036
Nitrate as N	<0.7	mg/l	05/08/2021	N Cov	WAS036
Phosphorus , Total as P	0.14	mg/l	05/08/2021	Y Cov	WAS049
Sulphate as SO4	51.7	mg/l	05/08/2021	N Cov	WAS036
Total Suspended Solids	67.0	mg/l	12/08/2021	Y Cov	WAS006
TOC as C	5.1	mg/l	02/08/2021	Y Cov	WAS005
Aliphatic VPH >C5 - C6	<10	ug/l	03/08/2021	Y Cov	GEO45
Aliphatic VPH >C6 - C8	<10	ug/l	03/08/2021	Y Cov	GEO45
Aliphatic VPH >C8 - 10	<10	ug/l	03/08/2021	Y Cov	GEO45
Aliphatic VPH >C5 - C10	<10	ug/l	03/08/2021	Y Cov	GEO45
Aromatic VPH >C5 - C7	<10	ug/l	03/08/2021	Y Cov	GEO45
Aromatic VPH >C7 - C8	<10	ug/l	03/08/2021	Y Cov	GEO45
Aromatic VPH >C8 - C10	<10	ug/l	03/08/2021	Y Cov	GEO45
Aromatic VPH >C5 - C10	<10	ug/l	03/08/2021	Y Cov	GEO45
VPH >C5 - C10	<10	ug/l	03/08/2021	Y Cov	GEO45
Aliphatic EPH >C10 - C12	<10	ug/l	05/08/2021	N Cov	GEO46
Aliphatic EPH >C12 - C16	<10	ug/l	05/08/2021	N Cov	GEO46
Aliphatic EPH >C16 - C35	<10	ug/l	05/08/2021	N Cov	GEO46
Aliphatic EPH >C35 - C44	<10	ug/l	05/08/2021	N Cov	GEO46
Aliphatic EPH >C10 - C44	<10	ug/l	05/08/2021	N Cov	GEO46
Aromatic EPH >C10 - C12	<10	ug/l	05/08/2021	N Cov	GEO46
Aromatic EPH >C12 - C16	<10	ug/l	05/08/2021	N Cov	GEO46
Aromatic EPH >C16 - C21	<10	ug/l	05/08/2021	N Cov	GEO46

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Report Number: **COV/2173281/2021**
Laboratory Number: **20690184**
Sample Source: **Envirologic**
Sample Point Description:
Sample Description: **MW2**
Sample Matrix: **Ground Water**
Sample Date/Time: **29 July 2021**
Sample Received: **29 July 2021**
Analysis Complete: **12 August 2021**

Issue **1**
Sample **1** of **4**

Test Description	Result	Units	Analysis Date	Accreditation	Method
Aromatic EPH >C21 - C35	<10	ug/l	05/08/2021	N Cov	GEO46
Aromatic EPH >C35 - C44	<10	ug/l	05/08/2021	N Cov	GEO46
Aromatic EPH >C10 - C44	<10	ug/l	05/08/2021	N Cov	GEO46
EPH >C10 - C44	<10	ug/l	05/08/2021	N Cov	GEO46
Aliphatic VPH/EPH >C5 - C44	<10	ug/l	05/08/2021	N Cov	GEO45/GEO46
Aromatic VPH/EPH >C5 - C44	<10	ug/l	05/08/2021	N Cov	GEO45/GEO46
VPH/EPH >C5 - C44	<10	ug/l	05/08/2021	N Cov	GEO45/GEO46
Naphthalene	0.047	ug/l	03/08/2021	Y Cov	GEO81
Acenaphthylene	<0.010	ug/l	03/08/2021	Y Cov	GEO81
Acenaphthene	0.011	ug/l	03/08/2021	Y Cov	GEO81
Fluorene	0.016	ug/l	03/08/2021	Y Cov	GEO81
Phenanthrene	0.030	ug/l	03/08/2021	Y Cov	GEO81
Anthracene	<0.010	ug/l	03/08/2021	Y Cov	GEO81
Fluoranthene	0.016	ug/l	03/08/2021	Y Cov	GEO81
Pyrene	0.013	ug/l	03/08/2021	Y Cov	GEO81
Benzo(a)anthracene	<0.010	ug/l	03/08/2021	Y Cov	GEO81
Chrysene	<0.010	ug/l	03/08/2021	Y Cov	GEO81
Benzo(b)fluoranthene	0.012	ug/l	03/08/2021	Y Cov	GEO81
Benzo(k)fluoranthene	0.014	ug/l	03/08/2021	Y Cov	GEO81
Benzo(a)pyrene	0.014	ug/l	03/08/2021	Y Cov	GEO81
Indeno(123cd)pyrene	0.010	ug/l	03/08/2021	Y Cov	GEO81
Dibenzo(ah)anthracene	<0.010	ug/l	03/08/2021	Y Cov	GEO81
Benzo(ghi)perylene	<0.010	ug/l	03/08/2021	Y Cov	GEO81
PAH, Total of 16	0.184	ug/l	03/08/2021	N Cov	GEO81

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Analyst Comments for 20690184:

This sample has been analysed for Total Suspended Solids, Nitrite as N, Nitrate as N outside recommended stability times. It is therefore possible that the results provided may be compromised. The sample for EPH was analysed in a container inappropriate for this parameter. It is therefore possible that the results provided may be compromised.

This issue replaces all previous issues

Accreditation Codes: Y = UKAS / ISO17025 Accredited, N = Not UKAS / ISO17025 Accredited, M = MCERTS.

Analysed at: CHE = Chester(CH5 3US), COV = Coventry(CV4 9GU), OTT = Otterbourne(SO21 2RU), S = Subcontracted, TRB = Subcontracted to Trowbridge(BA14 0XD), WAK = Wakefield(WF5 9TG), F = Data supplied by customer.

For Microbiological determinands 0 or ND=Not Detected, For Legionella ND=Not Detected in volume of sample filtered.

I/S=Insufficient sample For soil/sludge samples: AR=As received, DW=Dry weight.

Signed: 

Name: **D. Lewis**

Date: **12 August 2021**

Title: **Technical Inorganic Manager**

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Certificate of Analysis

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Report Number: **COV/2173281/2021**
Laboratory Number: **20690185**
Sample Source: **Envirologic**
Sample Point Description:
Sample Description: **MW3**
Sample Matrix: **Ground Water**
Sample Date/Time: **29 July 2021**
Sample Received: **29 July 2021**
Analysis Complete: **12 August 2021**

