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

30 January 2018

**Test Report: COV/1493385/2018**

Dear Mr Lloyd

Analysis of your sample(s) submitted on 16 January 2018 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: *B. Phillips*

Name: B. Phillips

Title: Inorganic Team Leader



# 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: **30 January 2018**

Report Number: **COV/1493385/2018**

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: **16 January 2018**

Number of Test Results  
included in this report **157**

Analysis Commenced: **17 January 2018**

Signed:

*B. Phillips*

Name: **B. Phillips**

Date: **30 January 2018**

Title: **Inorganic Team Leader**

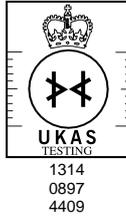
ALS Environmental Ltd was responsible for sampling.

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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# Certificate of Analysis



Report Number: **COV/1493385/2018**

Issue **1**

Laboratory Number: **16761575**

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

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

Sample Point Description: **03**

Sample Description: **03**

Sample Matrix: **Land Leachate**

Sample Date/Time: **16 January 2018 12:15**

Sample Received: **16 January 2018**

Analysis Complete: **30 January 2018**

Test Description	Result	Units	Analysis Date	Accreditation	Method
Field Temperature	15.0	Deg C	17/01/2018	N Cov	FIELD
pH	7.7	pH units	19/01/2018	Y Cov	WAS039
Conductivity- Electrical 20C	1930	uS/cm	19/01/2018	Y Cov	WAS039
Ammoniacal Nitrogen as N	90.8	mg/l	18/01/2018	Y Cov	WAS055
BOD + ATU (5 day)	2	mg/l	23/01/2018	Y Cov	WAS001
COD (Total)	104	mg/l	22/01/2018	Y Cov	WAS040
Chloride as Cl, High Level	140	mg/l	18/01/2018	Y Cov	WAS036

#### Analyst Comments for 16761575:

This sample has been analysed for pH outside recommended stability times. It is therefore possible that the results provided may be compromised. {/\*}Ammonia analysed by duplicate analysis. Ammonia analysed by colorimetric analysis..{\*/}

This issue replaces all previous issues

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

Analysed at: CHE = Chester(CH4 9EP), CTD = Coatbridge(ML5 4FR), COV = Coventry(CV4 9GU), 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:

Name: **B. Phillips**

Date: **30 January 2018**

Title: **Inorganic Team Leader**

**ALS Environmental Ltd**

Torrington Avenue, Coventry, CV4 9GU  
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# Certificate of Analysis



Report Number: **COV/1493385/2018**

Issue **1**

Laboratory Number: **16761576**

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

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

Sample Point Description: **08**

Sample Description: **08**

Sample Matrix: **Land Leachate**

Sample Date/Time: **16 January 2018 10:35**

Sample Received: **16 January 2018**

Analysis Complete: **30 January 2018**

Test Description	Result	Units	Analysis Date	Accreditation	Method
Field Temperature	10.2	Deg C	17/01/2018	N Cov	FIELD
pH	8.0	pH units	29/01/2018	Y Cov	WAS039
Conductivity- Electrical 20C	1370	uS/cm	29/01/2018	Y Cov	WAS039
Ammoniacal Nitrogen as N	48.8	mg/l	18/01/2018	Y Cov	WAS036
BOD + ATU (5 day)	5	mg/l	23/01/2018	Y Cov	WAS001
COD (Total)	66.0	mg/l	22/01/2018	Y Cov	WAS040
Chloride as Cl, High Level	97.2	mg/l	18/01/2018	Y Cov	WAS036

#### Analyst Comments for 16761576:

This sample has been analysed for pH outside recommended stability times. It is therefore possible that the results provided may be compromised. {/\*}Ammonia analysed by duplicate analysis. Ammonia analysed by colorimetric analysis..{\*/}

This issue replaces all previous issues

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

Analysed at: CHE = Chester(CH4 9EP), CTD = Coatbridge(ML5 4FR), COV = Coventry(CV4 9GU), 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:

