

Caulmert Limited

Engineering, Environmental & Planning
Consultancy Services

Standard Landfill Site

Flintshire County Council Waste Management Services

Quarterly Monitoring Review

October– December 2015

Prepared by:

Caulmert Limited

InTec, Parc Menai, Bangor, Gwynedd, LL57 4FG

Tel: 01248 672666

Fax: 01248 672601

Email: jimmcclymont@caulmert.com

Web: www.caulmert.com

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Project Director: Mike Caulfield

Project Manager: Jim McClymont

Caulmert Limited: Intec, Parc Menai, Bangor, Gwynedd, LL57 4FG

Tel: 01248 672666

Author	Natalie Weatherill	Date	27.01.2016
Reviewer	Jim McClymont	Date	27.01.2016
Approved	Jim McClymont	Date	29.01.2016

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1.0 INTRODUCTION

1.1 Background

- 1.1.1 This report has been compiled in accordance with the Environmental Permit for Standard Landfill Site, Buckley, which requires a quarterly review of the environmental monitoring data collected at the site. The data reviewed by this report was collected between the 1st of October and the 31st of December 2015.
- 1.1.2 This report records and discusses the monitoring data collected for landfill gas, groundwater, leachate, and surface water. For details regarding the site location, surrounding land-use, site history and development and environmental context please refer to the Standard Landfill Site Annual Monitoring Review 2014, document reference 1902.14.FCC.SDB.JDM.A0, submitted to Natural Resources Wales by Caulmert Ltd, on behalf of Flintshire County Council Waste Management Services in January 2015.

2.0 LANDFILL GAS

2.1 Introduction

- 2.1.1 Routine landfill gas (LFG) monitoring was carried out on a weekly basis at 29 perimeter boreholes during the review period. Methane, carbon dioxide, oxygen, relative pressure and atmospheric pressure were recorded at each borehole.
- 2.1.2 Borehole locations are shown on the drawing entitled 'Environmental Monitoring Locations' enclosed. A summary table displaying methane and carbon dioxide concentrations and can be found in Appendix 1.

2.2 Methane

- 2.2.1 Methane was only detected in BH22, with an average concentration of 0.3 %. A methane trigger level of 1.0 % was proposed for BH22 in EPR Compliance Assessment Report (CAR) ID 37073/0202764 issued by Natural Resources Wales (NRW) on the 27th of February 2014. The proposed trigger level was not exceeded at BH22 during this review period, with a maximum concentration of 0.5 %.

2.3 Carbon Dioxide

- 2.3.1 Carbon dioxide trigger levels were agreed with the Environment Agency during Q3 of 2011 and can be found in Appendix 1 along with the monitoring data. The carbon dioxide trigger values for boreholes BH16 and BH22, 3.0 % and 3.1 % respectively, were approved in EPR Compliance Assessment Report (CAR) ID 37073/0202764.
- 2.3.2 Carbon dioxide concentrations remained below the trigger levels in all locations throughout the review period.

3.0 GROUNDWATER

3.1 Introduction

- 3.1.1 During the review period groundwater levels were recorded on a monthly basis at seven groundwater monitoring boreholes, GW1, GW2, GW3, GW4R, GW5, GW6 and GW7R. Samples collected from GW1, GW3, GW4R, GW5, GW6 and GW7R were analysed for the quarterly suite of parameters listed below:

Carbon, Inorganics, Filtered (Dissolved) Metals, Mineral Oil/Oil & Greases, TPH CWG, SVOCs, VOCs, and combined pesticides/herbicides.

3.2 Groundwater Levels

- 3.2.1 Groundwater level data was recorded on a monthly basis in meters below ground level (mBGL), where borehole cover level data was available this also resulted in a calculation for groundwater level in metres above Ordnance Datum (mAOD).
- 3.2.2 Groundwater levels, in mBGL and mAOD are displayed in a summary table included in Appendix 2. Groundwater levels remained relatively stable over the review period.

3.3 Groundwater Quality

- 3.3.1 A groundwater quality summary table for this review period is included in Appendix 2.
- 3.3.2 GW6 continues to exhibit elevated concentrations of several parameters, following the leachate outbreak which was detected at the north west edge of the site, close to gas monitoring borehole 2.2 in May 2013. Ammoniacal nitrogen and chloride concentrations in GW6 have shown a generally decreasing trend since 2013, the concentrations continue to decrease in this monitoring round.
- 3.3.3 Ammoniacal nitrogen concentrations were at detection limit in GW1 and GW4 and were comparatively lower than GW6 at all other monitoring points.
- 3.3.4 COD was highest in GW5 and GW6 at 101 mg/l and 152 mg/l respectively. COD concentrations remained below 100 mg/l in all other groundwater monitoring points.
- 3.3.5 No toluene or xylenes were detected in any of the groundwater locations. No pesticides, herbicides, semi-organic compounds or organics were detected in the annual monitoring suite. No TPH's or any evidence of oil or grease was detected.
- 3.3.6 A trace concentration of the VOC 1,1-Dichloropropene was detected in GW6, at a concentration of 0.001 mg/l. Mecoprop was also detected in GW6 at a trace concentration of 0.003 mg/l.

4.0 LEACHATE

4.1 Introduction

- 4.1.1 Leachate levels were recorded monthly at nine leachate monitoring locations, LC2.1, LC3, LC4, LC7, S1, S2, S3, SSR5 (LS5) and SSR6 (LS6). Additionally, samples from LC chambers were analysed for the quarterly suite of determinants listed below:

Carbon, Inorganics and Filtered (Dissolved) Metals, Mineral Oil/Oil & Greases, SVOCs, VOCs, and combined pesticides/herbicides.

- 4.1.2 Well locations are shown on the Environmental Monitoring Location drawing enclosed.

4.2 Leachate Levels

- 4.2.1 Leachate levels were recorded on a monthly basis. A summary table displaying leachate levels, in metres below ground level (mBGL) and in metres above Ordnance Datum (mAOD), can be found in Appendix 3.
- 4.2.2 Table 1 below displays minimum, maximum and average leachate head levels in metres above well base. Average levels range between 1.2 m above well base in S1 to 1.83 m above well base in LC7.

Table 1: Leachate Head Levels in metres above well base

Location	Leachate head (m above cell base)		
	Min	Max	Average
LC2.1	1.41	1.47	1.44
LC3	1.60	1.69	1.65
LC4	1.49	1.54	1.51
LC7	1.81	1.87	1.83
LS5	1.33	1.35	1.34
LS6	1.18	1.19	1.19
S1	1.15	1.25	1.20
S2	1.71	1.75	1.73
S3	1.42	1.50	1.46

4.3 Leachate Quality

- 4.3.1 Quarterly leachate quality sampling was undertaken at four monitoring locations (LC2, LC3, LC4 and LC7). A summary of the analysis is shown in Table 3.2 in Appendix 3.
- 4.3.2 Concentrations of ammoniacal nitrogen within the leachate ranged between 172 mg/l in LC4 and a maximum concentration of 1560 mg/l in LC2.
- 4.3.3 Chloride concentrations range between 1180 mg/l in LC4 and 2140 mg/l in LC2.
- 4.3.4 14 substances were detected as part of the annual suite. These included 3 SVOCs, 9 VOCs and 2 organics - Dibutyl tin and Mecoprop. Concentrations are shown in Table 3.2 in Appendix 3.

5.0 SURFACE WATER

5.1 Introduction

5.1.1 Surface water samples are collected at four locations; SW1, SW2, SW4 and SW5 which are shown on the Environmental Monitoring Locations drawing enclosed.

5.1.2 Surface water samples were analysed for the following Quarterly parameters:

Carbon, Inorganics, Filtered (dissolved) metals, mineral oils & grease, TPH CWG, SVOCs, VOCs and combined pesticides/herbicides.

5.1.4 Summary tables displaying the surface water analysis results are presented in Appendix 4.

5.2 Surface Water Quality

5.2.1 Ammoniacal nitrogen was not detected in SW5 or SW2. Concentrations in SW1 and SW4 were 0.66 mg/l and 0.38 mg/l respectively.

5.2.2 Chemical oxygen demand concentration was the highest in SW1 at 679 mg/l. Within other monitoring points the maximum was 39.5 in SW4, decreasing since the last quarter.

5.2.3 Trace concentrations of 3 parameters were detected as part of the annual suite. Mineral oil was detected in SW1 at a concentration of 0.916 mg/l. The VOC carbon disulphide was also detected in SW1 at 0.00335 mg/l. Finally, the organic compound Dicamba was detected in SW5 at 0.00005 mg/l.

6.0 CONCLUSIONS

6.1 Landfill gas

- 6.1.1 None of the permitted trigger levels for methane or carbon dioxide were exceeded during this review period.
- 6.1.2 Methane was only detected in BH22, remaining below the trigger level of 1.0 % throughout the review period, with an average concentration of 0.3 %.

6.2 Groundwater

- 6.2.1 Groundwater quality was generally good in all locations, with the exception of GW6.
- 6.2.2 GW6 continued to display the highest concentrations of most parameters potentially due to the residual impact of the leachate outbreak close to this borehole which was detected in May 2013. The concentrations of key leachate indicator parameters have decreased considerably since the outbreak and continue to decrease in the current quarter.
- 6.2.3 Two hazardous substances were detected in monitoring location GW6 – mecoprop and one SVOC.

6.3 Leachate

- 6.3.1 Leachate levels remained low for the duration of the review period.
- 6.3.2 Leachate quality results indicate that a medium to strong leachate is present. This is to be expected given the age of the waste mass and the closed and capped nature of the site.
- 6.3.3 14 hazardous substances were detected within the leachate in the annual suite.

6.4 Surface Water

- 6.4.1 Surface water was sampled at SW1, SW2, SW4 and SW5 during this review period. Two hazardous substances were detected in upstream monitoring location SW1 – mineral oils and one SVOC.

Notes

-  Groundwater Borehole
-  Side Slope Riser
-  Leachate Chamber
-  Surface Water Monitoring Point
-  Cross Section
-  Ground Water Contours

Notes

Monitoring Point Height (mOD)
Given Below Identity Number

Ground Water Contour Based on
2005 Levels



Bold Business Centre, Bold Lane,
Sutton, St Helens WA9 4TX

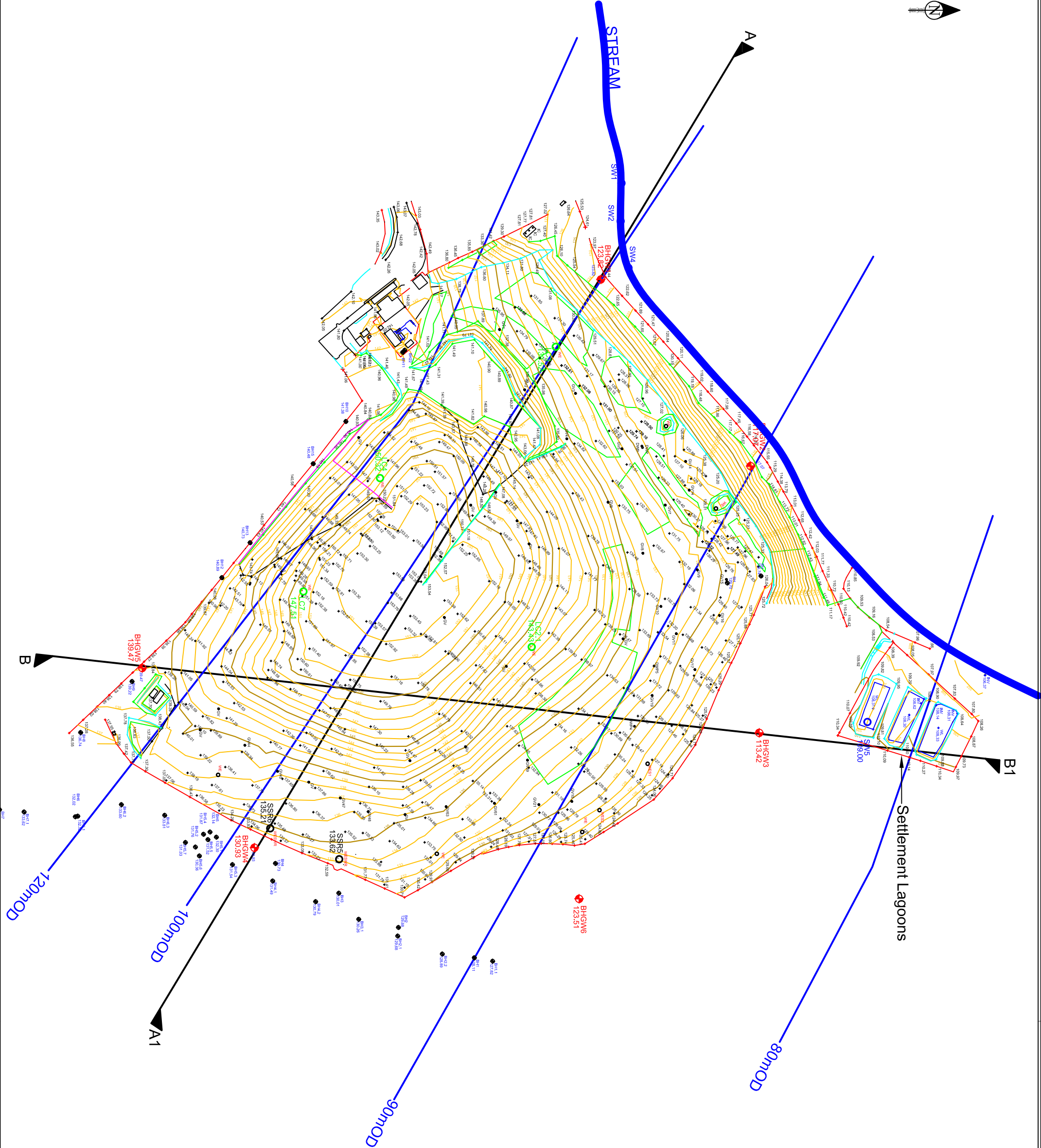
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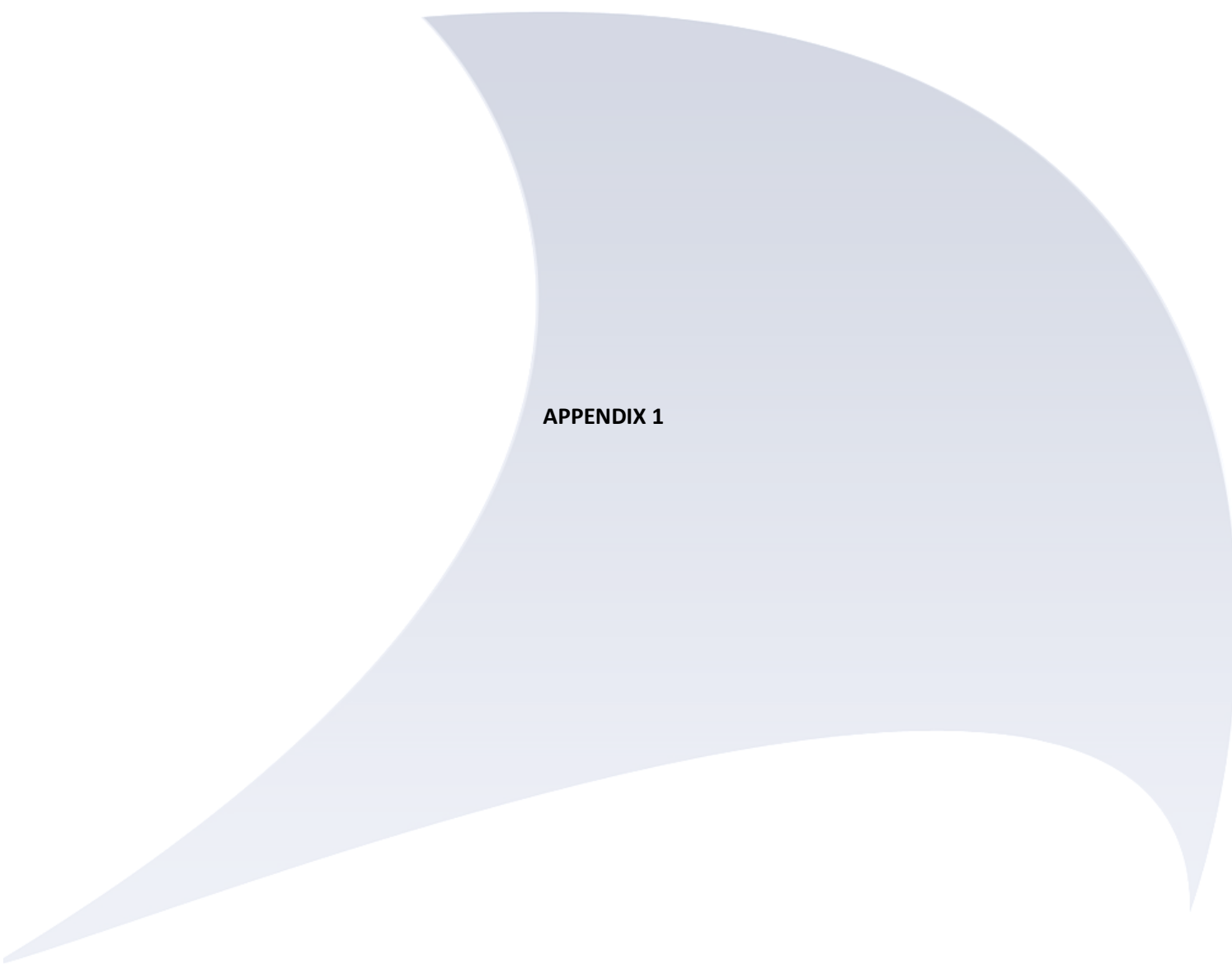


Site
**Standard Landfill
Buckley**

Title
**Environmental Monitoring
Locations**

Scale	1:1500	@ A2
Drawing No.	0987/1/002	
Rev	Date	Description
File	Standard Landfill3863a-TCL Revision001.dwg	
Date	03/09	Engineer CB
Drawn	SH	Checked JB



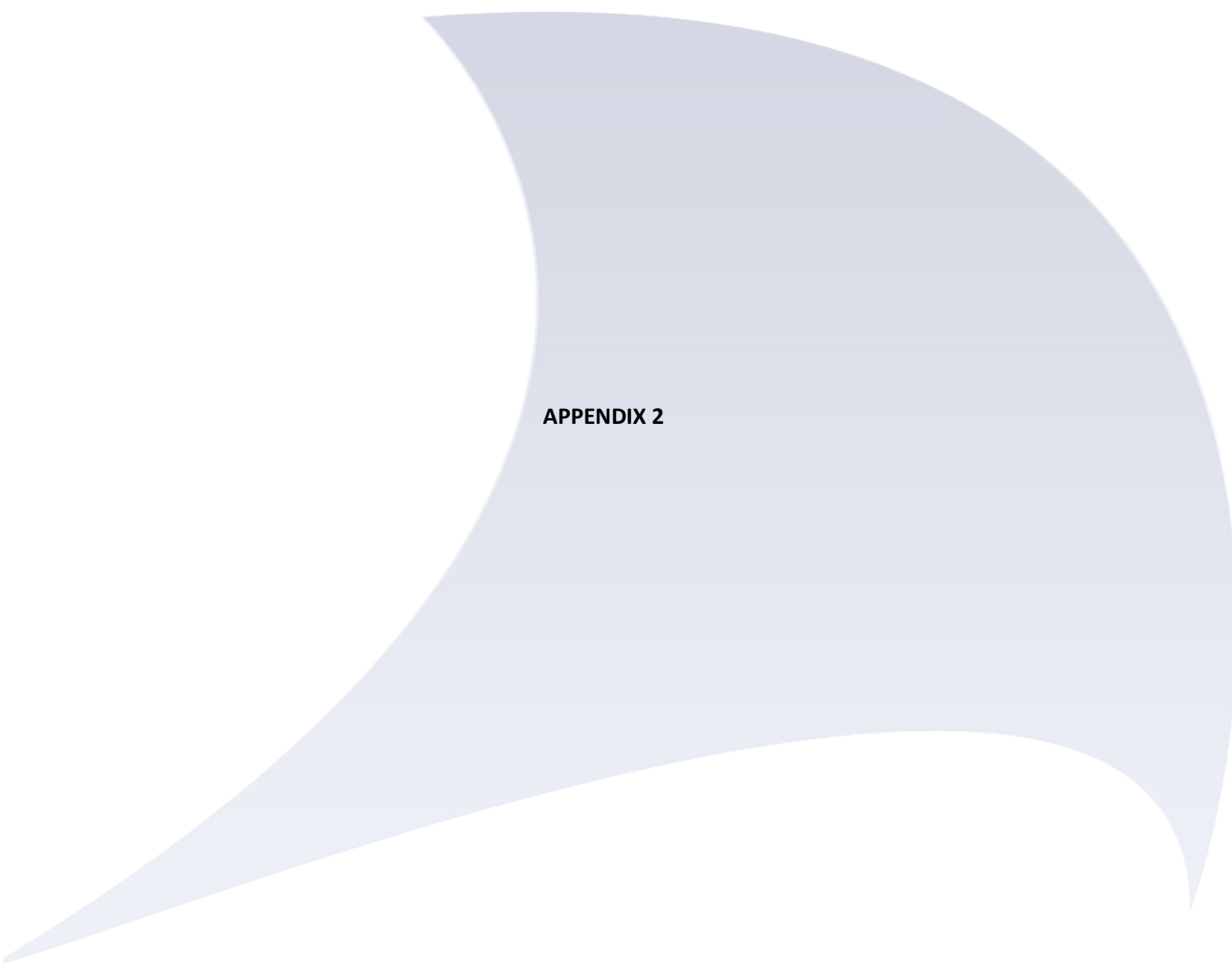


APPENDIX 1

APPENDIX 1

Table 1 – Summary of Landfill Gas Concentrations

Location	Methane (%v/v)					Carbon Dioxide (%v/v)				
	Min	Max	Ave	Count	Limit	Min	Max	Ave	Count	Limit
BH 1	0.0	0.0	0.0	14	1.0	1.2	2.2	1.6	14	5.4
BH 1.1	0.0	0.0	0.0	14	1.0	1.0	2.1	1.5	14	5.4
BH 2.0	0.0	0.0	0.0	14	1.0	1.1	2.5	1.9	14	7.1
BH 2.1	0.0	0.0	0.0	14	1.0	1.4	2.1	1.6	14	7.6
BH 2.2	0.0	0.0	0.0	14	1.0	1.0	2.0	1.5	14	5.8
BH 3.0	0.0	0.0	0.0	14	1.0	1.8	3.3	2.2	14	6.7
BH 3.1	0.0	0.0	0.0	14	1.0	1.0	2.0	1.6	14	7.8
BH 4.0	0.0	0.0	0.0	14	1.0	1.2	1.9	1.6	14	10.7
BH 4.1	0.0	0.0	0.0	14	1.0	1.1	2.3	1.7	14	7.1
BH 4.2	0.0	0.0	0.0	14	1.0	1.0	2.4	1.7	14	8.6
BH 5.0	0.0	0.0	0.0	14	1.0	1.2	2.3	1.8	14	19.4
BH 5.1	0.0	0.0	0.0	14	1.0	1.6	2.6	2.1	14	5.8
BH 5.2	0.0	0.0	0.0	14	1.0	1.1	1.9	1.4	14	9.6
BH 5.3	0.0	0.0	0.0	14	1.0	1.0	1.9	1.7	14	6.0
BH 5.4	0.0	0.0	0.0	14	1.0	1.4	1.9	1.6	14	16.0
BH 5.5	0.0	0.0	0.0	14	1.0	1.1	2.6	1.9	14	17.1
BH 5.7	0.0	0.0	0.0	14	1.0	1.3	2.3	1.9	14	7.1
BH 6.0	0.0	0.0	0.0	14	1.0	1.1	2.5	1.8	14	8.9
BH 6.1	0.0	0.0	0.0	14	1.0	1.6	2.3	2.0	14	3.7
BH 6.2	0.0	0.0	0.0	14	1.0	1.0	2.3	1.5	14	1.0
BH 6.3	0.0	0.0	0.0	14	1.0	1.2	2.1	1.6	14	8.2
BH 7.0	0.0	0.0	0.0	14	1.0	1.3	2.9	1.9	14	6.2
BH 7.1	0.0	0.0	0.0	14	1.0	0.9	2.6	1.8	14	5.5
BH 9.0	0.0	0.0	0.0	14	1.0	1.0	3.6	1.9	14	10.7
BH 12	0.0	0.0	0.0	14	1.0	1.3	1.9	1.7	14	6.5
BH 13	0.0	0.0	0.0	14	1.0	2.0	2.6	2.3	14	5.2
BH 15	0.0	0.0	0.0	14	1.0	1.4	4.0	2.7	14	8.3
BH 16	0.0	0.0	0.0	14	1.0	1.3	2.3	1.7	14	3.0
BH 22	0.2	0.5	0.3	14	1.0	1.8	2.6	2.2	14	3.1



APPENDIX 2

APPENDIX 2**Table 2.1 - Groundwater Levels**

Location	Date	Dip Level (mBGL)	Groundwater Level (m AOD)
GW 1	20/10/2015	25.67	98.41
	17/11/2015	22.39	101.69
	21/12/2015	19.98	104.1
GW 2	20/10/2015	9.1	108.11
	17/11/2015	9.1	108.11
	21/12/2015	9.1	108.11
GW 3	20/10/2015	27.98	85.44
	17/11/2015	21.54	91.88
	21/12/2015	20.39	93.03
GW 4R	20/10/2015	42.56	88.44
	17/11/2015	39.69	91.31
	21/12/2015	39.99	91.01
GW 5	20/10/2015	2.56	132.3
	17/11/2015	2.45	132.41
	21/12/2015	2.51	132.35
GW 6	20/10/2015	25.58	97.99
	17/11/2015	23.01	100.56
	21/12/2015	22.87	100.7
GW 7R	20/10/2015	42.31	99.69
	17/11/2015	38.19	103.81
	21/12/2015	39.79	102.21

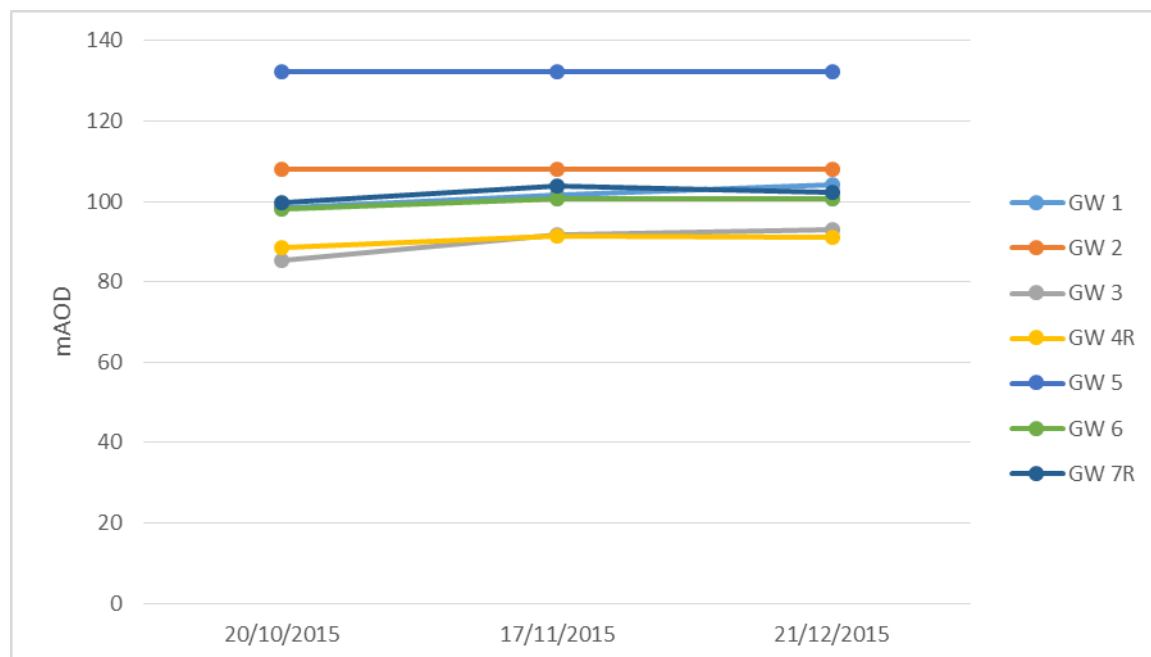


Table 2.2 - Groundwater Quality Data Summary (Annual)

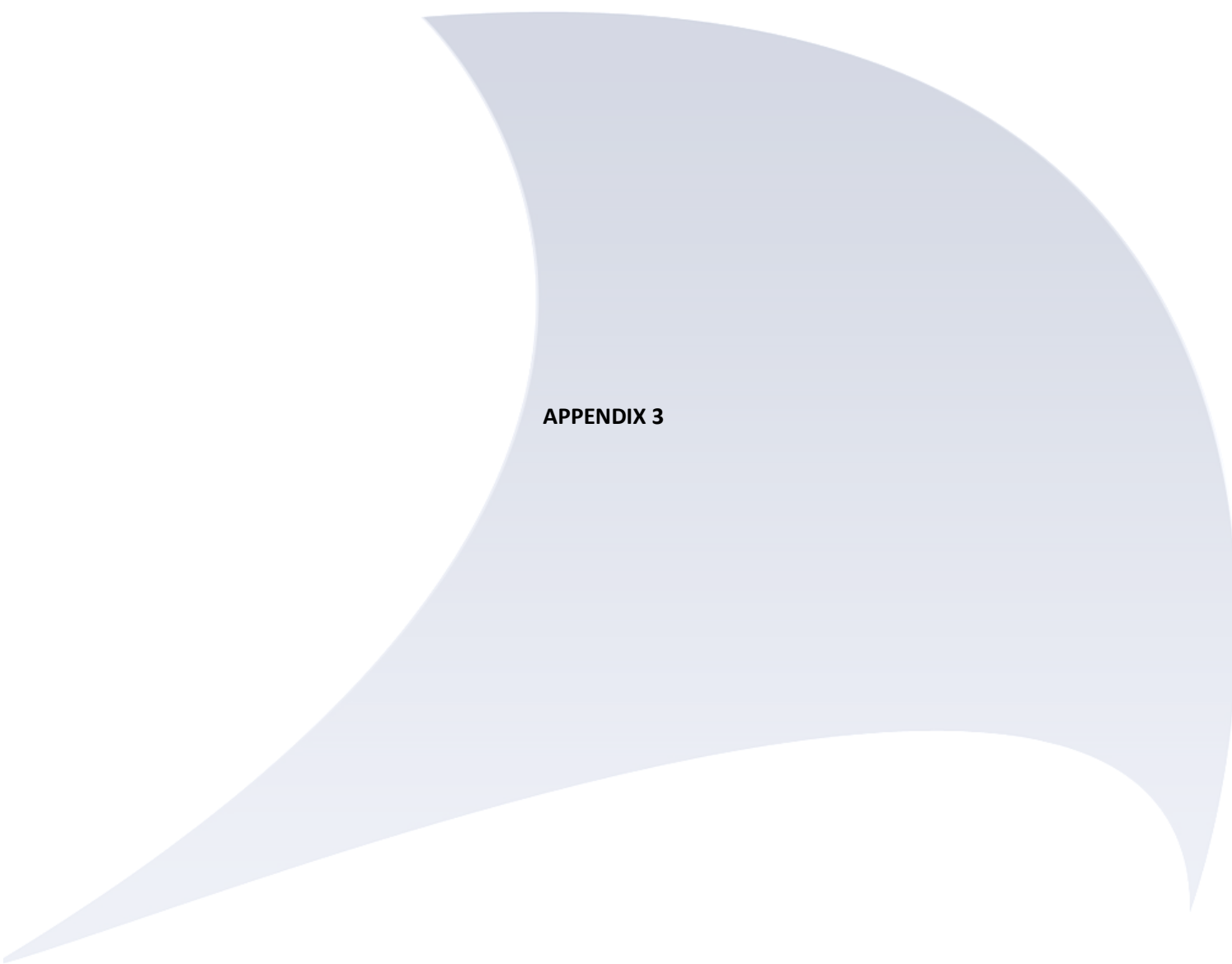
Parameter	Units	GW1	GW3	GW4R	GW5	GW6	GW7
Carbon							
Organic Carbon, Total	mg/l	<3	6.71	4.69	7.41	27.2	<3
Inorganics							
Alkalinity, Total as CaCO ₃	mg/l	44.7	104	106	228	35.7	311
Ammoniacal Nitrogen as N	mg/l	<0.2	0.215	<0.2	1.13	64.2	1.12
Chloride	mg/l	45.4	67.6	53.5	10.6	373	51.1
COD, unfiltered	mg/l	83.3	24	20.1	101	152	17.2
Conductivity @ 20 deg.C	mS/cm	20	0.73	0.873	0.467	2.83	0.902
Cyanide, Free	mg/l	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Cyanide, Total	mg/l	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Oxygen, dissolved	mg/l	7.33	2.41	5.01	0.3	4.39	3.78
pH	pH Units	7.11	6.12	6.74	6.65	5.65	7.16
Sulphate	mg/l	200	192	346	21.5	324	157
Total Oxidised Nitrogen as N	mg/l	0.639	<0.01	0.326	0.116	176	<0.01
Filtered (Dissolved) Metals							
Cadmium (diss.filt)	mg/l	<0.0001	<0.0001	0.000163	0.000197	0.00325	<0.0001
Calcium (diss.filt)	mg/l	48.2	68.7	101	67.2	74.9	71.7
Chromium (diss.filt)	mg/l	0.00203	0.00458	0.00231	0.0325	0.00521	0.00487
Copper (diss.filt)	mg/l	0.00165	0.00133	0.00238	0.0047	0.00693	0.000914
Iron (diss.filt)	mg/l	<0.019	1.26	0.0286	27.6	0.057	3.76
Lead (diss.filt)	mg/l	<0.00002	<0.00002	0.000047	0.000585	0.000517	<0.00002
Magnesium (diss.filt)	mg/l	23.7	25.1	34.9	7.98	36.1	29
Manganese (diss.filt)	mg/l	0.241	0.912	0.781	28	8.26	0.982
Mercury (diss.filt)	mg/l	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001
Nickel (diss.filt)	mg/l	0.00156	0.0153	0.0396	0.0513	0.129	0.0144
Potassium (diss.filt)	mg/l	9.02	7.86	8.46	6.12	58.5	12.4
Sodium (diss.filt)	mg/l	24.4	34.1	30.6	12.3	325	74.1
Zinc (diss.filt)	mg/l	0.0301	0.0325	0.0471	0.216	0.147	0.00773
Mineral Oil / Oils & Greases							
Mineral oil >C10 C40 (aq)	mg/l	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
TPH Criteria Working Group (TPH CWG)							
Sum of detected Xylenes	mg/l	<0.011	<0.011	<0.011	<0.011	<0.011	<0.011
Toluene	mg/l	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004
Semi-Volatile Organic Compounds (SVOCs)							
1,2,4-Trichlorobenzene (aq)	mg/l	<0.004	<0.001	<0.001	<0.001	<0.001	<0.001
1,2-Dichlorobenzene (aq)	mg/l	<0.004	<0.001	<0.001	<0.001	<0.001	<0.001
1,3-Dichlorobenzene (aq)	mg/l	<0.004	<0.001	<0.001	<0.001	<0.001	<0.001
1,4-Dichlorobenzene (aq)	mg/l	<0.004	<0.001	<0.001	<0.001	<0.001	<0.001
2,4,5-Trichlorophenol (aq)	mg/l	<0.004	<0.001	<0.001	<0.001	<0.001	<0.001
2,4,6-Trichlorophenol (aq)	mg/l	<0.004	<0.001	<0.001	<0.001	<0.001	<0.001
2,4-Dichlorophenol (aq)	mg/l	<0.004	<0.001	<0.001	<0.001	<0.001	<0.001
2,4-Dimethylphenol (aq)	mg/l	<0.004	<0.001	<0.001	<0.001	<0.001	<0.001
2,4-Dinitrotoluene (aq)	mg/l	<0.004	<0.001	<0.001	<0.001	<0.001	<0.001
2,6-Dinitrotoluene (aq)	mg/l	<0.004	<0.001	<0.001	<0.001	<0.001	<0.001
2-Chloronaphthalene (aq)	mg/l	<0.004	<0.001	<0.001	<0.001	<0.001	<0.001
2-Chlorophenol (aq)	mg/l	<0.004	<0.001	<0.001	<0.001	<0.001	<0.001
2-Methylnaphthalene (aq)	mg/l	<0.004	<0.001	<0.001	<0.001	<0.001	<0.001
2-Methylphenol (aq)	mg/l	<0.004	<0.001	<0.001	<0.001	<0.001	<0.001
2-Nitroaniline (aq)	mg/l	<0.004	<0.001	<0.001	<0.001	<0.001	<0.001
2-Nitrophenol (aq)	mg/l	<0.004	<0.001	<0.001	<0.001	<0.001	<0.001
3-Nitroaniline (aq)	mg/l	<0.004	<0.001	<0.001	<0.001	<0.001	<0.001
4-Bromophenylphenylether	mg/l	<0.004	<0.001	<0.001	<0.001	<0.001	<0.001

Parameter	Units	GW1	GW3	GW4R	GW5	GW6	GW7
(aq)							
4-Chloro-3-methylphenol (aq)	mg/l	<0.004	<0.001	<0.001	<0.001	<0.001	<0.001
4-Chloroaniline (aq)	mg/l	<0.004	<0.001	<0.001	<0.001	<0.001	<0.001
4-Chlorophenylphenylether (aq)	mg/l	<0.004	<0.001	<0.001	<0.001	<0.001	<0.001
4-Methylphenol (aq)	mg/l	<0.004	<0.001	<0.001	<0.001	<0.001	<0.001
4-Nitroaniline (aq)	mg/l	<0.004	<0.001	<0.001	<0.001	<0.001	<0.001
4-Nitrophenol (aq)	mg/l	<0.004	<0.001	<0.001	<0.001	<0.001	<0.001
Acenaphthene (aq)	mg/l	<0.004	<0.001	<0.001	<0.001	<0.001	<0.001
Acenaphthylene (aq)	mg/l	<0.004	<0.001	<0.001	<0.001	<0.001	<0.001
Anthracene (aq)	mg/l	<0.004	<0.001	<0.001	<0.001	<0.001	<0.001
Azobenzene (aq)	mg/l	<0.004	<0.001	<0.001	<0.001	<0.001	<0.001
Benzo(a)anthracene (aq)	mg/l	<0.004	<0.001	<0.001	<0.001	<0.001	<0.001
Benzo(a)pyrene (aq)	mg/l	<0.004	<0.001	<0.001	<0.001	<0.001	<0.001
Benzo(b)fluoranthene (aq)	mg/l	<0.004	<0.001	<0.001	<0.001	<0.001	<0.001
Benzo(g,h,i)perylene (aq)	mg/l	<0.004	<0.001	<0.001	<0.001	<0.001	<0.001
Benzo(k)fluoranthene (aq)	mg/l	<0.004	<0.001	<0.001	<0.001	<0.001	<0.001
bis(2-Chloroethoxy)methane (aq)	mg/l	<0.004	<0.001	<0.001	<0.001	<0.001	<0.001
bis(2-Chloroethyl)ether (aq)	mg/l	<0.004	<0.001	<0.001	<0.001	<0.001	<0.001
bis(2-Ethylhexyl) phthalate (aq)	mg/l	<0.008	<0.002	<0.002	<0.002	<0.002	<0.002
Butylbenzyl phthalate (aq)	mg/l	<0.004	<0.001	<0.001	<0.001	<0.001	<0.001
Carbazole (aq)	mg/l	<0.004	<0.001	<0.001	<0.001	<0.001	<0.001
Chrysene (aq)	mg/l	<0.004	<0.001	<0.001	<0.001	<0.001	<0.001
Dibenzo(a,h)anthracene (aq)	mg/l	<0.004	<0.001	<0.001	<0.001	<0.001	<0.001
Dibenzofuran (aq)	mg/l	<0.004	<0.001	<0.001	<0.001	<0.001	<0.001
Diethyl phthalate (aq)	mg/l	<0.004	<0.001	<0.001	<0.001	<0.001	<0.001
Dimethyl phthalate (aq)	mg/l	<0.004	<0.001	<0.001	<0.001	<0.001	<0.001
Fluoranthene (aq)	mg/l	<0.004	<0.001	<0.001	<0.001	<0.001	<0.001
Fluorene (aq)	mg/l	<0.004	<0.001	<0.001	<0.001	<0.001	<0.001
Hexachlorobenzene (aq)	mg/l	<0.004	<0.001	<0.001	<0.001	<0.001	<0.001
Hexachlorobutadiene (aq)	mg/l	<0.004	<0.001	<0.001	<0.001	<0.001	<0.001
Hexachlorocyclopentadiene (aq)	mg/l	<0.004	<0.001	<0.001	<0.001	<0.001	<0.001
Hexachloroethane (aq)	mg/l	<0.004	<0.001	<0.001	<0.001	<0.001	<0.001
Indeno(1,2,3-cd)pyrene (aq)	mg/l	<0.004	<0.001	<0.001	<0.001	<0.001	<0.001
Isophorone (aq)	mg/l	<0.004	<0.001	<0.001	<0.001	<0.001	<0.001
Naphthalene (aq)	mg/l	<0.004	<0.001	<0.001	<0.001	<0.001	<0.001
n-Dibutyl phthalate (aq)	mg/l	<0.004	<0.001	<0.001	<0.001	<0.001	<0.001
n-Dioctyl phthalate (aq)	mg/l	<0.02	<0.005	<0.005	<0.005	<0.005	<0.005
Nitrobenzene (aq)	mg/l	<0.004	<0.001	<0.001	<0.001	<0.001	<0.001
n-Nitroso-n-dipropylamine (aq)	mg/l	<0.004	<0.001	<0.001	<0.001	<0.001	<0.001
Pentachlorophenol (aq)	mg/l	<0.004	<0.001	<0.001	<0.001	<0.001	<0.001
Phenanthrene (aq)	mg/l	<0.004	<0.001	<0.001	<0.001	<0.001	<0.001
Phenol (aq)	mg/l	<0.004	<0.001	<0.001	<0.001	<0.001	<0.001
Pyrene (aq)	mg/l	<0.004	<0.001	<0.001	<0.001	<0.001	<0.001
Volatile Organic Compounds (VOCs)							
1,1,1,2-Tetrachloroethane	mg/l	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
1,1,1-Trichloroethane	mg/l	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
1,1,2,2-Tetrachloroethane	mg/l	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
1,1,2-Trichloroethane	mg/l	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
1,1-Dichloroethane	mg/l	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
1,1-Dichloroethene	mg/l	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
1,1-Dichloropropene	mg/l	<0.001	<0.001	<0.001	<0.001	0.00105	<0.001

