

Caulmert Limited

Engineering, Environmental & Planning
Consultancy Services

Standard Landfill Site

Flintshire County Council Waste Management Services

Quarterly Monitoring Review

April – June 2017

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1.0 INTRODUCTION

1.1 Background

- 1.1.1 This report reviews environmental monitoring data collected during the second quarter of 2017 at Standard Landfill Site, Buckley, as required by Natural Resources Wales (NRW). The data reviewed by this report was collected between the 1st of April and the 30th of June 2017.
- 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 2016, document reference 2596.14.FCC.SDB.DB.A0, submitted to Natural Resources Wales by Caulmert Ltd, on behalf of Flintshire County Council Waste Management Services in February 2017.

2.0 LANDFILL GAS

2.1 Introduction

- 2.1.1 Routine landfill gas (LFG) monitoring was carried out on a weekly basis at 28 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 'Environmental Monitoring Locations' 0987/1/002, enclosed. A summary table displaying methane and carbon dioxide concentrations can be found in Appendix 1.

2.2 Methane

- 2.2.1 Methane was only detected in BH22, where the maximum concentration was 0.4 % and the average concentration was 0.2 %. 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.

2.3 Carbon Dioxide

- 2.3.1 Carbon dioxide trigger levels were agreed with the Environment Agency (now NRW) 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 Maximum carbon dioxide concentrations ranged for 1.2 % in locations BH1, BH5.5 and BH22 to 3.0 % in BH4.1.
- 2.3.3 Carbon dioxide concentrations remained below the trigger levels in all locations throughout the review period.

3.0 LEACHATE

3.1 Introduction

3.1.1 Leachate levels were recorded monthly at nine leachate monitoring locations, LC2, LC3, LC4, LC7, S1, S2, S3, SSR5 (LS5) and SSR6 (LS6). On this monitoring occasion, the nearest well to LC2 was sampled as there was no access to LC2.

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

3.2 Leachate Levels

3.2.1 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.

3.2.2 Table 1 below displays minimum, maximum and average leachate head levels in metres above well base. Leachate levels remained low over the review period. Average levels range between 1.20 m above well base in LS6 to 1.79 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	1.31	1.40	1.36
LC3	1.57	1.60	1.59
LC4	1.49	1.59	1.53
LC7	1.76	1.82	1.79
LS5	1.29	1.30	1.30
LS6	1.19	1.20	1.20
S1	1.26	1.30	1.28
S2	1.64	1.69	1.67
S3	1.44	1.50	1.47

3.3 Leachate Quality

3.3.1 A summary of the leachate quality is shown in Table 3.2 in Appendix 3.

3.3.2 Concentrations of ammoniacal nitrogen (as N) within the leachate ranged between 150 mg/l in LS6 and a maximum concentration of 1560 mg/l in LC2. Chloride concentrations ranged from 368 mg/l in S1 to 2260 mg/l in LC2. COD concentrations ranged from 396 mg/l in LS5 to 2260 mg/l in LC7.

3.3.3 In general, LC2 contained the highest concentration of the parameters monitored during this review period.

4.0 GROUNDWATER

4.1 Introduction

- 4.1.1 During the review period groundwater levels were recorded on a monthly basis at seven groundwater monitoring boreholes, GW1, GW2R, GW3, GW4R, GW5, GW6 and GW7R. Location GW2R was installed in October 2016 to replace GW2. Samples collected at these locations were analysed for the quarterly suite of chemicals.

4.2 Groundwater Levels

- 4.2.1 Groundwater level data was recorded on a monthly basis in metres below ground level (mBGL). Where borehole cover level to Ordinance Datum was available this was used to calculate the groundwater level in metres above Ordnance Datum (mAOD).
- 4.2.2 Groundwater levels, in mBGL and mAOD are displayed in a summary table included in Appendix 2. Groundwater levels remained stable over the review period.

4.3 Groundwater Quality

- 4.3.1 A groundwater quality summary table for this review period is included in Appendix 2.
- 4.3.2 Ammoniacal nitrogen and chloride concentrations in GW6 have shown a generally decreasing trend since a leachate outbreak in 2013. The concentration of ammoniacal nitrogen decreased slightly from 27 mg/l in March 2017 to 16.9 mg/l during this quarter. However, chloride concentration increased from 95 mg/l in March to 183 mg/l during this quarter.
- 4.3.3 Ammoniacal nitrogen concentrations were below the detection limit in GW1. Where ammoniacal nitrogen was detected (GW2R, GW3, GW4R, GW5 and GW7), the concentrations were significantly lower than at GW6.
- 4.3.4 Chemical oxygen demand (COD) was highest in GW5, at 462 mg/l which is significantly higher than the concentration detected in the previous quarter (156 mg/l). COD concentrations were comparatively low in all other groundwater monitoring points.
- 4.3.5 No creosols, phenols or xlenols were detected in the groundwater during this review period.
- 4.3.6 Only trace concentrations of mercury were detected in GW6, all other locations were undetected.
- 4.3.7 The pH in GW6 was 5.52, similar to that detected in the previous review (5.39).

5.0 SURFACE WATER

5.1 Introduction

- 5.1.1 Surface water samples were collected at two locations; SW4 and SW5 which are shown on the enclosed Environmental Monitoring Locations drawing.
- 5.1.2 Surface water samples were analysed for the quarterly suite of parameters. Summary tables displaying the surface water analysis results are presented in Appendix 4.

5.2 Surface Water Quality

- 5.2.1 No Ammoniacal nitrogen was detected in SW4, a low concentration of 0.204 mg/l was detected at SW5.
- 5.2.2 Chemical oxygen demand concentration increased slightly in both SW4 and SW5 from 12.4 mg/l and 44.2 mg/l to 29.6 mg/l and 99.8 mg/l respectively.
- 5.2.3 Metal concentrations were low across the surface water locations with iron and magnesium concentrations decreasing from the previous review.

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 Leachate

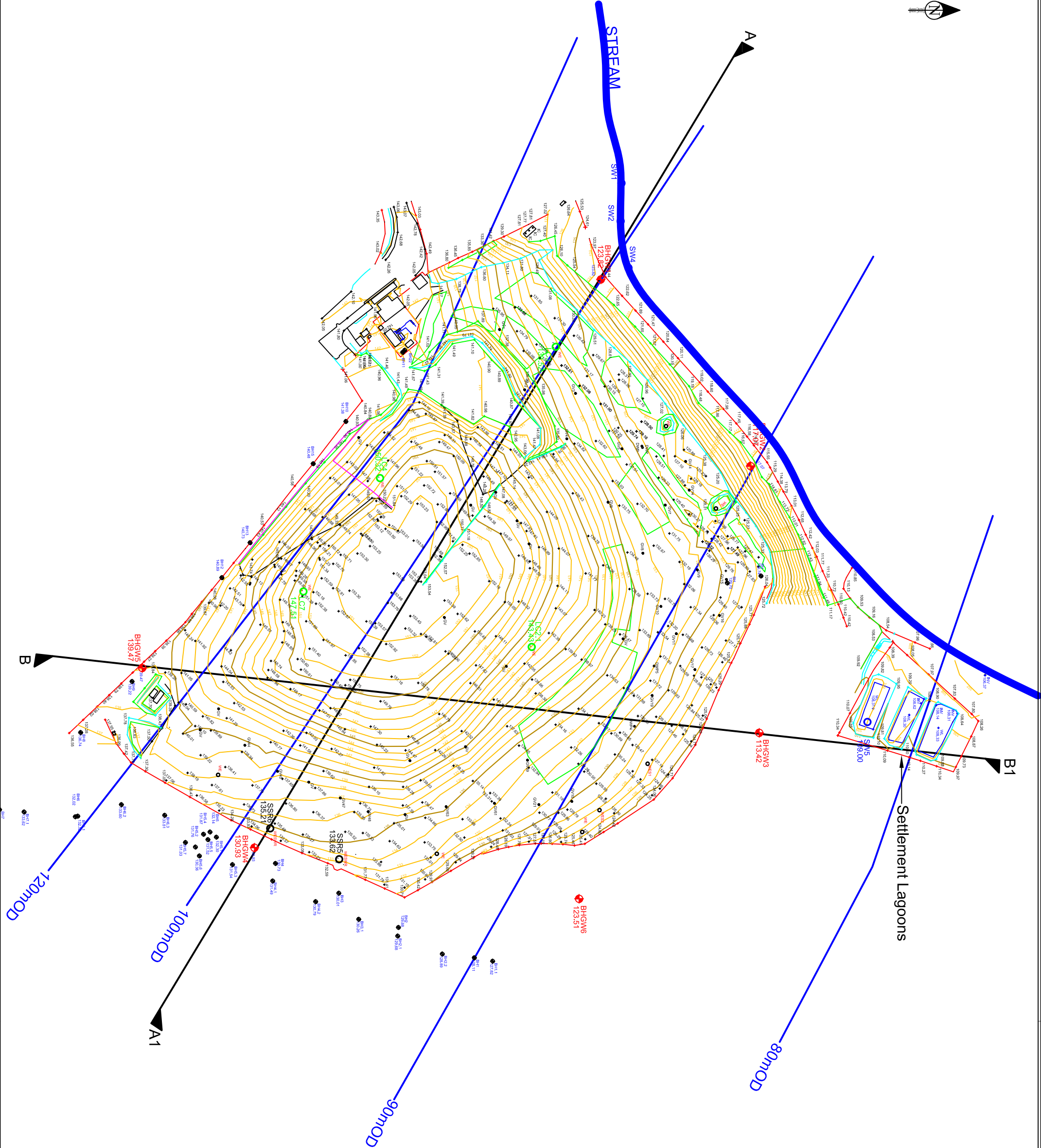
- 6.2.1 Leachate levels remained low for the duration of the review period.
- 6.2.2 Leachate quality results indicate that a medium to strong leachate is present. This is to be expected given the age of the waste mass and the closed and capped nature of the site.

6.3 Groundwater

- 6.3.1 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.

6.4 Surface Water

- 6.4.1 Surface water was generally of good quality across the sampled locations.



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



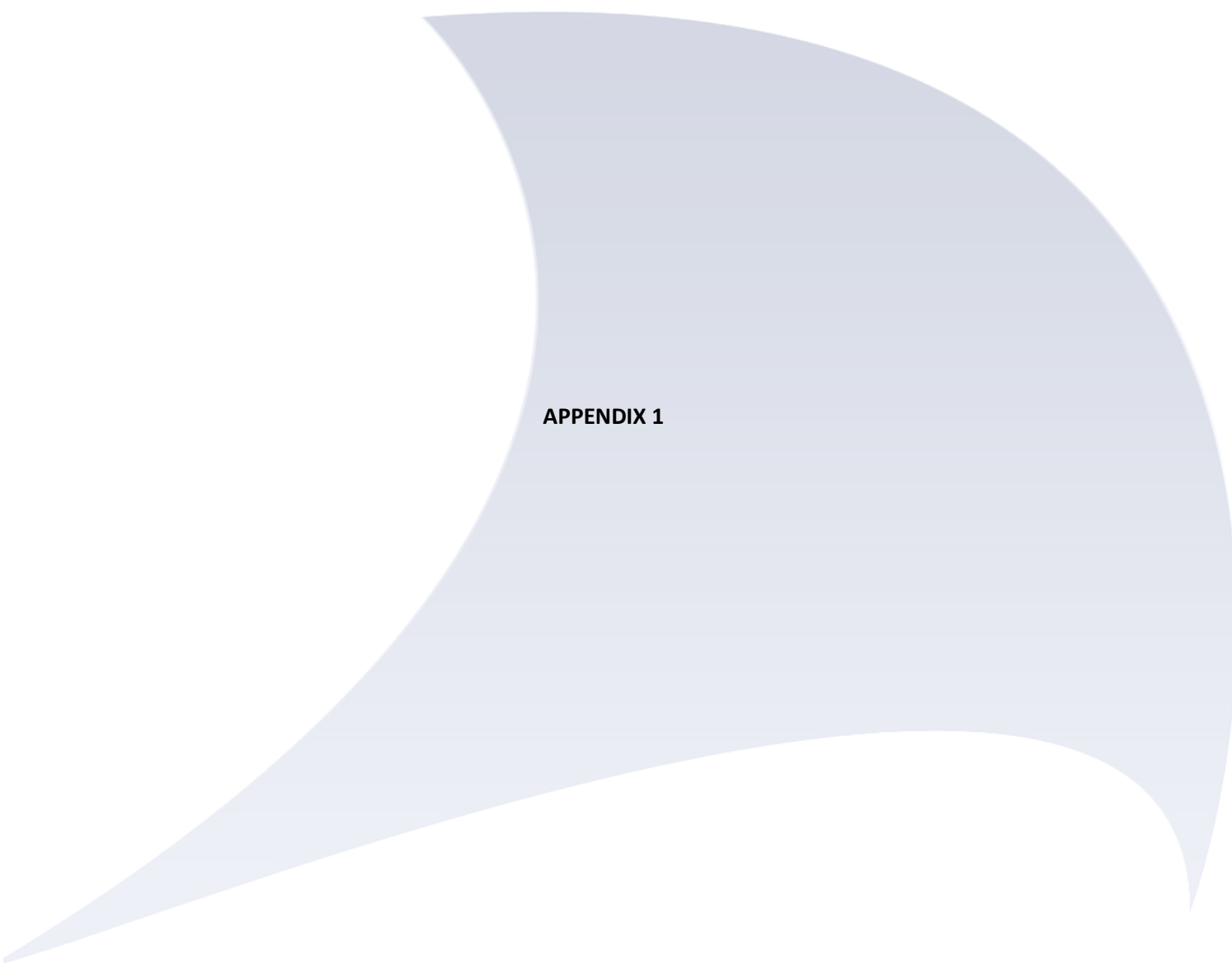
Bold Business Centre, Bold Lane,
Sutton, St Helens WA9 4TX



