

**ALS Environmental Ltd**  
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CV4 9GU

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[www.alsenvironmental.co.uk](http://www.alsenvironmental.co.uk)

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

06 April 2017

**Test Report: COV/1374425/2017**

Dear Mr Lloyd

Analysis of your sample(s) submitted on 23 March 2017 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,

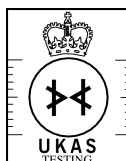
Signed: 

Name: C. Law

Title: Inorganics 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: **06 April 2017**

Report Number: **COV/1374425/2017**

Issue **1**

This issue replaces  
all previous issues

**Job Description:** Trehir Landfill Site

**Job Location:** Caerphilly

Number of Samples  
included in this report **21**

Job Received: **23 March 2017**

Number of Test Results  
included in this report **467**

Analysis Commenced: **23 March 2017**

Signed:

Name: **C. Law**

Date: **06 April 2017**

Title: **Inorganics 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.

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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**ALS Environmental Ltd**

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# Certificate of Analysis



Report Number: **COV/1374425/2017**

Issue **1**

Laboratory Number: **15970364**

Sample **1** of **21**

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

Sample Point Description: **03**

Sample Description: **03**

Sample Matrix: **Land Leachate**

Sample Date/Time: **23 March 2017 12:03**

Sample Received: **23 March 2017**

Analysis Complete: **06 April 2017**

Test Description	Result	Units	Analysis Date	Accreditation	Method
Field Temperature	18.1	Deg C	23/03/2017	N Cov	FIELD
Calcium , Total as Ca	105	mg/l	28/03/2017	Y Cov	WAS049
Magnesium, Total as Mg	36.2	mg/l	28/03/2017	Y Cov	WAS049
Potassium , Total as K	69.1	mg/l	28/03/2017	Y Cov	WAS049
Sodium , Total as Na	140	mg/l	28/03/2017	Y Cov	WAS049
pH	7.3	pH units	24/03/2017	Y Cov	WAS039
Conductivity- Electrical 20C	2140	uS/cm	24/03/2017	Y Cov	WAS039
Alkalinity as CaCO3	806	mg/l	04/04/2017	Y Cov	WAS025
Ammoniacal Nitrogen as N	98.2	mg/l	27/03/2017	Y Cov	WAS055
Nitrogen, Total Oxidised as N	5.4	mg/l	27/03/2017	Y Cov	WAS036
Sulphate as SO4	25.8	mg/l	27/03/2017	N Cov	WAS036
BOD + ATU (5 day)	6	mg/l	29/03/2017	Y Cov	WAS001
COD (Total)	97.0	mg/l	29/03/2017	Y Cov	WAS040
TOC (Filtered)	29.1	mg/l	24/03/2017	Y Cov	WAS005
Chloride as Cl, High Level	162	mg/l	28/03/2017	Y Cov	WAS036

## Analyst Comments for 15970364:

This sample has been analysed for pH, BOD + ATU (5 day) outside recommended stability times. It is therefore possible that the results provided may be compromised. {/\*}Ammonia analysed by colorimetric method{\*/}

This issue replaces all previous issues

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).

Signed:

Name: **C. Law**

Date: **06 April 2017**

Title: **Inorganics Operations Manager**

**ALS Environmental Ltd**

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# Certificate of Analysis



Report Number: **COV/1374425/2017**

Issue **1**

Laboratory Number: **15970365**

Sample **2** of **21**

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

Sample Point Description: **08**

Sample Description: **08**

Sample Matrix: **Land Leachate**

Sample Date/Time: **23 March 2017 10:32**

Sample Received: **23 March 2017**

Analysis Complete: **06 April 2017**

Test Description	Result	Units	Analysis Date	Accreditation	Method
Field Temperature	11.6	Deg C	23/03/2017	N Cov	FIELD
Calcium , Total as Ca	89.6	mg/l	28/03/2017	Y Cov	WAS049
Magnesium, Total as Mg	23.5	mg/l	28/03/2017	Y Cov	WAS049
Potassium , Total as K	43.3	mg/l	28/03/2017	Y Cov	WAS049
Sodium , Total as Na	84.7	mg/l	28/03/2017	Y Cov	WAS049
pH	8.0	pH units	24/03/2017	Y Cov	WAS039
Conductivity- Electrical 20C	1420	uS/cm	24/03/2017	Y Cov	WAS039
Alkalinity as CaCO3	429	mg/l	04/04/2017	Y Cov	WAS025
Ammoniacal Nitrogen as N	49.9	mg/l	27/03/2017	Y Cov	WAS036
Nitrogen, Total Oxidised as N	16.1	mg/l	27/03/2017	Y Cov	WAS036
Sulphate as SO4	21.1	mg/l	27/03/2017	N Cov	WAS036
BOD + ATU (5 day)	10	mg/l	29/03/2017	Y Cov	WAS001
COD (Total)	89.0	mg/l	29/03/2017	Y Cov	WAS040
TOC (Filtered)	20.5	mg/l	24/03/2017	Y Cov	WAS005
Chloride as Cl, High Level	104	mg/l	28/03/2017	Y Cov	WAS036

## Analyst Comments for 15970365:

This sample has been analysed for pH, BOD + ATU (5 day) outside recommended stability times. It is therefore possible that the results provided may be compromised. {(\*)}Ammonia analysed by colorimetric method{(\*)}

This issue replaces all previous issues

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).

Signed:

Name: **C. Law**

Date: **06 April 2017**

Title: **Inorganics Operations Manager**

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# Certificate of Analysis



Report Number: **COV/1374425/2017**

Issue **1**

Laboratory Number: **15970366**

Sample **3** of **21**

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

Sample Point Description: **MHL28**

Sample Description: **MHL28**

Sample Matrix: **Land Leachate**

Sample Date/Time: **23 March 2017 10:50**

Sample Received: **23 March 2017**

Analysis Complete: **06 April 2017**

Test Description	Result	Units	Analysis Date	Accreditation	Method
Field Temperature	9.7	Deg C	23/03/2017	N Cov	FIELD
Calcium , Total as Ca	131	mg/l	03/04/2017	Y Cov	WAS049
Magnesium, Total as Mg	32.7	mg/l	03/04/2017	Y Cov	WAS049
Potassium , Total as K	14.0	mg/l	03/04/2017	Y Cov	WAS049
Sodium , Total as Na	34.2	mg/l	03/04/2017	Y Cov	WAS049
pH	7.1	pH units	24/03/2017	Y Cov	WAS039
Conductivity- Electrical 20C	811	uS/cm	24/03/2017	Y Cov	WAS039
Alkalinity as CaCO3	368	mg/l	04/04/2017	Y Cov	WAS025
Ammoniacal Nitrogen as N	0.55	mg/l	27/03/2017	Y Cov	WAS036
Nitrogen, Total Oxidised as N	17.9	mg/l	27/03/2017	Y Cov	WAS036
Sulphate as SO4	15.4	mg/l	27/03/2017	N Cov	WAS036
BOD + ATU (5 day)	6	mg/l	29/03/2017	Y Cov	WAS001
COD (Total)	936	mg/l	29/03/2017	Y Cov	WAS040
TOC (Filtered)	7.3	mg/l	24/03/2017	Y Cov	WAS005
Chloride as Cl, High Level	71.8	mg/l	28/03/2017	Y Cov	WAS036

## Analyst Comments for 15970366:

This sample has been analysed for Sodium Total as Na outside recommended stability times. It is therefore possible that the results provided may be compromised. This sample has been analysed for Sodium Total as Na outside recommended stability times. It is therefore possible that the results provided may be compromised. {(\*)}Ammonia analysed by colorimetric method{\*/}

This issue replaces all previous issues

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).

