

ALS Environmental Ltd
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Mr Lloyd
Caerphilly County B.C.
Caerphilly County Borough
Council
Unit B5
Tiryberth Depot
Hengoed CF82 8AU
Caerphilly

29 December 2016

Test Report: COV/1345188/2016

Dear Mr Lloyd

Analysis of your sample(s) submitted on 12 December 2016 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,

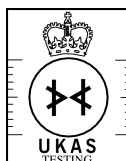
Signed: 

Name: A. Horobin

Title: Organic Operations Manager



Report Summary



1314
0897
4409



**Mr Rhodri Lloyd
Caerphilly County B.C.
Caerphilly County Borough
Council
Unit B5
Tiryberth Depot
Hengoed
Caerphilly**

Date of Issue: **29 December 2016**

Report Number: **COV/1345188/2016**

Issue **1**

Job Description: Trehir Landfill Site

Job Location: Caerphilly

Number of Samples
included in this report **19**

Job Received: **12 December 2016**

Number of Test Results
included in this report **424**

Analysis Commenced: **13 December 2016**

Signed: *A I Horobin*

Name: **A. Horobin**

Date: **29 December 2016**

Title: **Organic Operations Manager**

ALS Environmental Ltd was responsible for sampling. Sampling is not covered by our UKAS accreditation.

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.

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

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Certificate of Analysis



Report Number: **COV/1345188/2016**

Issue **1**

Laboratory Number: **15749320**

Sample **1** of **19**

Sample Source: **Caerphilly County B.C.**

Sample Point Description: **08**

Sample Description: **08**

Sample Matrix: **Land Leachate**

Sample Date/Time: **12 December 2016 10:10**

Sample Received: **12 December 2016**

Analysis Complete: **29 December 2016**

Test Description	Result	Units	Analysis Date	Accreditation	Method
Field Temperature	11.1	Deg C	13/12/2016	N Cov	FIELD
Cadmium , Total as Cd	<0.0006	mg/l	29/12/2016	Y Cov	WAS049
Calcium , Total as Ca	92.4	mg/l	29/12/2016	Y Cov	WAS049
Chromium , Total as Cr	0.004	mg/l	29/12/2016	Y Cov	WAS049
Copper, Total as Cu	<0.009	mg/l	29/12/2016	Y Cov	WAS049
Iron , Total as Fe	1.20	mg/l	29/12/2016	Y Cov	WAS049
Lead , Total as Pb	<0.006	mg/l	29/12/2016	Y Cov	WAS049
Magnesium, Total as Mg	23.8	mg/l	29/12/2016	Y Cov	WAS049
Manganese , Total as Mn	0.563	mg/l	29/12/2016	Y Cov	WAS049
Nickel, Total as Ni	0.014	mg/l	29/12/2016	Y Cov	WAS049
Potassium , Total as K	39.9	mg/l	29/12/2016	Y Cov	WAS049
Sodium , Total as Na	93.9	mg/l	29/12/2016	Y Cov	WAS049
Zinc, Total as Zn	0.08	mg/l	29/12/2016	Y Cov	WAS049
pH	8.0	pH units	15/12/2016	Y Cov	WAS039
Conductivity- Electrical 20C	1290	uS/cm	15/12/2016	Y Cov	WAS039
Alkalinity as CaCO3	476	mg/l	21/12/2016	Y Cov	WAS025
Ammoniacal Nitrogen as N	43.0	mg/l	15/12/2016	Y Cov	WAS036
Nitrogen, Total Oxidised as N	20.9	mg/l	16/12/2016	Y Cov	WAS036
Sulphate as SO4	23.4	mg/l	16/12/2016	N Cov	WAS036
Dissolved Oxygen, Fixed	Analyst Com	mg/l	16/12/2016	N Cov	WAS052
Dissolved Oxygen, Unfixed	3.4	mg/l	23/12/2016	N Cov	WAS052
COD (Total)	73.0	mg/l	16/12/2016	Y Cov	WAS040
TOC (Filtered)	22.1	mg/l	19/12/2016	Y Cov	WAS005
Chloride as Cl, High Level	124	mg/l	16/12/2016	Y Cov	WAS036

Analyst Comments for 15749320:

This sample has been analysed for Magnesium, Total as Mg, Sodium Total as Na outside recommended stability times. It is therefore possible that the results provided may be compromised. {(*)}Ammonia analysed by colorimetric method{(*)}
Sample analysed for DO from an unfixed bottle

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

Analysed at: Cov = Coventry(CV4 9GU), Che = Chester(CH4 9EP), Ott = Otterbourne(SO21 2SW), S = Subcontracted, Trb = Subcontracted to Trowbridge(BA14 0XD), Wak = Wakefield(WF5 9TG).
For Microbiological determinands 0 or ND=Not Detected, For Legionella ND=Not Detected in volume of sample filtered. The LOD for the Legionella analysis will increase where the volume analysed is <1000g (1g is approximately equivalent to 1ml for sample volume analysed).

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

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Signed: A I Horobin

Name: **A. Horobin**

Date: **29 December 2016**

Title: **Organic Operations Manager**

Certificate of Analysis



Report Number: **COV/1345188/2016**

Issue **1**

Laboratory Number: **15749321**

Sample **2** of **19**

Sample Source: **Caerphilly County B.C.**

Sample Point Description: **MHL28**

Sample Description: **MHL28**

Sample Matrix: **Land Leachate**

Sample Date/Time: **12 December 2016 11:14**

Sample Received: **12 December 2016**

Analysis Complete: **29 December 2016**

Test Description	Result	Units	Analysis Date	Accreditation	Method
Field Temperature	14.8	Deg C	13/12/2016	N Cov	FIELD
Cadmium , Total as Cd	<0.0006	mg/l	29/12/2016	Y Cov	WAS049
Calcium , Total as Ca	126	mg/l	29/12/2016	Y Cov	WAS049
Chromium , Total as Cr	0.009	mg/l	29/12/2016	Y Cov	WAS049
Copper, Total as Cu	<0.009	mg/l	29/12/2016	Y Cov	WAS049
Iron , Total as Fe	2.69	mg/l	29/12/2016	Y Cov	WAS049
Lead , Total as Pb	<0.006	mg/l	29/12/2016	Y Cov	WAS049
Magnesium, Total as Mg	36.5	mg/l	29/12/2016	Y Cov	WAS049
Manganese , Total as Mn	1.22	mg/l	29/12/2016	Y Cov	WAS049
Nickel, Total as Ni	0.018	mg/l	29/12/2016	Y Cov	WAS049
Potassium , Total as K	84.8	mg/l	29/12/2016	Y Cov	WAS049
Sodium , Total as Na	167	mg/l	29/12/2016	Y Cov	WAS049
Zinc, Total as Zn	<0.018	mg/l	29/12/2016	Y Cov	WAS049
pH	8.1	pH units	15/12/2016	Y Cov	WAS039
Conductivity- Electrical 20C	2140	uS/cm	15/12/2016	Y Cov	WAS039
Alkalinity as CaCO3	1070	mg/l	15/12/2016	Y Cov	WAS025
Ammoniacal Nitrogen as N	115	mg/l	16/12/2016	Y Cov	WAS055
Nitrogen, Total Oxidised as N	16.0	mg/l	16/12/2016	Y Cov	WAS036
Sulphate as SO4	21.3	mg/l	16/12/2016	N Cov	WAS036
Dissolved Oxygen, Fixed	Analyst Com	mg/l	16/12/2016	N Cov	WAS052
Dissolved Oxygen, Unfixed	2.6	mg/l	23/12/2016	N Cov	WAS052
COD (Total)	186	mg/l	16/12/2016	Y Cov	WAS040
TOC (Filtered)	48.7	mg/l	19/12/2016	Y Cov	WAS005
Chloride as Cl, High Level	192	mg/l	16/12/2016	Y Cov	WAS036

Analyst Comments for 15749321:

This sample has been analysed for Magnesium, Total as Mg, Sodium Total as Na outside recommended stability times. It is therefore possible that the results provided may be compromised. {(*)}Ammonia analysed by colorimetric method{(*)} Sample analysed for DO from an unfixed bottle

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

Analysed at: Cov = Coventry(CV4 9GU), Che = Chester(CH4 9EP), Ott = Otterbourne(SO21 2SW), S = Subcontracted, Trb = Subcontracted to Trowbridge(BA14 0XD), Wak = Wakefield(WF5 9TG).

For Microbiological determinands 0 or ND=Not Detected, For Legionella ND=Not Detected in volume of sample filtered. The LOD for the Legionella analysis will increase where the volume analysed is <1000g (1g is approximately equivalent to 1ml for sample volume analysed).