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

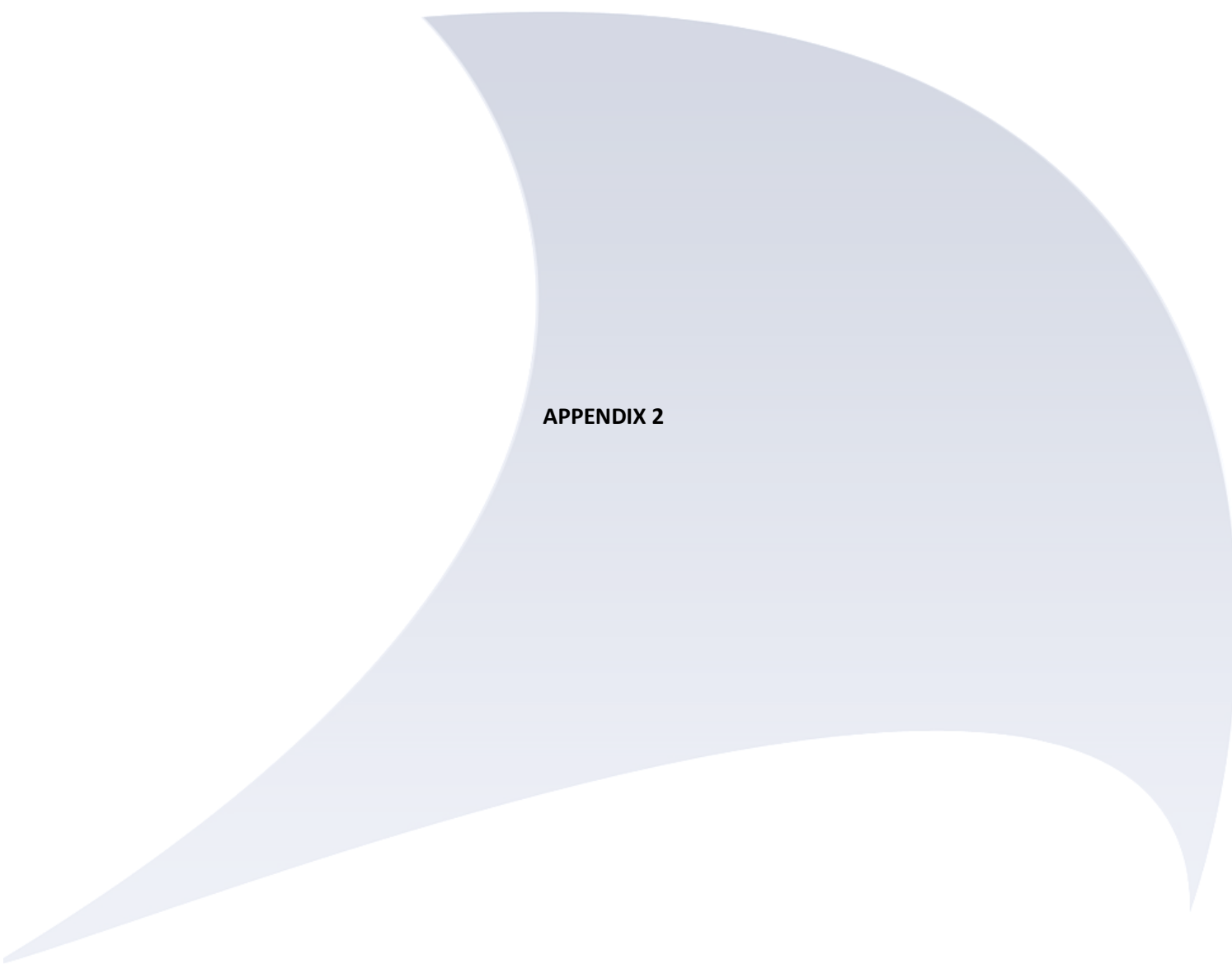


APPENDIX 1

APPENDIX 1

Table 1 – Summary of Landfill Gas Concentrations

Location	Methane (%v/v)				Limit	Carbon Dioxide (%v/v)				
	Min	Max	Ave	Count		Min	Max	Ave	Count	Limit
BH 1	0.0	0.0	0.0	13	1.0	1.2	2.8	2.0	13	5.4
BH 1.1	0.0	0.0	0.0	13	1.0	1.6	2.6	2.0	13	5.4
BH 2.0	0.0	0.0	0.0	13	1.0	1.8	2.5	2.1	13	7.1
BH 2.1	0.0	0.0	0.0	13	1.0	1.5	2.5	2.1	13	7.6
BH 2.2	0.0	0.0	0.0	13	1.0	1.4	2.5	1.9	13	5.8
BH 3.0	0.0	0.0	0.0	13	1.0	1.3	2.3	1.8	13	6.7
BH 3.1	0.0	0.0	0.0	13	1.0	1.6	2.6	2.0	13	7.8
BH 4.0	0.0	0.0	0.0	13	1.0	1.3	2.5	1.8	13	10.7
BH 4.1	0.0	0.0	0.0	13	1.0	1.6	3.0	2.1	13	7.1
BH 4.2	0.0	0.0	0.0	13	1.0	1.6	2.8	2.0	13	8.6
BH 5.0	0.0	0.0	0.0	13	1.0	1.4	2.4	2.1	13	19.4
BH 5.1	0.0	0.0	0.0	13	1.0	1.5	2.5	2.0	13	5.8
BH 5.2	0.0	0.0	0.0	13	1.0	1.3	2.3	1.8	13	9.6
BH 5.3	0.0	0.0	0.0	13	1.0	1.5	2.4	2.0	13	6.0
BH 5.4	0.0	0.0	0.0	13	1.0	1.4	2.5	2.1	13	16.0
BH 5.5	0.0	0.0	0.0	13	1.0	1.2	2.4	1.8	13	17.1
BH 5.7	0.0	0.0	0.0	13	1.0	1.9	2.8	2.4	13	7.1
BH 6.0	0.0	0.0	0.0	13	1.0	1.4	2.3	1.9	13	8.9
BH 6.1	0.0	0.0	0.0	13	1.0	1.6	2.5	1.9	13	3.7
BH 6.2	0.0	0.0	0.0	13	1.0	1.4	2.3	1.8	13	6.1
BH 6.3	0.0	0.0	0.0	13	1.0	1.5	2.3	1.8	13	8.2
BH 7.0	0.0	0.0	0.0	13	1.0	1.4	2.6	1.8	13	6.2
BH 7.1	0.0	0.0	0.0	13	1.0	1.8	2.3	2.1	13	5.5
BH 12	0.0	0.0	0.0	13	1.0	1.6	2.1	1.9	13	6.5
BH 13	0.0	0.0	0.0	13	1.0	1.5	2.3	1.9	13	5.2
BH 15	0.0	0.0	0.0	13	1.0	1.4	2.3	1.7	13	8.3
BH 16	0.0	0.0	0.0	13	1.0	1.5	2.4	2.0	13	3.0
BH 22	0.1	0.4	0.2	13	1.0	1.2	2.6	1.8	13	3.1



APPENDIX 2

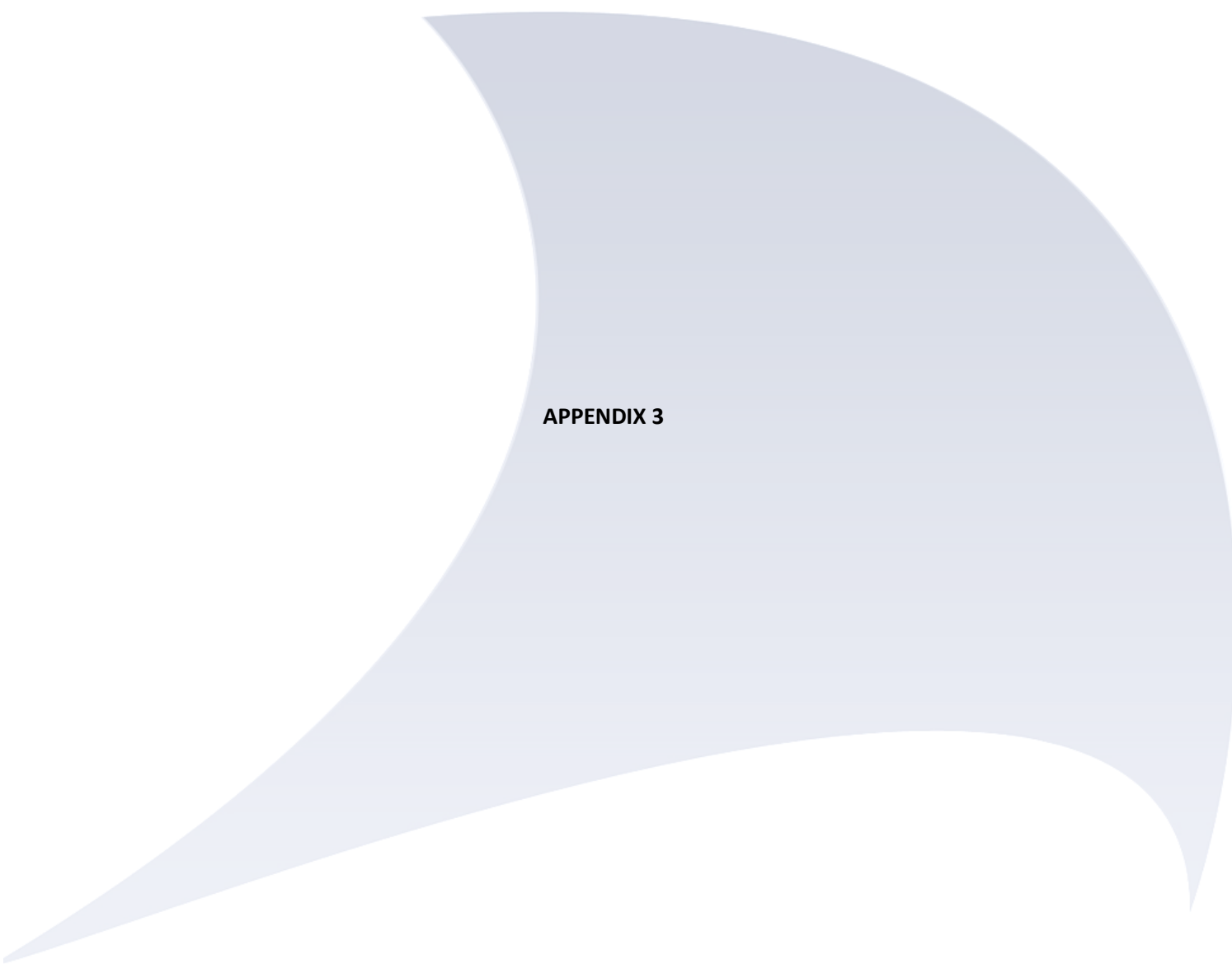
APPENDIX 2

Table 2.1 - Leachate Levels

Location	Date	Dip Level (mBGL)	Leachate Level (mAOD)	Leachate Level Head (m)
LC2.1	11/04/2017	29.62	111.43	1.38
	09/05/2017	29.69	111.36	1.31
	13/06/2017	29.6	111.45	1.40
LC3	11/04/2017	3.24	130.72	1.60
	09/05/2017	3.27	130.69	1.57
	13/06/2017	3.24	130.72	1.60
LC4	11/04/2017	17.41	131.24	1.59
	09/05/2017	17.5	131.15	1.50
	13/06/2017	17.51	131.14	1.49
LC7	11/04/2017	18.52	132.77	1.79
	09/05/2017	18.55	132.74	1.76
	13/06/2017	18.49	132.8	1.82
LS5	11/04/2017	28.74	104.57	1.30
	09/05/2017	28.76	104.55	1.29
	13/06/2017	28.75	104.56	1.30
LS6	11/04/2017	29.98	104.88	1.20
	09/05/2017	30	104.86	1.20
	13/06/2017	30.02	104.84	1.19
S1	11/04/2017	3.16	124.82	1.27
	09/05/2017	3.17	124.81	1.26
	13/06/2017	3.13	124.85	1.30
S2	11/04/2017	1.66	127.2	1.69
	09/05/2017	1.68	127.18	1.67
	13/06/2017	1.71	127.15	1.64
S3	11/04/2017	3.63	124.87	1.46
	09/05/2017	3.65	124.85	1.44
	13/06/2017	3.59	124.91	1.50