Signed:

Name: **C. Law**

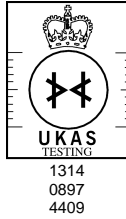
Date: **06 April 2017**

Title: **Inorganics Operations Manager**

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# Certificate of Analysis



Report Number: **COV/1374425/2017**

Issue **1**

Laboratory Number: **15970367**

Sample **4** of **21**

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

Sample Point Description: **N2**

Sample Description: **N2**

Sample Matrix: **Ground Water**

Sample Date/Time: **23 March 2017 10:10**

Sample Received: **23 March 2017**

Analysis Complete: **06 April 2017**

Test Description	Result	Units	Analysis Date	Accreditation	Method
Field Temperature	9.8	Deg C	23/03/2017	N Cov	FIELD
Cadmium , Total as Cd	<0.0006	mg/l	28/03/2017	Y Cov	WAS049
Calcium , Total as Ca	20.3	mg/l	28/03/2017	Y Cov	WAS049
Chromium , Total as Cr	<0.002	mg/l	28/03/2017	Y Cov	WAS049
Copper, Total as Cu	<0.009	mg/l	28/03/2017	Y Cov	WAS049
Iron , Total as Fe	0.35	mg/l	28/03/2017	Y Cov	WAS049
Lead , Total as Pb	<0.006	mg/l	28/03/2017	Y Cov	WAS049
Magnesium, Total as Mg	9.7	mg/l	28/03/2017	Y Cov	WAS049
Manganese , Total as Mn	0.021	mg/l	28/03/2017	Y Cov	WAS049
Nickel, Total as Ni	<0.003	mg/l	28/03/2017	Y Cov	WAS049
Potassium , Total as K	0.92	mg/l	28/03/2017	Y Cov	WAS049
Sodium , Total as Na	4.43	mg/l	28/03/2017	Y Cov	WAS049
Zinc, Total as Zn	<0.018	mg/l	28/03/2017	Y Cov	WAS049
pH	6.9	pH units	24/03/2017	Y Cov	WAS039
Conductivity- Electrical 20C	199	uS/cm	24/03/2017	Y Cov	WAS039
Alkalinity as CaCO3	78.4	mg/l	24/03/2017	Y Cov	WAS025
Ammoniacal Nitrogen as N	<0.41	mg/l	27/03/2017	N Cov	WAS036
Chloride as Cl	12.2	mg/l	27/03/2017	N Cov	WAS036
Nitrogen, Total Oxidised as N	0.8	mg/l	27/03/2017	N Cov	WAS036
Sulphate as SO4	11.8	mg/l	27/03/2017	N Cov	WAS036
Dissolved Oxygen, Fixed	3.5	mg/l	24/03/2017	Y Cov	WAS052
COD (Total)	<11.0	mg/l	29/03/2017	Y Cov	WAS040
TOC (Filtered)	<0.7	mg/l	24/03/2017	Y Cov	WAS005
Water Level to top of Casing	3.24	m	23/03/2017	N Cov	IN SITU M

## Analyst Comments for 15970367:

This sample has been analysed for Sodium Total as Na outside recommended stability times. It is therefore possible that the results provided may be compromised. This sample has been analysed for Sodium Total as Na outside recommended stability times. It is therefore possible that the results provided may be compromised. {(\*)}Ammonia analysed by colorimetric method{(\*)}

This issue replaces all previous issues

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).

## ALS Environmental Ltd

Torrington Avenue, Coventry, CV4 9GU  
Tel:+44 (0)24 7642 1213 Fax:+44 (0)24 7685 6575

Signed:



Name: **C. Law**

Date: **06 April 2017**

Title: **Inorganics Operations Manager**

# Certificate of Analysis



Report Number: **COV/1374425/2017**

Issue **1**

Laboratory Number: **15970368**

Sample **5** of **21**

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

Sample Point Description: **N5**

Sample Description: **N5**

Sample Matrix: **Ground Water**

Sample Date/Time: **23 March 2017 12:55**

Sample Received: **23 March 2017**

Analysis Complete: **06 April 2017**

Test Description	Result	Units	Analysis Date	Accreditation	Method
Field Temperature	11.5	Deg C	23/03/2017	N Cov	FIELD
Cadmium , Total as Cd	<0.0006	mg/l	28/03/2017	Y Cov	WAS049
Calcium , Total as Ca	90.5	mg/l	28/03/2017	Y Cov	WAS049
Chromium , Total as Cr	<0.002	mg/l	28/03/2017	Y Cov	WAS049
Copper, Total as Cu	<0.009	mg/l	28/03/2017	Y Cov	WAS049
Iron , Total as Fe	5.57	mg/l	28/03/2017	Y Cov	WAS049
Lead , Total as Pb	<0.006	mg/l	28/03/2017	Y Cov	WAS049
Magnesium, Total as Mg	52.1	mg/l	28/03/2017	Y Cov	WAS049
Manganese , Total as Mn	0.788	mg/l	28/03/2017	Y Cov	WAS049
Nickel, Total as Ni	0.030	mg/l	28/03/2017	Y Cov	WAS049
Potassium , Total as K	7.92	mg/l	28/03/2017	Y Cov	WAS049
Sodium , Total as Na	45.3	mg/l	28/03/2017	Y Cov	WAS049
Zinc, Total as Zn	0.02	mg/l	28/03/2017	Y Cov	WAS049
pH	7.3	pH units	24/03/2017	Y Cov	WAS039
Conductivity- Electrical 20C	1130	uS/cm	24/03/2017	Y Cov	WAS039
Alkalinity as CaCO3	356	mg/l	04/04/2017	Y Cov	WAS025
Ammoniacal Nitrogen as N	1.59	mg/l	27/03/2017	N Cov	WAS036
Chloride as Cl	165	mg/l	27/03/2017	N Cov	WAS036
Nitrogen, Total Oxidised as N	<0.7	mg/l	27/03/2017	N Cov	WAS036
Sulphate as SO4	15.3	mg/l	27/03/2017	N Cov	WAS036
Dissolved Oxygen, Fixed	4.3	mg/l	24/03/2017	Y Cov	WAS052
COD (Total)	64.0	mg/l	29/03/2017	Y Cov	WAS040
TOC (Filtered)	10.4	mg/l	24/03/2017	Y Cov	WAS005
Water Level to top of Casing	2.34	m	23/03/2017	N Cov	IN SITU M

## Analyst Comments for 15970368:

This sample has been analysed for Sodium Total as Na outside recommended stability times. It is therefore possible that the results provided may be compromised. This sample has been analysed for Sodium Total as Na outside recommended stability times. It is therefore possible that the results provided may be compromised. {(\*)}Ammonia analysed by colorimetric method{(\*)}

This issue replaces all previous issues

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).

## ALS Environmental Ltd

Torrington Avenue, Coventry, CV4 9GU  
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Signed:



Name: **C. Law**

Date: **06 April 2017**

Title: **Inorganics Operations Manager**

# Certificate of Analysis



Report Number: **COV/1374425/2017**

Issue **1**

Laboratory Number: **15970369**

Sample **6** of **21**

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

Sample Point Description: **N6**

Sample Description: **N6**

Sample Matrix: **Ground Water**

Sample Date/Time: **23 March 2017 12:40**

Sample Received: **23 March 2017**

Analysis Complete: **06 April 2017**

Test Description	Result	Units	Analysis Date	Accreditation	Method
Field Temperature	11.0	Deg C	23/03/2017	N Cov	FIELD
Cadmium , Total as Cd	0.0019	mg/l	28/03/2017	Y Cov	WAS049
Calcium , Total as Ca	62.6	mg/l	28/03/2017	Y Cov	WAS049
Chromium , Total as Cr	<0.002	mg/l	28/03/2017	Y Cov	WAS049
Copper, Total as Cu	<0.009	mg/l	28/03/2017	Y Cov	WAS049
Iron , Total as Fe	4.59	mg/l	28/03/2017	Y Cov	WAS049
Lead , Total as Pb	<0.006	mg/l	28/03/2017	Y Cov	WAS049
Magnesium, Total as Mg	37.7	mg/l	28/03/2017	Y Cov	WAS049
Manganese , Total as Mn	6.50	mg/l	28/03/2017	Y Cov	WAS049
Nickel, Total as Ni	0.025	mg/l	28/03/2017	Y Cov	WAS049
Potassium , Total as K	17.9	mg/l	28/03/2017	Y Cov	WAS049
Sodium , Total as Na	44.0	mg/l	28/03/2017	Y Cov	WAS049
Zinc, Total as Zn	0.03	mg/l	28/03/2017	Y Cov	WAS049
pH	7.0	pH units	24/03/2017	Y Cov	WAS039
Conductivity- Electrical 20C	957	uS/cm	24/03/2017	Y Cov	WAS039
Alkalinity as CaCO3	385	mg/l	04/04/2017	Y Cov	WAS025
Ammoniacal Nitrogen as N	17.6	mg/l	27/03/2017	N Cov	WAS036
Chloride as Cl	62.8	mg/l	27/03/2017	N Cov	WAS036
Nitrogen, Total Oxidised as N	<0.7	mg/l	27/03/2017	N Cov	WAS036
Sulphate as SO4	21.0	mg/l	27/03/2017	N Cov	WAS036
Dissolved Oxygen, Fixed	0.5	mg/l	24/03/2017	Y Cov	WAS052
COD (Total)	50.0	mg/l	29/03/2017	Y Cov	WAS040
TOC (Filtered)	7.1	mg/l	24/03/2017	Y Cov	WAS005