Parameter	Units	GW1	GW3	GW4R	GW5	GW6	GW7
1,2,3-Trichlorobenzene	mg/l	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
1,2,3-Trichloropropane	mg/l	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
1,2,4-Trichlorobenzene	mg/l	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
1,2,4-Trimethylbenzene	mg/l	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
1,2-Dibromo-3-chloropropane	mg/l	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
1,2-Dibromoethane	mg/l	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
1,2-Dichlorobenzene	mg/l	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
1,2-Dichloroethane	mg/l	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
1,2-Dichloropropane	mg/l	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
1,3,5-Trichlorobenzene	mg/l	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
1,3,5-Trimethylbenzene	mg/l	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
1,3-Dichlorobenzene	mg/l	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
1,3-Dichloropropane	mg/l	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
1,4-Dichlorobenzene	mg/l	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
2,2-Dichloropropane	mg/l	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
2-Chlorotoluene	mg/l	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
4-Chlorotoluene	mg/l	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
4-iso-Propyltoluene	mg/l	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Benzene	mg/l	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Bromobenzene	mg/l	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Bromochloromethane	mg/l	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Bromodichloromethane	mg/l	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Bromoform	mg/l	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Bromomethane	mg/l	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Carbon disulphide	mg/l	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Carbontetrachloride	mg/l	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Chlorobenzene	mg/l	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Chloroethane	mg/l	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Chloroform	mg/l	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Chloromethane	mg/l	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
cis-1,2-Dichloroethene	mg/l	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
cis-1,3-Dichloropropene	mg/l	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Dibromochloromethane	mg/l	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Dibromomethane	mg/l	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Dichlorodifluoromethane	mg/l	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Dichloromethane	mg/l	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003
Ethylbenzene	mg/l	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Hexachlorobutadiene	mg/l	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Isopropylbenzene	mg/l	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
m,p-Xylene	mg/l	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Methyl tertiary butyl ether (MTBE)	mg/l	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Naphthalene	mg/l	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
n-Butylbenzene	mg/l	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
o-Xylene	mg/l	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Propylbenzene	mg/l	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
sec-Butylbenzene	mg/l	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Styrene	mg/l	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
tert-Amyl methyl ether (TAME)	mg/l	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
tert-Butylbenzene	mg/l	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Tetrachloroethene	mg/l	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Toluene	mg/l	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Toluene-d8**	%	98.6	97.7	96.6	97.2	98.1	96.8
trans-1,2-Dichloroethene	mg/l	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001

Parameter	Units	GW1	GW3	GW4R	GW5	GW6	GW7
trans-1,3-Dichloropropene	mg/l	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Trichloroethene	mg/l	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Trichlorofluoromethane	mg/l	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Vinyl chloride	mg/l	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Combined Pesticides / Herbicides							
Aldrin	mg/l	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001
alpha-Hexachlorocyclohexane (HCH / Lindane)	mg/l	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001
Atrazine	mg/l	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Azinphos-ethyl	mg/l	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001
Azinphos-methyl	mg/l	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001
beta-Hexachlorocyclohexane (HCH / Lindane)	mg/l	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001
Carbophenothion	mg/l	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001
Chlorfenvinphos	mg/l	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001
Chlorothalonil	mg/l	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001
Chlorpyrifos	mg/l	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001
Chlorpyrifos methyl	mg/l	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001
cis-Chlordane	mg/l	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001
Diazinon	mg/l	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001
Dichlorvos	mg/l	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001
Dieldrin	mg/l	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001
Dimethoate	mg/l	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001
Endosulphan I	mg/l	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001
Endosulphan II	mg/l	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001
Endosulphan sulphate	mg/l	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001
Endrin	mg/l	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001
Ethion	mg/l	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001
Etrimphos	mg/l	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001
Fenitrothion	mg/l	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001
Fenthion	mg/l	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001
gamma-Hexachlorocyclohexane (HCH / Lindane)	mg/l	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001
Heptachlor	mg/l	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001
Heptachlor epoxide	mg/l	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001
Hexachlorobenzene	mg/l	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001
Isodrin	mg/l	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001
Malathion	mg/l	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001
Methyl parathion	mg/l	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001
Mevinphos	mg/l	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001
o,p-DDE	mg/l	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001
o,p-DDT	mg/l	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001
o,p-Methoxychlor	mg/l	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001
o,p-TDE (DDD)	mg/l	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001
p,p-DDE	mg/l	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001
p,p-DDT	mg/l	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001
p,p-Methoxychlor	mg/l	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001
p,p-TDE (DDD)	mg/l	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001
Parathion	mg/l	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001
Pendimethalin	mg/l	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001
Permethrin I	mg/l	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001
Permethrin II	mg/l	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001
Phosalone	mg/l	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001
Pirimiphos-methyl	mg/l	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001
Propetamphos	mg/l	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001

Parameter	Units	GW1	GW3	GW4R	GW5	GW6	GW7
Quintozene (PCNB)	mg/l	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001
Simazine	mg/l	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Tecnazene	mg/l	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001
Telodrin	mg/l	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001
Trans-chlordane	mg/l	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001
Triadimefon	mg/l	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001
Triallate	mg/l	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001
Triazophos	mg/l	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001
Trifluralin	mg/l	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001
Miscellaneous Organics							
Dibutyl tin	mg/l	<0.000005	<0.000005	<0.000005	<0.00001	<0.000005	<0.000005
Tetrabutyl tin	mg/l	<0.000002	<0.000002	<0.000002	<0.000004	<0.000002	<0.000002
Tributyl tin	mg/l	<0.000001	<0.000001	<0.000001	<0.000002	<0.000001	<0.000001
Triphenyl tin	mg/l	<0.000001	<0.000001	<0.000001	<0.000002	<0.000001	<0.000001
Subcontracted: Organics							
2,4,5-T*	mg/l	<0.0001	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005
2,4-D*	mg/l	<0.0001	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005
2,4-DB*	mg/l	<0.0001	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005
4-(4-Chloro-o-tolyloxy) butyric acid (MCPB)*	mg/l	<0.0001	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005
Bentazone*	mg/l	<0.0001	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005
Bromoxynil*	mg/l	<0.0001	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005
Dicamba*	mg/l	<0.0001	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005
Dichloroprop*	mg/l	<0.0001	<0.00005	<0.00005	<0.00005	<0.0004	<0.00005
Fenoprop*	mg/l	<0.0001	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005
Ioxynil*	mg/l	<0.0001	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005
MCPA*	mg/l	<0.0001	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005
Mecoprop*	mg/l	<0.00008	<0.00004	<0.00004	<0.00004	0.00267	<0.00004
Triclopyr*	mg/l	<0.0001	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005



APPENDIX 3

APPENDIX 3

Table 3.1 - Leachate Levels

Location	Date	Dip Level (mBGL)	Leachate Level (mAOD)	Leachate Level Head (m)
LC2.1	05/10/2015	29.59	111.46	1.41
	03/11/2015	29.53	111.52	1.47
	02/12/2015	29.55	111.5	1.45
LC3	05/10/2015	3.24	130.72	1.60
	03/11/2015	3.19	130.77	1.65
	02/12/2015	3.15	130.81	1.69
LC4	05/10/2015	17.49	131.16	1.51
	03/11/2015	17.51	131.14	1.49
	02/12/2015	17.46	131.19	1.54
LC7	05/10/2015	18.5	132.79	1.81
	03/11/2015	18.44	132.85	1.87
	02/12/2015	18.49	132.8	1.82
LS5	05/10/2015	28.62	104.69	1.35
	03/11/2015	28.65	104.66	1.34
	02/12/2015	28.66	104.65	1.33
LS6	05/10/2015	30.03	104.83	1.19
	03/11/2015	30.01	104.85	1.19
	02/12/2015	30.04	104.82	1.18
S1	05/10/2015	3.28	124.7	1.15
	03/11/2015	3.24	124.74	1.19
	02/12/2015	3.18	124.8	1.25
S2	05/10/2015	1.61	127.25	1.74
	03/11/2015	1.6	127.26	1.75
	02/12/2015	1.64	127.22	1.71
S3	05/10/2015	3.59	124.91	1.50
	03/11/2015	3.62	124.88	1.47
	02/12/2015	3.67	124.83	1.42

Table 3.2 - Leachate Quality Data Summary LC Wells (Annual)

Parameter	Unit	LC2	LC3	LC4	LC7
Carbon					
Organic Carbon, Total	mg/l	892	19.9	345	421
Inorganics					
Alkalinity, Total as CaCO ₃	mg/l	8060	5140	4300	4880
Ammoniacal Nitrogen as N	mg/l	1560	6.73	172	801
BOD, unfiltered	mg/l	102	>81.6	160	87.4
Chloride	mg/l	2140	1330	1180	1190
COD, unfiltered	mg/l	2490	1060	1670	1110
Cyanide, Free	mg/l	<0.05	<0.05	<0.05	<0.05
Cyanide, Total	mg/l	<0.05	<0.05	<0.05	<0.05
pH	pH Units	7.81	7.8	8.01	8.23
Sulphate	mg/l	5.21	75.2	1.71	2
Total Oxidised Nitrogen as N	mg/l	<0.25	<0.2	0.333	<0.1
Filtered (Dissolved) Metals					
Cadmium (diss.filt)	mg/l	0.0001	0.000185	<0.0001	<0.0001
Calcium (diss.filt)	mg/l	30.1	56.6	71.2	41.3
Chromium (diss.filt)	mg/l	0.0499	0.036	0.0149	0.0162
Copper (diss.filt)	mg/l	0.00351	0.363	0.00706	<0.00085
Iron (diss.filt)	mg/l	3.04	2.27	0.809	1.67
Lead (diss.filt)	mg/l	0.00223	0.00625	0.000171	0.00025
Magnesium (diss.filt)	mg/l	50.9	41.6	60.4	57.5
Manganese (diss.filt)	mg/l	0.147	0.209	0.175	0.0564
Mercury (diss.filt)	mg/l	<0.00001	<0.00001	<0.00001	<0.00001
Nickel (diss.filt)	mg/l	0.297	0.191	0.108	0.0489
Potassium (diss.filt)	mg/l	324	251	248	269
Sodium (diss.filt)	mg/l	1550	1030	881	1050
Zinc (diss.filt)	mg/l	0.0232	0.154	0.0182	0.00309
Mineral Oil / Oils & Greases					
Mineral oil >C10 C40 (aq)	mg/l	<0.01	<0.01	<0.01	<0.01
Semi-Volatile Organic Compounds (SVOCs)					
1,2,4-Trichlorobenzene (aq)	mg/l	<0.004	<0.001	<0.001	<0.002
1,2-Dichlorobenzene (aq)	mg/l	<0.004	<0.001	<0.001	<0.002
1,3-Dichlorobenzene (aq)	mg/l	<0.004	<0.001	<0.001	<0.002
1,4-Dichlorobenzene (aq)	mg/l	<0.004	<0.001	<0.001	<0.002
2,4,5-Trichlorophenol (aq)	mg/l	<0.004	<0.001	<0.001	<0.002
2,4,6-Trichlorophenol (aq)	mg/l	<0.004	<0.001	<0.001	<0.002
2,4-Dichlorophenol (aq)	mg/l	<0.004	<0.001	<0.001	<0.002
2,4-Dimethylphenol (aq)	mg/l	<0.004	0.00106	<0.001	<0.002
2,4-Dinitrotoluene (aq)	mg/l	<0.004	<0.001	<0.001	<0.002
2,6-Dinitrotoluene (aq)	mg/l	<0.004	<0.001	<0.001	<0.002
2-Chloronaphthalene (aq)	mg/l	<0.004	<0.001	<0.001	<0.002
2-Chlorophenol (aq)	mg/l	<0.004	<0.001	<0.001	<0.002

Parameter	Unit	LC2	LC3	LC4	LC7
2-Methylnaphthalene (aq)	mg/l	<0.004	<0.001	<0.001	<0.002
2-Methylphenol (aq)	mg/l	<0.004	0.00122	<0.001	<0.002
2-Nitroaniline (aq)	mg/l	<0.004	<0.001	<0.001	<0.002
2-Nitrophenol (aq)	mg/l	<0.004	<0.001	<0.001	<0.002
3-Nitroaniline (aq)	mg/l	<0.004	<0.001	<0.001	<0.002
4-Bromophenylphenylether (aq)	mg/l	<0.004	<0.001	<0.001	<0.002
4-Chloro-3-methylphenol (aq)	mg/l	<0.004	<0.001	<0.001	<0.002
4-Chloroaniline (aq)	mg/l	<0.004	<0.001	<0.001	<0.002
4-Chlorophenylphenylether (aq)	mg/l	<0.004	<0.001	<0.001	<0.002
4-Methylphenol (aq)	mg/l	<0.004	0.00123	<0.001	<0.002
4-Nitroaniline (aq)	mg/l	<0.004	<0.001	<0.001	<0.002
4-Nitrophenol (aq)	mg/l	<0.004	<0.001	<0.001	<0.002
Acenaphthene (aq)	mg/l	<0.004	<0.001	<0.001	<0.002
Acenaphthylene (aq)	mg/l	<0.004	<0.001	<0.001	<0.002
Anthracene (aq)	mg/l	<0.004	<0.001	<0.001	<0.002
Azobenzene (aq)	mg/l	<0.004	<0.001	<0.001	<0.002
Benzo(a)anthracene (aq)	mg/l	<0.004	<0.001	<0.001	<0.002
Benzo(a)pyrene (aq)	mg/l	<0.004	<0.001	<0.001	<0.002
Benzo(b)fluoranthene (aq)	mg/l	<0.004	<0.001	<0.001	<0.002
Benzo(g,h,i)perylene (aq)	mg/l	<0.004	<0.001	<0.001	<0.002
Benzo(k)fluoranthene (aq)	mg/l	<0.004	<0.001	<0.001	<0.002
bis(2-Chloroethoxy)methane (aq)	mg/l	<0.004	<0.001	<0.001	<0.002
bis(2-Chloroethyl)ether (aq)	mg/l	<0.004	<0.001	<0.001	<0.002
bis(2-Ethylhexyl) phthalate (aq)	mg/l	<0.008	<0.002	<0.002	<0.004
Butylbenzyl phthalate (aq)	mg/l	<0.004	<0.001	<0.001	<0.002
Carbazole (aq)	mg/l	<0.004	<0.001	<0.001	<0.002
Chrysene (aq)	mg/l	<0.004	<0.001	<0.001	<0.002
Dibenzo(a,h)anthracene (aq)	mg/l	<0.004	<0.001	<0.001	<0.002
Dibenzofuran (aq)	mg/l	<0.004	<0.001	<0.001	<0.002
Diethyl phthalate (aq)	mg/l	<0.004	<0.001	<0.001	<0.002
Dimethyl phthalate (aq)	mg/l	<0.004	<0.001	<0.001	<0.002
Fluoranthene (aq)	mg/l	<0.004	<0.001	<0.001	<0.002
Fluorene (aq)	mg/l	<0.004	<0.001	<0.001	<0.002
Hexachlorobenzene (aq)	mg/l	<0.004	<0.001	<0.001	<0.002
Hexachlorobutadiene (aq)	mg/l	<0.004	<0.001	<0.001	<0.002
Hexachlorocyclopentadiene (aq)	mg/l	<0.004	<0.001	<0.001	<0.002
Hexachloroethane (aq)	mg/l	<0.004	<0.001	<0.001	<0.002
Indeno(1,2,3-cd)pyrene (aq)	mg/l	<0.004	<0.001	<0.001	<0.002
Isophorone (aq)	mg/l	<0.004	<0.001	<0.001	<0.002
Naphthalene (aq)	mg/l	<0.004	<0.001	<0.001	<0.002
n-Dibutyl phthalate (aq)	mg/l	<0.004	<0.001	<0.001	<0.002
n-Dioctyl phthalate (aq)	mg/l	<0.02	<0.005	<0.005	<0.01
Nitrobenzene (aq)	mg/l	<0.004	<0.001	<0.001	<0.002

Parameter	Unit	LC2	LC3	LC4	LC7
n-Nitroso-n-dipropylamine (aq)	mg/l	<0.004	<0.001	<0.001	<0.002
Pentachlorophenol (aq)	mg/l	<0.004	<0.001	<0.001	<0.002
Phenanthrene (aq)	mg/l	<0.004	<0.001	<0.001	<0.002
Phenol (aq)	mg/l	<0.004	<0.001	<0.001	<0.002
Pyrene (aq)	mg/l	<0.004	<0.001	<0.001	<0.002
Volatile Organic Compounds (VOCs)					
1,1,1,2-Tetrachloroethane	mg/l	<0.001	<0.001	<0.001	<0.001
1,1,1-Trichloroethane	mg/l	<0.001	<0.001	<0.001	<0.001
1,1,2,2-Tetrachloroethane	mg/l	<0.001	<0.001	<0.001	<0.001
1,1,2-Trichloroethane	mg/l	<0.001	<0.001	<0.001	<0.001
1,1-Dichloroethane	mg/l	<0.001	<0.001	<0.001	<0.001
1,1-Dichloroethene	mg/l	<0.001	<0.001	<0.001	<0.001
1,1-Dichloropropene	mg/l	<0.001	<0.001	<0.001	<0.001
1,2,3-Trichlorobenzene	mg/l	<0.001	<0.001	<0.001	<0.001
1,2,3-Trichloropropane	mg/l	<0.001	<0.001	<0.001	<0.001
1,2,4-Trichlorobenzene	mg/l	<0.001	<0.001	<0.001	<0.001
1,2,4-Trimethylbenzene	mg/l	0.00219	<0.001	<0.001	0.00585
1,2-Dibromo-3-chloropropane	mg/l	<0.001	<0.001	<0.001	<0.001
1,2-Dibromoethane	mg/l	<0.001	<0.001	<0.001	<0.001
1,2-Dichlorobenzene	mg/l	<0.001	<0.001	<0.001	<0.001
1,2-Dichloroethane	mg/l	<0.001	<0.001	<0.001	<0.001
1,2-Dichloropropane	mg/l	<0.001	<0.001	<0.001	<0.001
1,3,5-Trichlorobenzene	mg/l	<0.001	<0.001	<0.001	<0.001
1,3,5-Trimethylbenzene	mg/l	0.00271	0.00118	<0.001	0.00181
1,3-Dichlorobenzene	mg/l	<0.001	<0.001	<0.001	<0.001
1,3-Dichloropropane	mg/l	<0.001	<0.001	<0.001	<0.001
1,4-Dichlorobenzene	mg/l	<0.001	<0.001	<0.001	<0.001
2,2-Dichloropropane	mg/l	<0.001	<0.001	<0.001	<0.001
2-Chlorotoluene	mg/l	<0.001	<0.001	<0.001	<0.001
4-Chlorotoluene	mg/l	<0.001	<0.001	<0.001	<0.001
4-iso-Propyltoluene	mg/l	0.00522	<0.001	<0.001	<0.001
Benzene	mg/l	0.00398	0.00281	0.00354	0.00345
Bromobenzene	mg/l	<0.001	<0.001	<0.001	<0.001
Bromochloromethane	mg/l	<0.001	<0.001	<0.001	<0.001
Bromodichloromethane	mg/l	<0.001	<0.001	<0.001	<0.001
Bromoform	mg/l	<0.001	<0.001	<0.001	<0.001
Bromomethane	mg/l	<0.001	<0.001	<0.001	<0.001
Carbon disulphide	mg/l	<0.001	<0.001	<0.001	<0.001
Carbontetrachloride	mg/l	<0.001	<0.001	<0.001	<0.001
Chlorobenzene	mg/l	<0.001	<0.001	<0.001	<0.001
Chloroethane	mg/l	<0.001	<0.001	<0.001	<0.001
Chloroform	mg/l	<0.001	<0.001	<0.001	<0.001
Chloromethane	mg/l	<0.001	<0.001	<0.001	<0.001

Parameter	Unit	LC2	LC3	LC4	LC7
cis-1,2-Dichloroethene	mg/l	<0.001	<0.001	<0.001	<0.001
cis-1,3-Dichloropropene	mg/l	<0.001	<0.001	<0.001	<0.001
Dibromochloromethane	mg/l	<0.001	<0.001	<0.001	<0.001
Dibromomethane	mg/l	<0.001	<0.001	<0.001	<0.001
Dichlorodifluoromethane	mg/l	<0.001	<0.001	<0.001	<0.001
Dichloromethane	mg/l	<0.003	<0.003	<0.003	<0.003
Ethylbenzene	mg/l	<0.001	<0.001	<0.001	0.00371
Hexachlorobutadiene	mg/l	<0.001	<0.001	<0.001	<0.001
Isopropylbenzene	mg/l	<0.001	<0.001	<0.001	<0.001
m,p-Xylene	mg/l	0.00656	<0.001	0.00115	0.0145
Methyl tertiary butyl ether (MTBE)	mg/l	<0.001	<0.001	<0.001	<0.001
Naphthalene	mg/l	0.0129	0.00422	0.0166	0.00605
n-Butylbenzene	mg/l	<0.001	<0.001	<0.001	<0.001
o-Xylene	mg/l	0.00915	0.00537	0.00169	0.00557
Propylbenzene	mg/l	<0.001	<0.001	<0.001	<0.001
sec-Butylbenzene	mg/l	<0.001	<0.001	<0.001	<0.001
Styrene	mg/l	<0.001	<0.001	<0.001	<0.001
tert-Amyl methyl ether (TAME)	mg/l	<0.001	<0.001	<0.001	<0.001
tert-Butylbenzene	mg/l	<0.001	<0.001	<0.001	<0.001
Tetrachloroethene	mg/l	<0.001	<0.001	<0.001	<0.001
Toluene	mg/l	0.00519	0.00214	<0.001	0.00241
trans-1,2-Dichloroethene	mg/l	<0.001	<0.001	<0.001	<0.001
trans-1,3-Dichloropropene	mg/l	<0.001	<0.001	<0.001	<0.001
Trichloroethene	mg/l	<0.001	<0.001	<0.001	<0.001
Trichlorofluoromethane	mg/l	<0.001	<0.001	<0.001	<0.001
Vinyl chloride	mg/l	<0.001	<0.001	<0.001	<0.001
Combined Pesticides / Herbicides					
Aldrin	mg/l	<0.00001	<0.00001	<0.00001	<0.00001
alpha-Hexachlorocyclohexane (HCH / Lindane)	mg/l	<0.00001	<0.00001	<0.00001	<0.00001
Atrazine	mg/l	<0.001	<0.001	<0.001	<0.001
Azinphos-ethyl	mg/l	<0.00001	<0.00001	<0.00001	<0.00001
Azinphos-methyl	mg/l	<0.00001	<0.00001	<0.00001	<0.00001
beta-Hexachlorocyclohexane (HCH / Lindane)	mg/l	<0.00001	<0.00001	<0.00001	<0.00001
Carbophenothion	mg/l	<0.00001	<0.00001	<0.00001	<0.00001
Chlorfenvinphos	mg/l	<0.00001	<0.00001	<0.00001	<0.00001
Chlorothalonil	mg/l	<0.00001	<0.00001	<0.00001	<0.00001
Chlorpyrifos	mg/l	<0.00001	<0.00001	<0.00001	<0.00001
Chlorpyrifos methyl	mg/l	<0.00001	<0.00001	<0.00001	<0.00001
cis-Chlordane	mg/l	<0.00001	<0.00001	<0.00001	<0.00001
Diazinon	mg/l	<0.00001	<0.00001	<0.00001	<0.00001
Dichlorvos	mg/l	<0.00001	<0.00001	<0.00001	<0.00001
Dieldrin	mg/l	<0.00001	<0.00001	<0.00001	<0.00001

Parameter	Unit	LC2	LC3	LC4	LC7
Dimethoate	mg/l	<0.00001	<0.00001	<0.00001	<0.00001
Endosulphan I	mg/l	<0.00001	<0.00001	<0.00001	<0.00001
Endosulphan II	mg/l	<0.00001	<0.00001	<0.00001	<0.00001
Endosulphan sulphate	mg/l	<0.00001	<0.00001	<0.00001	<0.00001
Endrin	mg/l	<0.00001	<0.00001	<0.00001	<0.00001
Ethion	mg/l	<0.00001	<0.00001	<0.00001	<0.00001
Etrimphos	mg/l	<0.00001	<0.00001	<0.00001	<0.00001
Fenitrothion	mg/l	<0.00001	<0.00001	<0.00001	<0.00001
Fenthion	mg/l	<0.00001	<0.00001	<0.00001	<0.00001
gamma-Hexachlorocyclohexane (HCH / Lindane)	mg/l	<0.00001	<0.00001	<0.00001	<0.00001
Heptachlor	mg/l	<0.00001	<0.00001	<0.00001	<0.00001
Heptachlor epoxide	mg/l	<0.00001	<0.00001	<0.00001	<0.00001
Hexachlorobenzene	mg/l	<0.00001	<0.00001	<0.00001	<0.00001
Isodrin	mg/l	<0.00001	<0.00001	<0.00001	<0.00001
Malathion	mg/l	<0.00001	<0.00001	<0.00001	<0.00001
Methyl parathion	mg/l	<0.00001	<0.00001	<0.00001	<0.00001
Mevinphos	mg/l	<0.00001	<0.00001	<0.00001	<0.00001
o,p-DDE	mg/l	<0.00001	<0.00001	<0.00001	<0.00001
o,p-DDT	mg/l	<0.00001	<0.00001	<0.00001	<0.00001
o,p-Methoxychlor	mg/l	<0.00001	<0.00001	<0.00001	<0.00001
o,p-TDE (DDD)	mg/l	<0.00001	<0.00001	<0.00001	<0.00001
p,p-DDE	mg/l	<0.00001	<0.00001	<0.00001	<0.00001
p,p-DDT	mg/l	<0.00001	<0.00001	<0.00001	<0.00001
p,p-Methoxychlor	mg/l	<0.00001	<0.00001	<0.00001	<0.00001
p,p-TDE (DDD)	mg/l	<0.00001	<0.00001	<0.00001	<0.00001
Parathion	mg/l	<0.00001	<0.00001	<0.00001	<0.00001
Pendimethalin	mg/l	<0.00001	<0.00001	<0.00001	<0.00001
Permethrin I	mg/l	<0.00001	<0.00001	<0.00001	<0.00001
Permethrin II	mg/l	<0.00001	<0.00001	<0.00001	<0.00001
Phosalone	mg/l	<0.00001	<0.00001	<0.00001	<0.00001
Pirimiphos-methyl	mg/l	<0.00001	<0.00001	<0.00001	<0.00001
Propetamphos	mg/l	<0.00001	<0.00001	<0.00001	<0.00001
Quintozene (PCNB)	mg/l	<0.00001	<0.00001	<0.00001	<0.00001
Simazine	mg/l	<0.001	<0.001	<0.001	<0.001
Tecnazene	mg/l	<0.00001	<0.00001	<0.00001	<0.00001
Telodrin	mg/l	<0.00001	<0.00001	<0.00001	<0.00001
Trans-chlordane	mg/l	<0.00001	<0.00001	<0.00001	<0.00001
Triadimefon	mg/l	<0.00001	<0.00001	<0.00001	<0.00001
Triallate	mg/l	<0.00001	<0.00001	<0.00001	<0.00001
Triazophos	mg/l	<0.00001	<0.00001	<0.00001	<0.00001
Trifluralin	mg/l	<0.00001	<0.00001	<0.00001	<0.00001
Miscellaneous Organics					
Dibutyl tin	mg/l	<0.00015	<0.000005	<0.00003	0.000054

Parameter	Unit	LC2	LC3	LC4	LC7
Tetrabutyl tin	mg/l	<0.00006	<0.000002	<0.000012	<0.00002
Tributyl tin	mg/l	<0.00003	<0.000001	<0.000006	<0.00001
Triphenyl tin	mg/l	<0.00003	<0.000001	<0.000006	<0.00001
Subcontracted: Organics					
2,4,5-T*	mg/l	<0.002	<0.002	-	<0.0005
2,4-D*	mg/l	<0.002	<0.002	<0.0005	<0.0005
2,4-DB*	mg/l	<0.002	<0.002	<0.0005	<0.0005
4-(4-Chloro-o-tolyloxy) butyric acid (MCPB)*	mg/l	<0.002	<0.002	<0.0005	<0.0005
Bentazone*	mg/l	<0.002	<0.002	<0.0005	<0.0005
Bromoxynil*	mg/l	<0.002	<0.002	<0.0005	<0.0005
Dicamba*	mg/l	<0.002	<0.002	<0.0005	<0.0005
Dichloroprop*	mg/l	<0.002	<0.002	<0.0005	<0.0005
Fenoprop*	mg/l	<0.002	<0.002	<0.0005	<0.0005
Ioxynil*	mg/l	<0.002	<0.002	<0.0005	<0.0005
MCPA*	mg/l	<0.002	<0.002	<0.0005	<0.0005
Mecoprop*	mg/l	0.0725	0.0545	0.0295	0.0355
Triclopyr*	mg/l	<0.002	<0.002	<0.0005	<0.0005

APPENDIX 4

APPENDIX 4

Table 4 –Surface Water Quality (Annual)

Parameter	Units	SW1	SW2	SW4	SW5
Carbon					
Organic Carbon, Total	mg/l	12.9	7.87	8.97	12.8
Inorganics					
Alkalinity, Total as CaCO ₃	mg/l	875	135	160	42.5
Ammoniacal Nitrogen as N	mg/l	0.664	<0.2	0.378	<0.2
Chloride	mg/l	54.3	34.7	36.4	21.4
COD, unfiltered	mg/l	679	24.7	39.5	35.8
Conductivity @ 20 deg.C	mS/cm	0.78	0.542	0.604	0.232
Cyanide, Free	mg/l	<0.05	<0.05	<0.05	<0.05
Cyanide, Total	mg/l	<0.05	<0.05	<0.05	<0.05
Oxygen, dissolved	mg/l	<0.3	7.07	7.13	9.52
pH	-	7.21	7.9	7.74	7.46
Sulphate	mg/l	364	105	120	40
Total Oxidised Nitrogen as N	mg/l	<0.05	0.873	1.63	0.763
Filtered (Dissolved) Metals					
Cadmium (diss.filt)	mg/l	<0.0001	<0.0001	<0.0001	<0.0001
Calcium (diss.filt)	mg/l	101	68	86	21.6
Chromium (diss.filt)	mg/l	0.00137	0.00191	0.0128	0.00799
Copper (diss.filt)	mg/l	0.00142	0.00436	0.00449	0.00524
Iron (diss.filt)	mg/l	0.219	0.05	0.107	0.115
Lead (diss.filt)	mg/l	0.00011	0.000212	0.000279	0.000448
Magnesium (diss.filt)	mg/l	17.2	11.5	11	4.3
Manganese (diss.filt)	mg/l	1.11	0.0515	0.0256	0.0102
Mercury (diss.filt)	mg/l	<0.00001	<0.00001	<0.00001	<0.00001
Nickel (diss.filt)	mg/l	0.00415	0.00546	0.0514	0.0378
Potassium (diss.filt)	mg/l	7.87	7.44	8.16	4.21
Sodium (diss.filt)	mg/l	39.1	26.2	25.2	17.6
Zinc (diss.filt)	mg/l	0.000905	0.00383	0.00848	0.012
Mineral Oil / Oils & Greases					
Mineral oil >C10 C40 (aq)	mg/l	0.916	<0.01	<0.01	<0.01
TPH Criteria Working Group (TPH CWG)					
Sum of detected Xylenes	mg/l	<0.011	<0.011	<0.011	<0.011
Toluene	mg/l	<0.004	<0.004	<0.004	<0.004
Semi-Volatile Organic Compounds (SVOCs)					
1,2,4-Trichlorobenzene (aq)	mg/l	<0.02	<0.001	<0.001	<0.001
1,2-Dichlorobenzene (aq)	mg/l	<0.02	<0.001	<0.001	<0.001
1,3-Dichlorobenzene (aq)	mg/l	<0.02	<0.001	<0.001	<0.001
1,4-Dichlorobenzene (aq)	mg/l	<0.02	<0.001	<0.001	<0.001
2,4,5-Trichlorophenol (aq)	mg/l	<0.02	<0.001	<0.001	<0.001
2,4,6-Trichlorophenol (aq)	mg/l	<0.02	<0.001	<0.001	<0.001
2,4-Dichlorophenol (aq)	mg/l	<0.02	<0.001	<0.001	<0.001

Parameter	Units	SW1	SW2	SW4	SW5
2,4-Dimethylphenol (aq)	mg/l	<0.02	<0.001	<0.001	<0.001
2,4-Dinitrotoluene (aq)	mg/l	<0.02	<0.001	<0.001	<0.001
2,6-Dinitrotoluene (aq)	mg/l	<0.02	<0.001	<0.001	<0.001
2-Chloronaphthalene (aq)	mg/l	<0.02	<0.001	<0.001	<0.001
2-Chlorophenol (aq)	mg/l	<0.02	<0.001	<0.001	<0.001
2-Methylnaphthalene (aq)	mg/l	<0.02	<0.001	<0.001	<0.001
2-Methylphenol (aq)	mg/l	<0.02	<0.001	<0.001	<0.001
2-Nitroaniline (aq)	mg/l	<0.02	<0.001	<0.001	<0.001
2-Nitrophenol (aq)	mg/l	<0.02	<0.001	<0.001	<0.001
3-Nitroaniline (aq)	mg/l	<0.02	<0.001	<0.001	<0.001
4-Bromophenylphenylether (aq)	mg/l	<0.02	<0.001	<0.001	<0.001
4-Chloro-3-methylphenol (aq)	mg/l	<0.02	<0.001	<0.001	<0.001
4-Chloroaniline (aq)	mg/l	<0.02	<0.001	<0.001	<0.001
4-Chlorophenylphenylether (aq)	mg/l	<0.02	<0.001	<0.001	<0.001
4-Methylphenol (aq)	mg/l	<0.02	<0.001	<0.001	<0.001
4-Nitroaniline (aq)	mg/l	<0.02	<0.001	<0.001	<0.001
4-Nitrophenol (aq)	mg/l	<0.02	<0.001	<0.001	<0.001
Acenaphthene (aq)	mg/l	<0.02	<0.001	<0.001	<0.001
Acenaphthylene (aq)	mg/l	<0.02	<0.001	<0.001	<0.001
Anthracene (aq)	mg/l	<0.02	<0.001	<0.001	<0.001
Azobenzene (aq)	mg/l	<0.02	<0.001	<0.001	<0.001
Benzo(a)anthracene (aq)	mg/l	<0.02	<0.001	<0.001	<0.001
Benzo(a)pyrene (aq)	mg/l	<0.02	<0.001	<0.001	<0.001
Benzo(b)fluoranthene (aq)	mg/l	<0.02	<0.001	<0.001	<0.001
Benzo(g,h,i)perylene (aq)	mg/l	<0.02	<0.001	<0.001	<0.001
Benzo(k)fluoranthene (aq)	mg/l	<0.02	<0.001	<0.001	<0.001
bis(2-Chloroethoxy)methane (aq)	mg/l	<0.02	<0.001	<0.001	<0.001
bis(2-Chloroethyl)ether (aq)	mg/l	<0.02	<0.001	<0.001	<0.001
bis(2-Ethylhexyl) phthalate (aq)	mg/l	<0.04	<0.002	<0.002	<0.002
Butylbenzyl phthalate (aq)	mg/l	<0.02	<0.001	<0.001	<0.001
Carbazole (aq)	mg/l	<0.02	<0.001	<0.001	<0.001
Chrysene (aq)	mg/l	<0.02	<0.001	<0.001	<0.001
Dibenzo(a,h)anthracene (aq)	mg/l	<0.02	<0.001	<0.001	<0.001
Dibenzofuran (aq)	mg/l	<0.02	<0.001	<0.001	<0.001
Diethyl phthalate (aq)	mg/l	<0.02	<0.001	<0.001	<0.001
Dimethyl phthalate (aq)	mg/l	<0.02	<0.001	<0.001	<0.001
Fluoranthene (aq)	mg/l	<0.02	<0.001	<0.001	<0.001
Fluorene (aq)	mg/l	<0.02	<0.001	<0.001	<0.001
Hexachlorobenzene (aq)	mg/l	<0.02	<0.001	<0.001	<0.001
Hexachlorobutadiene (aq)	mg/l	<0.02	<0.001	<0.001	<0.001
Hexachlorocyclopentadiene (aq)	mg/l	<0.02	<0.001	<0.001	<0.001
Hexachloroethane (aq)	mg/l	<0.02	<0.001	<0.001	<0.001
Indeno(1,2,3-cd)pyrene (aq)	mg/l	<0.02	<0.001	<0.001	<0.001