Issue **1**
Sample **2** of **4**

Test Description	Result	Units	Analysis Date	Accreditation	Method
Phosphate, Ortho as P LL	<0.02	mg/l	31/07/2021	N Cov	WAS067
Magnesium, Total as Mg	11700	ug/l	05/08/2021	Y Cov	WAS049
Potassium, Total as K	3110	ug/l	05/08/2021	Y Cov	WAS049
Sodium, Total as Na	20500	ug/l	05/08/2021	Y Cov	WAS049
Calcium, Total as Ca	101000	ug/l	05/08/2021	Y Cov	WAS049
Ethylbenzene	<1	ug/l	03/08/2021	N Cov	GEO45
Benzene	<1	ug/l	03/08/2021	N Cov	GEO45
Toluene	<1	ug/l	03/08/2021	N Cov	GEO45
m&p-Xylene	<1	ug/l	03/08/2021	N Cov	GEO45
o-Xylene	<1	ug/l	03/08/2021	N Cov	GEO45
BODS + ATU	<2	mg/l O2	05/08/2021	N S	SUBCON
Total Coliforms (Colilert)	0	mpn/100ml	02/08/2021	N S	SUBCON
Faecal Coliforms (Colilert)	0	mpn/100ml	02/08/2021	N S	SUBCON
Aluminium , Total as Al	579	ug/l	05/08/2021	Y Cov	WAS049
Cadmium , Total as Cd	0.800	ug/l	05/08/2021	Y Cov	WAS049
Chromium , Total as Cr	<2.00	ug/l	05/08/2021	Y Cov	WAS049
Iron, Total as Fe	2100	ug/l	05/08/2021	Y Cov	WAS049
Manganese , Total as Mn	543	ug/l	05/08/2021	Y Cov	WAS049
Mercury, Total as Hg	0.02	ug/l	10/08/2021	Y Cov	WAS013
Zinc , Total as Zn	36.1	ug/l	05/08/2021	Y Cov	WAS049
Alkalinity as CaCO3	334	mg/l	31/07/2021	Y Cov	WAS025
Bicarbonate Alkalinity	334	mg/l	31/07/2021	N Cov	WAS025
Total Hardness as CaCO3	301	mg/l	05/08/2021	Y Cov	WAS049

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Report Number: **COV/2173281/2021**
 Laboratory Number: **20690185**
 Sample Source: **Envirologic**
 Sample Point Description:
 Sample Description: **MW3**
 Sample Matrix: **Ground Water**
 Sample Date/Time: **29 July 2021**
 Sample Received: **29 July 2021**
 Analysis Complete: **12 August 2021**

Issue **1**
 Sample **2** of **4**

Test Description	Result	Units	Analysis Date	Accreditation	Method
Chloride as Cl	42.7	mg/l	05/08/2021	N Cov	WAS036
Nitrite as N	0.65	mg/l	05/08/2021	N Cov	WAS036
Nitrate as N	<0.7	mg/l	05/08/2021	N Cov	WAS036
Phosphorus , Total as P	<0.12	mg/l	05/08/2021	Y Cov	WAS049
Sulphate as SO4	16.7	mg/l	05/08/2021	N Cov	WAS036
Total Suspended Solids	163	mg/l	12/08/2021	Y Cov	WAS006
TOC as C	4.6	mg/l	02/08/2021	Y Cov	WAS005
Aliphatic VPH >C5 - C6	<10	ug/l	03/08/2021	Y Cov	GEO45
Aliphatic VPH >C6 - C8	<10	ug/l	03/08/2021	Y Cov	GEO45
Aliphatic VPH >C8 - 10	<10	ug/l	03/08/2021	Y Cov	GEO45
Aliphatic VPH >C5 - C10	<10	ug/l	03/08/2021	Y Cov	GEO45
Aromatic VPH >C5 - C7	<10	ug/l	03/08/2021	Y Cov	GEO45
Aromatic VPH >C7 - C8	<10	ug/l	03/08/2021	Y Cov	GEO45
Aromatic VPH >C8 - C10	<10	ug/l	03/08/2021	Y Cov	GEO45
Aromatic VPH >C5 - C10	<10	ug/l	03/08/2021	Y Cov	GEO45
VPH >C5 - C10	<10	ug/l	03/08/2021	Y Cov	GEO45
Aliphatic EPH >C10 - C12	<10	ug/l	05/08/2021	N Cov	GEO46
Aliphatic EPH >C12 - C16	<10	ug/l	05/08/2021	N Cov	GEO46
Aliphatic EPH >C16 - C35	<10	ug/l	05/08/2021	N Cov	GEO46
Aliphatic EPH >C35 - C44	<10	ug/l	05/08/2021	N Cov	GEO46
Aliphatic EPH >C10 - C44	<10	ug/l	05/08/2021	N Cov	GEO46
Aromatic EPH >C10 - C12	<10	ug/l	05/08/2021	N Cov	GEO46
Aromatic EPH >C12 - C16	<10	ug/l	05/08/2021	N Cov	GEO46
Aromatic EPH >C16 - C21	<10	ug/l	05/08/2021	N Cov	GEO46

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Report Number: **COV/2173281/2021**
Laboratory Number: **20690185**
Sample Source: **Envirologic**
Sample Point Description:
Sample Description: **MW3**
Sample Matrix: **Ground Water**
Sample Date/Time: **29 July 2021**
Sample Received: **29 July 2021**
Analysis Complete: **12 August 2021**

Issue **1**
Sample **2** of **4**

Test Description	Result	Units	Analysis Date	Accreditation	Method
Aromatic EPH >C21 - C35	<10	ug/l	05/08/2021	N Cov	GEO46
Aromatic EPH >C35 - C44	<10	ug/l	05/08/2021	N Cov	GEO46
Aromatic EPH >C10 - C44	<10	ug/l	05/08/2021	N Cov	GEO46
EPH >C10 - C44	<10	ug/l	05/08/2021	N Cov	GEO46
Aliphatic VPH/EPH >C5 - C44	<10	ug/l	05/08/2021	N Cov	GEO45/GEO46
Aromatic VPH/EPH >C5 - C44	<10	ug/l	05/08/2021	N Cov	GEO45/GEO46
VPH/EPH >C5 - C44	<10	ug/l	05/08/2021	N Cov	GEO45/GEO46
Naphthalene	0.015	ug/l	03/08/2021	Y Cov	GEO81
Acenaphthylene	<0.010	ug/l	03/08/2021	Y Cov	GEO81
Acenaphthene	<0.010	ug/l	03/08/2021	Y Cov	GEO81
Fluorene	<0.010	ug/l	03/08/2021	Y Cov	GEO81
Phenanthrene	<0.010	ug/l	03/08/2021	Y Cov	GEO81
Anthracene	<0.010	ug/l	03/08/2021	Y Cov	GEO81
Fluoranthene	<0.010	ug/l	03/08/2021	Y Cov	GEO81
Pyrene	<0.010	ug/l	03/08/2021	Y Cov	GEO81
Benzo(a)anthracene	<0.010	ug/l	03/08/2021	Y Cov	GEO81
Chrysene	<0.010	ug/l	03/08/2021	Y Cov	GEO81
Benzo(b)fluoranthene	<0.010	ug/l	03/08/2021	Y Cov	GEO81
Benzo(k)fluoranthene	<0.010	ug/l	03/08/2021	Y Cov	GEO81
Benzo(a)pyrene	<0.010	ug/l	03/08/2021	Y Cov	GEO81
Indeno(123cd)pyrene	<0.010	ug/l	03/08/2021	Y Cov	GEO81
Dibenzo(ah)anthracene	<0.010	ug/l	03/08/2021	Y Cov	GEO81
Benzo(ghi)perylene	<0.010	ug/l	03/08/2021	Y Cov	GEO81
PAH, Total of 16	0.015	ug/l	03/08/2021	N Cov	GEO81

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Analyst Comments for 20690185:

This sample has been analysed for Total Suspended Solids, Nitrite as N, Nitrate as N outside recommended stability times. It is therefore possible that the results provided may be compromised. The sample for EPH was analysed in a container inappropriate for this parameter. It is therefore possible that the results provided may be compromised.

