

Bridgeton Landfill, LLC

Monthly Data Submittals

December 2017

Required by Section 52.E of Agreed Order, Case No. 13SL-CC01088
Effective May 13, 2013

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Provided Separately:

- Flare Raw Data Excel Spreadsheet
- Gas Wellfield Raw Data Excel Spreadsheet

January 20, 2018

Commentary on Data

January 20, 2018

The following observations and comments are offered during this time period:

Gas Volume

- As seen in Attachment B-1, the gas collection volumetric rate in for this month averaged 224 SCFM from the North Quarry and 1,047 SCFM from the South Quarry, for a total site flow of 1,271 SCFM, as normalized per the MDNR weekly flow and TRS sampling results.

Gas Quality

- Attachments D and E contain the monthly data related to gas quality as measured at the respective wellheads.
- Attachment E-1 contains vertical wells which had oxygen levels over 5% at one (1) or more weekly monitoring events during this reporting period. These consisted of 38 GEW wells that are experiencing low or restricted flows, and six (6) GIW wells that have low gas flow due to the cooling loops that are installed within these wells. By the end of the month, 29 of the GEW wells and 4 of the GIW wells still exhibited oxygen at the wellhead at or greater than 5%. All of these wells are low-flow/vacuum sensitive wells with valves only slightly open. On-going tuning, maintenance, and pump operation is being performed to manage the oxygen content. With the exception of GEW-1A, all of these wells are in the South Quarry area where the flexible membrane liner cap is in place to prevent atmospheric intrusion into the waste mass. Please note that the abnormal cold ambient temperatures toward the end of December 2017 may have affected landfill gas collection and gas well tuning.
- Attachment E-2 contains gas temperatures as measured at the wellheads. Four (4) vertical wells (excluding GIW wells) increased by 30°F during this reporting period. Additionally, 9 vertical wells (excluding GIW wells) decreased by 30°F or more. All wells that exhibited changes greater than 30 degrees are all within the historical gas temperature norms for these wells or within the range of temperatures of nearby vertical wells.
- All wells in the North Quarry during this reporting period exhibited a maximum wellhead temperature under 145°F. Carbon monoxide (CO) results showed non-detect (ND) for North Quarry wells, with the exception of GEW-053 (62 ppm) and GEW-055 (32 ppm).

Settlement

- The South Quarry exhibited monthly maximum settlement up to 0.69 feet over 30 days for this reporting period (see Attachment F).

Bird Monitoring and Mitigation

- Bridgeton Landfill conducted bird monitoring during this reporting period in accordance with the Approved Bird Hazard Monitoring and Mitigation Plan, last updated in December 2016. Bridgeton Landfill personnel completed required annual training by USDA APHIS Wildlife Services on August 25, 2017 for landfill personnel actively involved in managing potentially hazardous wildlife near airports. Birds noted on-site are dispersed using pyrotechnics, a cap gun, vehicles, or on foot. Logs of bird population observations are provided to the Airport and the USDA APHIS Wildlife Services on a weekly basis.

Low Fill Project Area

- Enclosed is the requested clean fill placement figure in accordance with the June 19, 2015 letter from the Missouri Department of Natural Resources (MDNR) granting modification approval to Permit number 0118912. This modification allows for the acceptance of clean fill and use thereof as a method of re-establishing positive surface drainage and maintaining structural stability of landfill infrastructure. Condition 4 of this approval is satisfied via the text below and the accompanying figure in Attachment I-1.
- Clean fill activities commenced on June 28th and continued into December.

ATTACHMENT A

WORK COMPLETED AND PLANNED

Bridgeton Landfill, LLC
Monthly Summary of Work Completed and Planned

Work Completed in December 2017

Gas Collection and Control System (GCCS)

- Continued operation and maintenance of GCCS system.
- Continued upgrades to GCCS system as necessary.
- Completed GCCS expansion project

Heat Extraction System (HES)

- Continued operation and maintenance of the HES (pilot and barrier wells).

Leachate Management System

- Continued routine operation of previously installed and upgraded features.

Pre-Treatment Facility

- Continued ongoing operation of facility.
- Continued to optimize operation efficiency of pre-treatment facility.
- Permeate continued to be discharged directly to St. Louis Metropolitan Sewer District (MSD) – Bissell Point Facility or other approved disposal facilities as determined by MSD.

Other Projects

- Continued the East Fill project.
- Continued accepting clean fill for East Fill maintenance and fill project.
- Infrastructure in East Fill area has been raised as necessary to perform maintenance on existing infrastructure.
- Initiated construction of alternative first responder entrance.

Work Planned for January 2018

Gas Collection and Control System (GCCS)

- Continue operation and maintenance of GCCS system.
- Continue upgrades to GCCS system as necessary.

Heat Extraction System (HES)

- Continue operation and maintenance of the HES.
- Continue upgrades to the HES as necessary.

Leachate Management System

- Continue routine operation of previously installed and upgraded features.

Pre-Treatment Facility

- Ongoing operation of facility.
- Continue to optimize operation efficiency of pre-treatment facility.
- Permeate will continue to be discharged directly to St. Louis Metropolitan Sewer District (MSD) – Bissell Point Facility or other approved disposal facilities as determined by MSD.

Other Projects:

- Continue the East Fill project.
- Continue acceptance of clean fill materials for East Fill maintenance and fill project.
- Infrastructure will continued to be raised as necessary in the East Fill area.
- Continue construction of alternative first responder entrance.

ATTACHMENT B

DAILY FLARE MONITORING DATA

ATTACHMENT B-1
FLOW DATA TABLE

Daily Flare Monitoring Data - Bridgeton Landfill
December 2017

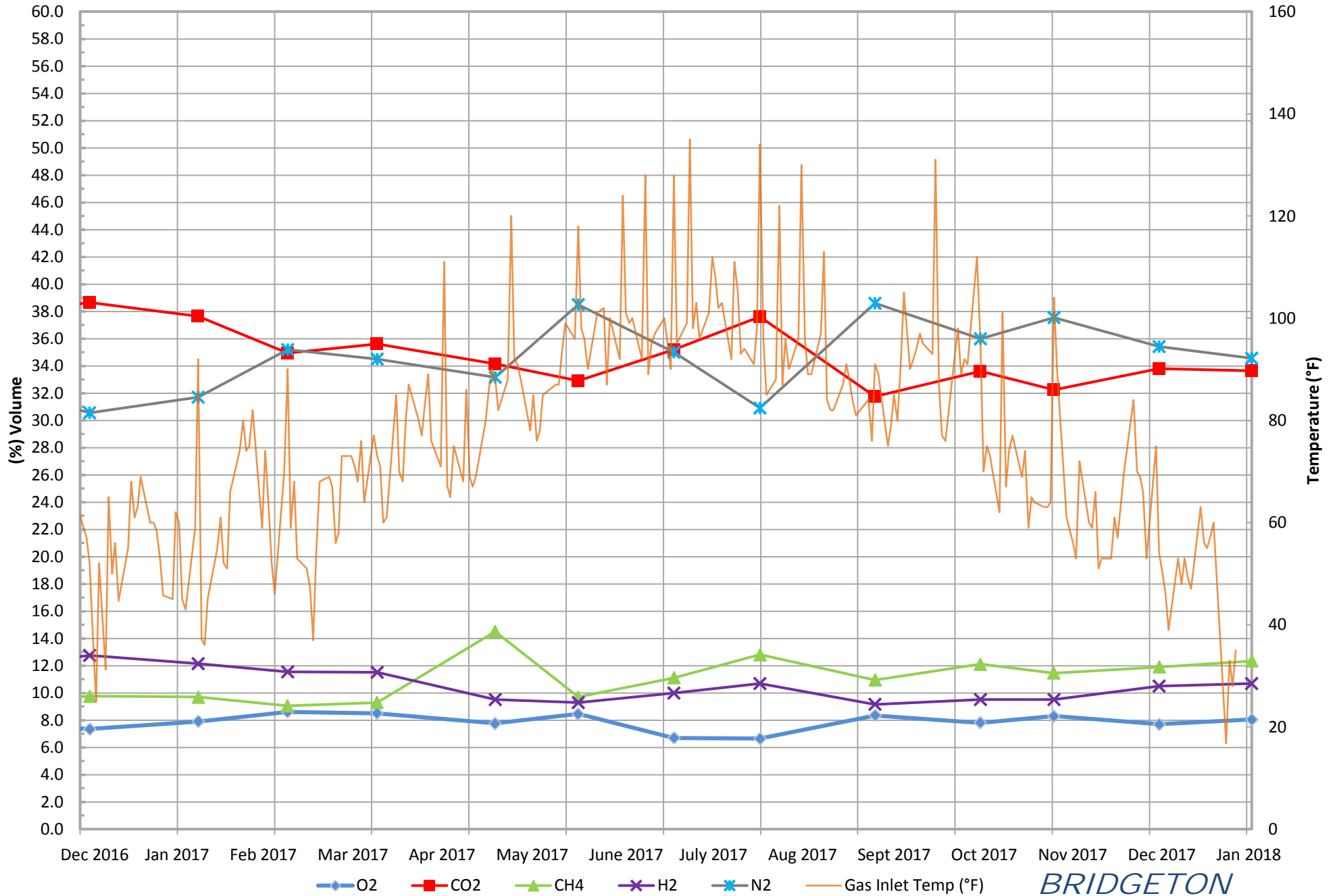
Date	Average Device Flow* (scfm)				Total Avg. Flow** (scfm)
	Utility Flare (FL-100)	Utility Flare (FL-120)	Utility Flare (FL-140)	EP14 NQ Utility Flare***	
12/1/2017	0	1,023	0	207	1,230
12/2/2017	0	1,019	0	207	1,226
12/3/2017	0	1,018	0	207	1,226
12/4/2017	0	997	0	209	1,206
12/5/2017	0	968	0	204	1,172
12/6/2017	0	996	0	204	1,200
12/7/2017	0	1,004	0	200	1,204
12/8/2017	0	1,028	0	202	1,230
12/9/2017	0	993	0	202	1,195
12/10/2017	0	992	0	206	1,198
12/11/2017	0	993	0	230	1,223
12/12/2017	0	995	0	243	1,239
12/13/2017	0	998	0	245	1,243
12/14/2017	0	975	0	240	1,215
12/15/2017	0	1,002	0	241	1,244
12/16/2017	0	1,011	0	239	1,250
12/17/2017	0	993	0	239	1,233
12/18/2017	0	1,065	0	239	1,304
12/19/2017	0	1,129	0	239	1,368
12/20/2017	0	1,149	0	240	1,390
12/21/2017	0	1,145	0	246	1,391
12/22/2017	0	1,137	0	244	1,380
12/23/2017	0	1,114	0	243	1,357
12/24/2017	0	1,114	0	241	1,355
12/25/2017	0	1,094	0	243	1,338
12/26/2017	0	1,078	0	234	1,313
12/27/2017	0	1,108	0	228	1,337
12/28/2017	0	1,061	0	215	1,277
12/29/2017	0	1,092	0	212	1,304
12/30/2017	0	1,089	0	198	1,288
12/31/2017	0	1,069	0	189	1,259
AVERAGE	0	1,047	0	224	1,271

* Flows normalized to **Blower Outlet Flowmeter - EPA Method 2 measurement verified

*** On 3/18/2016, the Bridgeton Landfill began separating the North Quarry gas to the Auxiliary Flare.

ATTACHMENT B-2
FLOW DATA GRAPHS

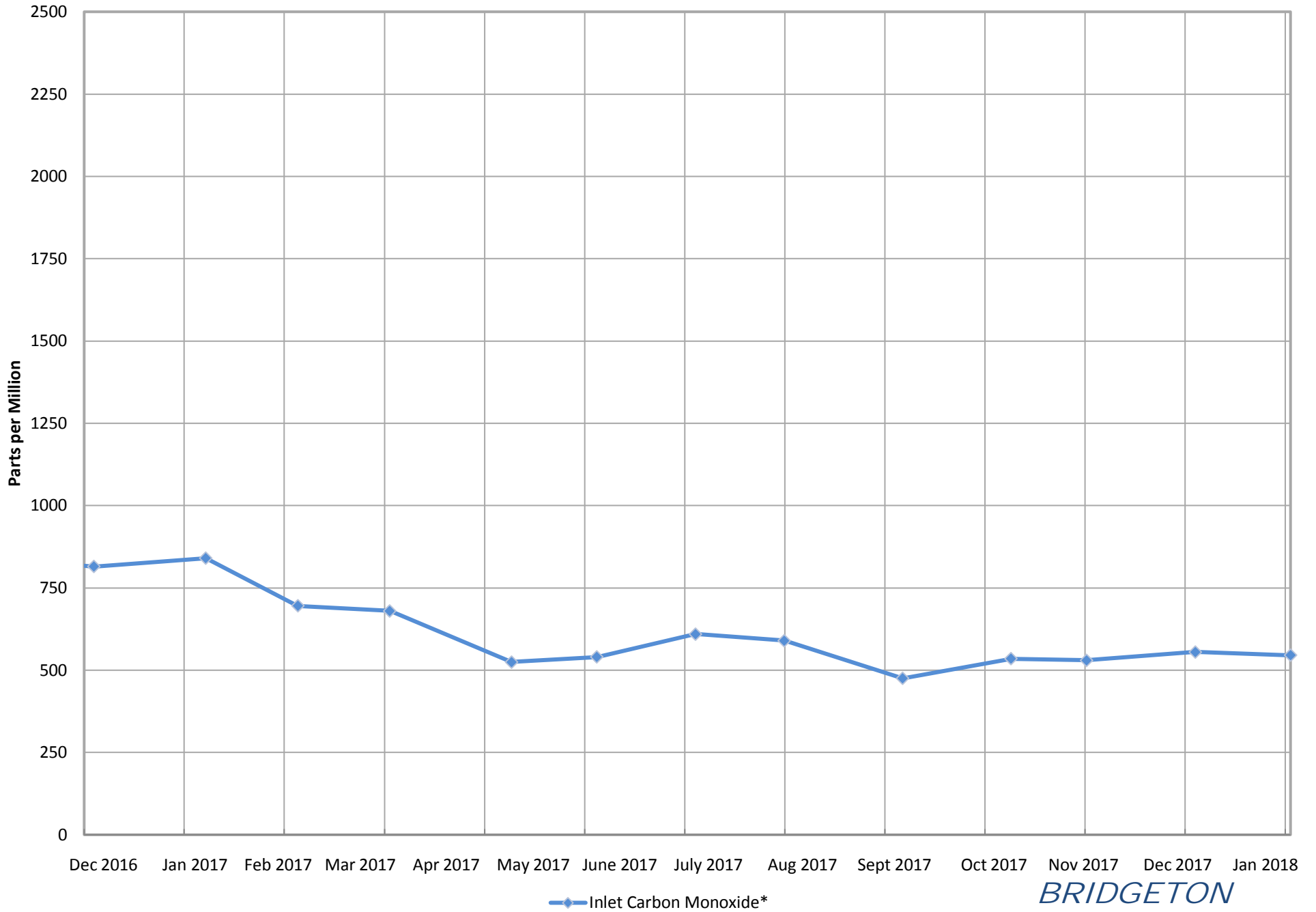
South Quarry Inlet Gas and Temperature*



*BRIDGETON
LANDFILL*

*Gas data collected from Laboratory Reports. Temperature data collected from field readings.

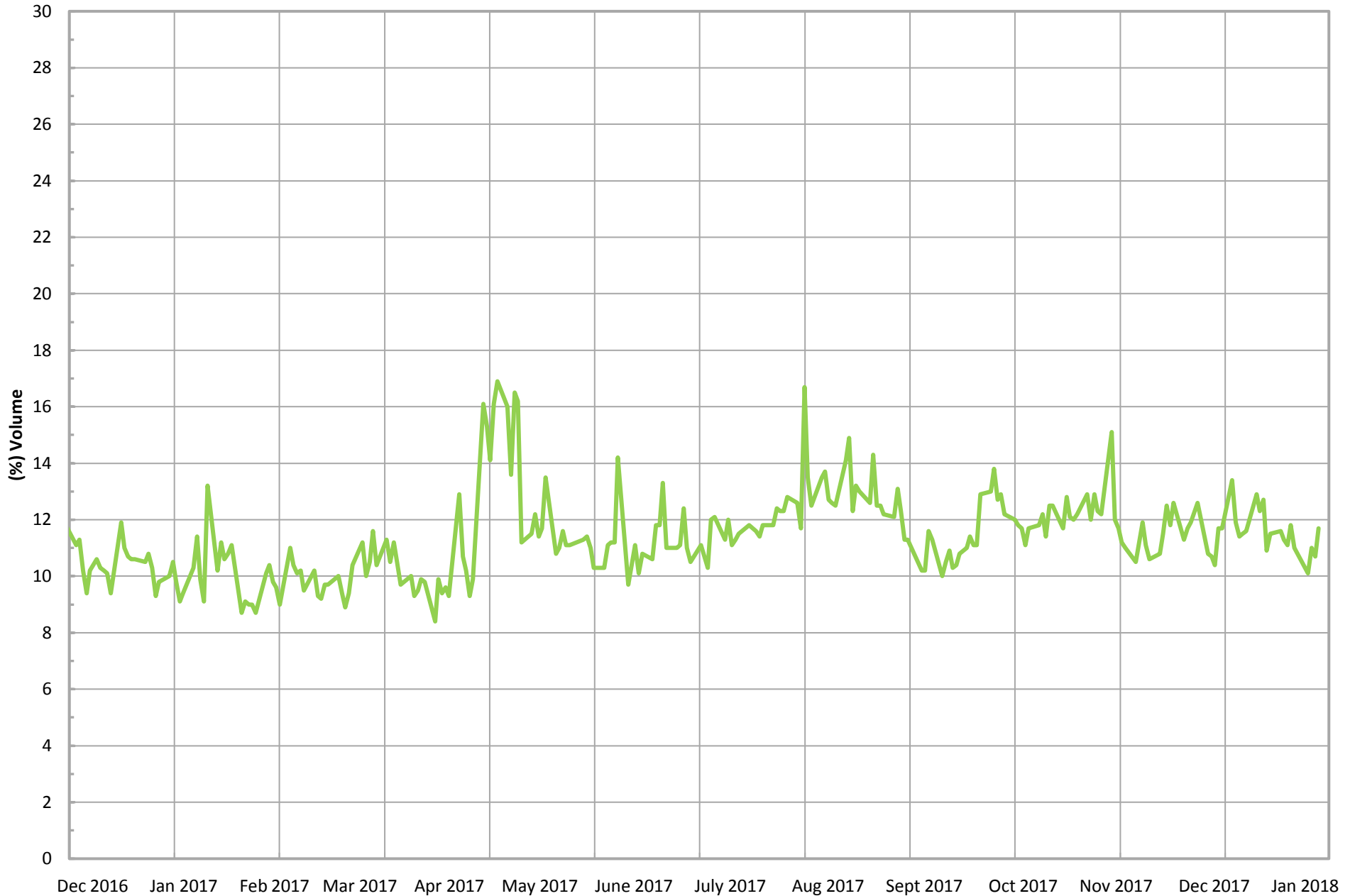
South Quarry Inlet Carbon Monoxide*



*Data collected from Laboratory Reports for the South Quarry.

*BRIDGETON
LANDFILL*

South Quarry Inlet Methane (Field Data)*

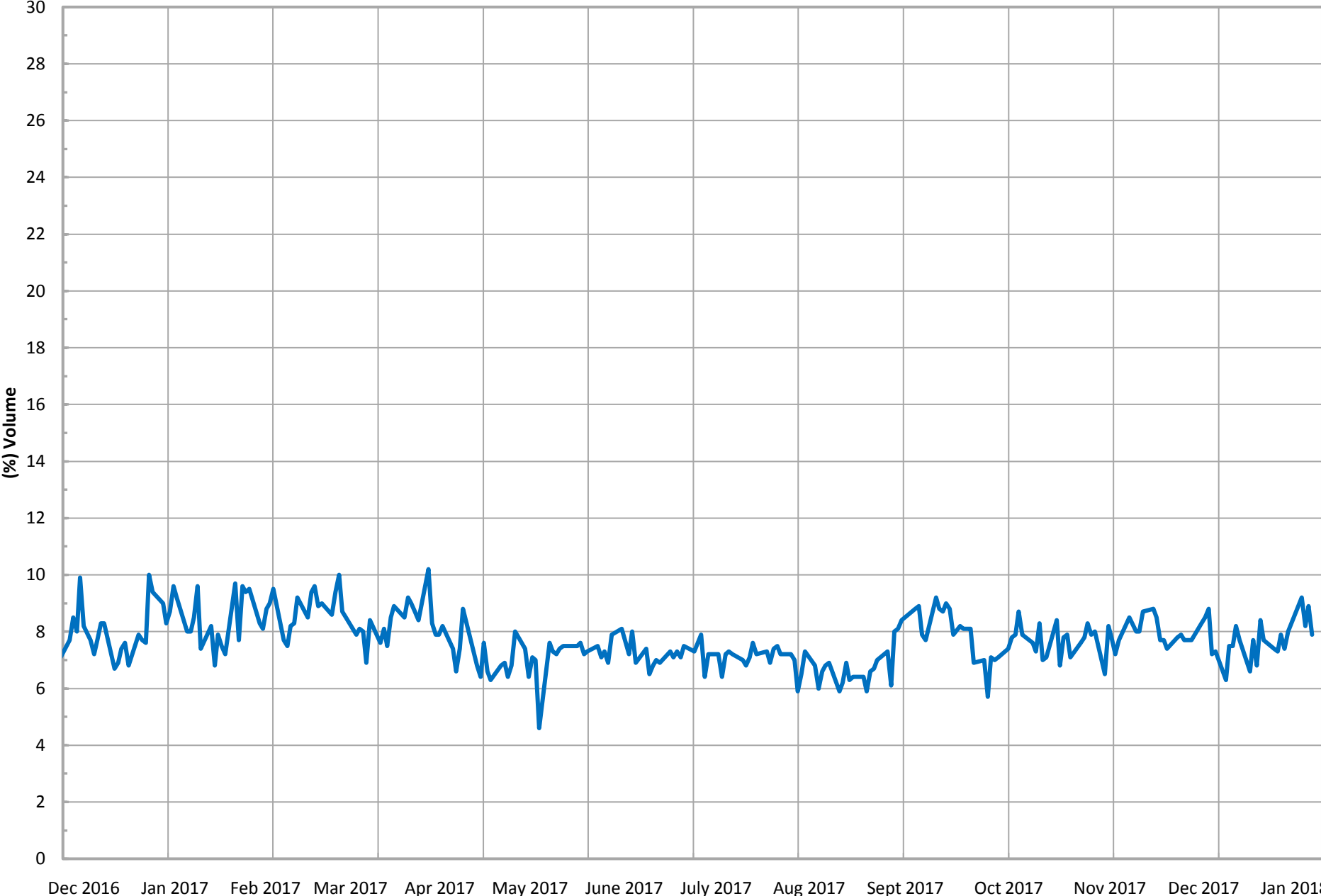


*Gas data collected from field monitoring data in the South Quarry.

— Combined Inlet Methane (Field Data)*

*BRIDGETON
LANDFILL*

South Quarry Inlet Oxygen (Field Data)*

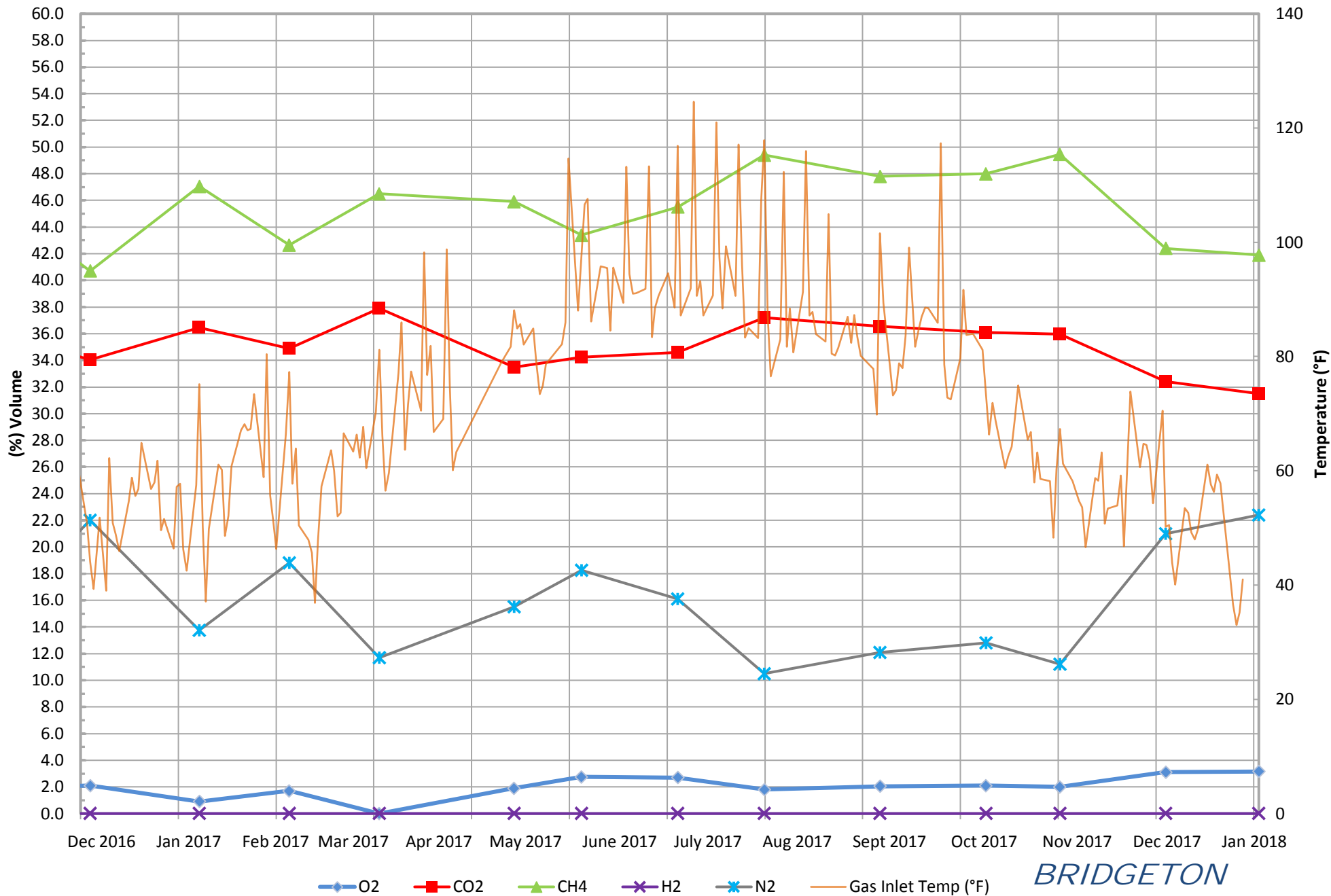


*Gas data collected from field monitoring data in the South Quarry.