Table 2.2 - Leachate Quality Data Summary

Parameter	Unit	LC2	LC3	LC4	LC7	S1	S2	S3	SSR5	SSR6
Inorganics										
Alkalinity, Total as CaCO ₃	mg/l	7900	5700	4290	4350	1850	4030	3640	1030	1070
Ammoniacal Nitrogen as N	mg/l	1560	989	770	705	1260	676	397	997	150
BOD, unfiltered	mg/l	96.2	137	55.4	71.8	196	105	46.3	20.4	24.7
Chloride	mg/l	2260	1550	1280	1170	368	1240	919	474	468
Chlorine, Total (Residual)	mg/l	2.1	2	1.4	1.4	0.5	1.1	1.1	1	1.1
COD, unfiltered	mg/l	2280	1660	950	942	1790	1130	499	396	400
Conductivity @ 20 deg.C	mS/cm	17.4	12.3	9.97	9.66	3.98	9.24	8.32	3.61	3.66
pH	pH Units	7.79	7.88	7.72	7.83	7.58	7.73	7.64	8.3	8.19
Total Oxidised Nitrogen as N	mg/l	<2	<1	<0.5	<0.5	0.194	1.29	<0.5	76.6	75.7
Filtered (Dissolved) Metals										
Magnesium (diss.filt)	mg/l	35.7	62.7	65.1	71.8	43.4	63.8	53.5	23.4	24.3
Potassium (diss.filt)	mg/l	286	372	283	250	109	259	205	170	180
Sodium (diss.filt)	mg/l	1890	1290	1010	1030	271	977	795	378	417



APPENDIX 3

APPENDIX 3

Table 3.1 - Groundwater Levels

Location	Date	Dip Level (mBGL)	Groundwater Level (m AOD)
GW 1	25/04/2017	35.21	88.87
	23/05/2017	35.18	88.90
	27/06/2017	36.00	88.08
GW 2R	25/04/2017	45.66	-
	23/05/2017	45.69	-
	27/06/2017	42.35	-
GW 3	25/04/2017	41.28	72.14
	23/05/2017	41.87	71.55
	27/06/2017	39.97	73.45
GW 4R	25/04/2017	48.00	83.00
	23/05/2017	48.06	82.94
	27/06/2017	48.26	82.74
GW 5	25/04/2017	2.63	132.23
	23/05/2017	2.61	132.25
	27/06/2017	2.89	131.97
GW 6	25/04/2017	28.99	94.58
	23/05/2017	29.54	94.03
	27/06/2017	27.59	95.98
GW 7R	25/04/2017	59.87	82.13
	23/05/2017	60.24	81.76
	27/06/2017	58.62	83.38

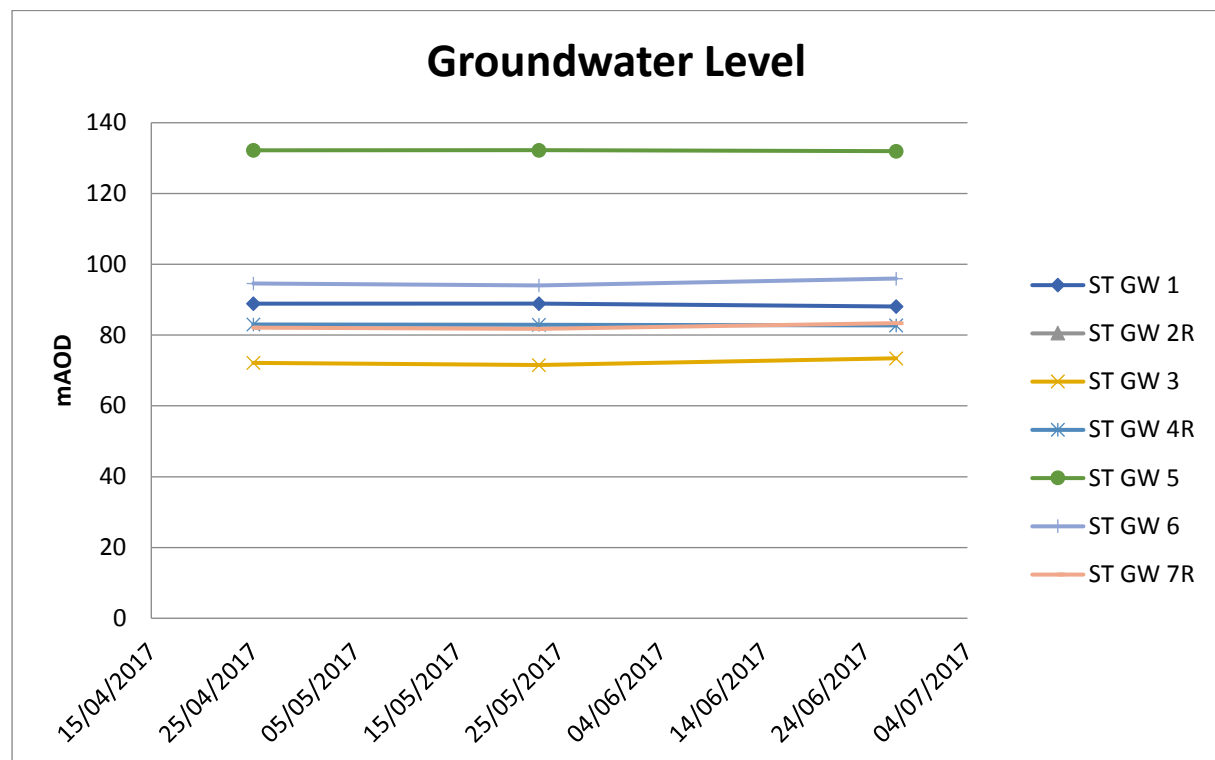
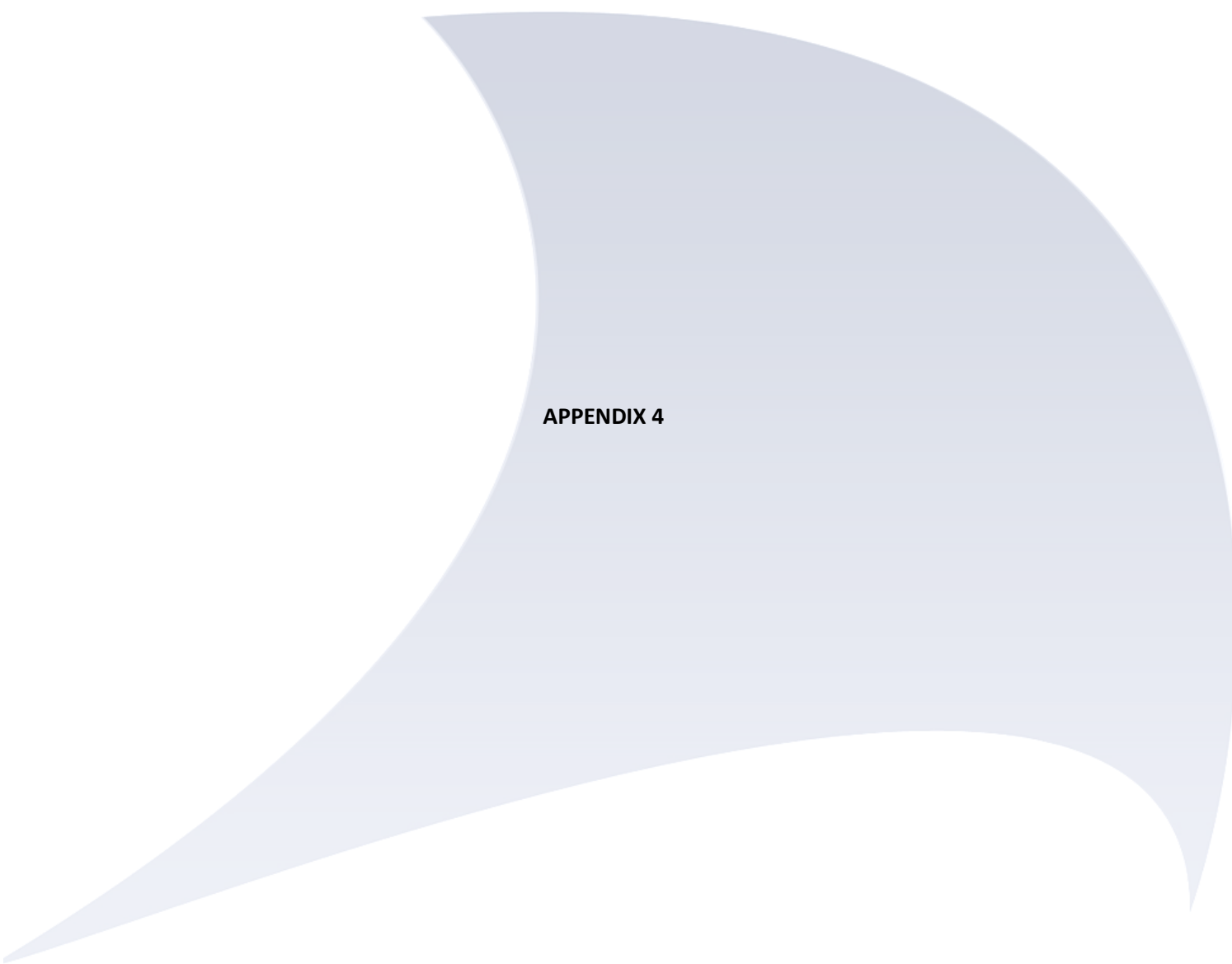


Table 3.2 - Groundwater Quality Data Summary

Parameter		GW1	GW2A	GW3	GW4R	GW5	GW6	GW7
Carbon								
Inorganic Carbon, Total	mg/l	9.47	18.5	39.1	19.8	32.6	51.5	87.4
Inorganics								
Alkalinity, Total as CaCO ₃	mg/l	39.5	90	150	100	130	28	315
Ammoniacal Nitrogen as N	mg/l	<0.2	0.41	0.264	0.368	0.732	16.9	1.28
BOD, unfiltered	mg/l	<1.67	<1.67	<1	<1.67	<1.67	<1	<1
Chloride	mg/l	54	67	72.9	78.3	4.6	183	54.7
Chlorine, Total (Residual)	mg/l	0.04	0.04	0.04	0.03	0.04	0.05	0.1
COD, unfiltered	mg/l	23.4	121	34.7	53.2	462	160	29.8
Cyanide, Total	mg/l	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Nitrite as NO ₂	mg/l	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
pH	pH	5.99	6.48	6.24	6.35	6.52	5.52	6.94
Sulphate	mg/l	221	108	282	203	3.7	438	148
Filtered (Dissolved) Metals								
Arsenic (diss.filt)	mg/l	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.000621	0.0231
Cadmium (diss.filt)	mg/l	<0.00008	<0.00008	<0.00008	0.000356	<0.00008	0.00381	<0.00008
Calcium (diss.filt)	mg/l	55.7	48.2	93.2	77.1	40.4	102	79.3
Copper (diss.filt)	mg/l	<0.0003	<0.0003	<0.0003	<0.0003	0.000895	0.00283	<0.0003
Iron (diss.filt)	mg/l	0.0228	0.0757	<0.019	0.0224	0.0433	0.0376	3.72
Lead (diss.filt)	mg/l	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	0.000363	<0.0002
Magnesium (diss.filt)	mg/l	26	17.6	42.6	23.1	5.09	39.6	32.4
Mercury (diss.filt)	mg/l	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	0.000076	<0.00001
Nickel (diss.filt)	mg/l	0.000964	0.0238	0.00208	0.0813	0.00217	0.131	0.0115
Potassium (diss.filt)	mg/l	10.3	9.17	7.96	9.01	4.15	28.8	13.7
Sodium (diss.filt)	mg/l	27.4	35.7	37.6	36.6	5.54	140	79.6
Zinc (diss.filt)	mg/l	0.0228	0.0146	0.0186	0.116	0.0102	0.18	0.00354
Phenols								
Cresols	mg/l	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006
Phenol	mg/l	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Phenols, Total Detected monohydric	mg/l	<0.016	<0.016	<0.016	<0.016	<0.016	<0.016	<0.016
Xylenols	mg/l	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008