Name: **B. Phillips**

Date: **30 January 2018**

Title: **Inorganic Team Leader**

**ALS Environmental Ltd**

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

# Certificate of Analysis



Report Number: **COV/1493385/2018**

Issue **1**

Laboratory Number: **16761577**

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

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

Sample Point Description: **MHL28**

Sample Description: **MHL28**

Sample Matrix: **Land Leachate**

Sample Date/Time: **16 January 2018 12:08**

Sample Received: **16 January 2018**

Analysis Complete: **30 January 2018**

Test Description	Result	Units	Analysis Date	Accreditation	Method
Field Temperature	12.2	Deg C	17/01/2018	N Cov	FIELD
pH	7.9	pH units	24/01/2018	Y Cov	WAS039
Conductivity- Electrical 20C	1730	uS/cm	24/01/2018	Y Cov	WAS039
Ammoniacal Nitrogen as N	80.1	mg/l	18/01/2018	Y Cov	WAS055
BOD + ATU (5 day)	10	mg/l	23/01/2018	Y Cov	WAS001
COD (Total)	97.0	mg/l	22/01/2018	Y Cov	WAS040
Chloride as Cl, High Level	124	mg/l	18/01/2018	Y Cov	WAS036

#### Analyst Comments for 16761577:

This sample has been analysed for pH outside recommended stability times. It is therefore possible that the results provided may be compromised. {/\*}Ammonia analysed by duplicate analysis. Ammonia analysed by colorimetric analysis..{\*/}

This issue replaces all previous issues

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

Analysed at: CHE = Chester(CH4 9EP), CTD = Coatbridge(ML5 4FR), COV = Coventry(CV4 9GU), 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:

Name: **B. Phillips**

Date: **30 January 2018**

Title: **Inorganic Team Leader**

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# Certificate of Analysis



Report Number: **COV/1493385/2018**

Issue **1**

Laboratory Number: **16761578**

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

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

Sample Point Description: **N2**

Sample Description: **N2**

Sample Matrix: **Ground Water**

Sample Date/Time: **16 January 2018 10:15**

Sample Received: **16 January 2018**

Analysis Complete: **30 January 2018**

Test Description	Result	Units	Analysis Date	Accreditation	Method
Field Temperature	9.7	Deg C	17/01/2018	N Cov	FIELD
pH	7.3	pH units	19/01/2018	Y Cov	WAS039
Conductivity- Electrical 20C	185	uS/cm	19/01/2018	Y Cov	WAS039
Ammoniacal Nitrogen as N	<0.41	mg/l	18/01/2018	N Cov	WAS036
Chloride as Cl	7.6	mg/l	18/01/2018	N Cov	WAS036
Dissolved Oxygen, Fixed	4.2	mg/l	18/01/2018	Y Cov	WAS052
COD (Total)	11.0	mg/l	22/01/2018	Y Cov	WAS040
Water Level to top of Casing	4.21	m	17/01/2018	N Cov	COM05

#### Analyst Comments for 16761578:

This sample has been analysed for pH 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: CHE = Chester(CH4 9EP), CTD = Coatbridge(ML5 4FR), COV = Coventry(CV4 9GU), 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:

Name: **B. Phillips**

Date: **30 January 2018**

Title: **Inorganic Team Leader**

# Certificate of Analysis



Report Number: **COV/1493385/2018**

Issue **1**

Laboratory Number: **16761579**

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

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

Sample Point Description: **N5**

Sample Description: **N5**

Sample Matrix: **Ground Water**

Sample Date/Time: **16 January 2018 13:17**

Sample Received: **16 January 2018**

Analysis Complete: **30 January 2018**

Test Description	Result	Units	Analysis Date	Accreditation	Method
Field Temperature	9.6	Deg C	17/01/2018	N Cov	FIELD
pH	7.4	pH units	19/01/2018	Y Cov	WAS039
Conductivity- Electrical 20C	1180	uS/cm	19/01/2018	Y Cov	WAS039
Ammoniacal Nitrogen as N	1.79	mg/l	18/01/2018	N Cov	WAS036
Chloride as Cl	177	mg/l	18/01/2018	N Cov	WAS036
Dissolved Oxygen, Fixed	2.0	mg/l	18/01/2018	Y Cov	WAS052
COD (Total)	123	mg/l	22/01/2018	Y Cov	WAS040
Water Level to top of Casing	2.90	m	17/01/2018	N Cov	COM05

**Analyst Comments for 16761579:**

This sample has been analysed for pH 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: CHE = Chester(CH4 9EP), CTD = Coatbridge(ML5 4FR), COV = Coventry(CV4 9GU), 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: 	Name: <b>B. Phillips</b>	Date: <b>30 January 2018</b>
	Title: <b>Inorganic Team Leader</b>	