— Combined Inlet Oxygen (Field Data)*

*BRIDGETON
LANDFILL*

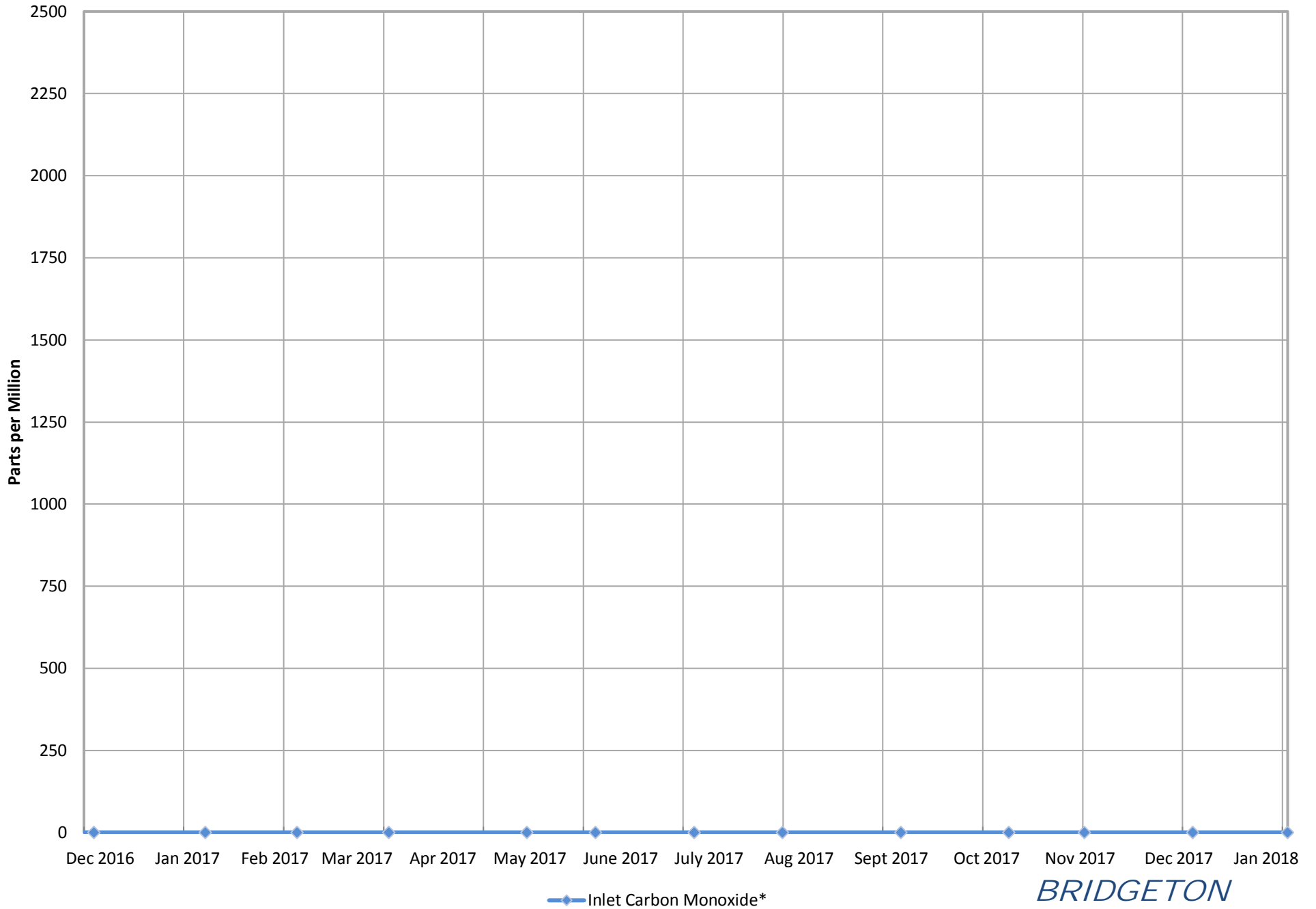
North Quarry Inlet Gas and Temperature*



*BRIDGETON
LANDFILL*

*Gas data collected from Laboratory Reports. Temperature data collected from field readings.

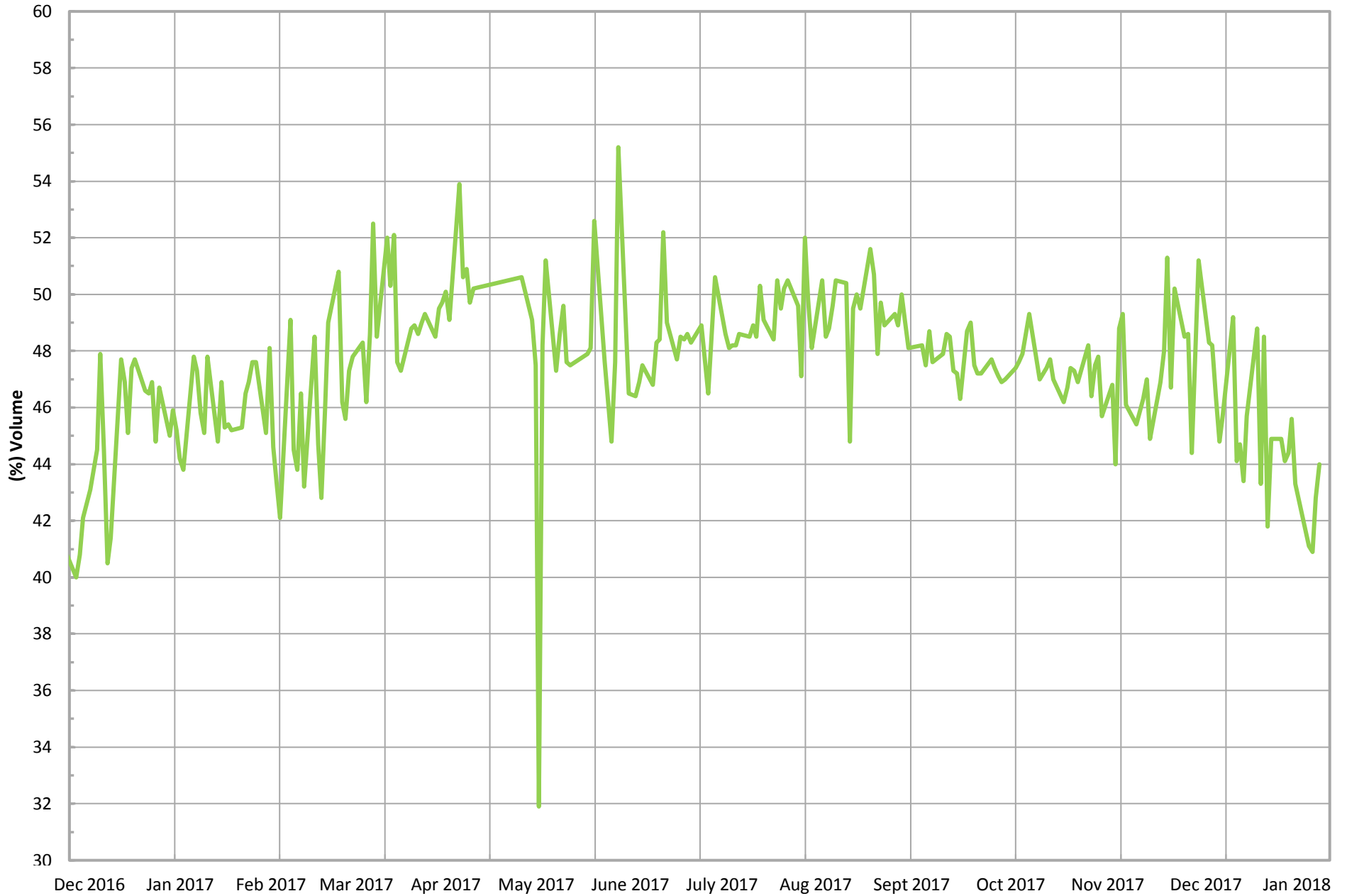
North Quarry Inlet Carbon Monoxide*



*Data collected from Laboratory Reports for the North Quarry.

*BRIDGETON
LANDFILL*

North Quarry Inlet Methane (Field Data)*

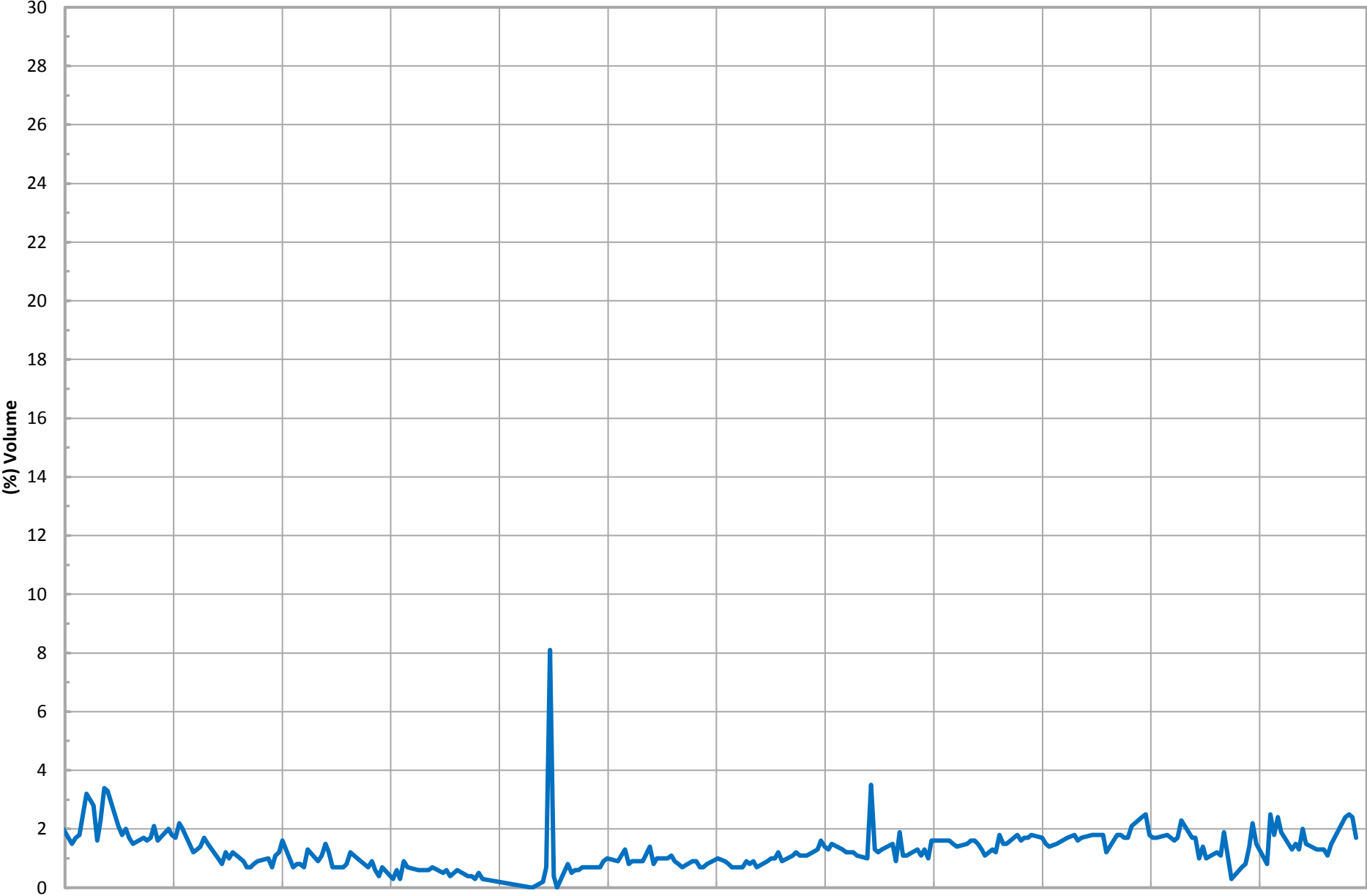


*Gas data collected from field monitoring data in the North Quarry.

— Combined Inlet Methane (Field Data)*

*BRIDGETON
LANDFILL*

North Quarry Inlet Oxygen (Field Data)*

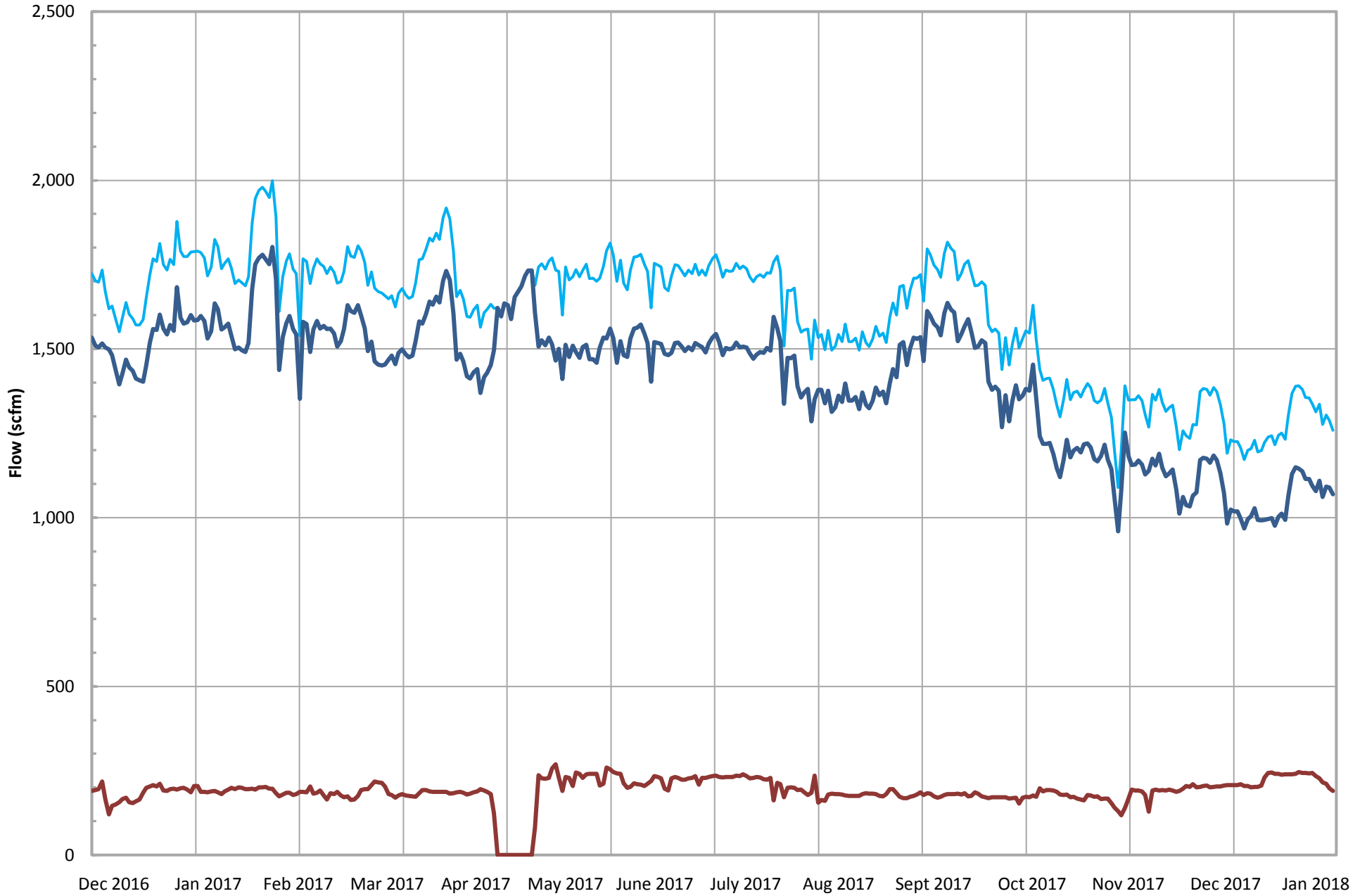


*Gas data collected from field monitoring data in the North Quarry.

— Combined Inlet Oxygen (Field Data)*

*BRIDGETON
LANDFILL*

Total Combined Flow (scfm)*



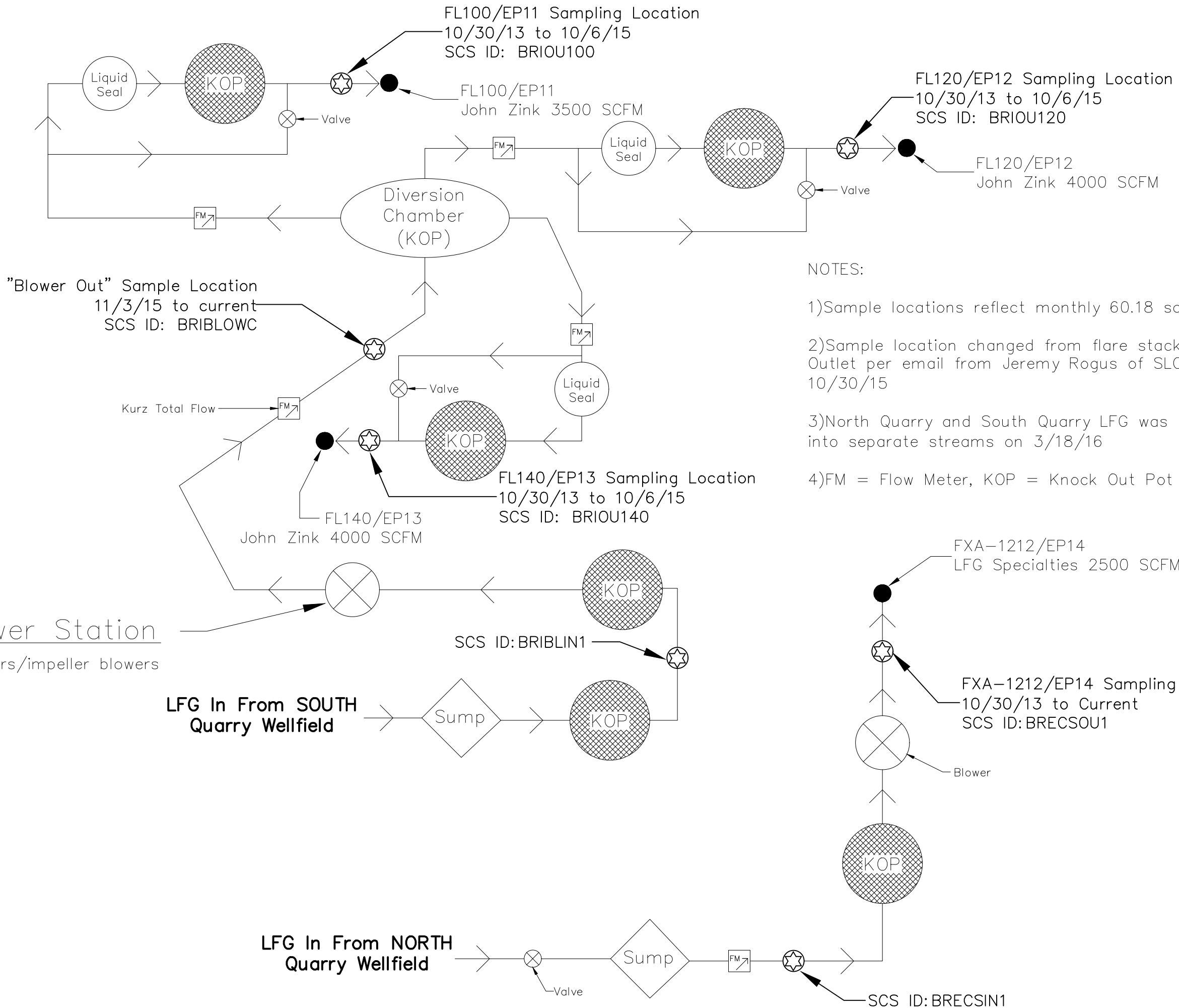
*Combined flow is based on tabulated flow data collected daily from FL-100, FL-120, FL-140, and the Auxillary Candlestick Flare.

— Total Combined Flow (scfm)*
— SQ Flare Station Total Utility Flare Flow
— NQ Utility Flare

*BRIDGETON
LANDFILL*

ATTACHMENT B-3

FLARE TRS / FLARE STATION FLOW



FL100/EP11 Sampling Location
10/30/13 to 10/6/15
SCS ID: BRIOU100

FL120/EP12 Sampling Location
10/30/13 to 10/6/15
SCS ID: BRIOU120

"Blower Out" Sample Location
11/3/15 to current
SCS ID: BRIBLOWC

FL140/EP13 Sampling Location
10/30/13 to 10/6/15
SCS ID: BRIOU140

FXA-1212/EP14
LFG Specialties 2500 SCFM

FXA-1212/EP14 Sampling Location
10/30/13 to Current
SCS ID: BRECSOU1

NOTES:

- 1) Sample locations reflect monthly 60.18 sampling points
- 2) Sample location changed from flare stacks to Blower Outlet per email from Jeremy Rogus of SLCHD dated 10/30/15
- 3) North Quarry and South Quarry LFG was segregated into separate streams on 3/18/16
- 4) FM = Flow Meter, KOP = Knock Out Pot

Motor Blower Station

- 4 - 125 HP motors/impeller blowers
- *137 AMPS each
- *3570 RPM each

LFG In From SOUTH Quarry Wellfield

LFG In From NORTH Quarry Wellfield

PREPARED FOR:
BRIDGETON LANDFILL, LLC

FIGURE 1 - NORTH & SOUTH QUARRY FLARE COMPOUND
13570 ST. CHARLES ROCK ROAD
BRIDGETON, MISSOURI

No.	DATE	REVISION DESCRIPTION
1	07/10/2016	EP 08 Removed, shown only to represent SQ LFG flow

Weaver Consultants Group

WEAVER CONSULTANTS GROUP
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DRAWN BY: DT
REVIEWED BY: MC
DATE: 10/7/2016
FILE: 0120-131-10
CAD: Figure 1 - Flow Diagram.dwg

SHEET 1 OF 1

I:\PROJECTS\120\131 Bridgeton\Bridgeton Air Compliance 2016\Figure 1 - Flow Diagram.dwg; cthoenen; February 17, 2017

TABLE 1
Summary of Key LFG Tested Parameters
Flare Compound: Blower Outlet

Bridgeton Landfill, LLC.
December 05, 2017 to January 03, 2018

SAMPLE EVENT #	DATE	VELOCITY ft/sec	FLOW dscfm	TRS ppm _{vd}
¹ 148-01	1/3/2018	12.80	1120	1300
				1300
² 147-52	12/27/2017	12.40	1004	1100
				1200
² 146-51	12/19/2017	13.02	1055	1400
				1300
² 145-50	12/12/2017	11.51	932	1200
				1200
¹ 144-49	12/5/2017	13.56	1146	1500
				1600

Notes:

¹Indicates velocity/flow determined by EPA Method 2

²Indicates velocity/flow recorded by Blower Outlet's KURZ Flow Meter

PARAMETER		Blower Out
SOUTH QUARRY LFG - BLOWER OUTLET (FL120/EP-12 Only)		
Date	Test Date	1/3/18
Start	Run Start Time	11:24
	Run Finish Time	12:54
	Net Traversing Points	8 (2 x 4)
Θ	Net Run Time, minutes	1:29:55
C_p	Pitot Tube Coefficient	0.99
P_{Br}	Barometric Pressure, inches of Mercury	29.68
$\% H_2O$	Moisture Content of LFG, %	0.49
$\% RH$	Relative Humidity, %	59.30
M_{fd}	Dry Mole Fraction	0.995
$\%CH_4$	Methane, %	12.35
$\%CO_2$	Carbon Dioxide, %	33.65
$\%O_2$	Oxygen, %	8.05
$\%Balance$	Assumed as Nitrogen, %	34.55
$\%H_2$	Hydrogen, %	10.70
$\%CO$	Carbon Monoxide, %	0.05
M_d	Dry Molecular Weight, lb/lb-Mole	29.28
M_s	Wet Molecular weight, lb/lb-Mole	29.22
P_g	Flue Gas Static Pressure, inches of H ₂ O	14.28
P_s	Absolute Flue Gas Pressure, inches of Mercury	30.73
t_s	Average Stack Gas Temperature, °F	41
ΔP_{avg}	Average Velocity Head, inches of H ₂ O	0.041
v_s	Average LFG Velocity, feet/second	12.80
A_s	Stack Crosssectional Area, square feet	1.35
Q_{sd}	Dry Volumetric Flow Rate, dry scfm	1,120
Q_s	Standard Volumetric Flow Rate, scfm	1,125
Q_{aw}	Actual Wet Volumetric Flue Gas Flow Rate, acfm	1,039
$Q_{lb/hr}$	Dry Air Flow Rate at Standard Conditions, lb/hr	5,105
NHV	Net Heating Value, Btu/scf	156.4
LFG_{CH4}	Methane, lb/hr	345.6
	Methane, grains/dscf	36.01
LFG_{CO2}	Carbon Dioxide, lb/hr	2,583.0
	Carbon Dioxide, grains/dscf	269.13
LFG_{O2}	Oxygen, lb/hr	449.3
	Oxygen, grains/dscf	46.81
LFG_{N2}	Balance gas as Nitrogen, lb/hr	1,688.1
	Balance gas as Nitrogen, grains/dscf	175.89
LFG_{H2}	Hydrogen, lb/hr	37.6
	Hydrogen, grains/dscf	3.92
LFG_{CO}	Carbon Monoxide, lb/hr	2.7
	Carbon Monoxide, grains/dscf	0.28