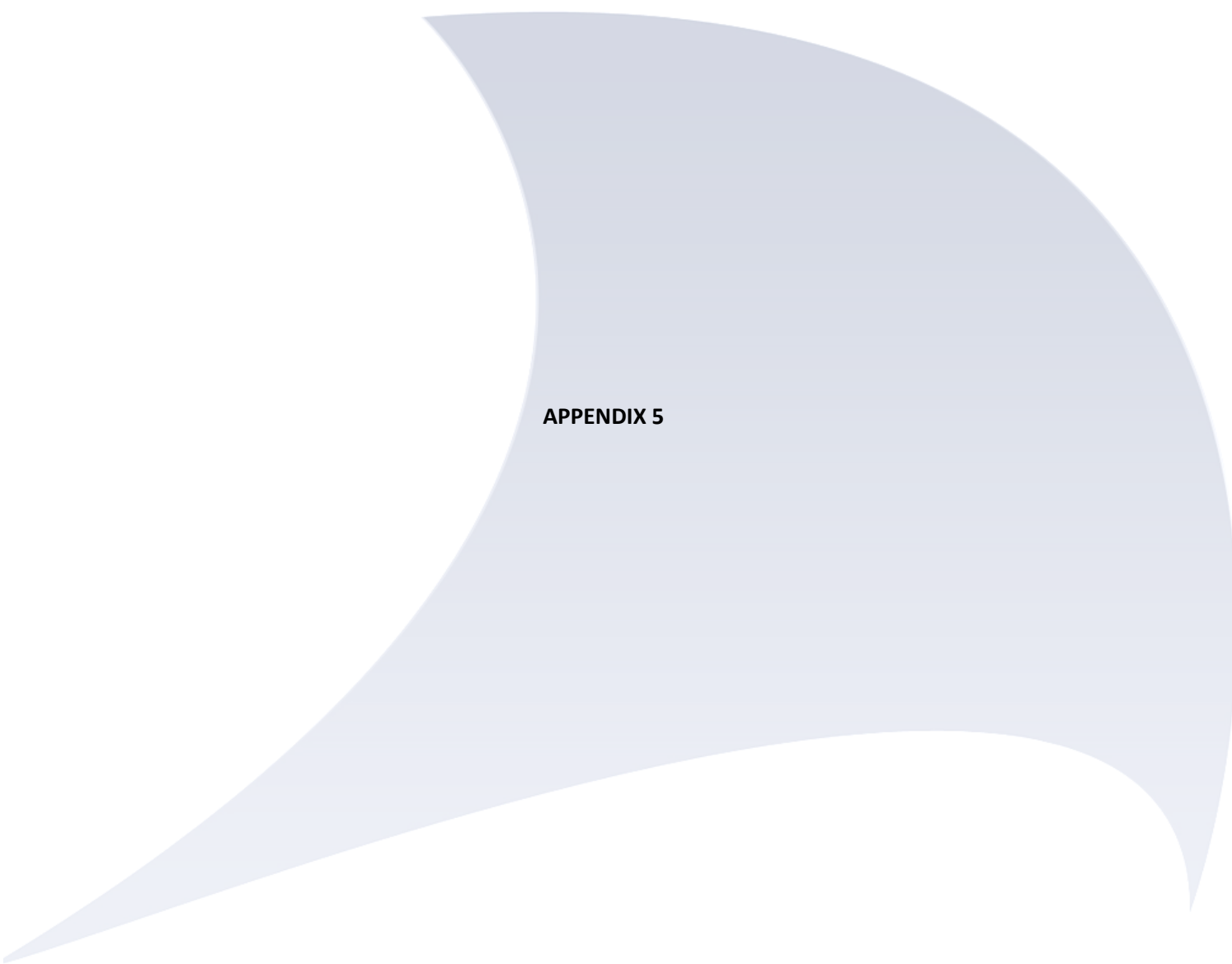


APPENDIX 4

APPENDIX 4

Table 4 –Surface Water Quality

Parameter	Units	SW4	SW5
Inorganics			
Alkalinity, Total as CaCO ₃	mg/l	200	220
Ammoniacal Nitrogen as N	mg/l	<0.2	0.204
BOD, unfiltered	mg/l	<1	3.93
Chloride	mg/l	68.6	27.9
Chlorine, Total (Residual)	mg/l	0.06	0.06
COD, unfiltered	mg/l	29.6	99.8
Conductivity @ 20 deg.C	mS/cm	0.749	0.61
Nitrate as NO ₃	mg/l	1.09	<0.3
pH	pH Units	8.04	7.73
Sulphate	mg/l	155	116
Total Oxidised Nitrogen as N	mg/l	0.251	<0.1
Filtered (Dissolved) Metals			
Calcium (diss.filt)	mg/l	107	65.9
Iron (diss.filt)	mg/l	<0.019	0.132
Magnesium (diss.filt)	mg/l	15.9	38.1
Potassium (diss.filt)	mg/l	9.03	6.85
Sodium (diss.filt)	mg/l	47.4	22.4



APPENDIX 5

Standard Landfill Borehole Gas Monitoring

Date 07/04/2017
 Weather: Dry
 Wind conditions: Calm
 Air Temperature: 12 °C

Instrument: GEM 2000
 Serial No: GM12289
 Calibrated To: 29/11//2017
 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	2.6	19.9	77.5	0	0	1012	0.03	1	5.4
STBH 1.1	11:13	0	2.3	19.6	78.1	0	0	1012	-0.13	1	5.4
STBH 2.0	11:20	0	2.5	19.8	77.7	0	0	1012	0.5	1	7
STBH 2.1	11:08	0	2	19.6	78.4	0	0	1012	0.79	1	7.6
STBH 2.2	11:11	0	1.4	19.8	78.8	0	0	1012	0.57	1	5.8
STBH 3.0	11:25	0	1.3	19.9	78.8	0	0	1012	0.63	1	6.7
STBH 3.1	11:06	0	2.6	19.9	77.5	0	0	1012	0.24	1	7.8
STBH 4.0	11:29	0	1.3	19.8	78.9	0	0	1012	1.23	10	10.6
STBH 4.1	10:57	0	1.8	19.6	78.6	0	0	1012	1.26	1	7.1
STBH 4.2	11:02	0	1.6	19.5	78.9	0	0	1012	1.07	1	8.6
STBH 5.0	11:32	0	1.4	19.8	78.8	0	0	1012	0.66	15	19.4
STBH 5.1	11:36	0	2	19.9	78.1	0	0	1012	0.41	1	5.8
STBH 5.2	10:49	0	2	19.9	78.1	0	0	1012	0.31	1	9.6
STBH 5.3	10:52	0	2.3	20	77.7	0	0	1012	1	1	6
STBH 6.0	11:54	0	1.6	19.6	78.8	0	0	1012	-0.9	1	5.4
STBH 6.1	10:38	0	2.5	19.4	78.1	0	0	1012	0.71	1	5.4
STBH 6.2	10:42	0	1.4	19.7	78.9	0	0	1012	1.35	1	5.4
STBH 6.3	10:46	0	1.8	19.7	78.5	0	0	1012	0.99	1	8.2
STBH 7.0	11:58	0	2.6	19.9	77.5	0	0	1012	0.15	1	6.2
STBH 7.1	10:34	0	2.3	19.8	77.9	0	0	1012	0.58	1	5.5
STBH 9.0	Buried										
STBH 12	12:12	0	2.1	19.9	78	0	0	1012	0.9	10	6.5
STBH 13	12:16	0	1.9	19.8	78.3	0	0	1012	-0.2	10	5.2
STBH 15	12:20	0	1.6	19.8	78.6	0	0	1012	0.83	1	8.3
STBH 16	12:24	0	2	19.6	78.4	0	0	1012	0.62	1	3
STBH 22	12:28	0.1	1.3	19.8	78.8	0	0	1012	0.51	1.6	3.1
STMBH 5.4	11:40	0	1.4	19.6	79	0	0	1012	0.53	1	16
STMBH 5.5	11:42	0	1.6	19.5	78.9	0	0	1012	-0.16	1	17.1
STMBH 5.7	11:45	0	2	19.9	78.1	0	0	1012	-0.18	1	7.1

Standard Landfill Borehole Gas Monitoring

Date 14/04/2017
 Weather: Dry
 Wind conditions: Breezy
 Air Temperature: 11 °C

Instrument: GEM 2000
 Serial No: GM12289
 Calibrated To: 29/11//2017
 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	2.8	20	77.2	0	0	1007	-0.17	1	5.4
STBH 1.1	11:08	0	2.6	19.8	77.6	0	0	1007	-0.04	1	5.4
STBH 2.0	11:15	0	2.4	19.6	78	0	0	1007	-0.55	1	7
STBH 2.1	11:03	0	2.3	19.8	77.9	0	0	1007	-0.83	1	7.6
STBH 2.2	11:06	0	1.6	19.4	79	0	0	1007	-0.59	1	5.8
STBH 3.0	11:20	0	1.5	19.6	78.9	0	0	1007	-0.21	1	6.7
STBH 3.1	11:01	0	2.5	19.8	77.7	0	0	1007	0.32	1	7.8
STBH 4.0	11:24	0	1.8	19.7	78.5	0	0	1007	0.87	10	10.6
STBH 4.1	10:52	0	1.9	19.3	78.8	0	0	1007	1.26	1	7.1
STBH 4.2	10:57	0	2.4	19.8	77.8	0	0	1007	1.04	1	8.6
STBH 5.0	11:27	0	2.3	19.4	78.3	0	0	1007	0.66	15	19.4
STBH 5.1	11:31	0	2.1	19.7	78.2	0	0	1007	0.45	1	5.8
STBH 5.2	10:44	0	1.7	20	78.3	0	0	1007	0.32	1	9.6
STBH 5.3	10:47	0	1.5	19.6	78.9	0	0	1007	-0.12	1	6
STBH 6.0	11:49	0	1.8	19.3	78.9	0	0	1007	-0.96	1	5.4
STBH 6.1	10:33	0	1.9	19.8	78.3	0	0	1007	-0.3	1	5.4
STBH 6.2	10:37	0	1.6	19.5	78.9	0	0	1007	1.2	1	5.4
STBH 6.3	10:41	0	1.6	19.4	79	0	0	1007	1.02	1	8.2
STBH 7.0	11:53	0	2.5	19.3	78.2	0	0	1007	0.47	1	6.2
STBH 7.1	10:29	0	2.2	19.8	78	0	0	1007	0.52	1	5.5
STBH 9.0	Buried										
STBH 12	12:07	0	2	20	78	0	0	1007	-0.92	10	6.5
STBH 13	12:11	0	1.8	19.9	78.3	0	0	1007	-0.16	10	5.2
STBH 15	12:15	0	1.7	20	78.3	0	0	1007	0.88	1	8.3
STBH 16	12:19	0	2.3	20.1	77.6	0	0	1007	-0.78	1	3
STBH 22	12:23	0.2	1.5	19.9	78.4	0	0	1007	0.61	1.6	3.1
STMBH 5.4	11:35	0	1.6	19.6	78.8	0	0	1007	-0.7	1	16
STMBH 5.5	11:37	0	1.7	19.8	78.5	0	0	1007	0.04	1	17.1
STMBH 5.7	11:40	0	1.9	19.8	78.3	0	0	1007	-0.14	1	7.1