## Analyst Comments for 15970369:

This sample has been analysed for Sodium Total as Na outside recommended stability times. It is therefore possible that the results provided may be compromised. This sample has been analysed for Sodium Total as Na outside recommended stability times. It is therefore possible that the results provided may be compromised. {(\*)}Ammonia analysed by colorimetric method{(\*)}

This issue replaces all previous issues

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).

## ALS Environmental Ltd

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Signed:



Name: **C. Law**

Date: **06 April 2017**

Title: **Inorganics Operations Manager**

# Certificate of Analysis



Report Number: **COV/1374425/2017**

Issue **1**

Laboratory Number: **15970370**

Sample **7** of **21**

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

Sample Point Description: **N8**

Sample Description: **N8**

Sample Matrix: **Ground Water**

Sample Date/Time: **23 March 2017 14:00**

Sample Received: **23 March 2017**

Analysis Complete: **06 April 2017**

Test Description	Result	Units	Analysis Date	Accreditation	Method
Field Temperature	11.2	Deg C	23/03/2017	N Cov	FIELD
Cadmium , Total as Cd	<0.0006	mg/l	28/03/2017	Y Cov	WAS049
Calcium , Total as Ca	72.3	mg/l	28/03/2017	Y Cov	WAS049
Chromium , Total as Cr	<0.002	mg/l	28/03/2017	Y Cov	WAS049
Copper, Total as Cu	<0.009	mg/l	28/03/2017	Y Cov	WAS049
Iron , Total as Fe	2.02	mg/l	28/03/2017	Y Cov	WAS049
Lead , Total as Pb	<0.006	mg/l	28/03/2017	Y Cov	WAS049
Magnesium, Total as Mg	44.2	mg/l	28/03/2017	Y Cov	WAS049
Manganese , Total as Mn	1.24	mg/l	28/03/2017	Y Cov	WAS049
Nickel, Total as Ni	0.011	mg/l	28/03/2017	Y Cov	WAS049
Potassium , Total as K	2.59	mg/l	28/03/2017	Y Cov	WAS049
Sodium , Total as Na	13.6	mg/l	28/03/2017	Y Cov	WAS049
Zinc, Total as Zn	<0.018	mg/l	28/03/2017	Y Cov	WAS049
pH	7.4	pH units	24/03/2017	Y Cov	WAS039
Conductivity- Electrical 20C	863	uS/cm	24/03/2017	Y Cov	WAS039
Alkalinity as CaCO3	129	mg/l	24/03/2017	Y Cov	WAS025
Ammoniacal Nitrogen as N	<0.41	mg/l	27/03/2017	N Cov	WAS036
Chloride as Cl	201	mg/l	27/03/2017	N Cov	WAS036
Nitrogen, Total Oxidised as N	<0.7	mg/l	27/03/2017	N Cov	WAS036
Sulphate as SO4	36.8	mg/l	27/03/2017	N Cov	WAS036
Dissolved Oxygen, Fixed	6.6	mg/l	24/03/2017	Y Cov	WAS052
COD (Total)	40.0	mg/l	29/03/2017	Y Cov	WAS040
TOC (Filtered)	1.8	mg/l	27/03/2017	Y Cov	WAS005
Water Level to top of Casing	2.2	m	23/03/2017	N Cov	IN SITU M

## Analyst Comments for 15970370:

This sample has been analysed for Sodium Total as Na outside recommended stability times. It is therefore possible that the results provided may be compromised. This sample has been analysed for Sodium Total as Na outside recommended stability times. It is therefore possible that the results provided may be compromised. {(\*)}Ammonia analysed by colorimetric method{(\*)}

This issue replaces all previous issues

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).

## ALS Environmental Ltd

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Signed:



Name: **C. Law**

Date: **06 April 2017**

Title: **Inorganics Operations Manager**

# Certificate of Analysis



Report Number: **COV/1374425/2017**

Issue **1**

Laboratory Number: **15970371**

Sample **8** of **21**

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

Sample Point Description: **NBH1**

Sample Description: **NBH1**

Sample Matrix: **Ground Water**

Sample Date/Time: **23 March 2017 12:20**

Sample Received: **23 March 2017**

Analysis Complete: **06 April 2017**

Test Description	Result	Units	Analysis Date	Accreditation	Method
Field Temperature	13.2	Deg C	23/03/2017	N Cov	FIELD
Cadmium , Total as Cd	0.0175	mg/l	03/04/2017	Y Cov	WAS049
Calcium , Total as Ca	443	mg/l	03/04/2017	Y Cov	WAS049
Chromium , Total as Cr	0.301	mg/l	03/04/2017	Y Cov	WAS049
Copper, Total as Cu	0.374	mg/l	03/04/2017	Y Cov	WAS049
Iron , Total as Fe	785	mg/l	03/04/2017	Y Cov	WAS049
Lead , Total as Pb	0.697	mg/l	03/04/2017	Y Cov	WAS049
Magnesium, Total as Mg	78.7	mg/l	03/04/2017	Y Cov	WAS049
Manganese , Total as Mn	20.0	mg/l	03/04/2017	Y Cov	WAS049
Nickel, Total as Ni	0.579	mg/l	03/04/2017	Y Cov	WAS049
Potassium , Total as K	30.9	mg/l	03/04/2017	Y Cov	WAS049
Sodium , Total as Na	41.2	mg/l	03/04/2017	Y Cov	WAS049
Zinc, Total as Zn	2.53	mg/l	03/04/2017	Y Cov	WAS049
pH	7.1	pH units	24/03/2017	Y Cov	WAS039
Conductivity- Electrical 20C	1270	uS/cm	24/03/2017	Y Cov	WAS039
Alkalinity as CaCO3	1150	mg/l	04/04/2017	Y Cov	WAS025
Ammoniacal Nitrogen as N	17.5	mg/l	27/03/2017	N Cov	WAS036
Chloride as Cl	81.8	mg/l	27/03/2017	N Cov	WAS036
Nitrogen, Total Oxidised as N	4.7	mg/l	27/03/2017	N Cov	WAS036
Sulphate as SO4	<4.4	mg/l	27/03/2017	N Cov	WAS036
Dissolved Oxygen, Fixed	<0.5	mg/l	24/03/2017	Y Cov	WAS052
COD (Total)	972	mg/l	29/03/2017	Y Cov	WAS040
TOC (Filtered)	12.8	mg/l	27/03/2017	Y Cov	WAS005
Water Level to top of Casing	2.66	m	23/03/2017	N Cov	IN SITU M

## Analyst Comments for 15970371:

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

## ALS Environmental Ltd

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Signed:



Name: **C. Law**

Date: **06 April 2017**

Title: **Inorganics Operations Manager**

# Certificate of Analysis



Report Number: **COV/1374425/2017**

Issue **1**

Laboratory Number: **15970372**

Sample **9** of **21**

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

Sample Point Description: **NBH3**

Sample Description: **NBH3**

Sample Matrix: **Ground Water**

Sample Date/Time: **23 March 2017 11:45**

Sample Received: **23 March 2017**

Analysis Complete: **06 April 2017**

Test Description	Result	Units	Analysis Date	Accreditation	Method
Field Temperature	12.3	Deg C	23/03/2017	N Cov	FIELD
Cadmium , Total as Cd	<0.0006	mg/l	28/03/2017	Y Cov	WAS049
Calcium , Total as Ca	123	mg/l	28/03/2017	Y Cov	WAS049
Chromium , Total as Cr	0.005	mg/l	28/03/2017	Y Cov	WAS049
Copper, Total as Cu	0.011	mg/l	28/03/2017	Y Cov	WAS049
Iron , Total as Fe	18.4	mg/l	28/03/2017	Y Cov	WAS049
Lead , Total as Pb	0.007	mg/l	28/03/2017	Y Cov	WAS049
Magnesium, Total as Mg	19.7	mg/l	28/03/2017	Y Cov	WAS049
Manganese , Total as Mn	1.27	mg/l	28/03/2017	Y Cov	WAS049
Nickel, Total as Ni	0.016	mg/l	28/03/2017	Y Cov	WAS049
Potassium , Total as K	14.2	mg/l	28/03/2017	Y Cov	WAS049
Sodium , Total as Na	18.4	mg/l	28/03/2017	Y Cov	WAS049
Zinc, Total as Zn	0.05	mg/l	28/03/2017	Y Cov	WAS049
pH	6.8	pH units	24/03/2017	Y Cov	WAS039
Conductivity- Electrical 20C	913	uS/cm	24/03/2017	Y Cov	WAS039
Alkalinity as CaCO3	404	mg/l	04/04/2017	Y Cov	WAS025
Ammoniacal Nitrogen as N	7.99	mg/l	27/03/2017	N Cov	WAS036
Chloride as Cl	25.9	mg/l	27/03/2017	N Cov	WAS036
Nitrogen, Total Oxidised as N	3.8	mg/l	27/03/2017	N Cov	WAS036
Sulphate as SO4	33.4	mg/l	27/03/2017	N Cov	WAS036
Dissolved Oxygen, Fixed	1.7	mg/l	24/03/2017	Y Cov	WAS052
COD (Total)	118	mg/l	06/04/2017	Y Cov	WAS040
TOC (Filtered)	4.4	mg/l	27/03/2017	Y Cov	WAS005
Water Level to top of Casing	5.50	m	23/03/2017	N Cov	IN SITU M

## Analyst Comments for 15970372:

This sample has been analysed for COD (Total) outside recommended stability times. It is therefore possible that the results provided may be compromised. This sample has been analysed for COD (Total) outside recommended stability times. 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: 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).

## ALS Environmental Ltd

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Signed:



Name: **C. Law**

Date: **06 April 2017**

Title: **Inorganics Operations Manager**

# Certificate of Analysis



Report Number: **COV/1374425/2017**

Issue **1**

Laboratory Number: **15970373**

Sample **10** of **21**

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

Sample Point Description: **NBH4**

Sample Description: **NBH4**

Sample Matrix: **Ground Water**

Sample Date/Time: **23 March 2017 11:20**

Sample Received: **23 March 2017**

Analysis Complete: **06 April 2017**

Test Description	Result	Units	Analysis Date	Accreditation	Method
Field Temperature	13.0	Deg C	23/03/2017	N Cov	FIELD
Cadmium , Total as Cd	<0.0006	mg/l	28/03/2017	Y Cov	WAS049
Calcium , Total as Ca	88.8	mg/l	28/03/2017	Y Cov	WAS049
Chromium , Total as Cr	<0.002	mg/l	28/03/2017	Y Cov	WAS049
Copper, Total as Cu	<0.009	mg/l	28/03/2017	Y Cov	WAS049
Iron , Total as Fe	10.9	mg/l	28/03/2017	Y Cov	WAS049
Lead , Total as Pb	<0.006	mg/l	28/03/2017	Y Cov	WAS049
Magnesium, Total as Mg	24.2	mg/l	28/03/2017	Y Cov	WAS049
Manganese , Total as Mn	6.07	mg/l	28/03/2017	Y Cov	WAS049
Nickel, Total as Ni	0.016	mg/l	28/03/2017	Y Cov	WAS049
Potassium , Total as K	3.57	mg/l	28/03/2017	Y Cov	WAS049
Sodium , Total as Na	8.41	mg/l	28/03/2017	Y Cov	WAS049
Zinc, Total as Zn	<0.018	mg/l	28/03/2017	Y Cov	WAS049
pH	6.8	pH units	24/03/2017	Y Cov	WAS039
Conductivity- Electrical 20C	633	uS/cm	24/03/2017	Y Cov	WAS039
Alkalinity as CaCO3	308	mg/l	24/03/2017	Y Cov	WAS025
Ammoniacal Nitrogen as N	<0.41	mg/l	27/03/2017	N Cov	WAS036
Chloride as Cl	12.8	mg/l	27/03/2017	N Cov	WAS036
Nitrogen, Total Oxidised as N	<0.7	mg/l	27/03/2017	N Cov	WAS036
Sulphate as SO4	64.6	mg/l	27/03/2017	N Cov	WAS036
Dissolved Oxygen, Fixed	6.6	mg/l	24/03/2017	Y Cov	WAS052
COD (Total)	30.0	mg/l	29/03/2017	Y Cov	WAS040
TOC (Filtered)	2.5	mg/l	27/03/2017	Y Cov	WAS005
Water Level to top of Casing	16.16	m	23/03/2017	N Cov	IN SITU M

## Analyst Comments for 15970373:

This sample has been analysed for COD (Total) outside recommended stability times. It is therefore possible that the results provided may be compromised. This sample has been analysed for COD (Total) outside recommended stability times. 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: 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).

## ALS Environmental Ltd

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Signed:



Name: **C. Law**

Date: **06 April 2017**

Title: **Inorganics Operations Manager**

# Certificate of Analysis



Report Number: **COV/1374425/2017**

Issue **1**

Laboratory Number: **15970374**

Sample **11** of **21**

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

Sample Point Description: **NBH5**

Sample Description: **NBH5**

Sample Matrix: **Ground Water**

Sample Date/Time: **23 March 2017 10:52**

Sample Received: **23 March 2017**

Analysis Complete: **06 April 2017**

Test Description	Result	Units	Analysis Date	Accreditation	Method
Field Temperature	9.7	Deg C	23/03/2017	N Cov	FIELD
Cadmium , Total as Cd	<0.0006	mg/l	28/03/2017	Y Cov	WAS049
Calcium , Total as Ca	66.5	mg/l	28/03/2017	Y Cov	WAS049
Chromium , Total as Cr	<0.002	mg/l	28/03/2017	Y Cov	WAS049
Copper, Total as Cu	<0.009	mg/l	28/03/2017	Y Cov	WAS049
Iron , Total as Fe	1.00	mg/l	28/03/2017	Y Cov	WAS049
Lead , Total as Pb	<0.006	mg/l	28/03/2017	Y Cov	WAS049
Magnesium, Total as Mg	13.9	mg/l	28/03/2017	Y Cov	WAS049
Manganese , Total as Mn	0.885	mg/l	28/03/2017	Y Cov	WAS049
Nickel, Total as Ni	<0.003	mg/l	28/03/2017	Y Cov	WAS049
Potassium , Total as K	5.64	mg/l	28/03/2017	Y Cov	WAS049
Sodium , Total as Na	8.93	mg/l	28/03/2017	Y Cov	WAS049
Zinc, Total as Zn	0.06	mg/l	28/03/2017	Y Cov	WAS049
pH	6.9	pH units	24/03/2017	Y Cov	WAS039
Conductivity- Electrical 20C	475	uS/cm	24/03/2017	Y Cov	WAS039
Alkalinity as CaCO3	202	mg/l	24/03/2017	Y Cov	WAS025
Ammoniacal Nitrogen as N	<0.41	mg/l	27/03/2017	N Cov	WAS036
Chloride as Cl	12.4	mg/l	27/03/2017	N Cov	WAS036
Nitrogen, Total Oxidised as N	6.1	mg/l	27/03/2017	N Cov	WAS036
Sulphate as SO4	33.7	mg/l	27/03/2017	N Cov	WAS036
Dissolved Oxygen, Fixed	1.9	mg/l	24/03/2017	Y Cov	WAS052
COD (Total)	22.0	mg/l	29/03/2017	Y Cov	WAS040
TOC (Filtered)	3.2	mg/l	27/03/2017	Y Cov	WAS005
Water Level to top of Casing	5.21	m	23/03/2017	N Cov	IN SITU M

## Analyst Comments for 15970374:

This sample has been analysed for COD (Total) outside recommended stability times. It is therefore possible that the results provided may be compromised. This sample has been analysed for COD (Total) outside recommended stability times. 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: 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).