		Outlet A	Outlet B
H₂S	Hydrogen Sulfide Concentration, ppmvd	17	21
	Hydrogen Sulfide Rate, lb/hr	0.10	0.12
	Hydrogen Sulfide Rate, grains/dscf	0.011	0.013
COS	Carbonyl Sulfide Concentration, ppmvd	0.51	0.53
	Carbonyl Sulfide Rate, lb/hr	0.01	0.01
	Carbonyl Sulfide Rate, grains/dscf	0.001	0.001
CH₄S	Methyl Mercaptan Concentration, ppmvd	160	160
	Methyl Mercaptan Rate, lb/hr	1.34	1.34
	Methyl Mercaptan Rate, grains/dscf	0.140	0.140
C₂H₆S	Ethyl Mercaptan Concentration, ppmvd	1.5	1.6
	Ethyl Mercaptan Rate, lb/hr	0.02	0.02
	Ethyl Mercaptan Rate, grains/dscf	0.002	0.002
(CH₃)₂S	Dimethyl Sulfide Concentration, ppmvd	1,000	1,000
	Dimethyl Sulfide Rate, lb/hr	10.84	10.84
	Dimethyl Sulfide Rate, grains/dscf	1.129	1.129
CS₂	Carbon Disulfide Concentration, ppmvd	0.63	0.65
	Carbon Disulfide Rate, lb/hr	0.01	0.01
	Carbon Disulfide Rate, grains/dscf	0.001	0.001
C₂H₆S₂	Dimethyl Disulfide Concentration, ppmvd	60	60
	Dimethyl Disulfide Rate, lb/hr	0.99	0.80
	Dimethyl Disulfide Rate, grains/dscf	0.103	0.083
①E_{TRS-SO2}	TRS-->SO2 Emission Concentration, ppmvd	1,300	1,300
	TRS-->SO2 Emission Rate, lb/hr	14.53	14.53
	TRS-->SO2 Emission Rate, grains/dscf	1.514	1.514

① TRS assumed molecular mass = SO₂, 64.06 gram/mole, i.e. 1 TRS in LFG assumed to = 1 SO₂ emitted from the stack

Wednesday, January 03, 2018

LOCATION	TIME	FLOW -SCFM			Method 2 vs. Fleetzoom	Method 2 vs Kurz	Kurz vs Fleetzoom
		Method 2	FleetZoom	Kurz FM			
BLOWER OUT	11:24	1,125	1,020	991	9.3%	11.9%	-2.9%

**Note: Fleetzoom data derived from EP-12/FL120 TSI Flow Meter*

PARAMETER		Blower Out
EP14 NORTH QUARRY LFG ONLY		
Date	Test Date	1/3/17
Start	Run Start Time	9:30
	Run Finish Time	11:00
	Net Traversing Points	8 (2 x 4)
Θ	Net Run Time, minutes	1:29:55
C _p	Pitot Tube Coefficient	0.99
P _{Br}	Barometric Pressure, inches of Mercury	29.72
% H ₂ O	Moisture Content of LFG, %	0.68
% RH	Relative Humidity, %	41.20
M _{fd}	Dry Mole Fraction	0.993
%CH ₄	Methane, %	41.90
%CO ₂	Carbon Dioxide, %	31.50
%O ₂	Oxygen, %	3.15
%Balance	Assumed as Nitrogen, %	22.40
%H ₂	Hydrogen, % (* reported at the laboratory detection limit)	2.60
%CO	Carbon Monoxide, % (* reported at the laboratory detection limit)	0.00260
M _d	Dry Molecular Weight, lb/lb-Mole	27.92
M _s	Wet Molecular weight, lb/lb-Mole	27.85
P _g	Flue Gas Static Pressure, inches of H ₂ O	1.14
P _s	Absolute Flue Gas Pressure, inches of Mercury	29.76
t _s	Average Stack Gas Temperature, °F	41
ΔP _{avg}	Average Velocity Head, inches of H ₂ O	0.028
v _s	Average LFG Velocity, feet/second	11.01
A _s	Stack Crosssectional Area, square feet	0.51
Q _{sd}	Dry Volumetric Flow Rate, dry scfm	353
Q _s	Standard Volumetric Flow Rate, scfm	355
Q _{aw}	Actual Wet Volumetric Flue Gas Flow Rate, acfm	339
Q _{lb/hr}	Dry Air Flow Rate at Standard Conditions, lb/hr	1,534
NHV	Net Heating Value, Btu/scf	381.1
LFG _{CH4}	Methane, lb/hr	369.5
	Methane, grains/dscf	122.16
LFG _{CO2}	Carbon Dioxide, lb/hr	762.1
	Carbon Dioxide, grains/dscf	251.94
LFG _{O2}	Oxygen, lb/hr	55.4
	Oxygen, grains/dscf	18.32
LFG _{N2}	Balance gas as Nitrogen, lb/hr	344.9
	Balance gas as Nitrogen, grains/dscf	114.04
LFG _{H4}	Hydrogen, lb/hr	2.9
	Hydrogen, grains/dscf	0.95
LFG _{CO}	Carbon Monoxide, lb/hr	0.0
	Carbon Monoxide, grains/dscf	0.01

		Outlet A	Outlet B
H ₂ S	Hydrogen Sulfide Concentration, ppmvd	39	31
	Hydrogen Sulfide Rate, lb/hr	0.07	0.06
	Hydrogen Sulfide Rate, grains/dscf	0.024	0.019
COS	Carbonyl Sulfide Concentration, ppmvd	0.51	0.53
	Carbonyl Sulfide Rate, lb/hr	0.00	0.00
	Carbonyl Sulfide Rate, grains/dscf	0.001	0.001
CH ₄ S	Methyl Mercaptan Concentration, ppmvd	3.4	3.3
	Methyl Mercaptan Rate, lb/hr	0.01	0.01
	Methyl Mercaptan Rate, grains/dscf	0.003	0.003
C ₂ H ₆ S	Ethyl Mercaptan Concentration, ppmvd	0.51	0.53
	Ethyl Mercaptan Rate, lb/hr	0.00	0.00
	Ethyl Mercaptan Rate, grains/dscf	0.001	0.001
(CH ₃) ₂ S	Dimethyl Sulfide Concentration, ppmvd	12	12
	Dimethyl Sulfide Rate, lb/hr	0.04	0.04
	Dimethyl Sulfide Rate, grains/dscf	0.014	0.014
CS ₂	Carbon Disulfide Concentration, ppmvd	0.51	0.53
	Carbon Disulfide Rate, lb/hr	0.00	0.00
	Carbon Disulfide Rate, grains/dscf	0.001	0.001
C ₂ H ₆ S ₂	Dimethyl Disulfide Concentration, ppmvd	0.51	0.53
	Dimethyl Disulfide Rate, lb/hr	0.00	0.00
	Dimethyl Disulfide Rate, grains/dscf	0.001	0.001
E _{TRS-SO2}	TRS-->SO2 Emission Concentration, ppmvd	55	47
	TRS-->SO2 Emission Rate, lb/hr	0.19	0.17
	TRS-->SO2 Emission Rate, grains/dscf	0.064	0.055

① TRS assumed molecular mass = SO₂, 64.06 gram/mole, i.e. 1 TRS in LFG assumed to = 1 SO₂ emitted from the stack



January 10, 2018

Republic Services
ATTN: Mike Lambrich
13570 St. Charles Rock Rd.
Bridgeton, MO 63044



LA Cert #04140
EPA Methods TO3, TO14A, TO15, 25C/3C,
RSK-175
TX Cert T104704450-14-6
EPA Methods TO14A, TO15
UT Cert CA0133332015-3
EPA Methods TO3, TO14A, TO15, RSK-175

LABORATORY TEST RESULTS

Project Reference: Bridgeton Landfill
Lab Number: J010403-01/04

Enclosed are **revised** results for sample(s) received 1/04/18 by Air Technology Laboratories. This revision replaces the report dated 1/08/18 in its entirety. Samples were received intact. Analyses were performed according to specifications on the chain of custody provided with the sample(s).

Report Narrative:

- Report was revised to report the correct Method Blank results for these samples.
- Unless otherwise noted in the report, sample analyses were performed within method performance criteria and meet all requirements of the NELAC Standards.
- The enclosed results relate only to the sample(s).

Preliminary results were e-mailed to Mike Lambrich and Erin Fanning; David Randall, Dustin Thoenen and Don Murphy, Weaver Consultants Group; and Jan Feezor, Feezor Engineering on 1/08/18.

ATL appreciates the opportunity to provide testing services to your company. If you have any questions regarding these results, please call me at (626) 964-4032.

Sincerely,

A handwritten signature in blue ink, appearing to read "Mark Johnson".

Mark Johnson
Operations Manager
M.Johnson@AirTechLabs.com

Enclosures

Note: The cover letter is an integral part of this analytical report.

AMT TECHNOLOGY
 Laboratories, Inc.
 18501 E. Gale Ave., Suite 130
 City of Industry, CA 91748
 Ph: 626-964-4032
 FX: 626-964-5832

Project No.: _____
Project Name: Bridgeton Landfill
Report To: Mike Lambrich
Company: Republic Services
Street: 13570 St. Charles Rock Rd
City/State/Zip: Bridgeton, MO 63044
Phone & Fax: 314-683-3921
e-mail: mlambrich@republicservices.com

CHAIN OF CUSTODY RECORD

TURNAROUND TIME **DELIVERABLES** **PAGE:** 1 OF 1

Standard 48 hours EDD Condition upon receipt: Sealed Yes No
 Same Day 72 hours EDF Intact Yes No
24 hours 96 hours Level 3 Chilled _____ deg C
 Other: 5 day Level 4

BILLING

P.O. No.: 6605567
Bill to: Republic Services
 Attn: Mike Lambrich
 13570 St. Charles Rock Rd.
 Bridgeton, MO 63044

ANALYSIS REQUEST

EPA Method 15/16 ASTM 1946 + H2 + CO &
 Biu/SCF Biu/SCF (by CH4 only)

LAB USE ONLY	Canister Pressures ("hg)				SAMPLE IDENTIFICATION	SAMPLE DATE	SAMPLE TIME	CONTAINER QTY/TPE	MATRIX	PRESERVATION	EPA Method 15/16	ASTM 1946 + H2 + CO & Biu/SCF	ASTM 1946 + H2 + CO & Biu/SCF (by CH4 only)
	Canister ID	Sample Start	Sample End	Lab Receive									
J010403-01	5953	-21.57	-3.5	-1	NQ EP14 A	1/3/2018	9:37	C-6L	LFG	He	X	X	X
-02	4440	-21.23	-3.5	-2	NQ EP14 B	1/3/2018	10:08	C-6L	LFG	He	X	X	X
-03	5966	-21.53	-3.48	-1	Blower Outlet A	1/3/2018	11:30	C-6L	LFG	He	X	X	X
-04	5978	-21.46	-3.49	-2	Blower Outlet B	1/3/2018	12:00	C-6L	LFG	He	X	X	X

COMMENTS

AUTHORIZATION TO PERFORM WORK: Dave Penoyer
SAMPLED BY: Anthony Kimutis
RELINQUISHED BY: [Signature] DATE/RECEIVED BY: 1/3/18
RELINQUISHED BY: [Signature] DATE/RECEIVED BY: 1-3-18
RELINQUISHED BY: [Signature] DATE/RECEIVED BY: 1/4/18 0928
RELINQUISHED BY: [Signature] DATE/RECEIVED BY: _____

METHOD OF TRANSPORT (circle one): Walk-In FedEx UPS Courier ATLI Other _____

DISTRIBUTION: White & Yellow - Lab Copies / Pink - Customer Copy

Preservation: H=HCl N=None / Container: B=Bag C=Can V=VOA O=Other

Client: Republic Services
 Attn: Mike Lambrich
 Project Name: Bridgeton Landfill
 Project No.: NA
 Date Received: 01/04/18
 Matrix: Air
 Reporting Units: ppmv

EPA Methods 15/16

Lab No.:	J010403-01	J010403-02	J010403-03	J010403-04
Client Sample I.D.:	EP-14 NQ A	EP-14 NQ B	Blower Outlet A	Blower Outlet B
Date/Time Sampled:	1/3/18 9:37	1/3/18 10:08	1/3/18 11:30	1/3/18 12:00
Date/Time Analyzed:	1/4/18 14:28	1/4/18 14:41	1/4/18 14:53	1/4/18 15:06
QC Batch No.:	180104GC3A1	180104GC3A1	180104GC3A1	180104GC3A1
Analyst Initials:	AS	AS	AS	AS
Dilution Factor:	2.5	2.7	2.5	2.7

ANALYTE	J010403-01		J010403-02		J010403-03		J010403-04	
	Result ppmv	RL ppmv	Result ppmv	RL ppmv	Result ppmv	RL ppmv	Result ppmv	RL ppmv
Hydrogen Sulfide	39 d	5.1	31 d	5.3	17	0.51	21	0.53
Carbonyl Sulfide	ND	0.51	ND	0.53	ND	0.51	ND	0.53
Methyl Mercaptan	3.4	0.51	3.3	0.53	160 d	51	160 d	53
Ethyl Mercaptan	ND	0.51	ND	0.53	1.5	0.51	1.6	0.53
Dimethyl Sulfide	12	0.51	12	0.53	1,000 d	51	1,000 d	53
Carbon Disulfide	ND	0.51	ND	0.53	0.63	0.51	0.65	0.53
Dimethyl Disulfide	ND	0.51	ND	0.53	60 d	51	60 d	53
Total Reduced Sulfur	55	0.51	47	0.53	1,300	0.51	1,300	0.53

ND = Not Detected (below RL)
 RL = Reporting Limit
 d = Reported from a secondary dilution

Reviewed/Approved By: 
 Mark Johnson
 Operations Manager

Date 1-5-18

The cover letter is an integral part of this analytical report



QC Batch No.: 180104GC3A1
Matrix: Air
Units: ppmv

QC for Sulfur Compounds by EPA 15/16


Lab No.:	Method Blank	LCS			LCSD			
Date/Time Analyzed:	1/4/18 13:37	1/4/18 13:11			1/4/18 13:24			
Analyst Initials:	AS	AS			AS			
Datafile:	04jan004	04jan002			04jan003			
Dilution Factor:	1.0	1.0			1.0			
ANALYTE	Results	RL	% Rec.	Criteria	% Rec.	Criteria	%RPD	Criteria
Hydrogen Sulfide	ND	0.20	74	70-130%	73	70-130%	1.5	<30
Carbonyl Sulfide	ND	0.20	89	70-130%	89	70-130%	0.5	<30
Methyl Mercaptan	ND	0.20	86	70-130%	86	70-130%	0.5	<30
Ethyl Mercaptan	ND	0.20	84	70-130%	83	70-130%	1.8	<30
Dimethyl Sulfide	ND	0.20	79	70-130%	78	70-130%	1.0	<30
Carbon Disulfide	ND	0.20	76	70-130%	76	70-130%	1.0	<30
Dimethyl Disulfide	ND	0.20	63	* 70-130%	63	* 70-130%	1.1	<30

ND = Not Detected (Below RL)

RL = Reporting Limit

* = Outside QC Criteria

Reviewed/Approved By: _____


Mark J. Johnson
Operations Manager

Date: 1-5-18

The cover letter is an integral part of this analytical report.



Client: Republic Services
 Attn: Mike Lambrich
 Project Name: Bridgeton Landfill
 Project No.: NA
 Date Received: 01/04/18
 Matrix: Air
 Reporting Units: % v/v

ASTM D1946

Lab No.:	J010403-01	J010403-02						
Client Sample I.D.:	EP-14 NQ A	EP-14 NQ B						
Date/Time Sampled:	1/3/18 9:37	1/3/18 10:08						
Date/Time Analyzed:	1/4/18 13:23	1/4/18 13:37						
QC Batch No.:	180104GC8A1	180104GC8A1						
Analyst Initials:	AS	AS						
Dilution Factor:	2.5	2.7						
ANALYTE	Result % v/v	RL % v/v	Result % v/v	RL % v/v				
Hydrogen	ND	2.5	ND	2.7				
Carbon Dioxide	31.6	0.025	31.4	0.027				
Oxygen/Argon	3.1	1.3	3.2	1.3				
Nitrogen	22.2	2.5	22.6	2.7				
Methane	42.1	0.0025	41.7	0.0027				
Carbon Monoxide	ND	0.0025	ND	0.0027				
Net Heating Value (BTU/ft3) methane only	383.0	2.5	379.2	2.7				
Gross Heating Value (BTU/ft3) methane only	425.4	2.5	421.1	2.7				

Results normalized including non-methane hydrocarbons
 BTU values based on D1946 analysis methane only
 ND = Not Detected (below RL)
 RL = Reporting Limit

Reviewed/Approved By: 
 Mark Johnson
 Operations Manager

Date 1-5-18

The cover letter is an integral part of this analytical report




Client: Republic Services
 Attn: Mike Lambrich
 Project Name: Bridgeton Landfill
 Project No.: NA
 Date Received: 01/04/18
 Matrix: Air
 Reporting Units: % v/v

ASTM D1946

Lab No.:	J010403-03	J010403-04						
Client Sample I.D.:	Blower Outlet A	Blower Outlet B						
Date/Time Sampled:	1/3/18 11:30	1/3/18 12:00						
Date/Time Analyzed:	1/4/18 13:52	1/4/18 14:07						
QC Batch No.:	180104GC8A1	180104GC8A1						
Analyst Initials:	AS	AS						
Dilution Factor:	2.5	2.7						
ANALYTE	Result % v/v	RL % v/v	Result % v/v	RL % v/v				
Hydrogen	10.9	2.5	10.5	2.7				
Carbon Dioxide	34.1	0.025	33.2	0.027				
Oxygen/Argon	7.8	1.3	8.3	1.3				
Nitrogen	34.0	2.5	35.1	2.7				
Methane	12.5	0.0025	12.2	0.0027				
Carbon Monoxide	0.055	0.0025	0.054	0.0027				
Net Heating Value (BTU/ft3)	157.9	2.5	154.9	2.7				
Gross Heating Value (BTU/ft3)	179.1	2.5	175.6	2.7				

Results normalized including non-methane hydrocarbons
 BTU values based on D1946 analysis and non-methane analysis assumed as propane
 ND = Not Detected (below RL)
 RL = Reporting Limit

Reviewed/Approved By: 
 Mark Johnson
 Operations Manager

Date 1-5-18

The cover letter is an integral part of this analytical report



QC Batch No: 180104GC8A1
 Matrix: Air
 Reporting Units: % v/v

**ASTM D1946
 LABORATORY CONTROL SAMPLE SUMMARY**

Lab No.:	METHOD BLANK			LCS		LCSD					
Date Analyzed:	1/4/18 11:38			1/4/18 10:08		1/4/18 10:22					
Analyst Initials:	AS			AS		AS					
Dilution Factor:	1.0			1.0		1.0		Limits			
ANALYTE	Result % v/v	RL % v/v	SPIKE AMT. % v/v	Result % v/v	% Rec.	Result % v/v	% Rec.	RPD %	Low %Rec	High %Rec	Max. RPD
Hydrogen	ND	1.0	5.0	4.89	98	4.92	98	0.5	70	130	30
Carbon Dioxide	ND	0.010	10	8.89	89	8.84	88	0.5	70	130	30
Oxygen/Argon	ND	0.50	15	15.8	107	15.9	107	0.3	70	130	30
Nitrogen	ND	1.0	70	70.1	100	70.4	101	0.3	70	130	30
Methane	ND	0.0010	0.10	0.115	115	0.111	111	3.3	70	130	30
Carbon Monoxide	ND	0.0010	0.10	0.107	107	0.106	106	0.6	70	130	30

ND = Not Detected (below RL)

RL = Reporting Limit

Reviewed/Approved By: _____
Mark Johnson
Operations Manager

Date: 1/10/18

The cover letter is an integral part of this analytical report



Kurz FM = **1,056** scfm
 Fleetzoom Total = **1,108** scfm $\Delta = 4.6\%$

PARAMETER		Blower Outlet A	Blower Outlet B
SOUTH QUARRY LFG - MAIN FLARE COMPOUND BLOWER OUTLET (FL120)			
Date	Test Date	12/27/17	12/27/17
Time	Start	14:32	14:48
*%CH ₄	Methane, %	11.2	10.9
*%CO ₂	Carbon Dioxide, %	34.1	34.1
**%O ₂	Oxygen, %	7.9	8.0
*%Balance	Assumed as Nitrogen, %	46.8	47.0
P _g	Flue Gas Static Pressure, inches of H ₂ O	18.4	14.9
t _s	Blower Outlet LFG Temperature, °F	45.0	45.0
Q _{sd}	Dry Volumetric Flow Rate, dry scfm (assumes 5%H ₂ O)	1,004	
Q _s	Kurz Blower Outlet, Standard Volumetric Flow Rate, scfm	1,056	
LFG _{CH₄}	Methane, lb/hr	280.9	273.4
	Methane, grains/dscf	32.65	31.78
LFG _{CO₂}	Carbon Dioxide, lb/hr	2,346.1	2,346.1
	Carbon Dioxide, grains/dscf	272.73	272.73
LFG _{O₂}	Oxygen, lb/hr	395.2	400.2
	Oxygen, grains/dscf	45.94	46.52
LFG _{N₂}	Balance gas as Nitrogen, lb/hr	2,049.6	2,058.3
	Balance gas as Nitrogen, grains/dscf	238.26	239.28
<i>* Fixed gas results based on field parameter data collection at the time of sampling, via Envision Landfill Gas Analyzer</i>			
		Blower Outlet A	Blower Outlet B
H ₂ S	Hydrogen Sulfide Concentration, ppmd	22	15
	Hydrogen Sulfide Rate, lb/hr	0.12	0.08
	Hydrogen Sulfide Rate, grains/dscf	0.014	0.009
COS	Carbonyl Sulfide Concentration, ppmd	0.48	0.48
	Carbonyl Sulfide Rate, lb/hr	0.00	0.00
	Carbonyl Sulfide Rate, grains/dscf	0.001	0.001
CH ₄ S	Methyl Mercaptan Concentration, ppmd	150	140
	Methyl Mercaptan Rate, lb/hr	1.13	1.05
	Methyl Mercaptan Rate, grains/dscf	0.131	0.122
C ₂ H ₆ S	Ethyl Mercaptan Concentration, ppmd	1.6	1.3
	Ethyl Mercaptan Rate, lb/hr	0.02	0.01
	Ethyl Mercaptan Rate, grains/dscf	0.002	0.001
(CH ₃) ₂ S	Dimethyl Sulfide Concentration, ppmd	790	900
	Dimethyl Sulfide Rate, lb/hr	7.67	8.74
	Dimethyl Sulfide Rate, grains/dscf	0.892	1.016
CS ₂	Carbon Disulfide Concentration, ppmd	0.65	0.64
	Carbon Disulfide Rate, lb/hr	0.01	0.01
	Carbon Disulfide Rate, grains/dscf	0.001	0.001
C ₂ H ₆ S ₂	Dimethyl Disulfide Concentration, ppmd	44	61
	Dimethyl Disulfide Rate, lb/hr	0.65	0.90
	Dimethyl Disulfide Rate, grains/dscf	0.075	0.104
①E _{TRS-SO₂}	TRS-->SO ₂ Emission Concentration, ppmd	1,100	1,200
	TRS-->SO ₂ Emission Rate, lb/hr	11.02	12.02
	TRS-->SO ₂ Emission Rate, grains/dscf	1.281	1.397
		TPY =	
		48.25	52.64
① TRS assumed molecular mass = SO ₂ , 64.06 gram/mole, i.e. 1 TRS in LFG assumed to = 1 SO ₂ emitted from the stack			

Bridgeton Landfill, LLC.
Weekly TRS Sampling Summary
Event 92-52
12/27/2017

Fleetzoom Total = 230 scfm

PARAMETER		EP14 NQ A	EP14 NQ B
EP14 NORTH QUARRY FLARE (OPERATING SOLO, NQ LFG Only)			
Date	Test Date	12/27/17	12/27/17
Time	Start	13:40	13:57
*%CH₄	Methane, %	43.6	42.8
*%CO₂	Carbon Dioxide, %	35.1	35.0
**%O₂	Oxygen, %	1.6	1.5
*%Balance	Assumed as Nitrogen, %	19.7	20.7
P_g	Flue Gas Static Pressure, inches of H ₂ O	1.11	1.12
t_s	Blower Outlet LFG Temperature, °F	46.1	47.1
Q_{sd}	Dry Volumetric Flow Rate, dry scfm (assumes 5%H ₂ O)	219	
Q_s	Fleetzoom Standard Volumetric Flow Rate, scfm	230	
LFG_{CH4}	Methane, lb/hr	238.4	234.1
	Methane, grains/dscf	127.11	124.78
LFG_{CO2}	Carbon Dioxide, lb/hr	526.6	525.1
	Carbon Dioxide, grains/dscf	280.73	279.93
LFG_{O2}	Oxygen, lb/hr	17.5	16.4
	Oxygen, grains/dscf	9.30	8.72
LFG_{N2}	Balance gas as Nitrogen, lb/hr	188.1	197.7
	Balance gas as Nitrogen, grains/dscf	100.29	105.38

* Fixed gas results based on field parameter data collection at the time of sampling, via Envision Landfill Gas Analyzer

		EP14 NQ A	EP14 NQ B
H₂S	Hydrogen Sulfide Concentration, ppmd	42	46
	Hydrogen Sulfide Rate, lb/hr	0.05	0.05
	Hydrogen Sulfide Rate, grains/dscf	0.026	0.028
COS	Carbonyl Sulfide Concentration, ppmd	0.48	0.51
	Carbonyl Sulfide Rate, lb/hr	0.00	0.00
	Carbonyl Sulfide Rate, grains/dscf	0.001	0.001
CH₄S	Methyl Mercaptan Concentration, ppmd	3.7	4.1
	Methyl Mercaptan Rate, lb/hr	0.01	0.01
	Methyl Mercaptan Rate, grains/dscf	0.003	0.004
C₂H₆S	Ethyl Mercaptan Concentration, ppmd	0.48	0.51
	Ethyl Mercaptan Rate, lb/hr	0.00	0.00
	Ethyl Mercaptan Rate, grains/dscf	0.001	0.001
(CH₃)₂S	Dimethyl Sulfide Concentration, ppmd	14	15
	Dimethyl Sulfide Rate, lb/hr	0.03	0.03
	Dimethyl Sulfide Rate, grains/dscf	0.016	0.017
CS₂	Carbon Disulfide Concentration, ppmd	0.48	0.51
	Carbon Disulfide Rate, lb/hr	0.00	0.00
	Carbon Disulfide Rate, grains/dscf	0.001	0.001
C₂H₆S₂	Dimethyl Disulfide Concentration, ppmd	0.48	0.51
	Dimethyl Disulfide Rate, lb/hr	0.00	0.00
	Dimethyl Disulfide Rate, grains/dscf	0.001	0.001

① E_{TRS-SO2}	TRS-->SO ₂ Emission Concentration, ppmd	60	65
	TRS-->SO ₂ Emission Rate, lb/hr	0.13	0.14
	TRS-->SO ₂ Emission Rate, grains/dscf	0.070	0.076
	TPY =	0.57	0.62

① TRS assumed molecular mass = SO₂, 64.06 gram/mole, i.e. 1 TRS in LFG assumed to = 1 SO₂ emitted from the stack



January 4, 2018

Republic Services
ATTN: Mike Lambrich
13570 St. Charles Rock Rd.
Bridgeton, MO 63044



LA Cert #04140
EPA Methods TO3, TO14A, TO15, 25C/3C,
RSK-175

TX Cert T104704450-14-6
EPA Methods TO14A, TO15

UT Cert CA0133332015-3
EPA Methods TO3, TO14A, TO15, RSK-175

LABORATORY TEST RESULTS

Project Reference: Bridgeton Landfill
Lab Number: I122904-01/04

Enclosed are results for sample(s) received 12/29/17 by Air Technology Laboratories. Samples were received intact. Analyses were performed according to specifications on the chain of custody provided with the sample(s).