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

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Signed: A I Horobin

Name: **A. Horobin**

Date: **29 December 2016**

Title: **Organic Operations Manager**

Certificate of Analysis



Report Number: **COV/1345188/2016**

Issue **1**

Laboratory Number: **15749322**

Sample **3** of **19**

Sample Source: **Caerphilly County B.C.**

Sample Point Description: **NBH5**

Sample Description: **NBH5**

Sample Matrix: **Ground Water**

Sample Date/Time: **12 December 2016 10:05**

Sample Received: **12 December 2016**

Analysis Complete: **29 December 2016**

Test Description	Result	Units	Analysis Date	Accreditation	Method
Sample Not Received	No Test		16/12/2016	N Cov	N/A

Analyst Comments for 15749322:

No Analyst Comment

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

Analysed at: Cov = Coventry(CV4 9GU), Che = Chester(CH4 9EP), Ott = Otterbourne(SO21 2SW), S = Subcontracted, Trb = Subcontracted to Trowbridge(BA14 0XD), Wak = Wakefield(WF5 9TG).

For Microbiological determinands 0 or ND=Not Detected, For Legionella ND=Not Detected in volume of sample filtered. The LOD for the Legionella analysis will increase where the volume analysed is <1000g (1g is approximately equivalent to 1ml for sample volume analysed).

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

Signed: *A I Horobin*

Name: **A. Horobin**

Date: **29 December 2016**

Title: **Organic Operations Manager**

ALS Environmental Ltd

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Certificate of Analysis



Report Number: **COV/1345188/2016**

Issue **1**

Laboratory Number: **15749323**

Sample **4** of **19**

Sample Source: **Caerphilly County B.C.**

Sample Point Description: **N5**

Sample Description: **N5**

Sample Matrix: **Ground Water**

Sample Date/Time: **12 December 2016 12:20**

Sample Received: **12 December 2016**

Analysis Complete: **29 December 2016**

Test Description	Result	Units	Analysis Date	Accreditation	Method
Field Temperature	11.1	Deg C	13/12/2016	N Cov	FIELD
Cadmium , Total as Cd	<0.0006	mg/l	29/12/2016	Y Cov	WAS049
Calcium , Total as Ca	96.2	mg/l	29/12/2016	Y Cov	WAS049
Chromium , Total as Cr	0.007	mg/l	29/12/2016	Y Cov	WAS049
Copper, Total as Cu	0.036	mg/l	29/12/2016	Y Cov	WAS049
Iron , Total as Fe	13.4	mg/l	29/12/2016	Y Cov	WAS049
Lead , Total as Pb	0.030	mg/l	29/12/2016	Y Cov	WAS049
Magnesium, Total as Mg	56.2	mg/l	29/12/2016	Y Cov	WAS049
Manganese , Total as Mn	1.03	mg/l	29/12/2016	Y Cov	WAS049
Nickel, Total as Ni	0.054	mg/l	29/12/2016	Y Cov	WAS049
Potassium , Total as K	7.15	mg/l	29/12/2016	Y Cov	WAS049
Sodium , Total as Na	49.7	mg/l	29/12/2016	Y Cov	WAS049
Zinc, Total as Zn	0.145	mg/l	29/12/2016	Y Cov	WAS049
pH	7.3	pH units	15/12/2016	Y Cov	WAS039
Conductivity- Electrical 20C	1250	uS/cm	15/12/2016	Y Cov	WAS039
Alkalinity as CaCO3	495	mg/l	15/12/2016	Y Cov	WAS025
Ammoniacal Nitrogen as N	1.82	mg/l	16/12/2016	N Cov	WAS036
Chloride as Cl	218	mg/l	16/12/2016	N Cov	WAS036
Nitrogen, Total Oxidised as N	<0.7	mg/l	16/12/2016	N Cov	WAS036
Sulphate as SO4	16.7	mg/l	16/12/2016	N Cov	WAS036
Dissolved Oxygen, Fixed	2.0	mg/l	14/12/2016	Y Cov	WAS052
COD (Total)	216	mg/l	16/12/2016	Y Cov	WAS040
TOC (Filtered)	17.4	mg/l	19/12/2016	Y Cov	WAS005
Water Level to top of Casing	Blocked	m	13/12/2016	N Cov	IN SITU M

Analyst Comments for 15749323:

This sample has been analysed for Magnesium, Total as Mg, Sodium Total as Na outside recommended stability times. It is therefore possible that the results provided may be compromised.

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

Analysed at: Cov = Coventry(CV4 9GU), Che = Chester(CH4 9EP), Ott = Otterbourne(SO21 2SW), S = Subcontracted, Trb = Subcontracted to Trowbridge(BA14 0XD), Wak = Wakefield(WF5 9TG). For Microbiological determinands 0 or ND=Not Detected, For Legionella ND=Not Detected in volume of sample filtered. The LOD for the Legionella analysis will increase where the volume analysed is <1000g (1g is approximately equivalent to 1ml for sample volume analysed).

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ALS Environmental Ltd

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Signed: A I Horobin

Name: **A. Horobin**

Date: **29 December 2016**

Title: **Organic Operations Manager**

Certificate of Analysis



Report Number: **COV/1345188/2016**

Issue **1**

Laboratory Number: **15749324**

Sample **5** of **19**

Sample Source: **Caerphilly County B.C.**

Sample Point Description: **N6**

Sample Description: **N6**

Sample Matrix: **Ground Water**

Sample Date/Time: **12 December 2016 12:10**

Sample Received: **12 December 2016**

Analysis Complete: **29 December 2016**

Test Description	Result	Units	Analysis Date	Accreditation	Method
Field Temperature	11.3	Deg C	13/12/2016	N Cov	FIELD
Cadmium , Total as Cd	0.0033	mg/l	29/12/2016	Y Cov	WAS049
Calcium , Total as Ca	64.9	mg/l	29/12/2016	Y Cov	WAS049
Chromium , Total as Cr	0.003	mg/l	29/12/2016	Y Cov	WAS049
Copper, Total as Cu	0.011	mg/l	29/12/2016	Y Cov	WAS049
Iron , Total as Fe	5.62	mg/l	29/12/2016	Y Cov	WAS049
Lead , Total as Pb	0.010	mg/l	29/12/2016	Y Cov	WAS049
Magnesium, Total as Mg	38.9	mg/l	29/12/2016	Y Cov	WAS049
Manganese , Total as Mn	7.14	mg/l	29/12/2016	Y Cov	WAS049
Nickel, Total as Ni	0.035	mg/l	29/12/2016	Y Cov	WAS049
Potassium , Total as K	17.4	mg/l	29/12/2016	Y Cov	WAS049
Sodium , Total as Na	46.8	mg/l	29/12/2016	Y Cov	WAS049
Zinc, Total as Zn	0.05	mg/l	29/12/2016	Y Cov	WAS049
pH	7.1	pH units	15/12/2016	Y Cov	WAS039
Conductivity- Electrical 20C	916	uS/cm	15/12/2016	Y Cov	WAS039
Alkalinity as CaCO3	472	mg/l	15/12/2016	Y Cov	WAS025
Ammoniacal Nitrogen as N	20.3	mg/l	16/12/2016	N Cov	WAS036
Chloride as Cl	67.4	mg/l	16/12/2016	N Cov	WAS036
Nitrogen, Total Oxidised as N	<0.7	mg/l	16/12/2016	N Cov	WAS036
Sulphate as SO4	22.7	mg/l	16/12/2016	N Cov	WAS036
Dissolved Oxygen, Fixed	1.0	mg/l	14/12/2016	Y Cov	WAS052
COD (Total)	53.0	mg/l	16/12/2016	Y Cov	WAS040
TOC (Filtered)	8.4	mg/l	19/12/2016	Y Cov	WAS005

Analyst Comments for 15749324:

This sample has been analysed for Magnesium, Total as Mg, Sodium Total as Na outside recommended stability times. It is therefore possible that the results provided may be compromised.

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

Analysed at: Cov = Coventry(CV4 9GU), Che = Chester(CH4 9EP), Ott = Otterbourne(SO21 2SW), S = Subcontracted, Trb = Subcontracted to Trowbridge(BA14 0XD), Wak = Wakefield(WF5 9TG).

For Microbiological determinands 0 or ND=Not Detected, For Legionella ND=Not Detected in volume of sample filtered. The LOD for the Legionella analysis will increase where the volume analysed is <1000g (1g is approximately equivalent to 1ml for sample volume analysed).