## ALS Environmental Ltd

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Signed:



Name: **C. Law**

Date: **06 April 2017**

Title: **Inorganics Operations Manager**

# Certificate of Analysis



Report Number: **COV/1374425/2017**

Issue **1**

Laboratory Number: **15970375**

Sample **12** of **21**

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

Sample Point Description: **NBH6**

Sample Description: **NBH6**

Sample Matrix: **Ground Water**

Sample Date/Time: **23 March 2017 10:42**

Sample Received: **23 March 2017**

Analysis Complete: **06 April 2017**

Test Description	Result	Units	Analysis Date	Accreditation	Method
Field Temperature	10.0	Deg C	23/03/2017	N Cov	FIELD
Cadmium , Total as Cd	0.0008	mg/l	28/03/2017	Y Cov	WAS049
Calcium , Total as Ca	12.2	mg/l	28/03/2017	Y Cov	WAS049
Chromium , Total as Cr	0.004	mg/l	28/03/2017	Y Cov	WAS049
Copper, Total as Cu	0.013	mg/l	28/03/2017	Y Cov	WAS049
Iron , Total as Fe	4.44	mg/l	28/03/2017	Y Cov	WAS049
Lead , Total as Pb	0.013	mg/l	28/03/2017	Y Cov	WAS049
Magnesium, Total as Mg	5.2	mg/l	28/03/2017	Y Cov	WAS049
Manganese , Total as Mn	0.430	mg/l	28/03/2017	Y Cov	WAS049
Nickel, Total as Ni	0.013	mg/l	28/03/2017	Y Cov	WAS049
Potassium , Total as K	0.99	mg/l	28/03/2017	Y Cov	WAS049
Sodium , Total as Na	6.35	mg/l	28/03/2017	Y Cov	WAS049
Zinc, Total as Zn	0.02	mg/l	28/03/2017	Y Cov	WAS049
pH	6.8	pH units	24/03/2017	Y Cov	WAS039
Conductivity- Electrical 20C	149	uS/cm	24/03/2017	Y Cov	WAS039
Alkalinity as CaCO3	40.8	mg/l	24/03/2017	Y Cov	WAS025
Ammoniacal Nitrogen as N	<0.41	mg/l	27/03/2017	N Cov	WAS036
Chloride as Cl	18.0	mg/l	27/03/2017	N Cov	WAS036
Nitrogen, Total Oxidised as N	0.9	mg/l	27/03/2017	N Cov	WAS036
Sulphate as SO4	4.5	mg/l	27/03/2017	N Cov	WAS036
Dissolved Oxygen, Fixed	7.7	mg/l	24/03/2017	Y Cov	WAS052
COD (Total)	61.0	mg/l	29/03/2017	Y Cov	WAS040
TOC (Filtered)	<0.7	mg/l	27/03/2017	Y Cov	WAS005
Water Level to top of Casing	5.82	m	23/03/2017	N Cov	IN SITU M

## Analyst Comments for 15970375:

This sample has been analysed for COD (Total) outside recommended stability times. It is therefore possible that the results provided may be compromised. This sample has been analysed for COD (Total) outside recommended stability times. 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: 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).

## ALS Environmental Ltd

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Signed:



Name: **C. Law**

Date: **06 April 2017**

Title: **Inorganics Operations Manager**

# Certificate of Analysis



Report Number: **COV/1374425/2017**

Issue **1**

Laboratory Number: **15970376**

Sample **13** of **21**

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

Sample Point Description: **W1**

Sample Description: **W1**

Sample Matrix: **Ground Water**

Sample Date/Time: **23 March 2017 09:45**

Sample Received: **23 March 2017**

Analysis Complete: **06 April 2017**

Test Description	Result	Units	Analysis Date	Accreditation	Method
Field Temperature	8.3	Deg C	23/03/2017	N Cov	FIELD
Cadmium , Total as Cd	<0.0006	mg/l	28/03/2017	Y Cov	WAS049
Calcium , Total as Ca	17.0	mg/l	28/03/2017	Y Cov	WAS049
Chromium , Total as Cr	<0.002	mg/l	28/03/2017	Y Cov	WAS049
Copper, Total as Cu	<0.009	mg/l	28/03/2017	Y Cov	WAS049
Iron , Total as Fe	1.69	mg/l	28/03/2017	Y Cov	WAS049
Lead , Total as Pb	<0.006	mg/l	28/03/2017	Y Cov	WAS049
Magnesium, Total as Mg	11.4	mg/l	28/03/2017	Y Cov	WAS049
Manganese , Total as Mn	0.086	mg/l	28/03/2017	Y Cov	WAS049
Nickel, Total as Ni	<0.003	mg/l	28/03/2017	Y Cov	WAS049
Potassium , Total as K	4.01	mg/l	28/03/2017	Y Cov	WAS049
Sodium , Total as Na	10.3	mg/l	28/03/2017	Y Cov	WAS049
Zinc, Total as Zn	<0.018	mg/l	28/03/2017	Y Cov	WAS049
pH	7.6	pH units	24/03/2017	Y Cov	WAS039
Conductivity- Electrical 20C	243	uS/cm	24/03/2017	Y Cov	WAS039
Alkalinity as CaCO3	64.0	mg/l	24/03/2017	Y Cov	WAS025
Ammoniacal Nitrogen as N	<0.41	mg/l	27/03/2017	N Cov	WAS036
Chloride as Cl	21.2	mg/l	27/03/2017	N Cov	WAS036
Nitrogen, Total Oxidised as N	2.0	mg/l	27/03/2017	N Cov	WAS036
Sulphate as SO4	26.6	mg/l	27/03/2017	N Cov	WAS036
Dissolved Oxygen, Fixed	9.7	mg/l	24/03/2017	Y Cov	WAS052
COD (Total)	144	mg/l	29/03/2017	Y Cov	WAS040
TOC (Filtered)	1.1	mg/l	27/03/2017	Y Cov	WAS005

## Analyst Comments for 15970376:

This sample has been analysed for COD (Total) outside recommended stability times. It is therefore possible that the results provided may be compromised. This sample has been analysed for COD (Total) outside recommended stability times. 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: 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).