# Certificate of Analysis



Report Number: **COV/1493385/2018**

Issue **1**

Laboratory Number: **16761580**

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

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

Sample Point Description: **N6**

Sample Description: **N6**

Sample Matrix: **Ground Water**

Sample Date/Time: **16 January 2018 12:48**

Sample Received: **16 January 2018**

Analysis Complete: **30 January 2018**

Test Description	Result	Units	Analysis Date	Accreditation	Method
Field Temperature	9.9	Deg C	17/01/2018	N Cov	FIELD
pH	7.4	pH units	19/01/2018	Y Cov	WAS039
Conductivity- Electrical 20C	983	uS/cm	19/01/2018	Y Cov	WAS039
Ammoniacal Nitrogen as N	19.1	mg/l	18/01/2018	N Cov	WAS036
Chloride as Cl	62.9	mg/l	18/01/2018	N Cov	WAS036
Dissolved Oxygen, Fixed	0.8	mg/l	18/01/2018	Y Cov	WAS052
COD (Total)	35.0	mg/l	22/01/2018	Y Cov	WAS040
Water Level to top of Casing	0.00	m	17/01/2018	N Cov	COM05

**Analyst Comments for 16761580:**

This sample has been analysed for pH 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: CHE = Chester(CH4 9EP), CTD = Coatbridge(ML5 4FR), COV = Coventry(CV4 9GU), 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:

Name: **B. Phillips**

Date: **30 January 2018**

Title: **Inorganic Team Leader**

# Certificate of Analysis



Report Number: **COV/1493385/2018**

Issue **1**

Laboratory Number: **16761581**

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

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

Sample Point Description: **N8**

Sample Description: **N8**

Sample Matrix: **Ground Water**

Sample Date/Time: **16 January 2018 11:45**

Sample Received: **16 January 2018**

Analysis Complete: **30 January 2018**

Test Description	Result	Units	Analysis Date	Accreditation	Method
Field Temperature	10.3	Deg C	17/01/2018	N Cov	FIELD
pH	8.1	pH units	24/01/2018	Y Cov	WAS039
Conductivity- Electrical 20C	846	uS/cm	24/01/2018	Y Cov	WAS039
Ammoniacal Nitrogen as N	<0.41	mg/l	18/01/2018	N Cov	WAS036
Chloride as Cl	204	mg/l	18/01/2018	N Cov	WAS036
Dissolved Oxygen, Fixed	1.7	mg/l	18/01/2018	Y Cov	WAS052
COD (Total)	46.0	mg/l	22/01/2018	Y Cov	WAS040
Water Level to top of Casing	2.10	m	17/01/2018	N Cov	COM05

**Analyst Comments for 16761581:**

This sample has been analysed for pH 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: CHE = Chester(CH4 9EP), CTD = Coatbridge(ML5 4FR), COV = Coventry(CV4 9GU), 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:

Name: **B. Phillips**

Date: **30 January 2018**

Title: **Inorganic Team Leader**

# Certificate of Analysis



Report Number: **COV/1493385/2018**

Issue **1**

Laboratory Number: **16761582**

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

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

Sample Point Description: **NBH1**

Sample Description: **NBH1**

Sample Matrix: **Ground Water**

Sample Date/Time: **16 January 2018 12:52**

Sample Received: **16 January 2018**

Analysis Complete: **30 January 2018**

Test Description	Result	Units	Analysis Date	Accreditation	Method
Field Temperature	9.6	Deg C	17/01/2018	N Cov	FIELD
pH	7.4	pH units	18/01/2018	Y Cov	WAS039
Conductivity- Electrical 20C	1690	uS/cm	18/01/2018	Y Cov	WAS039
Ammoniacal Nitrogen as N	31.8	mg/l	18/01/2018	N Cov	WAS036
Chloride as Cl	228	mg/l	18/01/2018	N Cov	WAS036
Dissolved Oxygen, Fixed	2.0	mg/l	18/01/2018	Y Cov	WAS052
COD (Total)	393	mg/l	22/01/2018	Y Cov	WAS040
Water Level to top of Casing	3.24	m	17/01/2018	N Cov	COM05

Analyst Comments for 16761582:

No Analyst Comment

This issue replaces all previous issues

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

Analysed at: CHE = Chester(CH4 9EP), CTD = Coatbridge(ML5 4FR), COV = Coventry(CV4 9GU), 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:

Name: **B. Phillips**

Date: **30 January 2018**

Title: **Inorganic Team Leader**

**ALS Environmental Ltd**

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

# Certificate of Analysis



Report Number: **COV/1493385/2018**

Issue **1**

Laboratory Number: **16761583**

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

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

Sample Point Description: **NBH2**

Sample Description: **NBH2**

Sample Matrix: **Ground Water**

Sample Date/Time: **16 January 2018 12:30**

Sample Received: **16 January 2018**

Analysis Complete: **30 January 2018**

Test Description	Result	Units	Analysis Date	Accreditation	Method
Field Temperature	13.1	Deg C	17/01/2018	N Cov	FIELD
pH	6.9	pH units	18/01/2018	Y Cov	WAS039
Conductivity- Electrical 20C	2020	uS/cm	18/01/2018	Y Cov	WAS039
Ammoniacal Nitrogen as N	87.4	mg/l	18/01/2018	N Cov	WAS036
Chloride as Cl	109	mg/l	18/01/2018	N Cov	WAS036
Dissolved Oxygen, Fixed	<0.5	mg/l	18/01/2018	Y Cov	WAS052
COD (Total)	70.0	mg/l	22/01/2018	Y Cov	WAS040
Water Level to top of Casing	2.62	m	17/01/2018	N Cov	COM05

Analyst Comments for 16761583:

No Analyst Comment

This issue replaces all previous issues

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

Analysed at: CHE = Chester(CH4 9EP), CTD = Coatbridge(ML5 4FR), COV = Coventry(CV4 9GU), 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:

Name: **B. Phillips**

Date: **30 January 2018**

Title: **Inorganic Team Leader**

**ALS Environmental Ltd**

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

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# Certificate of Analysis



Report Number: **COV/1493385/2018**

Issue **1**

Laboratory Number: **16761584**

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

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

Sample Point Description: **NBH3**

Sample Description: **NBH3**

Sample Matrix: **Ground Water**

Sample Date/Time: **16 January 2018 11:55**

Sample Received: **16 January 2018**

Analysis Complete: **30 January 2018**

Test Description	Result	Units	Analysis Date	Accreditation	Method
Field Temperature	12.2	Deg C	17/01/2018	N Cov	FIELD
pH	6.8	pH units	18/01/2018	Y Cov	WAS039
Conductivity- Electrical 20C	973	uS/cm	18/01/2018	Y Cov	WAS039
Ammoniacal Nitrogen as N	11.0	mg/l	18/01/2018	N Cov	WAS036
Chloride as Cl	35.7	mg/l	18/01/2018	N Cov	WAS036
Dissolved Oxygen, Fixed	4.3	mg/l	18/01/2018	Y Cov	WAS052
COD (Total)	74.0	mg/l	22/01/2018	Y Cov	WAS040
Water Level to top of Casing	5.35	m	17/01/2018	N Cov	COM05

Analyst Comments for 16761584:

No Analyst Comment

This issue replaces all previous issues

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

Analysed at: CHE = Chester(CH4 9EP), CTD = Coatbridge(ML5 4FR), COV = Coventry(CV4 9GU), 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:

Name: **B. Phillips**

Date: **30 January 2018**

Title: **Inorganic Team Leader**

**ALS Environmental Ltd**

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Page 11 of 24

# Certificate of Analysis



Report Number: **COV/1493385/2018**

Issue **1**

Laboratory Number: **16761585**

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

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

Sample Point Description: **NBH4**

Sample Description: **NBH4**

Sample Matrix: **Ground Water**

Sample Date/Time: **16 January 2018 11:27**

Sample Received: **16 January 2018**

Analysis Complete: **30 January 2018**

Test Description	Result	Units	Analysis Date	Accreditation	Method
Field Temperature	8.6	Deg C	17/01/2018	N Cov	FIELD
pH	6.6	pH units	18/01/2018	Y Cov	WAS039
Conductivity- Electrical 20C	603	uS/cm	18/01/2018	Y Cov	WAS039
Ammoniacal Nitrogen as N	0.51	mg/l	18/01/2018	N Cov	WAS036
Chloride as Cl	14.6	mg/l	18/01/2018	N Cov	WAS036
Dissolved Oxygen, Fixed	7.0	mg/l	18/01/2018	Y Cov	WAS052
COD (Total)	54.0	mg/l	22/01/2018	Y Cov	WAS040
Water Level to top of Casing	11.37	m	17/01/2018	N Cov	COM05