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Signed: 

Name: **D. Lewis**

Date: **12 August 2021**

Title: **Technical Inorganic Manager**

Westmeath County Council Planning Authority - Inspection Purposes Only

Certificate of Analysis

ANALYSED BY



Report Number: **COV/2173281/2021**
Laboratory Number: **20690186**
Sample Source: **Envirologic**
Sample Point Description:
Sample Description: **PW1**
Sample Matrix: **Ground Water**
Sample Date/Time: **29 July 2021**
Sample Received: **29 July 2021**
Analysis Complete: **12 August 2021**

Issue **1**
Sample **3** of **4**

Test Description	Result	Units	Analysis Date	Accreditation	Method
Phosphate, Ortho as P LL	<0.02	mg/l	31/07/2021	N Cov	WAS067
Magnesium, Total as Mg	25500	ug/l	05/08/2021	Y Cov	WAS049
Potassium, Total as K	707	ug/l	05/08/2021	Y Cov	WAS049
Sodium, Total as Na	7260	ug/l	05/08/2021	Y Cov	WAS049
Calcium, Total as Ca	116000	ug/l	05/08/2021	Y Cov	WAS049
Ethylbenzene	<1	ug/l	11/08/2021	N Cov	GEO45
Benzene	<1	ug/l	11/08/2021	N Cov	GEO45
Toluene	<1	ug/l	11/08/2021	N Cov	GEO45
m&p-Xylene	<1	ug/l	11/08/2021	N Cov	GEO45
o-Xylene	<1	ug/l	11/08/2021	N Cov	GEO45
BODS + ATU	<2	mg/l O2	05/08/2021	N S	SUBCON
Total Coliforms (Colilert)	0	mpn/100ml	02/08/2021	N S	SUBCON
Faecal Coliforms (Colilert)	0	mpn/100ml	02/08/2021	N S	SUBCON
Aluminium , Total as Al	<100	ug/l	05/08/2021	Y Cov	WAS049
Cadmium , Total as Cd	<0.600	ug/l	05/08/2021	Y Cov	WAS049
Chromium , Total as Cr	<2.00	ug/l	05/08/2021	Y Cov	WAS049
Iron, Total as Fe	275	ug/l	05/08/2021	Y Cov	WAS049
Manganese , Total as Mn	127	ug/l	05/08/2021	Y Cov	WAS049
Mercury, Total as Hg	<0.01	ug/l	10/08/2021	Y Cov	WAS013
Zinc , Total as Zn	<18.0	ug/l	05/08/2021	Y Cov	WAS049
Alkalinity as CaCO3	166	mg/l	31/07/2021	Y Cov	WAS025
Bicarbonate Alkalinity	166	mg/l	31/07/2021	N Cov	WAS025
Total Hardness as CaCO3	395	mg/l	05/08/2021	Y Cov	WAS049

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Certificate of Analysis

ANALYSED BY



Report Number: **COV/2173281/2021**
Laboratory Number: **20690186**
Sample Source: **Envirologic**
Sample Point Description:
Sample Description: **PW1**
Sample Matrix: **Ground Water**
Sample Date/Time: **29 July 2021**
Sample Received: **29 July 2021**
Analysis Complete: **12 August 2021**

Issue **1**
Sample **3** of **4**

Test Description	Result	Units	Analysis Date	Accreditation	Method
Chloride as Cl	9.7	mg/l	05/08/2021	N Cov	WAS036
Nitrite as N	<0.08	mg/l	05/08/2021	N Cov	WAS036
Nitrate as N	<0.7	mg/l	05/08/2021	N Cov	WAS036
Phosphorus , Total as P	<0.12	mg/l	05/08/2021	Y Cov	WAS049
Sulphate as SO4	236	mg/l	05/08/2021	N Cov	WAS036
Total Suspended Solids	16.0	mg/l	12/08/2021	Y Cov	WAS006
TOC as C	<0.7	mg/l	02/08/2021	Y Cov	WAS005
Aliphatic VPH >C5 - C6	<10	ug/l	11/08/2021	Y Cov	GEO45
Aliphatic VPH >C6 - C8	<10	ug/l	11/08/2021	Y Cov	GEO45
Aliphatic VPH >C8 - 10	<10	ug/l	11/08/2021	Y Cov	GEO45
Aliphatic VPH >C5 - C10	<10	ug/l	11/08/2021	Y Cov	GEO45
Aromatic VPH >C5 - C7	<10	ug/l	11/08/2021	Y Cov	GEO45
Aromatic VPH >C7 - C8	<10	ug/l	11/08/2021	Y Cov	GEO45
Aromatic VPH >C8 - C10	<10	ug/l	11/08/2021	Y Cov	GEO45
Aromatic VPH >C5 - C10	<10	ug/l	11/08/2021	Y Cov	GEO45
VPH >C5 - C10	<10	ug/l	11/08/2021	Y Cov	GEO45
Aliphatic EPH >C10 - C12	<10	ug/l	05/08/2021	N Cov	GEO46
Aliphatic EPH >C12 - C16	<10	ug/l	05/08/2021	N Cov	GEO46
Aliphatic EPH >C16 - C35	<10	ug/l	05/08/2021	N Cov	GEO46
Aliphatic EPH >C35 - C44	<10	ug/l	05/08/2021	N Cov	GEO46
Aliphatic EPH >C10 - C44	<10	ug/l	05/08/2021	N Cov	GEO46
Aromatic EPH >C10 - C12	<10	ug/l	05/08/2021	N Cov	GEO46
Aromatic EPH >C12 - C16	<10	ug/l	05/08/2021	N Cov	GEO46
Aromatic EPH >C16 - C21	<10	ug/l	05/08/2021	N Cov	GEO46

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Certificate of Analysis

ANALYSED BY



Report Number: **COV/2173281/2021**
 Laboratory Number: **20690186**
 Sample Source: **Envirologic**
 Sample Point Description:
 Sample Description: **PW1**
 Sample Matrix: **Ground Water**
 Sample Date/Time: **29 July 2021**
 Sample Received: **29 July 2021**
 Analysis Complete: **12 August 2021**