## ALS Environmental Ltd

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Signed:



Name: **C. Law**

Date: **06 April 2017**

Title: **Inorganics Operations Manager**

# Certificate of Analysis



Report Number: **COV/1374425/2017**

Issue **1**

Laboratory Number: **15970377**

Sample **14** of **21**

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

Sample Point Description: **W2**

Sample Description: **W2**

Sample Matrix: **Ground Water**

Sample Date/Time: **23 March 2017 09:50**

Sample Received: **23 March 2017**

Analysis Complete: **06 April 2017**

Test Description	Result	Units	Analysis Date	Accreditation	Method
Field Temperature	8.8	Deg C	23/03/2017	N Cov	FIELD
Cadmium , Total as Cd	<0.0006	mg/l	28/03/2017	Y Cov	WAS049
Calcium , Total as Ca	34.5	mg/l	28/03/2017	Y Cov	WAS049
Chromium , Total as Cr	<0.002	mg/l	28/03/2017	Y Cov	WAS049
Copper, Total as Cu	<0.009	mg/l	28/03/2017	Y Cov	WAS049
Iron , Total as Fe	0.70	mg/l	28/03/2017	Y Cov	WAS049
Lead , Total as Pb	<0.006	mg/l	28/03/2017	Y Cov	WAS049
Magnesium, Total as Mg	13.6	mg/l	28/03/2017	Y Cov	WAS049
Manganese , Total as Mn	0.061	mg/l	28/03/2017	Y Cov	WAS049
Nickel, Total as Ni	<0.003	mg/l	28/03/2017	Y Cov	WAS049
Potassium , Total as K	7.23	mg/l	28/03/2017	Y Cov	WAS049
Sodium , Total as Na	17.7	mg/l	28/03/2017	Y Cov	WAS049
Zinc, Total as Zn	<0.018	mg/l	28/03/2017	Y Cov	WAS049
pH	7.6	pH units	24/03/2017	Y Cov	WAS039
Conductivity- Electrical 20C	405	uS/cm	24/03/2017	Y Cov	WAS039
Alkalinity as CaCO3	139	mg/l	24/03/2017	Y Cov	WAS025
Ammoniacal Nitrogen as N	2.45	mg/l	27/03/2017	N Cov	WAS036
Chloride as Cl	30.5	mg/l	27/03/2017	N Cov	WAS036
Nitrogen, Total Oxidised as N	4.2	mg/l	27/03/2017	N Cov	WAS036
Sulphate as SO4	24.8	mg/l	27/03/2017	N Cov	WAS036
Dissolved Oxygen, Fixed	8.9	mg/l	24/03/2017	Y Cov	WAS052
COD (Total)	235	mg/l	29/03/2017	Y Cov	WAS040
TOC (Filtered)	2.6	mg/l	27/03/2017	Y Cov	WAS005

## Analyst Comments for 15970377:

This sample has been analysed for COD (Total) outside recommended stability times. It is therefore possible that the results provided may be compromised. This sample has been analysed for COD (Total) outside recommended stability times. 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: 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).

## ALS Environmental Ltd

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Signed:



Name: **C. Law**

Date: **06 April 2017**

Title: **Inorganics Operations Manager**

# Certificate of Analysis



Report Number: **COV/1374425/2017**

Issue **1**

Laboratory Number: **15970378**

Sample **15** of **21**

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

Sample Point Description: **W3**

Sample Description: **W3**

Sample Matrix: **Ground Water**

Sample Date/Time: **23 March 2017 11:05**

Sample Received: **23 March 2017**

Analysis Complete: **06 April 2017**

Test Description	Result	Units	Analysis Date	Accreditation	Method
Field Temperature	9.0	Deg C	23/03/2017	N Cov	FIELD
Cadmium , Total as Cd	<0.0006	mg/l	28/03/2017	Y Cov	WAS049
Calcium , Total as Ca	25.0	mg/l	28/03/2017	Y Cov	WAS049
Chromium , Total as Cr	<0.002	mg/l	28/03/2017	Y Cov	WAS049
Copper, Total as Cu	<0.009	mg/l	28/03/2017	Y Cov	WAS049
Iron , Total as Fe	0.33	mg/l	28/03/2017	Y Cov	WAS049
Lead , Total as Pb	<0.006	mg/l	28/03/2017	Y Cov	WAS049
Magnesium, Total as Mg	9.8	mg/l	28/03/2017	Y Cov	WAS049
Manganese , Total as Mn	0.026	mg/l	28/03/2017	Y Cov	WAS049
Nickel, Total as Ni	<0.003	mg/l	28/03/2017	Y Cov	WAS049
Potassium , Total as K	3.81	mg/l	28/03/2017	Y Cov	WAS049
Sodium , Total as Na	10.2	mg/l	28/03/2017	Y Cov	WAS049
Zinc, Total as Zn	<0.018	mg/l	28/03/2017	Y Cov	WAS049
pH	8.0	pH units	24/03/2017	Y Cov	WAS039
Conductivity- Electrical 20C	263	uS/cm	24/03/2017	Y Cov	WAS039
Alkalinity as CaCO3	80.8	mg/l	24/03/2017	Y Cov	WAS025
Ammoniacal Nitrogen as N	<0.41	mg/l	27/03/2017	N Cov	WAS036
Chloride as Cl	14.7	mg/l	27/03/2017	N Cov	WAS036
Nitrogen, Total Oxidised as N	0.9	mg/l	27/03/2017	N Cov	WAS036
Sulphate as SO4	38.7	mg/l	27/03/2017	N Cov	WAS036
Dissolved Oxygen, Fixed	11.4	mg/l	24/03/2017	Y Cov	WAS052
COD (Total)	114	mg/l	29/03/2017	Y Cov	WAS040
TOC (Filtered)	1.9	mg/l	27/03/2017	Y Cov	WAS005

## Analyst Comments for 15970378:

This sample has been analysed for COD (Total) outside recommended stability times. It is therefore possible that the results provided may be compromised. This sample has been analysed for COD (Total) outside recommended stability times. It is therefore possible that the results provided may be compromised.

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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).

## ALS Environmental Ltd

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Signed:



Name: **C. Law**

Date: **06 April 2017**

Title: **Inorganics Operations Manager**

# Certificate of Analysis



Report Number: **COV/1374425/2017**

Issue **1**

Laboratory Number: **15970379**

Sample **16** of **21**

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

Sample Point Description: **W5**

Sample Description: **W5**

Sample Matrix: **Ground Water**

Sample Date/Time: **23 March 2017 09:55**

Sample Received: **23 March 2017**

Analysis Complete: **06 April 2017**

Test Description	Result	Units	Analysis Date	Accreditation	Method
Field Temperature	9.6	Deg C	23/03/2017	N Cov	FIELD
Cadmium , Total as Cd	<0.0006	mg/l	28/03/2017	Y Cov	WAS049
Calcium , Total as Ca	8.17	mg/l	28/03/2017	Y Cov	WAS049
Chromium , Total as Cr	<0.002	mg/l	28/03/2017	Y Cov	WAS049
Copper, Total as Cu	<0.009	mg/l	28/03/2017	Y Cov	WAS049
Iron , Total as Fe	<0.23	mg/l	28/03/2017	Y Cov	WAS049
Lead , Total as Pb	<0.006	mg/l	28/03/2017	Y Cov	WAS049
Magnesium, Total as Mg	6.4	mg/l	28/03/2017	Y Cov	WAS049
Manganese , Total as Mn	0.041	mg/l	28/03/2017	Y Cov	WAS049
Nickel, Total as Ni	<0.003	mg/l	28/03/2017	Y Cov	WAS049
Potassium , Total as K	1.08	mg/l	28/03/2017	Y Cov	WAS049
Sodium , Total as Na	6.18	mg/l	28/03/2017	Y Cov	WAS049
Zinc, Total as Zn	<0.018	mg/l	28/03/2017	Y Cov	WAS049
pH	7.3	pH units	24/03/2017	Y Cov	WAS039
Conductivity- Electrical 20C	145	uS/cm	24/03/2017	Y Cov	WAS039
Alkalinity as CaCO3	24.0	mg/l	24/03/2017	Y Cov	WAS025
Ammoniacal Nitrogen as N	<0.41	mg/l	27/03/2017	N Cov	WAS036
Chloride as Cl	17.4	mg/l	27/03/2017	N Cov	WAS036
Nitrogen, Total Oxidised as N	4.6	mg/l	27/03/2017	N Cov	WAS036
Sulphate as SO4	7.2	mg/l	27/03/2017	N Cov	WAS036
Dissolved Oxygen, Fixed	10.6	mg/l	24/03/2017	Y Cov	WAS052
COD (Total)	92.0	mg/l	29/03/2017	Y Cov	WAS040
TOC (Filtered)	<0.7	mg/l	27/03/2017	Y Cov	WAS005

## Analyst Comments for 15970379:

This sample has been analysed for COD (Total) outside recommended stability times. It is therefore possible that the results provided may be compromised. This sample has been analysed for COD (Total) outside recommended stability times. 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: 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).