Analyst Comments for 16761585:

No Analyst Comment

This issue replaces all previous issues

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

Analysed at: CHE = Chester(CH4 9EP), CTD = Coatbridge(ML5 4FR), COV = Coventry(CV4 9GU), 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:

Name: **B. Phillips**

Date: **30 January 2018**

Title: **Inorganic Team Leader**

**ALS Environmental Ltd**

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# Certificate of Analysis



Report Number: **COV/1493385/2018**

Issue **1**

Laboratory Number: **16761586**

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

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

Sample Point Description: **NBH5**

Sample Description: **NBH5**

Sample Matrix: **Ground Water**

Sample Date/Time: **16 January 2018 10:10**

Sample Received: **16 January 2018**

Analysis Complete: **30 January 2018**

Test Description	Result	Units	Analysis Date	Accreditation	Method
Field Temperature	10.3	Deg C	17/01/2018	N Cov	FIELD
pH	6.6	pH units	18/01/2018	Y Cov	WAS039
Conductivity- Electrical 20C	562	uS/cm	18/01/2018	Y Cov	WAS039
Ammoniacal Nitrogen as N	0.67	mg/l	18/01/2018	N Cov	WAS036
Chloride as Cl	17.9	mg/l	18/01/2018	N Cov	WAS036
Dissolved Oxygen, Fixed	1.9	mg/l	18/01/2018	Y Cov	WAS052
COD (Total)	29.0	mg/l	22/01/2018	Y Cov	WAS040
Water Level to top of Casing	5.45	m	17/01/2018	N Cov	COM05

Analyst Comments for 16761586:

No Analyst Comment

This issue replaces all previous issues

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

Analysed at: CHE = Chester(CH4 9EP), CTD = Coatbridge(ML5 4FR), COV = Coventry(CV4 9GU), 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:

Name: **B. Phillips**

Date: **30 January 2018**

Title: **Inorganic Team Leader**

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# Certificate of Analysis



Report Number: **COV/1493385/2018**

Issue **1**

Laboratory Number: **16761587**

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

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

Sample Point Description: **NBH6**

Sample Description: **NBH6**

Sample Matrix: **Ground Water**

Sample Date/Time: **16 January 2018 10:35**

Sample Received: **16 January 2018**

Analysis Complete: **30 January 2018**

Test Description	Result	Units	Analysis Date	Accreditation	Method
Field Temperature	10.6	Deg C	17/01/2018	N Cov	FIELD
pH	6.7	pH units	18/01/2018	Y Cov	WAS039
Conductivity- Electrical 20C	222	uS/cm	18/01/2018	Y Cov	WAS039
Ammoniacal Nitrogen as N	<0.41	mg/l	18/01/2018	N Cov	WAS036
Chloride as Cl	11.4	mg/l	18/01/2018	N Cov	WAS036
Dissolved Oxygen, Fixed	2.2	mg/l	18/01/2018	Y Cov	WAS052
COD (Total)	31.0	mg/l	22/01/2018	Y Cov	WAS040
Water Level to top of Casing	10.1	m	17/01/2018	N Cov	COM05

Analyst Comments for 16761587:

No Analyst Comment

This issue replaces all previous issues

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

Analysed at: CHE = Chester(CH4 9EP), CTD = Coatbridge(ML5 4FR), COV = Coventry(CV4 9GU), 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:

Name: **B. Phillips**

Date: **30 January 2018**

Title: **Inorganic Team Leader**

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# Certificate of Analysis



Report Number: **COV/1493385/2018**

Issue **1**

Laboratory Number: **16761588**

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

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

Sample Point Description: **W1**

Sample Description: **W1**

Sample Matrix: **Ground Water**

Sample Date/Time: **16 January 2018 09:41**

Sample Received: **16 January 2018**

Analysis Complete: **30 January 2018**

Test Description	Result	Units	Analysis Date	Accreditation	Method
Field Temperature	6.3	Deg C	17/01/2018	N Cov	FIELD
pH	7.8	pH units	18/01/2018	Y Cov	WAS039
Conductivity- Electrical 20C	311	uS/cm	18/01/2018	Y Cov	WAS039
Ammoniacal Nitrogen as N	<0.41	mg/l	18/01/2018	N Cov	WAS036
Chloride as Cl	35.6	mg/l	18/01/2018	N Cov	WAS036
Dissolved Oxygen, Fixed	11.3	mg/l	18/01/2018	Y Cov	WAS052
COD (Total)	20.0	mg/l	22/01/2018	Y Cov	WAS040