Report Narrative:

- Unless otherwise noted in the report, sample analyses were performed within method performance criteria and meet all requirements of the NELAC Standards.
- The enclosed results relate only to the sample(s).

Preliminary results were e-mailed to Mike Lambrich and Erin Fanning; David Randall, Dustin Thoenen and Don Murphy, Weaver Consultants Group; and Jan Feezor, Feezor Engineering on 1/04/18.

ATL appreciates the opportunity to provide testing services to your company. If you have any questions regarding these results, please call me at (626) 964-4032.

Sincerely,

A handwritten signature in blue ink that reads "Mark Johnson".

Mark Johnson
Operations Manager
MJohnson@AirTechLabs.com

Enclosures

Note: The cover letter is an integral part of this analytical report.

AITTECHNOLOGY
Laboratories, Inc.

18501 E. Gale Ave., Suite 130
City of Industry, CA 91748
Ph: 626-964-4032
Fx: 626-964-5832

Project No.:
Report Name: Bridgeton Landfill
Report To: Mike Lambrich
Company: Republic Services
Street: 13570 St. Charles Rock Rd
City/State/Zip: Bridgeton, MO 63044
Phone & Fax: 314-683-3921
e-mail: mlambrich@republicservices.com

TURNAROUND TIME PAGE: 1 OF 1

Standard 48 hours
Same Day 72 hours
24 hours 96 hours
Other: 5 day

Condition upon receipt:
Sealed Yes No
Intact Yes No
Chilled deg C

DELIVERABLES	EDD	EDF	Level 3	Level 4

BILLING

P.O. No.: 6605567
Bill to: Republic Services
Attn: Mike Lambrich
13570 St. Charles Rock Rd.
Bridgeton, MO 63044

ANALYSIS REQUEST

EPA Method 15/16 + TRS

LAB USE ONLY	Canister Pressures ("hg)			SAMPLE IDENTIFICATION	SAMPLE DATE	SAMPLE TIME	CONTAINER QTY/TYP	MATRIX	PRESERVA-TION
	Canister ID	Sample Start	Sample End						
J122904-01	J1724	-21.09	-3.5	EP-14 NQ A	12/27/2017	13:40	C-1L	LFG	He
J122904-02	R1157	-21.05	-3.49	EP-14 NQ B	12/27/2017	13:57	C-1L	LFG	He
J122904-03	1620	-21.5	-3.48	Blower Outlet A	12/27/2017	14:32	C-1L	LFG	He
J122904-04	J1726	-21.35	-3.45	Blower Outlet B	12/27/2017	14:48	C-1L	LFG	He

LAB USE ONLY

Authorization to Perform work: Dave Penoyer

SAMPLED BY: Anthony Kimutis
RELINQUISHED BY: [Signature]
RELINQUISHED BY: [Signature]
RELINQUISHED BY: [Signature]

DATE RECEIVED BY: 12-27-17
DATE RECEIVED BY: 12/29/17
DATE RECEIVED BY: 1323

COMPANY: Republic Services

METHOD OF TRANSPORT (circle one): Walk-In FedEx UPS Courier ATLI Other

DISTRIBUTION: White & Yellow - Lab Copies / Pink - Customer Copy

Comments:

Preservation: H=HCl N=None / Container: B=Bag C=Can V=VOA O=Other Rev: 03 - 5.7.09

Client: Republic Services
 Attn: Mike Lambrich
 Project Name: Bridgeton Landfill
 Project No.: NA
 Date Received: 12/29/17
 Matrix: Air
 Reporting Units: ppmv

EPA Methods 15/16

Lab No.:	I122904-01	I122904-02	I122904-03	I122904-04
Client Sample I.D.:	EP-14 NQ A	EP-14 NQ B	Blower Outlet A	Blower Outlet B
Date/Time Sampled:	12/27/17 13:40	12/27/17 13:57	12/27/17 14:32	12/27/17 14:48
Date/Time Analyzed:	1/2/18 9:14	1/2/18 9:27	1/2/18 9:39	1/2/18 9:52
QC Batch No.:	180102GC3A1	180102GC3A1	180102GC3A1	180102GC3A1
Analyst Initials:	AS	AS	AS	AS
Dilution Factor:	2.4	2.5	2.4	2.4

ANALYTE	I122904-01		I122904-02		I122904-03		I122904-04	
	Result ppmv	RL ppmv	Result ppmv	RL ppmv	Result ppmv	RL ppmv	Result ppmv	RL ppmv
Hydrogen Sulfide	42 d	4.8	46 d	5.1	22	0.48	15	0.48
Carbonyl Sulfide	ND	0.48	ND	0.51	ND	0.48	ND	0.48
Methyl Mercaptan	3.7	0.48	4.1	0.51	150 d	4.8	140 d	48
Ethyl Mercaptan	ND	0.48	ND	0.51	1.6	0.48	1.3	0.48
Dimethyl Sulfide	14	0.48	15	0.51	790 d	48	900 d	48
Carbon Disulfide	ND	0.48	ND	0.51	0.65	0.48	0.64	0.48
Dimethyl Disulfide	ND	0.48	ND	0.51	44 d	4.8	61 d	48
Total Reduced Sulfur	60	0.48	65	0.51	1,100	0.48	1,200	0.48

ND = Not Detected (below RL)
 RL = Reporting Limit
 d = Reported from a secondary dilution

Reviewed/Approved By: Mark Johnson
 Mark Johnson
 Operations Manager

Date: 1/4/18

The cover letter is an integral part of this analytical report



QC Batch No.: 180102GC3A1
Matrix: Air
Units: ppmv

QC for Sulfur Compounds by EPA 15/16

Lab No.:	Method Blank		LCS		LCSD			
Date/Time Analyzed:	1/2/18 9:02		1/2/18 13:40		1/2/18 13:52			
Analyst Initials:	AS		AS		AS			
Datafile:	02jan003		02jan014		02jan015			
Dilution Factor:	1.0		1.0		1.0			
ANALYTE	Results	RL	% Rec.	Criteria	% Rec.	Criteria	%RPD	Criteria
Hydrogen Sulfide	ND	0.20	101	70-130%	97	70-130%	3.7	<30
Carbonyl Sulfide	ND	0.20	106	70-130%	98	70-130%	7.2	<30
Methyl Mercaptan	ND	0.20	114	70-130%	107	70-130%	5.9	<30
Ethyl Mercaptan	ND	0.20	105	70-130%	101	70-130%	3.9	<30
Dimethyl Sulfide	ND	0.20	91	70-130%	86	70-130%	5.8	<30
Carbon Disulfide	ND	0.20	94	70-130%	88	70-130%	5.8	<30
Dimethyl Disulfide	ND	0.20	80	70-130%	75	70-130%	6.8	<30

ND = Not Detected (Below RL)

RL = Reporting Limit

Reviewed/Approved By: _____

Mark J. Johnson
Operations Manager

Date: _____

1/2/18

The cover letter is an integral part of this analytical report.



Kurz FM = **1,111** scfm
 Fleetzoom Total = **1,107** scfm $\Delta = -0.3\%$

PARAMETER		Blower Outlet A	Blower Outlet B
SOUTH QUARRY LFG - MAIN FLARE COMPOUND BLOWER OUTLET (FL120)			
Date	Test Date	12/19/17	12/19/17
Time	Start	10:29	10:46
*%CH ₄	Methane, %	12.2	11.9
*%CO ₂	Carbon Dioxide, %	35.9	37.1
**%O ₂	Oxygen, %	6.8	6.9
*%Balance	Assumed as Nitrogen, %	45.1	44.1
P _g	Flue Gas Static Pressure, inches of H ₂ O	15.2	14.8
t _s	Blower Outlet LFG Temperature, °F	62.0	62.0
Q _{sd}	Dry Volumetric Flow Rate, dry scfm (assumes 5%H ₂ O)	1,055	
Q _s	Kurz Blower Outlet, Standard Volumetric Flow Rate, scfm	1,111	
LFG _{CH₄}	Methane, lb/hr	321.7	313.8
	Methane, grains/dscf	35.57	34.69
LFG _{CO₂}	Carbon Dioxide, lb/hr	2,597.2	2,684.0
	Carbon Dioxide, grains/dscf	287.13	296.73
LFG _{O₂}	Oxygen, lb/hr	357.7	363.0
	Oxygen, grains/dscf	39.54	40.13
LFG _{N₂}	Balance gas as Nitrogen, lb/hr	2,076.9	2,030.8
	Balance gas as Nitrogen, grains/dscf	229.60	224.51
<i>* Fixed gas results based on field parameter data collection at the time of sampling, via Envision Landfill Gas Analyzer</i>			
		Blower Outlet A	Blower Outlet B
H ₂ S	Hydrogen Sulfide Concentration, ppmd	20	21
	Hydrogen Sulfide Rate, lb/hr	0.11	0.12
	Hydrogen Sulfide Rate, grains/dscf	0.012	0.013
COS	Carbonyl Sulfide Concentration, ppmd	0.56	0.56
	Carbonyl Sulfide Rate, lb/hr	0.01	0.01
	Carbonyl Sulfide Rate, grains/dscf	0.001	0.001
CH ₄ S	Methyl Mercaptan Concentration, ppmd	180	170
	Methyl Mercaptan Rate, lb/hr	1.42	1.34
	Methyl Mercaptan Rate, grains/dscf	0.157	0.149
C ₂ H ₆ S	Ethyl Mercaptan Concentration, ppmd	1.8	2.0
	Ethyl Mercaptan Rate, lb/hr	0.02	0.02
	Ethyl Mercaptan Rate, grains/dscf	0.002	0.002
(CH ₃) ₂ S	Dimethyl Sulfide Concentration, ppmd	1,000	980
	Dimethyl Sulfide Rate, lb/hr	10.21	10.01
	Dimethyl Sulfide Rate, grains/dscf	1.129	1.107
CS ₂	Carbon Disulfide Concentration, ppmd	0.64	0.67
	Carbon Disulfide Rate, lb/hr	0.01	0.01
	Carbon Disulfide Rate, grains/dscf	0.001	0.001
C ₂ H ₆ S ₂	Dimethyl Disulfide Concentration, ppmd	66	65
	Dimethyl Disulfide Rate, lb/hr	1.02	1.01
	Dimethyl Disulfide Rate, grains/dscf	0.113	0.111
①E _{TRS-SO₂}	TRS-->SO ₂ Emission Concentration, ppmd	1,400	1,300
	TRS-->SO ₂ Emission Rate, lb/hr	14.74	13.69
	TRS-->SO ₂ Emission Rate, grains/dscf	1.630	1.514
TPY =		64.58	59.96
① TRS assumed molecular mass = SO ₂ , 64.06 gram/mole, i.e. 1 TRS in LFG assumed to = 1 SO ₂ emitted from the stack			

Fleetzoom Total = 242 scfm

PARAMETER		EP14 NQ A	EP14 NQ B
EP14 NORTH QUARRY FLARE (OPERATING SOLO, NQ LFG Only)			
Date	Test Date	12/19/17	12/19/17
Time	Start	9:36	9:53
*%CH ₄	Methane, %	45.0	44.8
*%CO ₂	Carbon Dioxide, %	35.6	36.7
**%O ₂	Oxygen, %	0.7	0.6
*%Balance	Assumed as Nitrogen, %	18.7	17.9
P _g	Flue Gas Static Pressure, inches of H ₂ O	1.27	1.27
t _s	Blower Outlet LFG Temperature, °F	62.9	65.0
Q _{sd}	Dry Volumetric Flow Rate, dry scfm (assumes 5%H ₂ O)	230	
Q _s	Fleetzoom Standard Volumetric Flow Rate, scfm	242	
LFG _{CH₄}	Methane, lb/hr	258.4	257.3
	Methane, grains/dscf	131.20	130.61
LFG _{CO₂}	Carbon Dioxide, lb/hr	560.9	578.2
	Carbon Dioxide, grains/dscf	284.73	293.53
LFG _{O₂}	Oxygen, lb/hr	8.0	6.9
	Oxygen, grains/dscf	4.07	3.49
LFG _{N₂}	Balance gas as Nitrogen, lb/hr	187.5	179.5
	Balance gas as Nitrogen, grains/dscf	95.20	91.13

* Fixed gas results based on field parameter data collection at the time of sampling, via Envision Landfill Gas Analyzer

		EP14 NQ A	EP14 NQ B
H ₂ S	Hydrogen Sulfide Concentration, ppmd	33	37
	Hydrogen Sulfide Rate, lb/hr	0.04	0.05
	Hydrogen Sulfide Rate, grains/dscf	0.020	0.023
COS	Carbonyl Sulfide Concentration, ppmd	0.56	0.56
	Carbonyl Sulfide Rate, lb/hr	0.00	0.00
	Carbonyl Sulfide Rate, grains/dscf	0.001	0.001
CH ₄ S	Methyl Mercaptan Concentration, ppmd	4.1	4.0
	Methyl Mercaptan Rate, lb/hr	0.01	0.01
	Methyl Mercaptan Rate, grains/dscf	0.004	0.003
C ₂ H ₆ S	Ethyl Mercaptan Concentration, ppmd	0.56	0.56
	Ethyl Mercaptan Rate, lb/hr	0.00	0.00
	Ethyl Mercaptan Rate, grains/dscf	0.001	0.001
(CH ₃) ₂ S	Dimethyl Sulfide Concentration, ppmd	14	14
	Dimethyl Sulfide Rate, lb/hr	0.03	0.03
	Dimethyl Sulfide Rate, grains/dscf	0.016	0.016
CS ₂	Carbon Disulfide Concentration, ppmd	0.56	0.56
	Carbon Disulfide Rate, lb/hr	0.00	0.00
	Carbon Disulfide Rate, grains/dscf	0.001	0.001
C ₂ H ₆ S ₂	Dimethyl Disulfide Concentration, ppmd	0.56	0.56
	Dimethyl Disulfide Rate, lb/hr	0.00	0.00
	Dimethyl Disulfide Rate, grains/dscf	0.001	0.001

① E _{TRS-SO₂}	TRS-->SO ₂ Emission Concentration, ppmd	52	55	
	TRS-->SO ₂ Emission Rate, lb/hr	0.12	0.13	
	TRS-->SO ₂ Emission Rate, grains/dscf	0.061	0.064	
		TPY =	0.52	0.55

① TRS assumed molecular mass = SO₂, 64.06 gram/mole, i.e. 1 TRS in LFG assumed to = 1 SO₂ emitted from the stack



December 28, 2017

Republic Services
ATTN: Mike Lambrich
13570 St. Charles Rock Rd.
Bridgeton, MO 63044



LA Cert #04140
EPA Methods TO3, TO14A, TO15, 25C/3C,
RSK-175

TX Cert T104704450-14-6
EPA Methods TO14A, TO15

UT Cert CA0133332015-3
EPA Methods TO3, TO14A, TO15, RSK-175

LABORATORY TEST RESULTS

Project Reference: Bridgeton Landfill
Lab Number: I122002-01/04

Enclosed are results for sample(s) received 12/20/17 by Air Technology Laboratories. Samples were received intact. Analyses were performed according to specifications on the chain of custody provided with the sample(s).

Report Narrative:

- Dimethyl disulfide exhibited a low recovery in the laboratory control sample (LCS) and LCS duplicate which may indicate a low bias.
- Unless otherwise noted in the report, sample analyses were performed within method performance criteria and meet all requirements of the NELAC Standards.
- The enclosed results relate only to the sample(s).

Preliminary results were e-mailed to Mike Lambrich and Erin Fanning; David Randall, Dustin Thoenen and Don Murphy, Weaver Consultants Group; and Jan Feezor, Feezor Engineering on 12/28/17.

ATL appreciates the opportunity to provide testing services to your company. If you have any questions regarding these results, please call me at (626) 964-4032.

Sincerely,

A handwritten signature in blue ink, appearing to read "M. Johnson".

Mark Johnson
Operations Manager
MJohnson@AirTechLabs.com

Enclosures

Note: The cover letter is an integral part of this analytical report.

CHAIN OF CUSTODY RECORD PAGE: 1 OF 1

TURNAROUND TIME DELIVERABLES: EDD, EDF, Level 3, Level 4

Standard 48 hours
Same Day 72 hours
24 hours 96 hours
Other: 5 day

Condition upon receipt: Sealed Yes No, Intact Yes No, Chilled deg C

BILLING
P.O. No.: 6605567
Bill to: Republic Services
Attn: Mike Lambrich
13570 St. Charles Rock Rd.
Bridgeton, MO 63044

LAB USE ONLY	Canister Pressures ("hg)				SAMPLE IDENTIFICATION	DATE	SAMPLE TIME	CONTAINER QTY/TYPE	MATRIX	PRESERVA TION	ANALYSIS REQUEST
	Canister ID	Sample Start	Sample End	Lab Receive							
J122002-01	R1370	-20.3	-3.48	-3	EP-14 NQ A	12/19/2017	9:36	C-1L	LFG	He	X
-02	R1373	-20.01	-3.51	-3	EP-14 NQ B	12/19/2017	9:53	C-1L	LFG	He	X
-03	R1343	-19.97	-3.5	-3	Blower Outlet A	12/19/2017	10:29	C-1L	LFG	He	X
-04	R1367	-20.66	-3.46	-3	Blower Outlet B	12/19/2017	10:46	C-1L	LFG	He	X

LABORATORY INFORMATION
18501 E. Gale Ave., Suite 130
City of Industry, CA 91748
Ph: 626-964-4032
Fx: 626-964-5832

Project No.: _____
Project Name: Bridgeton Landfill
Report To: Mike Lambrich
Company: Republic Services
Street: 13570 St. Charles Rock Rd
City/State/Zip: Bridgeton, MO 63044
Phone & Fax: 314-683-3921
e-mail: Mlambrich@republicservices.com

COMPANY: Republic Services
DATE/TIME: 12-19-17
DATE/TIME: 12-19-17
DATE/TIME: 12/20/17
DATE/TIME: 10/13

AUTHORIZATION TO PERFORM WORK: Dave Penoyer
SAMPLED BY: Anthony Kimutis
RELINQUISHED BY: [Signature]
RELINQUISHED BY: [Signature]
RELINQUISHED BY: [Signature]

METHOD OF TRANSPORT (circle one): Walk-In FedEx UPS Courier ATLI Other
DISTRIBUTION: White & Yellow - Lab Copies / Pink - Customer Copy

Preservation: H=HCl N=None / Container: B=Bag C=Can V=VOA O=Other Rev. 03 - 5/09

Client: Republic Services
 Attn: Mike Lambrich
 Project Name: Bridgeton Landfill
 Project No.: NA
 Date Received: 12/20/17
 Matrix: Air
 Reporting Units: ppmv

EPA Methods 15/16

Lab No.:	I122002-01	I122002-02	I122002-03	I122002-04				
Client Sample I.D.:	EP-14 NQ A	EP-14 NQ B	Blower Outlet A	Blower Outlet B				
Date/Time Sampled:	12/19/17 9:36	12/19/17 9:53	12/19/17 10:29	12/19/17 10:46				
Date/Time Analyzed:	12/21/17 9:41	12/21/17 9:54	12/21/17 10:06	12/21/17 10:19				
QC Batch No.:	171221GC3A1	171221GC3A1	171221GC3A1	171221GC3A1				
Analyst Initials:	AS	AS	AS	AS				
Dilution Factor:	2.8	2.8	2.8	2.8				
ANALYTE	Result	RL	Result	RL	Result	RL	Result	RL
	ppmv	ppmv	ppmv	ppmv	ppmv	ppmv	ppmv	ppmv
Hydrogen Sulfide	33 d	5.6	37 d	5.6	20	0.56	21	0.56
Carbonyl Sulfide	ND	0.56	ND	0.56	ND	0.56	ND	0.56
Methyl Mercaptan	4.1	0.56	4.0	0.56	180 d	56	170 d	56
Ethyl Mercaptan	ND	0.56	ND	0.56	1.8	0.56	2.0	0.56
Dimethyl Sulfide	14	0.56	14	0.56	1,000 d	56	980 d	56
Carbon Disulfide	ND	0.56	ND	0.56	0.64	0.56	0.67	0.56
Dimethyl Disulfide	ND	0.56	ND	0.56	66 d	56	65 d	56
Total Reduced Sulfur	52	0.56	55	0.56	1,400	0.56	1,300	0.56

ND = Not Detected (below RL)
 RL = Reporting Limit
 d = Reported from a secondary dilution

Reviewed/Approved By: Mark Johnson
 Mark Johnson
 Operations Manager

Date 12/28/17

The cover letter is an integral part of this analytical report



QC Batch No.: 171221GC3A1
 Matrix: Air
 Units: ppmv


QC for Sulfur Compounds by EPA 15/16

Lab No.:	Method Blank	LCS				LCSD			
Date/Time Analyzed:	12/21/17 8:40	12/21/17 8:15				12/21/17 8:27			
Analyst Initials:	AS	AS				AS			
Datafile:	21dec003	21dec001				21dec002			
Dilution Factor:	1.0	1.0				1.0			
ANALYTE	Results	RL	% Rec.	Criteria	% Rec.	Criteria	%RPD	Criteria	
Hydrogen Sulfide	ND	0.20	87	70-130%	87	70-130%	0.2	<30	
Carbonyl Sulfide	ND	0.20	93	70-130%	93	70-130%	0.3	<30	
Methyl Mercaptan	ND	0.20	99	70-130%	99	70-130%	0.1	<30	
Ethyl Mercaptan	ND	0.20	96	70-130%	94	70-130%	1.7	<30	
Dimethyl Sulfide	ND	0.20	83	70-130%	82	70-130%	1.0	<30	
Carbon Disulfide	ND	0.20	81	70-130%	81	70-130%	0.5	<30	
Dimethyl Disulfide	ND	0.20	66	* 70-130%	65	* 70-130%	0.5	<30	

ND = Not Detected (Below RL)

RL = Reporting Limit

* = Outside QC Criteria

Reviewed/Approved By: Mark J. Johnson 
 Operations Manager

Date: 12/27/17

The cover letter is an integral part of this analytical report.