Issue **1**
 Sample **3** of **4**

Test Description	Result	Units	Analysis Date	Accreditation	Method
Aromatic EPH >C21 - C35	<10	ug/l	05/08/2021	N Cov	GEO46
Aromatic EPH >C35 - C44	<10	ug/l	05/08/2021	N Cov	GEO46
Aromatic EPH >C10 - C44	<10	ug/l	05/08/2021	N Cov	GEO46
EPH >C10 - C44	<10	ug/l	05/08/2021	N Cov	GEO46
Aliphatic VPH/EPH >C5 - C44	<10	ug/l	12/08/2021	N Cov	GEO45/GEO46
Aromatic VPH/EPH >C5 - C44	<10	ug/l	12/08/2021	N Cov	GEO45/GEO46
VPH/EPH >C5 - C44	<10	ug/l	12/08/2021	N Cov	GEO45/GEO46
Naphthalene	0.016	ug/l	03/08/2021	Y Cov	GEO81
Acenaphthylene	<0.010	ug/l	03/08/2021	Y Cov	GEO81
Acenaphthene	<0.010	ug/l	03/08/2021	Y Cov	GEO81
Fluorene	<0.010	ug/l	03/08/2021	Y Cov	GEO81
Phenanthrene	<0.010	ug/l	03/08/2021	Y Cov	GEO81
Anthracene	<0.010	ug/l	03/08/2021	Y Cov	GEO81
Fluoranthene	<0.010	ug/l	03/08/2021	Y Cov	GEO81
Pyrene	<0.010	ug/l	03/08/2021	Y Cov	GEO81
Benzo(a)anthracene	<0.010	ug/l	03/08/2021	Y Cov	GEO81
Chrysene	<0.010	ug/l	03/08/2021	Y Cov	GEO81
Benzo(b)fluoranthene	<0.010	ug/l	03/08/2021	Y Cov	GEO81
Benzo(k)fluoranthene	<0.010	ug/l	03/08/2021	Y Cov	GEO81
Benzo(a)pyrene	<0.010	ug/l	03/08/2021	Y Cov	GEO81
Indeno(123cd)pyrene	<0.010	ug/l	03/08/2021	Y Cov	GEO81
Dibenzo(ah)anthracene	<0.010	ug/l	03/08/2021	Y Cov	GEO81
Benzo(ghi)perylene	<0.010	ug/l	03/08/2021	Y Cov	GEO81
PAH, Total of 16	0.016	ug/l	03/08/2021	N Cov	GEO81

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Analyst Comments for 20690186:

This sample has been analysed for Total Suspended Solids, Nitrite as N, Nitrate as N outside recommended stability times. It is therefore possible that the results provided may be compromised. The sample for EPH was analysed in a container inappropriate for this parameter. It is therefore possible that the results provided may be compromised.

This issue replaces all previous issues

Accreditation Codes: Y = UKAS / ISO17025 Accredited, N = Not UKAS / ISO17025 Accredited, M = MCERTS.

Analysed at: CHE = Chester(CH5 3US), COV = Coventry(CV4 9GU), OTT = Otterbourne(SO21 2RU), S = Subcontracted, TRB = Subcontracted to Trowbridge(BA14 0XD), WAK = Wakefield(WF5 9TG), F = Data supplied by customer.

For Microbiological determinands 0 or ND=Not Detected, For Legionella ND=Not Detected in volume of sample filtered.

I/S=Insufficient sample For soil/sludge samples: AR=As received, DW=Dry weight.

Signed: 

Name: **D. Lewis**

Date: **12 August 2021**

Title: **Technical Inorganic Manager**

Westmeath County Council Planning Authority - Inspection Purposes Only

Certificate of Analysis

ANALYSED BY



Report Number: **COV/2173281/2021**
 Laboratory Number: **20690187**
 Sample Source: **Envirologic**
 Sample Point Description:
 Sample Description: **SW2**
 Sample Matrix: **Surface Water**
 Sample Date/Time: **29 July 2021**
 Sample Received: **29 July 2021**
 Analysis Complete: **12 August 2021**

Issue **1**
 Sample **4** of **4**

Test Description	Result	Units	Analysis Date	Accreditation	Method
Phosphate, Ortho as P LL	<0.02	mg/l	31/07/2021	N Cov	WAS067
Magnesium, Total as Mg	8840	ug/l	05/08/2021	Y Cov	WAS049
Potassium, Total as K	1880	ug/l	05/08/2021	Y Cov	WAS049
Sodium, Total as Na	8960	ug/l	05/08/2021	Y Cov	WAS049
Calcium, Total as Ca	122000	ug/l	05/08/2021	Y Cov	WAS049
Ethylbenzene	<1	ug/l	11/08/2021	N Cov	GEO45
Benzene	<1	ug/l	11/08/2021	N Cov	GEO45
Toluene	<1	ug/l	11/08/2021	N Cov	GEO45
m&p-Xylene	<1	ug/l	11/08/2021	N Cov	GEO45
o-Xylene	<1	ug/l	11/08/2021	N Cov	GEO45
BODS + ATU	2	mg/l O2	05/08/2021	N S	SUBCON
Total Coliforms (Colilert)	4986	mpn/100ml	02/08/2021	N S	SUBCON
Faecal Coliforms (Colilert)	345	mpn/100ml	02/08/2021	N S	SUBCON
Aluminium , Total as Al	<100	ug/l	05/08/2021	Y Cov	WAS049
Cadmium , Total as Cd	<0.600	ug/l	05/08/2021	Y Cov	WAS049
Chromium , Total as Cr	<2.00	ug/l	05/08/2021	Y Cov	WAS049
Iron, Total as Fe	<230	ug/l	05/08/2021	Y Cov	WAS049
Manganese , Total as Mn	8.20	ug/l	05/08/2021	Y Cov	WAS049
Mercury, Total as Hg	<0.01	ug/l	10/08/2021	Y Cov	WAS013
Zinc , Total as Zn	<18.0	ug/l	05/08/2021	Y Cov	WAS049
Alkalinity as CaCO3	339	mg/l	31/07/2021	Y Cov	WAS025
Bicarbonate Alkalinity	337	mg/l	31/07/2021	N Cov	WAS025
Total Hardness as CaCO3	341	mg/l	05/08/2021	N Cov	WAS049

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ANALYSED BY



Report Number: **COV/2173281/2021**
 Laboratory Number: **20690187**
 Sample Source: **Envirologic**
 Sample Point Description:
 Sample Description: **SW2**
 Sample Matrix: **Surface Water**
 Sample Date/Time: **29 July 2021**
 Sample Received: **29 July 2021**
 Analysis Complete: **12 August 2021**