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

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Signed: A I Horobin

Name: **A. Horobin**

Date: **29 December 2016**

Title: **Organic Operations Manager**

Certificate of Analysis



Report Number: **COV/1345188/2016**

Issue **1**

Laboratory Number: **15749325**

Sample **6** of **19**

Sample Source: **Caerphilly County B.C.**

Sample Point Description: **N8**

Sample Description: **N8**

Sample Matrix: **Ground Water**

Sample Date/Time: **12 December 2016 09:35**

Sample Received: **12 December 2016**

Analysis Complete: **29 December 2016**

Test Description	Result	Units	Analysis Date	Accreditation	Method
Field Temperature	11.1	Deg C	13/12/2016	N Cov	FIELD
Cadmium , Total as Cd	<0.0006	mg/l	29/12/2016	Y Cov	WAS049
Calcium , Total as Ca	85.1	mg/l	29/12/2016	Y Cov	WAS049
Chromium , Total as Cr	<0.002	mg/l	29/12/2016	Y Cov	WAS049
Copper, Total as Cu	<0.009	mg/l	29/12/2016	Y Cov	WAS049
Iron , Total as Fe	1.54	mg/l	29/12/2016	Y Cov	WAS049
Lead , Total as Pb	<0.006	mg/l	29/12/2016	Y Cov	WAS049
Magnesium, Total as Mg	46.3	mg/l	29/12/2016	Y Cov	WAS049
Manganese , Total as Mn	1.33	mg/l	29/12/2016	Y Cov	WAS049
Nickel, Total as Ni	0.010	mg/l	29/12/2016	Y Cov	WAS049
Potassium , Total as K	2.78	mg/l	29/12/2016	Y Cov	WAS049
Sodium , Total as Na	15.1	mg/l	29/12/2016	Y Cov	WAS049
Zinc, Total as Zn	0.03	mg/l	29/12/2016	Y Cov	WAS049
pH	7.5	pH units	15/12/2016	Y Cov	WAS039
Conductivity- Electrical 20C	832	uS/cm	15/12/2016	Y Cov	WAS039
Alkalinity as CaCO3	189	mg/l	15/12/2016	Y Cov	WAS025
Ammoniacal Nitrogen as N	1.73	mg/l	16/12/2016	N Cov	WAS036
Chloride as Cl	191	mg/l	16/12/2016	N Cov	WAS036
Nitrogen, Total Oxidised as N	<0.7	mg/l	16/12/2016	N Cov	WAS036
Sulphate as SO4	27.3	mg/l	16/12/2016	N Cov	WAS036
Dissolved Oxygen, Fixed	1.9	mg/l	14/12/2016	Y Cov	WAS052
COD (Total)	28.0	mg/l	16/12/2016	Y Cov	WAS040
TOC (Filtered)	2.1	mg/l	19/12/2016	Y Cov	WAS005
Water Level to top of Casing	4.49	m	13/12/2016	N Cov	IN SITU M

Analyst Comments for 15749325:

This sample has been analysed for Magnesium, Total as Mg, Sodium Total as Na outside recommended stability times. It is therefore possible that the results provided may be compromised.

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

Analysed at: Cov = Coventry(CV4 9GU), Che = Chester(CH4 9EP), Ott = Otterbourne(SO21 2SW), S = Subcontracted, Trb = Subcontracted to Trowbridge(BA14 0XD), Wak = Wakefield(WF5 9TG). For Microbiological determinands 0 or ND=Not Detected, For Legionella ND=Not Detected in volume of sample filtered. The LOD for the Legionella analysis will increase where the volume analysed is <1000g (1g is approximately equivalent to 1ml for sample volume analysed).

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

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Signed: A I Horobin

Name: **A. Horobin**

Date: **29 December 2016**

Title: **Organic Operations Manager**

Certificate of Analysis



Report Number: **COV/1345188/2016**

Issue **1**

Laboratory Number: **15749326**

Sample **7** of **19**

Sample Source: **Caerphilly County B.C.**

Sample Point Description: **NBH1**

Sample Description: **NBH1**

Sample Matrix: **Ground Water**

Sample Date/Time: **12 December 2016 12:00**

Sample Received: **12 December 2016**

Analysis Complete: **29 December 2016**

Test Description	Result	Units	Analysis Date	Accreditation	Method
Field Temperature	15.7	Deg C	13/12/2016	N Cov	FIELD
Cadmium , Total as Cd	0.0018	mg/l	29/12/2016	Y Cov	WAS049
Calcium , Total as Ca	124	mg/l	29/12/2016	Y Cov	WAS049
Chromium , Total as Cr	0.023	mg/l	29/12/2016	Y Cov	WAS049
Copper, Total as Cu	0.026	mg/l	29/12/2016	Y Cov	WAS049
Iron , Total as Fe	66.7	mg/l	29/12/2016	Y Cov	WAS049
Lead , Total as Pb	0.048	mg/l	29/12/2016	Y Cov	WAS049
Magnesium, Total as Mg	24.3	mg/l	29/12/2016	Y Cov	WAS049
Manganese , Total as Mn	1.82	mg/l	29/12/2016	Y Cov	WAS049
Nickel, Total as Ni	0.042	mg/l	29/12/2016	Y Cov	WAS049
Potassium , Total as K	38.2	mg/l	29/12/2016	Y Cov	WAS049
Sodium , Total as Na	74.5	mg/l	29/12/2016	Y Cov	WAS049
Zinc, Total as Zn	0.173	mg/l	29/12/2016	Y Cov	WAS049
pH	7.4	pH units	15/12/2016	Y Cov	WAS039
Conductivity- Electrical 20C	1340	uS/cm	15/12/2016	Y Cov	WAS039
Alkalinity as CaCO3	666	mg/l	15/12/2016	Y Cov	WAS025
Ammoniacal Nitrogen as N	22.0	mg/l	16/12/2016	N Cov	WAS036
Chloride as Cl	116	mg/l	16/12/2016	N Cov	WAS036
Nitrogen, Total Oxidised as N	9.0	mg/l	16/12/2016	N Cov	WAS036
Sulphate as SO4	30.5	mg/l	16/12/2016	N Cov	WAS036
Dissolved Oxygen, Fixed	1.0	mg/l	14/12/2016	Y Cov	WAS052
COD (Total)	371	mg/l	16/12/2016	Y Cov	WAS040
TOC (Filtered)	20.7	mg/l	19/12/2016	Y Cov	WAS005
Water Level to top of Casing	3.70	m	13/12/2016	N Cov	IN SITU M

Analyst Comments for 15749326:

This sample has been analysed for Magnesium, Total as Mg, Sodium Total as Na outside recommended stability times. It is therefore possible that the results provided may be compromised.

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

Analysed at: Cov = Coventry(CV4 9GU), Che = Chester(CH4 9EP), Ott = Otterbourne(SO21 2SW), S = Subcontracted, Trb = Subcontracted to Trowbridge(BA14 0XD), Wak = Wakefield(WF5 9TG). For Microbiological determinands 0 or ND=Not Detected, For Legionella ND=Not Detected in volume of sample filtered. The LOD for the Legionella analysis will increase where the volume analysed is <1000g (1g is approximately equivalent to 1ml for sample volume analysed).

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

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Signed: A I Horobin

Name: **A. Horobin**

Date: **29 December 2016**

Title: **Organic Operations Manager**

Certificate of Analysis



Report Number: **COV/1345188/2016**

Issue **1**

Laboratory Number: **15749327**

Sample **8** of **19**

Sample Source: **Caerphilly County B.C.**

Sample Point Description: **NBH3**

Sample Description: **NBH3**

Sample Matrix: **Ground Water**

Sample Date/Time: **12 December 2016 11:30**

Sample Received: **12 December 2016**

Analysis Complete: **29 December 2016**

Test Description	Result	Units	Analysis Date	Accreditation	Method
Field Temperature	14.2	Deg C	13/12/2016	N Cov	FIELD
Cadmium , Total as Cd	<0.0006	mg/l	29/12/2016	Y Cov	WAS049
Calcium , Total as Ca	139	mg/l	29/12/2016	Y Cov	WAS049
Chromium , Total as Cr	0.003	mg/l	29/12/2016	Y Cov	WAS049
Copper, Total as Cu	<0.009	mg/l	29/12/2016	Y Cov	WAS049
Iron , Total as Fe	41.6	mg/l	29/12/2016	Y Cov	WAS049
Lead , Total as Pb	0.007	mg/l	29/12/2016	Y Cov	WAS049
Magnesium, Total as Mg	25.1	mg/l	29/12/2016	Y Cov	WAS049
Manganese , Total as Mn	1.35	mg/l	29/12/2016	Y Cov	WAS049
Nickel, Total as Ni	0.016	mg/l	29/12/2016	Y Cov	WAS049
Potassium , Total as K	18.6	mg/l	29/12/2016	Y Cov	WAS049
Sodium , Total as Na	32.1	mg/l	29/12/2016	Y Cov	WAS049
Zinc, Total as Zn	0.03	mg/l	29/12/2016	Y Cov	WAS049
pH	6.9	pH units	15/12/2016	Y Cov	WAS039
Conductivity- Electrical 20C	1010	uS/cm	15/12/2016	Y Cov	WAS039
Alkalinity as CaCO3	577	mg/l	15/12/2016	Y Cov	WAS025
Ammoniacal Nitrogen as N	13.6	mg/l	16/12/2016	N Cov	WAS036
Chloride as Cl	42.9	mg/l	16/12/2016	N Cov	WAS036
Nitrogen, Total Oxidised as N	6.4	mg/l	16/12/2016	N Cov	WAS036
Sulphate as SO4	27.1	mg/l	16/12/2016	N Cov	WAS036
Dissolved Oxygen, Fixed	1.9	mg/l	14/12/2016	Y Cov	WAS052
COD (Total)	56.0	mg/l	16/12/2016	Y Cov	WAS040
TOC (Filtered)	8.0	mg/l	19/12/2016	Y Cov	WAS005
Water Level to top of Casing	6.33	m	13/12/2016	N Cov	IN SITU M

Analyst Comments for 15749327:

This sample has been analysed for Magnesium, Total as Mg, Sodium Total as Na outside recommended stability times. It is therefore possible that the results provided may be compromised.