## ALS Environmental Ltd

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Signed:



Name: **C. Law**

Date: **06 April 2017**

Title: **Inorganics Operations Manager**

# Certificate of Analysis



Report Number: **COV/1374425/2017**

Issue **1**

Laboratory Number: **15970380**

Sample **17** of **21**

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

Sample Point Description: **Groundwater Sump**

Sample Description: **Sump**

Sample Matrix: **Ground Water**

Sample Date/Time: **23 March 2017 11:00**

Sample Received: **23 March 2017**

Analysis Complete: **06 April 2017**

Test Description	Result	Units	Analysis Date	Accreditation	Method
Field Temperature	15.7	Deg C	23/03/2017	N Cov	FIELD
Cadmium , Total as Cd	<0.0006	mg/l	28/03/2017	Y Cov	WAS049
Calcium , Total as Ca	102	mg/l	28/03/2017	Y Cov	WAS049
Chromium , Total as Cr	0.007	mg/l	28/03/2017	Y Cov	WAS049
Copper, Total as Cu	0.031	mg/l	28/03/2017	Y Cov	WAS049
Iron , Total as Fe	3.68	mg/l	28/03/2017	Y Cov	WAS049
Lead , Total as Pb	<0.006	mg/l	28/03/2017	Y Cov	WAS049
Magnesium, Total as Mg	29.0	mg/l	28/03/2017	Y Cov	WAS049
Manganese , Total as Mn	1.23	mg/l	28/03/2017	Y Cov	WAS049
Nickel, Total as Ni	0.014	mg/l	28/03/2017	Y Cov	WAS049
Potassium , Total as K	62.9	mg/l	28/03/2017	Y Cov	WAS049
Sodium , Total as Na	126	mg/l	28/03/2017	Y Cov	WAS049
Zinc, Total as Zn	0.04	mg/l	28/03/2017	Y Cov	WAS049
pH	8.0	pH units	24/03/2017	Y Cov	WAS039
Conductivity- Electrical 20C	1960	uS/cm	24/03/2017	Y Cov	WAS039
Alkalinity as CaCO3	746	mg/l	04/04/2017	Y Cov	WAS025
Ammoniacal Nitrogen as N	96.4	mg/l	27/03/2017	N Cov	WAS036
Chloride as Cl	145	mg/l	27/03/2017	N Cov	WAS036
Nitrogen, Total Oxidised as N	9.5	mg/l	27/03/2017	N Cov	WAS036
Sulphate as SO4	18.3	mg/l	27/03/2017	N Cov	WAS036
Dissolved Oxygen, Fixed	7.0	mg/l	24/03/2017	Y Cov	WAS052
COD (Total)	182	mg/l	29/03/2017	Y Cov	WAS040
TOC (Filtered)	24.8	mg/l	27/03/2017	Y Cov	WAS005

## Analyst Comments for 15970380:

This sample has been analysed for COD (Total) outside recommended stability times. It is therefore possible that the results provided may be compromised. This sample has been analysed for COD (Total) outside recommended stability times. 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: 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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Signed:



Name: **C. Law**

Date: **06 April 2017**

Title: **Inorganics Operations Manager**

# Certificate of Analysis



Report Number: **COV/1374425/2017**

Issue **1**

Laboratory Number: **15970381**

Sample **18** of **21**

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

Sample Point Description: **New River Discharge**

Sample Description: **New River Discharge**

Sample Matrix: **Ground Water**

Sample Date/Time: **23 March 2017 09:55**

Sample Received: **23 March 2017**

Analysis Complete: **06 April 2017**

Test Description	Result	Units	Analysis Date	Accreditation	Method
Field Temperature	7.0	Deg C	23/03/2017	N Cov	FIELD
Cadmium , Total as Cd	<0.0006	mg/l	28/03/2017	Y Cov	WAS049
Calcium , Total as Ca	24.9	mg/l	28/03/2017	Y Cov	WAS049
Chromium , Total as Cr	<0.002	mg/l	28/03/2017	Y Cov	WAS049
Copper, Total as Cu	<0.009	mg/l	28/03/2017	Y Cov	WAS049
Iron , Total as Fe	0.34	mg/l	28/03/2017	Y Cov	WAS049
Lead , Total as Pb	<0.006	mg/l	28/03/2017	Y Cov	WAS049
Magnesium, Total as Mg	9.5	mg/l	28/03/2017	Y Cov	WAS049
Manganese , Total as Mn	0.025	mg/l	28/03/2017	Y Cov	WAS049
Nickel, Total as Ni	<0.003	mg/l	28/03/2017	Y Cov	WAS049
Potassium , Total as K	3.73	mg/l	28/03/2017	Y Cov	WAS049
Sodium , Total as Na	10.2	mg/l	28/03/2017	Y Cov	WAS049
Zinc, Total as Zn	<0.018	mg/l	28/03/2017	Y Cov	WAS049
pH	8.0	pH units	24/03/2017	Y Cov	WAS039
Conductivity- Electrical 20C	255	uS/cm	24/03/2017	Y Cov	WAS039
Alkalinity as CaCO3	76.8	mg/l	24/03/2017	Y Cov	WAS025
Ammoniacal Nitrogen as N	<0.41	mg/l	27/03/2017	N Cov	WAS036
Chloride as Cl	15.6	mg/l	27/03/2017	N Cov	WAS036
Nitrogen, Total Oxidised as N	0.9	mg/l	27/03/2017	N Cov	WAS036
Sulphate as SO4	34.8	mg/l	27/03/2017	N Cov	WAS036
Dissolved Oxygen, Fixed	10.1	mg/l	24/03/2017	Y Cov	WAS052
COD (Total)	<11.0	mg/l	29/03/2017	Y Cov	WAS040
TOC (Filtered)	2.5	mg/l	27/03/2017	Y Cov	WAS005

## Analyst Comments for 15970381:

This sample has been analysed for COD (Total) outside recommended stability times. It is therefore possible that the results provided may be compromised. This sample has been analysed for COD (Total) outside recommended stability times. 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: 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).

## ALS Environmental Ltd

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Signed:



Name: **C. Law**

Date: **06 April 2017**

Title: **Inorganics Operations Manager**

# Certificate of Analysis



Report Number: **COV/1374425/2017**

Issue **1**

Laboratory Number: **15970382**

Sample **19** of **21**

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

Sample Point Description: **Land Drain 1**

Sample Description: **Land Drain 1a**

Sample Matrix: **Ground Water**

Sample Date/Time: **23 March 2017 10:22**

Sample Received: **23 March 2017**

Analysis Complete: **06 April 2017**

Test Description	Result	Units	Analysis Date	Accreditation	Method
Field Temperature	13.3	Deg C	23/03/2017	N Cov	FIELD
Cadmium , Total as Cd	<0.0006	mg/l	28/03/2017	Y Cov	WAS049
Calcium , Total as Ca	88.4	mg/l	28/03/2017	Y Cov	WAS049
Chromium , Total as Cr	0.004	mg/l	28/03/2017	Y Cov	WAS049
Copper, Total as Cu	<0.009	mg/l	28/03/2017	Y Cov	WAS049
Iron , Total as Fe	2.19	mg/l	28/03/2017	Y Cov	WAS049
Lead , Total as Pb	<0.006	mg/l	28/03/2017	Y Cov	WAS049
Magnesium, Total as Mg	25.3	mg/l	28/03/2017	Y Cov	WAS049
Manganese , Total as Mn	0.838	mg/l	28/03/2017	Y Cov	WAS049
Nickel, Total as Ni	0.011	mg/l	28/03/2017	Y Cov	WAS049
Potassium , Total as K	47.5	mg/l	28/03/2017	Y Cov	WAS049
Sodium , Total as Na	93.3	mg/l	28/03/2017	Y Cov	WAS049
Zinc, Total as Zn	<0.018	mg/l	28/03/2017	Y Cov	WAS049
pH	8.0	pH units	24/03/2017	Y Cov	WAS039
Conductivity- Electrical 20C	1540	uS/cm	24/03/2017	Y Cov	WAS039
Alkalinity as CaCO3	519	mg/l	04/04/2017	Y Cov	WAS025
Ammoniacal Nitrogen as N	61.1	mg/l	27/03/2017	N Cov	WAS036
Chloride as Cl	115	mg/l	27/03/2017	N Cov	WAS036
Nitrogen, Total Oxidised as N	13.8	mg/l	27/03/2017	N Cov	WAS036
Sulphate as SO4	20.2	mg/l	27/03/2017	N Cov	WAS036
Dissolved Oxygen, Fixed	4.8	mg/l	24/03/2017	Y Cov	WAS052
COD (Total)	103	mg/l	29/03/2017	Y Cov	WAS040
TOC (Filtered)	20.3	mg/l	27/03/2017	Y Cov	WAS005

## Analyst Comments for 15970382:

This sample has been analysed for COD (Total) outside recommended stability times. It is therefore possible that the results provided may be compromised. This sample has been analysed for COD (Total) outside recommended stability times. 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: 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).