Issue **1**
 Sample **4** of **4**

Test Description	Result	Units	Analysis Date	Accreditation	Method
Chloride as Cl	17.1	mg/l	05/08/2021	Y Cov	WAS036
Nitrite as N	<0.08	mg/l	05/08/2021	Y Cov	WAS036
Nitrate as N	1.7	mg/l	05/08/2021	Y Cov	WAS036
Phosphorus , Total as P	<0.12	mg/l	05/08/2021	Y Cov	WAS049
Sulphate as SO4	12.4	mg/l	05/08/2021	Y Cov	WAS036
Total Suspended Solids	26.0	mg/l	12/08/2021	Y Cov	WAS006
TOC as C	1.6	mg/l	02/08/2021	N Cov	WAS005
Aliphatic VPH >C5 - C6	<10	ug/l	11/08/2021	Y Cov	GEO45
Aliphatic VPH >C6 - C8	<10	ug/l	11/08/2021	Y Cov	GEO45
Aliphatic VPH >C8 - 10	<10	ug/l	11/08/2021	Y Cov	GEO45
Aliphatic VPH >C5 - C10	<10	ug/l	11/08/2021	Y Cov	GEO45
Aromatic VPH >C5 - C7	<10	ug/l	11/08/2021	Y Cov	GEO45
Aromatic VPH >C7 - C8	<10	ug/l	11/08/2021	Y Cov	GEO45
Aromatic VPH >C8 - C10	<10	ug/l	11/08/2021	Y Cov	GEO45
Aromatic VPH >C5 - C10	<10	ug/l	11/08/2021	Y Cov	GEO45
VPH >C5 - C10	<10	ug/l	11/08/2021	Y Cov	GEO45
Aliphatic EPH >C10 - C12	<10	ug/l	05/08/2021	N Cov	GEO46
Aliphatic EPH >C12 - C16	<10	ug/l	05/08/2021	N Cov	GEO46
Aliphatic EPH >C16 - C35	<10	ug/l	05/08/2021	N Cov	GEO46
Aliphatic EPH >C35 - C44	<10	ug/l	05/08/2021	N Cov	GEO46
Aliphatic EPH >C10 - C44	<10	ug/l	05/08/2021	N Cov	GEO46
Aromatic EPH >C10 - C12	<10	ug/l	05/08/2021	N Cov	GEO46
Aromatic EPH >C12 - C16	<10	ug/l	05/08/2021	N Cov	GEO46
Aromatic EPH >C16 - C21	<10	ug/l	05/08/2021	N Cov	GEO46

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ANALYSED BY



Report Number: **COV/2173281/2021**
 Laboratory Number: **20690187**
 Sample Source: **Envirologic**
 Sample Point Description:
 Sample Description: **SW2**
 Sample Matrix: **Surface Water**
 Sample Date/Time: **29 July 2021**
 Sample Received: **29 July 2021**
 Analysis Complete: **12 August 2021**

Issue **1**
 Sample **4** of **4**

Test Description	Result	Units	Analysis Date	Accreditation	Method
Aromatic EPH >C21 - C35	<10	ug/l	05/08/2021	N Cov	GEO46
Aromatic EPH >C35 - C44	<10	ug/l	05/08/2021	N Cov	GEO46
Aromatic EPH >C10 - C44	<10	ug/l	05/08/2021	N Cov	GEO46
EPH >C10 - C44	<10	ug/l	05/08/2021	N Cov	GEO46
Aliphatic VPH/EPH >C5 - C44	<10	ug/l	12/08/2021	N Cov	GEO45/GEO46
Aromatic VPH/EPH >C5 - C44	<10	ug/l	12/08/2021	N Cov	GEO45/GEO46
VPH/EPH >C5 - C44	<10	ug/l	12/08/2021	N Cov	GEO45/GEO46
Naphthalene	<0.010	ug/l	03/08/2021	Y Cov	GEO81
Acenaphthylene	<0.010	ug/l	03/08/2021	Y Cov	GEO81
Acenaphthene	<0.010	ug/l	03/08/2021	Y Cov	GEO81
Fluorene	<0.010	ug/l	03/08/2021	Y Cov	GEO81
Phenanthrene	<0.010	ug/l	03/08/2021	Y Cov	GEO81
Anthracene	<0.010	ug/l	03/08/2021	Y Cov	GEO81
Fluoranthene	<0.010	ug/l	03/08/2021	Y Cov	GEO81
Pyrene	<0.010	ug/l	03/08/2021	Y Cov	GEO81
Benzo(a)anthracene	<0.010	ug/l	03/08/2021	Y Cov	GEO81
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Benzo(b)fluoranthene	<0.010	ug/l	03/08/2021	Y Cov	GEO81
Benzo(k)fluoranthene	<0.010	ug/l	03/08/2021	Y Cov	GEO81
Benzo(a)pyrene	<0.010	ug/l	03/08/2021	Y Cov	GEO81
Indeno(123cd)pyrene	<0.010	ug/l	03/08/2021	Y Cov	GEO81
Dibenzo(ah)anthracene	<0.010	ug/l	03/08/2021	Y Cov	GEO81
Benzo(ghi)perylene	<0.010	ug/l	03/08/2021	Y Cov	GEO81
PAH, Total of 16	<0.010	ug/l	03/08/2021	N Cov	GEO81

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Analyst Comments for 20690187:

This sample has been analysed for Total Suspended Solids, Nitrite as N, Nitrate as N outside recommended stability times. It is therefore possible that the results provided may be compromised. The sample for EPH was analysed in a container inappropriate for this parameter. It is therefore possible that the results provided may be compromised.


This issue replaces all previous issues

Accreditation Codes: Y = UKAS / ISO17025 Accredited, N = Not UKAS / ISO17025 Accredited, M = MCERTS.

Analysed at: CHE = Chester(CH5 3US), COV = Coventry(CV4 9GU), OTT = Otterbourne(SO21 2RU), S = Subcontracted, TRB = Subcontracted to Trowbridge(BA14 0XD), WAK = Wakefield(WF5 9TG), F = Data supplied by customer.

For Microbiological determinands 0 or ND=Not Detected, For Legionella ND=Not Detected in volume of sample filtered.

I/S=Insufficient sample For soil/sludge samples: AR=As received, DW=Dry weight.

Signed: 	Name: D. Lewis	Date: 12 August 2021
Title: Technical Inorganic Manager		

Westmeath County Council Planning Authority - Inspection Purposes Only

Envirologic Ltd
78 St Peters Terrace
Howth
Co Dublin
Ireland



Attention : Pat Breheny
Date : 19th October, 2021
Your reference : Castle Pollard
Our reference : Test Report 21/15380 Batch 1
Location : Castle Pollard
Date samples received : 1st October, 2021
Status : Final Report
Issue : 1

Six samples were received for analysis on 1st October, 2021 of which six were scheduled for analysis. Please find attached our Test Report which should be read with notes at the end of the report and should include all sections if reproduced. Interpretations and opinions are outside the scope of any accreditation, and all results relate only to samples supplied.

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

Authorised By:



Phil Sommerton BSc
Senior Project Manager

Please include all sections of this report if it is reproduced

NOTES TO ACCOMPANY ALL SCHEDULES AND REPORTS

EMT Job No.: 21/15380

SOILS

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

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

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

All samples will be discarded one month after the date of reporting, unless we are instructed to the contrary.

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

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

All analysis is reported on a dry weight basis unless stated otherwise. Limits of detection for analyses carried out on as received samples are not moisture content corrected. Results are not surrogate corrected. Samples are dried at 35°C ±5°C unless otherwise stated. Moisture content for CEN Leachate tests are dried at 105°C ±5°C.

Where Mineral Oil or Fats, Oils and Grease is quoted, this refers to Total Aliphatics C10-C40.

Where a CEN 10:1 ZERO Headspace VOC test has been carried out, a 10:1 ratio of water to wet (as received) soil has been used.

% Asbestos in Asbestos Containing Materials (ACMs) is determined by reference to HSG 264 The Survey Guide - Appendix 2 : ACMs in buildings listed in order of ease of fibre release.