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

Analysed at: Cov = Coventry(CV4 9GU), Che = Chester(CH4 9EP), Ott = Otterbourne(SO21 2SW), S = Subcontracted, Trb = Subcontracted to Trowbridge(BA14 0XD), Wak = Wakefield(WF5 9TG). For Microbiological determinands 0 or ND=Not Detected, For Legionella ND=Not Detected in volume of sample filtered. The LOD for the Legionella analysis will increase where the volume analysed is <1000g (1g is approximately equivalent to 1ml for sample volume analysed).

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

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Report Number: **COV/1345188/2016**

Issue **1**

Laboratory Number: **15749328**

Sample **9** of **19**

Sample Source: **Caerphilly County B.C.**

Sample Point Description: **NBH4**

Sample Description: **NBH4**

Sample Matrix: **Ground Water**

Sample Date/Time: **12 December 2016 10:58**

Sample Received: **12 December 2016**

Analysis Complete: **29 December 2016**

Test Description	Result	Units	Analysis Date	Accreditation	Method
Field Temperature	13.4	Deg C	13/12/2016	N Cov	FIELD
Cadmium , Total as Cd	0.0014	mg/l	29/12/2016	Y Cov	WAS049
Calcium , Total as Ca	47.5	mg/l	29/12/2016	Y Cov	WAS049
Chromium , Total as Cr	0.002	mg/l	29/12/2016	Y Cov	WAS049
Copper, Total as Cu	0.011	mg/l	29/12/2016	Y Cov	WAS049
Iron , Total as Fe	89.1	mg/l	29/12/2016	Y Cov	WAS049
Lead , Total as Pb	0.013	mg/l	29/12/2016	Y Cov	WAS049
Magnesium, Total as Mg	15.2	mg/l	29/12/2016	Y Cov	WAS049
Manganese , Total as Mn	9.88	mg/l	29/12/2016	Y Cov	WAS049
Nickel, Total as Ni	0.049	mg/l	29/12/2016	Y Cov	WAS049
Potassium , Total as K	2.23	mg/l	29/12/2016	Y Cov	WAS049
Sodium , Total as Na	8.12	mg/l	29/12/2016	Y Cov	WAS049
Zinc, Total as Zn	0.05	mg/l	29/12/2016	Y Cov	WAS049
pH	6.6	pH units	15/12/2016	Y Cov	WAS039
Conductivity- Electrical 20C	411	uS/cm	15/12/2016	Y Cov	WAS039
Alkalinity as CaCO3	171	mg/l	15/12/2016	Y Cov	WAS025
Ammoniacal Nitrogen as N	<0.41	mg/l	16/12/2016	N Cov	WAS036
Chloride as Cl	14.7	mg/l	16/12/2016	N Cov	WAS036
Nitrogen, Total Oxidised as N	<0.7	mg/l	16/12/2016	N Cov	WAS036
Sulphate as SO4	62.7	mg/l	16/12/2016	N Cov	WAS036
Dissolved Oxygen, Fixed	11.7	mg/l	14/12/2016	Y Cov	WAS052
COD (Total)	181	mg/l	16/12/2016	Y Cov	WAS040
TOC (Filtered)	1.9	mg/l	19/12/2016	Y Cov	WAS005
Water Level to top of Casing	17.5	m	13/12/2016	N Cov	IN SITU M

Analyst Comments for 15749328:

This sample has been analysed for Magnesium, Total as Mg, Sodium Total as Na outside recommended stability times. It is therefore possible that the results provided may be compromised.

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

Analysed at: Cov = Coventry(CV4 9GU), Che = Chester(CH4 9EP), Ott = Otterbourne(SO21 2SW), S = Subcontracted, Trb = Subcontracted to Trowbridge(BA14 0XD), Wak = Wakefield(WF5 9TG). For Microbiological determinands 0 or ND=Not Detected, For Legionella ND=Not Detected in volume of sample filtered. The LOD for the Legionella analysis will increase where the volume analysed is <1000g (1g is approximately equivalent to 1ml for sample volume analysed).

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

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Title: **Organic Operations Manager**

Certificate of Analysis



Report Number: **COV/1345188/2016**

Issue **1**

Laboratory Number: **15749329**

Sample **10** of **19**

Sample Source: **Caerphilly County B.C.**

Sample Point Description: **N2**

Sample Description: **N2**

Sample Matrix: **Ground Water**

Sample Date/Time: **12 December 2016 10:05**

Sample Received: **12 December 2016**

Analysis Complete: **29 December 2016**

Test Description	Result	Units	Analysis Date	Accreditation	Method
Field Temperature	11.1	Deg C	14/12/2016	N Cov	FIELD
Cadmium , Total as Cd	<0.0006	mg/l	29/12/2016	Y Cov	WAS049
Calcium , Total as Ca	20.0	mg/l	29/12/2016	Y Cov	WAS049
Chromium , Total as Cr	<0.002	mg/l	29/12/2016	Y Cov	WAS049
Copper, Total as Cu	<0.009	mg/l	29/12/2016	Y Cov	WAS049
Iron , Total as Fe	1.20	mg/l	29/12/2016	Y Cov	WAS049
Lead , Total as Pb	<0.006	mg/l	29/12/2016	Y Cov	WAS049
Magnesium, Total as Mg	9.5	mg/l	29/12/2016	Y Cov	WAS049
Manganese , Total as Mn	0.116	mg/l	29/12/2016	Y Cov	WAS049
Nickel, Total as Ni	0.005	mg/l	29/12/2016	Y Cov	WAS049
Potassium , Total as K	0.81	mg/l	29/12/2016	Y Cov	WAS049
Sodium , Total as Na	4.70	mg/l	29/12/2016	Y Cov	WAS049
Zinc, Total as Zn	<0.018	mg/l	29/12/2016	Y Cov	WAS049
pH	6.9	pH units	15/12/2016	Y Cov	WAS039
Conductivity- Electrical 20C	179	uS/cm	15/12/2016	Y Cov	WAS039
Alkalinity as CaCO3	78.8	mg/l	15/12/2016	Y Cov	WAS025
Ammoniacal Nitrogen as N	<0.41	mg/l	16/12/2016	N Cov	WAS036
Chloride as Cl	9.9	mg/l	16/12/2016	N Cov	WAS036
Nitrogen, Total Oxidised as N	<0.7	mg/l	16/12/2016	N Cov	WAS036
Sulphate as SO4	11.2	mg/l	16/12/2016	N Cov	WAS036
Dissolved Oxygen, Fixed	3.0	mg/l	14/12/2016	Y Cov	WAS052
COD (Total)	15.0	mg/l	16/12/2016	Y Cov	WAS040
TOC (Filtered)	<0.7	mg/l	19/12/2016	Y Cov	WAS005
Water Level to top of Casing	7.75	m	14/12/2016	N Cov	IN SITU M

Analyst Comments for 15749329:

This sample has been analysed for Magnesium, Total as Mg, Sodium Total as Na outside recommended stability times. It is therefore possible that the results provided may be compromised.

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

Analysed at: Cov = Coventry(CV4 9GU), Che = Chester(CH4 9EP), Ott = Otterbourne(SO21 2SW), S = Subcontracted, Trb = Subcontracted to Trowbridge(BA14 0XD), Wak = Wakefield(WF5 9TG). For Microbiological determinands 0 or ND=Not Detected, For Legionella ND=Not Detected in volume of sample filtered. The LOD for the Legionella analysis will increase where the volume analysed is <1000g (1g is approximately equivalent to 1ml for sample volume analysed).