Kurz FM = **981** scfm
 Fleetzoom Total = **1,046** scfm $\Delta = 6.2\%$

PARAMETER		Blower Outlet A	Blower Outlet B
SOUTH QUARRY LFG - MAIN FLARE COMPOUND BLOWER OUTLET (FL120)			
Date	Test Date	12/12/17	12/12/17
Time	Start	10:37	10:55
*%CH ₄	Methane, %	12.3	12.3
*%CO ₂	Carbon Dioxide, %	36.4	36.3
**%O ₂	Oxygen, %	7.7	7.6
*%Balance	Assumed as Nitrogen, %	43.6	43.8
P _g	Flue Gas Static Pressure, inches of H ₂ O	12.8	12.6
t _s	Blower Outlet LFG Temperature, °F	48.1	52.0
Q _{sd}	Dry Volumetric Flow Rate, dry scfm (assumes 5%H ₂ O)	932	
Q _s	Kurz Blower Outlet, Standard Volumetric Flow Rate, scfm	981	
LFG _{CH₄}	Methane, lb/hr	286.5	286.5
	Methane, grains/dscf	35.86	35.86
LFG _{CO₂}	Carbon Dioxide, lb/hr	2,325.9	2,319.5
	Carbon Dioxide, grains/dscf	291.13	290.33
LFG _{O₂}	Oxygen, lb/hr	357.7	353.1
	Oxygen, grains/dscf	44.78	44.20
LFG _{N₂}	Balance gas as Nitrogen, lb/hr	1,773.4	1,781.5
	Balance gas as Nitrogen, grains/dscf	221.97	222.99
<i>* Fixed gas results based on field parameter data collection at the time of sampling, via Envision Landfill Gas Analyzer</i>			
		Blower Outlet A	Blower Outlet B
H ₂ S	Hydrogen Sulfide Concentration, ppmd	25	24
	Hydrogen Sulfide Rate, lb/hr	0.12	0.12
	Hydrogen Sulfide Rate, grains/dscf	0.015	0.015
COS	Carbonyl Sulfide Concentration, ppmd	0.52	0.53
	Carbonyl Sulfide Rate, lb/hr	0.00	0.00
	Carbonyl Sulfide Rate, grains/dscf	0.001	0.001
CH ₄ S	Methyl Mercaptan Concentration, ppmd	180	180
	Methyl Mercaptan Rate, lb/hr	1.26	1.26
	Methyl Mercaptan Rate, grains/dscf	0.157	0.157
C ₂ H ₆ S	Ethyl Mercaptan Concentration, ppmd	2.0	1.9
	Ethyl Mercaptan Rate, lb/hr	0.02	0.02
	Ethyl Mercaptan Rate, grains/dscf	0.002	0.002
(CH ₃) ₂ S	Dimethyl Sulfide Concentration, ppmd	890	940
	Dimethyl Sulfide Rate, lb/hr	8.03	8.48
	Dimethyl Sulfide Rate, grains/dscf	1.005	1.061
CS ₂	Carbon Disulfide Concentration, ppmd	0.61	0.63
	Carbon Disulfide Rate, lb/hr	0.01	0.01
	Carbon Disulfide Rate, grains/dscf	0.001	0.001
C ₂ H ₆ S ₂	Dimethyl Disulfide Concentration, ppmd	45	49
	Dimethyl Disulfide Rate, lb/hr	0.62	0.67
	Dimethyl Disulfide Rate, grains/dscf	0.077	0.084
①E _{TRS-SO₂}	TRS-->SO ₂ Emission Concentration, ppmd	1,200	1,200
	TRS-->SO ₂ Emission Rate, lb/hr	11.16	11.16
	TRS-->SO ₂ Emission Rate, grains/dscf	1.397	1.397
		TPY =	48.89
① TRS assumed molecular mass = SO ₂ , 64.06 gram/mole, i.e. 1 TRS in LFG assumed to = 1 SO ₂ emitted from the stack			

Bridgeton Landfill, LLC.
Weekly TRS Sampling Summary
Event 91-50
12/12/2017

Fleetzoom Total = 247 scfm

PARAMETER		EP14 NQ A	EP14 NQ B
EP14 NORTH QUARRY FLARE (OPERATING SOLO, NQ LFG Only)			
Date	Test Date	12/12/17	12/12/17
Time	Start	9:41	9:59
*%CH₄	Methane, %	43.3	43.6
*%CO₂	Carbon Dioxide, %	35.7	36.1
**%O₂	Oxygen, %	1.5	1.4
*%Balance	Assumed as Nitrogen, %	19.4	18.9
P_g	Flue Gas Static Pressure, inches of H ₂ O	1.14	1.32
t_s	Blower Outlet LFG Temperature, °F	52.6	55.2
Q_{sd}	Dry Volumetric Flow Rate, dry scfm (assumes 5%H ₂ O)	235	
Q_s	Fleetzoom Standard Volumetric Flow Rate, scfm	247	
LFG_{CH4}	Methane, lb/hr	254.3	256.0
	Methane, grains/dscf	126.24	127.11
LFG_{CO2}	Carbon Dioxide, lb/hr	575.1	581.6
	Carbon Dioxide, grains/dscf	285.53	288.73
LFG_{O2}	Oxygen, lb/hr	17.6	16.4
	Oxygen, grains/dscf	8.72	8.14
LFG_{N2}	Balance gas as Nitrogen, lb/hr	198.4	193.8
	Balance gas as Nitrogen, grains/dscf	98.51	96.22

* Fixed gas results based on field parameter data collection at the time of sampling, via Envision Landfill Gas Analyzer

		EP14 NQ A	EP14 NQ B
H₂S	Hydrogen Sulfide Concentration, ppmd	44	44
	Hydrogen Sulfide Rate, lb/hr	0.05	0.05
	Hydrogen Sulfide Rate, grains/dscf	0.027	0.027
COS	Carbonyl Sulfide Concentration, ppmd	0.51	0.51
	Carbonyl Sulfide Rate, lb/hr	0.00	0.00
	Carbonyl Sulfide Rate, grains/dscf	0.001	0.001
CH₄S	Methyl Mercaptan Concentration, ppmd	4.2	4.0
	Methyl Mercaptan Rate, lb/hr	0.01	0.01
	Methyl Mercaptan Rate, grains/dscf	0.004	0.003
C₂H₆S	Ethyl Mercaptan Concentration, ppmd	0.51	0.51
	Ethyl Mercaptan Rate, lb/hr	0.00	0.00
	Ethyl Mercaptan Rate, grains/dscf	0.001	0.001
(CH₃)₂S	Dimethyl Sulfide Concentration, ppmd	14	13
	Dimethyl Sulfide Rate, lb/hr	0.03	0.03
	Dimethyl Sulfide Rate, grains/dscf	0.016	0.015
CS₂	Carbon Disulfide Concentration, ppmd	0.51	0.51
	Carbon Disulfide Rate, lb/hr	0.00	0.00
	Carbon Disulfide Rate, grains/dscf	0.001	0.001
C₂H₆S₂	Dimethyl Disulfide Concentration, ppmd	0.51	0.51
	Dimethyl Disulfide Rate, lb/hr	0.00	0.00
	Dimethyl Disulfide Rate, grains/dscf	0.001	0.001

①E_{TRS-SO2}	TRS-->SO2 Emission Concentration, ppmd	62	61
	TRS-->SO2 Emission Rate, lb/hr	0.15	0.14
	TRS-->SO2 Emission Rate, grains/dscf	0.072	0.071
	TPY =	0.64	0.63

① TRS assumed molecular mass = SO₂, 64.06 gram/mole, i.e. 1 TRS in LFG assumed to = 1 SO₂ emitted from the stack



December 20, 2017

Republic Services
ATTN: Mike Lambrich
13570 St. Charles Rock Rd.
Bridgeton, MO 63044



LA Cert #04140
EPA Methods TO3, TO14A, TO15, 25C/3C,
RSK-175

TX Cert T104704450-14-6
EPA Methods TO14A, TO15

UT Cert CA013332015-3
EPA Methods TO3, TO14A, TO15, RSK-175

LABORATORY TEST RESULTS

Project Reference: Bridgeton Landfill
Lab Number: I121305-01/04

Enclosed are results for sample(s) received 12/13/17 by Air Technology Laboratories. Samples were received intact. Analyses were performed according to specifications on the chain of custody provided with the sample(s).

Report Narrative:

- Unless otherwise noted in the report, sample analyses were performed within method performance criteria and meet all requirements of the NELAC Standards.
- The enclosed results relate only to the sample(s).

Preliminary results were e-mailed to Mike Lambrich and Erin Fanning; David Randall, Dustin Thoenen and Don Murphy, Weaver Consultants Group; and Jan Feezor, Feezor Engineering on 12/20/17.

ATL appreciates the opportunity to provide testing services to your company. If you have any questions regarding these results, please call me at (626) 964-4032.


Sincerely,

A handwritten signature in blue ink, appearing to read "M. Johnson", with a stylized flourish at the end.

Mark Johnson
Operations Manager
MJohnson@AirTechLabs.com

Enclosures

Note: The cover letter is an integral part of this analytical report.

		18501 E. Gale Ave., Suite 130 City of Industry, CA 91748 Ph: 626-964-4032 FX: 626-964-5832																																														
CHAIN OF CUSTODY RECORD																																																
Project No.: _____ Project Name: Bridgeton Landfill Report To: Mike Lambrich Company: Republic Services Street: 13570 St. Charles Rock Rd City/State/Zip: Bridgeton, MO 63044 Phone& Fax: 314-683-3921 e-mail: Mlambrich@republicservices.com		TURNAROUND TIME Standard 48 hours Same Day 72 hours 24 hours 96 hours Other: <input checked="" type="checkbox"/> 5 day																																														
P.O. No.: 6605567 7044332 Bill to: Republic Services Attn: Mike Lambrich 13570 St. Charles Rock Rd. Bridgeton, MO 63044		DELIVERABLES EDD _____ EDF _____ Level 3 _____ Level 4 _____																																														
BILLING P.O. No.: 6605567 7044332 Bill to: Republic Services Attn: Mike Lambrich 13570 St. Charles Rock Rd. Bridgeton, MO 63044		ANALYSIS REQUEST EPA Method 15/16 + TRS																																														
SAMPLE IDENTIFICATION Canister Pressures ("hg) <table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th>Canister ID</th> <th>Sample Start</th> <th>Sample End</th> <th>Lab Receive</th> </tr> </thead> <tbody> <tr> <td>R2203</td> <td>-21.13</td> <td>-3.46</td> <td>-1</td> </tr> <tr> <td>R1162</td> <td>-21.25</td> <td>-3.46</td> <td>-1</td> </tr> <tr> <td>R1164</td> <td>-21.12</td> <td>-3.48</td> <td>-1.5</td> </tr> <tr> <td>1531</td> <td>-21.12</td> <td>-3.48</td> <td>-2</td> </tr> </tbody> </table>		Canister ID	Sample Start	Sample End	Lab Receive	R2203	-21.13	-3.46	-1	R1162	-21.25	-3.46	-1	R1164	-21.12	-3.48	-1.5	1531	-21.12	-3.48	-2	<table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th>SAMPLE DATE</th> <th>SAMPLE TIME</th> <th>CONTAINER QTY/TYP</th> <th>MATRIX</th> <th>PRESERVATION</th> </tr> </thead> <tbody> <tr> <td>12/12/2017</td> <td>9:41</td> <td>C-1L</td> <td>LFG</td> <td>He X</td> </tr> <tr> <td>12/12/2017</td> <td>9:59</td> <td>C-1L</td> <td>LFG</td> <td>He X</td> </tr> <tr> <td>12/12/2017</td> <td>10:37</td> <td>C-1L</td> <td>LFG</td> <td>He X</td> </tr> <tr> <td>12/12/2017</td> <td>10:55</td> <td>C-1L</td> <td>LFG</td> <td>He X</td> </tr> </tbody> </table>		SAMPLE DATE	SAMPLE TIME	CONTAINER QTY/TYP	MATRIX	PRESERVATION	12/12/2017	9:41	C-1L	LFG	He X	12/12/2017	9:59	C-1L	LFG	He X	12/12/2017	10:37	C-1L	LFG	He X	12/12/2017	10:55	C-1L	LFG	He X
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LAB USE ONLY I 121305-61 -62 -63 -64																																																
COMMENTS DATE/TIME: _____ COMPANY: Republic Services DATE/TIME: 12/12/17 DATE/RECEIVED BY: _____ DATE/RECEIVED BY: Dave Penoyer 12/13/17 DATE/RECEIVED BY: _____																																																
AUTHORIZATION TO PERFORM WORK: Dave Penoyer SAMPLED BY: Anthony Kimutis RELINQUISHED BY: _____ RELINQUISHED BY: _____ RELINQUISHED BY: _____																																																
METHOD OF TRANSPORT (circle one): Walk-In FedEx UPS Courier ATLI Other DISTRIBUTION: White & Yellow - Lab Copies / Pink - Customer Copy																																																

Preservation: H=HCl N=None / Container: B=Bag C=Can V=VOA O=Other Rev. 03 - 3 7 09

Client: Republic Services
Attn: Mike Lambrich
Project Name: Bridgeton Landfill
Project No.: NA
Date Received: 12/13/17
Matrix: Air
Reporting Units: ppmv

EPA Methods 15/16

Lab No.:	I121305-01	I121305-02	I121305-03	I121305-04				
Client Sample I.D.:	EP-14 NQ A	EP-14 NQ B	Blower Outlet A	Blower Outlet B				
Date/Time Sampled:	12/12/17 9:41	12/12/17 9:59	12/12/17 10:37	12/12/17 10:55				
Date/Time Analyzed:	12/14/17 10:39	12/14/17 10:52	12/14/17 11:04	12/14/17 11:17				
QC Batch No.:	171214GC3A1	171214GC3A1	171214GC3A1	171214GC3A1				
Analyst Initials:	AS	AS	AS	AS				
Dilution Factor:	2.5	2.5	2.6	2.7				
ANALYTE	Result ppmv	RL ppmv	Result ppmv	RL ppmv	Result ppmv	RL ppmv	Result ppmv	RL ppmv
Hydrogen Sulfide	44 d	5.1	44 d	5.1	25	0.52	24	0.53
Carbonyl Sulfide	ND	0.51	ND	0.51	ND	0.52	ND	0.53
Methyl Mercaptan	4.2	0.51	4.0	0.51	180 d	52	180 d	53
Ethyl Mercaptan	ND	0.51	ND	0.51	2.0	0.52	1.9	0.53
Dimethyl Sulfide	14	0.51	13	0.51	890 d	52	940 d	53
Carbon Disulfide	ND	0.51	ND	0.51	0.61	0.52	0.63	0.53
Dimethyl Disulfide	ND	0.51	ND	0.51	45 d	5.2	49 d	5.3
Total Reduced Sulfur	62	0.51	61	0.51	1,200	0.52	1,200	0.53

ND = Not Detected (below RL)
 RL = Reporting Limit
 d = Reported from a secondary dilution

Reviewed/Approved By: 
 Mark Johnson
 Operations Manager

Date 12-20-17

The cover letter is an integral part of this analytical report



QC Batch No.: 171214GC3A1
Matrix: Air
Units: ppmv

QC for Sulfur Compounds by EPA 15/16

Lab No.:	Method Blank		LCS		LCSD			
Date/Time Analyzed:	12/14/17 8:59		12/14/17 13:51		12/14/17 8:47			
Analyst Initials:	AS		AS		AS			
Datafile:	14dec003		14dec001		14dec002			
Dilution Factor:	1.0		1.0		1.0			
ANALYTE	Results	RL	% Rec.	Criteria	% Rec.	Criteria	%RPD	Criteria
Hydrogen Sulfide	ND	0.20	91	70-130%	91	70-130%	0.4	<30
Carbonyl Sulfide	ND	0.20	99	70-130%	97	70-130%	1.6	<30
Methyl Mercaptan	ND	0.20	102	70-130%	102	70-130%	0.3	<30
Ethyl Mercaptan	ND	0.20	97	70-130%	98	70-130%	1.0	<30
Dimethyl Sulfide	ND	0.20	81	70-130%	80	70-130%	1.2	<30
Carbon Disulfide	ND	0.20	83	70-130%	82	70-130%	1.4	<30
Dimethyl Disulfide	ND	0.20	57	* 70-130%	57	* 70-130%	0.0	<30

ND = Not Detected (Below RL)

RL = Reporting Limit

* = Outside QC Criteria

Reviewed/Approved By: _____



Mark J. Johnson
Operations Manager

Date: 12-20-17

The cover letter is an integral part of this analytical report.



PARAMETER		Blower Out
SOUTH QUARRY LFG - BLOWER OUTLET (FL120/EP-12 Only)		
Date	Test Date	12/5/17
Start	Run Start Time	10:58
	Run Finish Time	12:28
	Net Traversing Points	8 (2 x 4)
Θ	Net Run Time, minutes	1:29:55
C_p	Pitot Tube Coefficient	0.99
P_{Br}	Barometric Pressure, inches of Mercury	29.68
% H_2O	Moisture Content of LFG, %	0.87
% RH	Relative Humidity, %	57.00
M_{fd}	Dry Mole Fraction	0.991
% CH_4	Methane, %	11.90
% CO_2	Carbon Dioxide, %	33.80
% O_2	Oxygen, %	7.70
%Balance	Assumed as Nitrogen, %	35.95
% H_2	Hydrogen, %	10.50
% CO	Carbon Monoxide, %	0.06
M_d	Dry Molecular Weight, lb/lb-Mole	29.55
M_s	Wet Molecular weight, lb/lb-Mole	29.45
P_g	Flue Gas Static Pressure, inches of H_2O	14.82
P_s	Absolute Flue Gas Pressure, inches of Mercury	30.77
t_s	Average Stack Gas Temperature, °F	57
ΔP_{avg}	Average Velocity Head, inches of H_2O	0.045
v_s	Average LFG Velocity, feet/second	13.56
A_s	Stack Crosssectional Area, square feet	1.35
Q_{sd}	Dry Volumetric Flow Rate, dry scfm	1,146
Q_s	Standard Volumetric Flow Rate, scfm	1,156
Q_{aw}	Actual Wet Volumetric Flue Gas Flow Rate, acfm	1,101
$Q_{lb/hr}$	Dry Air Flow Rate at Standard Conditions, lb/hr	5,274
NHV	Net Heating Value, Btu/scf	154.9
LFG $_{CH_4}$	Methane, lb/hr	340.9
	Methane, grains/dscf	34.69
LFG $_{CO_2}$	Carbon Dioxide, lb/hr	2,656.1
	Carbon Dioxide, grains/dscf	270.33
LFG $_{O_2}$	Oxygen, lb/hr	440.0
	Oxygen, grains/dscf	44.78
LFG $_{N_2}$	Balance gas as Nitrogen, lb/hr	1,798.3
	Balance gas as Nitrogen, grains/dscf	183.02
LFG $_{H_2}$	Hydrogen, lb/hr	37.8
	Hydrogen, grains/dscf	3.85
LFG $_{CO}$	Carbon Monoxide, lb/hr	2.8
	Carbon Monoxide, grains/dscf	0.28

		Outlet A	Outlet B
H_2S	Hydrogen Sulfide Concentration, ppmvd	13	27
	Hydrogen Sulfide Rate, lb/hr	0.08	0.16
	Hydrogen Sulfide Rate, grains/dscf	0.008	0.017
COS	Carbonyl Sulfide Concentration, ppmvd	0.56	0.56
	Carbonyl Sulfide Rate, lb/hr	0.01	0.01
	Carbonyl Sulfide Rate, grains/dscf	0.001	0.001
CH_4S	Methyl Mercaptan Concentration, ppmvd	210	220
	Methyl Mercaptan Rate, lb/hr	1.80	1.89
	Methyl Mercaptan Rate, grains/dscf	0.184	0.192
C_2H_6S	Ethyl Mercaptan Concentration, ppmvd	2.1	2.2
	Ethyl Mercaptan Rate, lb/hr	0.02	0.02
	Ethyl Mercaptan Rate, grains/dscf	0.002	0.002
$(CH_3)_2S$	Dimethyl Sulfide Concentration, ppmvd	1,100	1,200
	Dimethyl Sulfide Rate, lb/hr	12.20	13.31
	Dimethyl Sulfide Rate, grains/dscf	1.242	1.355
CS_2	Carbon Disulfide Concentration, ppmvd	0.73	0.80
	Carbon Disulfide Rate, lb/hr	0.01	0.01
	Carbon Disulfide Rate, grains/dscf	0.001	0.001
$C_2H_6S_2$	Dimethyl Disulfide Concentration, ppmvd	70	71
	Dimethyl Disulfide Rate, lb/hr	1.18	0.97
	Dimethyl Disulfide Rate, grains/dscf	0.120	0.098
$\textcircled{1}E_{TRS-SO_2}$	TRS-->SO2 Emission Concentration, ppmvd	1,500	1,600
	TRS-->SO2 Emission Rate, lb/hr	17.16	18.30
	TRS-->SO2 Emission Rate, grains/dscf	1.746	1.863

1 TRS assumed molecular mass = SO2, 64.06 gram/mole, i.e. 1 TRS in LFG assumed to = 1 SO2 emitted from the stack

Tuesday, December 05, 2017

LOCATION	TIME	FLOW -SCFM			Method 2	Method 2	Kurz
		Method 2	FleetZoom	Kurz FM	vs. Fleetzoom	vs Kurz	vs Fleetzoom
BLOWER OUT	10:58	1,156	965	1,037	16.5%	10.3%	6.9%

**Note: Fleetzoom data derived from EP-12/FL120 TSI Flow Meter*

PARAMETER		Blower Out
EP14 NORTH QUARRY LFG ONLY		
Date	Test Date	12/5/17
Start	Run Start Time	9:00
	Run Finish Time	10:30
	Net Traversing Points	8 (2 x 4)
	Net Run Time, minutes	1:29:55
C_p	Pitot Tube Coefficient	0.99
P_{Br}	Barometric Pressure, inches of Mercury	29.75
% H_2O	Moisture Content of LFG, %	2.88
% RH	Relative Humidity, %	51.95
M_{fd}	Dry Mole Fraction	0.971
% CH_4	Methane, %	42.40
% CO_2	Carbon Dioxide, %	32.40
% O_2	Oxygen, %	3.10
% Balance	Assumed as Nitrogen, %	21.00
% H_2	Hydrogen, % (* reported at the laboratory detection limit)	2.70
% CO	Carbon Monoxide, % (* reported at the laboratory detection limit)	0.00270
M_d	Dry Molecular Weight, lb/lb-Mole	27.99
M_s	Wet Molecular weight, lb/lb-Mole	27.70
P_g	Flue Gas Static Pressure, inches of H_2O	0.98
P_s	Absolute Flue Gas Pressure, inches of Mercury	29.82
t_s	Average Stack Gas Temperature, °F	94
ΔP_{avg}	Average Velocity Head, inches of H_2O	0.023
v_s	Average LFG Velocity, feet/second	10.51
A_s	Stack Crosssectional Area, square feet	0.51
Q_{sd}	Dry Volumetric Flow Rate, dry scfm	298
Q_s	Standard Volumetric Flow Rate, scfm	307
Q_{aw}	Actual Wet Volumetric Flue Gas Flow Rate, acfm	324
$Q_{lb/hr}$	Dry Air Flow Rate at Standard Conditions, lb/hr	1,301
NHV	Net Heating Value, Btu/scf	385.7
LFG $_{CH_4}$	Methane, lb/hr	316.2
	Methane, grains/dscf	123.62
LFG $_{CO_2}$	Carbon Dioxide, lb/hr	663.0
	Carbon Dioxide, grains/dscf	259.14
LFG $_{O_2}$	Oxygen, lb/hr	46.1
	Oxygen, grains/dscf	18.03
LFG $_{N_2}$	Balance gas as Nitrogen, lb/hr	273.5
	Balance gas as Nitrogen, grains/dscf	106.91
LFG $_{H_4}$	Hydrogen, lb/hr	2.5
	Hydrogen, grains/dscf	0.99
LFG $_{CO}$	Carbon Monoxide, lb/hr	0.0
	Carbon Monoxide, grains/dscf	0.01

		Outlet A	Outlet B
H_2S	Hydrogen Sulfide Concentration, ppmd	48	43
	Hydrogen Sulfide Rate, lb/hr	0.08	0.07
	Hydrogen Sulfide Rate, grains/dscf	0.030	0.027
COS	Carbonyl Sulfide Concentration, ppmd	0.55	0.55
	Carbonyl Sulfide Rate, lb/hr	0.00	0.00
	Carbonyl Sulfide Rate, grains/dscf	0.001	0.001
CH_4S	Methyl Mercaptan Concentration, ppmd	4.9	4.7
	Methyl Mercaptan Rate, lb/hr	0.01	0.01
	Methyl Mercaptan Rate, grains/dscf	0.004	0.004
C_2H_6S	Ethyl Mercaptan Concentration, ppmd	0.55	0.55
	Ethyl Mercaptan Rate, lb/hr	0.00	0.00
	Ethyl Mercaptan Rate, grains/dscf	0.001	0.001
$(CH_3)_2S$	Dimethyl Sulfide Concentration, ppmd	17	16
	Dimethyl Sulfide Rate, lb/hr	0.05	0.05
	Dimethyl Sulfide Rate, grains/dscf	0.019	0.018
CS_2	Carbon Disulfide Concentration, ppmd	0.55	0.55
	Carbon Disulfide Rate, lb/hr	0.00	0.00
	Carbon Disulfide Rate, grains/dscf	0.001	0.001
$C_2H_6S_2$	Dimethyl Disulfide Concentration, ppmd	0.55	0.55
	Dimethyl Disulfide Rate, lb/hr	0.00	0.00
	Dimethyl Disulfide Rate, grains/dscf	0.001	0.001
E_{TRS-SO_2}	TRS-->SO2 Emission Concentration, ppmd	70	65
	TRS-->SO2 Emission Rate, lb/hr	0.21	0.19
	TRS-->SO2 Emission Rate, grains/dscf	0.081	0.076

① TRS assumed molecular mass = SO2, 64.06 gram/mole, i.e. 1 TRS in LFG assumed to = 1 SO2 emitted from the stack



December 13, 2017

Republic Services
ATTN: Mike Lambrich
13570 St. Charles Rock Rd.
Bridgeton, MO 63044



LA Cert #04140
EPA Methods TO3, TO14A, TO15, 25C/3C,
RSK-175

TX Cert T104704450-14-6
EPA Methods TO14A, TO15

UT Cert CA013332015-3
EPA Methods TO3, TO14A, TO15, RSK-175

LABORATORY TEST RESULTS

Project Reference: Bridgeton Landfill
Lab Number: I120603-01/04

Enclosed are results for sample(s) received 12/06/17 by Air Technology Laboratories. Samples were received intact. Analyses were performed according to specifications on the chain of custody provided with the sample(s).