Sufficient amount of sample must be received to carry out the testing specified. Where an insufficient amount of sample has been received the testing may not meet the requirements of our accredited methods, as such accreditation may be removed.

Negative Neutralization Potential (NP) values are obtained when the volume of NaOH (0.1N) titrated (pH 8.3) is greater than the volume of HCl (1N) to reduce the pH of the sample to 2.0 - 2.5. Any negative NP values are corrected to 0.

The calculation of Pyrite content assumes that all oxidisable sulphides present in the sample are pyrite. This may not be the case. The calculation may be an overestimate when other sulphides such as Barite (Barium Sulphate) are present.

WATERS

Please note we are not a UK Drinking Water Inspectorate (DWI) Approved Laboratory .

ISO17025 accreditation applies to surface water and groundwater and usually one other matrix which is analysis specific, any other liquids are outside our scope of accreditation.

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

Where Mineral Oil or Fats, Oils and Grease is quoted, this refers to Total Aliphatics C10-C40.

DEVIATING SAMPLES

All samples should be submitted to the laboratory in suitable containers with sufficient ice packs to sustain an appropriate temperature for the requested analysis. The temperature of sample receipt is recorded on the confirmation schedules in order that the client can make an informed decision as to whether testing should still be undertaken.

SURROGATES

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

DILUTIONS

A dilution suffix indicates a dilution has been performed and the reported result takes this into account. No further calculation is required.

BLANKS

Where analytes have been found in the blank, the sample will be treated in accordance with our laboratory procedure for dealing with contaminated blanks.

NOTE

Data is only reported if the laboratory is confident that the data is a true reflection of the samples analysed. Data is only reported as accredited when all the requirements of our Quality System have been met. In certain circumstances where all the requirements of the Quality System have not been met, for instance if the associated AQC has failed, the reason is fully investigated and documented. The sample data is then evaluated alongside the other quality control checks performed during analysis to determine its suitability. Following this evaluation, provided the sample results have not been effected, the data is reported but accreditation is removed. It is a UKAS requirement for data not reported as accredited to be considered indicative only, but this does not mean the data is not valid.

Where possible, and if requested, samples will be re-extracted and a revised report issued with accredited results. Please do not hesitate to contact the laboratory if further details are required of the circumstances which have led to the removal of accreditation.

Please include all sections of this report if it is reproduced

REPORTS FROM THE SOUTH AFRICA LABORATORY

Any method number not prefixed with SA has been undertaken in our UK laboratory unless reported as subcontracted.

Measurement Uncertainty

Measurement uncertainty defines the range of values that could reasonably be attributed to the measured quantity. This range of values has not been included within the reported results. Uncertainty expressed as a percentage can be provided upon request.

ABBREVIATIONS and ACRONYMS USED

#	ISO17025 (UKAS Ref No. 4225) accredited - UK.
SA	ISO17025 (SANAS Ref No.T0729) accredited - South Africa
B	Indicates analyte found in associated method blank.
DR	Dilution required.
M	MCERTS accredited.
NA	Not applicable
NAD	No Asbestos Detected.
ND	None Detected (usually refers to VOC and/SVOC TICs).
NDP	No Determination Possible
SS	Calibrated against a single substance
SV	Surrogate recovery outside performance criteria. This may be due to a matrix effect.
W	Results expressed on as received basis.
+	AQC failure, accreditation has been removed from this result, if appropriate, see 'Note' on previous page.
>>	Results above calibration range, the result should be considered the minimum value. The actual result could be significantly higher.
*	Analysis subcontracted to an Element Materials Technology approved laboratory.
AD	Samples are dried at 35°C ±5°C
CO	Suspected carry over
LOD/LOR	Limit of Detection (Limit of Reporting) in line with ISO 17025 and MCERTS
ME	Matrix Effect
NFD	No Fibres Detected
BS	AQC Sample
LB	Blank Sample
N	Client Sample
TB	Trip Blank Sample
OC	Outside Calibration Range
AA	x2 Dilution

EMT Job No: 21/15380

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS/S ANAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
TM4	Modified USEPA 8270D v5:2014 method for the solvent extraction and determination of PAHs by GC-MS.	PM30	Water samples are extracted with solvent using a magnetic stirrer to create a vortex.				
TM4	Modified USEPA 8270D v5:2014 method for the solvent extraction and determination of PAHs by GC-MS.	PM30	Water samples are extracted with solvent using a magnetic stirrer to create a vortex.	Yes			
TM5	Modified 8015B v2:1996 method for the determination of solvent Extractable Petroleum Hydrocarbons (EPH) within the range C8-C40 by GCFID. For waters the solvent extracts dissolved phase plus a sheen if present.	PM16/PM30	Fractionation into aliphatic and aromatic fractions using a Rapid Trace SPE/Water samples are extracted with solvent using a magnetic stirrer to create a vortex.	Yes			
TM5	Modified 8015B v2:1996 method for the determination of solvent Extractable Petroleum Hydrocarbons (EPH) within the range C8-C40 by GCFID. For waters the solvent extracts dissolved phase plus a sheen if present.	PM30	Water samples are extracted with solvent using a magnetic stirrer to create a vortex.	Yes			
TM5/TM36	please refer to TM5 and TM36 for method details	PM12/PM16/PM30	please refer to PM16/PM30 and PM12 for method details	Yes			
TM30	Determination of Trace Metals by ICP-OES (Inductively Coupled Plasma – Optical Emission Spectrometry): WATERS by Modified USEPA Method 200.7, Rev. 4.4, 1994; Modified EPA Method 6010B, Rev.2, Dec 1996; Modified BS EN ISO 11885:2009: SOILS by Modified USEP 6010B, Rev.2, Dec.1996; Modified EPA Method 3050B, Rev.2, Dec.1996	PM14	Preparation of waters and leachates for metals by ICP OES/ICP MS. Samples are filtered for Dissolved metals, and remain unfiltered for Total metals then acidified				
TM30	Determination of Trace Metals by ICP-OES (Inductively Coupled Plasma – Optical Emission Spectrometry): WATERS by Modified USEPA Method 200.7, Rev. 4.4, 1994; Modified EPA Method 6010B, Rev.2, Dec 1996; Modified BS EN ISO 11885:2009: SOILS by Modified USEP 6010B, Rev.2, Dec.1996; Modified EPA Method 3050B, Rev.2, Dec.1996	PM14	Preparation of waters and leachates for metals by ICP OES/ICP MS. Samples are filtered for Dissolved metals, and remain unfiltered for Total metals then acidified	Yes			
TM36	Modified US EPA method 8015B v2:1996. Determination of Gasoline Range Organics (GRO) in the carbon chain range of C4-12 by headspace GC-FID. MTBE by GCFID co-elutes with 3-methylpentane if present and therefore can give a false positive. Positive MTBE results will be re-run using GC-MS to double check, when requested.	PM12	Modified US EPA method 5021A v2:2014. Preparation of solid and liquid samples for GC headspace analysis.	Yes			
TM37	Modified methods: TSS: USEPA 100.2 (1993), EN612:2009 and APHA 5140.100 2540D:1999 22nd Edition; VSS: USEPA 1684 (Jan 2001), USEPA 160.4 (1971) and SMEWW 2540E:1999 22nd Edition. Gravimetric determination of Total Suspended Solids (TSS) and Volatile Suspended Solids (VSS). Sample is filtered through a 1.5um pore size glass fibre filter and the resulting residue is dried and weighed at 105°C for TSS and 550°C for VSS.	PM0	No preparation is required.	Yes			
TM38	Soluble Ion analysis using Discrete Analyser. Modified US EPA methods: Chloride 325.2 (1978), Sulphate 375.4 (Rev.2 1993), o-Phosphate 365.2 (Rev.2 1993), TON 353.1 (Rev.2 1993), Nitrite 354.1 (1971), Hex Cr 7196A (1992), NH4+ 350.1 (Rev.2 1993) – All anions comparable to BS ISO 15923-1: 2013	PM0	No preparation is required.				