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Title: **Organic Operations Manager**

Certificate of Analysis



Report Number: **COV/1345188/2016**

Issue **1**

Laboratory Number: **15749330**

Sample **11** of **19**

Sample Source: **Caerphilly County B.C.**

Sample Point Description: **NBH6**

Sample Description: **NBH6**

Sample Matrix: **Ground Water**

Sample Date/Time: **12 December 2016 10:35**

Sample Received: **12 December 2016**

Analysis Complete: **29 December 2016**

Test Description	Result	Units	Analysis Date	Accreditation	Method
Field Temperature	12.4	Deg C	14/12/2016	N Cov	FIELD
Cadmium , Total as Cd	<0.0006	mg/l	29/12/2016	Y Cov	WAS049
Calcium , Total as Ca	69.5	mg/l	29/12/2016	Y Cov	WAS049
Chromium , Total as Cr	<0.002	mg/l	29/12/2016	Y Cov	WAS049
Copper, Total as Cu	<0.009	mg/l	29/12/2016	Y Cov	WAS049
Iron , Total as Fe	20.6	mg/l	29/12/2016	Y Cov	WAS049
Lead , Total as Pb	<0.006	mg/l	29/12/2016	Y Cov	WAS049
Magnesium, Total as Mg	16.5	mg/l	29/12/2016	Y Cov	WAS049
Manganese , Total as Mn	1.35	mg/l	29/12/2016	Y Cov	WAS049
Nickel, Total as Ni	0.007	mg/l	29/12/2016	Y Cov	WAS049
Potassium , Total as K	5.52	mg/l	29/12/2016	Y Cov	WAS049
Sodium , Total as Na	11.0	mg/l	29/12/2016	Y Cov	WAS049
Zinc, Total as Zn	0.02	mg/l	29/12/2016	Y Cov	WAS049
pH	6.6	pH units	15/12/2016	Y Cov	WAS039
Conductivity- Electrical 20C	501	uS/cm	15/12/2016	Y Cov	WAS039
Alkalinity as CaCO3	211	mg/l	15/12/2016	Y Cov	WAS025
Ammoniacal Nitrogen as N	<0.41	mg/l	16/12/2016	N Cov	WAS036
Chloride as Cl	20.7	mg/l	16/12/2016	N Cov	WAS036
Nitrogen, Total Oxidised as N	9.8	mg/l	16/12/2016	N Cov	WAS036
Sulphate as SO4	48.3	mg/l	16/12/2016	N Cov	WAS036
Dissolved Oxygen, Fixed	2.2	mg/l	14/12/2016	Y Cov	WAS052
COD (Total)	42.0	mg/l	16/12/2016	Y Cov	WAS040
TOC (Filtered)	4.2	mg/l	19/12/2016	Y Cov	WAS005
Water Level to top of Casing	5.80	m	14/12/2016	N Cov	IN SITU M

Analyst Comments for 15749330:

This sample has been analysed for Magnesium, Total as Mg, Sodium Total as Na outside recommended stability times. It is therefore possible that the results provided may be compromised.

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

Analysed at: Cov = Coventry(CV4 9GU), Che = Chester(CH4 9EP), Ott = Otterbourne(SO21 2SW), S = Subcontracted, Trb = Subcontracted to Trowbridge(BA14 0XD), Wak = Wakefield(WF5 9TG). For Microbiological determinands 0 or ND=Not Detected, For Legionella ND=Not Detected in volume of sample filtered. The LOD for the Legionella analysis will increase where the volume analysed is <1000g (1g is approximately equivalent to 1ml for sample volume analysed).

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Certificate of Analysis



Report Number: **COV/1345188/2016**

Issue **1**

Laboratory Number: **15749331**

Sample **12** of **19**

Sample Source: **Caerphilly County B.C.**

Sample Point Description: **W1**

Sample Description: **W1**

Sample Matrix: **Ground Water**

Sample Date/Time: **12 December 2016 09:45**

Sample Received: **12 December 2016**

Analysis Complete: **29 December 2016**

Test Description	Result	Units	Analysis Date	Accreditation	Method
Field Temperature	8.0	Deg C	13/12/2016	N Cov	FIELD
Cadmium , Total as Cd	<0.0006	mg/l	29/12/2016	Y Cov	WAS049
Calcium , Total as Ca	28.8	mg/l	29/12/2016	Y Cov	WAS049
Chromium , Total as Cr	<0.002	mg/l	29/12/2016	Y Cov	WAS049
Copper, Total as Cu	<0.009	mg/l	29/12/2016	Y Cov	WAS049
Iron , Total as Fe	17.8	mg/l	29/12/2016	Y Cov	WAS049
Lead , Total as Pb	<0.006	mg/l	29/12/2016	Y Cov	WAS049
Magnesium, Total as Mg	15.8	mg/l	29/12/2016	Y Cov	WAS049
Manganese , Total as Mn	0.335	mg/l	29/12/2016	Y Cov	WAS049
Nickel, Total as Ni	0.005	mg/l	29/12/2016	Y Cov	WAS049
Potassium , Total as K	4.94	mg/l	29/12/2016	Y Cov	WAS049
Sodium , Total as Na	15.5	mg/l	29/12/2016	Y Cov	WAS049
Zinc, Total as Zn	0.02	mg/l	29/12/2016	Y Cov	WAS049
pH	7.5	pH units	15/12/2016	Y Cov	WAS039
Conductivity- Electrical 20C	308	uS/cm	15/12/2016	Y Cov	WAS039
Alkalinity as CaCO3	110	mg/l	15/12/2016	Y Cov	WAS025
Ammoniacal Nitrogen as N	0.65	mg/l	16/12/2016	N Cov	WAS036
Chloride as Cl	29.2	mg/l	16/12/2016	N Cov	WAS036
Nitrogen, Total Oxidised as N	2.2	mg/l	16/12/2016	N Cov	WAS036
Sulphate as SO4	23.6	mg/l	16/12/2016	N Cov	WAS036
Dissolved Oxygen, Fixed	9.2	mg/l	14/12/2016	Y Cov	WAS052
COD (Total)	24.0	mg/l	16/12/2016	Y Cov	WAS040
TOC (Filtered)	2.2	mg/l	19/12/2016	Y Cov	WAS005

Analyst Comments for 15749331:

This sample has been analysed for Magnesium, Total as Mg, Sodium Total as Na outside recommended stability times. It is therefore possible that the results provided may be compromised.

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

Analysed at: Cov = Coventry(CV4 9GU), Che = Chester(CH4 9EP), Ott = Otterbourne(SO21 2SW), S = Subcontracted, Trb = Subcontracted to Trowbridge(BA14 0XD), Wak = Wakefield(WF5 9TG).

For Microbiological determinands 0 or ND=Not Detected, For Legionella ND=Not Detected in volume of sample filtered. The LOD for the Legionella analysis will increase where the volume analysed is <1000g (1g is approximately equivalent to 1ml for sample volume analysed).

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

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Title: **Organic Operations Manager**

Certificate of Analysis



Report Number: **COV/1345188/2016**

Issue **1**

Laboratory Number: **15749332**

Sample **13** of **19**

Sample Source: **Caerphilly County B.C.**

Sample Point Description: **W2**

Sample Description: **W2**

Sample Matrix: **Ground Water**

Sample Date/Time: **12 December 2016 09:46**

Sample Received: **12 December 2016**

Analysis Complete: **29 December 2016**

Test Description	Result	Units	Analysis Date	Accreditation	Method
Field Temperature	8.2	Deg C	13/12/2016	N Cov	FIELD
Cadmium , Total as Cd	<0.0006	mg/l	29/12/2016	Y Cov	WAS049
Calcium , Total as Ca	42.6	mg/l	29/12/2016	Y Cov	WAS049
Chromium , Total as Cr	<0.002	mg/l	29/12/2016	Y Cov	WAS049
Copper, Total as Cu	<0.009	mg/l	29/12/2016	Y Cov	WAS049
Iron , Total as Fe	0.63	mg/l	29/12/2016	Y Cov	WAS049
Lead , Total as Pb	<0.006	mg/l	29/12/2016	Y Cov	WAS049
Magnesium, Total as Mg	16.9	mg/l	29/12/2016	Y Cov	WAS049
Manganese , Total as Mn	0.064	mg/l	29/12/2016	Y Cov	WAS049
Nickel, Total as Ni	0.004	mg/l	29/12/2016	Y Cov	WAS049
Potassium , Total as K	9.38	mg/l	29/12/2016	Y Cov	WAS049
Sodium , Total as Na	25.0	mg/l	29/12/2016	Y Cov	WAS049
Zinc, Total as Zn	<0.018	mg/l	29/12/2016	Y Cov	WAS049
pH	7.8	pH units	15/12/2016	Y Cov	WAS039
Conductivity- Electrical 20C	466	uS/cm	15/12/2016	Y Cov	WAS039
Alkalinity as CaCO3	182	mg/l	15/12/2016	Y Cov	WAS025
Ammoniacal Nitrogen as N	4.59	mg/l	16/12/2016	N Cov	WAS036
Chloride as Cl	40.7	mg/l	16/12/2016	N Cov	WAS036
Nitrogen, Total Oxidised as N	4.9	mg/l	16/12/2016	N Cov	WAS036
Sulphate as SO4	20.2	mg/l	16/12/2016	N Cov	WAS036
Dissolved Oxygen, Fixed	9.2	mg/l	14/12/2016	Y Cov	WAS052
COD (Total)	18.0	mg/l	16/12/2016	Y Cov	WAS040
TOC (Filtered)	4.8	mg/l	19/12/2016	Y Cov	WAS005

Analyst Comments for 15749332:

This sample has been analysed for Magnesium, Total as Mg, Sodium Total as Na outside recommended stability times. It is therefore possible that the results provided may be compromised.