Analyst Comments for 16761588:

No Analyst Comment

This issue replaces all previous issues

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

Analysed at: CHE = Chester(CH4 9EP), CTD = Coatbridge(ML5 4FR), COV = Coventry(CV4 9GU), 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:

Name: **B. Phillips**

Date: **30 January 2018**

Title: **Inorganic Team Leader**

**ALS Environmental Ltd**

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# Certificate of Analysis



Report Number: **COV/1493385/2018**

Issue **1**

Laboratory Number: **16761589**

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

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

Sample Point Description: **W2**

Sample Description: **W2**

Sample Matrix: **Ground Water**

Sample Date/Time: **16 January 2018 09:45**

Sample Received: **16 January 2018**

Analysis Complete: **30 January 2018**

Test Description	Result	Units	Analysis Date	Accreditation	Method
Field Temperature	6.1	Deg C	17/01/2018	N Cov	FIELD
pH	7.8	pH units	18/01/2018	Y Cov	WAS039
Conductivity- Electrical 20C	311	uS/cm	18/01/2018	Y Cov	WAS039
Ammoniacal Nitrogen as N	<0.41	mg/l	18/01/2018	N Cov	WAS036
Chloride as Cl	36.1	mg/l	18/01/2018	N Cov	WAS036
Dissolved Oxygen, Fixed	12.0	mg/l	18/01/2018	Y Cov	WAS052
COD (Total)	18.0	mg/l	22/01/2018	Y Cov	WAS040

Analyst Comments for 16761589:

No Analyst Comment

This issue replaces all previous issues

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

Analysed at: CHE = Chester(CH4 9EP), CTD = Coatbridge(ML5 4FR), COV = Coventry(CV4 9GU), 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:

Name: **B. Phillips**

Date: **30 January 2018**

Title: **Inorganic Team Leader**

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# Certificate of Analysis



Report Number: **COV/1493385/2018**

Issue **1**

Laboratory Number: **16761590**

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

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

Sample Point Description: **W3**

Sample Description: **W3**

Sample Matrix: **Ground Water**

Sample Date/Time: **16 January 2018 09:57**

Sample Received: **16 January 2018**

Analysis Complete: **30 January 2018**

Test Description	Result	Units	Analysis Date	Accreditation	Method
Field Temperature	6.4	Deg C	17/01/2018	N Cov	FIELD
pH	7.8	pH units	18/01/2018	Y Cov	WAS039
Conductivity- Electrical 20C	312	uS/cm	18/01/2018	Y Cov	WAS039
Ammoniacal Nitrogen as N	<0.41	mg/l	18/01/2018	N Cov	WAS036
Chloride as Cl	35.8	mg/l	18/01/2018	N Cov	WAS036
Dissolved Oxygen, Fixed	10.8	mg/l	18/01/2018	Y Cov	WAS052
COD (Total)	13.0	mg/l	22/01/2018	Y Cov	WAS040

Analyst Comments for 16761590:

No Analyst Comment

This issue replaces all previous issues

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

Analysed at: CHE = Chester(CH4 9EP), CTD = Coatbridge(ML5 4FR), COV = Coventry(CV4 9GU), OTT = Otterbourne(SO21 2SW), S = Subcontracted, TRB = Subcontracted to Trowbridge(BA14 0XD), WAK = Wakefield(WF5 9TG).

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

Signed:

Name: **B. Phillips**

Date: **30 January 2018**

Title: **Inorganic Team Leader**

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# Certificate of Analysis



Report Number: **COV/1493385/2018**

Issue **1**

Laboratory Number: **16761591**

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

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

Sample Point Description: **W5**

Sample Description: **W5**

Sample Matrix: **Ground Water**

Sample Date/Time: **16 January 2018 10:55**

Sample Received: **16 January 2018**

Analysis Complete: **30 January 2018**

Test Description	Result	Units	Analysis Date	Accreditation	Method
Field Temperature	6.7	Deg C	17/01/2018	N Cov	FIELD
pH	7.4	pH units	18/01/2018	Y Cov	WAS039
Conductivity- Electrical 20C	134	uS/cm	18/01/2018	Y Cov	WAS039
Ammoniacal Nitrogen as N	<0.41	mg/l	18/01/2018	N Cov	WAS036
Chloride as Cl	14.3	mg/l	18/01/2018	N Cov	WAS036
Dissolved Oxygen, Fixed	10.8	mg/l	18/01/2018	Y Cov	WAS052
COD (Total)	<11.0	mg/l	22/01/2018	Y Cov	WAS040