EMT Job No: 21/15380

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS/S ANAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
TM38	Soluble Ion analysis using Discrete Analyser. Modified US EPA methods: Chloride 325.2 (1978), Sulphate 375.4 (Rev.2 1993), o-Phosphate 365.2 (Rev.2 1993), TON 353.1 (Rev.2 1993), Nitrite 354.1 (1971), Hex Cr 7196A (1992), NH4+ 350.1 (Rev.2 1993) – All anions comparable to BS ISO 15923-1: 2013l	PM0	No preparation is required.	Yes			
TM38/TM125	Total Nitrogen/Organic Nitrogen by calculation	PM0	No preparation is required.				
TM60	TC/TOC analysis of Waters by High Temperature Combustion followed by NDIR detection. Based on the following modified standard methods: USEPA 9060A (2002), APHA SMEWW 5310B:1999 22nd Edition, ASTM D 7573, and USEPA 415.1.	PM0	No preparation is required.	Yes			
TM75	Modified US EPA method 310.1 (1978). Determination of Alkalinity by Metrohm automated titration analyser.	PM0	No preparation is required.	Yes			



ALS Environmental Ltd

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www.alsenvironmental.co.uk

Mr Breheny
Envirologic
Envirologic Ltd.
78 St Peters Terrace
Howth
Dublin D13 H008
South Dublin

08 October 2021

Test Report: COV/2206236/2021

Dear Mr Breheny

Analysis of your sample(s) received on 30 September 2021 is now complete and we have pleasure in enclosing the appropriate test report(s).

An invoice for the analysis carried out will be sent under separate cover.

Should you have any queries regarding this report(s) or any part of our service, please contact Customer Services on +44 (0)24 7642 1213 who will be happy to discuss your requirements.

If you would like to arrange any further analysis, please contact Customer Services. To arrange container delivery or sample collection, please call the Couriers Department directly on 024 7685 6562.

Thank you for using ALS Environmental Ltd and we look forward to receiving your next samples.

Yours Sincerely,

Signed:

Name:

P. Patel

Title:

Inorganics Chemistry Manager



EMS 675527

OHS 542058

Report Summary

ANALYSED BY

Mr Patrick Breheny
Envirologic
Envirologic Ltd.
78 St Peters Terrace
Howth
Dublin
South Dublin
D13 H008



Date of Issue: **08 October 2021**

Report Number: **COV/2206236/2021**

Issue **1**

This issue replaces
all previous issues

Job Description: Micro analysis

Job Location: Castlepollard

Number of Samples
included in this report **6**

Job Received: **30 September 2021**

Number of Test Results
included in this report **18**

Analysis Commenced: **04 October 2021**

Signed:

Name: **P. Patel**

Date: **08 October 2021**

Title: **Inorganics Chemistry Manager**

ALS Environmental Ltd was not responsible for sampling unless otherwise stated.

Information on the methods of analysis and performance characteristics are available on request.

Opinions and interpretations expressed herein are outside the scope of UKAS accreditation. The results relate only to the items tested and where relevant sampled.

Tests marked 'Not UKAS Accredited' in this Report/Certificate are not included in the UKAS Accreditation Schedule for our laboratory.

This test report is not a statement of conformity to any specification or standard.

This communication has been sent to you by ALS Environmental Ltd. Registered in England and Wales. Registration No. 02148934. Registered Office: ALS Environmental Limited, Torrington Avenue, Coventry, CV4 9GU.

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Certificate of Analysis

ANALYSED BY



Report Number: **COV/2206236/2021**
Laboratory Number: **20903266**
Sample Source: **Envirologic**
Sample Point Description:
Sample Description: **MW1**
Sample Matrix: **Ground Water**
Sample Date/Time: **30 September 2021**
Sample Received: **30 September 2021**
Analysis Complete: **08 October 2021**

Issue **1**
Sample **1** of **6**

Test Description	Result	Units	Analysis Date	Accreditation	Method
BODS + ATU	2	mg/l O ₂	08/10/2021	N S	SUBCON
Total Coliforms (Colilert)	14	mpn/100ml	04/10/2021	N S	SUBCON
Faecal Coliforms (Colilert)	14	mpn/100ml	04/10/2021	N S	SUBCON

Analyst Comments for 20903266: No Analyst Comment

This issue replaces all previous issues

Accreditation Codes: Y = UKAS / ISO17025 Accredited, N = Not UKAS / ISO17025 Accredited, M = MCERTS.

Analysed at: CHE = Chester(CH5 3US), COV = Coventry(CV4 9GU), OTT = Otterbourne(SO21 2RU), S = Subcontracted, TRB = Subcontracted to Trowbridge(BA14 0XD), WAK = Wakefield(WF5 9TG), F = Data supplied by customer.

For Microbiological determinands 0 or ND=Not Detected, For Legionella ND=Not Detected in volume of sample filtered.

I/S=Insufficient sample For soil/sludge samples: AR=As received, DW=Dry weight.

Signed:

Name: **P. Patel**

Date: **08 October 2021**

Title: **Inorganics Chemistry Manager**

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Certificate of Analysis

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Report Number: **COV/2206236/2021**
Laboratory Number: **20903267**
Sample Source: **Envirologic**
Sample Point Description:
Sample Description: **MW2**
Sample Matrix: **Ground Water**
Sample Date/Time: **30 September 2021**
Sample Received: **30 September 2021**
Analysis Complete: **08 October 2021**

Issue **1**
Sample **2** of **6**

Test Description	Result	Units	Analysis Date	Accreditation	Method
BODS + ATU	2	mg/l O ₂	08/10/2021	N S	SUBCON
Total Coliforms (Colilert)	1	mpn/100ml	04/10/2021	N S	SUBCON
Faecal Coliforms (Colilert)	1	mpn/100ml	04/10/2021	N S	SUBCON

Analyst Comments for 20903267: No Analyst Comment

This issue replaces all previous issues

Accreditation Codes: Y = UKAS / ISO17025 Accredited, N = Not UKAS / ISO17025 Accredited, M = MCERTS.