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

Analysed at: Cov = Coventry(CV4 9GU), Che = Chester(CH4 9EP), Ott = Otterbourne(SO21 2SW), S = Subcontracted, Trb = Subcontracted to Trowbridge(BA14 0XD), Wak = Wakefield(WF5 9TG).

For Microbiological determinands 0 or ND=Not Detected, For Legionella ND=Not Detected in volume of sample filtered. The LOD for the Legionella analysis will increase where the volume analysed is <1000g (1g is approximately equivalent to 1ml for sample volume analysed).

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

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Title: **Organic Operations Manager**

Certificate of Analysis



Report Number: **COV/1345188/2016**

Issue **1**

Laboratory Number: **15749333**

Sample **14** of **19**

Sample Source: **Caerphilly County B.C.**

Sample Point Description: **W3**

Sample Description: **W3**

Sample Matrix: **Ground Water**

Sample Date/Time: **12 December 2016 09:40**

Sample Received: **12 December 2016**

Analysis Complete: **29 December 2016**

Test Description	Result	Units	Analysis Date	Accreditation	Method
Field Temperature	8.1	Deg C	13/12/2016	N Cov	FIELD
Cadmium , Total as Cd	<0.0006	mg/l	29/12/2016	Y Cov	WAS049
Calcium , Total as Ca	33.5	mg/l	29/12/2016	Y Cov	WAS049
Chromium , Total as Cr	<0.002	mg/l	29/12/2016	Y Cov	WAS049
Copper, Total as Cu	<0.009	mg/l	29/12/2016	Y Cov	WAS049
Iron , Total as Fe	0.43	mg/l	29/12/2016	Y Cov	WAS049
Lead , Total as Pb	<0.006	mg/l	29/12/2016	Y Cov	WAS049
Magnesium, Total as Mg	14.1	mg/l	29/12/2016	Y Cov	WAS049
Manganese , Total as Mn	0.019	mg/l	29/12/2016	Y Cov	WAS049
Nickel, Total as Ni	<0.003	mg/l	29/12/2016	Y Cov	WAS049
Potassium , Total as K	4.64	mg/l	29/12/2016	Y Cov	WAS049
Sodium , Total as Na	13.7	mg/l	29/12/2016	Y Cov	WAS049
Zinc, Total as Zn	0.07	mg/l	29/12/2016	Y Cov	WAS049
pH	8.1	pH units	15/12/2016	Y Cov	WAS039
Conductivity- Electrical 20C	310	uS/cm	15/12/2016	Y Cov	WAS039
Alkalinity as CaCO3	105	mg/l	15/12/2016	Y Cov	WAS025
Ammoniacal Nitrogen as N	<0.41	mg/l	16/12/2016	N Cov	WAS036
Chloride as Cl	16.4	mg/l	16/12/2016	N Cov	WAS036
Nitrogen, Total Oxidised as N	<0.7	mg/l	16/12/2016	N Cov	WAS036
Sulphate as SO4	51.1	mg/l	16/12/2016	N Cov	WAS036
Dissolved Oxygen, Fixed	12.8	mg/l	14/12/2016	Y Cov	WAS052
COD (Total)	20.0	mg/l	16/12/2016	Y Cov	WAS040
TOC (Filtered)	2.7	mg/l	19/12/2016	Y Cov	WAS005

Analyst Comments for 15749333:

This sample has been analysed for Magnesium, Total as Mg, Sodium Total as Na outside recommended stability times. It is therefore possible that the results provided may be compromised.

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

Analysed at: Cov = Coventry(CV4 9GU), Che = Chester(CH4 9EP), Ott = Otterbourne(SO21 2SW), S = Subcontracted, Trb = Subcontracted to Trowbridge(BA14 0XD), Wak = Wakefield(WF5 9TG).

For Microbiological determinands 0 or ND=Not Detected, For Legionella ND=Not Detected in volume of sample filtered. The LOD for the Legionella analysis will increase where the volume analysed is

<1000g (1g is approximately equivalent to 1ml for sample volume analysed).

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

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Signed: A I Horobin

Name: **A. Horobin**

Date: **29 December 2016**

Title: **Organic Operations Manager**

Certificate of Analysis



Report Number: **COV/1345188/2016**

Issue **1**

Laboratory Number: **15749334**

Sample **15** of **19**

Sample Source: **Caerphilly County B.C.**

Sample Point Description: **W5**

Sample Description: **W5**

Sample Matrix: **Ground Water**

Sample Date/Time: **12 December 2016 10:45**

Sample Received: **12 December 2016**

Analysis Complete: **29 December 2016**

Test Description	Result	Units	Analysis Date	Accreditation	Method
Field Temperature	9.2	Deg C	13/12/2016	N Cov	FIELD
Cadmium , Total as Cd	<0.0006	mg/l	29/12/2016	Y Cov	WAS049
Calcium , Total as Ca	7.45	mg/l	29/12/2016	Y Cov	WAS049
Chromium , Total as Cr	<0.002	mg/l	29/12/2016	Y Cov	WAS049
Copper, Total as Cu	<0.009	mg/l	29/12/2016	Y Cov	WAS049
Iron , Total as Fe	0.26	mg/l	29/12/2016	Y Cov	WAS049
Lead , Total as Pb	<0.006	mg/l	29/12/2016	Y Cov	WAS049
Magnesium, Total as Mg	5.7	mg/l	29/12/2016	Y Cov	WAS049
Manganese , Total as Mn	0.050	mg/l	29/12/2016	Y Cov	WAS049
Nickel, Total as Ni	<0.003	mg/l	29/12/2016	Y Cov	WAS049
Potassium , Total as K	0.84	mg/l	29/12/2016	Y Cov	WAS049
Sodium , Total as Na	6.50	mg/l	29/12/2016	Y Cov	WAS049
Zinc, Total as Zn	<0.018	mg/l	29/12/2016	Y Cov	WAS049
pH	7.6	pH units	15/12/2016	Y Cov	WAS039
Conductivity- Electrical 20C	118	uS/cm	15/12/2016	Y Cov	WAS039
Alkalinity as CaCO3	29.0	mg/l	15/12/2016	Y Cov	WAS025
Ammoniacal Nitrogen as N	<0.41	mg/l	16/12/2016	N Cov	WAS036
Chloride as Cl	12.8	mg/l	16/12/2016	N Cov	WAS036
Nitrogen, Total Oxidised as N	1.3	mg/l	16/12/2016	N Cov	WAS036
Sulphate as SO4	6.6	mg/l	16/12/2016	N Cov	WAS036
Dissolved Oxygen, Fixed	9.9	mg/l	14/12/2016	Y Cov	WAS052
COD (Total)	23.0	mg/l	16/12/2016	Y Cov	WAS040
TOC (Filtered)	2.0	mg/l	19/12/2016	Y Cov	WAS005

Analyst Comments for 15749334:

This sample has been analysed for Magnesium, Total as Mg, Sodium Total as Na outside recommended stability times. It is therefore possible that the results provided may be compromised.

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

Analysed at: Cov = Coventry(CV4 9GU), Che = Chester(CH4 9EP), Ott = Otterbourne(SO21 2SW), S = Subcontracted, Trb = Subcontracted to Trowbridge(BA14 0XD), Wak = Wakefield(WF5 9TG).

For Microbiological determinands 0 or ND=Not Detected, For Legionella ND=Not Detected in volume of sample filtered. The LOD for the Legionella analysis will increase where the volume analysed is <1000g (1g is approximately equivalent to 1ml for sample volume analysed).