Report Narrative:

- Dimethyl exhibited a low recovery in the laboratory control sample (LCS) and LCS duplicate which may indicate a low bias.
- Unless otherwise noted in the report, sample analyses were performed within method performance criteria and meet all requirements of the NELAC Standards.
- The enclosed results relate only to the sample(s).

Preliminary results were e-mailed to Mike Lambrich and Erin Fanning; David Randall, Dustin Thoenen and Don Murphy, Weaver Consultants Group; and Jan Feezor, Feezor Engineering on 12/13/17.

ATL appreciates the opportunity to provide testing services to your company. If you have any questions regarding these results, please call me at (626) 964-4032.

Sincerely,

A handwritten signature in blue ink, appearing to read "Mark Johnson", with a vertical line to the right of the signature.

Mark Johnson
Operations Manager
MJohnson@AirTechLabs.com

Enclosures

Note: The cover letter is an integral part of this analytical report.



18501 E. Gale Ave., Suite 130
City of Industry, CA 91748
Ph: 626-964-4032
FX: 626-964-5832

CHAIN OF CUSTODY RECORD

TURNAROUND TIME: Standard 48 hours, Same Day 72 hours, **24 hours** 96 hours, Other: 5 day

DELIVERABLES: EDD [initials], EDF [initials], Level 3 [initials], Level 4 [initials]

Condition upon receipt: Sealed Yes No Intact Yes No Chilled _____ deg C

PAGE: 1 OF 1

Project No.:
Project Name: Bridgeton Landfill
Report To: Mike Lambrich
Company: Republic Services
Street: 13570 St. Charles Rock Rd
City/State/Zip: Bridgeton, MO 63044
Phone & Fax: 314-683-3921
e-mail: Nbauer@republicservices.com

BILLING
P.O. No.: 6605567
Bill to: Republic Services
Attn: Mike Lambrich
13570 St. Charles Rock Rd.
Bridgeton, MO 63044

ANALYSIS REQUEST

ASTM 1946 + H2 + CO &	<input checked="" type="checkbox"/>	ASTM 1946 + H2 + CO &	<input checked="" type="checkbox"/>
Bu/SCF (by CH4 only)	<input checked="" type="checkbox"/>	Bu/SCF	<input type="checkbox"/>

LAB USE ONLY	Canister Pressures ("hg)				SAMPLE IDENTIFICATION	DATE	SAMPLE TIME	CONTAINER QTY/TYP	MATRIX	PRESERVATION
	Canister ID	Sample Start	Sample End	Lab Receive						
I(20603-01)	5988	-21.23	-3.47	-2.5	NQ EP14 A	12/5/2017	9:29	C-6L	LFG	He
02	1289	-21.26	-3.47	-2.5	NQ EP14 B	12/5/2017	10:01	C-6L	LFG	He
03	5964	-21.24	-3.48	-3	Blower Outlet A	12/5/2017	11:24	C-6L	LFG	He
04	1302	-21.43	-3.45	-3	Blower Outlet B	12/5/2017	11:57	C-6L	LFG	He

AUTHORIZATION TO PERFORM WORK: Dave Penoyer

COMPANY: Republic Services

DATE/TIME: 11/20/2017 02:06:15:00

DATE/RECEIVED BY: J. Kang 12/6/17 14:10

METHOD OF TRANSPORT (circle one): Walk-In (FedEx) UPS Courier ATLI Other

DISTRIBUTION: White & Yellow - Lab Copies / Pink - Customer Copy

COMMENTS

Preservation: H=HCl N=None / Container: B=Bag C=Can V=VOA O=Other

Client: Republic Services
Attn: Mike Lambrich
Project Name: Bridgeton Landfill
Project No.: NA
Date Received: 12/06/17
Matrix: Air
Reporting Units: ppmv

EPA Methods 15/16

Lab No.:	I120603-01	I120603-02	I120603-03	I120603-04				
Client Sample I.D.:	EP-14 NQ A	EP-14 NQ B	Blower Outlet A	Blower Outlet B				
Date/Time Sampled:	12/5/17 9:29	12/5/17 10:01	12/5/17 11:24	12/5/17 11:57				
Date/Time Analyzed:	12/11/17 10:54	12/11/17 11:06	12/11/17 11:19	12/11/17 11:31				
QC Batch No.:	171211GC3A1	171211GC3A1	171211GC3A1	171211GC3A1				
Analyst Initials:	AS	AS	AS	AS				
Dilution Factor:	2.7	2.7	2.8	2.8				
ANALYTE	Result ppmv	RL ppmv	Result ppmv	RL ppmv	Result ppmv	RL ppmv	Result ppmv	RL ppmv
Hydrogen Sulfide	48 d	5.5	43 d	5.5	13	0.56	27	0.56
Carbonyl Sulfide	ND	0.55	ND	0.55	ND	0.56	ND	0.56
Methyl Mercaptan	4.9	0.55	4.7	0.55	210 d	56	220 d	56
Ethyl Mercaptan	ND	0.55	ND	0.55	2.1	0.56	2.2	0.56
Dimethyl Sulfide	17	0.55	16	0.55	1,100 d	56	1,200 d	56
Carbon Disulfide	ND	0.55	ND	0.55	0.73	0.56	0.80	0.56
Dimethyl Disulfide	ND	0.55	ND	0.55	70 d	56	71 d	56
Total Reduced Sulfur	70	0.55	65	0.55	1,500	0.56	1,600	0.56

ND = Not Detected (below RL)
 RL = Reporting Limit
 d = Reported from a secondary dilution

Reviewed/Approved By: *Mark Johnson*
 Mark Johnson
 Operations Manager

Date 12/13/17

The cover letter is an integral part of this analytical report



QC Batch No.: 171211GC3A1
Matrix: Air
Units: ppmv

QC for Sulfur Compounds by EPA 15/16

Lab No.:	Method Blank	LCS			LCSD				
Date/Time Analyzed:	12/11/17 10:41	12/11/17 10:16			12/11/17 10:29				
Analyst Initials:	AS	AS			AS				
Datafile:	11dec006	11dec004			11dec005				
Dilution Factor:	1.0	1.0			1.0				
ANALYTE	Results	RL	% Rec.	Criteria	% Rec.	Criteria	%RPD	Criteria	
Hydrogen Sulfide	ND	0.20	106	70-130%	106	70-130%	0.1	<30	
Carbonyl Sulfide	ND	0.20	108	70-130%	110	70-130%	2.3	<30	
Methyl Mercaptan	ND	0.20	117	70-130%	117	70-130%	0.4	<30	
Ethyl Mercaptan	ND	0.20	109	70-130%	109	70-130%	0.3	<30	
Dimethyl Sulfide	ND	0.20	91	70-130%	90	70-130%	1.1	<30	
Carbon Disulfide	ND	0.20	97	70-130%	97	70-130%	0.2	<30	
Dimethyl Disulfide	ND	0.20	68	* 70-130%	69	* 70-130%	1.7	<30	

ND = Not Detected (Below RL)

RL = Reporting Limit

* = Outside QC Criteria

Reviewed/Approved By: _____

Mark J. Johnson
Mark J. Johnson
Operations Manager

Date: _____

12/13/17

The cover letter is an integral part of this analytical report.



Client: Republic Services
 Attn: Mike Lambrich
 Project Name: Bridgeton Landfill
 Project No.: NA
 Date Received: 12/06/17
 Matrix: Air
 Reporting Units: % v/v

ASTM D1946

Lab No.:	I120603-03	I120603-04						
Client Sample I.D.:	Blower Outlet A	Blower Outlet B						
Date/Time Sampled:	12/5/17 11:24	12/5/17 11:57						
Date/Time Analyzed:	12/11/17 10:35	12/11/17 10:49						
QC Batch No.:	171211GC8A1	171211GC8A1						
Analyst Initials:	AS	AS						
Dilution Factor:	2.8	2.8						
ANALYTE	Result % v/v	RL % v/v	Result % v/v	RL % v/v				
Hydrogen	10.4	2.8	10.6	2.8				
Carbon Dioxide	33.5	0.028	34.0	0.028				
Oxygen/Argon	7.8	1.4	7.6	1.4				
Nitrogen	35.7	2.8	35.0	2.8				
Methane	11.8	0.0028	12.0	0.0028				
Carbon Monoxide	0.055	0.0028	0.056	0.0028				
Net Heating Value (BTU/ft3)	152.7	2.8	157.1	2.8				
Gross Heating Value (BTU/ft3)	173.1	2.8	178.1	2.8				

Results normalized including non-methane hydrocarbons
 BTU values based on D1946 analysis and non-methane analysis assumed as propane
 ND = Not Detected (below RL)
 RL = Reporting Limit

Reviewed/Approved By: Mark Johnson
 Mark Johnson
 Operations Manager

Date 12/13/17

The cover letter is an integral part of this analytical report



QC Batch No: 171211GC8A1
 Matrix: Air
 Reporting Units: % v/v

**ASTM D1946
 LABORATORY CONTROL SAMPLE SUMMARY**

Lab No.:	METHOD BLANK			LCS		LCSD					
Date Analyzed:	12/11/17 9:51			12/11/17 9:07		12/11/17 9:22					
Analyst Initials:	AS			AS		AS					
Dilution Factor:	1.0			1.0		1.0		Limits			
ANALYTE	Result % v/v	RL % v/v	SPIKE AMT. % v/v	Result % v/v	% Rec.	Result % v/v	% Rec.	RPD %	Low %Rec	High %Rec	Max. RPD
Hydrogen	ND	1.0	5.0	5.76	115	5.84	117	1.3	70	130	30
Carbon Dioxide	ND	0.010	10	9.28	93	9.42	94	1.5	70	130	30
Oxygen/Argon	ND	0.50	15	15.6	105	15.9	107	1.9	70	130	30
Nitrogen	ND	1.0	70	70.0	100	71.4	102	2.0	70	130	30
Methane	ND	0.0010	0.10	0.109	109	0.108	108	0.7	70	130	30
Carbon Monoxide	ND	0.0010	0.10	0.107	107	0.107	107	0.6	70	130	30

ND = Not Detected (below RL)
 RL = Reporting Limit

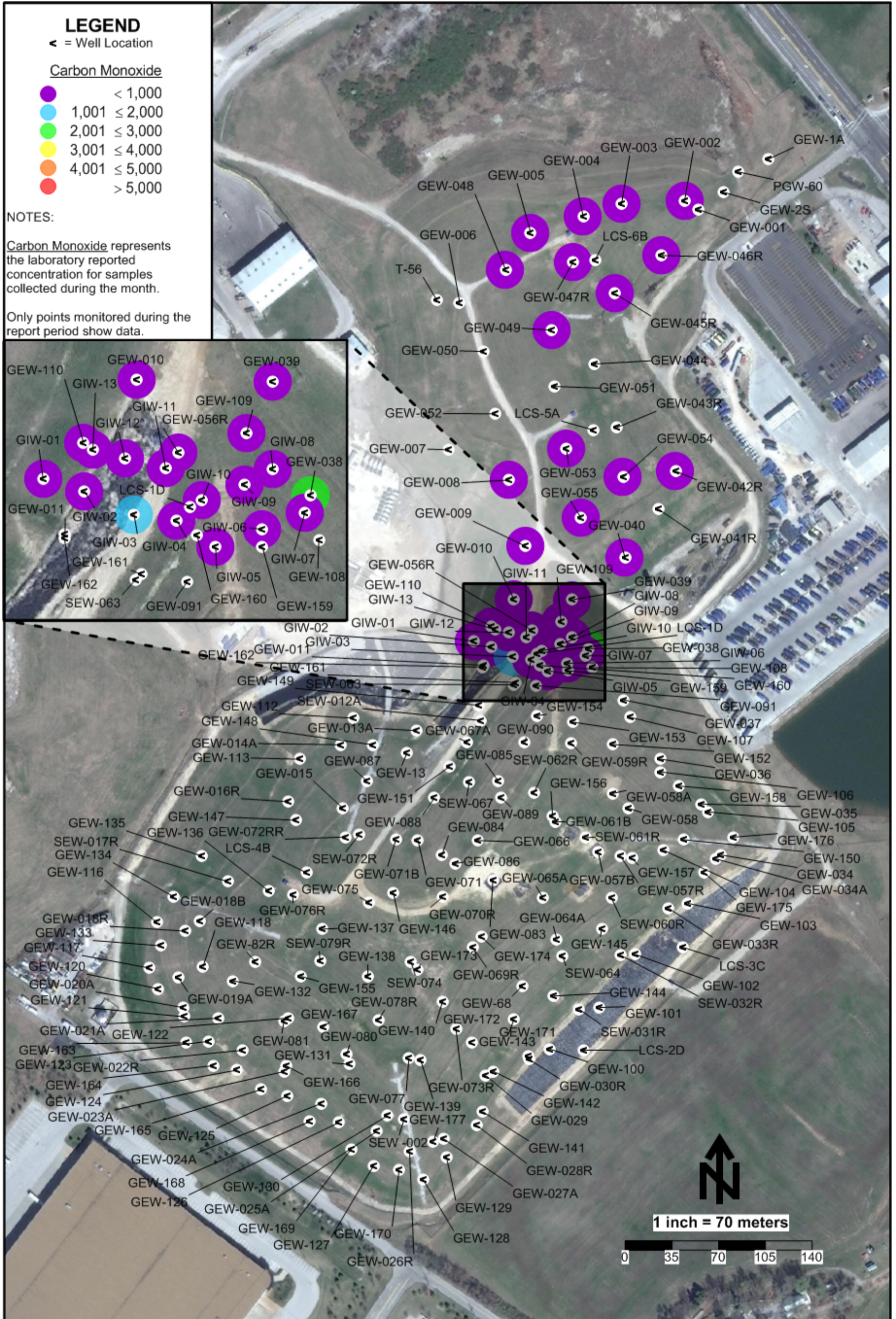
Reviewed/Approved By: Mark Johnson
 Operations Manager

Date 12/13/17

The cover letter is an integral part of this analytical report



ATTACHMENT C
GAS WELL ANALYSIS MAPS



Carbon Monoxide Data Map - December 2017 - Bridgeton Landfill

ATTACHMENT D
LABORATORY DATA

ATTACHMENT D-1

LAB ANALYSIS SUMMARY

Laboratory Analysis - Bridgeton Landfill

Well Name	Date Sampled	Methane	CO ₂	O ₂ /Argon	Nitrogen	Hydrogen	Carbon Monoxide (ppm)	Comments
GEW-002	8/8/2017	53	40	ND	4.9	ND	ND	
GEW-002	9/12/2017	45	33	4.9	17	ND	ND	See Note 3
GEW-002	10/9/2017	56	40	ND	ND	ND	ND	
GEW-002	11/6/2017	55	40	ND	3.8	ND	ND	
GEW-002	12/12/2017	54	40	ND	4.4	ND	ND	
GEW-02S	9/14/2017	60	37	ND	ND	ND	ND	
GEW-02S	11/9/2017	53	37	2.2	7.7	ND	ND	See Note 3
GEW-003	8/8/2017	54	39	ND	6.3	0.09	ND	
GEW-003	9/12/2017	51	39	ND	8.7	0.09	ND	
GEW-003	10/9/2017	47	36	ND	15	0.06	ND	
GEW-003	11/6/2017	50	37	ND	12	0.08	ND	
GEW-003	12/12/2017	49	36	ND	14	0.067	ND	
GEW-004	8/8/2017	55	39	ND	4.5	0.08	ND	
GEW-004	9/12/2017	56	40	ND	3.7	0.06	ND	
GEW-004	10/9/2017	56	39	ND	3.7	0.06	ND	
GEW-004	11/6/2017	56	39	ND	4.1	0.08	ND	
GEW-004	12/12/2017	52	38	ND	9.3	0.094	ND	
GEW-005	8/8/2017	55	38	ND	6.4	0.04	ND	
GEW-005	9/11/2017	54	36	ND	8.6	ND	ND	
GEW-005	10/9/2017	52	34	1.9	12	ND	ND	
GEW-005	11/6/2017	57	36	ND	6.2	0.04	ND	
GEW-005	12/12/2017	46	34	ND	19	ND	ND	
GEW-006	9/11/2017	47	31	4.9	18	ND	ND	See Note 3
GEW-006	11/6/2017	59	37	ND	3.2	ND	ND	
GEW-007	9/12/2017	56	40	ND	ND	ND	ND	
GEW-007	11/7/2017	54	36	2.1	7.4	ND	ND	See Note 3
GEW-008	8/9/2017	52	43	ND	ND	1.1	ND	
GEW-008	9/12/2017	53	44	ND	ND	1.1	ND	
GEW-008	10/11/2017	53	43	ND	ND	1.1	ND	
GEW-008	11/7/2017	54	43	ND	ND	1.2	ND	
GEW-008	12/13/2017	53	41	ND	3.4	1.5	ND	
GEW-009	8/9/2017	53	42	ND	4.5	0.48	ND	
GEW-009	9/12/2017	37	29	7.1	26	0.48	ND	See Note 4
GEW-009	10/11/2017	49	39	ND	10	0.41	ND	
GEW-009	11/7/2017	51	39	ND	9	0.6	ND	
GEW-009	12/13/2017	50	38	ND	11	0.70	ND	
GEW-040	8/9/2017	57	41	ND	ND	ND	ND	
GEW-040	9/14/2017	57	40	ND	ND	ND	ND	
GEW-040	10/11/2017	57	39	ND	3.2	ND	ND	
GEW-040	11/9/2017	58	39	ND	ND	ND	ND	
GEW-040	12/13/2017	58	39	ND	ND	ND	ND	
GEW-041R	9/14/2017	58	39	ND	ND	ND	ND	
GEW-041R	11/9/2017	59	38	ND	ND	ND	ND	
GEW-042R	8/9/2017	57	41	ND	ND	ND	ND	
GEW-042R	9/12/2017	56	42	ND	ND	ND	ND	
GEW-042R	10/11/2017	55	39	ND	4.2	ND	ND	
GEW-042R	11/9/2017	55	39	ND	4.5	ND	ND	
GEW-042R	12/13/2017	57	39	ND	ND	ND	ND	
GEW-043R	9/12/2017	55	43	ND	ND	0.25	ND	
GEW-043R	11/9/2017	47	34	4.1	15	0.19	ND	See Note 3
GEW-044	9/12/2017	55	39	ND	4.4	ND	ND	
GEW-044	11/9/2017	59	39	ND	ND	ND	ND	
GEW-045R	8/8/2017	56	41	ND	ND	ND	ND	
GEW-045R	9/12/2017	56	41	ND	ND	ND	ND	
GEW-045R	10/11/2017	57	41	ND	ND	ND	ND	
GEW-045R	11/6/2017	55	41	ND	ND	ND	ND	

Laboratory Analysis - Bridgeton Landfill

Well Name	Date Sampled	Methane	CO ₂	O ₂ /Argon	Nitrogen	Hydrogen	Carbon Monoxide (ppm)	Comments
GEW-045R	12/12/2017	61	36	ND	ND	ND	ND	
GEW-046R	8/8/2017	55	39	ND	5	0.06	ND	
GEW-046R	9/12/2017	56	41	ND	ND	0.07	ND	
GEW-046R	10/9/2017	56	40	ND	ND	0.05	ND	
GEW-046R	11/6/2017	55	40	ND	4	0.06	ND	
GEW-046R	12/12/2017	57	38	ND	4.2	0.039	ND	
GEW-047R	8/8/2017	56	41	ND	ND	ND	ND	
GEW-047R	9/12/2017	54	39	ND	6.3	ND	ND	
GEW-047R	10/9/2017	56	42	ND	ND	ND	ND	
GEW-047R	11/6/2017	56	41	ND	ND	ND	ND	
GEW-047R	12/12/2017	48	36	1.5	14	0.032	ND	
GEW-048	8/8/2017	55	38	ND	6.7	ND	ND	
GEW-048	9/11/2017	56	39	ND	4.7	ND	ND	
GEW-048	10/9/2017	54	36	2.1	7.8	ND	ND	See Note 3
GEW-048	11/6/2017	58	39	ND	ND	ND	ND	
GEW-048	12/12/2017	55	38	ND	6.6	ND	ND	
GEW-049	8/9/2017	56	39	ND	4.2	0.05	ND	
GEW-049	9/12/2017	56	40	ND	3.7	0.06	ND	
GEW-049	10/11/2017	55	39	ND	5.7	ND	ND	
GEW-049	11/6/2017	57	39	ND	3.4	0.06	ND	
GEW-049	12/12/2017	53	36	ND	10.0	0.056	ND	
GEW-050	9/12/2017	57	39	ND	ND	0.05	ND	
GEW-050	11/6/2017	55	36	1.7	7	0.05	ND	
GEW-051	9/12/2017	43	32	5.3	19	0.7	ND	See Note 4
GEW-051	11/6/2017	56	40	ND	ND	1.0	ND	
GEW-052	9/12/2017	49	35	3.2	13	0.04	ND	See Note 3
GEW-052	11/7/2017	52	37	ND	11	0.04	ND	
GEW-053	8/9/2017	50	42	ND	ND	5.3	61	
GEW-053	9/13/2017	49	41	ND	ND	5	56	
GEW-053	10/9/2017	53	40	ND	ND	2.8	58	
GEW-053	11/9/2017	49	42	ND	ND	6.7	56	
GEW-053	12/13/2017	51	41	ND	ND	5.1	62	
GEW-054	8/9/2017	53	41	ND	ND	2.3	ND	
GEW-054	9/13/2017	52	43	ND	ND	2.7	ND	
GEW-054	10/9/2017	53	42	ND	ND	2.7	ND	
GEW-054	11/9/2017	54	41	ND	ND	2.7	30	
GEW-054	12/12/2017	54	41	ND	ND	2.5	ND	
GEW-055	8/9/2017	49	41	ND	3.7	4.6	36	
GEW-055	9/14/2017	49	41	ND	4.2	4.3	35	
GEW-055	10/11/2017	49	40	1.9	6.4	2.8	36	
GEW-055	11/9/2017	53	41	ND	3.2	2.4	32	
GEW-055	12/12/2017	54	40	ND	3.0	2.1	32	
Flare Station ²	8/2/2017	49.4	37.2	1.8	10.5	ND	ND	See Note 5
Flare Station ²	9/7/2017	47.8	36.6	2.1	12.1	ND	ND	See Note 5
Flare Station ²	10/10/2017	48.0	36.1	2.1	12.8	ND	ND	See Note 5
Flare Station ²	11/2/2017	49.5	36.0	2.0	11.2	ND	ND	See Note 5
Flare Station ²	12/5/2017	42.4	32.4	3.1	21.0	ND	ND	See Note 5

Notes: (1) Based on the comparison of field to laboratory readings, oxygen to balance gas ratios, and historical concentrations, the sample was determined to be suspect due to oxygen introduction which likely occurred during sample collection or laboratory analytical methods. (2) MDNR also collected duplicate LFG samples at these locations during this sampling period. (3) Based on the oxygen verification readings taken with an Envision meter, it was determined there is a sample train leak. (4) Based on the oxygen verification readings taken with an Envision meter, it was determined that the readings are accurate. (5) Flare station gas concentration data is an average of NQ EP14 A (or 1) and NQ EP14 B (or 2), located in the North Quarry. (6) Flare station gas concentration data is an average of Outlets 1 and 2 (A & B) or SQ OU 1 and OU 2, located in the South Quarry. (7) Sample not reported by lab due to canister leak.

ND = Analyte not detected in sample.