Standard Landfill Borehole Gas Monitoring

Date 21/04/2017
 Weather: Dry
 Wind conditions: calm
 Air Temperature: 13 °C

Instrument: GEM 2000
 Serial No: GM12289
 Calibrated To: 29/11//2017
 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	09:36	0	1.8	19.6	78.6	0	0	1007	0.5	1	5.4
STBH 1.1	09:33	0	1.9	19.9	78.2	0	0	1007	-0.66	1	5.4
STBH 2.0	09:40	0	1.8	20	78.2	0	0	1007	0.96	1	7
STBH 2.1	09:28	0	2.1	19.8	78.1	0	0	1007	0.62	1	7.6
STBH 2.2	09:31	0	2.5	19.6	77.9	0	0	1007	0.71	1	5.8
STBH 3.0	09:45	0	1.8	19.2	79	0	0	1007	0.66	1	6.7
STBH 3.1	09:26	0	1.6	19.1	79.3	0	0	1007	0.58	1	7.8
STBH 4.0	09:49	0	2.1	19.9	78	0	0	1007	1.04	10	10.6
STBH 4.1	09:17	0	1.6	19.8	78.6	0	0	1007	1.38	1	7.1
STBH 4.2	09:22	0	2.1	19.9	78	0	0	1007	0.87	1	8.6
STBH 5.0	09:52	0	2	20	78	0	0	1007	1.14	15	19.4
STBH 5.1	09:56	0	1.6	19.9	78.5	0	0	1007	0.69	1	5.8
STBH 5.2	09:09	0	1.6	19.6	78.8	0	0	1007	0.56	1	9.6
STBH 5.3	09:12	0	2	19.8	78.2	0	0	1007	0.75	1	6
STBH 6.0	10:14	0	1.8	19.9	78.3	0	0	1007	-0.82	1	5.4
STBH 6.1	08:58	0	2.3	19.6	78.1	0	0	1007	0.52	1	5.4
STBH 6.2	09:02	0	1.4	19.8	78.8	0	0	1007	0.87	1	5.4
STBH 6.3	09:06	0	1.9	19.6	78.5	0	0	1007	0.75	1	8.2
STBH 7.0	10:18	0	1.6	19.9	78.5	0	0	1007	0.72	1	6.2
STBH 7.1	08:54	0	2.1	19.6	78.3	0	0	1007	0.91	1	5.5
STBH 9.0	buried										
STBH 12	10:32	0	2	19.8	78.2	0	0	1007	1.23	10	6.5
STBH 13	10:36	0	2.1	19.6	78.3	0	0	1007	-0.85	10	5.2
STBH 15	10:40	0	1.5	19.7	78.8	0	0	1007	0.61	1	8.3
STBH 16	10:44	0	1.6	19.9	78.5	0	0	1007	0.75	1	3
STBH 22	10:48	0.2	1.4	20	78.4	0	0	1007	0.59	1.6	3.1
STMBH 5.4	10:00	0	2.5	19.2	78.3	0	0	1007	0.86	1	16
STMBH 5.5	10:02	0	1.4	19.7	78.9	0	0	1007	0.81	1	17.1
STMBH 5.7	10:05	0	2.3	19.8	77.9	0	0	1007	-0.62	1	7.1

Standard Landfill Borehole Gas Monitoring

Date 28/04/2017
 Weather: Dry
 Wind conditions: calm
 Air Temperature: 14 °C

Instrument: GEM 2000
 Serial No: GM12289
 Calibrated To: 29/11//2017
 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	09:32	0	1.2	19.4	79.4	0	0	1007	0.07	1	5.4
STBH 1.1	09:29	0	1.6	19.8	78.6	0	0	1007	-0.01	1	5.4
STBH 2.0	09:36	0	2	19.9	78.1	0	0	1007	-0.48	1	7
STBH 2.1	09:24	0	2	20	78	0	0	1007	-0.24	1	7.6
STBH 2.2	09:27	0	1.8	19.5	78.7	0	0	1007	-0.28	1	5.8
STBH 3.0	09:41	0	1.5	19.6	78.9	0	0	1007	-0.16	1	6.7
STBH 3.1	09:22	0	1.9	19.5	78.6	0	0	1007	0.24	1	7.8
STBH 4.0	09:45	0	2	20.1	77.9	0	0	1007	0.4	10	10.6
STBH 4.1	09:13	0	1.7	19.9	78.4	0	0	1007	0.67	1	7.1
STBH 4.2	09:18	0	2	19.8	78.2	0	0	1007	-0.91	1	8.6
STBH 5.0	09:48	0	2.3	19.9	77.8	0	0	1007	0.75	15	19.4
STBH 5.1	09:52	0	1.7	20	78.3	0	0	1007	0.19	1	5.8
STBH 5.2	09:05	0	2	19.4	78.6	0	0	1007	0.43	1	9.6
STBH 5.3	09:08	0	1.5	19.9	78.6	0	0	1007	-0.36	1	6
STBH 6.0	10:10	0	1.4	20	78.6	0	0	1007	-0.18	1	5.4
STBH 6.1	08:54	0	2	19.9	78.1	0	0	1007	-0.36	1	5.4
STBH 6.2	08:58	0	1.9	20	78.1	0	0	1007	0.93	1	5.4
STBH 6.3	09:02	0	2	19.5	78.5	0	0	1007	0.68	1	8.2
STBH 7.0	10:14	0	1.4	19.8	78.8	0	0	1007	0.33	1	6.2
STBH 7.1	08:50	0	2	19.5	78.5	0	0	1007	0.15	1	5.5
STBH 9.0	Buried										
STBH 12	10:28	0	1.8	20	78.2	0	0	1007	0.81	10	6.5
STBH 13	10:32	0	2.3	19.7	78	0	0	1007	0.05	10	5.2
STBH 15	10:36	0	1.4	19.9	78.7	0	0	1007	0.35	1	8.3
STBH 16	10:40	0	1.5	19.8	78.7	0	0	1007	-0.12	1	3
STBH 22	10:44	0.2	1.2	19.5	79.1	0	0	1007	0.51	1.6	3.1
STMBH 5.4	09:56	0	2.2	19.9	77.9	0	0	1007	-0.15	1	16
STMBH 5.5	09:58	0	1.2	19.8	79	0	0	1007	-0.09	1	17.1
STMBH 5.7	10:01	0	2.5	19.8	77.7	0	0	1007	-0.9	1	7.1

Standard Landfill Borehole Gas Monitoring

Date 05/05/2017
 Weather: Dry
 Wind conditions: calm
 Air Temperature: 16 °C

Instrument: GEM 2000
 Serial No: GM12289
 Calibrated To: 29/11//2017
 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	09:32	0	1.5	19.8	78.7	0	0	1004	0.03	1	5.4
STBH 1.1	09:29	0	1.9	20	78.1	0	0	1004	-0.13	1	5.4
STBH 2.0	09:36	0	2.1	19.6	78.3	0	0	1004	0.5	1	7
STBH 2.1	09:24	0	2.2	19.8	78	0	0	1004	0.79	1	7.6
STBH 2.2	09:27	0	1.9	19.6	78.5	0	0	1004	0.57	1	5.8
STBH 3.0	09:41	0	1.6	19.9	78.5	0	0	1004	0.63	1	6.7
STBH 3.1	09:22	0	1.8	19.8	78.4	0	0	1004	0.24	1	7.8
STBH 4.0	09:45	0	1.7	19.9	78.4	0	0	1004	1.23	10	10.6
STBH 4.1	09:13	0	1.8	19.7	78.5	0	0	1004	1.26	1	7.1
STBH 4.2	09:18	0	1.8	19.8	78.4	0	0	1004	1.07	1	8.6
STBH 5.0	09:48	0	2.1	19.6	78.3	0	0	1004	0.66	15	19.4
STBH 5.1	09:52	0	1.6	20.1	78.3	0	0	1004	0.41	1	5.8
STBH 5.2	09:05	0	1.8	19.9	78.3	0	0	1004	0.31	1	9.6
STBH 5.3	09:08	0	1.9	19.6	78.5	0	0	1004	1	1	6
STBH 6.0	10:10	0	1.6	19.8	78.6	0	0	1004	-0.9	1	5.4
STBH 6.1	08:54	0	1.8	19.8	78.4	0	0	1004	0.71	1	5.4
STBH 6.2	08:58	0	2.1	20	77.9	0	0	1004	1.35	1	5.4
STBH 6.3	09:02	0	2.3	19.6	78.1	0	0	1004	0.99	1	8.2
STBH 7.0	10:14	0	1.6	19.9	78.5	0	0	1004	0.15	1	6.2
STBH 7.1	08:50	0	1.8	19.6	78.6	0	0	1004	0.58	1	5.5
STBH 9.0	Buried										
STBH 12	10:28	0	1.7	19.9	78.4	0	0	1004	0.9	10	6.5
STBH 13	10:32	0	2.1	19.8	78.1	0	0	1004	-0.2	10	5.2
STBH 15	10:36	0	1.6	20	78.4	0	0	1004	0.83	1	8.3
STBH 16	10:40	0	1.8	19.7	78.5	0	0	1004	0.62	1	3
STBH 22	10:44	0.3	1.5	19.6	78.6	0	0	1004	0.51	1.6	3.1
STMBH 5.4	09:56	0	2.1	19.8	78.1	0	0	1004	0.53	1	16
STMBH 5.5	09:58	0	1.5	19.6	78.9	0	0	1004	-0.16	1	17.1
STMBH 5.7	10:01	0	2.4	19.9	77.7	0	0	1004	-0.18	1	7.1

Standard Landfill Borehole Gas Monitoring

Date 12/05/2017
 Weather: Dry
 Wind conditions: Breezy
 Air Temperature: 15 °C

Instrument: GEM 2000
 Serial No: GM12289
 Calibrated To: 29/11//2017
 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	09:36	0	1.8	20	78.2	0	0	996	0.02	1	5.4
STBH 1.1	09:33	0	1.6	19.9	78.5	0	0	996	-0.06	1	5.4
STBH 2.0	09:40	0	2	19.8	78.2	0	0	996	0.51	1	7
STBH 2.1	09:28	0	2	19.5	78.5	0	0	996	0.85	1	7.6
STBH 2.2	09:31	0	1.6	19.9	78.5	0	0	996	0.54	1	5.8
STBH 3.0	09:45	0	2	19.7	78.3	0	0	996	0.6	1	6.7
STBH 3.1	09:26	0	1.9	19.3	78.8	0	0	996	0.24	1	7.8
STBH 4.0	09:49	0	1.6	19.8	78.6	0	0	996	1.3	10	10.6
STBH 4.1	09:17	0	2	19.5	78.5	0	0	996	1.31	1	7.1
STBH 4.2	09:22	0	1.9	19.8	78.3	0	0	996	1.06	1	8.6
STBH 5.0	09:52	0	2.3	19.9	77.8	0	0	996	0.64	15	19.4
STBH 5.1	09:56	0	1.5	19.9	78.6	0	0	996	0.44	1	5.8
STBH 5.2	09:09	0	1.7	20	78.3	0	0	996	0.26	1	9.6
STBH 5.3	09:12	0	1.6	20.1	78.3	0	0	996	0.96	1	6
STBH 6.0	10:14	0	1.8	19.9	78.3	0	0	996	-0.97	1	5.4
STBH 6.1	08:58	0	2.4	19.8	77.8	0	0	996	0.7	1	5.4
STBH 6.2	09:02	0	2	20	78	0	0	996	1.33	1	5.4
STBH 6.3	09:06	0	1.9	19.8	78.3	0	0	996	1.01	1	8.2
STBH 7.0	10:18	0	2	19.4	78.6	0	0	996	0.11	1	6.2
STBH 7.1	08:54	0	1.9	19.8	78.3	0	0	996	0.54	1	5.5
STBH 9.0	Buried										
STBH 12	10:32	0	1.6	19.6	78.8	0	0	996	0.84	10	6.5
STBH 13	10:36	0	2.3	19.8	77.9	0	0	996	-0.16	10	5.2
STBH 15	10:40	0	1.8	19.9	78.3	0	0	996	0.85	1	8.3
STBH 16	10:44	0	2	20	78	0	0	996	0.65	1	3
STBH 22	10:48	0.2	1.5	19.3	79	0	0	996	0.55	1.6	3.1
STMBH 5.4	10:00	0	2.3	19.5	78.2	0	0	996	0.57	1	16
STMBH 5.5	10:02	0	1.8	19.7	78.5	0	0	996	-0.1	1	17.1
STMBH 5.7	10:05	0	2.6	19.9	77.5	0	0	996	-0.22	1	7.1