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

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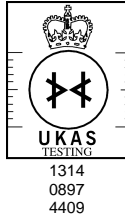
Signed: A I Horobin

Name: **A. Horobin**

Date: **29 December 2016**

Title: **Organic Operations Manager**

Certificate of Analysis



Report Number: **COV/1345188/2016**

Issue **1**

Laboratory Number: **15749335**

Sample **16** of **19**

Sample Source: **Caerphilly County B.C.**

Sample Point Description: **Groundwater Sump**

Sample Description: **SUMP**

Sample Matrix: **Ground Water**

Sample Date/Time: **12 December 2016 11:10**

Sample Received: **12 December 2016**

Analysis Complete: **29 December 2016**

Test Description	Result	Units	Analysis Date	Accreditation	Method
Field Temperature	11.0	Deg C	13/12/2016	N Cov	FIELD
Cadmium , Total as Cd	0.0053	mg/l	29/12/2016	Y Cov	WAS049
Calcium , Total as Ca	82.6	mg/l	29/12/2016	Y Cov	WAS049
Chromium , Total as Cr	0.014	mg/l	29/12/2016	Y Cov	WAS049
Copper, Total as Cu	0.021	mg/l	29/12/2016	Y Cov	WAS049
Iron , Total as Fe	221	mg/l	29/12/2016	Y Cov	WAS049
Lead , Total as Pb	0.043	mg/l	29/12/2016	Y Cov	WAS049
Magnesium, Total as Mg	26.6	mg/l	29/12/2016	Y Cov	WAS049
Manganese , Total as Mn	11.3	mg/l	29/12/2016	Y Cov	WAS049
Nickel, Total as Ni	0.040	mg/l	29/12/2016	Y Cov	WAS049
Potassium , Total as K	24.6	mg/l	29/12/2016	Y Cov	WAS049
Sodium , Total as Na	58.0	mg/l	29/12/2016	Y Cov	WAS049
Zinc, Total as Zn	0.354	mg/l	29/12/2016	Y Cov	WAS049
pH	7.3	pH units	15/12/2016	Y Cov	WAS039
Conductivity- Electrical 20C	1250	uS/cm	15/12/2016	Y Cov	WAS039
Alkalinity as CaCO3	460	mg/l	15/12/2016	Y Cov	WAS025
Ammoniacal Nitrogen as N	10.9	mg/l	16/12/2016	N Cov	WAS036
Chloride as Cl	155	mg/l	16/12/2016	N Cov	WAS036
Nitrogen, Total Oxidised as N	36.9	mg/l	16/12/2016	N Cov	WAS036
Sulphate as SO4	24.0	mg/l	16/12/2016	N Cov	WAS036
Dissolved Oxygen, Fixed	5.8	mg/l	14/12/2016	Y Cov	WAS052
COD (Total)	137	mg/l	16/12/2016	Y Cov	WAS040
TOC (Filtered)	14.6	mg/l	19/12/2016	Y Cov	WAS005

Analyst Comments for 15749335:

This sample has been analysed for Magnesium, Total as Mg, Sodium Total as Na outside recommended stability times. It is therefore possible that the results provided may be compromised.

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

Analysed at: Cov = Coventry(CV4 9GU), Che = Chester(CH4 9EP), Ott = Otterbourne(SO21 2SW), S = Subcontracted, Trb = Subcontracted to Trowbridge(BA14 0XD), Wak = Wakefield(WF5 9TG).

For Microbiological determinands 0 or ND=Not Detected, For Legionella ND=Not Detected in volume of sample filtered. The LOD for the Legionella analysis will increase where the volume analysed is <1000g (1g is approximately equivalent to 1ml for sample volume analysed).

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

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Certificate of Analysis



Report Number: **COV/1345188/2016**

Issue **1**

Laboratory Number: **15749336**

Sample **17** of **19**

Sample Source: **Caerphilly County B.C.**

Sample Point Description: **Land Drain 1**

Sample Description: **LAND DRAIN 1a**

Sample Matrix: **Ground Water**

Sample Date/Time: **12 December 2016 10:05**

Sample Received: **12 December 2016**

Analysis Complete: **29 December 2016**

Test Description	Result	Units	Analysis Date	Accreditation	Method
Field Temperature	12.2	Deg C	13/12/2016	N Cov	FIELD
Cadmium , Total as Cd	<0.0006	mg/l	29/12/2016	Y Cov	WAS049
Calcium , Total as Ca	101	mg/l	29/12/2016	Y Cov	WAS049
Chromium , Total as Cr	0.004	mg/l	29/12/2016	Y Cov	WAS049
Copper, Total as Cu	<0.009	mg/l	29/12/2016	Y Cov	WAS049
Iron , Total as Fe	1.48	mg/l	29/12/2016	Y Cov	WAS049
Lead , Total as Pb	<0.006	mg/l	29/12/2016	Y Cov	WAS049
Magnesium, Total as Mg	35.6	mg/l	29/12/2016	Y Cov	WAS049
Manganese , Total as Mn	1.02	mg/l	29/12/2016	Y Cov	WAS049
Nickel, Total as Ni	0.021	mg/l	29/12/2016	Y Cov	WAS049
Potassium , Total as K	52.4	mg/l	29/12/2016	Y Cov	WAS049
Sodium , Total as Na	118	mg/l	29/12/2016	Y Cov	WAS049
Zinc, Total as Zn	0.02	mg/l	29/12/2016	Y Cov	WAS049
pH	7.9	pH units	15/12/2016	Y Cov	WAS039
Conductivity- Electrical 20C	1570	uS/cm	15/12/2016	Y Cov	WAS039
Alkalinity as CaCO3	617	mg/l	15/12/2016	Y Cov	WAS025
Ammoniacal Nitrogen as N	47.8	mg/l	16/12/2016	N Cov	WAS036
Chloride as Cl	169	mg/l	16/12/2016	N Cov	WAS036
Nitrogen, Total Oxidised as N	33.1	mg/l	16/12/2016	N Cov	WAS036
Sulphate as SO4	23.6	mg/l	16/12/2016	N Cov	WAS036
Dissolved Oxygen, Fixed	6.3	mg/l	14/12/2016	Y Cov	WAS052
COD (Total)	77.0	mg/l	16/12/2016	Y Cov	WAS040
TOC (Filtered)	26.2	mg/l	19/12/2016	Y Cov	WAS005

Analyst Comments for 15749336:

This sample has been analysed for Magnesium, Total as Mg, Sodium Total as Na outside recommended stability times. It is therefore possible that the results provided may be compromised.

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

Analysed at: Cov = Coventry(CV4 9GU), Che = Chester(CH4 9EP), Ott = Otterbourne(SO21 2SW), S = Subcontracted, Trb = Subcontracted to Trowbridge(BA14 0XD), Wak = Wakefield(WF5 9TG).

For Microbiological determinands 0 or ND=Not Detected, For Legionella ND=Not Detected in volume of sample filtered. The LOD for the Legionella analysis will increase where the volume analysed is <1000g (1g is approximately equivalent to 1ml for sample volume analysed).

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

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Certificate of Analysis



Report Number: **COV/1345188/2016**

Issue **1**

Laboratory Number: **15749337**

Sample **18** of **19**

Sample Source: **Caerphilly County B.C.**

Sample Point Description: **Land Drain 1b**

Sample Description: **LAND DRAIN 1b**

Sample Matrix: **Ground Water**

Sample Date/Time: **12 December 2016 10:05**

Sample Received: **12 December 2016**

Analysis Complete: **29 December 2016**

Test Description	Result	Units	Analysis Date	Accreditation	Method
Field Temperature	12.1	Deg C	13/12/2016	N Cov	FIELD
Cadmium , Total as Cd	<0.0006	mg/l	29/12/2016	Y Cov	WAS049
Calcium , Total as Ca	72.6	mg/l	29/12/2016	Y Cov	WAS049
Chromium , Total as Cr	<0.002	mg/l	29/12/2016	Y Cov	WAS049
Copper, Total as Cu	<0.009	mg/l	29/12/2016	Y Cov	WAS049
Iron , Total as Fe	0.47	mg/l	29/12/2016	Y Cov	WAS049
Lead , Total as Pb	<0.006	mg/l	29/12/2016	Y Cov	WAS049
Magnesium, Total as Mg	16.1	mg/l	29/12/2016	Y Cov	WAS049
Manganese , Total as Mn	0.340	mg/l	29/12/2016	Y Cov	WAS049
Nickel, Total as Ni	0.009	mg/l	29/12/2016	Y Cov	WAS049
Potassium , Total as K	18.8	mg/l	29/12/2016	Y Cov	WAS049
Sodium , Total as Na	54.0	mg/l	29/12/2016	Y Cov	WAS049
Zinc, Total as Zn	<0.018	mg/l	29/12/2016	Y Cov	WAS049
pH	7.4	pH units	15/12/2016	Y Cov	WAS039
Conductivity- Electrical 20C	748	uS/cm	15/12/2016	Y Cov	WAS039
Alkalinity as CaCO3	255	mg/l	15/12/2016	Y Cov	WAS025
Ammoniacal Nitrogen as N	5.65	mg/l	16/12/2016	N Cov	WAS036
Chloride as Cl	76.4	mg/l	16/12/2016	N Cov	WAS036
Nitrogen, Total Oxidised as N	16.4	mg/l	16/12/2016	N Cov	WAS036
Sulphate as SO4	22.7	mg/l	16/12/2016	N Cov	WAS036
Dissolved Oxygen, Fixed	5.9	mg/l	14/12/2016	Y Cov	WAS052
COD (Total)	24.0	mg/l	16/12/2016	Y Cov	WAS040
TOC (Filtered)	10.0	mg/l	19/12/2016	Y Cov	WAS005

Analyst Comments for 15749337:

This sample has been analysed for Magnesium, Total as Mg, Sodium Total as Na outside recommended stability times. It is therefore possible that the results provided may be compromised.