## ALS Environmental Ltd

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Signed:



Name: **C. Law**

Date: **06 April 2017**

Title: **Inorganics Operations Manager**

# Certificate of Analysis



Report Number: **COV/1374425/2017**

Issue **1**

Laboratory Number: **15970383**

Sample **20** of **21**

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

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

Sample Description: **Land Drain 1b**

Sample Matrix: **Ground Water**

Sample Date/Time: **23 March 2017 10:20**

Sample Received: **23 March 2017**

Analysis Complete: **06 April 2017**

Test Description	Result	Units	Analysis Date	Accreditation	Method
Field Temperature	9.7	Deg C	23/03/2017	N Cov	FIELD
Cadmium , Total as Cd	<0.0006	mg/l	28/03/2017	Y Cov	WAS049
Calcium , Total as Ca	76.7	mg/l	28/03/2017	Y Cov	WAS049
Chromium , Total as Cr	<0.002	mg/l	28/03/2017	Y Cov	WAS049
Copper, Total as Cu	<0.009	mg/l	28/03/2017	Y Cov	WAS049
Iron , Total as Fe	<0.23	mg/l	28/03/2017	Y Cov	WAS049
Lead , Total as Pb	<0.006	mg/l	28/03/2017	Y Cov	WAS049
Magnesium, Total as Mg	16.4	mg/l	28/03/2017	Y Cov	WAS049
Manganese , Total as Mn	0.207	mg/l	28/03/2017	Y Cov	WAS049
Nickel, Total as Ni	0.005	mg/l	28/03/2017	Y Cov	WAS049
Potassium , Total as K	22.2	mg/l	28/03/2017	Y Cov	WAS049
Sodium , Total as Na	43.6	mg/l	28/03/2017	Y Cov	WAS049
Zinc, Total as Zn	<0.018	mg/l	28/03/2017	Y Cov	WAS049
pH	7.5	pH units	24/03/2017	Y Cov	WAS039
Conductivity- Electrical 20C	819	uS/cm	24/03/2017	Y Cov	WAS039
Alkalinity as CaCO3	305	mg/l	24/03/2017	Y Cov	WAS025
Ammoniacal Nitrogen as N	8.49	mg/l	27/03/2017	N Cov	WAS036
Chloride as Cl	56.8	mg/l	27/03/2017	N Cov	WAS036
Nitrogen, Total Oxidised as N	15.1	mg/l	27/03/2017	N Cov	WAS036
Sulphate as SO4	23.0	mg/l	27/03/2017	N Cov	WAS036
Dissolved Oxygen, Fixed	6.5	mg/l	24/03/2017	Y Cov	WAS052
COD (Total)	71.0	mg/l	29/03/2017	Y Cov	WAS040
TOC (Filtered)	7.5	mg/l	27/03/2017	Y Cov	WAS005

## Analyst Comments for 15970383:

This sample has been analysed for COD (Total) outside recommended stability times. It is therefore possible that the results provided may be compromised. This sample has been analysed for COD (Total) outside recommended stability times. 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: 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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Signed:



Name: **C. Law**

Date: **06 April 2017**

Title: **Inorganics Operations Manager**

# Certificate of Analysis



Report Number: **COV/1374425/2017**

Issue **1**

Laboratory Number: **15970384**

Sample **21** of **21**

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

Sample Point Description: **Land Drain 2**

Sample Description: **Land Drain 2**

Sample Matrix: **Ground Water**

Sample Date/Time: **23 March 2017 10:36**

Sample Received: **23 March 2017**

Analysis Complete: **06 April 2017**

Test Description	Result	Units	Analysis Date	Accreditation	Method
Field Temperature	8.9	Deg C	23/03/2017	N Cov	FIELD
Cadmium , Total as Cd	<0.0006	mg/l	28/03/2017	Y Cov	WAS049
Calcium , Total as Ca	80.1	mg/l	28/03/2017	Y Cov	WAS049
Chromium , Total as Cr	<0.002	mg/l	28/03/2017	Y Cov	WAS049
Copper, Total as Cu	<0.009	mg/l	28/03/2017	Y Cov	WAS049
Iron , Total as Fe	<0.23	mg/l	28/03/2017	Y Cov	WAS049
Lead , Total as Pb	<0.006	mg/l	28/03/2017	Y Cov	WAS049
Magnesium, Total as Mg	20.1	mg/l	28/03/2017	Y Cov	WAS049
Manganese , Total as Mn	0.044	mg/l	28/03/2017	Y Cov	WAS049
Nickel, Total as Ni	0.004	mg/l	28/03/2017	Y Cov	WAS049
Potassium , Total as K	15.5	mg/l	28/03/2017	Y Cov	WAS049
Sodium , Total as Na	47.2	mg/l	28/03/2017	Y Cov	WAS049
Zinc, Total as Zn	0.09	mg/l	28/03/2017	Y Cov	WAS049
pH	8.1	pH units	24/03/2017	Y Cov	WAS039
Conductivity- Electrical 20C	802	uS/cm	24/03/2017	Y Cov	WAS039
Alkalinity as CaCO3	257	mg/l	24/03/2017	Y Cov	WAS025
Ammoniacal Nitrogen as N	<0.41	mg/l	27/03/2017	N Cov	WAS036
Chloride as Cl	72.1	mg/l	27/03/2017	N Cov	WAS036
Nitrogen, Total Oxidised as N	15.8	mg/l	27/03/2017	N Cov	WAS036
Sulphate as SO4	33.5	mg/l	27/03/2017	N Cov	WAS036
Dissolved Oxygen, Fixed	9.6	mg/l	24/03/2017	Y Cov	WAS052
COD (Total)	30.0	mg/l	29/03/2017	Y Cov	WAS040
TOC (Filtered)	4.1	mg/l	27/03/2017	Y Cov	WAS005

## Analyst Comments for 15970384:

This sample has been analysed for COD (Total) outside recommended stability times. It is therefore possible that the results provided may be compromised. This sample has been analysed for COD (Total) outside recommended stability times. 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: 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).

## ALS Environmental Ltd

Torrington Avenue, Coventry, CV4 9GU  
Tel:+44 (0)24 7642 1213 Fax:+44 (0)24 7685 6575



Signed:



Name: **C. Law**

Date: **06 April 2017**

Title: **Inorganics Operations Manager**



**COV/1374425/2017**

# Issue 1

Date of Issue: **06 April 2017**

[illegible]

# ANALYST COMMENTS FOR REPORT

COV/1374425/2017

Issue 1

Date of Issue: 06 April 2017

Sample No	Analysis Comments
15970384	This sample has been analysed for COD (Total) outside recommended stability times. It is therefore possible that the results provided may be compromised. This sample has been analysed for COD (Total) outside recommended stability times. It is therefore possible that the results provided may be compromised.

Signed:



Name: **C. Law**

Date: **06 April 2017**


Title: **Inorganics Operations Manager**

## DETERMINAND COMMENTS FOR REPORT COV/1374425/2017

ISSUE 1

Date of Issue : 06 April 2017

Sample No	Description	Determinand	Comments

Signed: 	Name: <b>C. Law</b>	Date: <b>06 April 2017</b>
	Title: <b>Inorganics Operations Manager</b>	