Analyst Comments for 16761591:

No Analyst Comment

This issue replaces all previous issues

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

Analysed at: CHE = Chester(CH4 9EP), CTD = Coatbridge(ML5 4FR), COV = Coventry(CV4 9GU), OTT = Otterbourne(SO21 2SW), S = Subcontracted, TRB = Subcontracted to Trowbridge(BA14 0XD), WAK = Wakefield(WF5 9TG).

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

Signed:

Name: **B. Phillips**

Date: **30 January 2018**

Title: **Inorganic Team Leader**

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# Certificate of Analysis



Report Number: **COV/1493385/2018**

Issue **1**

Laboratory Number: **16761592**

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

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

Sample Point Description: **Groundwater Sump**

Sample Description: **SUMP**

Sample Matrix: **Ground Water**

Sample Date/Time: **16 January 2018 12:04**

Sample Received: **16 January 2018**

Analysis Complete: **30 January 2018**

Test Description	Result	Units	Analysis Date	Accreditation	Method
Field Temperature	9.2	Deg C	17/01/2018	N Cov	FIELD
pH	7.0	pH units	18/01/2018	Y Cov	WAS039
Conductivity- Electrical 20C	975	uS/cm	18/01/2018	Y Cov	WAS039
Ammoniacal Nitrogen as N	1.31	mg/l	18/01/2018	N Cov	WAS036
Chloride as Cl	187	mg/l	18/01/2018	N Cov	WAS036
Dissolved Oxygen, Fixed	1.6	mg/l	18/01/2018	Y Cov	WAS052
COD (Total)	15.0	mg/l	22/01/2018	Y Cov	WAS040

Analyst Comments for 16761592:

No Analyst Comment

This issue replaces all previous issues

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

Analysed at: CHE = Chester(CH4 9EP), CTD = Coatbridge(ML5 4FR), COV = Coventry(CV4 9GU), OTT = Otterbourne(SO21 2SW), S = Subcontracted, TRB = Subcontracted to Trowbridge(BA14 0XD), WAK = Wakefield(WF5 9TG).

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

Signed:

Name: **B. Phillips**

Date: **30 January 2018**

Title: **Inorganic Team Leader**

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# Certificate of Analysis



Report Number: **COV/1493385/2018**

Issue **1**

Laboratory Number: **16761593**

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: **16 January 2018 10:21**

Sample Received: **16 January 2018**

Analysis Complete: **30 January 2018**

Test Description	Result	Units	Analysis Date	Accreditation	Method
Field Temperature	11.9	Deg C	17/01/2018	N Cov	FIELD
pH	7.8	pH units	18/01/2018	Y Cov	WAS039
Conductivity- Electrical 20C	1790	uS/cm	18/01/2018	Y Cov	WAS039
Ammoniacal Nitrogen as N	77.1	mg/l	18/01/2018	N Cov	WAS036
Chloride as Cl	122	mg/l	18/01/2018	N Cov	WAS036
Dissolved Oxygen, Fixed	6.2	mg/l	18/01/2018	Y Cov	WAS052
COD (Total)	102	mg/l	22/01/2018	Y Cov	WAS040

Analyst Comments for 16761593:

No Analyst Comment

This issue replaces all previous issues

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

Analysed at: CHE = Chester(CH4 9EP), CTD = Coatbridge(ML5 4FR), COV = Coventry(CV4 9GU), OTT = Otterbourne(SO21 2SW), S = Subcontracted, TRB = Subcontracted to Trowbridge(BA14 0XD), WAK = Wakefield(WF5 9TG).