Parameter	Units	SW1	SW2	SW4	SW5
Isophorone (aq)	mg/l	<0.02	<0.001	<0.001	<0.001
Naphthalene (aq)	mg/l	<0.02	<0.001	<0.001	<0.001
n-Dibutyl phthalate (aq)	mg/l	<0.02	<0.001	<0.001	<0.001
n-Dioctyl phthalate (aq)	mg/l	<0.1	<0.005	<0.005	<0.005
Nitrobenzene (aq)	mg/l	<0.02	<0.001	<0.001	<0.001
n-Nitroso-n-dipropylamine (aq)	mg/l	<0.02	<0.001	<0.001	<0.001
Pentachlorophenol (aq)	mg/l	<0.02	<0.001	<0.001	<0.001
Phenanthrene (aq)	mg/l	<0.02	<0.001	<0.001	<0.001
Phenol (aq)	mg/l	<0.02	<0.001	<0.001	<0.001
Pyrene (aq)	mg/l	<0.02	<0.001	<0.001	<0.001
Volatile Organic Compounds (VOCs)					
1,1,1,2-Tetrachloroethane	mg/l	<0.001	<0.001	<0.001	<0.001
1,1,1-Trichloroethane	mg/l	<0.001	<0.001	<0.001	<0.001
1,1,2,2-Tetrachloroethane	mg/l	<0.001	<0.001	<0.001	<0.001
1,1,2-Trichloroethane	mg/l	<0.001	<0.001	<0.001	<0.001
1,1-Dichloroethane	mg/l	<0.001	<0.001	<0.001	<0.001
1,1-Dichloroethene	mg/l	<0.001	<0.001	<0.001	<0.001
1,1-Dichloropropene	mg/l	<0.001	<0.001	<0.001	<0.001
1,2,3-Trichlorobenzene	mg/l	<0.001	<0.001	<0.001	<0.001
1,2,3-Trichloropropane	mg/l	<0.001	<0.001	<0.001	<0.001
1,2,4-Trichlorobenzene	mg/l	<0.001	<0.001	<0.001	<0.001
1,2,4-Trimethylbenzene	mg/l	<0.001	<0.001	<0.001	<0.001
1,2-Dibromo-3-chloropropane	mg/l	<0.001	<0.001	<0.001	<0.001
1,2-Dibromoethane	mg/l	<0.001	<0.001	<0.001	<0.001
1,2-Dichlorobenzene	mg/l	<0.001	<0.001	<0.001	<0.001
1,2-Dichloroethane	mg/l	<0.001	<0.001	<0.001	<0.001
1,2-Dichloropropane	mg/l	<0.001	<0.001	<0.001	<0.001
1,3,5-Trichlorobenzene	mg/l	<0.001	<0.001	<0.001	<0.001
1,3,5-Trimethylbenzene	mg/l	<0.001	<0.001	<0.001	<0.001
1,3-Dichlorobenzene	mg/l	<0.001	<0.001	<0.001	<0.001
1,3-Dichloropropane	mg/l	<0.001	<0.001	<0.001	<0.001
1,4-Dichlorobenzene	mg/l	<0.001	<0.001	<0.001	<0.001
2,2-Dichloropropane	mg/l	<0.001	<0.001	<0.001	<0.001
2-Chlorotoluene	mg/l	<0.001	<0.001	<0.001	<0.001
4-Bromofluorobenzene**	%	80.9	96.3	94.6	96.8
4-Chlorotoluene	mg/l	<0.001	<0.001	<0.001	<0.001
4-iso-Propyltoluene	mg/l	<0.001	<0.001	<0.001	<0.001
Benzene	mg/l	<0.001	<0.001	<0.001	<0.001
Bromobenzene	mg/l	<0.001	<0.001	<0.001	<0.001
Bromochloromethane	mg/l	<0.001	<0.001	<0.001	<0.001
Bromodichloromethane	mg/l	<0.001	<0.001	<0.001	<0.001
Bromoform	mg/l	<0.001	<0.001	<0.001	<0.001
Bromomethane	mg/l	<0.001	<0.001	<0.001	<0.001

Parameter	Units	SW1	SW2	SW4	SW5
Carbon disulphide	mg/l	0.00335	<0.001	<0.001	<0.001
Carbontetrachloride	mg/l	<0.001	<0.001	<0.001	<0.001
Chlorobenzene	mg/l	<0.001	<0.001	<0.001	<0.001
Chloroethane	mg/l	<0.001	<0.001	<0.001	<0.001
Chloroform	mg/l	<0.001	<0.001	<0.001	<0.001
Chloromethane	mg/l	<0.001	<0.001	<0.001	<0.001
cis-1,2-Dichloroethene	mg/l	<0.001	<0.001	<0.001	<0.001
cis-1,3-Dichloropropene	mg/l	<0.001	<0.001	<0.001	<0.001
Dibromochloromethane	mg/l	<0.001	<0.001	<0.001	<0.001
Dibromofluoromethane**	%	158	131	117	135
Dibromomethane	mg/l	<0.001	<0.001	<0.001	<0.001
Dichlorodifluoromethane	mg/l	<0.001	<0.001	<0.001	<0.001
Dichloromethane	mg/l	<0.003	<0.003	<0.003	<0.003
Ethylbenzene	mg/l	<0.001	<0.001	<0.001	<0.001
Hexachlorobutadiene	mg/l	<0.001	<0.001	<0.001	<0.001
Isopropylbenzene	mg/l	<0.001	<0.001	<0.001	<0.001
m,p-Xylene	mg/l	<0.001	<0.001	<0.001	<0.001
Methyl tertiary butyl ether (MTBE)	mg/l	<0.001	<0.001	<0.001	<0.001
Naphthalene	mg/l	<0.001	<0.001	<0.001	<0.001
n-Butylbenzene	mg/l	<0.001	<0.001	<0.001	<0.001
o-Xylene	mg/l	<0.001	<0.001	<0.001	<0.001
Propylbenzene	mg/l	<0.001	<0.001	<0.001	<0.001
sec-Butylbenzene	mg/l	<0.001	<0.001	<0.001	<0.001
Styrene	mg/l	<0.001	<0.001	<0.001	<0.001
tert-Amyl methyl ether (TAME)	mg/l	<0.001	<0.001	<0.001	<0.001
tert-Butylbenzene	mg/l	<0.001	<0.001	<0.001	<0.001
Tetrachloroethene	mg/l	<0.001	<0.001	<0.001	<0.001
Toluene	mg/l	<0.001	<0.001	<0.001	<0.001
Toluene-d8**	%	95.2	98.2	97.3	97.2
trans-1,2-Dichloroethene	mg/l	<0.001	<0.001	<0.001	<0.001
trans-1,3-Dichloropropene	mg/l	<0.001	<0.001	<0.001	<0.001
Trichloroethene	mg/l	<0.001	<0.001	<0.001	<0.001
Trichlorofluoromethane	mg/l	<0.001	<0.001	<0.001	<0.001
Vinyl chloride	mg/l	<0.001	<0.001	<0.001	<0.001
Combined Pesticides / Herbicides					
Aldrin	mg/l	<0.00001	<0.00001	<0.00001	<0.00001
alpha-Hexachlorocyclohexane (HCH / Lindane)	mg/l	<0.00001	<0.00001	<0.00001	<0.00001
Atrazine	mg/l	<0.001	<0.001	<0.001	<0.001
Azinphos-ethyl	mg/l	<0.00001	<0.00001	<0.00001	<0.00001
Azinphos-methyl	mg/l	<0.00001	<0.00001	<0.00001	<0.00001
beta-Hexachlorocyclohexane (HCH / Lindane)	mg/l	<0.00001	<0.00001	<0.00001	<0.00001
Carbophenothion	mg/l	<0.00001	<0.00001	<0.00001	<0.00001

Parameter	Units	SW1	SW2	SW4	SW5
Chlorfenvinphos	mg/l	<0.00001	<0.00001	<0.00001	<0.00001
Chlorothalonil	mg/l	<0.00001	<0.00001	<0.00001	<0.00001
Chlorpyrifos	mg/l	<0.00001	<0.00001	<0.00001	<0.00001
Chlorpyrifos methyl	mg/l	<0.00001	<0.00001	<0.00001	<0.00001
cis-Chlordane	mg/l	<0.00001	<0.00001	<0.00001	<0.00001
Diazinon	mg/l	<0.00001	<0.00001	<0.00001	<0.00001
Dichlorvos	mg/l	<0.00001	<0.00001	<0.00001	<0.00001
Dieldrin	mg/l	<0.00001	<0.00001	<0.00001	<0.00001
Dimethoate	mg/l	<0.00001	<0.00001	<0.00001	<0.00001
Endosulphan I	mg/l	<0.00001	<0.00001	<0.00001	<0.00001
Endosulphan II	mg/l	<0.00001	<0.00001	<0.00001	<0.00001
Endosulphan sulphate	mg/l	<0.00001	<0.00001	<0.00001	<0.00001
Endrin	mg/l	<0.00001	<0.00001	<0.00001	<0.00001
Ethion	mg/l	<0.00001	<0.00001	<0.00001	<0.00001
Etrimphos	mg/l	<0.00001	<0.00001	<0.00001	<0.00001
Fenitrothion	mg/l	<0.00001	<0.00001	<0.00001	<0.00001
Fenthion	mg/l	<0.00001	<0.00001	<0.00001	<0.00001
gamma-Hexachlorocyclohexane (HCH / Lindane)	mg/l	<0.00001	<0.00001	<0.00001	<0.00001
Heptachlor	mg/l	<0.00001	<0.00001	<0.00001	<0.00001
Heptachlor epoxide	mg/l	<0.00001	<0.00001	<0.00001	<0.00001
Hexachlorobenzene	mg/l	<0.00001	<0.00001	<0.00001	<0.00001
Isodrin	mg/l	<0.00001	<0.00001	<0.00001	<0.00001
Malathion	mg/l	<0.00001	<0.00001	<0.00001	<0.00001
Methyl parathion	mg/l	<0.00001	<0.00001	<0.00001	<0.00001
Mevinphos	mg/l	<0.00001	<0.00001	<0.00001	<0.00001
o,p-DDE	mg/l	<0.00001	<0.00001	<0.00001	<0.00001
o,p-DDT	mg/l	<0.00001	<0.00001	<0.00001	<0.00001
o,p-Methoxychlor	mg/l	<0.00001	<0.00001	<0.00001	<0.00001
o,p-TDE (DDD)	mg/l	<0.00001	<0.00001	<0.00001	<0.00001
p,p-DDE	mg/l	<0.00001	<0.00001	<0.00001	<0.00001
p,p-DDT	mg/l	<0.00001	<0.00001	<0.00001	<0.00001
p,p-Methoxychlor	mg/l	<0.00001	<0.00001	<0.00001	<0.00001
p,p-TDE (DDD)	mg/l	<0.00001	<0.00001	<0.00001	<0.00001
Parathion	mg/l	<0.00001	<0.00001	<0.00001	<0.00001
Pendimethalin	mg/l	<0.00001	<0.00001	<0.00001	<0.00001
Permethrin I	mg/l	<0.00001	<0.00001	<0.00001	<0.00001
Permethrin II	mg/l	<0.00001	<0.00001	<0.00001	<0.00001
Phosalone	mg/l	<0.00001	<0.00001	<0.00001	<0.00001
Pirimiphos-methyl	mg/l	<0.00001	<0.00001	<0.00001	<0.00001
Propetamphos	mg/l	<0.00001	<0.00001	<0.00001	<0.00001
Quintozone (PCNB)	mg/l	<0.00001	<0.00001	<0.00001	<0.00001
Simazine	mg/l	<0.001	<0.001	<0.001	<0.001
Tecnazene	mg/l	<0.00001	<0.00001	<0.00001	<0.00001

Parameter	Units	SW1	SW2	SW4	SW5
Telodrin	mg/l	<0.00001	<0.00001	<0.00001	<0.00001
Trans-chlordane	mg/l	<0.00001	<0.00001	<0.00001	<0.00001
Triadimefon	mg/l	<0.00001	<0.00001	<0.00001	<0.00001
Triallate	mg/l	<0.00001	<0.00001	<0.00001	<0.00001
Triazophos	mg/l	<0.00001	<0.00001	<0.00001	<0.00001
Trifluralin	mg/l	<0.00001	<0.00001	<0.00001	<0.00001
Miscellaneous Organics					
Dibutyl tin	mg/l	<0.00005	<0.000005	<0.000005	<0.000005
Surrogate	%	69.4	82.9	885	89.6
Tetrabutyl tin	mg/l	<0.00002	<0.000002	<0.000002	<0.000002
Tributyl tin	mg/l	<0.00001	<0.000001	<0.000001	<0.000001
Triphenyl tin	mg/l	<0.00001	<0.000001	<0.000001	<0.000001
Subcontracted: Organics					
2,4,5-T*	mg/l	<0.00005	<0.00005	<0.00005	<0.00005
2,4-D*	mg/l	<0.00005	<0.00005	<0.00005	<0.00005
2,4-DB*	mg/l	<0.00005	<0.00005	<0.00005	<0.00005
4-(4-Chloro-o-tolyloxy) butyric acid (MCPB)*	mg/l	<0.00005	<0.00005	<0.00005	<0.00005
Bentazone*	mg/l	<0.00005	<0.00005	<0.00005	<0.00005
Bromoxynil*	mg/l	<0.00005	<0.00005	<0.00005	<0.00005
Dicamba*	mg/l	<0.00005	<0.00005	<0.00005	0.00005
Dichloroprop*	mg/l	<0.00005	<0.00005	<0.00005	<0.00005
Fenoprop*	mg/l	<0.00005	<0.00005	<0.00005	<0.00005
Ioxynil*	mg/l	<0.00005	<0.00005	<0.00005	<0.00005
MCPA*	mg/l	<0.00005	<0.00005	<0.00005	<0.00005
Mecoprop*	mg/l	<0.00004	<0.00004	<0.00004	<0.00004
Triclopyr*	mg/l	<0.00005	<0.00005	<0.00005	<0.00005

APPENDIX 5

Standard Landfill Borehole Gas Monitoring

Date 01/10/2015
 Weather: slight rain
 Wind conditions: breezy
 Air Temperature: 15 °C

Instrument: GA 2000
 Serial No: GA10692
 Calibrated To: 26/03/2016
 Operatives AS

Monitoring Point	Time Hrs	CH4 %	CO2 %	O2 %	Balance %	CO ppm	H2S ppm	Baro mb	Rel Pressure mb	Trigger lev CH4 %	Trigger lev CO2
STBH 1	10:37	0	2.2	19.7	78.1	0	0	997	0.01	1	5.4
STBH 1.1	10:34	0	2.1	19.8	78.1	0	0	997	-0.15	1	5.4
STBH 2.0	10:41	0	2.5	19.6	77.9	0	0	997	0.57	1	7
STBH 2.1	10:29	0	1.5	20	78.5	0	0	997	0.79	1	7.6
STBH 2.2	10:32	0	1.4	19.4	79.2	0	0	997	0.56	1	5.8
STBH 3.0	10:46	0	2.3	19.9	77.8	0	0	997	0.57	1	6.7
STBH 3.1	10:27	0	2	20.1	77.9	0	0	997	0.41	1	7.8
STBH 4.0	10:50	0	1.5	20.2	78.3	0	0	997	1.21	10	10.6
STBH 4.1	10:18	0	2.3	19.8	77.9	0	0	997	1.32	1	7.1
STBH 4.2	10:23	0	2.4	19.6	78	0	0	997	1.06	1	8.6
STBH 5.0	10:53	0	1.5	19.4	79.1	0	0	997	0.66	15	19.4
STBH 5.1	10:57	0	2	19.8	78.2	0	0	997	0.4	1	5.8
STBH 5.2	10:10	0	1.6	19.8	78.6	0	0	997	0.35	1	9.6
STBH 5.3	10:13	0	1.9	20	78.1	0	0	997	0.98	1	6
STBH 6.0	11:15	0	2.5	19.9	77.6	0	0	997	-0.91	1	5.4
STBH 6.1	09:59	0	2	19	79	0	0	997	0.71	1	5.4
STBH 6.2	10:03	0	1.3	19.4	79.3	0	0	997	1.21	1	5.4
STBH 6.3	10:07	0	1.5	19.6	78.9	0	0	997	1.05	1	8.2
STBH 7.0	11:19	0	2.9	19.5	77.6	0	0	997	0.09	1	6.2
STBH 7.1	09:55	0	1.2	19.8	79	0	0	997	0.54	1	5.5
STBH 9.0	11:30	0	3.6	20	76.4	0	0	997	0.7	1	10.7
STBH 12	11:33	0	1.9	19.5	78.6	0	0	997	0.85	10	6.5
STBH 13	11:37	0	2.4	19.6	78	0	0	997	-0.16	10	5.2
STBH 15	11:41	0	1.5	19.8	78.7	0	0	997	0.88	1	8.3
STBH 16	11:45	0	1.6	20	78.4	0	0	997	0.69	1	3
STBH 22	11:49	0.3	2	19.4	78.3	0	0	997	0.53	1.6	3.1
STMBH 5.4	11:01	0	1.5	19.8	78.7	0	0	997	0.53	1	16
STMBH 5.5	11:03	0	2.3	20	77.7	0	0	997	-0.12	1	17.1
STMBH 5.7	11:06	0	1.8	20	78.2	0	0	997	-0.22	1	7.1

Standard Landfill Borehole Gas Monitoring

Date 08/10/2015
 Weather: slight rain
 Wind conditions: Calm
 Air Temperature: 14 °C

Instrument: GA 2000
 Serial No: GA10692
 Calibrated To: 26/03/2016
 Operatives AS

Monitoring Point	Time Hrs	CH4 %	CO2 %	O2 %	Balance %	CO ppm	H2S ppm	Baro mb	Rel Pressure mb	Trigger lev CH4 %	Trigger lev CO2
STBH 1	11:16	0	2	19.5	78.5	0	0	998	0.1	1	5.4
STBH 1.1	11:13	0	1.8	19.9	78.3	0	0	998	-0.07	1	5.4
STBH 2.0	11:20	0	2.3	20	77.7	0	0	998	0.5	1	7
STBH 2.1	11:08	0	1.6	19.6	78.8	0	0	998	0.85	1	7.6
STBH 2.2	11:11	0	1.5	19.2	79.3	0	0	998	0.51	1	5.8
STBH 3.0	11:25	0	2	20	78	0	0	998	0.58	1	6.7
STBH 3.1	11:06	0	1.6	19.6	78.8	0	0	998	0.28	1	7.8
STBH 4.0	11:29	0	1.8	19.7	78.5	0	0	998	1.25	10	10.6
STBH 4.1	10:57	0	2	19.9	78.1	0	0	998	1.26	1	7.1
STBH 4.2	11:02	0	1.9	20	78.1	0	0	998	1.05	1	8.6
STBH 5.0	11:32	0	1.2	19.2	79.6	0	0	998	0.64	15	19.4
STBH 5.1	11:36	0	2.3	20	77.7	0	0	998	0.42	1	5.8
STBH 5.2	10:49	0	1.5	19.6	78.9	0	0	998	0.22	1	9.6
STBH 5.3	10:52	0	1.6	19.9	78.5	0	0	998	0.94	1	6
STBH 6.0	11:54	0	2	20.1	77.9	0	0	998	-0.88	1	5.4
STBH 6.1	10:38	0	1.8	19.5	78.7	0	0	998	0.69	1	5.4
STBH 6.2	10:42	0	1	19.3	79.7	0	0	998	1.37	1	5.4
STBH 6.3	10:46	0	1.4	19.2	79.4	0	0	998	1.04	1	8.2
STBH 7.0	11:58	0	2	19.8	78.2	0	0	998	0.12	1	6.2
STBH 7.1	10:34	0	1.5	20	78.5	0	0	998	0.56	1	5.5
STBH 9.0	12:09	0	3	19.9	77.1	0	0	998	0.66	1	10.7
STBH 12	12:12	0	1.5	19.6	78.9	0	0	998	0.82	10	6.5
STBH 13	12:16	0	2.2	20	77.8	0	0	998	-0.16	10	5.2
STBH 15	12:20	0	1.4	20	78.6	0	0	998	0.86	1	8.3
STBH 16	12:24	0	1.8	19.8	78.4	0	0	998	0.59	1	3
STBH 22	12:28	0.4	2.3	19.8	77.5	0	0	998	0.51	1.6	3.1
STMBH 5.4	11:40	0	1.4	20	78.6	0	0	998	0.58	1	16
STMBH 5.5	11:42	0	2.6	19.6	77.8	0	0	998	-0.16	1	17.1
STMBH 5.7	11:45	0	1.9	19.9	78.2	0	0	998	-0.18	1	7.1

Standard Landfill Borehole Gas Monitoring

Date 15/10/2015
 Weather: Dry
 Wind conditions: Breezy
 Air Temperature: 13 °C

Instrument: GA 2000
 Serial No: GA10692
 Calibrated To: 26/03/2016
 Operatives AS

Monitoring Point	Time Hrs	CH4 %	CO2 %	O2 %	Balance %	CO ppm	H2S ppm	Baro mb	Rel Pressure mb	Trigger lev CH4 %	Trigger lev CO2
STBH 1	11:52	0	1.8	19.9	78.3	0	0	997	-0.16	1	5.4
STBH 1.1	11:49	0	1.5	19.5	79	0	0	997	-0.09	1	5.4
STBH 2.0	11:56	0	2	20.1	77.9	0	0	997	-0.53	1	7
STBH 2.1	11:44	0	1.4	19.9	78.7	0	0	997	-0.84	1	7.6
STBH 2.2	11:47	0	1.6	19.5	78.9	0	0	997	-0.65	1	5.8
STBH 3.0	12:01	0	2.1	19.6	78.3	0	0	997	-0.22	1	6.7
STBH 3.1	11:42	0	1.4	20.1	78.5	0	0	997	0.36	1	7.8
STBH 4.0	12:05	0	1.9	19.9	78.2	0	0	997	0.88	10	10.6
STBH 4.1	11:33	0	1.8	19.5	78.7	0	0	997	1.28	1	7.1
STBH 4.2	11:38	0	2.1	19.8	78.1	0	0	997	0.99	1	8.6
STBH 5.0	12:08	0	1.4	19.5	79.1	0	0	997	0.63	15	19.4
STBH 5.1	12:12	0	1.8	20.1	78.1	0	0	997	0.47	1	5.8
STBH 5.2	11:25	0	1.6	19.7	78.7	0	0	997	0.34	1	9.6
STBH 5.3	11:28	0	1.9	19.5	78.6	0	0	997	-0.18	1	6
STBH 6.0	12:30	0	2.1	20	77.9	0	0	997	-0.91	1	5.4
STBH 6.1	11:14	0	2	19.9	78.1	0	0	997	-0.24	1	5.4
STBH 6.2	11:18	0	1.4	19.5	79.1	0	0	997	1.27	1	5.4
STBH 6.3	11:22	0	1.2	19.5	79.3	0	0	997	0.99	1	8.2
STBH 7.0	12:34	0	2.3	19.6	78.1	0	0	997	0.45	1	6.2
STBH 7.1	11:10	0	1.3	20.1	78.6	0	0	997	0.52	1	5.5
STBH 9.0	12:45	0	2.5	19.8	77.7	0	0	997	0.67	1	10.7
STBH 12	12:48	0	1.4	19.4	79.2	0	0	997	-0.91	10	6.5
STBH 13	12:52	0	2	19.6	78.4	0	0	997	-0.15	10	5.2
STBH 15	12:56	0	1.6	20.1	78.3	0	0	997	0.85	1	8.3
STBH 16	13:00	0	1.9	19.9	78.2	0	0	997	-0.78	1	3
STBH 22	13:04	0.3	2	19.9	77.8	0	0	997	0.58	1.6	3.1
STMBH 5.4	12:16	0	1.4	20.1	78.5	0	0	997	-0.7	1	16
STMBH 5.5	12:18	0	2.3	19.8	77.9	0	0	997	0.06	1	17.1
STMBH 5.7	12:21	0	1.5	20.1	78.4	0	0	997	-0.12	1	7.1

Standard Landfill Borehole Gas Monitoring

Date 22/10/2015
 Weather: Dry
 Wind conditions: Calm
 Air Temperature: 14 °C

Instrument: GA 2000
 Serial No: GA10692
 Calibrated To: 26/03/2016
 Operatives AS

Monitoring Point	Time Hrs	CH4 %	CO2 %	O2 %	Balance %	CO ppm	H2S ppm	Baro mb	Rel Pressure mb	Trigger lev CH4 %	Trigger lev CO2
STBH 1	11:39	0	1.4	19.9	78.7	0	0	1003	-0.17	1	5.4
STBH 1.1	11:36	0	1.2	19.5	79.3	0	0	1003	-0.04	1	5.4
STBH 2.0	11:43	0	1.8	19.8	78.4	0	0	1003	-0.55	1	7
STBH 2.1	11:31	0	1.6	19.9	78.5	0	0	1003	-0.83	1	7.6
STBH 2.2	11:34	0	1.2	20	78.8	0	0	1003	-0.59	1	5.8
STBH 3.0	11:48	0	2	19.6	78.4	0	0	1003	-0.21	1	6.7
STBH 3.1	11:29	0	1.8	20	78.2	0	0	1003	0.32	1	7.8
STBH 4.0	11:52	0	1.5	20	78.5	0	0	1003	0.87	10	10.6
STBH 4.1	11:20	0	1.3	19.8	78.9	0	0	1003	1.26	1	7.1
STBH 4.2	11:25	0	2	19.8	78.2	0	0	1003	1.04	1	8.6
STBH 5.0	11:55	0	1.6	19.7	78.7	0	0	1003	0.66	15	19.4
STBH 5.1	11:59	0	1.9	20	78.1	0	0	1003	0.45	1	5.8
STBH 5.2	11:12	0	1.2	19.6	79.2	0	0	1003	0.32	1	9.6
STBH 5.3	11:15	0	1.8	19.5	78.7	0	0	1003	-0.12	1	6
STBH 6.0	12:17	0	2	20	78	0	0	1003	-0.96	1	5.4
STBH 6.1	11:01	0	1.6	19.6	78.8	0	0	1003	-0.3	1	5.4
STBH 6.2	11:05	0	1	19.5	79.5	0	0	1003	1.2	1	5.4
STBH 6.3	11:09	0	1.6	20.1	78.3	0	0	1003	1.02	1	8.2
STBH 7.0	12:21	0	2	19.5	78.5	0	0	1003	0.47	1	6.2
STBH 7.1	10:57	0	2	19.4	78.6	0	0	1003	0.52	1	5.5
STBH 9.0	12:32	0	1.5	20.1	78.4	0	0	1003	0.64	1	10.7
STBH 12	12:35	0	1.9	19.8	78.3	0	0	1003	-0.92	10	6.5
STBH 13	12:39	0	2.3	20.1	77.6	0	0	1003	-0.16	10	5.2
STBH 15	12:43	0	4	19.9	76.1	0	0	1003	0.88	1	8.3
STBH 16	12:47	0	1.8	19.8	78.4	0	0	1003	-0.78	1	3
STBH 22	12:51	0.2	2.6	20.1	77.1	0	0	1003	0.61	1.6	3.1
STMBH 5.4	12:03	0	1.5	19.9	78.6	0	0	1003	-0.7	1	16
STMBH 5.5	12:05	0	2	19.6	78.4	0	0	1003	0.04	1	17.1
STMBH 5.7	12:08	0	1.3	20.1	78.6	0	0	1003	-0.14	1	7.1

Standard Landfill Borehole Gas Monitoring

Date 29/10/2015
 Weather: Dry
 Wind conditions: Calm
 Air Temperature: 11 °C

Instrument: GA 2000
 Serial No: GA10692
 Calibrated To: 26/03/2016
 Operatives AS

Monitoring Point	Time Hrs	CH4 %	CO2 %	O2 %	Balance %	CO ppm	H2S ppm	Baro mb	Rel Pressure mb	Trigger lev CH4 %	Trigger lev CO2
STBH 1	9:55	0	1.6	20.1	78.3	0	0	996	0.09	1	5.4
STBH 1.1	9:52	0	1.3	19.6	79.1	0	0	996	0.02	1	5.4
STBH 2.0	9:59	0	1.6	19.6	78.8	0	0	996	-0.48	1	7
STBH 2.1	9:47	0	1.4	20.1	78.5	0	0	996	-0.18	1	7.6
STBH 2.2	9:50	0	1	19.6	79.4	0	0	996	-0.3	1	5.8
STBH 3.0	10:04	0	1.8	19.8	78.4	0	0	996	-0.2	1	6.7
STBH 3.1	9:45	0	1.6	20.1	78.3	0	0	996	0.22	1	7.8
STBH 4.0	10:08	0	1.6	19.8	78.6	0	0	996	0.5	10	10.6
STBH 4.1	9:36	0	1.4	19.6	79	0	0	996	0.66	1	7.1
STBH 4.2	9:41	0	2.3	20	77.7	0	0	996	-0.94	1	8.6
STBH 5.0	10:11	0	1.9	19.8	78.3	0	0	996	0.75	15	19.4
STBH 5.1	10:15	0	1.6	19.6	78.8	0	0	996	0.22	1	5.8
STBH 5.2	9:28	0	1.1	20	78.9	0	0	996	0.39	1	9.6
STBH 5.3	9:31	0	1.8	19.8	78.4	0	0	996	-0.41	1	6
STBH 6.0	10:33	0	1.7	19.9	78.4	0	0	996	-0.16	1	5.4
STBH 6.1	9:17	0	2	20	78	0	0	996	-0.36	1	5.4
STBH 6.2	9:21	0	1.3	19.6	79.1	0	0	996	0.95	1	5.4
STBH 6.3	9:25	0	1.2	19.9	78.9	0	0	996	0.72	1	8.2
STBH 7.0	10:37	0	2.3	20	77.7	0	0	996	0.33	1	6.2
STBH 7.1	9:13	0	2.6	19.7	77.7	0	0	996	0.18	1	5.5
STBH 9.0	10:48	0	1.4	19.6	79	0	0	996	-0.21	1	10.7
STBH 12	10:51	0	1.6	19.5	78.9	0	0	996	0.83	10	6.5
STBH 13	10:55	0	2	19.6	78.4	0	0	996	0.1	10	5.2
STBH 15	10:59	0	3.5	18.9	77.6	0	0	996	0.29	1	8.3
STBH 16	11:03	0	1.9	19.1	79	0	0	996	-0.17	1	3
STBH 22	11:07	0.4	2.2	20	77.4	0	0	996	0.45	1.6	3.1
STMBH 5.4	10:19	0	1.9	19.8	78.3	0	0	996	-0.2	1	16
STMBH 5.5	10:21	0	2.3	20	77.7	0	0	996	-0.11	1	17.1
STMBH 5.7	10:24	0	1.5	19.9	78.6	0	0	996	-0.94	1	7.1

Standard Landfill Borehole Gas Monitoring

Date 05/11/2015
 Weather: Dry
 Wind conditions: Calm
 Air Temperature: 12 °C

Instrument: GA 2000
 Serial No: GA10692
 Calibrated To: 26/03/2016
 Operatives AS

Monitoring Point	Time Hrs	CH4 %	CO2 %	O2 %	Balance %	CO ppm	H2S ppm	Baro mb	Rel Pressure mb	Trigger lev CH4 %	Trigger lev CO2
STBH 1	10:02	0	1.9	19.9	78.2	0	0	996	0.04	1	5.4
STBH 1.1	9:59	0	1	19.4	79.6	0	0	996	-0.02	1	5.4
STBH 2.0	10:06	0	1.4	20.1	78.5	0	0	996	-0.47	1	7
STBH 2.1	9:54	0	1.6	19.9	78.5	0	0	996	-0.23	1	7.6
STBH 2.2	9:57	0	1.3	20.1	78.6	0	0	996	-0.29	1	5.8
STBH 3.0	10:11	0	2	19.6	78.4	0	0	996	-0.12	1	6.7
STBH 3.1	9:52	0	1.9	19.8	78.3	0	0	996	0.27	1	7.8
STBH 4.0	10:15	0	1.4	20	78.6	0	0	996	0.47	10	10.6
STBH 4.1	9:43	0	1.6	19.7	78.7	0	0	996	0.68	1	7.1
STBH 4.2	9:48	0	2	20.1	77.9	0	0	996	-0.93	1	8.6
STBH 5.0	10:18	0	1.5	19.6	78.9	0	0	996	0.79	15	19.4
STBH 5.1	10:22	0	2	19.5	78.5	0	0	996	0.24	1	5.8
STBH 5.2	9:35	0	1.2	20.1	78.7	0	0	996	0.38	1	9.6
STBH 5.3	9:38	0	1.9	19.5	78.6	0	0	996	-0.38	1	6
STBH 6.0	10:40	0	1.5	19.5	79	0	0	996	-0.13	1	5.4
STBH 6.1	9:24	0	2.3	20.1	77.6	0	0	996	-0.38	1	5.4
STBH 6.2	9:28	0	1.4	19.6	79	0	0	996	0.88	1	5.4
STBH 6.3	9:32	0	1.5	18.9	79.6	0	0	996	0.7	1	8.2
STBH 7.0	10:44	0	2.4	19.9	77.7	0	0	996	0.32	1	6.2
STBH 7.1	9:20	0	2.3	19.5	78.2	0	0	996	0.22	1	5.5
STBH 9.0	10:55	0	1.6	19.2	79.2	0	0	996	-0.23	1	10.7
STBH 12	10:58	0	1.9	19.4	78.7	0	0	996	0.81	10	6.5
STBH 13	11:02	0	2.5	19.9	77.6	0	0	996	0.06	10	5.2
STBH 15	11:06	0	3.2	19.3	77.5	0	0	996	0.31	1	8.3
STBH 16	11:10	0	2.3	19.4	78.3	0	0	996	-0.19	1	3
STBH 22	11:14	0.5	2	19.8	77.7	0	0	996	0.44	1.6	3.1
STMBH 5.4	10:26	0	1.8	20	78.2	0	0	996	-0.24	1	16
STMBH 5.5	10:28	0	2	19.3	78.7	0	0	996	-0.14	1	17.1
STMBH 5.7	10:31	0	1.4	20	78.6	0	0	996	-0.95	1	7.1

Standard Landfill Borehole Gas Monitoring

Date 12/11/2015
 Weather: Dry
 Wind conditions: Calm
 Air Temperature: 10 °C

Instrument: GA 2000
 Serial No: GA10692
 Calibrated To: 26/03/2016
 Operatives AS

Monitoring Point	Time Hrs	CH4 %	CO2 %	O2 %	Balance %	CO ppm	H2S ppm	Baro mb	Rel Pressure mb	Trigger lev CH4 %	Trigger lev CO2
STBH 1	9:44	0	1.6	19.6	78.8	0	0	996	0.04	1	5.4
STBH 1.1	9:43	0	1.2	19.6	79.2	0	0	996	-0.01	1	5.4
STBH 2.0	9:46	0	1.3	20	78.7	0	0	996	0.41	1	7
STBH 2.1	9:39	0	1.4	19.8	78.8	0	0	996	0.32	1	7.6
STBH 2.2	9:42	0	1.2	20	78.8	0	0	996	1.01	1	5.8
STBH 3.0	9:50	0	2.3	19.3	78.4	0	0	996	0.26	1	6.7
STBH 3.1	9:37	0	1.5	19.5	79	0	0	996	0.01	1	7.8
STBH 4.0	9:54	0	1.2	19.6	79.2	0	0	996	0.2	10	10.6
STBH 4.1	9:33	0	1.1	19.8	79.1	0	0	996	0.59	1	7.1
STBH 4.2	9:35	0	1.5	20	78.5	0	0	996	0.96	1	8.6
STBH 5.0	9:57	0	1.4	19.7	78.9	0	0	996	1.06	15	19.4
STBH 5.1	9:59	0	2.3	19.8	77.9	0	0	996	1.23	1	5.8
STBH 5.2	9:29	0	1.5	20	78.5	0	0	996	1.09	1	9.6
STBH 5.3	9:31	0	1.3	19.6	79.1	0	0	996	0.34	1	6
STBH 6.0	10:19	0	1.4	19.8	78.8	0	0	996	-0.09	1	5.4
STBH 6.1	9:23	0	2	20.3	77.7	0	0	996	0.05	1	5.4
STBH 6.2	9:26	0	1.6	19.9	78.5	0	0	996	0.1	1	5.4
STBH 6.3	10:23	0	1.4	19.5	79.1	0	0	996	0.62	1	8.2
STBH 7.0	10:26	0	2.1	20.1	77.8	0	0	996	0.35	1	6.2
STBH 7.1	9:21	0	1.8	19.9	78.3	0	0	996	0.23	1	5.5
STBH 9.0	10:33	0	1.6	19.5	78.9	0	0	996	0.21	1	10.7
STBH 12	10:36	0	1.8	19.6	78.6	0	0	996	0.86	10	6.5
STBH 13	10:38	0	2.1	20.1	77.8	0	0	996	0.91	10	5.2
STBH 15	10:41	0	3	19.4	77.6	0	0	996	-0.08	1	8.3
STBH 16	10:44	0	2.1	19.6	78.3	0	0	996	0.14	1	3
STBH 22	10:48	0.4	2.3	19.5	77.8	0	0	996	0.32	1.6	3.1
STMBH 5.4	10:01	0	1.5	20.1	78.4	0	0	996	0.87	1	16
STMBH 5.5	10:04	0	2.3	19.6	78.1	0	0	996	-0.19	1	17.1
STMBH 5.7	10:10	0	1.6	19.9	78.5	0	0	996	0.29	1	7.1

Standard Landfill Borehole Gas Monitoring

Date 19/11/2015
 Weather: Dry
 Wind conditions: Breezy
 Air Temperature: 8 °C

Instrument: GA 2000
 Serial No: GA10692
 Calibrated To: 26/03/2016
 Operatives AS

Monitoring Point	Time Hrs	CH4 %	CO2 %	O2 %	Balance %	CO ppm	H2S ppm	Baro mb	Rel Pressure mb	Trigger lev CH4 %	Trigger lev CO2
STBH 1	11:11	0	1.4	19.9	78.7	0	0	999	-0.19	1	5.4
STBH 1.1	11:08	0	1.5	20	78.5	0	0	999	-0.02	1	5.4
STBH 2.0	11:15	0	1.1	19.9	79	0	0	999	-0.51	1	7
STBH 2.1	11:03	0	1.5	19.6	78.9	0	0	999	-0.86	1	7.6
STBH 2.2	11:06	0	1.6	19.8	78.6	0	0	999	-0.6	1	5.8
STBH 3.0	11:20	0	3.3	19.5	77.2	0	0	999	-0.26	1	6.7
STBH 3.1	11:01	0	2	20.1	77.9	0	0	999	0.37	1	7.8
STBH 4.0	11:24	0	1.5	19.5	79	0	0	999	0.8	10	10.6
STBH 4.1	10:52	0	1.3	19.9	78.8	0	0	999	1.25	1	7.1
STBH 4.2	10:57	0	1	20.1	78.9	0	0	999	1	1	8.6
STBH 5.0	11:27	0	1.9	19.8	78.3	0	0	999	0.66	15	19.4
STBH 5.1	11:31	0	2.6	19.3	78.1	0	0	999	0.49	1	5.8
STBH 5.2	10:44	0	1.6	20	78.4	0	0	999	0.26	1	9.6
STBH 5.3	10:47	0	1.5	19.9	78.6	0	0	999	-0.15	1	6
STBH 6.0	11:49	0	1.1	19.5	79.4	0	0	999	-0.95	1	5.4
STBH 6.1	10:33	0	2.1	20.1	77.8	0	0	999	-0.27	1	5.4
STBH 6.2	10:37	0	1.9	19.5	78.6	0	0	999	1.19	1	5.4
STBH 6.3	10:41	0	1.2	19.9	78.9	0	0	999	1.04	1	8.2
STBH 7.0	11:53	0	1.8	20.1	78.1	0	0	999	0.43	1	6.2
STBH 7.1	10:29	0	2	19.6	78.4	0	0	999	0.55	1	5.5
STBH 9.0	12:04	0	1.9	19.6	78.5	0	0	999	0.68	1	10.7
STBH 12	12:07	0	1.5	19.9	78.6	0	0	999	-0.92	10	6.5
STBH 13	12:11	0	2.3	20.3	77.4	0	0	999	-0.16	10	5.2
STBH 15	12:15	0	3.5	19.6	76.9	0	0	999	0.87	1	8.3
STBH 16	12:19	0	1.8	19.9	78.3	0	0	999	-0.84	1	3
STBH 22	12:23	0.3	2.5	19.8	77.4	0	0	999	0.67	1.6	3.1
STMBH 5.4	11:35	0	1.8	19.4	78.8	0	0	999	-0.65	1	16
STMBH 5.5	11:37	0	2	20.1	77.9	0	0	999	-0.02	1	17.1
STMBH 5.7	11:40	0	2	19.6	78.4	0	0	999	-0.17	1	7.1