² = Flare Station measured at EPA Method 2 flow port (blower outlet)

Laboratory Analysis - Bridgeton Landfill

Well Name	Date Sampled	Methane	CO ₂	O ₂ /Argon	Nitrogen	Hydrogen	Carbon Monoxide (ppm)	Comments
GEW-010	8/8/2017	57	40	ND	ND	ND	ND	
GEW-010	9/12/2017	55	42	ND	ND	0.35	ND	
GEW-010	10/9/2017	57	41	ND	ND	0.06	ND	
GEW-010	11/6/2017	57	39	ND	ND	0.12	ND	
GEW-010	12/12/2017	57	40	ND	ND	ND	ND	
GEW-022R	9/18/2017	2.8	58	1.8	6.2	30	2,100	
GEW-022R	11/9/2017	2	44	6.3	22	25	1,700	See Note 3
GEW-038	8/9/2017	1.1	51	2.1	7.2	38	2,100	See Note 4
GEW-038	9/12/2017	0.67	44	5.8	20	29	1,800	See Note 4
GEW-038	10/9/2017	1.2	19	14.0	51	14	840	See Note 4
GEW-038	11/6/2017	0.77	51	2.1	7.3	38	2,300	
GEW-038	12/13/2017	0.89	53	ND	ND	42	2,200	
GEW-039	8/9/2017	42	51	ND	4.7	ND	ND	
GEW-039	9/12/2017	45	52	ND	ND	ND	ND	
GEW-039	10/9/2017	46	52	ND	ND	ND	ND	
GEW-039	11/6/2017	46	49	ND	3.2	0.14	ND	
GEW-039	12/13/2017	46	48	ND	5.1	ND	ND	
GEW-056R	8/8/2017	18	51	ND	ND	28	850	
GEW-056R	9/12/2017	27	52	ND	ND	18	590	
GEW-056R	10/9/2017	31	48	ND	ND	17	580	
GEW-056R	11/6/2017	30	42	1.8	10	15	510	
GEW-056R	12/12/2017	9.9	47	ND	20	22	920	
GEW-058	9/6/2017	1.5	25	5.2	53	14	510	See Note 3
GEW-058	11/8/2017	2.4	36	4.1	29	28	1,100	
GEW-058A	9/6/2017	11	24	7.6	44	13	540	See Note 3
GEW-058A	11/8/2017	12	25	7.3	41	15	620	See Note 4
GEW-059R	9/6/2017	11	45	ND	ND	41	1,300	
GEW-059R	11/7/2017	14	43	ND	4.6	37	1,300	
GEW-082R	9/14/2017	12	42	ND	16	28	950	
GEW-082R	11/13/2017	11	37	ND	25	26	960	
GEW-086	9/6/2017	8.5	30	4.0	51	6.9	180	
GEW-086	11/9/2017	19	37	2.7	36	5.1	140	
GEW-090	9/6/2017	18	45	ND	3.9	32	980	
GEW-090	11/9/2017	19	43	ND	5.6	31	1,000	
GEW-102	9/8/2017	7.8	42	4.8	17	28	440	
GEW-102	11/9/2017	5.7	46	2.2	7.4	38	640	
GEW-104	9/6/2017	17	52	ND	ND	26	1,000	
GEW-105	9/6/2017	11	44	4.1	18	22	1,200	
GEW-106	9/6/2017	27	50	ND	6.9	14	510	
GEW-107	9/6/2017	0.13	1.6	21	76	0.43	55	See Note 4
GEW-107	11/7/2017	42	39	2.9	10	6	290	
GEW-108	9/6/2017	29	44	1.7	5.7	18	640	
GEW-109	8/9/2017	29	48	ND	6.8	15	330	
GEW-109	9/12/2017	32	44	ND	12	11	240	
GEW-109	10/9/2017	36	42	ND	14	7.6	180	
GEW-109	11/6/2017	33	38	2	19	7.9	190	
GEW-109	12/13/2017	26	35	3.1	22	13	340	
GEW-110	8/8/2017	6.2	22	11	52	9.2	420	See Note 4
GEW-110	9/12/2017	13	53	ND	ND	31	1,100	
GEW-110	10/9/2017	7.9	21	12	48	10	510	See Note 4
GEW-110	11/6/2017	8	17	14	53	8.4	290	See Note 4
GEW-110	12/12/2017	12	38	4.2	19	27	990	
GEW-116	9/14/2017	5	65	ND	ND	26	1,200	
GEW-116	11/13/2017	7.7	58	ND	4.1	28	1,200	
GEW-117	9/14/2017	34	51	ND	5.2	7.5	310	
GEW-117	11/9/2017	44	51	ND	ND	0.42	140	

Laboratory Analysis - Bridgeton Landfill

Well Name	Date Sampled	Methane	CO ₂	O ₂ /Argon	Nitrogen	Hydrogen	Carbon Monoxide	Comments
							(%)	
GEW-118	9/14/2017	0.9	50	1.9	6.8	39	1,400	
GEW-118	11/9/2017	1.9	52	2.3	8.5	34	750	
GEW-120	9/14/2017	17	55	ND	18	9	390	
GEW-120	11/9/2017	17	53	ND	18	11	510	
GEW-121	9/18/2017	9.3	50	ND	19	19	860	
GEW-121	11/9/2017	11	48	ND	20	19	910	
GEW-122	9/18/2017	12	34	ND	36	16	1,400	
GEW-122	11/9/2017	12	34	ND	36	16	1,500	
GEW-123	9/18/2017	2.8	61	ND	ND	32	2,400	
GEW-123	11/9/2017	7.7	58	ND	ND	31	2,300	
GEW-124	9/18/2017	48	49	ND	ND	0.07	ND	
GEW-124	11/9/2017	53	44	ND	ND	0.06	ND	
GEW-125	9/18/2017	4.2	53	ND	10	31	1,800	
GEW-125	11/9/2017	3.4	45	2.1	20	28	1,800	
GEW-126	9/18/2017	29	48	ND	13	7.8	570	
GEW-126	11/9/2017	20	46	2.5	24	6.9	530	
GEW-127	9/14/2017	3.6	65	ND	ND	27	2,700	
GEW-127	11/9/2017	4.1	54	2.3	14	24	2,600	
GEW-128	9/14/2017	7.8	63	ND	4.3	23	2,300	
GEW-128	11/9/2017	14	60	ND	6.8	17	1,800	
GEW-129	9/14/2017	0.69	60	ND	ND	35	3,500	
GEW-129	11/9/2017	6.3	45	5.5	19	23	2,500	See Note 3
GEW-130	9/14/2017	3.5	46	3.3	16	31	2,300	
GEW-130	11/9/2017	5.9	39	5.9	27	22	1,600	See Note 4
GEW-131	9/18/2017	20	42	ND	15	21	1,400	
GEW-131	11/9/2017	20	39	ND	21	19	1,400	
GEW-132	9/14/2017	2.2	27	7.6	47	16	820	See Note 4
GEW-132	11/9/2017	1.8	18	10	61	9.2	500	See Note 4
GEW-133	9/14/2017	10	53	ND	13	22	990	
GEW-133	11/13/2017	11	49	ND	15	23	1,100	
GEW-134	9/14/2017	14.0	46	ND	27	12	500	
GEW-134	11/13/2017	10.0	38	2.3	40	10	450	
GEW-135	9/14/2017	6	52	ND	8.6	32	1,200	
GEW-135	11/13/2017	7.3	35	4.4	36	18	890	
GEW-136	9/8/2017	5.4	30	7.7	37	19	490	See Note 4
GEW-136	11/13/2017	5.7	26	7.7	40	20	540	See Note 4
GEW-137	9/8/2017	22	31	3	44	ND	ND	
GEW-137	11/13/2017	29	34	1.8	35	0.16	33	
GEW-138	9/14/2017	14	43	ND	28	14	790	
GEW-138	11/13/2017	6.5	21	8.9	56	7	390	See Note 4
GEW-139	9/14/2017	2.6	50	ND	4.2	41	2,700	
GEW-139	11/9/2017	1.8	51	ND	ND	43	3,000	
GEW-145	9/8/2017	1.3	32	8.8	31	26	1100	See Note 3
GEW-146	9/8/2017	1.7	7.4	16	74	0.44	ND	See Note 4
GEW-147	9/14/2017	12	46	ND	13	27	960	
GEW-147	11/13/2017	11	42	ND	22	23	880	
GEW-148	9/6/2017	4	51	1.8	6	37	2,100	
GEW-149	9/6/2017	12	36	5.2	34	13	570	See Note 3
GEW-149	11/9/2017	14	32	4.3	43	6.4	310	
GEW-150	9/6/2017	9.2	41	6.4	28	15	580	See Note 4
GEW-150	11/8/2017	12	29	7.7	44	6.7	260	See Note 4
GEW-151	9/6/2017	23	51	ND	5.3	20	780	
GEW-151	11/13/2017	1.4	43	ND	ND	52	1000	
GEW-152	9/6/2017	24	45	ND	3.8	26	1300	
GEW-152	11/7/2017	24	42	2.2	7.5	23	1300	
GEW-153	9/6/2017	45	40	ND	8.1	5.3	66	
GEW-153	11/7/2017	43	37	ND	17	2	77	

Laboratory Analysis - Bridgeton Landfill

Well Name	Date Sampled	Methane	CO ₂	O ₂ /Argon	Nitrogen	Hydrogen	Carbon Monoxide	Comments
							(%)	
GEW-154	9/6/2017	13	18	13	55	1.5	88	See Note 4
GEW-154	11/9/2017	2.2	10	16	64	7.2	340	See Note 4
GEW-155	9/14/2017	2.2	21	4.8	69	2.8	77	
GEW-155	11/13/2017	1.1	13	11	75	ND	79	See Note 3
GEW-156	11/8/2017	16	23	12	43	6	140	See Note 4
GEW-158	9/6/2017	34	48	ND	ND	15	470	
GEW-158	11/8/2017	34	48	ND	ND	15	470	
GEW-159	9/6/2017	26	43	ND	25	4.8	150	
GEW-159	11/7/2017	25	40	3	29	2.9	150	
GEW-160	9/8/2017	1.2	55	ND	ND	40	1,900	
GEW-160	11/13/2017	13	43	ND	20	23	1,100	
GEW-161	9/8/2017	0.84	59	ND	ND	36	1,900	
GEW-162	9/6/2017	7.9	64	ND	ND	25	930	
GEW-162	11/9/2017	11	56	2	11	20	950	
GEW-163	9/14/2017	4.6	31	7.2	46	9.7	450	See Note 4
GEW-163	11/7/2017	10	36	6.8	38	8.7	400	See Note 4
GEW-164	9/14/2017	18	60	ND	6.4	14	920	
GEW-164	11/7/2017	18	51	3.6	17	11	690	
GEW-165	9/14/2017	5.4	38	8.8	32	14	850	See Note 4
GEW-165	11/7/2017	7.8	54	3.7	13	20	1,100	
GEW-166	9/14/2017	0.66	53	1.8	6.9	37	2,400	
GEW-166	11/7/2017	0.81	53	1.7	6.6	38	2,500	
GEW-167	9/14/2017	0.33	40	5.5	20	33	1,900	See Note 4
GEW-167	11/7/2017	0.56	35	7.8	28	28	1,700	See Note 4
GEW-168	9/14/2017	6.5	59	ND	ND	31	1,900	
GEW-168	11/7/2017	10	55	1.6	6.5	26	1,700	
GEW-169	9/14/2017	3.2	62	ND	ND	32	2,400	
GEW-169	11/7/2017	2.6	46	5.6	22	23	1,700	See Note 4
GEW-170	9/14/2017	7.6	52	3.5	16	19	1,800	
GEW-170	11/9/2017	8.3	41	7.1	28	15	1,300	See Note 4
GEW-172	11/9/2017	0.33	46	4.3	15	34	2,700	
GEW-173	9/14/2017	28	44	3.2	23	1.8	210	
GEW-173	11/9/2017	8.7	17	12	61	0.21	33	See Note 4
GEW-174	9/8/2017	10	42	3.6	23	20	1,100	
GEW-174	11/9/2017	5.5	50	ND	ND	42	2,700	
GEW-175	9/6/2017	14	40	5.3	31	9.8	420	See Note 4
GEW-175	11/8/2017	17	45	3.5	21	13	550	
GEW-176	9/6/2017	21	42	4.4	23	9.3	370	
GEW-176	11/8/2017	21	39	5.5	28	6.8	250	See Note 4
GEW-177	11/9/2017	0.32	63	2	6.8	27	4,600	
GIW-01	8/8/2017	12	64	ND	8.7	13	780	
GIW-01	9/12/2017	13	39	3.8	38	5.8	340	
GIW-01	10/9/2017	27	41	3.3	28	0.67	110	
GIW-01	11/6/2017	6	61	ND	7.5	23	1,300	
GIW-01	12/12/2017	16	43	6.1	30	5.0	230	See Note 4
GIW-02	8/8/2017	17	62	ND	ND	19	660	
GIW-02	9/12/2017	2.8	20	16	58	2.7	110	See Note 4
GIW-02	10/9/2017	2.3	17	13	65	2.8	290	See Note 4
GIW-02	11/6/2017	1.9	12	14	69	2.8	240	See Note 4
GIW-02	12/12/2017	5.7	32	7.3	43	11	550	See Note 4
GIW-03	8/8/2017	1.1	50	4.7	17	27	1,500	See Note 4
GIW-03	9/12/2017	2.5	59	2	8.5	27	1,400	
GIW-03	10/9/2017	3.3	53	1.9	17	24	1,400	
GIW-03	11/6/2017	2.9	47	2.1	25	23	1,300	
GIW-03	12/12/2017	1.1	59	ND	ND	37	1,900	
GIW-04	8/8/2017	0.4	23	12	42	22	1,200	See Note 4
GIW-04	9/12/2017	12	49	3.4	14	21	1,100	
GIW-04	10/9/2017	3.3	53	3	15	26	1,400	

Laboratory Analysis - Bridgeton Landfill

Well Name	Date Sampled	Methane	CO ₂	O ₂ /Argon	Nitrogen	Hydrogen	Carbon Monoxide	Comments
							(%)	
GIW-04	11/6/2017	1.5	48	4.5	18	27	1,500	
GIW-04	12/12/2017	0.096	5.6	20	69	6.0	280	See Note 4
GIW-05	8/9/2017	1.7	50	ND	ND	46	610	
GIW-05	9/12/2017	0.3	6.8	19	68	6.1	120	See Note 3
GIW-05	10/9/2017	0.36	7.2	18	66	8.2	150	See Note 4
GIW-05	11/6/2017	0.21	4.1	20	73	2.3	68	See Note 4
GIW-05	12/12/2017	0.32	8.7	18	62	11	120	See Note 4
GIW-06	8/9/2017	21	48	ND	ND	28	530	
GIW-06	9/12/2017	12	44	ND	24	18	410	
GIW-06	10/9/2017	15	43	ND	25	15	340	
GIW-06	11/6/2017	17	43	1.6	25	14	320	
GIW-06	12/13/2017	1.7	50	ND	3.5	43	830	
GIW-07	8/9/2017	32	52	ND	ND	12	590	
GIW-07	9/12/2017	26	59	ND	10	2.8	160	
GIW-07	10/9/2017	22	61	ND	10	5	210	
GIW-07	11/6/2017	21	62	1.9	11	4.3	250	
GIW-07	12/13/2017	19	58	2.6	14	6.3	340	
GIW-08	8/9/2017	44	51	ND	ND	1.4	120	
GIW-08	9/12/2017	22	56	ND	20	0.84	99	
GIW-08	10/9/2017	24	55	ND	19	0.49	78	
GIW-08	11/6/2017	22	52	1.8	24	0.48	67	
GIW-08	12/13/2017	25	51	ND	22	0.68	82	
GIW-09	8/9/2017	28	40	ND	22	9.3	280	
GIW-09	9/12/2017	7.2	22	5	61	4.5	120	See Note 4
GIW-09	10/9/2017	3.9	17	9.8	66	2.6	160	See Note 4
GIW-09	11/6/2017	4	15	12	67	2.4	150	See Note 4
GIW-09	12/13/2017	13	21	5.9	55	5.0	150	See Note 3
GIW-10	8/9/2017	7.3	51	ND	ND	39	810	
GIW-10	9/12/2017	11	42	ND	26	20	590	
GIW-10	10/9/2017	14	36	ND	34	15	470	
GIW-10	11/6/2017	11	31	ND	41	15	470	
GIW-10	12/12/2017	6.1	42	ND	17	34	660	
GIW-11	8/8/2017	9.8	55	ND	ND	33	1,200	
GIW-11	9/12/2017	18	48	ND	18	15	580	
GIW-11	10/9/2017	15	40	2.6	30	12	560	
GIW-11	11/6/2017	13	38	1.7	33	14	620	
GIW-11	12/12/2017	29	46	ND	6.4	18	590	
GIW-12	8/8/2017	15	44	3.7	22	15	390	See Note 4
GIW-12	9/12/2017	11	34	7.9	36	11	590	See Note 4
GIW-12	10/9/2017	6.2	33	8.7	37	15	990	See Note 4
GIW-12	11/6/2017	4.9	32	8.3	37	17	1100	See Note 4
GIW-12	12/12/2017	14	33	6.7	37	9.4	470	See Note 4
GIW-13	8/8/2017	11	62	ND	ND	24	850	
GIW-13	9/12/2017	15	63	1.6	6	14	550	
GIW-13	10/9/2017	20	57	ND	5.2	16	550	
GIW-13	11/6/2017	24	56	ND	3.9	15	540	
GIW-13	12/12/2017	17	56	ND	5.5	20	610	
Flare Station ²	8/2/2017	12.8	37.6	6.7	30.9	10.7	590	See Note 6
Flare Station ²	9/7/2017	11.0	31.8	8.4	38.6	9.2	475	See Note 6
Flare Station ²	10/10/2017	12.1	33.6	7.8	36.0	9.5	535	See Note 6
Flare Station ²	11/2/2017	11.5	32.3	8.3	37.6	9.5	530	See Note 6
Flare Station ²	12/5/2017	11.9	33.8	7.7	35.4	10.5	555	See Note 6

Laboratory Analysis - Bridgeton Landfill

Well Name	Date Sampled	Methane	CO ₂	O ₂ /Argon	Nitrogen	Hydrogen	Carbon Monoxide	Comments
		(%)					(ppm)	
<p>Notes: (1) Based on the comparison of field to laboratory readings, oxygen to balance gas ratios, and historical concentrations, the sample was determined to be suspect due to oxygen introduction which likely occurred during sample collection or laboratory analytical methods. (2) MDNR also collected duplicate LFG samples at these locations during this sampling period. (3) Based on the oxygen verification readings taken with an Envirovision meter, it was determined there is a sample train leak. (4) Based on the oxygen verification readings taken with an Envirovision meter, it was determined that the readings are accurate. (5) Flare station gas concentration data is an average of NQ EP14 A (or 1) and NQ EP14 B (or 2), located in the North Quarry. (6) Flare station gas concentration data is an average of Outlets 1 and 2 (A & B) or SQ OU 1 and OU 2, located in the South Quarry. (7) Sample not reported by lab due to canister leak.</p> <p>ND = Analyte not detected in sample.</p> <p>² = Flare Station Inlet measured at EPA Method 2 flow port (blower outlet)</p>								

ATTACHMENT D-2
LAB ANALYSIS REPORTS



January 17, 2018

Republic Services
ATTN: Mike Lambrich
13570 St. Charles Rock Rd.
Bridgeton, MO 63044



LA Cert #04140
EPA Methods TO3, TO14A, TO15, 25C/3C,
RSK-175

TX Cert T104704450-14-6
EPA Methods TO14A, TO15

UT Cert CA0133332015-3
EPA Methods TO3, TO14A, TO15, RSK-175

LABORATORY TEST RESULTS

Project Reference: Bridgeton Landfill
Lab Number: I121406-01/35

Enclosed are **revised** results for sample(s) received 12/14/17 by Air Technology Laboratories. This revision replaces the report dated 12/21/17 in its entirety. Samples were received intact. Analyses were performed according to specifications on the chain of custody provided with the sample(s).

Report Narrative:

- Report was revised to correct the sample identification for I121406-16 from GEW 46R to GEW 4, per client's instructions.
- Unless otherwise noted in the report, sample analyses were performed within method performance criteria and meet all requirements of the NELAC Standards.
- The enclosed results relate only to the sample(s).

Preliminary results were e-mailed to Mike Lambrich and Erin Fanning; David Randall, Dustin Thoenen and Don Murphy, Weaver Consultants Group; and Jan Feezor, Feezor Engineering on 12/21/17.

ATL appreciates the opportunity to provide testing services to your company. If you have any questions regarding these results, please call me at (626) 964-4032.

Sincerely,

A handwritten signature in blue ink that reads "Mark Johnson".

Mark Johnson
Operations Manager
MJohnson@AirTechLabs.com

Enclosures

Note: The cover letter is an integral part of this analytical report.

AIRTECHNOLOGY
Laboratories, Inc.

18501 E. Gale Ave., Suite 130
City of Industry, CA 91748
Ph: 626-964-4032
Fx: 626-964-5832

CHAIN OF CUSTODY RECORD PAGE: 1 OF 5

Condition upon receipt: Sealed Yes No
Intact Yes No
Chilled _____ deg C

TURNAROUND TIME DELIVERABLES

Standard 48 hours EDD
Same Day 72 hours EDF
24 hours 96 hours Level 3
Other: *5 day pm* Level 4

BILLING

P.O. No.: PO6342552-7044332
Bill to: Republic Services
Attn: Mike Lambrich
13570 St. Charles Rock Rd.
Bridgeton, MO 63044

LAB USE ONLY	Cannister ID	Sample Start	Sample End	SAMPLE IDENTIFICATION	SAMPLE DATE	SAMPLE TIME	CONTAINER QTY/TYPE	MATRIX	PRESERVATION	ANALYSIS REQUEST
I-12406-01	5921	-21.1	-5	GEW 10	12/12/2017	1332	C	LFG	NA	D1946 + CO, H2
-02	A7816	-20.7	-5	GEW 110	12/12/2017	1343	C	LFG	NA	-3
-03	A7810	-20.5	-5	GIW 13	12/12/2017	1353	C	LFG	NA	-4
-04	A7744	-20.8	-5	GIW 12	12/12/2017	1403	C	LFG	NA	-4
-05	A7809	-20.7	-5	GEW 56R	12/12/2017	1415	C	LFG	NA	-3.5
-06	3156	-20.5	-5	GIW 11	12/12/2017	1425	C	LFG	NA	-3.5
-07	5818	-20.5	-5	GIW 1	12/12/2017	1449	C	LFG	NA	-4
-08	A7776	-20.7	-5	GIW 2	12/12/2017	1501	C	LFG	NA	-4
-09	A7818	-20.6	-5	GIW 3	12/12/2017	1521	C	LFG	NA	-4
-10	A7648	-20.8	-5	GIW 4	12/12/2017	1532	C	LFG	NA	-4

COMMENTS

AUTHORIZATION TO PERFORM WORK: Dave Penoyer COMPANY: Republic Services

SAMPLED BY: Anthony Kimutis DATE/TIME: 12-13-17

RELINQUISHED BY: [Signature] DATE/TIME: 12-13-17 RECEIVED BY: Republic Services

RELINQUISHED BY: [Signature] DATE/TIME: 12/14/17 RECEIVED BY: [Signature] DATE/TIME: 0857

RELINQUISHED BY: [Signature] DATE/TIME: [Signature] DATE/TIME: [Signature]

METHOD OF TRANSPORT (circle one): Walk-In FedEx UPS Courier ATLI Other _____

DISTRIBUTION: White & Yellow - Lab Copies / Pink - Customer Copy

Preservation: H=HCl N=None / Container: B=Bag C=Can V=VOA O=Other Rev. 03 - 5/7/09

AIRTECHNOLOGY
Laboratories, Inc.
18501 E. Gale Ave., Suite 130
City of Industry, CA 91748
Ph: 626-964-4032
Fx: 626-964-5832

CHAIN OF CUSTODY RECORD

TURNAROUND TIME PAGE: 2 OF 5

Standard 48 hours EDD Condition upon receipt:
 Same Day 72 hours EDF Sealed Yes No
 24 hours 96 hours Level 3 Intact Yes No
 Other: 5 Day AYZ Level 4 Chilled _____ deg C

BILLING

P.O. No.: PO6312552
 Bill to: Republic Services
 Attn: Mike Lambrich
 13570 St. Charles Rock Rd.
 Bridgeton, MO 63044

LAB USE ONLY	Cannister Pressure ("hg)		SAMPLE IDENTIFICATION		SAMPLE DATE	SAMPLE TIME	CONTAINER QTY/TYPE	MATRIX	PRESERVATION	DELIVERABLES	ANALYSIS REQUEST
	Cannister ID	Sample Start	Sample End								
I12-14-06 -11	A7748	-20.5	-5	GIW 10	12/12/2017	1544	C	LFG	NA	X	D1946 + CO, H2
I12-14-06 -12	A7775	-20.6	-5	GIW 5	12/12/2017	1555	C	LFG	NA	X	
							C	LFG	NA	X	
							C	LFG	NA	X	
							C	LFG	NA	X	
							C	LFG	NA	X	
							C	LFG	NA	X	
							C	LFG	NA	X	
							C	LFG	NA	X	
							C	LFG	NA	X	

COMMENTS

AUTHORIZATION TO PERFORM WORK: Dave Penoyer COMPANY: Republic Services

SAMPLED BY: Anthony Kimutis DATE/TIME: 12/13/17

RELINQUISHED BY: [Signature] DATE/TIME: 12/13/17 RECEIVED BY: [Signature] DATE/TIME: 12/13/17

RELINQUISHED BY: [Signature] DATE/TIME: 12/14/17 RECEIVED BY: [Signature] DATE/TIME: 0957

RELINQUISHED BY: [Signature] DATE/TIME: DATE/TIME: RECEIVED BY: DATE/TIME:

METHOD OF TRANSPORT (circle one): Walk-In FedEx UPS Courier ATLI Other: _____

DISTRIBUTION: White & Yellow - Lab Copies / Pink - Customer Copy

AIRTECHNOLOGY
Laboratories, Inc.