Standard Landfill Borehole Gas Monitoring

Date 19/05/2017
 Weather: Wet
 Wind conditions: light Rain
 Air Temperature: 15 °C

Instrument: GEM 2000
 Serial No: GM12289
 Calibrated To: 29/11//2017
 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	1.5	19.9	78.6	0	0	999	-0.12	1	5.4
STBH 1.1	11:49	0	1.8	20.1	78.1	0	0	999	-0.05	1	5.4
STBH 2.0	11:56	0	2	19.8	78.2	0	0	999	-0.55	1	7
STBH 2.1	11:44	0	1.5	19.9	78.6	0	0	999	-0.77	1	7.6
STBH 2.2	11:47	0	1.9	19.6	78.5	0	0	999	-0.58	1	5.8
STBH 3.0	12:01	0	1.7	19.5	78.8	0	0	999	-0.26	1	6.7
STBH 3.1	11:42	0	1.8	19.6	78.6	0	0	999	0.3	1	7.8
STBH 4.0	12:05	0	2.5	19.8	77.7	0	0	999	0.86	10	10.6
STBH 4.1	11:33	0	3	19.5	77.5	0	0	999	1.22	1	7.1
STBH 4.2	11:38	0	2.8	19.3	77.9	0	0	999	1.03	1	8.6
STBH 5.0	12:08	0	1.9	20	78.1	0	0	999	0.62	15	19.4
STBH 5.1	12:12	0	1.8	20	78.2	0	0	999	0.44	1	5.8
STBH 5.2	11:25	0	2.3	19.9	77.8	0	0	999	0.27	1	9.6
STBH 5.3	11:28	0	2.1	20.1	77.8	0	0	999	-0.1	1	6
STBH 6.0	12:30	0	1.9	19.8	78.3	0	0	999	-0.94	1	5.4
STBH 6.1	11:14	0	1.6	19.9	78.5	0	0	999	-0.3	1	5.4
STBH 6.2	11:18	0	1.4	19.7	78.9	0	0	999	1.19	1	5.4
STBH 6.3	11:22	0	1.5	19.8	78.7	0	0	999	1.08	1	8.2
STBH 7.0	12:34	0	1.8	19.9	78.3	0	0	999	0.46	1	6.2
STBH 7.1	11:10	0	2	19.9	78.1	0	0	999	0.58	1	5.5
STBH 9.0	Buried										
STBH 12	12:48	0	1.9	19.9	78.2	0	0	999	-0.9	10	6.5
STBH 13	12:52	0	1.8	20	78.2	0	0	999	-0.19	10	5.2
STBH 15	12:56	0	2.3	19.8	77.9	0	0	999	0.87	1	8.3
STBH 16	13:00	0	2.1	19.9	78	0	0	999	-0.78	1	3
STBH 22	13:04	0.4	1.9	19.7	78	0	0	999	0.65	1.6	3.1
STMBH 5.4	12:16	0	1.8	19.6	78.6	0	0	999	-0.64	1	16
STMBH 5.5	12:18	0	1.6	19.8	78.6	0	0	999	0.01	1	17.1
STMBH 5.7	12:21	0	2.5	20	77.5	0	0	999	-0.14	1	7.1

Standard Landfill Borehole Gas Monitoring

Date 26/05/2017
 Weather: Dry
 Wind conditions: Calm
 Air Temperature: 20 °C

Instrument: GEM 2000
 Serial No: GM12289
 Calibrated To: 29/11//2017
 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	1.8	20	78.2	0	0	1009	-0.2	1	5.4
STBH 1.1	10:38	0	1.6	19.8	78.6	0	0	1009	-0.02	1	5.4
STBH 2.0	10:45	0	2	19.9	78.1	0	0	1009	-0.59	1	7
STBH 2.1	10:33	0	1.9	19.6	78.5	0	0	1009	-0.81	1	7.6
STBH 2.2	10:36	0	1.7	20	78.3	0	0	1009	-0.62	1	5.8
STBH 3.0	10:50	0	1.8	19.8	78.4	0	0	1009	-0.29	1	6.7
STBH 3.1	10:31	0	2.2	19.6	78.2	0	0	1009	0.39	1	7.8
STBH 4.0	10:54	0	2.1	19.9	78	0	0	1009	0.9	10	10.6
STBH 4.1	10:22	0	2.5	19.7	77.8	0	0	1009	1.29	1	7.1
STBH 4.2	10:27	0	2.5	20.2	77.3	0	0	1009	1.04	1	8.6
STBH 5.0	10:57	0	2.1	19.8	78.1	0	0	1009	0.63	15	19.4
STBH 5.1	11:01	0	1.9	19.9	78.2	0	0	1009	0.42	1	5.8
STBH 5.2	10:14	0	2.1	20	77.9	0	0	1009	0.34	1	9.6
STBH 5.3	10:17	0	2.4	20.1	77.5	0	0	1009	-0.13	1	6
STBH 6.0	11:19	0	2	19.7	78.3	0	0	1009	-0.91	1	5.4
STBH 6.1	10:03	0	1.9	19.8	78.3	0	0	1009	-0.24	1	5.4
STBH 6.2	10:07	0	1.7	19.3	79	0	0	1009	1.28	1	5.4
STBH 6.3	10:11	0	1.6	19.5	78.9	0	0	1009	0.98	1	8.2
STBH 7.0	11:23	0	1.9	19.6	78.5	0	0	1009	0.49	1	6.2
STBH 7.1	09:59	0	2.1	19.5	78.4	0	0	1009	0.54	1	5.5
STBH 9.0	Buried										
STBH 12	11:37	0	2	20	78	0	0	1009	-0.94	10	6.5
STBH 13	11:41	0	1.6	20	78.4	0	0	1009	-0.17	10	5.2
STBH 15	11:45	0	2.1	20.1	77.8	0	0	1009	0.83	1	8.3
STBH 16	11:49	0	2.3	19.8	77.9	0	0	1009	-0.75	1	3
STBH 22	11:53	0.4	2	19.9	77.7	0	0	1009	0.61	1.6	3.1
STMBH 5.4	11:05	0	1.7	19.6	78.7	0	0	1009	-0.7	1	16
STMBH 5.5	11:07	0	1.8	19.5	78.7	0	0	1009	-0.01	1	17.1
STMBH 5.7	11:10	0	2.6	19.7	77.7	0	0	1009	-0.18	1	7.1

Standard Landfill Borehole Gas Monitoring

Date 02/06/2017
 Weather: Dry
 Wind conditions: Calm
 Air Temperature: 16 °C

Instrument: GEM 2000
 Serial No: GM12289
 Calibrated To: 29/11//2017
 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	19.9	78.1	0	0	1005	-0.17	1	5.4
STBH 1.1	10:34	0	2.5	20	77.5	0	0	1005	-0.04	1	5.4
STBH 2.0	10:41	0	1.9	19.9	78.2	0	0	1005	-0.55	1	7
STBH 2.1	10:29	0	1.9	19.8	78.3	0	0	1005	-0.83	1	7.6
STBH 2.2	10:32	0	2.1	19.6	78.3	0	0	1005	-0.59	1	5.8
STBH 3.0	10:46	0	1.8	19.6	78.6	0	0	1005	-0.21	1	6.7
STBH 3.1	10:27	0	1.7	19.5	78.8	0	0	1005	0.32	1	7.8
STBH 4.0	10:50	0	2.2	19.8	78	0	0	1005	0.87	10	10.6
STBH 4.1	10:18	0	2.3	20	77.7	0	0	1005	1.26	1	7.1
STBH 4.2	10:23	0	1.8	20.1	78.1	0	0	1005	1.04	1	8.6
STBH 5.0	10:53	0	2	19.8	78.2	0	0	1005	0.66	15	19.4
STBH 5.1	10:57	0	1.9	19.7	78.4	0	0	1005	0.45	1	5.8
STBH 5.2	10:10	0	1.5	19.9	78.6	0	0	1005	0.32	1	9.6
STBH 5.3	10:13	0	1.7	19.6	78.7	0	0	1005	-0.12	1	6
STBH 6.0	11:15	0	2.1	20	77.9	0	0	1005	-0.96	1	5.4
STBH 6.1	09:59	0	1.9	19.8	78.3	0	0	1005	-0.3	1	5.4
STBH 6.2	10:03	0	1.7	19.4	78.9	0	0	1005	1.2	1	5.4
STBH 6.3	10:07	0	1.5	19.7	78.8	0	0	1005	1.02	1	8.2
STBH 7.0	11:19	0	1.8	19.9	78.3	0	0	1005	0.47	1	6.2
STBH 7.1	09:55	0	1.9	20	78.1	0	0	1005	0.52	1	5.5
STBH 9.0	Buried										
STBH 12	11:33	0	2.1	20.1	77.8	0	0	1005	-0.92	10	6.5
STBH 13	11:37	0	1.9	20.3	77.8	0	0	1005	-0.16	10	5.2
STBH 15	11:41	0	1.5	20	78.5	0	0	1005	0.88	1	8.3
STBH 16	11:45	0	1.8	19.9	78.3	0	0	1005	-0.78	1	3
STBH 22	11:49	0.2	2.1	19.5	78.2	0	0	1005	0.61	1.6	3.1
STMBH 5.4	11:01	0	2	19.2	78.8	0	0	1005	-0.7	1	16
STMBH 5.5	11:03	0	2.1	19.8	78.1	0	0	1005	0.04	1	17.1
STMBH 5.7	11:06	0	2.5	19.5	78	0	0	1005	-0.14	1	7.1

Standard Landfill Borehole Gas Monitoring

Date 09/06/2017
 Weather: Dry
 Wind conditions: Calm
 Air Temperature: 17 °C

Instrument: GEM 2000
 Serial No: GM12289
 Calibrated To: 29/11//2017
 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	1.9	19.9	78.2	0	0	1002	0.01	1	5.4
STBH 1.1	11:36	0	2.1	20.1	77.8	0	0	1002	-0.15	1	5.4
STBH 2.0	11:43	0	2.4	19.8	77.8	0	0	1002	0.57	1	7
STBH 2.1	11:31	0	2	19.6	78.4	0	0	1002	0.79	1	7.6
STBH 2.2	11:34	0	2.1	19.6	78.3	0	0	1002	0.56	1	5.8
STBH 3.0	11:48	0	2.2	19.8	78	0	0	1002	0.57	1	6.7
STBH 3.1	11:29	0	1.7	19.7	78.6	0	0	1002	0.41	1	7.8
STBH 4.0	11:52	0	1.4	19.3	79.3	0	0	1002	1.21	10	10.6
STBH 4.1	11:20	0	2	19.8	78.2	0	0	1002	1.32	1	7.1
STBH 4.2	11:25	0	1.9	20	78.1	0	0	1002	1.06	1	8.6
STBH 5.0	11:55	0	2.4	20.1	77.5	0	0	1002	0.66	15	19.4
STBH 5.1	11:59	0	2.3	19.8	77.9	0	0	1002	0.4	1	5.8
STBH 5.2	11:12	0	1.3	19.9	78.8	0	0	1002	0.35	1	9.6
STBH 5.3	11:15	0	2	19.6	78.4	0	0	1002	0.98	1	6
STBH 6.0	12:17	0	1.9	19.4	78.7	0	0	1002	-0.91	1	5.4
STBH 6.1	11:01	0	1.7	19.8	78.5	0	0	1002	0.71	1	5.4
STBH 6.2	11:05	0	1.6	19.9	78.5	0	0	1002	1.21	1	5.4
STBH 6.3	11:09	0	1.8	19.3	78.9	0	0	1002	1.05	1	8.2
STBH 7.0	12:21	0	1.9	19.5	78.6	0	0	1002	0.09	1	6.2
STBH 7.1	10:57	0	2.1	19.8	78.1	0	0	1002	0.54	1	5.5
STBH 9.0	Buried										
STBH 12	12:35	0	1.9	20	78.1	0	0	1002	0.85	10	6.5
STBH 13	12:39	0	1.8	19.9	78.3	0	0	1002	-0.16	10	5.2
STBH 15	12:43	0	1.9	19.8	78.3	0	0	1002	0.88	1	8.3
STBH 16	12:47	0	2.4	20	77.6	0	0	1002	0.69	1	3
STBH 22	12:51	0.3	2.6	19.6	77.5	0	0	1002	0.53	1.6	3.1
STMBH 5.4	12:03	0	2.1	19.7	78.2	0	0	1002	0.53	1	16
STMBH 5.5	12:05	0	2	19.9	78.1	0	0	1002	-0.12	1	17.1
STMBH 5.7	12:08	0	2.4	20	77.6	0	0	1002	-0.22	1	7.1