Standard Landfill Borehole Gas Monitoring

Date 26/11/2015
 Weather: slight rain
 Wind conditions: Breezy
 Air Temperature: 9 °C

Instrument: GA 2000
 Serial No: GA10692
 Calibrated To: 26/03/2016
 Operatives AS

Monitoring Point	Time Hrs	CH4 %	CO2 %	O2 %	Balance %	CO ppm	H2S ppm	Baro mb	Rel Pressure mb	Trigger lev CH4 %	Trigger lev CO2
STBH 1	11:52	0	1.2	20	78.8	0	0	1005	-0.2	1	5.4
STBH 1.1	11:49	0	1.9	19.9	78.2	0	0	1005	-0.02	1	5.4
STBH 2.0	11:56	0	1.9	20.1	78	0	0	1005	-0.59	1	7
STBH 2.1	11:44	0	1.9	19.6	78.5	0	0	1005	-0.81	1	7.6
STBH 2.2	11:47	0	1.4	20	78.6	0	0	1005	-0.62	1	5.8
STBH 3.0	12:01	0	3	19.2	77.8	0	0	1005	-0.29	1	6.7
STBH 3.1	11:42	0	1.8	19.9	78.3	0	0	1005	0.39	1	7.8
STBH 4.0	12:05	0	1.6	19.2	79.2	0	0	1005	0.9	10	10.6
STBH 4.1	11:33	0	1.4	19.6	79	0	0	1005	1.29	1	7.1
STBH 4.2	11:38	0	1.2	20	78.8	0	0	1005	1.04	1	8.6
STBH 5.0	12:08	0	1.6	19.5	78.9	0	0	1005	0.63	15	19.4
STBH 5.1	12:12	0	2.3	19.5	78.2	0	0	1005	0.42	1	5.8
STBH 5.2	11:25	0	1.4	19.3	79.3	0	0	1005	0.34	1	9.6
STBH 5.3	11:28	0	1.6	19	79.4	0	0	1005	-0.13	1	6
STBH 6.0	12:30	0	1.6	19.8	78.6	0	0	1005	-0.91	1	5.4
STBH 6.1	11:14	0	2	19.6	78.4	0	0	1005	-0.24	1	5.4
STBH 6.2	11:18	0	2.3	19.6	78.1	0	0	1005	1.28	1	5.4
STBH 6.3	11:22	0	1.6	19.9	78.5	0	0	1005	0.98	1	8.2
STBH 7.0	12:34	0	1.4	20.1	78.5	0	0	1005	0.49	1	6.2
STBH 7.1	11:10	0	2.3	19.8	77.9	0	0	1005	0.54	1	5.5
STBH 9.0	12:45	0	1.8	19.7	78.5	0	0	1005	0.72	1	10.7
STBH 12	12:48	0	1.9	20	78.1	0	0	1005	-0.94	10	6.5
STBH 13	12:52	0	2.6	19.6	77.8	0	0	1005	-0.17	10	5.2
STBH 15	12:56	0	3.2	19.7	77.1	0	0	1005	0.83	1	8.3
STBH 16	13:00	0	1.5	20	78.5	0	0	1005	-0.75	1	3
STBH 22	13:04	0.2	2.3	19.6	77.9	0	0	1005	0.61	1.6	3.1
STMBH 5.4	12:16	0	1.6	19.5	78.9	0	0	1005	-0.7	1	16
STMBH 5.5	12:18	0	1.6	19.9	78.5	0	0	1005	-0.01	1	17.1
STMBH 5.7	12:21	0	2.3	19.2	78.5	0	0	1005	-0.18	1	7.1

Standard Landfill Borehole Gas Monitoring

Date 03/12/2015
 Weather: slight rain
 Wind conditions: Calm
 Air Temperature: 8 °C

Instrument: GA 2000
 Serial No: GA10692
 Calibrated To: 26/03/2016
 Operatives AS

Monitoring Point	Time Hrs	CH4 %	CO2 %	O2 %	Balance %	CO ppm	H2S ppm	Baro mb	Rel Pressure mb	Trigger lev CH4 %	Trigger lev CO2
STBH 1	11:11	0	1.3	19.6	79.1	0	0	1002	-0.16	1	5.4
STBH 1.1	11:08	0	1.5	19.8	78.7	0	0	1002	-0.09	1	5.4
STBH 2.0	11:15	0	2	20	78	0	0	1002	-0.53	1	7
STBH 2.1	11:03	0	1.8	19.8	78.4	0	0	1002	-0.84	1	7.6
STBH 2.2	11:06	0	1.6	19.6	78.8	0	0	1002	-0.65	1	5.8
STBH 3.0	11:20	0	2.5	19.4	78.1	0	0	1002	-0.22	1	6.7
STBH 3.1	11:01	0	1.4	20	78.6	0	0	1002	0.36	1	7.8
STBH 4.0	11:24	0	1.3	19.3	79.4	0	0	1002	0.88	10	10.6
STBH 4.1	10:52	0	1.6	19.9	78.5	0	0	1002	1.28	1	7.1
STBH 4.2	10:57	0	1.3	19.9	78.8	0	0	1002	0.99	1	8.6
STBH 5.0	11:27	0	2	19.7	78.3	0	0	1002	0.63	15	19.4
STBH 5.1	11:31	0	2	19.1	78.9	0	0	1002	0.47	1	5.8
STBH 5.2	10:44	0	1.1	19.6	79.3	0	0	1002	0.34	1	9.6
STBH 5.3	10:47	0	1.9	19.5	78.6	0	0	1002	-0.18	1	6
STBH 6.0	11:49	0	1.4	19.9	78.7	0	0	1002	-0.91	1	5.4
STBH 6.1	10:33	0	2.2	19.7	78.1	0	0	1002	-0.24	1	5.4
STBH 6.2	10:37	0	1.8	19.8	78.4	0	0	1002	1.27	1	5.4
STBH 6.3	10:41	0	1.8	19.6	78.6	0	0	1002	0.99	1	8.2
STBH 7.0	11:53	0	1.3	19	79.7	0	0	1002	0.45	1	6.2
STBH 7.1	10:29	0	2.1	20	77.9	0	0	1002	0.52	1	5.5
STBH 9.0	12:04	0	1.5	19.5	79	0	0	1002	0.67	1	10.7
STBH 12	12:07	0	1.8	19.6	78.6	0	0	1002	-0.91	10	6.5
STBH 13	12:11	0	2.1	19.3	78.6	0	0	1002	-0.15	10	5.2
STBH 15	12:15	0	3	19.8	77.2	0	0	1002	0.85	1	8.3
STBH 16	12:19	0	1.4	20	78.6	0	0	1002	-0.78	1	3
STBH 22	12:23	0.3	2	19.7	78	0	0	1002	0.58	1.6	3.1
STMBH 5.4	11:35	0	1.8	19.6	78.6	0	0	1002	-0.7	1	16
STMBH 5.5	11:37	0	1.4	20	78.6	0	0	1002	0.06	1	17.1
STMBH 5.7	11:40	0	2	19.5	78.5	0	0	1002	-0.12	1	7.1

Standard Landfill Borehole Gas Monitoring

Date 10/12/2015
 Weather: Dry
 Wind conditions: Calm
 Air Temperature: 8 °C

Instrument: GA 2000
 Serial No: GA10692
 Calibrated To: 26/03/2016
 Operatives AS

Monitoring Point	Time Hrs	CH4 %	CO2 %	O2 %	Balance %	CO ppm	H2S ppm	Baro mb	Rel Pressure mb	Trigger lev CH4 %	Trigger lev CO2
STBH 1	11:43	0	1.2	19.9	78.9	0	0	999	-0.12	1	5.4
STBH 1.1	11:40	0	1.3	20.1	78.6	0	0	999	-0.1	1	5.4
STBH 2.0	11:47	0	2.3	19.6	78.1	0	0	999	-0.6	1	7
STBH 2.1	11:35	0	1.7	19.9	78.4	0	0	999	-0.76	1	7.6
STBH 2.2	11:38	0	1.9	19.5	78.6	0	0	999	-0.66	1	5.8
STBH 3.0	11:52	0	2.3	19.6	78.1	0	0	999	-0.3	1	6.7
STBH 3.1	11:33	0	1.5	20	78.5	0	0	999	0.3	1	7.8
STBH 4.0	11:56	0	1.4	19.5	79.1	0	0	999	0.8	10	10.6
STBH 4.1	11:24	0	1.9	19.8	78.3	0	0	999	1.24	1	7.1
STBH 4.2	11:29	0	1.4	20	78.6	0	0	999	1.01	1	8.6
STBH 5.0	11:59	0	2.3	19.6	78.1	0	0	999	0.67	15	19.4
STBH 5.1	12:03	0	2	19.4	78.6	0	0	999	0.48	1	5.8
STBH 5.2	11:16	0	1.5	19.8	78.7	0	0	999	0.25	1	9.6
STBH 5.3	11:19	0	1.8	19.6	78.6	0	0	999	-0.09	1	6
STBH 6.0	12:21	0	1.5	20	78.5	0	0	999	-0.9	1	5.4
STBH 6.1	11:05	0	2	19.8	78.2	0	0	999	-0.32	1	5.4
STBH 6.2	11:09	0	1.6	20.1	78.3	0	0	999	1.28	1	5.4
STBH 6.3	11:13	0	1.9	19.8	78.3	0	0	999	0.98	1	8.2
STBH 7.0	12:25	0	1.4	19.3	79.3	0	0	999	0.44	1	6.2
STBH 7.1	11:01	0	2.4	19.8	77.8	0	0	999	0.53	1	5.5
STBH 9.0	12:36	0	1.6	19.6	78.8	0	0	999	0.64	1	10.7
STBH 12	12:39	0	1.9	19.8	78.3	0	0	999	-0.95	10	6.5
STBH 13	12:43	0	2.5	19.4	78.1	0	0	999	-0.12	10	5.2
STBH 15	12:47	0	2.8	19.5	77.7	0	0	999	0.83	1	8.3
STBH 16	12:51	0	1.3	19.6	79.1	0	0	999	-0.77	1	3
STBH 22	12:55	0.2	1.9	20	77.9	0	0	999	0.64	1.6	3.1
STMBH 5.4	12:07	0	1.5	19.6	78.9	0	0	999	-0.71	1	16
STMBH 5.5	12:09	0	1.2	19.9	78.9	0	0	999	0.02	1	17.1
STMBH 5.7	12:12	0	2.3	19.6	78.1	0	0	999	-0.17	1	7.1

Standard Landfill Borehole Gas Monitoring

Date 17/12/2015
 Weather: Dry
 Wind conditions: Calm
 Air Temperature: 6 °C

Instrument: GA 2000
 Serial No: GA10692
 Calibrated To: 26/03/2016
 Operatives AS

Monitoring Point	Time Hrs	CH4 %	CO2 %	O2 %	Balance %	CO ppm	H2S ppm	Baro mb	Rel Pressure mb	Trigger lev CH4 %	Trigger lev CO2
STBH 1	10:41	0	1.4	19.8	78.8	0	0	999	-0.12	1	5.4
STBH 1.1	10:38	0	1.5	20	78.5	0	0	999	-0.05	1	5.4
STBH 2.0	10:45	0	2.1	19.5	78.4	0	0	999	-0.55	1	7
STBH 2.1	10:33	0	1.6	19.8	78.6	0	0	999	-0.77	1	7.6
STBH 2.2	10:36	0	1.8	19.7	78.5	0	0	999	-0.58	1	5.8
STBH 3.0	10:50	0	2	19.4	78.6	0	0	999	-0.26	1	6.7
STBH 3.1	10:31	0	1.4	19.8	78.8	0	0	999	0.3	1	7.8
STBH 4.0	10:54	0	1.6	19.6	78.8	0	0	999	0.86	10	10.6
STBH 4.1	10:22	0	2.1	19.6	78.3	0	0	999	1.22	1	7.1
STBH 4.2	10:27	0	1.5	19.9	78.6	0	0	999	1.03	1	8.6
STBH 5.0	10:57	0	2.1	19.8	78.1	0	0	999	0.62	15	19.4
STBH 5.1	11:01	0	2.3	19.5	78.2	0	0	999	0.44	1	5.8
STBH 5.2	10:14	0	1.4	19.6	79	0	0	999	0.27	1	9.6
STBH 5.3	10:17	0	1.6	19.7	78.7	0	0	999	-0.1	1	6
STBH 6.0	11:19	0	1.9	19.9	78.2	0	0	999	-0.94	1	5.4
STBH 6.1	10:03	0	2	19.6	78.4	0	0	999	-0.3	1	5.4
STBH 6.2	10:07	0	1.4	20	78.6	0	0	999	1.19	1	5.4
STBH 6.3	10:11	0	1.8	19.9	78.3	0	0	999	1.08	1	8.2
STBH 7.0	11:23	0	1.5	19.4	79.1	0	0	999	0.46	1	6.2
STBH 7.1	09:59	0	2.1	19.5	78.4	0	0	999	0.58	1	5.5
STBH 9.0	11:34	0	1.7	19.3	79	0	0	999	0.64	1	10.7
STBH 12	11:37	0	1.3	20.1	78.6	0	0	999	-0.9	10	6.5
STBH 13	11:41	0	2.1	19.9	78	0	0	999	-0.19	10	5.2
STBH 15	11:45	0	2.3	19.6	78.1	0	0	999	0.87	1	8.3
STBH 16	11:49	0	1.4	19.7	78.9	0	0	999	-0.78	1	3
STBH 22	11:53	0.3	1.8	19.9	78	0	0	999	0.65	1.6	3.1
STMBH 5.4	11:05	0	1.4	20	78.6	0	0	999	-0.64	1	16
STMBH 5.5	11:07	0	1.1	19.6	79.3	0	0	999	0.01	1	17.1
STMBH 5.7	11:10	0	2.1	19.8	78.1	0	0	999	-0.14	1	7.1

Standard Landfill Borehole Gas Monitoring

Date 23/12/2015
 Weather: Dry
 Wind conditions: Calm
 Air Temperature: 5 °C

Instrument: GA 2000
 Serial No: GA10692
 Calibrated To: 26/03/2016
 Operatives AS

Monitoring Point	Time Hrs	CH4 %	CO2 %	O2 %	Balance %	CO ppm	H2S ppm	Baro mb	Rel Pressure mb	Trigger lev CH4 %	Trigger lev CO2
STBH 1	9:45	0	1.6	19.9	78.5	0	0	900	0.04	1	5.4
STBH 1.1	9:42	0	1.9	20	78.1	0	0	900	-0.02	1	5.4
STBH 2.0	9:49	0	2.3	19.6	78.1	0	0	900	-0.47	1	7
STBH 2.1	9:37	0	1.9	19.6	78.5	0	0	900	-0.23	1	7.6
STBH 2.2	9:40	0	2	19.2	78.8	0	0	900	-0.29	1	5.8
STBH 3.0	9:54	0	1.8	19.8	78.4	0	0	900	-0.12	1	6.7
STBH 3.1	9:35	0	1.2	19	79.8	0	0	900	0.27	1	7.8
STBH 4.0	9:58	0	1.8	19.7	78.5	0	0	900	0.47	10	10.6
STBH 4.1	9:26	0	2.2	20	77.8	0	0	900	0.68	1	7.1
STBH 4.2	9:31	0	1.6	20.1	78.3	0	0	900	-0.93	1	8.6
STBH 5.0	10:01	0	2.3	19.2	78.5	0	0	900	0.79	15	19.4
STBH 5.1	10:05	0	2.4	19.8	77.8	0	0	900	0.24	1	5.8
STBH 5.2	9:18	0	1.6	19.3	79.1	0	0	900	0.38	1	9.6
STBH 5.3	9:21	0	1	18.9	80.1	0	0	900	-0.38	1	6
STBH 6.0	10:23	0	2.1	19.6	78.3	0	0	900	-0.13	1	5.4
STBH 6.1	9:07	0	2.3	19.9	77.8	0	0	900	-0.38	1	5.4
STBH 6.2	9:11	0	1.5	19.9	78.6	0	0	900	0.88	1	5.4
STBH 6.3	9:15	0	2	19.9	78.1	0	0	900	0.7	1	8.2
STBH 7.0	10:27	0	1.9	19.8	78.3	0	0	900	0.32	1	6.2
STBH 7.1	9:03	0	0.9	19.9	79.2	0	0	900	0.22	1	5.5
STBH 9.0	10:38	0	1	19.5	79.5	0	0	900	-0.23	1	10.7
STBH 12	10:41	0	1.5	19.3	79.2	0	0	900	0.81	10	6.5
STBH 13	10:45	0	2.6	19.2	78.2	0	0	900	0.06	10	5.2
STBH 15	10:49	0	2.2	19.6	78.2	0	0	900	0.31	1	8.3
STBH 16	10:53	0	1.4	19.2	79.4	0	0	900	-0.19	1	3
STBH 22	10:57	0.5	2	19.9	77.6	0	0	900	0.44	1.6	3.1
STMBH 5.4	10:09	0	1.9	19.8	78.3	0	0	900	-0.24	1	16
STMBH 5.5	10:11	0	1.5	19.9	78.6	0	0	900	-0.14	1	17.1
STMBH 5.7	10:14	0	2.2	20	77.8	0	0	900	-0.95	1	7.1

Standard Landfill Borehole Gas Monitoring

Date 31/12/2015
 Weather: Dry
 Wind conditions: Calm
 Air Temperature: 4 °C

Instrument: GA 2000
 Serial No: GA10692
 Calibrated To: 26/03/2016
 Operatives AS

Monitoring Point	Time Hrs	CH4 %	CO2 %	O2 %	Balance %	CO ppm	H2S ppm	Baro mb	Rel Pressure mb	Trigger lev CH4 %	Trigger lev CO2
STBH 1	9:55	0	1.9	20	78.1	0	0	996	0	1	5.4
STBH 1.1	9:52	0	1.5	19.5	79	0	0	996	0.02	1	5.4
STBH 2.0	9:59	0	2.3	19.6	78.1	0	0	996	-0.51	1	7
STBH 2.1	9:47	0	2.1	19.5	78.4	0	0	996	-0.22	1	7.6
STBH 2.2	9:50	0	1.8	19.8	78.4	0	0	996	-0.31	1	5.8
STBH 3.0	10:04	0	2	19.9	78.1	0	0	996	-0.16	1	6.7
STBH 3.1	9:45	0	1	19.7	79.3	0	0	996	0.26	1	7.8
STBH 4.0	10:08	0	1.9	19.9	78.2	0	0	996	0.42	10	10.6
STBH 4.1	9:36	0	2	19.3	78.7	0	0	996	0.68	1	7.1
STBH 4.2	9:41	0	1.4	19.8	78.8	0	0	996	-1	1	8.6
STBH 5.0	10:11	0	2	19.3	78.7	0	0	996	0.75	15	19.4
STBH 5.1	10:15	0	2.2	19.6	78.2	0	0	996	0.21	1	5.8
STBH 5.2	9:28	0	1.9	19.8	78.3	0	0	996	0.4	1	9.6
STBH 5.3	9:31	0	1.6	19.8	78.6	0	0	996	-0.44	1	6
STBH 6.0	10:33	0	2.3	19.4	78.3	0	0	996	-0.14	1	5.4
STBH 6.1	9:17	0	2.1	20	77.9	0	0	996	-0.37	1	5.4
STBH 6.2	9:21	0	1.8	19.6	78.6	0	0	996	0.97	1	5.4
STBH 6.3	9:25	0	2.1	19.8	78.1	0	0	996	0.71	1	8.2
STBH 7.0	10:37	0	1.5	19.2	79.3	0	0	996	0.32	1	6.2
STBH 7.1	9:13	0	1.3	19.3	79.4	0	0	996	0.17	1	5.5
STBH 9.0	10:48	0	1.9	20.1	78	0	0	996	-0.3	1	10.7
STBH 12	10:51	0	1.6	19.5	78.9	0	0	996	0.79	10	6.5
STBH 13	10:55	0	2.2	19.7	78.1	0	0	996	0.03	10	5.2
STBH 15	10:59	0	2	19.3	78.7	0	0	996	0.32	1	8.3
STBH 16	11:03	0	1.6	19.6	78.8	0	0	996	-0.13	1	3
STBH 22	11:07	0.3	2.3	20	77.4	0	0	996	0.5	1.6	3.1
STMBH 5.4	10:19	0	1.8	20.1	78.1	0	0	996	-0.19	1	16
STMBH 5.5	10:21	0	1.6	19.9	78.5	0	0	996	-0.06	1	17.1
STMBH 5.7	10:24	0	2	20.1	77.9	0	0	996	-0.98	1	7.1

Standard Groundwater Monitoring

Date 20/10/2015
 Weather: dry
 Wind conditions: calm
 Air Temperature: 13 °C

Instrument: Dip-Metre

Operative AS

Monitoring Point	Time Hrs	Dip-Lev Metres	Dip-Base Metres	Water-Lev Metres	
ST GW 1	9:40	25.67	55.77	30.1	DRY
ST GW 2	10:00	9.1	9.1	0	
ST GW 3	11:10	27.98	53.25	25.27	
ST GW 4R	11:40	42.56	53	10.44	
ST GW 5	10:25	2.56	10	7.44	
ST GW 6	10:45	25.58	45.46	19.88	
ST GW 7R	9:10	42.31	71	28.69	

Standard Groundwater Monitoring

Date 17/11/2015

Weather: dry

Wind conditions: calm

Air Temperature: 11 °C

Instrument: Dip-Metre

Operative AS

Monitoring Point	Time Hrs	Dip-Lev Metres	Dip-Base Metres	Water-Lev Metres	
ST GW 1	9:40	22.39	55.77	33.38	DRY
ST GW 2	10:00	9.1	9.1	0	
ST GW 3	11:10	21.54	53.25	31.71	
ST GW 4R	11:40	39.69	53	13.31	
ST GW 5	10:25	2.45	10	7.55	
ST GW 6	10:45	23.01	45.46	22.45	
ST GW 7R	9:10	38.19	71	32.81	

Samples not taken this day.

Standard Groundwater Monitoring

Date 21/12/2015

Weather: dry

Wind conditions: calm

Air Temperature: 5 °C

Instrument: Dip-Metre

Operative AS

Monitoring Point	Time Hrs	Dip-Lev Metres	Dip-Base Metres	Water-Lev Metres	
ST GW 1	9:45	19.98	55.77	35.79	DRY
ST GW 2	9:58	9.1	9.1	0	
ST GW 3	11:10	20.39	53.25	32.86	
ST GW 4R	10:25	39.99	53	13.01	
ST GW 5	9:25	2.51	10	7.49	
ST GW 6	10:50	22.87	45.46	22.59	
ST GW 7R	9:00	39.79	71	31.21	

Samples not taken this day.

Standard Leachate Monitoring

Date 05/10/2015
 Weather: dry
 Wind conditions: breezy
 Air Temperature: 15 °C

Instrument: Dip-Metre

Operative AS

Monitoring Point	Time Hrs	Dip Level (m)	Base Level	Leachate Depth	Pumping Yes/No	Comments
LC2.1	10:15	29.59	31	1.41	YES	Pneumatic pumps
LC3	10:30	3.24	4.84	1.6	YES	Pneumatic pumps
LC4	10:40	17.49	19	1.51	YES	Pneumatic pumps
LC7	11:00	18.5	20.31	1.81	YES	Pneumatic pumps
LS5	11:15	28.62	32	1.35	YES	Electric Pump - Direct To Tanks
LS6	11:30	30.03	33	1.19	YES	Electric Pump - Direct To Tanks
S1	11:45	3.28	4.43	1.15	YES	Pneumatic pumps
S2	12:05	1.61	3.35	1.74	YES	Pneumatic pumps
S3	12:25	3.59	5.09	1.5	YES	Pneumatic pumps

Standard Leachate Monitoring

Date 03/11/2015
 Weather: dry
 Wind conditions: breezy
 Air Temperature: 12 °C

Instrument: Dip-Metre

Operative AS

Monitoring Point	Time Hrs	Dip Level (m)	Base Level	Leachate Depth	Pumping Yes/No	Comments
LC2.1	09:10	29.53	31	1.47	YES	Pneumatic pumps
LC3	9:30	3.19	4.84	1.65	YES	Pneumatic pumps
LC4	9:45	17.51	19	1.49	YES	Pneumatic pumps
LC7	10:15	18.44	20.31	1.87	YES	Pneumatic pumps
LS5	10:32	28.65	32	1.34	YES	Electric Pump - Direct To Tanks
LS6	10:57	30.01	33	1.19	YES	Electric Pump - Direct To Tanks
S1	11:17	3.24	4.43	1.19	YES	Pneumatic pumps
S2	11:42	1.6	3.35	1.75	YES	Pneumatic pumps
S3	12:09	3.62	5.09	1.47	YES	Pneumatic pumps

Standard Leachate Monitoring

Date 02/12/2015
 Weather: Slight Rain
 Wind conditions: Calm
 Air Temperature: 8 °C

Instrument: Dip-Metre

Operative AS

Monitoring Point	Time Hrs	Dip Level (m)	Base Level	Leachate Depth	Pumping Yes/No	Comments
LC2.1	09:20	29.55	31	1.45	YES	Pneumatic pumps
LC3	9:39	3.15	4.84	1.69	YES	Pneumatic pumps
LC4	9:57	17.46	19	1.54	YES	Pneumatic pumps
LC7	10:24	18.49	20.31	1.82	YES	Pneumatic pumps
LS5	10:41	28.66	32	1.33	YES	Electric Pump - Direct To Tanks
LS6	11:10	30.04	33	1.18	YES	Electric Pump - Direct To Tanks
S1	11:29	3.18	4.43	1.25	YES	Pneumatic pumps
S2	11:48	1.64	3.35	1.71	YES	Pneumatic pumps
S3	12:21	3.67	5.09	1.42	YES	Pneumatic pumps



Flintshire County Council
Waste Management Services
Brookhill Landfill Site
Pinfold Industrial Estate
Buckley
Flintshire
CH7 3PL

Attention: Paul Murphy

CERTIFICATE OF ANALYSIS

Date: 06 January 2016
Customer: H_FLINTCCO_BUC
Sample Delivery Group (SDG): 151202-106
Your Reference:
Location: Standard Annual
Report No: 344344

We received 10 samples on Wednesday December 02, 2015 and 10 of these samples were scheduled for analysis which was completed on Wednesday January 06, 2016. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

Should this report require incorporation into client reports, it must be used in its entirety and not simply with the data sections alone.

All chemical testing (unless subcontracted) is performed at ALcontrol Hawarden Laboratories.

Approved By:

Sonia McWhan

Operations Manager





SDG:	151202-106	Location:	Standard Annual	Order Number:	
Job:	H_FLINTCCO_BUC-10	Customer:	Flintshire County Council	Report Number:	344344
Client Reference:		Attention:	Paul Murphy	Superseded Report:	

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
12558998	GW1		0.00 - 0.00	30/11/2015
12558999	GW3		0.00 - 0.00	30/11/2015
12559001	GW5		0.00 - 0.00	30/11/2015
12559002	GW6		0.00 - 0.00	30/11/2015
12559003	GW7		0.00 - 0.00	30/11/2015
12559000	GW4R		0.00 - 0.00	30/11/2015
12559004	SW1		0.00 - 0.00	30/11/2015
12559005	SW2		0.00 - 0.00	30/11/2015
12559006	SW4		0.00 - 0.00	30/11/2015
12559007	SW5		0.00 - 0.00	30/11/2015

Only received samples which have had analysis scheduled will be shown on the following pages.



CERTIFICATE OF ANALYSIS

SDG: 151202-106
Job: H_FLINTCCO_BUC-10
Client Reference:

Location: Standard Annual
Customer: Flintshire County Council
Attention: Paul Murphy

Order Number:
Report Number: 344344
Superseded Report:

LIQUID Results Legend X Test N No Determination Possible	Lab Sample No(s)		Customer Sample Reference		AGS Reference		Depth (m)		Container	
	12559004		SW1				0.00 - 0.00		250ml BOD (AL E21) 1000ml glass bottle	
	12559000		GW4R				0.00 - 0.00		250ml BOD (AL E21) 1000ml glass bottle	
	12559003		GW7				0.00 - 0.00		250ml BOD (AL E21) 1000ml glass bottle	
	12559002		GW6				0.00 - 0.00		250ml BOD (AL E21) 1000ml glass bottle	
Acid Herbicides (W)*	All	NDPs: 0 Tests: 10							250ml BOD (AL E21) 1000ml glass bottle	
Alkalinity as CaCO3	All	NDPs: 0 Tests: 10							250ml BOD (AL E21) 1000ml glass bottle	
Ammoniacal Nitrogen	All	NDPs: 0 Tests: 10							250ml BOD (AL E21) 1000ml glass bottle	
Anions by ion Chromatography	All	NDPs: 0 Tests: 10							250ml BOD (AL E21) 1000ml glass bottle	
COD Unfiltered	All	NDPs: 0 Tests: 10							250ml BOD (AL E21) 1000ml glass bottle	
Conductivity (at 20 deg.C)	All	NDPs: 0 Tests: 10							250ml BOD (AL E21) 1000ml glass bottle	
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 10							250ml BOD (AL E21) 1000ml glass bottle	
Dissolved Metals by ICP-MS	All	NDPs: 0 Tests: 10							250ml BOD (AL E21) 1000ml glass bottle	
Dissolved Oxygen by Probe	All	NDPs: 0 Tests: 10							250ml BOD (AL E21) 1000ml glass bottle	
GRO by GC-FID (W)	All	NDPs: 0 Tests: 10							250ml BOD (AL E21) 1000ml glass bottle	
Mercury Dissolved	All	NDPs: 0 Tests: 10							250ml BOD (AL E21) 1000ml glass bottle	
Metals by iCap-OES Dissolved (W)	All	NDPs: 0 Tests: 10							250ml BOD (AL E21) 1000ml glass bottle	
Mineral Oil C10-40 Aqueous (W)	All	NDPs: 0 Tests: 10							250ml BOD (AL E21) 1000ml glass bottle	
OC, OP Pesticides and Triazine Herb	All	NDPs: 0 Tests: 10							250ml BOD (AL E21) 1000ml glass bottle	
Organotins in Aqueous Samples	All	NDPs: 0 Tests: 10							250ml BOD (AL E21) 1000ml glass bottle	



CERTIFICATE OF ANALYSIS

SDG: 151202-106
Job: H_FLINTCCO_BUC-10
Client Reference:

Location: Standard Annual
Customer: Flintshire County Council
Attention: Paul Murphy

Order Number:
Report Number: 344344
Superseded Report:

LIQUID Results Legend X Test N No Determination Possible	Lab Sample No(s)		Customer Sample Reference		AGS Reference		Depth (m)		Container	
	12559004		SW1				0.00 - 0.00		Dissolved Metals Pr 250ml BOD (ALE21) 1000ml glass bottle NaOH (ALE245) H2SO4 (ALE244) Dissolved Metals Pr 250ml BOD (ALE21) 1000ml glass bottle NaOH (ALE245)	
	12559000		GW4R				0.00 - 0.00		Dissolved Metals Pr 250ml BOD (ALE21) 1000ml glass bottle NaOH (ALE245)	
	12559003		GW7				0.00 - 0.00		Dissolved Metals Pr 250ml BOD (ALE21) 1000ml glass bottle NaOH (ALE245)	
	12559002		GW6				0.00 - 0.00		Dissolved Metals Pr 250ml BOD (ALE21) 1000ml glass bottle NaOH (ALE245)	
pH Value	All	NDPs: 0 Tests: 10							Dissolved Metals Pr 250ml BOD (ALE21) 1000ml glass bottle NaOH (ALE245)	
SVOC MS (W) - Aqueous	All	NDPs: 0 Tests: 10							Dissolved Metals Pr 250ml BOD (ALE21) 1000ml glass bottle NaOH (ALE245)	
Total Organic and Inorganic Carbon	All	NDPs: 0 Tests: 10							Dissolved Metals Pr 250ml BOD (ALE21) 1000ml glass bottle NaOH (ALE245)	
VOC MS (W)	All	NDPs: 0 Tests: 10							Dissolved Metals Pr 250ml BOD (ALE21) 1000ml glass bottle NaOH (ALE245)	



CERTIFICATE OF ANALYSIS

SDG: 151202-106
Job: H_FLINTCCO_BUC-10
Client Reference:

Location: Standard Annual
Customer: Flintshire County Council
Attention: Paul Murphy

Order Number:
Report Number: 344344
Superseded Report:

LIQUID Results Legend X Test N No Determination Possible	Lab Sample No(s)		12559004		12559005		12559006		12559007
	Customer Sample Reference		SW1		SW2		SW4		SW5
	AGS Reference								
	Depth (m)		0.00 - 0.00		0.00 - 0.00		0.00 - 0.00		0.00 - 0.00
	Container		H2SO4 (ALE244) NaOH (ALE245) 1000ml glass bottle 1l plastic (ALE221) 250ml BOD (ALE21)		H2SO4 (ALE244) NaOH (ALE245) 1000ml glass bottle 1l plastic (ALE221) 250ml BOD (ALE21)		H2SO4 (ALE244) NaOH (ALE245) 1000ml glass bottle 1l plastic (ALE221) 250ml BOD (ALE21)		H2SO4 (ALE244) NaOH (ALE245) 1000ml glass bottle 1l plastic (ALE221) 250ml BOD (ALE21)
Acid Herbicides (W)*	All	NDPs: 0 Tests: 10	X		X		X		
Alkalinity as CaCO3	All	NDPs: 0 Tests: 10		X		X		X	
Ammoniacal Nitrogen	All	NDPs: 0 Tests: 10	X		X		X		X
Anions by ion Chromatography	All	NDPs: 0 Tests: 10		X		X		X	
COD Unfiltered	All	NDPs: 0 Tests: 10		X		X		X	
Conductivity (at 20 deg.C)	All	NDPs: 0 Tests: 10		X		X		X	
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 10	X		X		X		X
Dissolved Metals by ICP-MS	All	NDPs: 0 Tests: 10		X		X		X	
Dissolved Oxygen by Probe	All	NDPs: 0 Tests: 10		X		X		X	
GRO by GC-FID (W)	All	NDPs: 0 Tests: 10	X		X		X		
Mercury Dissolved	All	NDPs: 0 Tests: 10			X		X		X
Metals by iCap-OES Dissolved (W)	All	NDPs: 0 Tests: 10		X		X		X	
Mineral Oil C10-40 Aqueous (W)	All	NDPs: 0 Tests: 10	X		X		X		
OC, OP Pesticides and Triazine Herb	All	NDPs: 0 Tests: 10	X		X		X		
Organotins in Aqueous Samples	All	NDPs: 0 Tests: 10	X		X		X		



SDG: 151202-106
Job: H_FLINTCCO_BUC-10
Client Reference:

Location: Standard Annual
Customer: Flintshire County Council
Attention: Paul Murphy

Order Number:
Report Number: 344344
Superseded Report:

LIQUID Results Legend X Test N No Determination Possible	Lab Sample No(s)		12559004	12559005	12559006	12559007
	Customer Sample Reference		SW1	SW2	SW4	SW5
	AGS Reference					
	Depth (m)		0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
	Container		NaOH (ALE245) H2SO4 (ALE244) Dissolved Metals Pr 250ml BOD (ALE21 11plastic (ALE221) 1000ml glass bottle NaOH (ALE245) H2SO4 (ALE244) Dissolved Metals Pr 250ml BOD (ALE21 11plastic (ALE221) 1000ml glass bottle NaOH (ALE245) H2SO4 (ALE244)	NaOH (ALE245) H2SO4 (ALE244) Dissolved Metals Pr 250ml BOD (ALE21 11plastic (ALE221) 1000ml glass bottle NaOH (ALE245) H2SO4 (ALE244) Dissolved Metals Pr 250ml BOD (ALE21 11plastic (ALE221) 1000ml glass bottle NaOH (ALE245) H2SO4 (ALE244)	NaOH (ALE245) H2SO4 (ALE244) Dissolved Metals Pr 250ml BOD (ALE21 11plastic (ALE221) 1000ml glass bottle NaOH (ALE245) H2SO4 (ALE244) Dissolved Metals Pr 250ml BOD (ALE21 11plastic (ALE221) 1000ml glass bottle NaOH (ALE245) H2SO4 (ALE244)	NaOH (ALE245) H2SO4 (ALE244) Dissolved Metals Pr 250ml BOD (ALE21 11plastic (ALE221) 1000ml glass bottle NaOH (ALE245) H2SO4 (ALE244) Dissolved Metals Pr 250ml BOD (ALE21 11plastic (ALE221) 1000ml glass bottle NaOH (ALE245) H2SO4 (ALE244)
pH Value	All	NDPs: 0 Tests: 10		X	X	X
SVOC MS (W) - Aqueous	All	NDPs: 0 Tests: 10	X	X	X	
Total Organic and Inorganic Carbon	All	NDPs: 0 Tests: 10	X	X	X	
VOC MS (W)	All	NDPs: 0 Tests: 10	X	X	X	



CERTIFICATE OF ANALYSIS

SDG: 151202-106
Job: H_FLINTCCO_BUC-10
Client Reference:

Location: Standard Annual
Customer: Flintshire County Council
Attention: Paul Murphy

Order Number:
Report Number: 344344
Superseded Report:

Results Legend		Customer Sample R	GW1		GW3		GW5		GW6		GW7		GW4R	
#	ISO17025 accredited.		0.00 - 0.00		0.00 - 0.00		0.00 - 0.00		0.00 - 0.00		0.00 - 0.00		0.00 - 0.00	
M	mCERTS accredited.	Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref Lab Sample No.(s) AGS Reference	Water(GW/SW) 30/11/2015		Water(GW/SW) 30/11/2015		Water(GW/SW) 30/11/2015		Water(GW/SW) 30/11/2015		Water(GW/SW) 30/11/2015		Water(GW/SW) 30/11/2015	
aq	Aqueous / settled sample.		02/12/2015		02/12/2015		02/12/2015		02/12/2015		02/12/2015		02/12/2015	
diss.filt	Dissolved / filtered sample.		151202-106		151202-106		151202-106		151202-106		151202-106		151202-106	
tot.unfilt	Total / unfiltered sample.		12558998		12558999		12559001		12559002		12559003		12559000	
*	Subcontracted test.													
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery													
(F)	Trigger breach confirmed													
1-5&*\$@	Sample deviation (see appendix)													
Component	LOD/Units	Method												
2,4-D*	<0.00005 mg/l	SUB	<0.0001	#	<0.00005	#	<0.00005	#	<0.00005	#	<0.00005	#	<0.00005	#
2,4-DB*	<0.00005 mg/l	SUB	<0.0001	#	<0.00005	#	<0.00005	#	<0.00005	#	<0.00005	#	<0.00005	#
2,4,5-T*	<0.00005 mg/l	SUB	<0.0001	#	<0.00005	#	<0.00005	#	<0.00005	#	<0.00005	#	<0.00005	#
Bentazone*	<0.00005 mg/l	SUB	<0.0001	#	<0.00005	#	<0.00005	#	<0.00005	#	<0.00005	#	<0.00005	#
Bromoxynil*	<0.00005 mg/l	SUB	<0.0001	#	<0.00005	#	<0.00005	#	<0.00005	#	<0.00005	#	<0.00005	#
Dicamba*	<0.00005 mg/l	SUB	<0.0001	#	<0.00005	#	<0.00005	#	<0.00005	#	<0.00005	#	<0.00005	#
Dichloroprop*	<0.00005 mg/l	SUB	<0.0001	#	<0.00005	#	<0.00005	#	<0.0004	#	<0.00005	#	<0.00005	#
Fenoprop*	<0.00005 mg/l	SUB	<0.0001	#	<0.00005	#	<0.00005	#	<0.00005	#	<0.00005	#	<0.00005	#
Ioxynil*	<0.00005 mg/l	SUB	<0.0001	#	<0.00005	#	<0.00005	#	<0.00005	#	<0.00005	#	<0.00005	#
MCPA*	<0.00005 mg/l	SUB	<0.0001	#	<0.00005	#	<0.00005	#	<0.00005	#	<0.00005	#	<0.00005	#
4-(4-Chloro-o-tolyloxy) butyric acid (MCPB)*	<0.00005 mg/l	SUB	<0.0001	#	<0.00005	#	<0.00005	#	<0.00005	#	<0.00005	#	<0.00005	#
Mecoprop*	<0.00004 mg/l	SUB	<0.00008	#	<0.00004	#	<0.00004	#	0.00267	#	<0.00004	#	<0.00004	#
Triclopyr*	<0.00005 mg/l	SUB	<0.0001	#	<0.00005	#	<0.00005	#	<0.00005	#	<0.00005	#	<0.00005	#
Alkalinity, Total as CaCO3	<2 mg/l	TM043	44.7	#	104	#	228	#	35.7	#	311	#	106	#
Oxygen, dissolved	<0.3 mg/l	TM046	7.33	#	2.41	#	0.3	#	4.39	#	3.78	#	5.01	#
Organic Carbon, Total	<3 mg/l	TM090	<3	#	6.71	#	7.41	#	27.2	#	<3	#	4.69	#
Ammoniacal Nitrogen as N	<0.2 mg/l	TM099	<0.2	#	0.215	#	1.13	#	64.2	#	1.12	#	<0.2	#
COD, unfiltered	<7 mg/l	TM107	83.3	#	24	#	101	#	152	#	17.2	#	20.1	#
Conductivity @ 20 deg.C	<0.005 mS/cm	TM120	20	#	0.73	#	0.467	#	2.83	#	0.902	#	0.873	#
Cadmium (diss.filt)	<0.0001 mg/l	TM152	<0.0001	#	<0.0001	#	0.000197	#	0.00325	#	<0.0001	#	0.000163	#
Chromium (diss.filt)	<0.00022 mg/l	TM152	0.00203	#	0.00458	#	0.0325	#	0.00521	#	0.00487	#	0.00231	#
Copper (diss.filt)	<0.00085 mg/l	TM152	0.00165	#	0.00133	#	0.0047	#	0.00693	#	0.000914	#	0.00238	#
Lead (diss.filt)	<0.00002 mg/l	TM152	<0.00002	#	<0.00002	#	0.000585	#	0.000517	#	<0.00002	#	0.000047	#
Manganese (diss.filt)	<0.00004 mg/l	TM152	0.241	#	0.912	#	28	#	8.26	#	0.982	#	0.781	#
Nickel (diss.filt)	<0.00015 mg/l	TM152	0.00156	#	0.0153	#	0.0513	#	0.129	#	0.0144	#	0.0396	#
Zinc (diss.filt)	<0.00041 mg/l	TM152	0.0301	#	0.0325	#	0.216	#	0.147	#	0.00773	#	0.0471	#
Mineral oil >C10 C40 (aq)	<0.01 mg/l	TM172	<0.01	#	<0.01	#	<0.01	#	<0.01	#	<0.01	#	<0.01	#
Mercury (diss.filt)	<0.00001 mg/l	TM183	<0.00001	#	<0.00001	#	<0.00001	#	<0.00001	#	<0.00001	#	<0.00001	#
Chloride	<0.08 mg/l	TM226	45.4	#	67.6	#	10.6	#	373	#	51.1	#	53.5	#
Sulphate	<0.1 mg/l	TM226	200	#	192	#	21.5	#	324	#	157	#	346	#
Total Oxidised Nitrogen as N	<0.02 mg/l	TM226	0.639	#	<0.01	#	0.116	#	176	#	<0.01	#	0.326	#
Cyanide, Total	<0.05 mg/l	TM227	<0.05	#	<0.05	#	<0.05	#	<0.05	#	<0.05	#	<0.05	#

Order Number:
Report Number: 344344
Superseded Report:

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CERTIFICATE OF ANALYSIS

SDG: 151202-106
Job: H_FLINTCCO_BUC-10
Client Reference:

Location: Standard Annual
Customer: Flintshire County Council
Attention: Paul Murphy

Order Number:
Report Number: 344344
Superseded Report:

Results Legend		Customer Sample R <
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Order Number:
Report Number: 344344
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Order Number:
Report Number: 344344
Superseded Report:

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Order Number:
Report Number: 344344
Superseded Report:

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CERTIFICATE OF ANALYSIS

SDG: 151202-106
Job: H_FLINTCCO_BUC-10
Client Reference:

Location: Standard Annual
Customer: Flintshire County Council
Attention: Paul Murphy

Order Number:
Report Number: 344344
Superseded Report:

OC, OP Pesticides and Triazine Herb

Results Legend		Customer Sample R	GW1	GW3	GW5	GW6	GW7	GW4R
#	ISO17025 accredited.							
M	mCERTS accredited.	Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref Lab Sample No.(s) AGS Reference	0.00 - 0.00 Water(GW/SW) 30/11/2015 02/12/2015 151202-106 12558998	0.00 - 0.00 Water(GW/SW) 30/11/2015 02/12/2015 151202-106 12558999	0.00 - 0.00 Water(GW/SW) 30/11/2015 02/12/2015 151202-106 12559001	0.00 - 0.00 Water(GW/SW) 30/11/2015 02/12/2015 151202-106 12559002	0.00 - 0.00 Water(GW/SW) 30/11/2015 02/12/2015 151202-106 12559003	0.00 - 0.00 Water(GW/SW) 30/11/2015 02/12/2015 151202-106 12559000
aq	Aqueous / settled sample.							
diss.filt	Dissolved / filtered sample.							
tot.unfilt	Total / unfiltered sample.							
*	Subcontracted test.							
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery							
(F)	Trigger breach confirmed							
1-5&*\$@	Sample deviation (see appendix)							
Component	LOD/Units	Method						
Atrazine	<0.001 mg/l	TM231	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Simazine	<0.001 mg/l	TM231	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Dichlorvos	<0.00001 mg/l	TM231	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001
Mevinphos	<0.00001 mg/l	TM231	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001
Tecnazene	<0.00001 mg/l	TM231	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001
Hexachlorobenzene	<0.00001 mg/l	TM231	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001
Trifluralin	<0.00001 mg/l	TM231	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001
alpha-Hexachlorocyclohexane (HCH / Lindane)	<0.00001 mg/l	TM231	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001
Quintozone (PCNB)	<0.00001 mg/l	TM231	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001
Diazinon	<0.00001 mg/l	TM231	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001
Triallate	<0.00001 mg/l	TM231	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001
Etrimphos	<0.00001 mg/l	TM231	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001
gamma-Hexachlorocyclohexane (HCH / Lindane)	<0.00001 mg/l	TM231	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001
Propetamphos	<0.00001 mg/l	TM231	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001
Heptachlor	<0.00001 mg/l	TM231	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001
Chlorpyrifos methyl	<0.00001 mg/l	TM231	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001
Dimethoate	<0.00001 mg/l	TM231	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001
Aldrin	<0.00001 mg/l	TM231	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001
Chlorothalonil	<0.00001 mg/l	TM231	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001
Pirimiphos-methyl	<0.00001 mg/l	TM231	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001
beta-Hexachlorocyclohexane (HCH / Lindane)	<0.00001 mg/l	TM231	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001
Chlorpyrifos	<0.00001 mg/l	TM231	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001
Telodrin	<0.00001 mg/l	TM231	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001
Methyl parathion	<0.00001 mg/l	TM231	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001
Isodrin	<0.00001 mg/l	TM231	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001
Malathion	<0.00001 mg/l	TM231	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001
Fenthion	<0.00001 mg/l	TM231	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001
Fenitrothion	<0.00001 mg/l	TM231	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001
Heptachlor epoxide	<0.00001 mg/l	TM231	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001
Triadimefon	<0.00001 mg/l	TM231	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001
Pendimethalin	<0.00001 mg/l	TM231	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001
Parathion	<0.00001 mg/l	TM231	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001



CERTIFICATE OF ANALYSIS

SDG: 151202-106
Job: H_FLINTCCO_BUC-10
Client Reference:

Location: Standard Annual
Customer: Flintshire County Council
Attention: Paul Murphy

Order Number:
Report Number: 344344
Superseded Report:

OC, OP Pesticides and Triazine Herb

Results Legend		Customer Sample R	SW1	SW2	SW4	SW5		
#	ISO17025 accredited.							
M	mCERTS accredited.	Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref Lab Sample No.(s) AGS Reference	0.00 - 0.00 Water(GW/SW) 30/11/2015	0.00 - 0.00 Water(GW/SW) 30/11/2015	0.00 - 0.00 Water(GW/SW) 30/11/2015	0.00 - 0.00 Water(GW/SW) 30/11/2015		
aq	Aqueous / settled sample.							
diss.filt	Dissolved / filtered sample.							
tot.unfilt	Total / unfiltered sample.							
*	Subcontracted test.							
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery							
(F)	Trigger breach confirmed							
1-5&*\$@	Sample deviation (see appendix)							
Component	LOD/Units	Method						
Atrazine	<0.001 mg/l	TM231	<0.001	<0.001	<0.001	<0.001		
Simazine	<0.001 mg/l	TM231	<0.001	<0.001	<0.001	<0.001		
Dichlorvos	<0.00001 mg/l	TM231	<0.00001	<0.00001	<0.00001	<0.00001		
Mevinphos	<0.00001 mg/l	TM231	<0.00001	<0.00001	<0.00001	<0.00001		
Tecnazene	<0.00001 mg/l	TM231	<0.00001	<0.00001	<0.00001	<0.00001		
Hexachlorobenzene	<0.00001 mg/l	TM231	<0.00001	<0.00001	<0.00001	<0.00001		
Trifluralin	<0.00001 mg/l	TM231	<0.00001	<0.00001	<0.00001	<0.00001		
alpha-Hexachlorocyclohexane (HCH / Lindane)	<0.00001 mg/l	TM231	<0.00001	<0.00001	<0.00001	<0.00001		
Quintozone (PCNB)	<0.00001 mg/l	TM231	<0.00001	<0.00001	<0.00001	<0.00001		
Diazinon	<0.00001 mg/l	TM231	<0.00001	<0.00001	<0.00001	<0.00001		
Triallate	<0.00001 mg/l	TM231	<0.00001	<0.00001	<0.00001	<0.00001		
Etrimphos	<0.00001 mg/l	TM231	<0.00001	<0.00001	<0.00001	<0.00001		
gamma-Hexachlorocyclohexane (HCH / Lindane)	<0.00001 mg/l	TM231	<0.00001	<0.00001	<0.00001	<0.00001		
Propetamphos	<0.00001 mg/l	TM231	<0.00001	<0.00001	<0.00001	<0.00001		
Heptachlor	<0.00001 mg/l	TM231	<0.00001	<0.00001	<0.00001	<0.00001		
Chlorpyrifos methyl	<0.00001 mg/l	TM231	<0.00001	<0.00001	<0.00001	<0.00001		
Dimethoate	<0.00001 mg/l	TM231	<0.00001	<0.00001	<0.00001	<0.00001		
Aldrin	<0.00001 mg/l	TM231	<0.00001	<0.00001	<0.00001	<0.00001		
Chlorothalonil	<0.00001 mg/l	TM231	<0.00001	<0.00001	<0.00001	<0.00001		
Pirimiphos-methyl	<0.00001 mg/l	TM231	<0.00001	<0.00001	<0.00001	<0.00001		
beta-Hexachlorocyclohexane (HCH / Lindane)	<0.00001 mg/l	TM231	<0.00001	<0.00001	<0.00001	<0.00001		
Chlorpyrifos	<0.00001 mg/l	TM231	<0.00001	<0.00001	<0.00001	<0.00001		
Telodrin	<0.00001 mg/l	TM231	<0.00001	<0.00001	<0.00001	<0.00001		
Methyl parathion	<0.00001 mg/l	TM231	<0.00001	<0.00001	<0.00001	<0.00001		
Isodrin	<0.00001 mg/l	TM231	<0.00001	<0.00001	<0.00001	<0.00001		
Malathion	<0.00001 mg/l	TM231	<0.00001	<0.00001	<0.00001	<0.00001		
Fenthion	<0.00001 mg/l	TM231	<0.00001	<0.00001	<0.00001	<0.00001		
Fenitrothion	<0.00001 mg/l	TM231	<0.00001	<0.00001	<0.00001	<0.00001		
Heptachlor epoxide	<0.00001 mg/l	TM231	<0.00001	<0.00001	<0.00001	<0.00001		
Triadimefon	<0.00001 mg/l	TM231	<0.00001	<0.00001	<0.00001	<0.00001		
Pendimethalin	<0.00001 mg/l	TM231	<0.00001	<0.00001	<0.00001	<0.00001		
Parathion	<0.00001 mg/l	TM231	<0.00001	<0.00001	<0.00001	<0.00001		

Order Number:
Report Number: 344344
Superseded Report:

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CERTIFICATE OF ANALYSIS

SDG: 151202-106
Job: H_FLINTCCO_BUC-10
Client Reference:

Location: Standard Annual
Customer: Flintshire County Council
Attention: Paul Murphy

Order Number:
Report Number: 344344
Superseded Report:

SVOC MS (W) - Aqueous

Results Legend		Customer Sample R	GW1		GW3		GW5		GW6		GW7		GW4R	
#	ISO17025 accredited.		0.00 - 0.00		0.00 - 0.00		0.00 - 0.00		0.00 - 0.00		0.00 - 0.00		0.00 - 0.00	
M	mCERTS accredited.	Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref Lab Sample No.(s) AGS Reference	Water(GW/SW) 30/11/2015		Water(GW/SW) 30/11/2015		Water(GW/SW) 30/11/2015		Water(GW/SW) 30/11/2015		Water(GW/SW) 30/11/2015		Water(GW/SW) 30/11/2015	
aq	Aqueous / settled sample.		02/12/2015		02/12/2015		02/12/2015		02/12/2015		02/12/2015		02/12/2015	
diss.filt	Dissolved / filtered sample.		151202-106		151202-106		151202-106		151202-106		151202-106		151202-106	
tot.unfilt	Total / unfiltered sample.		12558998		12558999		12559001		12559002		12559003		12559000	
*	Subcontracted test.													
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery													
(F)	Trigger breach confirmed													
1-5&*\$@	Sample deviation (see appendix)													
Component	LOD/Units	Method												
1,2,4-Trichlorobenzene (aq)	<0.001 mg/l	TM176	<0.004	#	<0.001	#	<0.001	#	<0.001	#	<0.001	#	<0.001	#
1,2-Dichlorobenzene (aq)	<0.001 mg/l	TM176	<0.004	#	<0.001	#	<0.001	#	<0.001	#	<0.001	#	<0.001	#
1,3-Dichlorobenzene (aq)	<0.001 mg/l	TM176	<0.004	#	<0.001	#	<0.001	#	<0.001	#	<0.001	#	<0.001	#
1,4-Dichlorobenzene (aq)	<0.001 mg/l	TM176	<0.004	#	<0.001	#	<0.001	#	<0.001	#	<0.001	#	<0.001	#
2,4,5-Trichlorophenol (aq)	<0.001 mg/l	TM176	<0.004	#	<0.001	#	<0.001	#	<0.001	#	<0.001	#	<0.001	#
2,4,6-Trichlorophenol (aq)	<0.001 mg/l	TM176	<0.004	#	<0.001	#	<0.001	#	<0.001	#	<0.001	#	<0.001	#
2,4-Dichlorophenol (aq)	<0.001 mg/l	TM176	<0.004	#	<0.001	#	<0.001	#	<0.001	#	<0.001	#	<0.001	#
2,4-Dimethylphenol (aq)	<0.001 mg/l	TM176	<0.004	#	<0.001	#	<0.001	#	<0.001	#	<0.001	#	<0.001	#
2,4-Dinitrotoluene (aq)	<0.001 mg/l	TM176	<0.004	#	<0.001	#	<0.001	#	<0.001	#	<0.001	#	<0.001	#
2,6-Dinitrotoluene (aq)	<0.001 mg/l	TM176	<0.004	#	<0.001	#	<0.001	#	<0.001	#	<0.001	#	<0.001	#
2-Chloronaphthalene (aq)	<0.001 mg/l	TM176	<0.004	#	<0.001	#	<0.001	#	<0.001	#	<0.001	#	<0.001	#
2-Chlorophenol (aq)	<0.001 mg/l	TM176	<0.004	#	<0.001	#	<0.001	#	<0.001	#	<0.001	#	<0.001	#
2-Methylnaphthalene (aq)	<0.001 mg/l	TM176	<0.004	#	<0.001	#	<0.001	#	<0.001	#	<0.001	#	<0.001	#
2-Methylphenol (aq)	<0.001 mg/l	TM176	<0.004	#	<0.001	#	<0.001	#	<0.001	#	<0.001	#	<0.001	#
2-Nitroaniline (aq)	<0.001 mg/l	TM176	<0.004	#	<0.001	#	<0.001	#	<0.001	#	<0.001	#	<0.001	#
2-Nitrophenol (aq)	<0.001 mg/l	TM176	<0.004	#	<0.001	#	<0.001	#	<0.001	#	<0.001	#	<0.001	#
3-Nitroaniline (aq)	<0.001 mg/l	TM176	<0.004	#	<0.001	#	<0.001	#	<0.001	#	<0.001	#	<0.001	#
4-Bromophenylphenylether (aq)	<0.001 mg/l	TM176	<0.004	#	<0.001	#	<0.001	#	<0.001	#	<0.001	#	<0.001	#
4-Chloro-3-methylphenol (aq)	<0.001 mg/l	TM176	<0.004	#	<0.001	#	<0.001	#	<0.001	#	<0.001	#	<0.001	#
4-Chloroaniline (aq)	<0.001 mg/l	TM176	<0.004	#	<0.001	#	<0.001	#	<0.001	#	<0.001	#	<0.001	#
4-Chlorophenylphenylether (aq)	<0.001 mg/l	TM176	<0.004	#	<0.001	#	<0.001	#	<0.001	#	<0.001	#	<0.001	#
4-Methylphenol (aq)	<0.001 mg/l	TM176	<0.004	#	<0.001	#	<0.001	#	<0.001	#	<0.001	#	<0.001	#
4-Nitroaniline (aq)	<0.001 mg/l	TM176	<0.004	#	<0.001	#	<0.001	#	<0.001	#	<0.001	#	<0.001	#
4-Nitrophenol (aq)	<0.001 mg/l	TM176	<0.004	#	<0.001	#	<0.001	#	<0.001	#	<0.001	#	<0.001	#
Azobenzene (aq)	<0.001 mg/l	TM176	<0.004	#	<0.001	#	<0.001	#	<0.001	#	<0.001	#	<0.001	#
Acenaphthylene (aq)	<0.001 mg/l	TM176	<0.004	#	<0.001	#	<0.001	#	<0.001	#	<0.001	#	<0.001	#
Acenaphthene (aq)	<0.001 mg/l	TM176	<0.004	#	<0.001	#	<0.001	#	<0.001	#	<0.001	#	<0.001	#
Anthracene (aq)	<0.001 mg/l	TM176	<0.004	#	<0.001	#	<0.001	#	<0.001	#	<0.001	#	<0.001	#
bis(2-Chloroethyl)ether (aq)	<0.001 mg/l	TM176	<0.004	#	<0.001	#	<0.001	#	<0.001	#	<0.001	#	<0.001	#
bis(2-Chloroethoxy)methane (aq)	<0.001 mg/l	TM176	<0.004	#	<0.001	#	<0.001	#	<0.001	#	<0.001	#	<0.001	#
bis(2-Ethylhexyl) phthalate (aq)	<0.002 mg/l	TM176	<0.008	#	<0.002	#	<0.002	#	<0.002	#	<0.002	#	<0.002	#
Butylbenzyl phthalate (aq)	<0.001 mg/l	TM176	<0.004	#	<0.001	#	<0.001	#	<0.001	#	<0.001	#	<0.001	#



CERTIFICATE OF ANALYSIS

SDG: 151202-106
Job: H_FLINTCCO_BUC-10
Client Reference:

Location: Standard Annual
Customer: Flintshire County Council
Attention: Paul Murphy

Order Number:
Report Number: 344344
Superseded Report:

SVOC MS (W) - Aqueous

Results Legend		Customer Sample R Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref Lab Sample No.(s) AGS Reference	GW1	GW3	GW5	GW6	GW7	GW4R
#	ISO17025 accredited.		0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
M	mCERTS accredited.		Water(GW/SW)	Water(GW/SW)	Water(GW/SW)	Water(GW/SW)	Water(GW/SW)	Water(GW/SW)
aq	Aqueous / settled sample.		30/11/2015	30/11/2015	30/11/2015	30/11/2015	30/11/2015	30/11/2015
diss.filt	Dissolved / filtered sample.							
tot.unfilt	Total / unfiltered sample.							
*	Subcontracted test.							
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery		02/12/2015	02/12/2015	02/12/2015	02/12/2015	02/12/2015	02/12/2015
(F)	Trigger breach confirmed		151202-106	151202-106	151202-106	151202-106	151202-106	151202-106
1-5&+5@	Sample deviation (see appendix)		12558998	12558999	12559001	12559002	12559003	12559000
Component	LOD/Units	Method						
Benzo(a)anthracene (aq)	<0.001 mg/l	TM176	<0.004 #	<0.001 #	<0.001 #	<0.001 #	<0.001 #	<0.001 #
Benzo(b)fluoranthene (aq)	<0.001 mg/l	TM176	<0.004 #	<0.001 #	<0.001 #	<0.001 #	<0.001 #	<0.001 #
Benzo(k)fluoranthene (aq)	<0.001 mg/l	TM176	<0.004 #	<0.001 #	<0.001 #	<0.001 #	<0.001 #	<0.001 #
Benzo(a)pyrene (aq)	<0.001 mg/l	TM176	<0.004 #	<0.001 #	<0.001 #	<0.001 #	<0.001 #	<0.001 #
Benzo(g,h,i)perylene (aq)	<0.001 mg/l	TM176	<0.004 #	<0.001 #	<0.001 #	<0.001 #	<0.001 #	<0.001 #
Carbazole (aq)	<0.001 mg/l	TM176	<0.004 #	<0.001 #	<0.001 #	<0.001 #	<0.001 #	<0.001 #
Chrysene (aq)	<0.001 mg/l	TM176	<0.004 #	<0.001 #	<0.001 #	<0.001 #	<0.001 #	<0.001 #
Dibenzofuran (aq)	<0.001 mg/l	TM176	<0.004 #	<0.001 #	<0.001 #	<0.001 #	<0.001 #	<0.001 #
n-Dibutyl phthalate (aq)	<0.001 mg/l	TM176	<0.004 #	<0.001 #	<0.001 #	<0.001 #	<0.001 #	<0.001 #
Diethyl phthalate (aq)	<0.001 mg/l	TM176	<0.004 #	<0.001 #	<0.001 #	<0.001 #	<0.001 #	<0.001 #
Dibenzo(a,h)anthracene (aq)	<0.001 mg/l	TM176	<0.004 #	<0.001 #	<0.001 #	<0.001 #	<0.001 #	<0.001 #
Dimethyl phthalate (aq)	<0.001 mg/l	TM176	<0.004 #	<0.001 #	<0.001 #	<0.001 #	<0.001 #	<0.001 #
n-Dioctyl phthalate (aq)	<0.005 mg/l	TM176	<0.02 #	<0.005 #	<0.005 #	<0.005 #	<0.005 #	<0.005 #
Fluoranthene (aq)	<0.001 mg/l	TM176	<0.004 #	<0.001 #	<0.001 #	<0.001 #	<0.001 #	<0.001 #
Fluorene (aq)	<0.001 mg/l	TM176	<0.004 #	<0.001 #	<0.001 #	<0.001 #	<0.001 #	<0.001 #
Hexachlorobenzene (aq)	<0.001 mg/l	TM176	<0.004 #	<0.001 #	<0.001 #	<0.001 #	<0.001 #	<0.001 #
Hexachlorobutadiene (aq)	<0.001 mg/l	TM176	<0.004 #	<0.001 #	<0.001 #	<0.001 #	<0.001 #	<0.001 #
Pentachlorophenol (aq)	<0.001 mg/l	TM176	<0.004	<0.001	<0.001	<0.001	<0.001	<0.001
Phenol (aq)	<0.001 mg/l	TM176	<0.004	<0.001	<0.001	<0.001	<0.001	<0.001
n-Nitroso-n-dipropylamine (aq)	<0.001 mg/l	TM176	<0.004 #	<0.001 #	<0.001 #	<0.001 #	<0.001 #	<0.001 #
Hexachloroethane (aq)	<0.001 mg/l	TM176	<0.004 #	<0.001 #	<0.001 #	<0.001 #	<0.001 #	<0.001 #
Nitrobenzene (aq)	<0.001 mg/l	TM176	<0.004 #	<0.001 #	<0.001 #	<0.001 #	<0.001 #	<0.001 #
Naphthalene (aq)	<0.001 mg/l	TM176	<0.004 #	<0.001 #	<0.001 #	<0.001 #	<0.001 #	<0.001 #
Isophorone (aq)	<0.001 mg/l	TM176	<0.004 #	<0.001 #	<0.001 #	<0.001 #	<0.001 #	<0.001 #
Hexachlorocyclopentadiene (aq)	<0.001 mg/l	TM176	<0.004	<0.001	<0.001	<0.001	<0.001	<0.001
Phenanthrene (aq)	<0.001 mg/l	TM176	<0.004 #	<0.001 #	<0.001 #	<0.001 #	<0.001 #	<0.001 #
Indeno(1,2,3-cd)pyrene (aq)	<0.001 mg/l	TM176	<0.004 #	<0.001 #	<0.001 #	<0.001 #	<0.001 #	<0.001 #
Pyrene (aq)	<0.001 mg/l	TM176	<0.004 #	<0.001 #	<0.001 #	<0.001 #	<0.001 #	<0.001 #



CERTIFICATE OF ANALYSIS

SDG: 151202-106
Job: H_FLINTCCO_BUC-10
Client Reference:

Location: Standard Annual
Customer: Flintshire County Council
Attention: Paul Murphy

Order Number:
Report Number: 344344
Superseded Report:

SVOC MS (W) - Aqueous

Results Legend		Customer Sample R Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref Lab Sample No.(s) AGS Reference	SW1	SW2	SW4	SW5		
#	ISO17025 accredited.		0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00		
M	mCERTS accredited.		Water(GW/SW)	Water(GW/SW)	Water(GW/SW)	Water(GW/SW)		
aq	Aqueous / settled sample.		30/11/2015	30/11/2015	30/11/2015	30/11/2015		
diss.filt	Dissolved / filtered sample.							
tot.unfilt	Total / unfiltered sample.		02/12/2015	02/12/2015	02/12/2015	02/12/2015		
+	Subcontracted test.		151202-106	151202-106	151202-106	151202-106		
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery		12559004	12559005	12559006	12559007		
(F)	Trigger breach confirmed							
1-5&*\$@	Sample deviation (see appendix)							
Component	LOD/Units	Method						
1,2,4-Trichlorobenzene (aq)	<0.001 mg/l	TM176	<0.02 #	<0.001 #	<0.001 #	<0.001 #		
1,2-Dichlorobenzene (aq)	<0.001 mg/l	TM176	<0.02 #	<0.001 #	<0.001 #	<0.001 #		
1,3-Dichlorobenzene (aq)	<0.001 mg/l	TM176	<0.02 #	<0.001 #	<0.001 #	<0.001 #		
1,4-Dichlorobenzene (aq)	<0.001 mg/l	TM176	<0.02	<0.001	<0.001	<0.001		
2,4,5-Trichlorophenol (aq)	<0.001 mg/l	TM176	<0.02 #	<0.001 #	<0.001 #	<0.001 #		
2,4,6-Trichlorophenol (aq)	<0.001 mg/l	TM176	<0.02 #	<0.001 #	<0.001 #	<0.001 #		
2,4-Dichlorophenol (aq)	<0.001 mg/l	TM176	<0.02 #	<0.001 #	<0.001 #	<0.001 #		
2,4-Dimethylphenol (aq)	<0.001 mg/l	TM176	<0.02 #	<0.001 #	<0.001 #	<0.001 #		
2,4-Dinitrotoluene (aq)	<0.001 mg/l	TM176	<0.02 #	<0.001 #	<0.001 #	<0.001 #		
2,6-Dinitrotoluene (aq)	<0.001 mg/l	TM176	<0.02 #	<0.001 #	<0.001 #	<0.001 #		
2-Chloronaphthalene (aq)	<0.001 mg/l	TM176	<0.02 #	<0.001 #	<0.001 #	<0.001 #		
2-Chlorophenol (aq)	<0.001 mg/l	TM176	<0.02 #	<0.001 #	<0.001 #	<0.001 #		
2-Methylnaphthalene (aq)	<0.001 mg/l	TM176	<0.02 #	<0.001 #	<0.001 #	<0.001 #		
2-Methylphenol (aq)	<0.001 mg/l	TM176	<0.02 #	<0.001 #	<0.001 #	<0.001 #		
2-Nitroaniline (aq)	<0.001 mg/l	TM176	<0.02 #	<0.001 #	<0.001 #	<0.001 #		
2-Nitrophenol (aq)	<0.001 mg/l	TM176	<0.02 #	<0.001 #	<0.001 #	<0.001 #		
3-Nitroaniline (aq)	<0.001 mg/l	TM176	<0.02 #	<0.001 #	<0.001 #	<0.001 #		
4-Bromophenylphenylether (aq)	<0.001 mg/l	TM176	<0.02 #	<0.001 #	<0.001 #	<0.001 #		
4-Chloro-3-methylphenol (aq)	<0.001 mg/l	TM176	<0.02 #	<0.001 #	<0.001 #	<0.001 #		
4-Chloroaniline (aq)	<0.001 mg/l	TM176	<0.02	<0.001	<0.001	<0.001		
4-Chlorophenylphenylether (aq)	<0.001 mg/l	TM176	<0.02 #	<0.001 #	<0.001 #	<0.001 #		
4-Methylphenol (aq)	<0.001 mg/l	TM176	<0.02 #	<0.001 #	<0.001 #	<0.001 #		
4-Nitroaniline (aq)	<0.001 mg/l	TM176	<0.02 #	<0.001 #	<0.001 #	<0.001 #		
4-Nitrophenol (aq)	<0.001 mg/l	TM176	<0.02	<0.001	<0.001	<0.001		
Azobenzene (aq)	<0.001 mg/l	TM176	<0.02 #	<0.001 #	<0.001 #	<0.001 #		
Acenaphthylene (aq)	<0.001 mg/l	TM176	<0.02 #	<0.001 #	<0.001 #	<0.001 #		
Acenaphthene (aq)	<0.001 mg/l	TM176	<0.02 #	<0.001 #	<0.001 #	<0.001 #		
Anthracene (aq)	<0.001 mg/l	TM176	<0.02 #	<0.001 #	<0.001 #	<0.001 #		
bis(2-Chloroethyl)ether (aq)	<0.001 mg/l	TM176	<0.02 #	<0.001 #	<0.001 #	<0.001 #		
bis(2-Chloroethoxy)methane (aq)	<0.001 mg/l	TM176	<0.02 #	<0.001 #	<0.001 #	<0.001 #		
bis(2-Ethylhexyl) phthalate (aq)	<0.002 mg/l	TM176	<0.04 #	<0.002 #	<0.002 #	<0.002 #		
Butylbenzyl phthalate (aq)	<0.001 mg/l	TM176	<0.02 #	<0.001 #	<0.001 #	<0.001 #		



CERTIFICATE OF ANALYSIS

SDG: 151202-106
Job: H_FLINTCCO_BUC-10
Client Reference:

Location: Standard Annual
Customer: Flintshire County Council
Attention: Paul Murphy

Order Number:
Report Number: 344344
Superseded Report:

SVOC MS (W) - Aqueous

Results Legend			Customer Sample R		SW1	SW2	SW4	SW5		
#	ISO17025 accredited.		Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref Lab Sample No.(s) AGS Reference		0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00		
M	mCERTS accredited.				Water(GW/SW)	Water(GW/SW)	Water(GW/SW)	Water(GW/SW)		
aq	Aqueous / settled sample.				30/11/2015	30/11/2015	30/11/2015	30/11/2015		
dis.filt	Dissolved / filtered sample.									
tot.unfilt	Total / unfiltered sample.				02/12/2015	02/12/2015	02/12/2015	02/12/2015		
*	Subcontracted test.				151202-106	151202-106	151202-106	151202-106		
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery				12559004	12559005	12559006	12559007		
(F)	Trigger breach confirmed									
1-5&+5@	Sample deviation (see appendix)									
Component	LOD/Units	Method								
Benzo(a)anthracene (aq)	<0.001 mg/l	TM176			<0.02 #	<0.001 #	<0.001 #	<0.001 #		
Benzo(b)fluoranthene (aq)	<0.001 mg/l	TM176			<0.02 #	<0.001 #	<0.001 #	<0.001 #		
Benzo(k)fluoranthene (aq)	<0.001 mg/l	TM176			<0.02 #	<0.001 #	<0.001 #	<0.001 #		
Benzo(a)pyrene (aq)	<0.001 mg/l	TM176			<0.02 #	<0.001 #	<0.001 #	<0.001 #		
Benzo(g,h,i)perylene (aq)	<0.001 mg/l	TM176			<0.02 #	<0.001 #	<0.001 #	<0.001 #		
Carbazole (aq)	<0.001 mg/l	TM176			<0.02 #	<0.001 #	<0.001 #	<0.001 #		
Chrysene (aq)	<0.001 mg/l	TM176			<0.02 #	<0.001 #	<0.001 #	<0.001 #		
Dibenzofuran (aq)	<0.001 mg/l	TM176			<0.02 #	<0.001 #	<0.001 #	<0.001 #		
n-Dibutyl phthalate (aq)	<0.001 mg/l	TM176			<0.02 #	<0.001 #	<0.001 #	<0.001 #		
Diethyl phthalate (aq)	<0.001 mg/l	TM176			<0.02 #	<0.001 #	<0.001 #	<0.001 #		
Dibenzo(a,h)anthracene (aq)	<0.001 mg/l	TM176			<0.02 #	<0.001 #	<0.001 #	<0.001 #		
Dimethyl phthalate (aq)	<0.001 mg/l	TM176			<0.02 #	<0.001 #	<0.001 #	<0.001 #		
n-Dioctyl phthalate (aq)	<0.005 mg/l	TM176			<0.1 #	<0.005 #	<0.005 #	<0.005 #		
Fluoranthene (aq)	<0.001 mg/l	TM176			<0.02 #	<0.001 #	<0.001 #	<0.001 #		
Fluorene (aq)	<0.001 mg/l	TM176			<0.02 #	<0.001 #	<0.001 #	<0.001 #		
Hexachlorobenzene (aq)	<0.001 mg/l	TM176			<0.02 #	<0.001 #	<0.001 #	<0.001 #		
Hexachlorobutadiene (aq)	<0.001 mg/l	TM176			<0.02 #	<0.001 #	<0.001 #	<0.001 #		
Pentachlorophenol (aq)	<0.001 mg/l	TM176			<0.02	<0.001	<0.001	<0.001		
Phenol (aq)	<0.001 mg/l	TM176			<0.02	<0.001	<0.001	<0.001		
n-Nitroso-n-dipropylamine (aq)	<0.001 mg/l	TM176			<0.02 #	<0.001 #	<0.001 #	<0.001 #		
Hexachloroethane (aq)	<0.001 mg/l	TM176			<0.02 #	<0.001 #	<0.001 #	<0.001 #		
Nitrobenzene (aq)	<0.001 mg/l	TM176			<0.02 #	<0.001 #	<0.001 #	<0.001 #		
Naphthalene (aq)	<0.001 mg/l	TM176			<0.02 #	<0.001 #	<0.001 #	<0.001 #		
Isophorone (aq)	<0.001 mg/l	TM176			<0.02 #	<0.001 #	<0.001 #	<0.001 #		
Hexachlorocyclopentadiene (aq)	<0.001 mg/l	TM176			<0.02	<0.001	<0.001	<0.001		
Phenanthrene (aq)	<0.001 mg/l	TM176			<0.02 #	<0.001 #	<0.001 #	<0.001 #		
Indeno(1,2,3-cd)pyrene (aq)	<0.001 mg/l	TM176			<0.02 #	<0.001 #	<0.001 #	<0.001 #		
Pyrene (aq)	<0.001 mg/l	TM176			<0.02 #	<0.001 #	<0.001 #	<0.001 #		



CERTIFICATE OF ANALYSIS

SDG: 151202-106
Job: H_FLINTCCO_BUC-10
Client Reference:

Location: Standard Annual
Customer: Flintshire County Council
Attention: Paul Murphy

Order Number:
Report Number: 344344
Superseded Report:

VOC MS (W)

Results Legend		Customer Sample R	GW1		GW3		GW5		GW6		GW7		GW4R	
#	ISO17025 accredited.		0.00 - 0.00		0.00 - 0.00		0.00 - 0.00		0.00 - 0.00		0.00 - 0.00		0.00 - 0.00	
M	mCERTS accredited.	Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref Lab Sample No.(s) AGS Reference	Water(GW/SW) 30/11/2015		Water(GW/SW) 30/11/2015		Water(GW/SW) 30/11/2015		Water(GW/SW) 30/11/2015		Water(GW/SW) 30/11/2015		Water(GW/SW) 30/11/2015	
aq	Aqueous / settled sample.		02/12/2015		02/12/2015		02/12/2015		02/12/2015		02/12/2015		02/12/2015	
diss.filt	Dissolved / filtered sample.		151202-106		151202-106		151202-106		151202-106		151202-106		151202-106	
tot.unfilt	Total / unfiltered sample.		12558998		12558999		12559001		12559002		12559003		12559000	
*	Subcontracted test.													
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery													
(F)	Trigger breach confirmed													
1-5&5@	Sample deviation (see appendix)													
Component	LOD/Units	Method												
Dibromofluoromethane**	%	TM208	126	1	128	2	125	1	118	1	118	1	134	1
Toluene-d8**	%	TM208	98.6	1	97.7	2	97.2	1	98.1	1	96.8	1	96.6	1
4-Bromofluorobenzene**	%	TM208	95.1	1	95.3	2	91.1	1	94.6	1	93.4	1	96.5	1
Dichlorodifluoromethane	<0.001 mg/l	TM208	<0.001	1	<0.001	2	<0.001	1	<0.001	1	<0.001	1	<0.001	1
Chloromethane	<0.001 mg/l	TM208	<0.001	1 #	<0.001	2 #	<0.001	1 #	<0.001	1 #	<0.001	1 #	<0.001	1 #
Vinyl chloride	<0.001 mg/l	TM208	<0.001	1 #	<0.001	2 #	<0.001	1 #	<0.001	1 #	<0.001	1 #	<0.001	1 #
Bromomethane	<0.001 mg/l	TM208	<0.001	1 #	<0.001	2 #	<0.001	1 #	<0.001	1 #	<0.001	1 #	<0.001	1 #
Chloroethane	<0.001 mg/l	TM208	<0.001	1 #	<0.001	2 #	<0.001	1 #	<0.001	1 #	<0.001	1 #	<0.001	1 #
Trichlorofluoromethane	<0.001 mg/l	TM208	<0.001	1 #	<0.001	2 #	<0.001	1 #	<0.001	1 #	<0.001	1 #	<0.001	1 #
1,1-Dichloroethene	<0.001 mg/l	TM208	<0.001	1 #	<0.001	2 #	<0.001	1 #	<0.001	1 #	<0.001	1 #	<0.001	1 #
Carbon disulphide	<0.001 mg/l	TM208	<0.001	1 #	<0.001	2 #	<0.001	1 #	<0.001	1 #	<0.001	1 #	<0.001	1 #
Dichloromethane	<0.003 mg/l	TM208	<0.003	1 #	<0.003	2 #	<0.003	1 #	<0.003	1 #	<0.003	1 #	<0.003	1 #
Methyl tertiary butyl ether (MTBE)	<0.001 mg/l	TM208	<0.001	1 #	<0.001	2 #	<0.001	1 #	<0.001	1 #	<0.001	1 #	<0.001	1 #
trans-1,2-Dichloroethene	<0.001 mg/l	TM208	<0.001	1 #	<0.001	2 #	<0.001	1 #	<0.001	1 #	<0.001	1 #	<0.001	1 #
1,1-Dichloroethane	<0.001 mg/l	TM208	<0.001	1 #	<0.001	2 #	<0.001	1 #	<0.001	1 #	<0.001	1 #	<0.001	1 #
cis-1,2-Dichloroethene	<0.001 mg/l	TM208	<0.001	1 #	<0.001	2 #	<0.001	1 #	<0.001	1 #	<0.001	1 #	<0.001	1 #
2,2-Dichloropropane	<0.001 mg/l	TM208	<0.001	1	<0.001	2	<0.001	1	<0.001	1	<0.001	1	<0.001	1
Bromochloromethane	<0.001 mg/l	TM208	<0.001	1 #	<0.001	2 #	<0.001	1 #	<0.001	1 #	<0.001	1 #	<0.001	1 #
Chloroform	<0.001 mg/l	TM208	<0.001	1 #	<0.001	2 #	<0.001	1 #	<0.001	1 #	<0.001	1 #	<0.001	1 #
1,1,1-Trichloroethane	<0.001 mg/l	TM208	<0.001	1 #	<0.001	2 #	<0.001	1 #	<0.001	1 #	<0.001	1 #	<0.001	1 #
1,1-Dichloropropene	<0.001 mg/l	TM208	<0.001	1 #	<0.001	2 #	<0.001	1 #	0.00105	1 #	<0.001	1 #	<0.001	1 #
Carbontetrachloride	<0.001 mg/l	TM208	<0.001	1 #	<0.001	2 #	<0.001	1 #	<0.001	1 #	<0.001	1 #	<0.001	1 #
1,2-Dichloroethane	<0.001 mg/l	TM208	<0.001	1	<0.001	2	<0.001	1	<0.001	1	<0.001	1	<0.001	1
Benzene	<0.001 mg/l	TM208	<0.001	1 #	<0.001	2 #	<0.001	1 #	<0.001	1 #	<0.001	1 #	<0.001	1 #
Trichloroethene	<0.001 mg/l	TM208	<0.001	1 #	<0.001	2 #	<0.001	1 #	<0.001	1 #	<0.001	1 #	<0.001	1 #
1,2-Dichloropropane	<0.001 mg/l	TM208	<0.001	1 #	<0.001	2 #	<0.001	1 #	<0.001	1 #	<0.001	1 #	<0.001	1 #
Dibromomethane	<0.001 mg/l	TM208	<0.001	1 #	<0.001	2 #	<0.001	1 #	<0.001	1 #	<0.001	1 #	<0.001	1 #
Bromodichloromethane	<0.001 mg/l	TM208	<0.001	1 #	<0.001	2 #	<0.001	1 #	<0.001	1 #	<0.001	1 #	<0.001	1 #
cis-1,3-Dichloropropene	<0.001 mg/l	TM208	<0.001	1 #	<0.001	2 #	<0.001	1 #	<0.001	1 #	<0.001	1 #	<0.001	1 #
Toluene	<0.001 mg/l	TM208	<0.001	1 #	<0.001	2 #	<0.001	1 #	<0.001	1 #	<0.001	1 #	<0.001	1 #
trans-1,3-Dichloropropene	<0.001 mg/l	TM208	<0.001	1 #	<0.001	2 #	<0.001	1 #	<0.001	1 #	<0.001	1 #	<0.001	1 #
1,1,2-Trichloroethane	<0.001 mg/l	TM208	<0.001	1 #	<0.001	2 #	<0.001	1 #	<0.001	1 #	<0.001	1 #	<0.001	1 #