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

Signed:

Name: **B. Phillips**

Date: **30 January 2018**

Title: **Inorganic Team Leader**

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# Certificate of Analysis



Report Number: **COV/1493385/2018**

Issue **1**

Laboratory Number: **16761594**

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: **16 January 2018 10:15**

Sample Received: **16 January 2018**

Analysis Complete: **30 January 2018**

Test Description	Result	Units	Analysis Date	Accreditation	Method
Field Temperature	9.2	Deg C	17/01/2018	N Cov	FIELD
pH	7.5	pH units	18/01/2018	Y Cov	WAS039
Conductivity- Electrical 20C	897	uS/cm	18/01/2018	Y Cov	WAS039
Ammoniacal Nitrogen as N	12.6	mg/l	18/01/2018	N Cov	WAS036
Chloride as Cl	68.1	mg/l	18/01/2018	N Cov	WAS036
Dissolved Oxygen, Fixed	7.1	mg/l	18/01/2018	Y Cov	WAS052
COD (Total)	45.0	mg/l	22/01/2018	Y Cov	WAS040

Analyst Comments for 16761594:

No Analyst Comment

This issue replaces all previous issues

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

Analysed at: CHE = Chester(CH4 9EP), CTD = Coatbridge(ML5 4FR), COV = Coventry(CV4 9GU), 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:

Name: **B. Phillips**

Date: **30 January 2018**

Title: **Inorganic Team Leader**

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# Certificate of Analysis



Report Number: **COV/1493385/2018**

Issue **1**

Laboratory Number: **16761595**

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: **16 January 2018 10:29**

Sample Received: **16 January 2018**

Analysis Complete: **30 January 2018**

Test Description	Result	Units	Analysis Date	Accreditation	Method
Field Temperature	7.3	Deg C	17/01/2018	N Cov	FIELD
pH	7.9	pH units	18/01/2018	Y Cov	WAS039
Conductivity- Electrical 20C	718	uS/cm	18/01/2018	Y Cov	WAS039
Ammoniacal Nitrogen as N	<0.41	mg/l	18/01/2018	N Cov	WAS036
Chloride as Cl	55.7	mg/l	18/01/2018	N Cov	WAS036
Dissolved Oxygen, Fixed	11.1	mg/l	18/01/2018	Y Cov	WAS052
COD (Total)	20.0	mg/l	22/01/2018	Y Cov	WAS040

Analyst Comments for 16761595:

No Analyst Comment

This issue replaces all previous issues

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

Analysed at: CHE = Chester(CH4 9EP), CTD = Coatbridge(ML5 4FR), COV = Coventry(CV4 9GU), 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:

Name: **B. Phillips**

Date: **30 January 2018**

Title: **Inorganic Team Leader**

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**ANALYST COMMENTS FOR REPORT COV/1493385/2018**

**Issue 1**

This issue replaces all previous issues

**Date of Issue: 30 January 2018**

Sample No	Analysis Comments
16761575	This sample has been analysed for pH outside recommended stability times. It is therefore possible that the results provided may be compromised. {/}*}Ammonia analysed by duplicate analysis. Ammonia analysed by colorimetric analysis..{/}*}
16761576	This sample has been analysed for pH outside recommended stability times. It is therefore possible that the results provided may be compromised. {/}*}Ammonia analysed by duplicate analysis. Ammonia analysed by colorimetric analysis..{/}*}
16761577	This sample has been analysed for pH outside recommended stability times. It is therefore possible that the results provided may be compromised. {/}*}Ammonia analysed by duplicate analysis. Ammonia analysed by colorimetric analysis..{/}*}
16761578	This sample has been analysed for pH outside recommended stability times. It is therefore possible that the results provided may be compromised.
16761579	This sample has been analysed for pH outside recommended stability times. It is therefore possible that the results provided may be compromised.
16761580	This sample has been analysed for pH outside recommended stability times. It is therefore possible that the results provided may be compromised.
16761581	This sample has been analysed for pH outside recommended stability times. It is therefore possible that the results provided may be compromised.
16761582	
16761583	
16761584	
16761585	
16761586	
16761587	
16761588	
16761589	
16761590	
16761591	
16761592	
16761593	
16761594	
16761595	

Signed: *B. Phillips*

Name: **B. Phillips**

Date: **30 January 2018**

Title: **Inorganic Team Leader**

**DETERMINAND COMMENTS FOR REPORT COV/1493385/2018**

**Date of Issue: 30 January 2018**

**ISSUE 1**

This issue replaces  
all previous issues

Sample No	Description	Determinand	Comments

Signed: <i>B. Phillips</i>	Name: <b>B. Phillips</b>	Date: <b>30 January 2018</b>
	Title: <b>Inorganic Team Leader</b>	