Standard Landfill Borehole Gas Monitoring

Date 16/06/2017
 Weather: Dry
 Wind conditions: Calm
 Air Temperature: 18 °C

Instrument: GEM 2000
 Serial No: GM12289
 Calibrated To: 29/11//2017
 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	2.4	19.9	77.7	0	0	1000	-0.17	1	5.4
STBH 1.1	10:34	0	2	19.8	78.2	0	0	1000	-0.04	1	5.4
STBH 2.0	10:41	0	2.1	19.6	78.3	0	0	1000	-0.58	1	7
STBH 2.1	10:29	0	2.3	19.8	77.9	0	0	1000	-0.84	1	7.6
STBH 2.2	10:32	0	2	19.7	78.3	0	0	1000	-0.58	1	5.8
STBH 3.0	10:46	0	2.1	19.9	78	0	0	1000	-0.28	1	6.7
STBH 3.1	10:27	0	1.8	20	78.2	0	0	1000	0.34	1	7.8
STBH 4.0	10:50	0	1.6	19.8	78.6	0	0	1000	0.9	10	10.6
STBH 4.1	10:18	0	2.3	19.9	77.8	0	0	1000	1.27	1	7.1
STBH 4.2	10:23	0	1.6	19.6	78.8	0	0	1000	0.97	1	8.6
STBH 5.0	10:53	0	2.4	19.5	78.1	0	0	1000	0.65	15	19.4
STBH 5.1	10:57	0	2.5	19.8	77.7	0	0	1000	0.42	1	5.8
STBH 5.2	10:10	0	1.5	20	78.5	0	0	1000	0.3	1	9.6
STBH 5.3	10:13	0	2.3	19.8	77.9	0	0	1000	-0.17	1	6
STBH 6.0	11:15	0	2	19.9	78.1	0	0	1000	-0.9	1	5.4
STBH 6.1	09:59	0	1.6	19.8	78.6	0	0	1000	-0.3	1	5.4
STBH 6.2	10:03	0	1.9	19.4	78.7	0	0	1000	1.18	1	5.4
STBH 6.3	10:07	0	1.7	19.7	78.6	0	0	1000	1.05	1	8.2
STBH 7.0	11:19	0	1.8	19.9	78.3	0	0	1000	0.5	1	6.2
STBH 7.1	09:55	0	2	20	78	0	0	1000	0.6	1	5.5
STBH 9.0	Buried										
STBH 12	11:33	0	1.7	19.8	78.5	0	0	1000	-0.91	10	6.5
STBH 13	11:37	0	1.5	19.9	78.6	0	0	1000	-0.12	10	5.2
STBH 15	11:41	0	1.6	20	78.4	0	0	1000	0.91	1	8.3
STBH 16	11:45	0	2.2	19.8	78	0	0	1000	-0.77	1	3
STBH 22	11:49	0.2	2.5	19.9	77.4	0	0	1000	0.67	1.6	3.1
STMBH 5.4	11:01	0	2.2	19.8	78	0	0	1000	-0.62	1	16
STMBH 5.5	11:03	0	2.1	19.9	78	0	0	1000	0.01	1	17.1
STMBH 5.7	11:06	0	2.6	20	77.4	0	0	1000	-0.13	1	7.1

Standard Landfill Borehole Gas Monitoring

Date 23/06/2017
 Weather: Dry
 Wind conditions: Calm
 Air Temperature: 17 °C

Instrument: GEM 2000
 Serial No: GM12289
 Calibrated To: 29/11//2017
 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	2.1	20	77.9	0	0	1004	0.22	1	5.4
STBH 1.1	11:36	0	2.2	19.8	78	0	0	1004	0.11	1	5.4
STBH 2.0	11:43	0	2	19.9	78.1	0	0	1004	-0.46	1	7
STBH 2.1	11:31	0	2.1	19.6	78.3	0	0	1004	-0.24	1	7.6
STBH 2.2	11:34	0	2.3	19.8	77.9	0	0	1004	-0.26	1	5.8
STBH 3.0	11:48	0	2.3	19.9	77.8	0	0	1004	-0.17	1	6.7
STBH 3.1	11:29	0	1.9	20	78.1	0	0	1004	0.21	1	7.8
STBH 4.0	11:52	0	1.9	19.7	78.4	0	0	1004	0.47	10	10.6
STBH 4.1	11:20	0	2.1	19.9	78	0	0	1004	0.66	1	7.1
STBH 4.2	11:25	0	1.6	20	78.4	0	0	1004	-0.96	1	8.6
STBH 5.0	11:55	0	2.2	19.9	77.9	0	0	1004	0.75	15	19.4
STBH 5.1	11:59	0	2.5	19.6	77.9	0	0	1004	0.23	1	5.8
STBH 5.2	11:12	0	1.7	19.8	78.5	0	0	1004	0.4	1	9.6
STBH 5.3	11:15	0	2.1	19.7	78.2	0	0	1004	-0.36	1	6
STBH 6.0	12:17	0	2.3	20	77.7	0	0	1004	-0.17	1	5.4
STBH 6.1	11:01	0	1.8	19.6	78.6	0	0	1004	-0.4	1	5.4
STBH 6.2	11:05	0	2	19.2	78.8	0	0	1004	0.9	1	5.4
STBH 6.3	11:09	0	1.6	20	78.4	0	0	1004	0.75	1	8.2
STBH 7.0	12:21	0	1.6	19.8	78.6	0	0	1004	0.3	1	6.2
STBH 7.1	10:57	0	2.1	19.6	78.3	0	0	1004	0.16	1	5.5
STBH 9.0	Buried										
STBH 12	12:35	0	1.6	19.6	78.8	0	0	1004	0.77	10	6.5
STBH 13	12:39	0	1.7	19.8	78.5	0	0	1004	0.04	10	5.2
STBH 15	12:43	0	1.9	20	78.1	0	0	1004	0.27	1	8.3
STBH 16	12:47	0	1.8	19.7	78.5	0	0	1004	-0.19	1	3
STBH 22	12:51	0.3	2	19.6	78.1	0	0	1004	0.48	1.6	3.1
STMBH 5.4	12:03	0	2.5	19.3	78.2	0	0	1004	-0.21	1	16
STMBH 5.5	12:05	0	2.4	19.8	77.8	0	0	1004	-0.11	1	17.1
STMBH 5.7	12:08	0	2.8	19.8	77.4	0	0	1004	-0.97	1	7.1

Standard Landfill Borehole Gas Monitoring

Date 30/06/2017
 Weather: Dry
 Wind conditions: Calm
 Air Temperature: 17 °C

Instrument: GEM 2000
 Serial No: GM12289
 Calibrated To: 29/11//2017
 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	2.6	19.9	77.5	0	0	999	0.09	1	5.4
STBH 1.1	10:34	0	2	19.8	78.2	0	0	999	-0.15	1	5.4
STBH 2.0	10:41	0	2.1	19.6	78.3	0	0	999	0.5	1	7
STBH 2.1	10:29	0	2.5	19.8	77.7	0	0	999	0.79	1	7.6
STBH 2.2	10:32	0	2	19.9	78.1	0	0	999	0.58	1	5.8
STBH 3.0	10:46	0	2.1	20	77.9	0	0	999	0.6	1	6.7
STBH 3.1	10:27	0	2.3	19.7	78	0	0	999	0.22	1	7.8
STBH 4.0	10:50	0	1.8	19.6	78.6	0	0	999	1.25	10	10.6
STBH 4.1	10:18	0	2	20	78	0	0	999	1.3	1	7.1
STBH 4.2	10:23	0	1.8	20.1	78.1	0	0	999	1.07	1	8.6
STBH 5.0	10:53	0	2.1	19.8	78.1	0	0	999	0.63	15	19.4
STBH 5.1	10:57	0	2.3	19.9	77.8	0	0	999	0.45	1	5.8
STBH 5.2	10:10	0	1.8	19.6	78.6	0	0	999	0.21	1	9.6
STBH 5.3	10:13	0	2.4	19.9	77.7	0	0	999	0.95	1	6
STBH 6.0	11:15	0	2.1	20	77.9	0	0	999	-0.97	1	5.4
STBH 6.1	09:59	0	1.6	19.8	78.6	0	0	999	0.73	1	5.4
STBH 6.2	10:03	0	2.3	19.7	78	0	0	999	1.31	1	5.4
STBH 6.3	10:07	0	1.9	19.9	78.2	0	0	999	1.02	1	8.2
STBH 7.0	11:19	0	1.4	19.6	79	0	0	999	0.12	1	6.2
STBH 7.1	09:55	0	2.2	19.9	77.9	0	0	999	0.56	1	5.5
STBH 9.0	Buried										
STBH 12	11:33	0	1.8	20	78.2	0	0	999	0.88	10	6.5
STBH 13	11:37	0	1.9	20	78.1	0	0	999	-0.15	10	5.2
STBH 15	11:41	0	1.7	19.9	78.4	0	0	999	0.83	1	8.3
STBH 16	11:45	0	1.9	19.9	78.2	0	0	999	0.6	1	3
STBH 22	11:49	0.2	2.3	20	77.5	0	0	999	0.54	1.6	3.1
STMBH 5.4	11:01	0	2.4	19.8	77.8	0	0	999	0.57	1	16
STMBH 5.5	11:03	0	2.1	19.6	78.3	0	0	999	-0.14	1	17.1
STMBH 5.7	11:06	0	2.6	19.3	78.1	0	0	999	-0.18	1	7.1

[illegible]

Standard Leachate Monitoring

Date 11/04/2017
 Weather: Dry
 Wind conditions: Breezy
 Air Temperature: 16 °C

Instrument: Dip-Metre

Operative AS

Monitoring Point	Time Hrs	Dip Level (m)	Base Level	Leachate Depth	Pumping Yes/No	Comments
LC	10:20	29.62	31	1.38	YES	Pneumatic pumps
LC3	10:45	3.24	4.84	1.6	YES	Pneumatic pumps
LC4	10:56	17.41	19	1.59	YES	Pneumatic pumps
LC7	11:10	18.52	20.31	1.79	YES	Pneumatic pumps
LS5	11:30	28.74	32	1.30	YES	Electric Pump - Direct To Tanks
LS6	11:40	29.98	33	1.20	YES	Electric Pump - Direct To Tanks
S1	11:55	3.16	4.43	1.27	YES	Pneumatic pumps
S2	12:24	1.66	3.35	1.69	YES	Pneumatic pumps
S3	12:45	3.63	5.09	1.46	YES	Pneumatic pumps

Standard Leachate Monitoring

Date 09/05/2017
 Weather: Dry
 Wind conditions: Calm
 Air Temperature: 15 °C

Instrument: Dip-Metre

Operative AS

Monitoring Point	Time Hrs	Dip Level (m)	Base Level	Leachate Depth	Pumping Yes/No	Comments
LC	11:20	29.69	31	1.31	YES	Pneumatic pumps
LC3	11:45	3.27	4.84	1.57	YES	Pneumatic pumps
LC4	11:58	17.5	19	1.5	YES	Pneumatic pumps
LC7	12:12	18.55	20.31	1.76	YES	Pneumatic pumps
LS5	12:35	28.76	32	1.29	YES	Electric Pump - Direct To Tanks
LS6	12:45	30	33	1.20	YES	Electric Pump - Direct To Tanks
S1	13:00	3.17	4.43	1.26	YES	Pneumatic pumps
S2	13:25	1.68	3.35	1.67	YES	Pneumatic pumps
S3	13:45	3.65	5.09	1.44	YES	Pneumatic pumps