CERTIFICATE OF ANALYSIS

SDG: 151202-106
Job: H_FLINTCCO_BUC-10
Client Reference:

Location: Standard Annual
Customer: Flintshire County Council
Attention: Paul Murphy

Order Number:
Report Number: 344344
Superseded Report:

VOC MS (W)

Results Legend			Customer Sample R		GW1	GW3	GW5	GW6	GW7	GW4R
#	ISO17025 accredited.		Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref Lab Sample No.(s) AGS Reference		0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
M	mCERTS accredited.				Water(GW/SW)	Water(GW/SW)	Water(GW/SW)	Water(GW/SW)	Water(GW/SW)	Water(GW/SW)
aq	Aqueous / settled sample.				30/11/2015	30/11/2015	30/11/2015	30/11/2015	30/11/2015	30/11/2015
dis.filt	Dissolved / filtered sample.									
tot.unfilt	Total / unfiltered sample.									
*	Subcontracted test.									
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery				02/12/2015	02/12/2015	02/12/2015	02/12/2015	02/12/2015	02/12/2015
(F)	Trigger breach confirmed				151202-106	151202-106	151202-106	151202-106	151202-106	151202-106
1-5&+5@	Sample deviation (see appendix)				12558998	12558999	12559001	12559002	12559003	12559000
Component	LOD/Units	Method								
1,3-Dichloropropane	<0.001 mg/l	TM208			<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
					1 #	2 #	1 #	1 #	1 #	1 #
Tetrachloroethene	<0.001 mg/l	TM208			<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
					1 #	2 #	1 #	1 #	1 #	1 #
Dibromochloromethane	<0.001 mg/l	TM208			<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
					1 #	2 #	1 #	1 #	1 #	1 #
1,2-Dibromoethane	<0.001 mg/l	TM208			<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
					1 #	2 #	1 #	1 #	1 #	1 #
Chlorobenzene	<0.001 mg/l	TM208			<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
					1 #	2 #	1 #	1 #	1 #	1 #
1,1,1,2-Tetrachloroethane	<0.001 mg/l	TM208			<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
					1 #	2 #	1 #	1 #	1 #	1 #
Ethylbenzene	<0.001 mg/l	TM208			<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
					1 #	2 #	1 #	1 #	1 #	1 #
m,p-Xylene	<0.001 mg/l	TM208			<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
					1 #	2 #	1 #	1 #	1 #	1 #
o-Xylene	<0.001 mg/l	TM208			<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
					1 #	2 #	1 #	1 #	1 #	1 #
Styrene	<0.001 mg/l	TM208			<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
					1 #	2 #	1 #	1 #	1 #	1 #
Bromoform	<0.001 mg/l	TM208			<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
					1 #	2 #	1 #	1 #	1 #	1 #
Isopropylbenzene	<0.001 mg/l	TM208			<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
					1 #	2 #	1 #	1 #	1 #	1 #
1,1,2,2-Tetrachloroethane	<0.001 mg/l	TM208			<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
					1	2	1	1	1	1
1,2,3-Trichloropropane	<0.001 mg/l	TM208			<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
					1 #	2 #	1 #	1 #	1 #	1 #
Bromobenzene	<0.001 mg/l	TM208			<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
					1 #	2 #	1 #	1 #	1 #	1 #
Propylbenzene	<0.001 mg/l	TM208			<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
					1 #	2 #	1 #	1 #	1 #	1 #
2-Chlorotoluene	<0.001 mg/l	TM208			<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
					1 #	2 #	1 #	1 #	1 #	1 #
1,3,5-Trimethylbenzene	<0.001 mg/l	TM208			<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
					1 #	2 #	1 #	1 #	1 #	1 #
4-Chlorotoluene	<0.001 mg/l	TM208			<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
					1 #	2 #	1 #	1 #	1 #	1 #
tert-Butylbenzene	<0.001 mg/l	TM208			<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
					1 #	2 #	1 #	1 #	1 #	1 #
1,2,4-Trimethylbenzene	<0.001 mg/l	TM208			<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
					1 #	2 #	1 #	1 #	1 #	1 #
sec-Butylbenzene	<0.001 mg/l	TM208			<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
					1 #	2 #	1 #	1 #	1 #	1 #
4-iso-Propyltoluene	<0.001 mg/l	TM208			<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
					1 #	2 #	1 #	1 #	1 #	1 #
1,3-Dichlorobenzene	<0.001 mg/l	TM208			<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
					1 #	2 #	1 #	1 #	1 #	1 #
1,4-Dichlorobenzene	<0.001 mg/l	TM208			<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
					1 #	2 #	1 #	1 #	1 #	1 #
n-Butylbenzene	<0.001 mg/l	TM208			<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
					1 #	2 #	1 #	1 #	1 #	1 #
1,2-Dichlorobenzene	<0.001 mg/l	TM208			<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
					1	2	1	1	1	1
1,2-Dibromo-3-chloroprop ane	<0.001 mg/l	TM208			<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
					1	2	1	1	1	1
1,2,4-Trichlorobenzene	<0.001 mg/l	TM208			<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
					1 #	2 #	1 #	1 #	1 #	1 #
Hexachlorobutadiene	<0.001 mg/l	TM208			<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
					1 #	2 #	1 #	1 #	1 #	1 #
tert-Amyl methyl ether (TAME)	<0.001 mg/l	TM208			<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
					1 #	2 #	1 #	1 #	1 #	1 #
Naphthalene	<0.001 mg/l	TM208			<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
					1 #	2 #	1 #	1 #	1 #	1 #

CERTIFICATE OF ANALYSIS

SDG: 151202-106
Job: H_FLINTCCO_BUC-10
Client Reference:

Location: Standard Annual
Customer: Flintshire County Council
Attention: Paul Murphy

Order Number:
Report Number: 344344
Superseded Report:

VOC MS (W)

[illegible]



CERTIFICATE OF ANALYSIS

SDG: 151202-106
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Client Reference:

Location: Standard Annual
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VOC MS (W)

Results Legend		Customer Sample R	SW1	SW2	SW4	SW5		
#	ISO17025 accredited.							
M	mCERTS accredited.	Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref Lab Sample No.(s) AGS Reference	0.00 - 0.00 Water(GW/SW) 30/11/2015 02/12/2015 151202-106 12559004	0.00 - 0.00 Water(GW/SW) 30/11/2015 02/12/2015 151202-106 12559005	0.00 - 0.00 Water(GW/SW) 30/11/2015 02/12/2015 151202-106 12559006	0.00 - 0.00 Water(GW/SW) 30/11/2015 02/12/2015 151202-106 12559007		
aq	Aqueous / settled sample.							
diss.filt	Dissolved / filtered sample.							
tot.unfilt	Total / unfiltered sample.							
*	Subcontracted test.							
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery							
(F)	Trigger breach confirmed							
1-5&\$@	Sample deviation (see appendix)							
Component	LOD/Units	Method						
Dibromofluoromethane**	%	TM208	158 1	131 1	117 2	135 1		
Toluene-d8**	%	TM208	95.2 1	98.2 1	97.3 2	97.2 1		
4-Bromofluorobenzene**	%	TM208	80.9 1	96.3 1	94.6 2	96.8 1		
Dichlorodifluoromethane	<0.001 mg/l	TM208	<0.001 1	<0.001 1	<0.001 2	<0.001 1		
Chloromethane	<0.001 mg/l	TM208	<0.001 1 #	<0.001 1 #	<0.001 2 #	<0.001 1 #		
Vinyl chloride	<0.001 mg/l	TM208	<0.001 1 #	<0.001 1 #	<0.001 2 #	<0.001 1 #		
Bromomethane	<0.001 mg/l	TM208	<0.001 1 #	<0.001 1 #	<0.001 2 #	<0.001 1 #		
Chloroethane	<0.001 mg/l	TM208	<0.001 1 #	<0.001 1 #	<0.001 2 #	<0.001 1 #		
Trichlorofluoromethane	<0.001 mg/l	TM208	<0.001 1 #	<0.001 1 #	<0.001 2 #	<0.001 1 #		
1,1-Dichloroethene	<0.001 mg/l	TM208	<0.001 1 #	<0.001 1 #	<0.001 2 #	<0.001 1 #		
Carbon disulphide	<0.001 mg/l	TM208	0.00335 1 #	<0.001 1 #	<0.001 2 #	<0.001 1 #		
Dichloromethane	<0.003 mg/l	TM208	<0.003 1 #	<0.003 1 #	<0.003 2 #	<0.003 1 #		
Methyl tertiary butyl ether (MTBE)	<0.001 mg/l	TM208	<0.001 1 #	<0.001 1 #	<0.001 2 #	<0.001 1 #		
trans-1,2-Dichloroethene	<0.001 mg/l	TM208	<0.001 1 #	<0.001 1 #	<0.001 2 #	<0.001 1 #		
1,1-Dichloroethane	<0.001 mg/l	TM208	<0.001 1 #	<0.001 1 #	<0.001 2 #	<0.001 1 #		
cis-1,2-Dichloroethene	<0.001 mg/l	TM208	<0.001 1 #	<0.001 1 #	<0.001 2 #	<0.001 1 #		
2,2-Dichloropropane	<0.001 mg/l	TM208	<0.001 1	<0.001 1	<0.001 2	<0.001 1		
Bromochloromethane	<0.001 mg/l	TM208	<0.001 1 #	<0.001 1 #	<0.001 2 #	<0.001 1 #		
Chloroform	<0.001 mg/l	TM208	<0.001 1 #	<0.001 1 #	<0.001 2 #	<0.001 1 #		
1,1,1-Trichloroethane	<0.001 mg/l	TM208	<0.001 1 #	<0.001 1 #	<0.001 2 #	<0.001 1 #		
1,1-Dichloropropene	<0.001 mg/l	TM208	<0.001 1 #	<0.001 1 #	<0.001 2 #	<0.001 1 #		
Carbontetrachloride	<0.001 mg/l	TM208	<0.001 1 #	<0.001 1 #	<0.001 2 #	<0.001 1 #		
1,2-Dichloroethane	<0.001 mg/l	TM208	<0.001 1	<0.001 1	<0.001 2	<0.001 1		
Benzene	<0.001 mg/l	TM208	<0.001 1 #	<0.001 1 #	<0.001 2 #	<0.001 1 #		
Trichloroethene	<0.001 mg/l	TM208	<0.001 1 #	<0.001 1 #	<0.001 2 #	<0.001 1 #		
1,2-Dichloropropane	<0.001 mg/l	TM208	<0.001 1 #	<0.001 1 #	<0.001 2 #	<0.001 1 #		
Dibromomethane	<0.001 mg/l	TM208	<0.001 1 #	<0.001 1 #	<0.001 2 #	<0.001 1 #		
Bromodichloromethane	<0.001 mg/l	TM208	<0.001 1 #	<0.001 1 #	<0.001 2 #	<0.001 1 #		
cis-1,3-Dichloropropene	<0.001 mg/l	TM208	<0.001 1 #	<0.001 1 #	<0.001 2 #	<0.001 1 #		
Toluene	<0.001 mg/l	TM208	<0.001 1 #	<0.001 1 #	<0.001 2 #	<0.001 1 #		
trans-1,3-Dichloropropene	<0.001 mg/l	TM208	<0.001 1 #	<0.001 1 #	<0.001 2 #	<0.001 1 #		
1,1,2-Trichloroethane	<0.001 mg/l	TM208	<0.001 1 #	<0.001 1 #	<0.001 2 #	<0.001 1 #		



CERTIFICATE OF ANALYSIS

SDG: 151202-106
Job: H_FLINTCCO_BUC-10
Client Reference:

Location: Standard Annual
Customer: Flintshire County Council
Attention: Paul Murphy

Order Number:
Report Number: 344344
Superseded Report:

VOC MS (W)

Results Legend		Customer Sample R	SW1	SW2	SW4	SW5		
#	ISO17025 accredited.							
M	mCERTS accredited.	Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref Lab Sample No.(s) AGS Reference	0.00 - 0.00 Water(GW/SW) 30/11/2015 02/12/2015 151202-106 12559004	0.00 - 0.00 Water(GW/SW) 30/11/2015 02/12/2015 151202-106 12559005	0.00 - 0.00 Water(GW/SW) 30/11/2015 02/12/2015 151202-106 12559006	0.00 - 0.00 Water(GW/SW) 30/11/2015 02/12/2015 151202-106 12559007		
aq	Aqueous / settled sample.							
dis.filt	Dissolved / filtered sample.							
tot.unfilt	Total / unfiltered sample.							
*	Subcontracted test.							
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery							
(F)	Trigger breach confirmed							
1-5&+5@	Sample deviation (see appendix)							
Component	LOD/Units	Method						
1,3-Dichloropropane	<0.001 mg/l	TM208	<0.001 1 #	<0.001 1 #	<0.001 2 #	<0.001 1 #		
Tetrachloroethene	<0.001 mg/l	TM208	<0.001 1 #	<0.001 1 #	<0.001 2 #	<0.001 1 #		
Dibromochloromethane	<0.001 mg/l	TM208	<0.001 1 #	<0.001 1 #	<0.001 2 #	<0.001 1 #		
1,2-Dibromoethane	<0.001 mg/l	TM208	<0.001 1 #	<0.001 1 #	<0.001 2 #	<0.001 1 #		
Chlorobenzene	<0.001 mg/l	TM208	<0.001 1 #	<0.001 1 #	<0.001 2 #	<0.001 1 #		
1,1,1,2-Tetrachloroethane	<0.001 mg/l	TM208	<0.001 1 #	<0.001 1 #	<0.001 2 #	<0.001 1 #		
Ethylbenzene	<0.001 mg/l	TM208	<0.001 1 #	<0.001 1 #	<0.001 2 #	<0.001 1 #		
m,p-Xylene	<0.001 mg/l	TM208	<0.001 1 #	<0.001 1 #	<0.001 2 #	<0.001 1 #		
o-Xylene	<0.001 mg/l	TM208	<0.001 1 #	<0.001 1 #	<0.001 2 #	<0.001 1 #		
Styrene	<0.001 mg/l	TM208	<0.001 1 #	<0.001 1 #	<0.001 2 #	<0.001 1 #		
Bromoform	<0.001 mg/l	TM208	<0.001 1 #	<0.001 1 #	<0.001 2 #	<0.001 1 #		
Isopropylbenzene	<0.001 mg/l	TM208	<0.001 1 #	<0.001 1 #	<0.001 2 #	<0.001 1 #		
1,1,2,2-Tetrachloroethane	<0.001 mg/l	TM208	<0.001 1	<0.001 1	<0.001 2	<0.001 1		
1,2,3-Trichloropropane	<0.001 mg/l	TM208	<0.001 1 #	<0.001 1 #	<0.001 2 #	<0.001 1 #		
Bromobenzene	<0.001 mg/l	TM208	<0.001 1 #	<0.001 1 #	<0.001 2 #	<0.001 1 #		
Propylbenzene	<0.001 mg/l	TM208	<0.001 1 #	<0.001 1 #	<0.001 2 #	<0.001 1 #		
2-Chlorotoluene	<0.001 mg/l	TM208	<0.001 1 #	<0.001 1 #	<0.001 2 #	<0.001 1 #		
1,3,5-Trimethylbenzene	<0.001 mg/l	TM208	<0.001 1 #	<0.001 1 #	<0.001 2 #	<0.001 1 #		
4-Chlorotoluene	<0.001 mg/l	TM208	<0.001 1 #	<0.001 1 #	<0.001 2 #	<0.001 1 #		
tert-Butylbenzene	<0.001 mg/l	TM208	<0.001 1 #	<0.001 1 #	<0.001 2 #	<0.001 1 #		
1,2,4-Trimethylbenzene	<0.001 mg/l	TM208	<0.001 1 #	<0.001 1 #	<0.001 2 #	<0.001 1 #		
sec-Butylbenzene	<0.001 mg/l	TM208	<0.001 1 #	<0.001 1 #	<0.001 2 #	<0.001 1 #		
4-iso-Propyltoluene	<0.001 mg/l	TM208	<0.001 1 #	<0.001 1 #	<0.001 2 #	<0.001 1 #		
1,3-Dichlorobenzene	<0.001 mg/l	TM208	<0.001 1 #	<0.001 1 #	<0.001 2 #	<0.001 1 #		
1,4-Dichlorobenzene	<0.001 mg/l	TM208	<0.001 1 #	<0.001 1 #	<0.001 2 #	<0.001 1 #		
n-Butylbenzene	<0.001 mg/l	TM208	<0.001 1 #	<0.001 1 #	<0.001 2 #	<0.001 1 #		
1,2-Dichlorobenzene	<0.001 mg/l	TM208	<0.001 1	<0.001 1	<0.001 2	<0.001 1		
1,2-Dibromo-3-chloropropane	<0.001 mg/l	TM208	<0.001 1	<0.001 1	<0.001 2	<0.001 1		
1,2,4-Trichlorobenzene	<0.001 mg/l	TM208	<0.001 1 #	<0.001 1 #	<0.001 2 #	<0.001 1 #		
Hexachlorobutadiene	<0.001 mg/l	TM208	<0.001 1 #	<0.001 1 #	<0.001 2 #	<0.001 1 #		
tert-Amyl methyl ether (TAME)	<0.001 mg/l	TM208	<0.001 1 #	<0.001 1 #	<0.001 2 #	<0.001 1 #		
Naphthalene	<0.001 mg/l	TM208	<0.001 1 #	<0.001 1 #	<0.001 2 #	<0.001 1 #		

Order Number:
Report Number: 344344
Superseded Report:

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SDG: 151202-106
Job: H_FLINTCCO_BUC-10
Client Reference:

Location: Standard Annual
Customer: Flintshire County Council
Attention: Paul Murphy

Order Number:
Report Number: 344344
Superseded Report:

Table of Results - Appendix

Method No	Reference	Description	Wet/Dry Sample ¹	Surrogate Corrected
SUB		Subcontracted Test		
TM043	Method 2320B, AWWA/APHA, 20th Ed., 1999 / BS 2690: Part109 1984	Determination of alkalinity in aqueous samples		
TM046	Method 4500G, AWWA/APHA, 20th Ed., 1999	Measurement of Dissolved Oxygen by Oxygen Meter		
TM061	Method for the Determination of EPH,Massachusetts Dept.of EP, 1998	Determination of Extractable Petroleum Hydrocarbons by GC-FID (C10-C40)		
TM090	Method 5310, AWWA/APHA, 20th Ed., 1999 / Modified: US EPA Method 415.1 & 9060	Determination of Total Organic Carbon/Total Inorganic Carbon in Water and Waste Water		
TM099	BS 2690: Part 7:1968 / BS 6068: Part2.11:1984	Determination of Ammonium in Water Samples using the Kone Analyser		
TM107	ISO 6060-1989	Determination of Chemical Oxygen Demand using COD Dr Lange Kit		
TM120	Method 2510B, AWWA/APHA, 20th Ed., 1999 / BS 2690: Part 9:1970	Determination of Electrical Conductivity using a Conductivity Meter		
TM152	Method 3125B, AWWA/APHA, 20th Ed., 1999	Analysis of Aqueous Samples by ICP-MS		
TM172	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	EPH in Waters		
TM176	EPA 8270D Semi-Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry (GC/MS)	Determination of SVOCs in Water by GCMS		
TM183	BS EN 23506:2002, (BS 6068-2.74:2002) ISBN 0 580 38924 3	Determination of Trace Level Mercury in Waters and Leachates by PSA Cold Vapour Atomic Fluorescence Spectrometry		
TM208	Modified: US EPA Method 8260b & 624	Determination of Volatile Organic Compounds by Headspace / GC-MS in Waters		
TM226	In-House Method	Determination of Anions in Waters using Ion Chromatography		
TM227	Standard methods for the examination of waters and wastewaters 20th Edition, AWWA/APHA Method 4500.	Determination of Total Cyanide, Free (Easily Liberatable) Cyanide and Thiocyanate		
TM228	US EPA Method 6010B	Determination of Major Cations in Water by iCap 6500 Duo ICP-OES		
TM231	Agilent 6890 Gas Chromatograph system using an Agilent 5973 Mass Selective Detector (MSD)	Determination of Organochlorine and Organophosphorus Pesticides and Triazine Herbicides by GCMS		
TM245	By GC-FID	Determination of GRO by Headspace in waters		
TM256	The measurement of Electrical Conductivity and the Laboratory determination of pH Value of Natural, Treated and Wastewaters. HMSO, 1978. ISBN 011 751428 4.	Determination of pH in Water and Leachate using the GLpH pH Meter		
TM328				

¹ Applies to Solid samples only. DRY indicates samples have been dried at 35°C. NA = not applicable.



CERTIFICATE OF ANALYSIS

SDG:	151202-106	Location:	Standard Annual	Order Number:	
Job:	H_FLINTCCO_BUC-10	Customer:	Flintshire County Council	Report Number:	344344
Client Reference:		Attention:	Paul Murphy	Superseded Report:	

Test Completion Dates

Lab Sample No(s)	12558998	12558999	12559001	12559002	12559003	12559000	12559004	12559005	12559006	12559007
Customer Sample Ref.	GW1	GW3	GW5	GW6	GW7	GW4R	SW1	SW2	SW4	SW5
AGS Ref.										
Depth	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
Type	LIQUID	LIQUID	LIQUID	LIQUID	LIQUID	LIQUID	LIQUID	LIQUID	LIQUID	LIQUID
Acid Herbicides (W)*	06-Jan-2016	06-Jan-2016	06-Jan-2016	06-Jan-2016	06-Jan-2016	06-Jan-2016	06-Jan-2016	06-Jan-2016	06-Jan-2016	06-Jan-2016
Alkalinity as CaCO3	08-Dec-2015	08-Dec-2015	08-Dec-2015	08-Dec-2015	08-Dec-2015	08-Dec-2015	08-Dec-2015	08-Dec-2015	08-Dec-2015	08-Dec-2015
Ammoniacal Nitrogen	04-Dec-2015	04-Dec-2015	04-Dec-2015	04-Dec-2015	04-Dec-2015	04-Dec-2015	04-Dec-2015	07-Dec-2015	03-Dec-2015	07-Dec-2015
Anions by ion Chromatography	07-Dec-2015	08-Dec-2015	08-Dec-2015	08-Dec-2015	08-Dec-2015	08-Dec-2015	09-Dec-2015	07-Dec-2015	09-Dec-2015	09-Dec-2015
COD Unfiltered	05-Dec-2015	05-Dec-2015	05-Dec-2015	05-Dec-2015	05-Dec-2015	05-Dec-2015	05-Dec-2015	05-Dec-2015	05-Dec-2015	04-Dec-2015
Conductivity (at 20 deg.C)	04-Dec-2015	04-Dec-2015	04-Dec-2015	04-Dec-2015	04-Dec-2015	04-Dec-2015	08-Dec-2015	03-Dec-2015	08-Dec-2015	08-Dec-2015
Cyanide Comp/Free/Total/Thiocyanate	04-Dec-2015	04-Dec-2015	04-Dec-2015	04-Dec-2015	04-Dec-2015	07-Dec-2015	04-Dec-2015	09-Dec-2015	04-Dec-2015	09-Dec-2015
Dissolved Metals by ICP-MS	07-Dec-2015	07-Dec-2015	10-Dec-2015	08-Dec-2015	08-Dec-2015	07-Dec-2015	10-Dec-2015	07-Dec-2015	10-Dec-2015	10-Dec-2015
Dissolved Oxygen by Probe	04-Dec-2015	04-Dec-2015	04-Dec-2015	04-Dec-2015	04-Dec-2015	04-Dec-2015	06-Dec-2015	04-Dec-2015	06-Dec-2015	06-Dec-2015
GRO by GC-FID (W)	09-Dec-2015	09-Dec-2015	09-Dec-2015	09-Dec-2015	08-Dec-2015	09-Dec-2015	09-Dec-2015	09-Dec-2015	09-Dec-2015	09-Dec-2015
Mercury Dissolved	09-Dec-2015	09-Dec-2015	04-Dec-2015	04-Dec-2015	04-Dec-2015	04-Dec-2015	09-Dec-2015	09-Dec-2015	09-Dec-2015	09-Dec-2015
Metals by iCap-OES Dissolved (W)	04-Dec-2015	04-Dec-2015	07-Dec-2015	04-Dec-2015	04-Dec-2015	04-Dec-2015	07-Dec-2015	04-Dec-2015	07-Dec-2015	07-Dec-2015
Mineral Oil C10-40 Aqueous (W)	11-Dec-2015	11-Dec-2015	11-Dec-2015	11-Dec-2015	11-Dec-2015	11-Dec-2015	11-Dec-2015	11-Dec-2015	14-Dec-2015	11-Dec-2015
OC, OP Pesticides and Triazine Herb	08-Dec-2015	08-Dec-2015	07-Dec-2015	07-Dec-2015	07-Dec-2015	07-Dec-2015	08-Dec-2015	08-Dec-2015	08-Dec-2015	08-Dec-2015
Organotins in Aqueous Samples	10-Dec-2015	10-Dec-2015	07-Dec-2015	07-Dec-2015	07-Dec-2015	07-Dec-2015	11-Dec-2015	10-Dec-2015	10-Dec-2015	10-Dec-2015
pH Value	09-Dec-2015	08-Dec-2015	09-Dec-2015	09-Dec-2015	08-Dec-2015	09-Dec-2015	09-Dec-2015	09-Dec-2015	09-Dec-2015	09-Dec-2015
SVOC MS (W) - Aqueous	09-Dec-2015	09-Dec-2015	10-Dec-2015	10-Dec-2015	10-Dec-2015	10-Dec-2015	10-Dec-2015	10-Dec-2015	10-Dec-2015	09-Dec-2015
Total Organic and Inorganic Carbon	07-Dec-2015	07-Dec-2015	04-Dec-2015	04-Dec-2015	07-Dec-2015	04-Dec-2015	07-Dec-2015	07-Dec-2015	07-Dec-2015	07-Dec-2015
VOC MS (W)	08-Dec-2015	08-Dec-2015	08-Dec-2015	08-Dec-2015	08-Dec-2015	08-Dec-2015	08-Dec-2015	08-Dec-2015	08-Dec-2015	08-Dec-2015

ALS Environmental Ltd
Torrington Avenue
Coventry
CV4 9GU

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

Mr Subcontracting
ALcontrol Laboratories
Units 7 & 8 Hawarden Business
Park
Manor Road
Hawarden
Deeside CH5 3US
Cheshire

05 January 2016

Test Report: COV/1240651/2015

Dear Mr Subcontracting

Analysis of your sample(s) submitted on 04 December 2015 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



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.

Report Summary



**Mr Harwarden Subcontracting
ALcontrol Laboratories
Units 7 & 8 Hawarden Business
Park
Manor Road
Hawarden
Deeside
Cheshire**

Date of Issue: **05 January 2016**

Report Number: **COV/1240651/2015**

Issue **1**

Job Description: Q81068 - Acid Herbicides in Land Leachat

Job Location: Hawarden 151202-106

Number of Samples
included in this report **10**

Job Received: **04 December 2015**

Number of Test Results
included in this report **130**

Analysis Commenced: **24 December 2015**

Signed:

Name: **C. Law**

Date: **05 January 2016**

Title: **Inorganics Operations Manager**

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

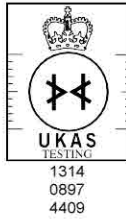
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Certificate of Analysis



Report Number: **COV/1240651/2015**

Issue **1**

Laboratory Number: **14992803**

Sample **1** of **10**

Sample Source: **ALcontrol Laboratories**

Sample Point Description:

Sample Description: **12565509 GW1**

Sample Matrix: **Ground Water**

Sample Date/Time: **30 November 2015**

Sample Received: **04 December 2015**

Analysis Complete: **05 January 2016**

Test Description	Result	Units	Analysis Date	Accreditation	Method
2,4 - D	<0.10	ug/l	05/01/2016	Y Cov	GEO20
2,4 - DB	<0.10	ug/l	05/01/2016	Y Cov	GEO20
2,4,5 - T	<0.10	ug/l	05/01/2016	Y Cov	GEO20
Bentazone	<0.10	ug/l	05/01/2016	Y Cov	GEO20
Bromoxynil	<0.10	ug/l	05/01/2016	Y Cov	GEO20
Dicamba	<0.10	ug/l	05/01/2016	Y Cov	GEO20
Dichlorprop	<0.10	ug/l	05/01/2016	Y Cov	GEO20
Fenoprop	<0.10	ug/l	05/01/2016	Y Cov	GEO20
Ioxynil	<0.10	ug/l	05/01/2016	Y Cov	GEO20
MCPA	<0.10	ug/l	05/01/2016	Y Cov	GEO20
MCPB	<0.10	ug/l	05/01/2016	Y Cov	GEO20
Triclopyr	<0.10	ug/l	05/01/2016	Y Cov	GEO20
Mecoprop	<0.08	ug/l	05/01/2016	Y Cov	GEO20

Analyst Comments for 14992803:

This sample has been analysed for Acid Herbs Waters method GEO20 outside recommended stability times. It is therefore possible that the results provided may be compromised.
Acid Herbicides reporting limits raised due to nature of sample matrix.

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

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

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

Signed:

Name: **C. Law**

Date: **05 January 2016**

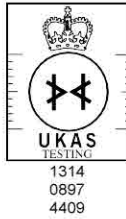
Title: **Inorganics Operations Manager**

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Torrington Avenue, Coventry, CV4 9GU
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Certificate of Analysis



Report Number: **COV/1240651/2015**

Issue **1**

Laboratory Number: **14992804**

Sample **2** of **10**

Sample Source: **ALcontrol Laboratories**

Sample Point Description:

Sample Description: **12565514 GW3**

Sample Matrix: **Ground Water**

Sample Date/Time: **30 November 2015**

Sample Received: **04 December 2015**

Analysis Complete: **05 January 2016**

Test Description	Result	Units	Analysis Date	Accreditation	Method
2,4 - D	<0.05	ug/l	29/12/2015	Y Cov	GEO20
2,4 - DB	<0.05	ug/l	29/12/2015	Y Cov	GEO20
2,4,5 - T	<0.05	ug/l	29/12/2015	Y Cov	GEO20
Bentazone	<0.05	ug/l	29/12/2015	Y Cov	GEO20
Bromoxynil	<0.05	ug/l	29/12/2015	Y Cov	GEO20
Dicamba	<0.05	ug/l	29/12/2015	Y Cov	GEO20
Dichlorprop	<0.05	ug/l	29/12/2015	Y Cov	GEO20
Fenoprop	<0.05	ug/l	29/12/2015	Y Cov	GEO20
Ioxynil	<0.05	ug/l	29/12/2015	Y Cov	GEO20
MCPA	<0.05	ug/l	29/12/2015	Y Cov	GEO20
MCPB	<0.05	ug/l	29/12/2015	Y Cov	GEO20
Triclopyr	<0.05	ug/l	29/12/2015	Y Cov	GEO20
Mecoprop	<0.04	ug/l	29/12/2015	Y Cov	GEO20

Analyst Comments for 14992804:

This sample has been analysed for Acid Herbs Waters method GEO20 outside recommended stability times. It is therefore possible that the results provided may be compromised.

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

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

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

Signed:

Name: **C. Law**

Date: **05 January 2016**

Title: **Inorganics Operations Manager**

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Certificate of Analysis



Report Number: **COV/1240651/2015**

Issue **1**

Laboratory Number: **14992805**

Sample **3** of **10**

Sample Source: **ALcontrol Laboratories**

Sample Point Description:

Sample Description: **12564291 GW4R**

Sample Matrix: **Ground Water**

Sample Date/Time: **30 November 2015**

Sample Received: **04 December 2015**

Analysis Complete: **05 January 2016**

Test Description	Result	Units	Analysis Date	Accreditation	Method
2,4 - D	<0.05	ug/l	29/12/2015	Y Cov	GEO20
2,4 - DB	<0.05	ug/l	29/12/2015	Y Cov	GEO20
2,4,5 - T	<0.05	ug/l	29/12/2015	Y Cov	GEO20
Bentazone	<0.05	ug/l	29/12/2015	Y Cov	GEO20
Bromoxynil	<0.05	ug/l	29/12/2015	Y Cov	GEO20
Dicamba	<0.05	ug/l	29/12/2015	Y Cov	GEO20
Dichlorprop	<0.05	ug/l	29/12/2015	Y Cov	GEO20
Fenoprop	<0.05	ug/l	29/12/2015	Y Cov	GEO20
Ioxynil	<0.05	ug/l	29/12/2015	Y Cov	GEO20
MCPA	<0.05	ug/l	29/12/2015	Y Cov	GEO20
MCPB	<0.05	ug/l	29/12/2015	Y Cov	GEO20
Triclopyr	<0.05	ug/l	29/12/2015	Y Cov	GEO20
Mecoprop	<0.04	ug/l	29/12/2015	Y Cov	GEO20

Analyst Comments for 14992805:

This sample has been analysed for Acid Herbs Waters method GEO20 outside recommended stability times. It is therefore possible that the results provided may be compromised.

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

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

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

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

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

Signed:

Name: **C. Law**

Date: **05 January 2016**

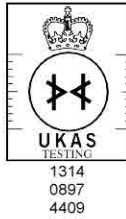
Title: **Inorganics Operations Manager**

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Certificate of Analysis



Report Number: **COV/1240651/2015**

Issue **1**

Laboratory Number: **14992806**

Sample **4** of **10**

Sample Source: **ALcontrol Laboratories**

Sample Point Description:

Sample Description: **12564280 GW5**

Sample Matrix: **Ground Water**

Sample Date/Time: **30 November 2015**

Sample Received: **04 December 2015**

Analysis Complete: **05 January 2016**

Test Description	Result	Units	Analysis Date	Accreditation	Method
2,4 - D	<0.05	ug/l	29/12/2015	Y Cov	GEO20
2,4 - DB	<0.05	ug/l	29/12/2015	Y Cov	GEO20
2,4,5 - T	<0.05	ug/l	29/12/2015	Y Cov	GEO20
Bentazone	<0.05	ug/l	29/12/2015	Y Cov	GEO20
Bromoxynil	<0.05	ug/l	29/12/2015	Y Cov	GEO20
Dicamba	<0.05	ug/l	29/12/2015	Y Cov	GEO20
Dichlorprop	<0.05	ug/l	29/12/2015	Y Cov	GEO20
Fenoprop	<0.05	ug/l	29/12/2015	Y Cov	GEO20
Ioxynil	<0.05	ug/l	29/12/2015	Y Cov	GEO20
MCPA	<0.05	ug/l	29/12/2015	Y Cov	GEO20
MCPB	<0.05	ug/l	29/12/2015	Y Cov	GEO20
Triclopyr	<0.05	ug/l	29/12/2015	Y Cov	GEO20
Mecoprop	<0.04	ug/l	29/12/2015	Y Cov	GEO20

Analyst Comments for 14992806:

This sample has been analysed for Acid Herbs Waters method GEO20 outside recommended stability times. It is therefore possible that the results provided may be compromised.

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

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

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

Signed:

Name: **C. Law**

Date: **05 January 2016**

Title: **Inorganics Operations Manager**

ALS Environmental Ltd

Torrington Avenue, Coventry, CV4 9GU
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Certificate of Analysis



Report Number: **COV/1240651/2015**

Issue **1**

Laboratory Number: **14992807**

Sample **5** of **10**

Sample Source: **ALcontrol Laboratories**

Sample Point Description:

Sample Description: **12564296 GW6**

Sample Matrix: **Ground Water**

Sample Date/Time: **30 November 2015**

Sample Received: **04 December 2015**

Analysis Complete: **05 January 2016**

Test Description	Result	Units	Analysis Date	Accreditation	Method
2,4 - D	<0.05	ug/l	29/12/2015	Y Cov	GEO20
2,4 - DB	<0.05	ug/l	29/12/2015	Y Cov	GEO20
2,4,5 - T	<0.05	ug/l	29/12/2015	Y Cov	GEO20
Bentazone	<0.05	ug/l	29/12/2015	Y Cov	GEO20
Bromoxynil	<0.05	ug/l	29/12/2015	Y Cov	GEO20
Dicamba	<0.05	ug/l	29/12/2015	Y Cov	GEO20
Dichlorprop	<0.40	ug/l	29/12/2015	Y Cov	GEO20
Fenoprop	<0.05	ug/l	29/12/2015	Y Cov	GEO20
Ioxynil	<0.05	ug/l	29/12/2015	Y Cov	GEO20
MCPA	<0.05	ug/l	29/12/2015	Y Cov	GEO20
MCPB	<0.05	ug/l	29/12/2015	Y Cov	GEO20
Triclopyr	<0.05	ug/l	29/12/2015	Y Cov	GEO20
Mecoprop	2.67	ug/l	29/12/2015	Y Cov	GEO20

Analyst Comments for 14992807:

This sample has been analysed for Acid Herbs Waters method GEO20 outside recommended stability times. It is therefore possible that the results provided may be compromised.
Reporting limit raised for Dichlorprop due to matrix interference.