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

Analysed at: Cov = Coventry(CV4 9GU), Che = Chester(CH4 9EP), Ott = Otterbourne(SO21 2SW), S = Subcontracted, Trb = Subcontracted to Trowbridge(BA14 0XD), Wak = Wakefield(WF5 9TG).

For Microbiological determinands 0 or ND=Not Detected, For Legionella ND=Not Detected in volume of sample filtered. The LOD for the Legionella analysis will increase where the volume analysed is <1000g (1g is approximately equivalent to 1ml for sample volume analysed).

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

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Signed: A I Horobin

Name: **A. Horobin**

Date: **29 December 2016**

Title: **Organic Operations Manager**

Certificate of Analysis



Report Number: **COV/1345188/2016**

Issue **1**

Laboratory Number: **15749338**

Sample **19** of **19**

Sample Source: **Caerphilly County B.C.**

Sample Point Description: **Land Drain 2**

Sample Description: **LAND DRAIN 2**

Sample Matrix: **Ground Water**

Sample Date/Time: **12 December 2016 10:00**

Sample Received: **12 December 2016**

Analysis Complete: **29 December 2016**

Test Description	Result	Units	Analysis Date	Accreditation	Method
Field Temperature	8.5	Deg C	13/12/2016	N Cov	FIELD
Cadmium , Total as Cd	<0.0006	mg/l	29/12/2016	Y Cov	WAS049
Calcium , Total as Ca	91.0	mg/l	29/12/2016	Y Cov	WAS049
Chromium , Total as Cr	<0.002	mg/l	29/12/2016	Y Cov	WAS049
Copper, Total as Cu	<0.009	mg/l	29/12/2016	Y Cov	WAS049
Iron , Total as Fe	<0.23	mg/l	29/12/2016	Y Cov	WAS049
Lead , Total as Pb	<0.006	mg/l	29/12/2016	Y Cov	WAS049
Magnesium, Total as Mg	23.5	mg/l	29/12/2016	Y Cov	WAS049
Manganese , Total as Mn	<0.007	mg/l	29/12/2016	Y Cov	WAS049
Nickel, Total as Ni	0.009	mg/l	29/12/2016	Y Cov	WAS049
Potassium , Total as K	13.2	mg/l	29/12/2016	Y Cov	WAS049
Sodium , Total as Na	58.2	mg/l	29/12/2016	Y Cov	WAS049
Zinc, Total as Zn	0.02	mg/l	29/12/2016	Y Cov	WAS049
pH	8.1	pH units	15/12/2016	Y Cov	WAS039
Conductivity- Electrical 20C	829	uS/cm	15/12/2016	Y Cov	WAS039
Alkalinity as CaCO3	318	mg/l	15/12/2016	Y Cov	WAS025
Ammoniacal Nitrogen as N	1.32	mg/l	16/12/2016	N Cov	WAS036
Chloride as Cl	98.6	mg/l	16/12/2016	N Cov	WAS036
Nitrogen, Total Oxidised as N	10.4	mg/l	16/12/2016	N Cov	WAS036
Sulphate as SO4	31.6	mg/l	16/12/2016	N Cov	WAS036
Dissolved Oxygen, Fixed	12.5	mg/l	14/12/2016	Y Cov	WAS052
COD (Total)	13.0	mg/l	16/12/2016	Y Cov	WAS040
TOC (Filtered)	5.4	mg/l	19/12/2016	Y Cov	WAS005

Analyst Comments for 15749338:

This sample has been analysed for Magnesium, Total as Mg, Sodium Total as Na outside recommended stability times. It is therefore possible that the results provided may be compromised.

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

Analysed at: Cov = Coventry(CV4 9GU), Che = Chester(CH4 9EP), Ott = Otterbourne(SO21 2SW), S = Subcontracted, Trb = Subcontracted to Trowbridge(BA14 0XD), Wak = Wakefield(WF5 9TG).

For Microbiological determinands 0 or ND=Not Detected, For Legionella ND=Not Detected in volume of sample filtered. The LOD for the Legionella analysis will increase where the volume analysed is <1000g (1g is approximately equivalent to 1ml for sample volume analysed).

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

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Signed: A I Horobin

Name: **A. Horobin**

Date: **29 December 2016**

Title: **Organic Operations Manager**

ANALYST COMMENTS FOR REPORT

COV/1345188/2016

Issue 1

Date of Issue: 29 December 2016

Sample No	Analysis Comments
15749320	This sample has been analysed for Magnesium, Total as Mg, Sodium Total as Na outside recommended stability times. It is therefore possible that the results provided may be compromised. {/}*Ammonia analysed by colorimetric method{/} Sample analysed for DO from an unfixed bottle
15749321	This sample has been analysed for Magnesium, Total as Mg, Sodium Total as Na outside recommended stability times. It is therefore possible that the results provided may be compromised. {/}*Ammonia analysed by colorimetric method{/} Sample analysed for DO from an unfixed bottle
15749322	
15749323	This sample has been analysed for Magnesium, Total as Mg, Sodium Total as Na outside recommended stability times. It is therefore possible that the results provided may be compromised.
15749324	This sample has been analysed for Magnesium, Total as Mg, Sodium Total as Na outside recommended stability times. It is therefore possible that the results provided may be compromised.
15749325	This sample has been analysed for Magnesium, Total as Mg, Sodium Total as Na outside recommended stability times. It is therefore possible that the results provided may be compromised.
15749326	This sample has been analysed for Magnesium, Total as Mg, Sodium Total as Na outside recommended stability times. It is therefore possible that the results provided may be compromised.
15749327	This sample has been analysed for Magnesium, Total as Mg, Sodium Total as Na outside recommended stability times. It is therefore possible that the results provided may be compromised.
15749328	This sample has been analysed for Magnesium, Total as Mg, Sodium Total as Na outside recommended stability times. It is therefore possible that the results provided may be compromised.
15749329	This sample has been analysed for Magnesium, Total as Mg, Sodium Total as Na outside recommended stability times. It is therefore possible that the results provided may be compromised.
15749330	This sample has been analysed for Magnesium, Total as Mg, Sodium Total as Na outside recommended stability times. It is therefore possible that the results provided may be compromised.
15749331	This sample has been analysed for Magnesium, Total as Mg, Sodium Total as Na outside recommended stability times. It is therefore possible that the results provided may be compromised.
15749332	This sample has been analysed for Magnesium, Total as Mg, Sodium Total as Na outside recommended stability times. It is therefore possible that the results provided may be compromised.
15749333	This sample has been analysed for Magnesium, Total as Mg, Sodium Total as Na outside recommended stability times. It is therefore possible that the results provided may be compromised.
15749334	This sample has been analysed for Magnesium, Total as Mg, Sodium Total as Na outside recommended stability times. It is therefore possible that the results provided may be compromised.
15749335	This sample has been analysed for Magnesium, Total as Mg, Sodium Total as Na outside recommended stability times. It is therefore possible that the results provided may be compromised.
15749336	This sample has been analysed for Magnesium, Total as Mg, Sodium Total as Na outside recommended stability times. It is therefore possible that the results provided may be compromised.
15749337	This sample has been analysed for Magnesium, Total as Mg, Sodium Total as Na outside recommended stability times. It is therefore possible that the results provided may be compromised.
15749338	This sample has been analysed for Magnesium, Total as Mg, Sodium Total as Na outside recommended stability times. It is therefore possible that the results provided may be compromised.

Signed: A I Horobin

Name: A. Horobin

Date: 29 December 2016

Title: Organic Operations Manager

DETERMINAND COMMENTS FOR REPORT COV/1345188/2016

ISSUE 1

Date of Issue : 29 December 2016

Sample No	Description	Determinand	Comments

Signed:

A I Horobin

Name: A. Horobin

Date: 29 December 2016

Title: Organic Operations Manager