Standard Leachate Monitoring

Date 13/06/2017
 Weather: Dry
 Wind conditions: Calm
 Air Temperature: 16 °C

Instrument: Dip-Metre

Operative AS

Monitoring Point	Time Hrs	Dip Level (m)	Base Level	Leachate Depth	Pumping Yes/No	Comments
LC	11:00	29.6	31	1.4	YES	Pneumatic pumps
LC3	11:26	3.24	4.84	1.6	YES	Pneumatic pumps
LC4	11:40	17.51	19	1.49	YES	Pneumatic pumps
LC7	12:00	18.49	20.31	1.82	YES	Pneumatic pumps
LS5	12:15	28.75	32	1.30	YES	Electric Pump - Direct To Tanks
LS6	12:25	30.02	33	1.19	YES	Electric Pump - Direct To Tanks
S1	12:42	3.13	4.43	1.3	YES	Pneumatic pumps
S2	13:07	1.71	3.35	1.64	YES	Pneumatic pumps
S3	13:26	3.59	5.09	1.5	YES	Pneumatic pumps

	15804606	15804607	15804608	15804609	15804610
Order details	SDG ID. 170708-4	170708-4	170708-4	170708-4	170708-4
	Status Authorised	Authorised	Authorised	Authorised	Authorised
	Project Site Standard Quart	Standard Quart	Standard Quart	Standard Quart	Standard Quart
	Project				
Sampling details	Contact Paul Murphy	Paul Murphy	Paul Murphy	Paul Murphy	Paul Murphy
	Sample Description S1	S2	S3	SSR5	SSR6
	Status Authorised	Authorised	Authorised	Authorised	Authorised
	Sample Depth -	-	-	-	-
	Sample Type MISC_LIQUID	MISC_LIQUID	MISC_LIQUID	MISC_LIQUID	MISC_LIQUID
	AGS Sample Type				
	AGS Sample Reference				
	Date Sampled 06/07/2017	06/07/2017	06/07/2017	06/07/2017	06/07/2017
	Received On 08/07/2017	08/07/2017	08/07/2017	08/07/2017	08/07/2017
	Date Complete 14/07/2017	14/07/2017	14/07/2017	14/07/2017	14/07/2017

Laboratory data

Inorganics					
Alkalinity, Total as CaCO3 mg/l	1850	4030	3640	1030	1070
Ammoniacal Nitrogen as N mg/l	1260	676	397	997	150
BOD, unfiltered mg/l	196	105	46.3	20.4	24.7
Chloride mg/l	368	1240	919	474	468
Chlorine, Total (Residual) mg/l	0.5	1.1	1.1	1	1.1
COD, unfiltered mg/l	1790	1130	499	396	400
Conductivity @ 20 deg.C mS/cm	3.98	9.24	8.32	3.61	3.66
pH pH Units	7.58	7.73	7.64	8.3	8.19
Total Oxidised Nitrogen as N mg/l	0.194	1.29	<0.5	76.6	75.7
Filtered (Dissolved) Metals					
Magnesium (diss.filt) mg/l	43.4	63.8	53.5	23.4	24.3
Potassium (diss.filt) mg/l	109	259	205	170	180
Sodium (diss.filt) mg/l	271	977	795	378	417

	15804603	15804604	15804611	15804605
Order details	SDG ID. 170708-4	170708-4	170708-4	170708-4
	Status Authorised	Authorised	Authorised	Authorised
	Project Site Standard Quart	Standard Quart	Standard Quart	Standard Quart
	Project			
Sampling details	Contact Paul Murphy	Paul Murphy	Paul Murphy	Paul Murphy
	Sample Description LC2 NEAREST LC3	LC4	LC7	
	Status Authorised	Authorised	Authorised	Authorised
	Sample Depth -	-	-	-
Laboratory data	Sample Type LANDFILL_LEA	LANDFILL_LEA	LANDFILL_LEA	LANDFILL_LEA
	AGS Sample Type			
	AGS Sample Reference			
	Date Sampled 06/07/2017	06/07/2017	06/07/2017	06/07/2017
Inorganics	Received On 08/07/2017	08/07/2017	08/07/2017	08/07/2017
	Date Complete 14/07/2017	14/07/2017	14/07/2017	14/07/2017
Filtered (Dissolved) Metals	Alkalinity, Total as CaCO3 mg/l	7900	5700	4290
	Ammoniacal Nitrogen as N mg/l	1560	989	770
	BOD, unfiltered mg/l	96.2	137	55.4
	Chloride mg/l	2260	1550	1280
	Chlorine, Total (Residual) mg/l	2.1	2	1.4
	COD, unfiltered mg/l	2280	1660	950
	Conductivity @ 20 deg.C mS/cm	17.4	12.3	9.97
	pH pH Units	7.79	7.88	7.72
	Total Oxidised Nitrogen as N mg/l	<2	<1	<0.5
	Magnesium (diss.filt) mg/l	35.7	62.7	65.1
	Potassium (diss.filt) mg/l	286	372	283
	Sodium (diss.filt) mg/l	1890	1290	1010

Standard

Groundwater Monitoring

Date 25/04/2017

Weather: dry

Wind conditions: Calm

Air Temperature: 14 °C

Instrument: Dip-Metre

Operative AS

Monitoring Point	Time Hrs	Dip-Lev Metres	Dip-Base Metres	Water-Lev Metres	
ST GW 1	11:00	35.21	55.77	20.56	Old Borehole
ST GW 2	11:05	9.1	9.1	0	
ST GW 2R	11:10	45.66	59.5	13.84	
ST GW 3	11:50	41.28	53.25	11.97	
ST GW 4R	11:20	48	53	5	
ST GW 5	10:42	2.63	10	7.37	
ST GW 6	12:25	28.99	45.46	16.47	
ST GW 7R	9:55	59.87	71	11.13	

Standard

Groundwater Monitoring

Date 23/05/2017

Weather: dry

Wind conditions: Calm

Air Temperature: 18 °C

Instrument: Dip-Metre

Operative AS

Monitoring Point	Time Hrs	Dip-Lev Metres	Dip-Base Metres	Water-Lev Metres
ST GW 1	11:30	35.18	55.77	20.59
ST GW 2	11:35	9.1	9.1	0
ST GW 2R	11:40	45.69	59.5	13.81
ST GW 3	12:20	41.87	53.25	11.38
ST GW 4R	11:50	48.06	53	4.94
ST GW 5	11:00	2.61	10	7.39
ST GW 6	12:50	29.54	45.46	15.92
ST GW 7R	10:30	60.24	71	10.76

Old Borehole

Standard

Groundwater Monitoring

Date 27/06/2017

Weather: dry

Wind conditions: Calm

Air Temperature: 19 °C

Instrument: Dip-Metre

Operative AS

Monitoring Point	Time Hrs	Dip-Lev Metres	Dip-Base Metres	Water-Lev Metres
ST GW 1	11:20	36	55.77	19.77
ST GW 2	11:25	9.1	9.1	0
ST GW 2R	11:30	42.35	59.5	17.15
ST GW 3	12:10	39.97	53.25	13.28
ST GW 4R	11:40	48.26	53	4.74
ST GW 5	10:50	2.89	10	7.11
ST GW 6	12:40	27.59	45.46	17.87
ST GW 7R	10:20	58.62	71	12.38

Old Borehole

Order details	SDG ID.	170707-124	170707-124	170707-124	170707-124	170707-124	170707-124	170707-124
	Status	Authorised	Authorised	Authorised	Authorised	Authorised	Authorised	Authorised
	Project Site	Standard Quart	Standard Quart	Standard Quart	Standard Quart	Standard Quart	Standard Quart	Standard Quarterly
	Project	QUARTERLY'S	QUARTERLY'S	QUARTERLY'S	QUARTERLY'S	QUARTERLY'S	QUARTERLY'S	QUARTERLY'S
	Contact	Paul Murphy	Paul Murphy	Paul Murphy	Paul Murphy	Paul Murphy	Paul Murphy	Paul Murphy
Sampling details	Sample Description	GW1	GW2A	GW3	GW4R	GW5	GW6	GW7
	Status	Authorised	Authorised	Authorised	Authorised	Authorised	Authorised	Authorised
	Sample Depth	-	-	-	-	-	-	-
	Sample Type	GROUND_WA	GROUND_WA	GROUND_WA	GROUND_WA	GROUND_WA	GROUND_WA	GROUND_WATER
	AGS Sample Type							
	AGS Sample Reference							
	Date Sampled	06/07/2017	06/07/2017	06/07/2017	06/07/2017	06/07/2017	06/07/2017	06/07/2017
	Received On	07/07/2017	07/07/2017	07/07/2017	07/07/2017	07/07/2017	07/07/2017	07/07/2017
	Date Complete	17/07/2017	17/07/2017	18/07/2017	17/07/2017	18/07/2017	18/07/2017	17/07/2017
	Laboratory data							
Carbon								
Inorganic Carbon, Total	mg/l	9.47	18.5	39.1	19.8	32.6	51.5	87.4
Inorganics								
Alkalinity, Total as CaCO3	mg/l	39.5	90	150	100	130	28	315
Ammoniacal Nitrogen as N	mg/l	<0.2	0.41	0.264	0.368	0.732	16.9	1.28
BOD, unfiltered	mg/l	<1.67	<1.67	<1	<1.67	<1.67	<1	<1
Chloride	mg/l	54	67	72.9	78.3	4.6	183	54.7
Chlorine, Total (Residual)	mg/l	0.04	0.04	0.04	0.03	0.04	0.05	0.1
COD, unfiltered	mg/l	23.4	121	34.7	53.2	462	160	29.8
Cyanide, Total	mg/l	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Nitrite as NO2	mg/l	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
pH	pH Units	5.99	6.48	6.24	6.35	6.52	5.52	6.94
Sulphate	mg/l	221	108	282	203	3.7	438	148
Filtered (Dissolved) Metals								
Arsenic (diss.filt)	mg/l	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.000621	0.0231
Cadmium (diss.filt)	mg/l	<0.00008	<0.00008	<0.00008	0.000356	<0.00008	0.00381	<0.00008
Calcium (diss.filt)	mg/l	55.7	48.2	93.2	77.1	40.4	102	79.3
Copper (diss.filt)	mg/l	<0.0003	<0.0003	<0.0003	<0.0003	0.000895	0.00283	<0.0003
Iron (diss.filt)	mg/l	0.0228	0.0757	<0.019	0.0224	0.0433	0.0376	3.72
Lead (diss.filt)	mg/l	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	0.000363	<0.0002
Magnesium (diss.filt)	mg/l	26	17.6	42.6	23.1	5.09	39.6	32.4
Mercury (diss.filt)	mg/l	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	0.000076	<0.00001
Nickel (diss.filt)	mg/l	0.000964	0.0238	0.00208	0.0813	0.00217	0.131	0.0115
Potassium (diss.filt)	mg/l	10.3	9.17	7.96	9.01	4.15	28.8	13.7
Sodium (diss.filt)	mg/l	27.4	35.7	37.6	36.6	5.54	140	79.6
Zinc (diss.filt)	mg/l	0.0228	0.0146	0.0186	0.116	0.0102	0.18	0.00354
Phenols								
Cresols	mg/l	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006
Phenol	mg/l	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Phenols, Total Detected monohydric	mg/l	<0.016	<0.016	<0.016	<0.016	<0.016	<0.016	<0.016
Xylenols	mg/l	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008

15804453 15804454

Order details

SDG ID. 170707-124 170707-124
Status Authorised Authorised
Project Site Standard Quart Standard Quarterly
Project QUARTERLY'S QUARTERLY'S
Contact Paul Murphy Paul Murphy

Sampling details

Sample Description SW4 SW5
Status Authorised Authorised
Sample Depth - -
Sample Type SURFACE_WA SURFACE_WATER
AGS Sample Type
AGS Sample Reference
Date Sampled 06/07/2017 06/07/2017
Received On 07/07/2017 07/07/2017
Date Complete 14/07/2017 14/07/2017

Laboratory data

Inorganics

Alkalinity, Total as CaCO3 mg/l	200	220
Ammoniacal Nitrogen as N mg/l	<0.2	0.204
BOD, unfiltered mg/l	<1	3.93
Chloride mg/l	68.6	27.9
Chlorine, Total (Residual) mg/l	0.06	0.06
COD, unfiltered mg/l	29.6	99.8
Conductivity @ 20 deg.C mS/cm	0.749	0.61
Nitrate as NO3 mg/l	1.09	<0.3
pH pH Units	8.04	7.73
Sulphate mg/l	155	116
Total Oxidised Nitrogen as N mg/l	0.251	<0.1

Filtered (Dissolved) Metals

Calcium (diss.filt) mg/l	107	65.9
Iron (diss.filt) mg/l	<0.019	0.132
Magnesium (diss.filt) mg/l	15.9	38.1
Potassium (diss.filt) mg/l	9.03	6.85
Sodium (diss.filt) mg/l	47.4	22.4



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