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

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

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

Signed:

Name: **C. Law**

Date: **05 January 2016**

Title: **Inorganics Operations Manager**

ALS Environmental Ltd

Torrington Avenue, Coventry, CV4 9GU
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Certificate of Analysis



Report Number: **COV/1240651/2015**

Issue **1**

Laboratory Number: **14992808**

Sample **6** of **10**

Sample Source: **ALcontrol Laboratories**

Sample Point Description:

Sample Description: **12564511 GW7**

Sample Matrix: **Ground Water**

Sample Date/Time: **30 November 2015**

Sample Received: **04 December 2015**

Analysis Complete: **05 January 2016**

Test Description	Result	Units	Analysis Date	Accreditation	Method
2,4 - D	<0.05	ug/l	29/12/2015	Y Cov	GEO20
2,4 - DB	<0.05	ug/l	29/12/2015	Y Cov	GEO20
2,4,5 - T	<0.05	ug/l	29/12/2015	Y Cov	GEO20
Bentazone	<0.05	ug/l	29/12/2015	Y Cov	GEO20
Bromoxynil	<0.05	ug/l	29/12/2015	Y Cov	GEO20
Dicamba	<0.05	ug/l	29/12/2015	Y Cov	GEO20
Dichlorprop	<0.05	ug/l	29/12/2015	Y Cov	GEO20
Fenoprop	<0.05	ug/l	29/12/2015	Y Cov	GEO20
Ioxynil	<0.05	ug/l	29/12/2015	Y Cov	GEO20
MCPA	<0.05	ug/l	29/12/2015	Y Cov	GEO20
MCPB	<0.05	ug/l	29/12/2015	Y Cov	GEO20
Triclopyr	<0.05	ug/l	29/12/2015	Y Cov	GEO20
Mecoprop	<0.04	ug/l	29/12/2015	Y Cov	GEO20

Analyst Comments for 14992808:

This sample has been analysed for Acid Herbs Waters method GEO20 outside recommended stability times. It is therefore possible that the results provided may be compromised.

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

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

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

Signed:

Name: **C. Law**

Date: **05 January 2016**

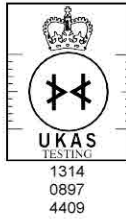
Title: **Inorganics Operations Manager**

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Certificate of Analysis



Report Number: **COV/1240651/2015**

Issue **1**

Laboratory Number: **14992809**

Sample **7** of **10**

Sample Source: **ALcontrol Laboratories**

Sample Point Description:

Sample Description: **12565437 SW1**

Sample Matrix: **Surface Water**

Sample Date/Time: **30 November 2015**

Sample Received: **04 December 2015**

Analysis Complete: **05 January 2016**

Test Description	Result	Units	Analysis Date	Accreditation	Method
2,4 - D	<0.05	ug/l	29/12/2015	Y Cov	GEO20
2,4 - DB	<0.05	ug/l	29/12/2015	Y Cov	GEO20
2,4,5 - T	<0.05	ug/l	29/12/2015	Y Cov	GEO20
Bentazone	<0.05	ug/l	29/12/2015	Y Cov	GEO20
Bromoxynil	<0.05	ug/l	29/12/2015	Y Cov	GEO20
Dicamba	<0.05	ug/l	29/12/2015	Y Cov	GEO20
Dichlorprop	<0.05	ug/l	29/12/2015	Y Cov	GEO20
Fenoprop	<0.05	ug/l	29/12/2015	Y Cov	GEO20
Ioxynil	<0.05	ug/l	29/12/2015	Y Cov	GEO20
MCPA	<0.05	ug/l	29/12/2015	Y Cov	GEO20
MCPB	<0.05	ug/l	29/12/2015	Y Cov	GEO20
Triclopyr	<0.05	ug/l	29/12/2015	Y Cov	GEO20
Mecoprop	<0.04	ug/l	29/12/2015	Y Cov	GEO20

Analyst Comments for 14992809:

This sample has been analysed for Acid Herbs Waters method GEO20 outside recommended stability times. It is therefore possible that the results provided may be compromised.

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

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

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

Signed:

Name: **C. Law**

Date: **05 January 2016**

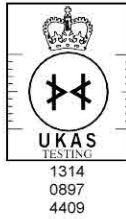
Title: **Inorganics Operations Manager**

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Torrington Avenue, Coventry, CV4 9GU
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Certificate of Analysis



Report Number: **COV/1240651/2015**

Issue **1**

Laboratory Number: **14992810**

Sample **8** of **10**

Sample Source: **ALcontrol Laboratories**

Sample Point Description:

Sample Description: **12565427 SW2**

Sample Matrix: **Surface Water**

Sample Date/Time: **30 November 2015**

Sample Received: **04 December 2015**

Analysis Complete: **05 January 2016**

Test Description	Result	Units	Analysis Date	Accreditation	Method
2,4 - D	<0.05	ug/l	29/12/2015	Y Cov	GEO20
2,4 - DB	<0.05	ug/l	29/12/2015	Y Cov	GEO20
2,4,5 - T	<0.05	ug/l	29/12/2015	Y Cov	GEO20
Bentazone	<0.05	ug/l	29/12/2015	Y Cov	GEO20
Bromoxynil	<0.05	ug/l	29/12/2015	Y Cov	GEO20
Dicamba	<0.05	ug/l	29/12/2015	Y Cov	GEO20
Dichlorprop	<0.05	ug/l	29/12/2015	Y Cov	GEO20
Fenoprop	<0.05	ug/l	29/12/2015	Y Cov	GEO20
Ioxynil	<0.05	ug/l	29/12/2015	Y Cov	GEO20
MCPA	<0.05	ug/l	29/12/2015	Y Cov	GEO20
MCPB	<0.05	ug/l	29/12/2015	Y Cov	GEO20
Triclopyr	<0.05	ug/l	29/12/2015	Y Cov	GEO20
Mecoprop	<0.04	ug/l	29/12/2015	Y Cov	GEO20

Analyst Comments for 14992810:

This sample has been analysed for Acid Herbs Waters method GEO20 outside recommended stability times. It is therefore possible that the results provided may be compromised.

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

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

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

Signed:

Name: **C. Law**

Date: **05 January 2016**

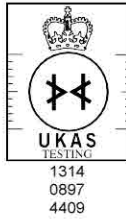
Title: **Inorganics Operations Manager**

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/1240651/2015**

Issue **1**

Laboratory Number: **14992811**

Sample **9** of **10**

Sample Source: **ALcontrol Laboratories**

Sample Point Description:

Sample Description: **12565441 SW4**

Sample Matrix: **Surface Water**

Sample Date/Time: **30 November 2015**

Sample Received: **04 December 2015**

Analysis Complete: **05 January 2016**

Test Description	Result	Units	Analysis Date	Accreditation	Method
2,4 - D	<0.05	ug/l	29/12/2015	Y Cov	GEO20
2,4 - DB	<0.05	ug/l	29/12/2015	Y Cov	GEO20
2,4,5 - T	<0.05	ug/l	29/12/2015	Y Cov	GEO20
Bentazone	<0.05	ug/l	29/12/2015	Y Cov	GEO20
Bromoxynil	<0.05	ug/l	29/12/2015	Y Cov	GEO20
Dicamba	<0.05	ug/l	29/12/2015	Y Cov	GEO20
Dichlorprop	<0.05	ug/l	29/12/2015	Y Cov	GEO20
Fenoprop	<0.05	ug/l	29/12/2015	Y Cov	GEO20
Ioxynil	<0.05	ug/l	29/12/2015	Y Cov	GEO20
MCPA	<0.05	ug/l	29/12/2015	Y Cov	GEO20
MCPB	<0.05	ug/l	29/12/2015	Y Cov	GEO20
Triclopyr	<0.05	ug/l	29/12/2015	Y Cov	GEO20
Mecoprop	<0.04	ug/l	29/12/2015	Y Cov	GEO20

Analyst Comments for 14992811:

This sample has been analysed for Acid Herbs Waters method GEO20 outside recommended stability times. It is therefore possible that the results provided may be compromised.

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

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

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

Signed:

Name: **C. Law**

Date: **05 January 2016**

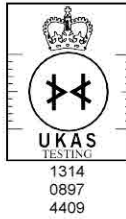
Title: **Inorganics Operations Manager**

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/1240651/2015**

Issue **1**

Laboratory Number: **14992812**

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

Sample Source: **ALcontrol Laboratories**

Sample Point Description:

Sample Description: **12565440 SW5**

Sample Matrix: **Surface Water**

Sample Date/Time: **30 November 2015**

Sample Received: **04 December 2015**

Analysis Complete: **05 January 2016**

Test Description	Result	Units	Analysis Date	Accreditation	Method
2,4 - D	<0.05	ug/l	29/12/2015	Y Cov	GEO20
2,4 - DB	<0.05	ug/l	29/12/2015	Y Cov	GEO20
2,4,5 - T	<0.05	ug/l	29/12/2015	Y Cov	GEO20
Bentazone	<0.05	ug/l	29/12/2015	Y Cov	GEO20
Bromoxynil	<0.05	ug/l	29/12/2015	Y Cov	GEO20
Dicamba	<0.05	ug/l	29/12/2015	Y Cov	GEO20
Dichlorprop	<0.05	ug/l	29/12/2015	Y Cov	GEO20
Fenoprop	<0.05	ug/l	29/12/2015	Y Cov	GEO20
Ioxynil	<0.05	ug/l	29/12/2015	Y Cov	GEO20
MCPA	<0.05	ug/l	29/12/2015	Y Cov	GEO20
MCPB	<0.05	ug/l	29/12/2015	Y Cov	GEO20
Triclopyr	<0.05	ug/l	29/12/2015	Y Cov	GEO20
Mecoprop	<0.04	ug/l	29/12/2015	Y Cov	GEO20

Analyst Comments for 14992812:

This sample has been analysed for Acid Herbs Waters method GEO20 outside recommended stability times. It is therefore possible that the results provided may be compromised.

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

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

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

Signed:

Name: **C. Law**

Date: **05 January 2016**

Title: **Inorganics Operations Manager**

ALS Environmental Ltd

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

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ANALYST COMMENTS FOR REPORT
COV/1240651/2015
Issue 1
Date of Issue: 05 January 2016

Sample No	Analysis Comments
14992803	This sample has been analysed for Acid Herbs Waters method GEO20 outside recommended stability times. It is therefore possible that the results provided may be compromised. Acid Herbicides reporting limits raised due to nature of sample matrix.
14992804	This sample has been analysed for Acid Herbs Waters method GEO20 outside recommended stability times. It is therefore possible that the results provided may be compromised.
14992805	This sample has been analysed for Acid Herbs Waters method GEO20 outside recommended stability times. It is therefore possible that the results provided may be compromised.
14992806	This sample has been analysed for Acid Herbs Waters method GEO20 outside recommended stability times. It is therefore possible that the results provided may be compromised.
14992807	This sample has been analysed for Acid Herbs Waters method GEO20 outside recommended stability times. It is therefore possible that the results provided may be compromised. Reporting limit raised for Dichlorprop due to matrix interference.
14992808	This sample has been analysed for Acid Herbs Waters method GEO20 outside recommended stability times. It is therefore possible that the results provided may be compromised.
14992809	This sample has been analysed for Acid Herbs Waters method GEO20 outside recommended stability times. It is therefore possible that the results provided may be compromised.
14992810	This sample has been analysed for Acid Herbs Waters method GEO20 outside recommended stability times. It is therefore possible that the results provided may be compromised.
14992811	This sample has been analysed for Acid Herbs Waters method GEO20 outside recommended stability times. It is therefore possible that the results provided may be compromised.
14992812	This sample has been analysed for Acid Herbs Waters method GEO20 outside recommended stability times. It is therefore possible that the results provided may be compromised.

Signed:



Name: **C. Law**

Date: **05 January 2016**

Title: **Inorganics Operations Manager**

DETERMINAND COMMENTS FOR REPORT COV/1240651/2015

ISSUE 1

Date of Issue : 05 January 2016

Sample No	Description	Determinand	Comments

Signed: 	Name: C. Law	Date: 05 January 2016
	Title: Inorganics Operations Manager	



SDG:	151202-106	Location:	Standard Annual	Order Number:	
Job:	H_FLINTCCO_BUC-10	Customer:	Flintshire County Council	Report Number:	344344
Client Reference:		Attention:	Paul Murphy	Superseded Report:	

Appendix General

1. Results are expressed on a dry weight basis (dried at 35°C) for all soil analyses except for the following: NRA and CEN Leach tests, flash point LOI, pH, ammonium as NH4 by the BRE method, VOC TICS and SVOC TICS.

2. Samples will be run in duplicate upon request, but an additional charge may be incurred.

3. If sufficient sample is received a sub sample will be retained free of charge for 30 days after analysis is completed (e-mailed) for all sample types unless the sample is destroyed on testing. The prepared soil sub sample that is analysed for asbestos will be retained for a period of 6 months after the analysis date. All bulk samples will be retained for a period of 6 months after the analysis date. All samples received and not scheduled will be disposed of one month after the date of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage. ALcontrol Laboratories reserve the right to charge for samples received and stored but not analysed.

4. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.

5. We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS/MCERTS Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there are no UKAS/MCERTS Accredited Laboratories, in this instance a laboratory with a known track record will be utilised.

6. When requested, the individual sub sample scheduled will be analysed in house for the presence of asbestos fibres and asbestos containing material by our documented in house method TM048 based on HSG 248 (2005), which is accredited to ISO17025. If a specific asbestos fibre type is not found this will be reported as "Not detected". If no asbestos fibre types are found all will be reported as "Not detected" and the sub sample analysed deemed to be clear of asbestos. If an asbestos fibre type is found it will be reported as detected (for each fibre type found). Testing can be carried out on asbestos positive samples, but, due to Health and Safety considerations, may be replaced by alternative tests or reported as No Determination Possible. The quantity of asbestos present is not determined unless specifically requested.

7. If no separate volatile sample is supplied by the client, or if a headspace or sediment is present in the volatile sample, the integrity of the data may be compromised. This will be flagged up as an invalid VOC on the test schedule and the result marked as deviating on the test certificate.

8. If appropriate preserved bottles are not received preservation will take place on receipt. However, the integrity of the data may be compromised.

9. NDP -No determination possible due to insufficient/unsuitable sample.

10. Metals in water are performed on a filtered sample, and therefore represent dissolved metals -total metals must be requested separately.

11. Results relate only to the items tested.

12. LODs for wet tests reported on a dry weight basis are not corrected for moisture content.

13. **Surrogate recoveries** - Surrogates are added to your sample to monitor recovery of the test requested. A % recovery is reported, results are not corrected for the recovery measured. Typical recoveries for organics tests are 70-130%, they are generally wider for volatiles analysis, 50-150%. Recoveries in soils are affected by organic rich or clay rich matrices. Waters can be affected by remediation fluids or high amounts of sediment. Test results are only ever reported if all of the associated quality checks pass; it is assumed that all recoveries outside of the values above are due to matrix affect.

14. **Product analyses** -Organic analyses on products can only be semi-quantitative due to the matrix effects and high dilution factors employed.

15. Phenols monohydric by HPLC include phenol, cresols (2-Methylphenol, 3-Methylphenol and 4-Methylphenol) and Xylenols (2,3 Dimethylphenol, 2,4 Dimethylphenol, 2,5 Dimethylphenol, 2,6 Dimethylphenol, 3,4 Dimethylphenol, 3,5 Dimethylphenol).

16. Total of 5 speciated phenols by HPLC includes Phenol, 2,3,5-Trimethyl Phenol, 2-Isopropylphenol, Cresols and Xylenols (as detailed in 15).

17. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.

18. In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range. Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.

19. Mercury results quoted on soils will not include volatile mercury as the analysis is performed on a dried and crushed sample.

20. For the BSEN 12457-3 two batch process to allow the cumulative release to be calculated, the volume of the leachate produced is measured and filtered for all tests. We therefore cannot carry out any unfiltered analysis. The tests affected include volatiles GCFID/GCMS and all subcontracted analysis.

21. For all leachate preparations (NRA, DIN, TCLP, BSEN 12457-1, 2, 3) volatile loss may occur, as we do not employ zero headspace extraction.

22. We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill /made ground, as long as these materials constitute the major part of the sample. Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

23. Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C5 -C12 range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l. Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only. It is not possible to specifically identify these non-hydrocarbons, as standards are not routinely run for any other compounds, and for more definitive identification, volatiles by GCMS should be utilised.
- ### Sample Deviations

1	Container with Headspace provided for volatiles analysis
2	Incorrect container received
3	Deviation from method
4	Holding time exceeded before sample received
5	Samples exceeded holding time before preservation was performed
\$	Sampled on date not provided
♦	Sample holding time exceeded in laboratory
@	Sample holding time exceeded due to sampled on date
&	Sample Holding Time exceeded - Late arrival of instructions.
- ### Asbestos

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials are obtained from supplied bulk materials which have been examined to determine the presence of asbestos fibres using Alcontrol Laboratories (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

The results for identification of asbestos in soils are obtained from a homogenised sub sample which has been examined to determine the presence of asbestos fibres using Alcontrol Laboratories (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

Asbestos Type	Common Name
Chrysotile	White Asbestos
Amosite	Brown Asbestos
Crocidolite	Blue Asbestos
Fibrous Actinolite	-
Fibrous Anthophyllite	-
Fibrous Tremolite	-
- Visual Estimation Of Fibre Content**

Estimation of fibre content is not permitted as part of our UKAS accredited test other than :
- Trace - Where only one or two asbestos fibres were identified.

Further guidance on typical asbestos fibre content of manufactured products can be found in HSG 264.

The identification of asbestos containing materials and soils falls within our schedule of tests for which we hold UKAS accreditation, however opinions, interpretations and all other information contained in the report are outside the scope of UKAS accreditation.



Flintshire County Council
Waste Management Services
Brookhill Landfill Site
Pinfold Industrial Estate
Buckley
Flintshire
CH7 3PL

Attention: Paul Murphy

CERTIFICATE OF ANALYSIS

Date: 30 December 2015
Customer: H_FLINTCCO_BUC
Sample Delivery Group (SDG): 151202-104
Your Reference:
Location: Standard Annual
Report No: 343730

We received 9 samples on Wednesday December 02, 2015 and 4 of these samples were scheduled for analysis which was completed on Wednesday December 30, 2015. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

Should this report require incorporation into client reports, it must be used in its entirety and not simply with the data sections alone.

All chemical testing (unless subcontracted) is performed at ALcontrol Hawarden Laboratories.

Approved By:

Sonia McWhan

Operations Manager





SDG:	151202-104	Location:	Standard Annual	Order Number:	
Job:	H_FLINTCCO_BUC-10	Customer:	Flintshire County Council	Report Number:	343730
Client Reference:		Attention:	Paul Murphy	Superseded Report:	

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
12558786	LC2		0.00 - 0.00	30/11/2015
12558788	LC3		0.00 - 0.00	30/11/2015
12558789	LC4		0.00 - 0.00	30/11/2015
12558790	LC7		0.00 - 0.00	30/11/2015
12558791	S1		0.00 - 0.00	30/11/2015
12558792	S2		0.00 - 0.00	30/11/2015
12558793	S3		0.00 - 0.00	30/11/2015
12558794	SSR5		0.00 - 0.00	30/11/2015
12558795	SSR6		0.00 - 0.00	30/11/2015

Only received samples which have had analysis scheduled will be shown on the following pages.



CERTIFICATE OF ANALYSIS

SDG: 151202-104
Job: H_FLINTCCO_BUC-10
Client Reference:

Location: Standard Annual
Customer: Flintshire County Council
Attention: Paul Murphy

Order Number:
Report Number: 343730
Superseded Report:

LIQUID Results Legend X Test N No Determination Possible	Lab Sample No(s)		12558786	12558788	12558789	12558790
	Customer Sample Reference		LC2	LC3	LC4	LC7
	AGS Reference					
	Depth (m)		0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
	Container		1000ml glass bottle 250ml BOD (ALE21) 250ml BOD (ALE21) 1l plastic (ALE21) 1000ml glass bottle NaOH (ALE245) H2SO4 (ALE244) Dissolved Metals Pr	1000ml glass bottle 250ml BOD (ALE21) 250ml BOD (ALE21) 1l plastic (ALE21) 1000ml glass bottle NaOH (ALE245) H2SO4 (ALE244) Dissolved Metals Pr	1000ml glass bottle 250ml BOD (ALE21) 250ml BOD (ALE21) 1l plastic (ALE21) 1000ml glass bottle NaOH (ALE245) H2SO4 (ALE244) Dissolved Metals Pr	1000ml glass bottle 250ml BOD (ALE21) 250ml BOD (ALE21) 1l plastic (ALE21) 1000ml glass bottle NaOH (ALE245) H2SO4 (ALE244) Dissolved Metals Pr
Acid Herbicides (W)*	All	NDPs: 0 Tests: 4	X	X	X	X
Alkalinity as CaCO3	All	NDPs: 0 Tests: 4	X	X	X	X
Ammoniacal Nitrogen	All	NDPs: 0 Tests: 4		X	X	X
Anions by ion Chromatography	All	NDPs: 0 Tests: 4	X	X	X	X
BOD True Total	All	NDPs: 0 Tests: 4	X	X	X	X
COD Unfiltered	All	NDPs: 0 Tests: 4	X	X	X	X
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 4		X	X	X
Dissolved Metals by ICP-MS	All	NDPs: 0 Tests: 4	X	X	X	X
Mercury Dissolved	All	NDPs: 0 Tests: 4		X	X	X
Metals by iCap-OES Dissolved (W)	All	NDPs: 0 Tests: 4	X	X	X	X
Mineral Oil C10-40 Aqueous (W)	All	NDPs: 0 Tests: 4	X	X	X	X
OC, OP Pesticides and Triazine Herb	All	NDPs: 0 Tests: 4	X	X	X	X
Organotins in Aqueous Samples	All	NDPs: 0 Tests: 4	X	X	X	X
pH Value	All	NDPs: 0 Tests: 4	X	X	X	X
SVOC MS (W) - Aqueous	All	NDPs: 0 Tests: 4	X	X	X	X



CERTIFICATE OF ANALYSIS

SDG: 151202-104

Job: H_FLINTCCO_BUC-10

Client Reference:

Location: Standard Annual

Customer: Flintshire County Council

Attention: Paul Murphy

Order Number:

Report Number: 343730

Superseded Report:

LIQUID Results Legend X Test N No Determination Possible	Lab Sample No(s)		12558786	12558788	12558789	12558790
	Customer Sample Reference		LC2	LC3	LC4	LC7
	AGS Reference					
	Depth (m)		0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
	Container		1000ml glass bottle	1000ml glass bottle	1000ml glass bottle	NaOH (ALE245) H2SO4 (ALE244) Dissolved Metals Pr 250ml BOD (ALE21) 11plastic (ALE221) 1000ml glass bottle NaOH (ALE245) H2SO4 (ALE244) Dissolved Metals Pr 250ml BOD (ALE21) 11plastic (ALE221) 1000ml glass bottle NaOH (ALE245) H2SO4 (ALE244) Dissolved Metals Pr 250ml BOD (ALE21) 11plastic (ALE221) 1000ml glass bottle
Total Organic and Inorganic Carbon	All	NDPs: 0 Tests: 4	X	X	X	
VOC MS (W)	All	NDPs: 0 Tests: 4	X	X	X	



CERTIFICATE OF ANALYSIS

SDG: 151202-104
Job: H_FLINTCCO_BUC-10
Client Reference:

Location: Standard Annual
Customer: Flintshire County Council
Attention: Paul Murphy

Order Number:
Report Number: 343730
Superseded Report:

Results Legend		Customer Sample R	LC2				LC3				LC4				LC7							
#	ISO17025 accredited.		0.00 - 0.00				0.00 - 0.00				0.00 - 0.00				0.00 - 0.00							
M	mCERTS accredited.	Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref Lab Sample No.(s) AGS Reference	Water(GW/SW) 30/11/2015				Water(GW/SW) 30/11/2015				Water(GW/SW) 30/11/2015				Water(GW/SW) 30/11/2015							
aq	Aqueous / settled sample.		02/12/2015				02/12/2015				02/12/2015				02/12/2015							
diss.filt	Dissolved / filtered sample.		151202-104				151202-104				151202-104				151202-104							
tot.unfilt	Total / unfiltered sample.		12558786				12558788				12558789				12558790							
*	Subcontracted test.																					
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery																					
(F)	Trigger breach confirmed																					
1-5&*&@	Sample deviation (see appendix)																					
Component	LOD/Units	Method																				
2,4-D*	<0.00005 mg/l	SUB	<0.002	#			<0.002	#			<0.0005	#			<0.0005	#						
2,4-DB*	<0.00005 mg/l	SUB	<0.002	#			<0.002	#			<0.0005	#			<0.0005	#						
2,4,5-T*	<0.00005 mg/l	SUB	<0.002	#			<0.002	#							<0.0005	#						
Bentazone*	<0.00005 mg/l	SUB	<0.002	#			<0.002	#			<0.0005	#			<0.0005	#						
Bromoxynil*	<0.00005 mg/l	SUB	<0.002	#			<0.002	#			<0.0005	#			<0.0005	#						
Dicamba*	<0.00005 mg/l	SUB	<0.002	#			<0.002	#			<0.0005	#			<0.0005	#						
Dichloroprop*	<0.00005 mg/l	SUB	<0.002	#			<0.002	#			<0.0005	#			<0.0005	#						
Fenoprop*	<0.00005 mg/l	SUB	<0.002	#			<0.002	#			<0.0005	#			<0.0005	#						
Ioxynil*	<0.00005 mg/l	SUB	<0.002	#			<0.002	#			<0.0005	#			<0.0005	#						
MCPA*	<0.00005 mg/l	SUB	<0.002	#			<0.002	#			<0.0005	#			<0.0005	#						
4-(4-Chloro-o-tolyloxy) butyric acid (MCPB)*	<0.00005 mg/l	SUB	<0.002	#			<0.002	#			<0.0005	#			<0.0005	#						
Mecoprop*	<0.00004 mg/l	SUB	0.0725	#			0.0545	#			0.0295	#			0.0355	#						
Triclopyr*	<0.00005 mg/l	SUB	<0.002	#			<0.002	#			<0.0005	#			<0.0005	#						
Alkalinity, Total as CaCO3	<2 mg/l	TM043	8060	#			5140	#			4300	#			4880	#						
BOD, unfiltered	<1 mg/l	TM045	102	◆ #			>81.6	◆ #			160	◆ #			87.4	◆ #						
Organic Carbon, Total	<3 mg/l	TM090	892	#			19.9	#			345	#			421	#						
Ammoniacal Nitrogen as N	<0.2 mg/l	TM099	1560	#			6.73	#			172	#			801	#						
COD, unfiltered	<7 mg/l	TM107	2490	#			1060	#			1670	#			1110	#						
Cadmium (diss.filt)	<0.0001 mg/l	TM152	0.0001	#			0.000185	#			<0.0001	#			<0.0001	#						
Chromium (diss.filt)	<0.00022 mg/l	TM152	0.0499	#			0.036	#			0.0149	#			0.0162	#						
Copper (diss.filt)	<0.00085 mg/l	TM152	0.00351	#			0.363	#			0.00706	#			<0.00085	#						
Lead (diss.filt)	<0.00002 mg/l	TM152	0.00223	#			0.00625	#			0.000171	#			0.00025	#						
Manganese (diss.filt)	<0.00004 mg/l	TM152	0.147	#			0.209	#			0.175	#			0.0564	#						
Nickel (diss.filt)	<0.00015 mg/l	TM152	0.297	#			0.191	#			0.108	#			0.0489	#						
Zinc (diss.filt)	<0.00041 mg/l	TM152	0.0232	#			0.154	#			0.0182	#			0.00309	#						
Mineral oil >C10 C40 (aq)	<0.01 mg/l	TM172	<0.01				<0.01				<0.01				<0.01							
Mercury (diss.filt)	<0.00001 mg/l	TM183	<0.00001	#			<0.00001	#			<0.00001	#			<0.00001	#						
Chloride	<0.08 mg/l	TM226	2140	#			1330	#			1180	#			1190	#						
Sulphate	<0.1 mg/l	TM226	5.21	#			75.2	#			1.71	#			2	#						
Total Oxidised Nitrogen as N	<0.02 mg/l	TM226	<0.25	#			<0.2	#			0.333	#			<0.1	#						
Cyanide, Total	<0.05 mg/l	TM227	<0.05	#			<0.05	#			<0.05	#			<0.05	#						
Cyanide, Free	<0.05 mg/l	TM227	<0.05	#			<0.05	#			<0.05	#			<0.05	#						

Order Number:
Report Number: 343730
Superseded Report:

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CERTIFICATE OF ANALYSIS

SDG: 151202-104
Job: H_FLINTCCO_BUC-10
Client Reference:

Location: Standard Annual
Customer: Flintshire County Council
Attention: Paul Murphy

Order Number:
Report Number: 343730
Superseded Report:

OC, OP Pesticides and Triazine Herb

Results Legend		Customer Sample R Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref Lab Sample No.(s) AGS Reference	LC2 0.00 - 0.00 Water(GW/SW) 30/11/2015 02/12/2015 151202-104 12558786	LC3 0.00 - 0.00 Water(GW/SW) 30/11/2015 02/12/2015 151202-104 12558788	LC4 0.00 - 0.00 Water(GW/SW) 30/11/2015 02/12/2015 151202-104 12558789	LC7 0.00 - 0.00 Water(GW/SW) 30/11/2015 02/12/2015 151202-104 12558790		
#	ISO17025 accredited.							
M	mCERTS accredited.							
aq	Aqueous / settled sample.							
diss.filt	Dissolved / filtered sample.							
tot.unfilt	Total / unfiltered sample.							
*	Subcontracted test.							
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery							
(F)	Trigger breach confirmed							
1-5&*\$@	Sample deviation (see appendix)							
Component	LOD/Units	Method						
Atrazine	<0.001 mg/l	TM231	<0.001	<0.001	<0.001	<0.001		
Simazine	<0.001 mg/l	TM231	<0.001	<0.001	<0.001	<0.001		
Dichlorvos	<0.00001 mg/l	TM231	<0.00001	<0.00001	<0.00001	<0.00001		
Mevinphos	<0.00001 mg/l	TM231	<0.00001	<0.00001	<0.00001	<0.00001		
Tecnazene	<0.00001 mg/l	TM231	<0.00001	<0.00001	<0.00001	<0.00001		
Hexachlorobenzene	<0.00001 mg/l	TM231	<0.00001	<0.00001	<0.00001	<0.00001		
Trifluralin	<0.00001 mg/l	TM231	<0.00001	<0.00001	<0.00001	<0.00001		
alpha-Hexachlorocyclohexane (HCH / Lindane)	<0.00001 mg/l	TM231	<0.00001	<0.00001	<0.00001	<0.00001		
Quintozene (PCNB)	<0.00001 mg/l	TM231	<0.00001	<0.00001	<0.00001	<0.00001		
Diazinon	<0.00001 mg/l	TM231	<0.00001	<0.00001	<0.00001	<0.00001		
Triallate	<0.00001 mg/l	TM231	<0.00001	<0.00001	<0.00001	<0.00001		
Etrimphos	<0.00001 mg/l	TM231	<0.00001	<0.00001	<0.00001	<0.00001		
gamma-Hexachlorocyclohexane (HCH / Lindane)	<0.00001 mg/l	TM231	<0.00001	<0.00001	<0.00001	<0.00001		
Propetamphos	<0.00001 mg/l	TM231	<0.00001	<0.00001	<0.00001	<0.00001		
Heptachlor	<0.00001 mg/l	TM231	<0.00001	<0.00001	<0.00001	<0.00001		
Chlorpyrifos methyl	<0.00001 mg/l	TM231	<0.00001	<0.00001	<0.00001	<0.00001		
Dimethoate	<0.00001 mg/l	TM231	<0.00001	<0.00001	<0.00001	<0.00001		
Aldrin	<0.00001 mg/l	TM231	<0.00001	<0.00001	<0.00001	<0.00001		
Chlorothalonil	<0.00001 mg/l	TM231	<0.00001	<0.00001	<0.00001	<0.00001		
Pirimiphos-methyl	<0.00001 mg/l	TM231	<0.00001	<0.00001	<0.00001	<0.00001		
beta-Hexachlorocyclohexane (HCH / Lindane)	<0.00001 mg/l	TM231	<0.00001	<0.00001	<0.00001	<0.00001		
Chlorpyrifos	<0.00001 mg/l	TM231	<0.00001	<0.00001	<0.00001	<0.00001		
Telodrin	<0.00001 mg/l	TM231	<0.00001	<0.00001	<0.00001	<0.00001		
Methyl parathion	<0.00001 mg/l	TM231	<0.00001	<0.00001	<0.00001	<0.00001		
Isodrin	<0.00001 mg/l	TM231	<0.00001	<0.00001	<0.00001	<0.00001		
Malathion	<0.00001 mg/l	TM231	<0.00001	<0.00001	<0.00001	<0.00001		
Fenthion	<0.00001 mg/l	TM231	<0.00001	<0.00001	<0.00001	<0.00001		
Fenitrothion	<0.00001 mg/l	TM231	<0.00001	<0.00001	<0.00001	<0.00001		
Heptachlor epoxide	<0.00001 mg/l	TM231	<0.00001	<0.00001	<0.00001	<0.00001		
Triadimefon	<0.00001 mg/l	TM231	<0.00001	<0.00001	<0.00001	<0.00001		
Pendimethalin	<0.00001 mg/l	TM231	<0.00001	<0.00001	<0.00001	<0.00001		
Parathion	<0.00001 mg/l	TM231	<0.00001	<0.00001	<0.00001	<0.00001		

Order Number:
Report Number: 343730
Superseded Report:

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CERTIFICATE OF ANALYSIS

SDG: 151202-104
Job: H_FLINTCCO_BUC-10
Client Reference:

Location: Standard Annual
Customer: Flintshire County Council
Attention: Paul Murphy

Order Number:
Report Number: 343730
Superseded Report:

SVOC MS (W) - Aqueous

Results Legend		Customer Sample R	LC2		LC3		LC4		LC7			
#	ISO17025 accredited.		0.00 - 0.00		0.00 - 0.00		0.00 - 0.00		0.00 - 0.00			
M	mCERTS accredited.	Depth (m)	Water(GW/SW)		Water(GW/SW)		Water(GW/SW)		Water(GW/SW)			
aq	Aqueous / settled sample.		30/11/2015		30/11/2015		30/11/2015		30/11/2015			
diss.filt	Dissolved / filtered sample.	Sample Type										
tot.unfilt	Total / unfiltered sample.											
*	Subcontracted test.	Date Sampled										
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery											
(F)	Trigger breach confirmed	Date Received	02/12/2015		02/12/2015		02/12/2015		02/12/2015			
1-5	@	Sample deviation (see appendix)		151202-104		151202-104		151202-104		151202-104			
		SDG Ref	12558786		12558788		12558789		12558790			
		Lab Sample No.(s)										
		AGS Reference										
Component	LOD/Units	Method										
1,2,4-Trichlorobenzene (aq)	<0.001 mg/l	TM176	<0.004	#	<0.001	#	<0.001	#	<0.002	#		
1,2-Dichlorobenzene (aq)	<0.001 mg/l	TM176	<0.004	#	<0.001	#	<0.001	#	<0.002	#		
1,3-Dichlorobenzene (aq)	<0.001 mg/l	TM176	<0.004	#	<0.001	#	<0.001	#	<0.002	#		
1,4-Dichlorobenzene (aq)	<0.001 mg/l	TM176	<0.004		<0.001		<0.001		<0.002			
2,4,5-Trichlorophenol (aq)	<0.001 mg/l	TM176	<0.004	#	<0.001	#	<0.001	#	<0.002	#		
2,4,6-Trichlorophenol (aq)	<0.001 mg/l	TM176	<0.004	#	<0.001	#	<0.001	#	<0.002	#		
2,4-Dichlorophenol (aq)	<0.001 mg/l	TM176	<0.004	#	<0.001	#	<0.001	#	<0.002	#		
2,4-Dimethylphenol (aq)	<0.001 mg/l	TM176	<0.004	#	0.00106	#	<0.001	#	<0.002	#		
2,4-Dinitrotoluene (aq)	<0.001 mg/l	TM176	<0.004	#	<0.001	#	<0.001	#	<0.002	#		
2,6-Dinitrotoluene (aq)	<0.001 mg/l	TM176	<0.004	#	<0.001	#	<0.001	#	<0.002	#		
2-Chloronaphthalene (aq)	<0.001 mg/l	TM176	<0.004	#	<0.001	#	<0.001	#	<0.002	#		
2-Chlorophenol (aq)	<0.001 mg/l	TM176	<0.004	#	<0.001	#	<0.001	#	<0.002	#		
2-Methylnaphthalene (aq)	<0.001 mg/l	TM176	<0.004	#	<0.001	#	<0.001	#	<0.002	#		
2-Methylphenol (aq)	<0.001 mg/l	TM176	<0.004	#	0.00122	#	<0.001	#	<0.002	#		
2-Nitroaniline (aq)	<0.001 mg/l	TM176	<0.004	#	<0.001	#	<0.001	#	<0.002	#		
2-Nitrophenol (aq)	<0.001 mg/l	TM176	<0.004	#	<0.001	#	<0.001	#	<0.002	#		
3-Nitroaniline (aq)	<0.001 mg/l	TM176	<0.004	#	<0.001	#	<0.001	#	<0.002	#		
4-Bromophenylphenylethe r (aq)	<0.001 mg/l	TM176	<0.004	#	<0.001	#	<0.001	#	<0.002	#		
4-Chloro-3-methylphenol (aq)	<0.001 mg/l	TM176	<0.004	#	<0.001	#	<0.001	#	<0.002	#		
4-Chloroaniline (aq)	<0.001 mg/l	TM176	<0.004		<0.001		<0.001		<0.002			
4-Chlorophenylphenylethe r (aq)	<0.001 mg/l	TM176	<0.004	#	<0.001	#	<0.001	#	<0.002	#		
4-Methylphenol (aq)	<0.001 mg/l	TM176	<0.004	#	0.00123	#	<0.001	#	<0.002	#		
4-Nitroaniline (aq)	<0.001 mg/l	TM176	<0.004	#	<0.001	#	<0.001	#	<0.002	#		
4-Nitrophenol (aq)	<0.001 mg/l	TM176	<0.004		<0.001		<0.001		<0.002			
Azobenzene (aq)	<0.001 mg/l	TM176	<0.004	#	<0.001	#	<0.001	#	<0.002	#		
Acenaphthylene (aq)	<0.001 mg/l	TM176	<0.004	#	<0.001	#	<0.001	#	<0.002	#		
Acenaphthene (aq)	<0.001 mg/l	TM176	<0.004	#	<0.001	#	<0.001	#	<0.002	#		
Anthracene (aq)	<0.001 mg/l	TM176	<0.004	#	<0.001	#	<0.001	#	<0.002	#		
bis(2-Chloroethyl)ether (aq)	<0.001 mg/l	TM176	<0.004	#	<0.001	#	<0.001	#	<0.002	#		
bis(2-Chloroethoxy)metha ne (aq)	<0.001 mg/l	TM176	<0.004	#	<0.001	#	<0.001	#	<0.002	#		
bis(2-Ethylhexyl) phthalate (aq)	<0.002 mg/l	TM176	<0.008	#	<0.002	#	<0.002	#	<0.004	#		
Butylbenzyl phthalate (aq)	<0.001 mg/l	TM176	<0.004	#	<0.001	#	<0.001	#	<0.002	#		



CERTIFICATE OF ANALYSIS

SDG: 151202-104
Job: H_FLINTCCO_BUC-10
Client Reference:

Location: Standard Annual
Customer: Flintshire County Council
Attention: Paul Murphy

Order Number:
Report Number: 343730
Superseded Report:

SVOC MS (W) - Aqueous

Results Legend			Customer Sample R		LC2	LC3	LC4	LC7		
#	ISO17025 accredited.		Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref Lab Sample No.(s) AGS Reference		0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00		
M	mCERTS accredited.				Water(GW/SW)	Water(GW/SW)	Water(GW/SW)	Water(GW/SW)		
aq	Aqueous / settled sample.				30/11/2015	30/11/2015	30/11/2015	30/11/2015		
dis.filt	Dissolved / filtered sample.									
tot.unfilt	Total / unfiltered sample.				02/12/2015	02/12/2015	02/12/2015	02/12/2015		
*	Subcontracted test.				151202-104	151202-104	151202-104	151202-104		
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery				12558786	12558788	12558789	12558790		
(F)	Trigger breach confirmed									
1-5&+5@	Sample deviation (see appendix)									
Component	LOD/Units	Method								
Benzo(a)anthracene (aq)	<0.001 mg/l	TM176			<0.004 #	<0.001 #	<0.001 #	<0.002 #		
Benzo(b)fluoranthene (aq)	<0.001 mg/l	TM176			<0.004 #	<0.001 #	<0.001 #	<0.002 #		
Benzo(k)fluoranthene (aq)	<0.001 mg/l	TM176			<0.004 #	<0.001 #	<0.001 #	<0.002 #		
Benzo(a)pyrene (aq)	<0.001 mg/l	TM176			<0.004 #	<0.001 #	<0.001 #	<0.002 #		
Benzo(g,h,i)perylene (aq)	<0.001 mg/l	TM176			<0.004 #	<0.001 #	<0.001 #	<0.002 #		
Carbazole (aq)	<0.001 mg/l	TM176			<0.004 #	<0.001 #	<0.001 #	<0.002 #		
Chrysene (aq)	<0.001 mg/l	TM176			<0.004 #	<0.001 #	<0.001 #	<0.002 #		
Dibenzofuran (aq)	<0.001 mg/l	TM176			<0.004 #	<0.001 #	<0.001 #	<0.002 #		
n-Dibutyl phthalate (aq)	<0.001 mg/l	TM176			<0.004 #	<0.001 #	<0.001 #	<0.002 #		
Diethyl phthalate (aq)	<0.001 mg/l	TM176			<0.004 #	<0.001 #	<0.001 #	<0.002 #		
Dibenzo(a,h)anthracene (aq)	<0.001 mg/l	TM176			<0.004 #	<0.001 #	<0.001 #	<0.002 #		
Dimethyl phthalate (aq)	<0.001 mg/l	TM176			<0.004 #	<0.001 #	<0.001 #	<0.002 #		
n-Dioctyl phthalate (aq)	<0.005 mg/l	TM176			<0.02 #	<0.005 #	<0.005 #	<0.01 #		
Fluoranthene (aq)	<0.001 mg/l	TM176			<0.004 #	<0.001 #	<0.001 #	<0.002 #		
Fluorene (aq)	<0.001 mg/l	TM176			<0.004 #	<0.001 #	<0.001 #	<0.002 #		
Hexachlorobenzene (aq)	<0.001 mg/l	TM176			<0.004 #	<0.001 #	<0.001 #	<0.002 #		
Hexachlorobutadiene (aq)	<0.001 mg/l	TM176			<0.004 #	<0.001 #	<0.001 #	<0.002 #		
Pentachlorophenol (aq)	<0.001 mg/l	TM176			<0.004	<0.001	<0.001	<0.002		
Phenol (aq)	<0.001 mg/l	TM176			<0.004	<0.001	<0.001	<0.002		
n-Nitroso-n-dipropylamine (aq)	<0.001 mg/l	TM176			<0.004 #	<0.001 #	<0.001 #	<0.002 #		
Hexachloroethane (aq)	<0.001 mg/l	TM176			<0.004 #	<0.001 #	<0.001 #	<0.002 #		
Nitrobenzene (aq)	<0.001 mg/l	TM176			<0.004 #	<0.001 #	<0.001 #	<0.002 #		
Naphthalene (aq)	<0.001 mg/l	TM176			<0.004 #	<0.001 #	<0.001 #	<0.002 #		
Isophorone (aq)	<0.001 mg/l	TM176			<0.004 #	<0.001 #	<0.001 #	<0.002 #		
Hexachlorocyclopentadiene (aq)	<0.001 mg/l	TM176			<0.004	<0.001	<0.001	<0.002		
Phenanthrene (aq)	<0.001 mg/l	TM176			<0.004 #	<0.001 #	<0.001 #	<0.002 #		
Indeno(1,2,3-cd)pyrene (aq)	<0.001 mg/l	TM176			<0.004 #	<0.001 #	<0.001 #	<0.002 #		
Pyrene (aq)	<0.001 mg/l	TM176			<0.004 #	<0.001 #	<0.001 #	<0.002 #		



CERTIFICATE OF ANALYSIS

SDG: 151202-104
Job: H_FLINTCCO_BUC-10
Client Reference:

Location: Standard Annual
Customer: Flintshire County Council
Attention: Paul Murphy

Order Number:
Report Number: 343730
Superseded Report:

VOC MS (W)

Results Legend		Customer Sample R	LC2		LC3		LC4		LC7			
#	ISO17025 accredited.		0.00 - 0.00		0.00 - 0.00		0.00 - 0.00		0.00 - 0.00			
M	mCERTS accredited.	Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref Lab Sample No.(s) AGS Reference	Water(GW/SW)		Water(GW/SW)		Water(GW/SW)		Water(GW/SW)			
aq	Aqueous / settled sample.		30/11/2015		30/11/2015		30/11/2015		30/11/2015			
diss.filt	Dissolved / filtered sample.											
tot.unfilt	Total / unfiltered sample.											
*	Subcontracted test.											
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery		02/12/2015		02/12/2015		02/12/2015		02/12/2015			
(F)	Trigger breach confirmed		151202-104		151202-104		151202-104		151202-104			
1-5&\$@	Sample deviation (see appendix)		12558786		12558788		12558789		12558790			
Component	LOD/Units	Method										
Dibromofluoromethane**	%	TM208	121	1	114	1	108	1	114	1		
Toluene-d8**	%	TM208	97.2	1	96.8	1	97.1	1	96.6	1		
4-Bromofluorobenzene**	%	TM208	95	1	95.7	1	97.9	1	92.8	1		
Dichlorodifluoromethane	<0.001 mg/l	TM208	<0.001	1	<0.001	1	<0.001	1	<0.001	1		
Chloromethane	<0.001 mg/l	TM208	<0.001	1 #	<0.001	1 #	<0.001	1 #	<0.001	1 #		
Vinyl chloride	<0.001 mg/l	TM208	<0.001	1 #	<0.001	1 #	<0.001	1 #	<0.001	1 #		
Bromomethane	<0.001 mg/l	TM208	<0.001	1 #	<0.001	1 #	<0.001	1 #	<0.001	1 #		
Chloroethane	<0.001 mg/l	TM208	<0.001	1 #	<0.001	1 #	<0.001	1 #	<0.001	1 #		
Trichlorofluoromethane	<0.001 mg/l	TM208	<0.001	1 #	<0.001	1 #	<0.001	1 #	<0.001	1 #		
1,1-Dichloroethene	<0.001 mg/l	TM208	<0.001	1 #	<0.001	1 #	<0.001	1 #	<0.001	1 #		
Carbon disulphide	<0.001 mg/l	TM208	<0.001	1 #	<0.001	1 #	<0.001	1 #	<0.001	1 #		
Dichloromethane	<0.003 mg/l	TM208	<0.003	1 #	<0.003	1 #	<0.003	1 #	<0.003	1 #		
Methyl tertiary butyl ether (MTBE)	<0.001 mg/l	TM208	<0.001	1 #	<0.001	1 #	<0.001	1 #	<0.001	1 #		
trans-1,2-Dichloroethene	<0.001 mg/l	TM208	<0.001	1 #	<0.001	1 #	<0.001	1 #	<0.001	1 #		
1,1-Dichloroethane	<0.001 mg/l	TM208	<0.001	1 #	<0.001	1 #	<0.001	1 #	<0.001	1 #		
cis-1,2-Dichloroethene	<0.001 mg/l	TM208	<0.001	1 #	<0.001	1 #	<0.001	1 #	<0.001	1 #		
2,2-Dichloropropane	<0.001 mg/l	TM208	<0.001	1	<0.001	1	<0.001	1	<0.001	1		
Bromochloromethane	<0.001 mg/l	TM208	<0.001	1 #	<0.001	1 #	<0.001	1 #	<0.001	1 #		
Chloroform	<0.001 mg/l	TM208	<0.001	1 #	<0.001	1 #	<0.001	1 #	<0.001	1 #		
1,1,1-Trichloroethane	<0.001 mg/l	TM208	<0.001	1 #	<0.001	1 #	<0.001	1 #	<0.001	1 #		
1,1-Dichloropropene	<0.001 mg/l	TM208	<0.001	1 #	<0.001	1 #	<0.001	1 #	<0.001	1 #		
Carbontetrachloride	<0.001 mg/l	TM208	<0.001	1 #	<0.001	1 #	<0.001	1 #	<0.001	1 #		
1,2-Dichloroethane	<0.001 mg/l	TM208	<0.001	1	<0.001	1	<0.001	1	<0.001	1		
Benzene	<0.001 mg/l	TM208	0.00398	1 #	0.00281	1 #	0.00354	1 #	0.00345	1 #		
Trichloroethene	<0.001 mg/l	TM208	<0.001	1 #	<0.001	1 #	<0.001	1 #	<0.001	1 #		
1,2-Dichloropropane	<0.001 mg/l	TM208	<0.001	1 #	<0.001	1 #	<0.001	1 #	<0.001	1 #		
Dibromomethane	<0.001 mg/l	TM208	<0.001	1 #	<0.001	1 #	<0.001	1 #	<0.001	1 #		
Bromodichloromethane	<0.001 mg/l	TM208	<0.001	1 #	<0.001	1 #	<0.001	1 #	<0.001	1 #		
cis-1,3-Dichloropropene	<0.001 mg/l	TM208	<0.001	1 #	<0.001	1 #	<0.001	1 #	<0.001	1 #		
Toluene	<0.001 mg/l	TM208	0.00519	1 #	0.00214	1 #	<0.001	1 #	0.00241	1 #		
trans-1,3-Dichloropropene	<0.001 mg/l	TM208	<0.001	1 #	<0.001	1 #	<0.001	1 #	<0.001	1 #		
1,1,2-Trichloroethane	<0.001 mg/l	TM208	<0.001	1 #	<0.001	1 #	<0.001	1 #	<0.001	1 #		



CERTIFICATE OF ANALYSIS

SDG: 151202-104
Job: H_FLINTCCO_BUC-10
Client Reference:

Location: Standard Annual
Customer: Flintshire County Council
Attention: Paul Murphy

Order Number:
Report Number: 343730
Superseded Report:

VOC MS (W)

Results Legend			Customer Sample R		LC2	LC3	LC4	LC7		
#	ISO17025 accredited.		Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref Lab Sample No.(s) AGS Reference		0.00 - 0.00 Water(GW/SW) 30/11/2015	0.00 - 0.00 Water(GW/SW) 30/11/2015	0.00 - 0.00 Water(GW/SW) 30/11/2015	0.00 - 0.00 Water(GW/SW) 30/11/2015		
M	mCERTS accredited.									
aq	Aqueous / settled sample.									
dis.filt	Dissolved / filtered sample.									
tot.unfilt	Total / unfiltered sample.									
*	Subcontracted test.									
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery									
(F)	Trigger breach confirmed				02/12/2015 151202-104 12558786	02/12/2015 151202-104 12558788	02/12/2015 151202-104 12558789	02/12/2015 151202-104 12558790		
1-5&+&@	Sample deviation (see appendix)									
Component	LOD/Units	Method								
1,3-Dichloropropane	<0.001 mg/l	TM208			<0.001 1 #	<0.001 1 #	<0.001 1 #	<0.001 1 #		
Tetrachloroethene	<0.001 mg/l	TM208			<0.001 1 #	<0.001 1 #	<0.001 1 #	<0.001 1 #		
Dibromochloromethane	<0.001 mg/l	TM208			<0.001 1 #	<0.001 1 #	<0.001 1 #	<0.001 1 #		
1,2-Dibromoethane	<0.001 mg/l	TM208			<0.001 1 #	<0.001 1 #	<0.001 1 #	<0.001 1 #		
Chlorobenzene	<0.001 mg/l	TM208			<0.001 1 #	<0.001 1 #	<0.001 1 #	<0.001 1 #		
1,1,1,2-Tetrachloroethane	<0.001 mg/l	TM208			<0.001 1 #	<0.001 1 #	<0.001 1 #	<0.001 1 #		
Ethylbenzene	<0.001 mg/l	TM208			<0.001 1 #	<0.001 1 #	<0.001 1 #	0.00371 1 #		
m,p-Xylene	<0.001 mg/l	TM208			0.00656 1 #	<0.001 1 #	0.00115 1 #	0.0145 1 #		
o-Xylene	<0.001 mg/l	TM208			0.00915 1 #	0.00537 1 #	0.00169 1 #	0.00557 1 #		
Styrene	<0.001 mg/l	TM208			<0.001 1 #	<0.001 1 #	<0.001 1 #	<0.001 1 #		
Bromoform	<0.001 mg/l	TM208			<0.001 1 #	<0.001 1 #	<0.001 1 #	<0.001 1 #		
Isopropylbenzene	<0.001 mg/l	TM208			<0.001 1 #	<0.001 1 #	<0.001 1 #	<0.001 1 #		
1,1,2,2-Tetrachloroethane	<0.001 mg/l	TM208			<0.001 1	<0.001 1	<0.001 1	<0.001 1		
1,2,3-Trichloropropane	<0.001 mg/l	TM208			<0.001 1 #	<0.001 1 #	<0.001 1 #	<0.001 1 #		
Bromobenzene	<0.001 mg/l	TM208			<0.001 1 #	<0.001 1 #	<0.001 1 #	<0.001 1 #		
Propylbenzene	<0.001 mg/l	TM208			<0.001 1 #	<0.001 1 #	<0.001 1 #	<0.001 1 #		
2-Chlorotoluene	<0.001 mg/l	TM208			<0.001 1 #	<0.001 1 #	<0.001 1 #	<0.001 1 #		
1,3,5-Trimethylbenzene	<0.001 mg/l	TM208			0.00271 1 #	0.00118 1 #	<0.001 1 #	0.00181 1 #		
4-Chlorotoluene	<0.001 mg/l	TM208			<0.001 1 #	<0.001 1 #	<0.001 1 #	<0.001 1 #		
tert-Butylbenzene	<0.001 mg/l	TM208			<0.001 1 #	<0.001 1 #	<0.001 1 #	<0.001 1 #		
1,2,4-Trimethylbenzene	<0.001 mg/l	TM208			0.00219 1 #	<0.001 1 #	<0.001 1 #	0.00585 1 #		
sec-Butylbenzene	<0.001 mg/l	TM208			<0.001 1 #	<0.001 1 #	<0.001 1 #	<0.001 1 #		
4-iso-Propyltoluene	<0.001 mg/l	TM208			0.00522 1 #	<0.001 1 #	<0.001 1 #	<0.001 1 #		
1,3-Dichlorobenzene	<0.001 mg/l	TM208			<0.001 1 #	<0.001 1 #	<0.001 1 #	<0.001 1 #		
1,4-Dichlorobenzene	<0.001 mg/l	TM208			<0.001 1 #	<0.001 1 #	<0.001 1 #	<0.001 1 #		
n-Butylbenzene	<0.001 mg/l	TM208			<0.001 1 #	<0.001 1 #	<0.001 1 #	<0.001 1 #		
1,2-Dichlorobenzene	<0.001 mg/l	TM208			<0.001 1	<0.001 1	<0.001 1	<0.001 1		
1,2-Dibromo-3-chloropropane	<0.001 mg/l	TM208			<0.001 1	<0.001 1	<0.001 1	<0.001 1		
1,2,4-Trichlorobenzene	<0.001 mg/l	TM208			<0.001 1 #	<0.001 1 #	<0.001 1 #	<0.001 1 #		
Hexachlorobutadiene	<0.001 mg/l	TM208			<0.001 1 #	<0.001 1 #	<0.001 1 #	<0.001 1 #		
tert-Amyl methyl ether (TAME)	<0.001 mg/l	TM208			<0.001 1 #	<0.001 1 #	<0.001 1 #	<0.001 1 #		
Naphthalene	<0.001 mg/l	TM208			0.0129 1 #	0.00422 1 #	0.0166 1 #	0.00605 1 #		

Order Number:
Report Number: 343730
Superseded Report:

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SDG: 151202-104
Job: H_FLINTCCO_BUC-10
Client Reference:

Location: Standard Annual
Customer: Flintshire County Council
Attention: Paul Murphy

Order Number:
Report Number: 343730
Superseded Report:

Table of Results - Appendix

Method No	Reference	Description	Wet/Dry Sample ¹	Surrogate Corrected
SUB		Subcontracted Test		
TM043	Method 2320B, AWWA/APHA, 20th Ed., 1999 / BS 2690: Part109 1984	Determination of alkalinity in aqueous samples		
TM045	MEWAM BOD5 2nd Ed.HMSO 1988 / Method 5210B, AWWA/APHA, 20th Ed., 1999; SCA Blue Book 130	Determination of BOD5 (ATU) Filtered by Oxygen Meter on liquids		
TM061	Method for the Determination of EPH,Massachusetts Dept.of EP, 1998	Determination of Extractable Petroleum Hydrocarbons by GC-FID (C10-C40)		
TM090	Method 5310, AWWA/APHA, 20th Ed., 1999 / Modified: US EPA Method 415.1 & 9060	Determination of Total Organic Carbon/Total Inorganic Carbon in Water and Waste Water		
TM099	BS 2690: Part 7:1968 / BS 6068: Part2.11:1984	Determination of Ammonium in Water Samples using the Kone Analyser		
TM107	ISO 6060-1989	Determination of Chemical Oxygen Demand using COD Dr Lange Kit		
TM152	Method 3125B, AWWA/APHA, 20th Ed., 1999	Analysis of Aqueous Samples by ICP-MS		
TM172	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	EPH in Waters		
TM176	EPA 8270D Semi-Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry (GC/MS)	Determination of SVOCs in Water by GCMS		
TM183	BS EN 23506:2002, (BS 6068-2.74:2002) ISBN 0 580 38924 3	Determination of Trace Level Mercury in Waters and Leachates by PSA Cold Vapour Atomic Fluorescence Spectrometry		
TM208	Modified: US EPA Method 8260b & 624	Determination of Volatile Organic Compounds by Headspace / GC-MS in Waters		
TM226	In-House Method	Determination of Anions in Waters using Ion Chromatography		
TM227	Standard methods for the examination of waters and wastewaters 20th Edition, AWWA/APHA Method 4500.	Determination of Total Cyanide, Free (Easily Liberatable) Cyanide and Thiocyanate		
TM228	US EPA Method 6010B	Determination of Major Cations in Water by iCap 6500 Duo ICP-OES		
TM231	Agilent 6890 Gas Chromatograph system using an Agilent 5973 Mass Selective Detector (MSD)	Determination of Organochlorine and Organophosphorus Pesticides and Triazine Herbicides by GCMS		
TM256	The measurement of Electrical Conductivity and the Laboratory determination of pH Value of Natural, Treated and Wastewaters. HMSO, 1978. ISBN 011 751428 4.	Determination of pH in Water and Leachate using the GLpH pH Meter		
TM328				

¹ Applies to Solid samples only. DRY indicates samples have been dried at 35°C. NA = not applicable.



SDG:	151202-104	Location:	Standard Annual	Order Number:	
Job:	H_FLINTCCO_BUC-10	Customer:	Flintshire County Council	Report Number:	343730
Client Reference:		Attention:	Paul Murphy	Superseded Report:	

Test Completion Dates

Lab Sample No(s)	12558786	12558788	12558789	12558790
Customer Sample Ref.	LC2	LC3	LC4	LC7
AGS Ref.				
Depth	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
Type	LIQUID	LIQUID	LIQUID	LIQUID

Acid Herbicides (W)*	30-Dec-2015	30-Dec-2015	30-Dec-2015	30-Dec-2015
Alkalinity as CaCO3	05-Dec-2015	05-Dec-2015	05-Dec-2015	05-Dec-2015
Ammoniacal Nitrogen	07-Dec-2015	07-Dec-2015	07-Dec-2015	07-Dec-2015
Anions by ion Chromatography	08-Dec-2015	08-Dec-2015	08-Dec-2015	08-Dec-2015
BOD True Total	08-Dec-2015	08-Dec-2015	08-Dec-2015	08-Dec-2015
COD Unfiltered	05-Dec-2015	05-Dec-2015	05-Dec-2015	05-Dec-2015
Cyanide Comp/Free/Total/Thiocyanate	07-Dec-2015	07-Dec-2015	07-Dec-2015	07-Dec-2015
Dissolved Metals by ICP-MS	10-Dec-2015	10-Dec-2015	10-Dec-2015	10-Dec-2015
Mercury Dissolved	04-Dec-2015	04-Dec-2015	04-Dec-2015	04-Dec-2015
Metals by iCap-OES Dissolved (W)	04-Dec-2015	04-Dec-2015	04-Dec-2015	04-Dec-2015
Mineral Oil C10-40 Aqueous (W)	14-Dec-2015	11-Dec-2015	11-Dec-2015	11-Dec-2015
OC, OP Pesticides and Triazine Herb	08-Dec-2015	07-Dec-2015	08-Dec-2015	08-Dec-2015
Organotins in Aqueous Samples	07-Dec-2015	07-Dec-2015	07-Dec-2015	07-Dec-2015
pH Value	09-Dec-2015	09-Dec-2015	09-Dec-2015	09-Dec-2015
SVOC MS (W) - Aqueous	10-Dec-2015	10-Dec-2015	10-Dec-2015	10-Dec-2015
Total Organic and Inorganic Carbon	04-Dec-2015	07-Dec-2015	04-Dec-2015	04-Dec-2015
VOC MS (W)	08-Dec-2015	08-Dec-2015	08-Dec-2015	08-Dec-2015

ALS Environmental Ltd
Torrington Avenue
Coventry
CV4 9GU

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

Mr Subcontracting
ALcontrol Laboratories
Units 7 & 8 Hawarden Business
Park
Manor Road
Hawarden
Deeside CH5 3US
Cheshire

30 December 2015

Test Report: COV/1240652/2015

Dear Mr Subcontracting

Analysis of your sample(s) submitted on 04 December 2015 is now complete and we have pleasure in enclosing the appropriate test report(s).

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

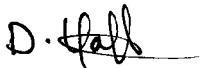
Should you have any queries regarding this report(s) or any part of our service, please contact Customer Services on +44 (0)24 7642 1213 who will be happy to discuss your requirements.

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

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

Yours Sincerely,

Signed:



Name: D. Hoffman

Title: Inorganic Team Leader



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.

Report Summary



**Mr Harwarden Subcontracting
ALcontrol Laboratories
Units 7 & 8 Hawarden Business
Park
Manor Road
Hawarden
Deeside
Cheshire**

Date of Issue: **30 December 2015**

Report Number: **COV/1240652/2015**

Issue **1**

Job Description: Q81068 - Acid Herbicides in Land Leachat

Job Location: Hawarden 151202-104

Number of Samples
included in this report **5**

Job Received: **04 December 2015**

Number of Test Results
included in this report **65**

Analysis Commenced: **24 December 2015**

Signed:

A handwritten signature in black ink, appearing to read 'D. Hoffman'.

Name: **D. Hoffman**

Date: **30 December 2015**

Title: **Inorganic Team Leader**

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



Report Number: **COV/1240652/2015**

Issue **1**

Laboratory Number: **14992824**

Sample **1** of **5**

Sample Source: **ALcontrol Laboratories**

Sample Point Description:

Sample Description: **12563865 LC2**

Sample Matrix: **Not Specified**

Sample Date/Time: **30 November 2015**

Sample Received: **04 December 2015**

Analysis Complete: **30 December 2015**

Test Description	Result	Units	Analysis Date	Accreditation	Method
2,4 - D	<2.00	ug/l	29/12/2015	N Cov	GEO20
2,4 - DB	<2.00	ug/l	29/12/2015	N Cov	GEO20
2,4,5 - T	<2.00	ug/l	29/12/2015	N Cov	GEO20
Bentazone	<2.00	ug/l	29/12/2015	N Cov	GEO20
Bromoxynil	<2.00	ug/l	29/12/2015	N Cov	GEO20
Dicamba	<2.00	ug/l	29/12/2015	N Cov	GEO20
Dichlorprop	<2.00	ug/l	29/12/2015	N Cov	GEO20
Fenoprop	<2.00	ug/l	29/12/2015	N Cov	GEO20
Ioxynil	<2.00	ug/l	29/12/2015	N Cov	GEO20
MCPA	<2.00	ug/l	29/12/2015	N Cov	GEO20
MCPB	<2.00	ug/l	29/12/2015	N Cov	GEO20
Triclopyr	<2.00	ug/l	29/12/2015	N Cov	GEO20
Mecoprop	72.5	ug/l	29/12/2015	N Cov	GEO20

Analyst Comments for 14992824:

This sample has been analysed for Acid Herbs Waters method GEO20 outside recommended stability times. It is therefore possible that the results provided may be compromised. Acid Herbicides reporting limits raised due to nature of sample matrix.

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

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

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

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

Signed:

A handwritten signature in black ink, appearing to read 'D. Hoffman'.

Name: **D. Hoffman**

Date: **30 December 2015**

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/1240652/2015**

Issue **1**

Laboratory Number: **14992825**

Sample **2** of **5**

Sample Source: **ALcontrol Laboratories**

Sample Point Description:

Sample Description: **12563635 LC3**

Sample Matrix: **Not Specified**

Sample Date/Time: **30 November 2015**

Sample Received: **04 December 2015**

Analysis Complete: **30 December 2015**

Test Description	Result	Units	Analysis Date	Accreditation		Method
2,4 - D	<2.00	ug/l	30/12/2015	N	Cov	GEO20
2,4 - DB	<2.00	ug/l	30/12/2015	N	Cov	GEO20
2,4,5 - T	<2.00	ug/l	30/12/2015	N	Cov	GEO20
Bentazone	<2.00	ug/l	30/12/2015	N	Cov	GEO20
Bromoxynil	<2.00	ug/l	30/12/2015	N	Cov	GEO20
Dicamba	<2.00	ug/l	30/12/2015	N	Cov	GEO20
Dichlorprop	<2.00	ug/l	30/12/2015	N	Cov	GEO20
Fenoprop	<2.00	ug/l	30/12/2015	N	Cov	GEO20
Ioxynil	<2.00	ug/l	30/12/2015	N	Cov	GEO20
MCPA	<2.00	ug/l	30/12/2015	N	Cov	GEO20
MCPB	<2.00	ug/l	30/12/2015	N	Cov	GEO20
Triclopyr	<2.00	ug/l	30/12/2015	N	Cov	GEO20
Mecoprop	54.5	ug/l	30/12/2015	N	Cov	GEO20

Analyst Comments for 14992825:

This sample has been analysed for Acid Herbs Waters method GEO20 outside recommended stability times. It is therefore possible that the results provided may be compromised. Acid Herbicides reporting limits raised due to nature of sample matrix.

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

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

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

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

Signed:

Name: **D. Hoffman**

Date: **30 December 2015**

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/1240652/2015**

Issue **1**

Laboratory Number: **14992826**

Sample **3** of **5**

Sample Source: **ALcontrol Laboratories**

Sample Point Description:

Sample Description: **12563657 LD4**

Sample Matrix: **Not Specified**

Sample Date/Time: **30 November 2015**

Sample Received: **04 December 2015**

Analysis Complete: **30 December 2015**

Test Description	Result	Units	Analysis Date	Accreditation	Method
2,4 - D	<0.50	ug/l	30/12/2015	N Cov	GEO20
2,4 - DB	<0.50	ug/l	30/12/2015	N Cov	GEO20
2,4,5 - T	<0.50	ug/l	30/12/2015	N Cov	GEO20
Bentazone	<0.50	ug/l	30/12/2015	N Cov	GEO20
Bromoxynil	<0.50	ug/l	30/12/2015	N Cov	GEO20
Dicamba	<0.50	ug/l	30/12/2015	N Cov	GEO20
Dichlorprop	<0.50	ug/l	30/12/2015	N Cov	GEO20
Fenoprop	<0.50	ug/l	30/12/2015	N Cov	GEO20
Ioxynil	<0.50	ug/l	30/12/2015	N Cov	GEO20
MCPA	<0.50	ug/l	30/12/2015	N Cov	GEO20
MCPB	<0.50	ug/l	30/12/2015	N Cov	GEO20
Triclopyr	<0.50	ug/l	30/12/2015	N Cov	GEO20
Mecoprop	29.5	ug/l	30/12/2015	N Cov	GEO20

Analyst Comments for 14992826:

This sample has been analysed for Acid Herbs Waters method GEO20 outside recommended stability times. It is therefore possible that the results provided may be compromised. Acid Herbicides reporting limits raised due to nature of sample matrix.

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

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

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

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

Signed:

A handwritten signature in black ink, appearing to read 'D. Hoffman'.

Name: **D. Hoffman**

Date: **30 December 2015**

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/1240652/2015**

Issue **1**

Laboratory Number: **14992827**

Sample **4** of **5**

Sample Source: **ALcontrol Laboratories**

Sample Point Description:

Sample Description: **12563602 LC7**

Sample Matrix: **Not Specified**

Sample Date/Time: **30 November 2015**

Sample Received: **04 December 2015**

Analysis Complete: **30 December 2015**

Test Description	Result	Units	Analysis Date	Accreditation	Method
2,4 - D	<0.50	ug/l	30/12/2015	N Cov	GEO20
2,4 - DB	<0.50	ug/l	30/12/2015	N Cov	GEO20
2,4,5 - T	<0.50	ug/l	30/12/2015	N Cov	GEO20
Bentazone	<0.50	ug/l	30/12/2015	N Cov	GEO20
Bromoxynil	<0.50	ug/l	30/12/2015	N Cov	GEO20
Dicamba	<0.50	ug/l	30/12/2015	N Cov	GEO20
Dichlorprop	<0.50	ug/l	30/12/2015	N Cov	GEO20
Fenoprop	<0.50	ug/l	30/12/2015	N Cov	GEO20
Ioxynil	<0.50	ug/l	30/12/2015	N Cov	GEO20
MCPA	<0.50	ug/l	30/12/2015	N Cov	GEO20
MCPB	<0.50	ug/l	30/12/2015	N Cov	GEO20
Triclopyr	<0.50	ug/l	30/12/2015	N Cov	GEO20
Mecoprop	35.5	ug/l	30/12/2015	N Cov	GEO20

Analyst Comments for 14992827:

This sample has been analysed for Acid Herbs Waters method GEO20 outside recommended stability times. It is therefore possible that the results provided may be compromised. Acid Herbicides reporting limits raised due to nature of sample matrix.

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

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

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

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

Signed:

Name: **D. Hoffman**

Date: **30 December 2015**

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/1240652/2015**

Issue **1**

Laboratory Number: **14992828**

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

Sample Source: **ALcontrol Laboratories**

Sample Point Description:

Sample Description: **12566925**

Sample Matrix: **Not Specified**

Sample Date/Time: **30 November 2015**

Sample Received: **04 December 2015**

Analysis Complete: **30 December 2015**

Test Description	Result	Units	Analysis Date	Accreditation	Method
2,4 - D	<0.05	ug/l	30/12/2015	N Cov	GEO20
2,4 - DB	<0.05	ug/l	30/12/2015	N Cov	GEO20
2,4,5 - T	<0.05	ug/l	30/12/2015	N Cov	GEO20
Bentazone	<0.05	ug/l	30/12/2015	N Cov	GEO20
Bromoxynil	<0.05	ug/l	30/12/2015	N Cov	GEO20
Dicamba	<0.05	ug/l	30/12/2015	N Cov	GEO20
Dichlorprop	<0.05	ug/l	30/12/2015	N Cov	GEO20
Fenoprop	<0.05	ug/l	30/12/2015	N Cov	GEO20
Ioxynil	<0.05	ug/l	30/12/2015	N Cov	GEO20
MCPA	<0.05	ug/l	30/12/2015	N Cov	GEO20
MCPB	<0.05	ug/l	30/12/2015	N Cov	GEO20
Triclopyr	<0.05	ug/l	30/12/2015	N Cov	GEO20
Mecoprop	<0.04	ug/l	30/12/2015	N Cov	GEO20

Analyst Comments for 14992828:

This sample has been analysed for Acid Herbs Waters method GEO20 outside recommended stability times. It is therefore possible that the results provided may be compromised.

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

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

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

Signed:

A handwritten signature in black ink, appearing to read 'D. Hoffman'.

Name: **D. Hoffman**

Date: **30 December 2015**

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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ANALYST COMMENTS FOR REPORT

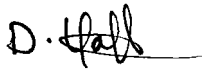
COV/1240652/2015

Issue 1

Date of Issue: 30 December 2015

Sample No	Analysis Comments
14992824	This sample has been analysed for Acid Herbs Waters method GEO20 outside recommended stability times. It is therefore possible that the results provided may be compromised. Acid Herbicides reporting limits raised due to nature of sample matrix.
14992825	This sample has been analysed for Acid Herbs Waters method GEO20 outside recommended stability times. It is therefore possible that the results provided may be compromised. Acid Herbicides reporting limits raised due to nature of sample matrix.
14992826	This sample has been analysed for Acid Herbs Waters method GEO20 outside recommended stability times. It is therefore possible that the results provided may be compromised. Acid Herbicides reporting limits raised due to nature of sample matrix.
14992827	This sample has been analysed for Acid Herbs Waters method GEO20 outside recommended stability times. It is therefore possible that the results provided may be compromised. Acid Herbicides reporting limits raised due to nature of sample matrix.
14992828	This sample has been analysed for Acid Herbs Waters method GEO20 outside recommended stability times. It is therefore possible that the results provided may be compromised.

Signed:



Name: D. Hoffman

Date: 30 December 2015

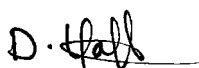
Title: Inorganic Team Leader

DETERMINAND COMMENTS FOR REPORT COV/1240652/2015

ISSUE 1

Date of Issue : 30 December 2015

Sample No	Description	Determinand	Comments

Signed: 	Name: D. Hoffman	Date: 30 December 2015
	Title: Inorganic Team Leader	



SDG:	151202-104	Location:	Standard Annual	Order Number:	
Job:	H_FLINTCCO_BUC-10	Customer:	Flintshire County Council	Report Number:	343730
Client Reference:		Attention:	Paul Murphy	Superseded Report:	

Appendix General

1. Results are expressed on a dry weight basis (dried at 35°C) for all soil analyses except for the following: NRA and CEN Leach tests, flash point LOI, pH, ammonium as NH4 by the BRE method, VOC TICS and SVOC TICS.

2. Samples will be run in duplicate upon request, but an additional charge may be incurred.

3. If sufficient sample is received a sub sample will be retained free of charge for 30 days after analysis is completed (e-mailed) for all sample types unless the sample is destroyed on testing. The prepared soil sub sample that is analysed for asbestos will be retained for a period of 6 months after the analysis date. All bulk samples will be retained for a period of 6 months after the analysis date. All samples received and not scheduled will be disposed of one month after the date of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage. ALcontrol Laboratories reserve the right to charge for samples received and stored but not analysed.

4. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.

5. We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS/MCERTS Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there are no UKAS/MCERTS Accredited Laboratories, in this instance a laboratory with a known track record will be utilised.

6. When requested, the individual sub sample scheduled will be analysed in house for the presence of asbestos fibres and asbestos containing material by our documented in house method TM048 based on HSG 248 (2005), which is accredited to ISO17025. If a specific asbestos fibre type is not found this will be reported as "Not detected". If no asbestos fibre types are found all will be reported as "Not detected" and the sub sample analysed deemed to be clear of asbestos. If an asbestos fibre type is found it will be reported as detected (for each fibre type found). Testing can be carried out on asbestos positive samples, but, due to Health and Safety considerations, may be replaced by alternative tests or reported as No Determination Possible. The quantity of asbestos present is not determined unless specifically requested.

7. If no separate volatile sample is supplied by the client, or if a headspace or sediment is present in the volatile sample, the integrity of the data may be compromised. This will be flagged up as an invalid VOC on the test schedule and the result marked as deviating on the test certificate.

8. If appropriate preserved bottles are not received preservation will take place on receipt. However, the integrity of the data may be compromised.

9. NDP -No determination possible due to insufficient/unsuitable sample.

10. Metals in water are performed on a filtered sample, and therefore represent dissolved metals -total metals must be requested separately.

11. Results relate only to the items tested.

12. LODs for wet tests reported on a dry weight basis are not corrected for moisture content.

13. **Surrogate recoveries** - Surrogates are added to your sample to monitor recovery of the test requested. A % recovery is reported, results are not corrected for the recovery measured. Typical recoveries for organics tests are 70-130%, they are generally wider for volatiles analysis, 50-150%. Recoveries in soils are affected by organic rich or clay rich matrices. Waters can be affected by remediation fluids or high amounts of sediment. Test results are only ever reported if all of the associated quality checks pass; it is assumed that all recoveries outside of the values above are due to matrix affect.

14. **Product analyses** -Organic analyses on products can only be semi-quantitative due to the matrix effects and high dilution factors employed.

15. Phenols monohydric by HPLC include phenol, cresols (2-Methylphenol, 3-Methylphenol and 4-Methylphenol) and Xylenols (2,3 Dimethylphenol, 2,4 Dimethylphenol, 2,5 Dimethylphenol, 2,6 Dimethylphenol, 3,4 Dimethylphenol, 3,5 Dimethylphenol).

16. Total of 5 speciated phenols by HPLC includes Phenol, 2,3,5-Trimethyl Phenol, 2-Isopropylphenol, Cresols and Xylenols (as detailed in 15).

17. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.

18. In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range. Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.

19. Mercury results quoted on soils will not include volatile mercury as the analysis is performed on a dried and crushed sample.

20. For the BSEN 12457-3 two batch process to allow the cumulative release to be calculated, the volume of the leachate produced is measured and filtered for all tests. We therefore cannot carry out any unfiltered analysis. The tests affected include volatiles GCFID/GCMS and all subcontracted analysis.

21. For all leachate preparations (NRA, DIN, TCLP, BSEN 12457-1, 2, 3) volatile loss may occur, as we do not employ zero headspace extraction.

22. We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill /made ground, as long as these materials constitute the major part of the sample. Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

23. Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C5 -C12 range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l. Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only. It is not possible to specifically identify these non-hydrocarbons, as standards are not routinely run for any other compounds, and for more definitive identification, volatiles by GCMS should be utilised.
- ### Sample Deviations

1	Container with Headspace provided for volatiles analysis
2	Incorrect container received
3	Deviation from method
4	Holding time exceeded before sample received
5	Samples exceeded holding time before preservation was performed
\$	Sampled on date not provided
♦	Sample holding time exceeded in laboratory
@	Sample holding time exceeded due to sampled on date
&	Sample Holding Time exceeded - Late arrival of instructions.
- ### Asbestos

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials are obtained from supplied bulk materials which have been examined to determine the presence of asbestos fibres using Alcontrol Laboratories (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

The results for identification of asbestos in soils are obtained from a homogenised sub sample which has been examined to determine the presence of asbestos fibres using Alcontrol Laboratories (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

Asbestos Type	Common Name
Chrysotile	White Asbestos
Amosite	Brown Asbestos
Crocidolite	Blue Asbestos
Fibrous Actinolite	-
Fibrous Anthophyllite	-
Fibrous Tremolite	-
- Visual Estimation Of Fibre Content

Estimation of fibre content is not permitted as part of our UKAS accredited test other than :
- Trace - Where only one or two asbestos fibres were identified.

Further guidance on typical asbestos fibre content of manufactured products can be found in HSG 264.

The identification of asbestos containing materials and soils falls within our schedule of tests for which we hold UKAS accreditation, however opinions, interpretations and all other information contained in the report are outside the scope of UKAS accreditation.



Registered Office:
InTec, Parc Menai, Bangor, Gwynedd, LL57 4FG
Tel: 01248 672666
Fax: 01248 672601
Email: contact@caulmert.com
Web: www.caulmert.com