Analysed at: CHE = Chester(CH5 3US), COV = Coventry(CV4 9GU), OTT = Otterbourne(SO21 2RU), S = Subcontracted, TRB = Subcontracted to Trowbridge(BA14 0XD), WAK = Wakefield(WF5 9TG), F = Data supplied by customer.

For Microbiological determinands 0 or ND=Not Detected, For Legionella ND=Not Detected in volume of sample filtered.

I/S=Insufficient sample For soil/sludge samples: AR=As received, DW=Dry weight.

Signed:

Name: **P. Patel**

Date: **08 October 2021**

Title: **Inorganics Chemistry Manager**

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Certificate of Analysis

ANALYSED BY



Report Number: **COV/2206236/2021**
Laboratory Number: **20903268**
Sample Source: **Envirologic**
Sample Point Description:
Sample Description: **MW3**
Sample Matrix: **Ground Water**
Sample Date/Time: **30 September 2021**
Sample Received: **30 September 2021**
Analysis Complete: **08 October 2021**

Issue **1**
Sample **3** of **6**

Test Description	Result	Units	Analysis Date	Accreditation	Method
BODS + ATU	2	mg/l O ₂	08/10/2021	N S	SUBCON
Total Coliforms (Colilert)	0	mpn/100ml	04/10/2021	N S	SUBCON
Faecal Coliforms (Colilert)	0	mpn/100ml	04/10/2021	N S	SUBCON

Analyst Comments for 20903268: No Analyst Comment

This issue replaces all previous issues

Accreditation Codes: Y = UKAS / ISO17025 Accredited, N = Not UKAS / ISO17025 Accredited, M = MCERTS.

Analysed at: CHE = Chester(CH5 3US), COV = Coventry(CV4 9GU), OTT = Otterbourne(SO21 2RU), S = Subcontracted, TRB = Subcontracted to Trowbridge(BA14 0XD), WAK = Wakefield(WF5 9TG), F = Data supplied by customer.

For Microbiological determinands 0 or ND=Not Detected, For Legionella ND=Not Detected in volume of sample filtered.

I/S=Insufficient sample For soil/sludge samples: AR=As received, DW=Dry weight.

Signed:

Name: **P. Patel**

Date: **08 October 2021**

Title: **Inorganics Chemistry Manager**

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Certificate of Analysis

ANALYSED BY



Report Number: **COV/2206236/2021**
Laboratory Number: **20903269**
Sample Source: **Envirologic**
Sample Point Description:
Sample Description: **PW1**
Sample Matrix: **Ground Water**
Sample Date/Time: **30 September 2021**
Sample Received: **30 September 2021**
Analysis Complete: **08 October 2021**

Issue **1**
Sample **4** of **6**

Test Description	Result	Units	Analysis Date	Accreditation	Method
BODS + ATU	<2	mg/l O ₂	08/10/2021	N S	SUBCON
Total Coliforms (Colilert)	0	mpn/100ml	04/10/2021	N S	SUBCON
Faecal Coliforms (Colilert)	0	mpn/100ml	04/10/2021	N S	SUBCON

Analyst Comments for 20903269: No Analyst Comment

This issue replaces all previous issues

Accreditation Codes: Y = UKAS / ISO17025 Accredited, N = Not UKAS / ISO17025 Accredited, M = MCERTS.

Analysed at: CHE = Chester(CH5 3US), COV = Coventry(CV4 9GU), OTT = Otterbourne(SO21 2RU), S = Subcontracted, TRB = Subcontracted to Trowbridge(BA14 0XD), WAK = Wakefield(WF5 9TG), F = Data supplied by customer.

For Microbiological determinands 0 or ND=Not Detected, For Legionella ND=Not Detected in volume of sample filtered.

I/S=Insufficient sample For soil/sludge samples: AR=As received, DW=Dry weight.

Signed:

Name: **P. Patel**

Date: **08 October 2021**

Title: **Inorganics Chemistry Manager**

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Certificate of Analysis

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Report Number: **COV/2206236/2021**
Laboratory Number: **20903270**
Sample Source: **Envirologic**
Sample Point Description:
Sample Description: **SW1**
Sample Matrix: **Surface Water**
Sample Date/Time: **30 September 2021**
Sample Received: **30 September 2021**
Analysis Complete: **08 October 2021**

Issue **1**
Sample **5** of **6**

Test Description	Result	Units	Analysis Date	Accreditation	Method
BODS + ATU	4	mg/l O ₂	08/10/2021	N S	SUBCON
Total Coliforms (Colilert)	548	mpn/100ml	04/10/2021	N S	SUBCON
Faecal Coliforms (Colilert)	548	mpn/100ml	04/10/2021	N S	SUBCON

Analyst Comments for 20903270: No Analyst Comment

This issue replaces all previous issues

Accreditation Codes: Y = UKAS / ISO17025 Accredited, N = Not UKAS / ISO17025 Accredited, M = MCERTS.

Analysed at: CHE = Chester(CH5 3US), COV = Coventry(CV4 9GU), OTT = Otterbourne(SO21 2RU), S = Subcontracted, TRB = Subcontracted to Trowbridge(BA14 0XD), WAK = Wakefield(WF5 9TG), F = Data supplied by customer.

For Microbiological determinands 0 or ND=Not Detected, For Legionella ND=Not Detected in volume of sample filtered.

I/S=Insufficient sample For soil/sludge samples: AR=As received, DW=Dry weight.

Signed:

Name: **P. Patel**

Date: **08 October 2021**

Title: **Inorganics Chemistry Manager**

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Certificate of Analysis

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Report Number: **COV/2206236/2021**
Laboratory Number: **20903271**
Sample Source: **Envirologic**
Sample Point Description:
Sample Description: **SW2**
Sample Matrix: **Surface Water**
Sample Date/Time: **30 September 2021**
Sample Received: **30 September 2021**
Analysis Complete: **08 October 2021**

Issue **1**
Sample **6** of **6**

Test Description	Result	Units	Analysis Date	Accreditation	Method
BODS + ATU	2	mg/l O ₂	08/10/2021	N S	SUBCON
Total Coliforms (Colilert)	1414	mpn/100ml	04/10/2021	N S	SUBCON
Faecal Coliforms (Colilert)	1414	mpn/100ml	04/10/2021	N S	SUBCON

Analyst Comments for 20903271: No Analyst Comment

This issue replaces all previous issues

Accreditation Codes: Y = UKAS / ISO17025 Accredited, N = Not UKAS / ISO17025 Accredited, M = MCERTS.

Analysed at: CHE = Chester(CH5 3US), COV = Coventry(CV4 9GU), OTT = Otterbourne(SO21 2RU), S = Subcontracted, TRB = Subcontracted to Trowbridge(BA14 0XD), WAK = Wakefield(WF5 9TG), F = Data supplied by customer.

For Microbiological determinands 0 or ND=Not Detected, For Legionella ND=Not Detected in volume of sample filtered.

I/S=Insufficient sample For soil/sludge samples: AR=As received, DW=Dry weight.

Signed:

Name: **P. Patel**

Date: **08 October 2021**

Title: **Inorganics Chemistry Manager**

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