18501 E. Gale Ave., Suite 130
City of Industry, CA 91748
Ph: 626-964-4032
Fx: 626-964-5832

CHAIN OF CUSTODY RECORD PAGE: 3 OF 5

TURNAROUND TIME DELIVERABLES

Standard 48 hours EDD Condition upon receipt:
 Same Day 72 hours EDF Sealed Yes No
 24 hours 96 hours Level 3 Intact Yes No
 Other: 5 Day Level 4 Chilled _____ deg C

BILLING

P.O. No.: PO6312552
 Bill to: Republic Services
 Attn: Mike Lambrich
 13570 St. Charles Rock Rd.
 Bridgeton, MO 63044

LAB USE ONLY	Cannister Pressure ("hg)		SAMPLE IDENTIFICATION		SAMPLE DATE	SAMPLE TIME	CONTAINER QTY/TYPE	MATRIX	PRESERVATION	ANALYSIS REQUEST
	Cannister ID	Sample Start	Sample End							
I 12-1406-13	3837	-21	-5	GEW 46R	12/12/2017	943	C	LFG	NA	X
-14	5309	-21	-5	GEW 2	12/12/2017	957	C	LFG	NA	X
-15	6144	-20.9	-5	GEW 3	12/12/2017	1014	C	LFG	NA	X
-16	A7751	-20.7	-5	GEW 46R <u>12/14/17</u>	12/12/2017	1027	C	LFG	NA	X
-17	5813	-20.5	-5	GEW 45R	12/12/2017	1101	C	LFG	NA	X
-18	4657	-20.8	-5	GEW 47R	12/12/2017	1118	C	LFG	NA	X
-19	6158	-20.6	-5	GEW 48	12/12/2017	1141	C	LFG	NA	X
-20	4644	-20.7	-5	GEW 5	12/12/2017	1337	C	LFG	NA	X
-21	A8063	-20.7	-5	GEW 49	12/12/2017	1404	C	LFG	NA	X
-22	A7803	-20.5	-5	GEW 54	12/12/2017	1416	C	LFG	NA	X

COMMENTS

AUTHORIZATION TO PERFORM WORK: Dave Penoyer COMPANY: Republic Services

SAMPLED BY: Ronald Baker DATE/TIME: 12/13/17

RELINQUISHED BY: [Signature] DATE/TIME: 12/13/17 RECEIVED BY: Republic Services

RELINQUISHED BY: [Signature] DATE/TIME: 12/14/17 0957 RECEIVED BY: [Signature] DATE/TIME: 12/14/17 0957

RELINQUISHED BY: [Signature] DATE/TIME: DATE/TIME: RECEIVED BY: DATE/TIME:

METHOD OF TRANSPORT (circle one): Walk-In FedEx UPS Courier ATLI Other _____

DISTRIBUTION: White & Yellow - Lab Copies / Pink - Customer Copy Preservation: H=HCl N=None / Container: B=Bag C=Can V=VOA O=Other

AMT TECHNOLOGY
Laboratories, Inc.
18501 E. Gale Ave., Suite 130
City of Industry, CA 91748
Ph: 626-964-4032
Fx: 626-964-5832

Project No.: _____
Project Name: Bridgeton Landfill
Report To: Mike Lambrich
Company: Republic Services
Street: 13570 St. Charles Rock Rd.
City/State/Zip: Bridgeton, MO 63044
Phone & Fax: 314-683-3921
e-mail: nbauer@republicservices.com

CHAIN OF CUSTODY RECORD PAGE: 4 OF 5

TURNAROUND TIME DELIVERABLES

Standard 48 hours EDD Condition upon receipt:
Same Day 72 hours EDF Sealed Yes No
24 hours 96 hours Level 3 Intact Yes No
Other: *5 Days* Level 4 Chilled _____ deg C

BILLING

P.O. No.: PO6312552
Bill to: Republic Services
Attn: Mike Lambrich
13570 St. Charles Rock Rd.
Bridgeton, MO 63044

LAB USE ONLY	Cannister Pressure ("hg)		SAMPLE IDENTIFICATION	SAMPLE DATE	SAMPLE TIME	CONTAINER QTY/TYPE	MATRIX	PRESERVATION	ANALYSIS REQUEST
	Cannister ID	Sample Start							
<i>T121406-23</i>	5269	-20.6	-5 GEW 55	12/12/2017	1428	C	LFG	NA	X
<i>-24</i>	A8072	-19.9	-5 GEW 9	12/13/2017	911	C	LFG	NA	X
<i>-25</i>	5305	-20	-5 GEW 8	12/13/2017	924	C	LFG	NA	X
<i>-26</i>	5308	-19.8	-5 GEW 53	12/13/2017	937	C	LFG	NA	X
<i>-27</i>	A8086	-19.9	-5 GEW 40	12/13/2017	951	C	LFG	NA	X
<i>-28</i>	A7646	-19.7	-5 GEW 42R	12/13/2017	1009	C	LFG	NA	X
<i>-29</i>	5833	-19.8	-5 GIW 6	12/13/2017	1058	C	LFG	NA	X
<i>-30</i>	A7779	-19.3	-5 GIW 7	12/13/2017	1109	C	LFG	NA	X
<i>-31</i>	6160	-20	-5 GIW 8	12/13/2017	1120	C	LFG	NA	X
<i>-32</i>	5929	-19.6	-5 GEW 38	12/13/2017	1130	C	LFG	NA	X

COMMENTS

AUTHORIZATION TO PERFORM WORK: Dave Penoyer COMPANY: Republic Services

SAMPLED BY: Ronald Baker DATE/TIME: 12/13/17

RELINQUISHED BY: [Signature] DATE/TIME: 12/13/17

RECEIVED BY: [Signature] DATE/TIME: 12/14/17 0957

RECEIVED BY: [Signature] DATE/TIME: 12/14/17 0957

METHOD OF TRANSPORT (circle one): Walk-In FedEx UPS Courier ATLI Other _____

DISTRIBUTION: White & Yellow - Lab Copies / Pink - Customer Copy

Preservation: H=HCl N=None / Container: B=Bag C=Can V=VOA O=Other Rev. 03 - 5/7/09



18501 E. Gale Ave., Suite 130
City of Industry, CA 91748
Ph: 626-964-4032
FX: 626-964-5832

Project No.: _____
Project Name: Bridgeton Landfill
Report To: Mike Lambrich
Company: Republic Services
Street: 13570 St. Charles Rock Rd.
City/State/Zip: Bridgeton, MO 63044
Phone & Fax: 314-683-3921
e-mail: MIambrich@republicservices.com

LAB USE ONLY	Cannister Pressure ("hg)		SAMPLE IDENTIFICATION		SAMPLE DATE	CONTAINER QTY/TPE	MATRIX	PRESERVA-TION	DELIVERABLES	PAGES	OF
	Cannister ID	Sample Start	Sample End	SAMPLE ID							
I121406-33	5936	-19.6	-5	GIW 9	12/13/2017	C	LFG	NA	X	5	5
↓ -34	5310	-19.5	-5	GEW 109	12/13/2017	C	LFG	NA	X	5	5
-35	3839	-19.3	-5	GEW 39	12/13/2017	C	LFG	NA	X	5	5
						C	LFG	NA	X		
						C	LFG	NA	X		
						C	LFG	NA	X		
						C	LFG	NA	X		
						C	LFG	NA	X		
						C	LFG	NA	X		
						C	LFG	NA	X		

D1946 + CO, H2

INITIAL PRESS

CHAIN OF CUSTODY RECORD

TURNAROUND TIME
 Standard 48 hours
 Same Day 72 hours
 24 hours 96 hours
 Other: _____

DELIVERABLES
 EDD
 EDF
 Level 3
 Level 4

Condition upon receipt:
 Sealed Yes No
 Intact Yes No
 Chilled _____ deg C

ANALYSIS REQUEST

BILLING

P.O. No.: P06312552
Bill to: Republic Services
 Attn: Mike Lambrich
 13570 St. Charles Rock Rd.
 Bridgeton, MO 63044

AUTHORIZATION TO PERFORM WORK: Dave Penoyer
COMPANY: Republic Services

SAMPLED BY: Ronald Baker
COMPANY: Republic Services

RECEIVED BY: _____
DATE/TIME: _____

RECEIVED BY: [Signature]
DATE/TIME: 12/14/17 0857

RECEIVED BY: [Signature]
DATE/TIME: _____

METHOD OF TRANSPORT (circle one): Walk-In FedEx UPS Courier ATLI Other _____

COMMENTS:

Client: Republic Services
Attn: Mike Lambrich
Project Name: Bridgeton Landfill
Project No.: NA
Date Received: 12/14/17
Matrix: Air
Reporting Units: % v/v

ASTM D1946

Lab No.:	I121406-01	I121406-02	I121406-03	I121406-04
Client Sample I.D.:	GEW 10	GEW 110	GIW 13	GIW 12
Date/Time Sampled:	12/12/17 13:32	12/12/17 13:43	12/12/17 13:53	12/12/17 14:03
Date/Time Analyzed:	12/15/17 10:08	12/15/17 10:23	12/15/17 10:37	12/15/17 11:21
QC Batch No.:	171214GC8A2	171214GC8A2	171214GC8A2	171214GC8A2
Analyst Initials:	AS	AS	AS	AS
Dilution Factor:	2.8	3.0	3.0	2.9

ANALYTE	I121406-01		I121406-02		I121406-03		I121406-04	
	Result % v/v	RL % v/v	Result % v/v	RL % v/v	Result % v/v	RL % v/v	Result % v/v	RL % v/v
Hydrogen	ND d	0.028	27	3.0	20	3.0	9.4	2.9
Carbon Dioxide	40	0.028	38	0.030	56	0.030	33	0.029
Oxygen/Argon	ND	1.4	4.2	1.5	ND	1.5	6.7	1.4
Nitrogen	ND	2.8	19	3.0	5.5	3.0	37	2.9
Methane	57	0.0028	12	0.0030	17	0.0030	14	0.0029
Carbon Monoxide	ND	0.0028	0.099	0.0030	0.061	0.0030	0.047	0.0029

Results normalized including non-methane hydrocarbons
 ND = Not Detected (below RL)
 RL = Reporting Limit
 d = Reported from a secondary analysis. QC Batch: 171218GC8A2

Reviewed/Approved By: 
 Mark Johnson
 Operations Manager

Date 12-21-17

The cover letter is an integral part of this analytical report



Client: Republic Services
 Attn: Mike Lambrich
 Project Name: Bridgeton Landfill
 Project No.: NA
 Date Received: 12/14/17
 Matrix: Air
 Reporting Units: % v/v

ASTM D1946


Lab No.:	I121406-05	I121406-06	I121406-07	I121406-08
Client Sample I.D.:	GEW 56R	GIW 11	GIW 1	GIW 2
Date/Time Sampled:	12/12/17 14:15	12/12/17 14:25	12/12/17 14:49	12/12/17 15:01
Date/Time Analyzed:	12/15/17 11:35	12/15/17 11:50	12/15/17 12:04	12/15/17 12:19
QC Batch No.:	171214GC8A2	171214GC8A2	171214GC8A2	171214GC8A2
Analyst Initials:	AS	AS	AS	AS
Dilution Factor:	2.9	3.0	3.0	3.0

ANALYTE	Result	RL	Result	RL	Result	RL	Result	RL
	% v/v	% v/v	% v/v	% v/v	% v/v	% v/v	% v/v	% v/v
Hydrogen	22	2.9	18	3.0	5.0	3.0	11	3.0
Carbon Dioxide	47	0.029	46	0.030	43	0.030	32	0.030
Oxygen/Argon	ND	1.4	ND	1.5	6.1	1.5	7.3	1.5
Nitrogen	20	2.9	6.4	3.0	30	3.0	43	3.0
Methane	9.9	0.0029	29	0.0030	16	0.0030	5.7	0.0030
Carbon Monoxide	0.092	0.0029	0.059	0.0030	0.023	0.0030	0.055	0.0030

Results normalized including non-methane hydrocarbons

ND = Not Detected (below RL)

RL = Reporting Limit

Reviewed/Approved By: 
 Mark Johnson
 Operations Manager

Date 12-21-17

The cover letter is an integral part of this analytical report



Client: Republic Services
 Attn: Mike Lambrich
 Project Name: Bridgeton Landfill
 Project No.: NA
 Date Received: 12/14/17
 Matrix: Air
 Reporting Units: % v/v

ASTM D1946


Lab No.:	I121406-09	I121406-10	I121406-11	I121406-12
Client Sample I.D.:	GIW 3	GIW 4	GIW 10	GIW 5
Date/Time Sampled:	12/12/17 15:21	12/12/17 15:32	12/12/17 15:44	12/12/17 15:55
Date/Time Analyzed:	12/15/17 14:17	12/15/17 14:31	12/15/17 14:46	12/15/17 15:00
QC Batch No.:	171215GC8A1	171215GC8A1	171215GC8A1	171215GC8A1
Analyst Initials:	AS	AS	AS	AS
Dilution Factor:	3.0	3.0	3.0	3.0

ANALYTE	Result	RL	Result	RL	Result	RL	Result	RL
	% v/v	% v/v	% v/v	% v/v	% v/v	% v/v	% v/v	% v/v
Hydrogen	37	3.0	6.0	3.0	34	3.0	11	3.0
Carbon Dioxide	59	0.030	5.6	0.030	42	0.030	8.7	0.030
Oxygen/Argon	ND	1.5	20	1.5	ND	1.5	18	1.5
Nitrogen	ND	3.0	69	3.0	17	3.0	62	3.0
Methane	1.1	0.0030	0.096	0.0030	6.1	0.0030	0.32	0.0030
Carbon Monoxide	0.19	0.0030	0.028	0.0030	0.066	0.0030	0.012	0.0030

Results normalized including non-methane hydrocarbons

ND = Not Detected (below RL)

RL = Reporting Limit

Reviewed/Approved By: 
 Mark Johnson
 Operations Manager

Date 12-21-17

The cover letter is an integral part of this analytical report



Client: Republic Services
 Attn: Mike Lambrich
 Project Name: Bridgeton Landfill
 Project No.: NA
 Date Received: 12/14/17
 Matrix: Air
 Reporting Units: % v/v

ASTM D1946

Lab No.:	I121406-13	I121406-14	I121406-15	I121406-16				
Client Sample I.D.:	GEW 46R	GEW 2	GEW 3	GEW 4				
Date/Time Sampled:	12/12/17 9:43	12/12/17 9:57	12/12/17 10:14	12/12/17 10:27				
Date/Time Analyzed:	12/15/17 15:30	12/15/17 15:15	12/15/17 15:44	12/15/17 15:59				
QC Batch No.:	171215GC8A1	171215GC8A1	171215GC8A1	171215GC8A1				
Analyst Initials:	AS	AS	AS	AS				
Dilution Factor:	2.8	2.8	2.8	2.9				
ANALYTE	Result % v/v	RL % v/v	Result % v/v	RL % v/v	Result % v/v	RL % v/v	Result % v/v	RL % v/v
Hydrogen	0.039 d	0.028	ND d	0.028	0.067 d	0.028	0.094 d	0.029
Carbon Dioxide	38	0.028	40	0.028	36	0.028	38	0.029
Oxygen/Argon	ND	1.4	ND	1.4	ND	1.4	ND	1.4
Nitrogen	4.2	2.8	4.4	2.8	14	2.8	9.3	2.9
Methane	57	0.0028	54	0.0028	49	0.0028	52	0.0029
Carbon Monoxide	ND	0.0028	ND	0.0028	ND	0.0028	ND	0.0029

Results normalized including non-methane hydrocarbons
 ND = Not Detected (below RL)
 RL = Reporting Limit
 d = Reported from a secondary analysis. QC Batch: 171218GC8A2

Reviewed/Approved By: Mark Johnson
 Mark Johnson
 Operations Manager

Date: 1/17/18

The cover letter is an integral part of this analytical report



Client: Republic Services
Attn: Mike Lambrich
Project Name: Bridgeton Landfill
Project No.: NA
Date Received: 12/14/17
Matrix: Air
Reporting Units: % v/v

ASTM D1946

Lab No.:	I121406-17	I121406-18	I121406-19	I121406-20				
Client Sample I.D.:	GEW 45R	GEW 47R	GEW 48	GEW 5				
Date/Time Sampled:	12/12/17 11:01	12/12/17 11:18	12/12/17 11:41	12/12/17 13:37				
Date/Time Analyzed:	12/18/17 9:41	12/18/17 9:55	12/18/17 10:10	12/18/17 10:24				
QC Batch No.:	171218GC8A1	171218GC8A1	171218GC8A1	171218GC8A1				
Analyst Initials:	AS	AS	AS	AS				
Dilution Factor:	3.0	2.9	3.0	2.9				
ANALYTE	Result	RL	Result	RL	Result	RL	Result	RL
	% v/v	% v/v	% v/v	% v/v	% v/v	% v/v	% v/v	% v/v
Hydrogen	ND d	0.030	0.032 d	0.029	ND d	0.030	ND d	0.029
Carbon Dioxide	36	0.030	36	0.029	38	0.030	34	0.029
Oxygen/Argon	ND	1.5	1.5	1.4	ND	1.5	ND	1.4
Nitrogen	ND	3.0	14	2.9	6.6	3.0	19	2.9
Methane	61	0.0030	48	0.0029	55	0.0030	46	0.0029
Carbon Monoxide	ND	0.0030	ND	0.0029	ND	0.0030	ND	0.0029

Results normalized including non-methane hydrocarbons

ND = Not Detected (below RL)

RL = Reporting Limit

d = Reported from a secondary analysis. QC Batch: 171218GC8A2

Reviewed/Approved By: 

Mark Johnson
Operations Manager

Date 12-21-17

The cover letter is an integral part of this analytical report



Client: Republic Services
Attn: Mike Lambrich
Project Name: Bridgeton Landfill
Project No.: NA
Date Received: 12/14/17
Matrix: Air
Reporting Units: % v/v

ASTM D1946

Lab No.:	I121406-21	I121406-22	I121406-23	I121406-24				
Client Sample I.D.:	GEW 49	GEW 54	GEW 55	GEW 9				
Date/Time Sampled:	12/12/17 14:04	12/12/17 14:16	12/12/17 14:28	12/13/17 9:11				
Date/Time Analyzed:	12/18/17 10:39	12/18/17 10:53	12/18/17 11:08	12/18/17 11:23				
QC Batch No.:	171218GC8A1	171218GC8A1	171218GC8A1	171218GC8A1				
Analyst Initials:	AS	AS	AS	AS				
Dilution Factor:	3.0	3.0	3.0	3.1				
ANALYTE	Result % v/v	RL % v/v	Result % v/v	RL % v/v	Result % v/v	RL % v/v	Result % v/v	RL % v/v
Hydrogen	0.056 d	0.030	2.5 d	0.030	2.1 d	0.030	0.70 d	0.031
Carbon Dioxide	36	0.030	41	0.030	40	0.030	38	0.031
Oxygen/Argon	ND	1.5	ND	1.5	ND	1.5	ND	1.5
Nitrogen	10.0	3.0	ND	3.0	3.0	3.0	11	3.1
Methane	53	0.0030	54	0.0030	54	0.0030	50	0.0031
Carbon Monoxide	ND	0.0030	ND	0.0030	0.0032	0.0030	ND	0.0031

Results normalized including non-methane hydrocarbons

ND = Not Detected (below RL)

RL = Reporting Limit

d = Reported from a secondary analysis. QC Batch: 171218GC8A2

Reviewed/Approved By: _____



Mark Johnson
Operations Manager

Date

12-21-17

The cover letter is an integral part of this analytical report




Client: Republic Services
Attn: Mike Lambrich
Project Name: Bridgeton Landfill
Project No.: NA
Date Received: 12/14/17
Matrix: Air
Reporting Units: % v/v

ASTM D1946

Lab No.:	I121406-25	I121406-26	I121406-27	I121406-28				
Client Sample I.D.:	GEW 8	GEW 53	GEW 40	GEW 42R				
Date/Time Sampled:	12/13/17 9:24	12/13/17 9:37	12/13/17 9:51	12/13/17 10:09				
Date/Time Analyzed:	12/18/17 11:37	12/18/17 11:52	12/18/17 12:06	12/18/17 12:21				
QC Batch No.:	171218GC8A1	171218GC8A1	171218GC8A1	171218GC8A1				
Analyst Initials:	AS	AS	AS	AS				
Dilution Factor:	3.2	3.2	3.2	3.2				
ANALYTE	Result % v/v	RL % v/v	Result % v/v	RL % v/v	Result % v/v	RL % v/v	Result % v/v	RL % v/v
Hydrogen	1.5 d	0.032	5.1	3.2	ND d	0.032	ND d	0.032
Carbon Dioxide	41	0.032	41	0.032	39	0.032	39	0.032
Oxygen/Argon	ND	1.6	ND	1.6	ND	1.6	ND	1.6
Nitrogen	3.4	3.2	ND	3.2	ND	3.2	ND	3.2
Methane	53	0.0032	51	0.0032	58	0.0032	57	0.0032
Carbon Monoxide	ND	0.0032	0.0062	0.0032	ND	0.0032	ND	0.0032

Results normalized including non-methane hydrocarbons
 ND = Not Detected (below RL)
 RL = Reporting Limit
 d = Reported from a secondary analysis. QC Batch: 171218GC8A2

Reviewed/Approved By: 
 Mark Johnson
 Operations Manager

Date 12-21-17

The cover letter is an integral part of this analytical report



Client: Republic Services
Attn: Mike Lambrich
Project Name: Bridgeton Landfill
Project No.: NA
Date Received: 12/14/17
Matrix: Air
Reporting Units: % v/v

ASTM D1946

Lab No.:	I121406-29	I121406-30	I121406-31	I121406-32				
Client Sample I.D.:	GIW 6	GIW 7	GIW 8	GEW 38				
Date/Time Sampled:	12/13/17 10:58	12/13/17 11:09	12/13/17 11:20	12/13/17 11:30				
Date/Time Analyzed:	12/18/17 12:35	12/18/17 12:50	12/18/17 13:04	12/18/17 13:19				
QC Batch No.:	171218GC8A1	171218GC8A1	171218GC8A1	171218GC8A1				
Analyst Initials:	AS	AS	AS	AS				
Dilution Factor:	3.2	3.2	3.2	3.2				
ANALYTE	Result	RL	Result	RL	Result	RL	Result	RL
	% v/v	% v/v	% v/v	% v/v	% v/v	% v/v	% v/v	% v/v
Hydrogen	43	3.2	6.3	3.2	0.68 d	0.032	42	3.2
Carbon Dioxide	50	0.032	58	0.032	51	0.032	53	0.032
Oxygen/Argon	ND	1.6	2.6	1.6	ND	1.6	ND	1.6
Nitrogen	3.5	3.2	14	3.2	22	3.2	ND	3.2
Methane	1.7	0.0032	19	0.0032	25	0.0032	0.89	0.0032
Carbon Monoxide	0.083	0.0032	0.034	0.0032	0.0082	0.0032	0.22	0.0032

Results normalized including non-methane hydrocarbons
 ND = Not Detected (below RL)
 RL = Reporting Limit
 d = Reported from a secondary analysis. QC Batch: 171218GC8A2

Reviewed/Approved By: 
 Mark Johnson
 Operations Manager

Date 12-21-17

The cover letter is an integral part of this analytical report



Client: Republic Services
Attn: Mike Lambrich
Project Name: Bridgeton Landfill
Project No.: NA
Date Received: 12/14/17
Matrix: Air
Reporting Units: % v/v

ASTM D1946

Lab No.:	I121406-33	I121406-34	I121406-35						
Client Sample I.D.:	GIW 9	GEW 109	GEW 39						
Date/Time Sampled:	12/13/17 11:45	12/13/17 11:56	12/13/17 12:06						
Date/Time Analyzed:	12/18/17 13:34	12/18/17 13:48	12/18/17 14:03						
QC Batch No.:	171218GC8A1	171218GC8A1	171218GC8A1						
Analyst Initials:	AS	AS	AS						
Dilution Factor:	3.2	3.2	3.2						
ANALYTE	Result % v/v	RL % v/v	Result % v/v	RL % v/v	Result % v/v	RL % v/v			
Hydrogen	5.0	3.2	13	3.2	ND	d	0.032		
Carbon Dioxide	21	0.032	35	0.032	48		0.032		
Oxygen/Argon	5.9	1.6	3.1	1.6	ND		1.6		
Nitrogen	55	3.2	22	3.2	5.1		3.2		
Methane	13	0.0032	26	0.0032	46		0.0032		
Carbon Monoxide	0.015	0.0032	0.034	0.0032	ND		0.0032		

Results normalized including non-methane hydrocarbons

ND = Not Detected (below RL)

RL = Reporting Limit

d = Reported from a secondary analysis. QC Batch: 171218GC8A2

Reviewed/Approved By:  _____

Mark Johnson
Operations Manager

Date 12-21-17

The cover letter is an integral part of this analytical report




QC Batch No: 171214GC8A2
Matrix: Air
Reporting Units: % v/v

**ASTM D1946
LABORATORY CONTROL SAMPLE SUMMARY**

Lab No.:	METHOD BLANK			LCS		LCSD					
Date Analyzed:	12/14/17 15:01			12/14/17 14:18		12/14/17 14:32					
Analyst Initials:	AS			AS		AS					
Dilution Factor:	1.0			1.0		1.0		Limits			
ANALYTE	Result % v/v	RL % v/v	SPIKE AMT. % v/v	Result % v/v	% Rec.	Result % v/v	% Rec.	RPD %	Low %Rec	High %Rec	Max. RPD
Hydrogen	ND	1.0	5.0	5.55	111	5.54	111	0.2	70	130	30
Carbon Dioxide	ND	0.010	10	9.55	95	9.54	95	0.2	70	130	30
Oxygen/Argon	ND	0.50	15	16.2	109	16.2	109	0.2	70	130	30
Nitrogen	ND	1.0	70	72.8	104	72.6	104	0.2	70	130	30
Methane	ND	0.0010	0.10	0.105	105	0.105	105	0.4	70	130	30
Carbon Monoxide	ND	0.0010	0.10	0.104	104	0.103	103	0.4	70	130	30

ND = Not Detected (below RL)

RL = Reporting Limit

Reviewed/Approved By: 
Mark Johnson
Operations Manager

Date: 12-21-17

The cover letter is an integral part of this analytical report




QC Batch No: 171215GC8A1
Matrix: Air
Reporting Units: % v/v

**ASTM D1946
LABORATORY CONTROL SAMPLE SUMMARY**

Lab No.:	METHOD BLANK			LCS		LCSD					
Date Analyzed:	12/15/17 14:01			12/15/17 13:17		12/15/17 13:32					
Analyst Initials:	AS			AS		AS					
Dilution Factor:	1.0			1.0		1.0		Limits			
ANALYTE	Result % v/v	RL % v/v	SPIKE AMT. % v/v	Result % v/v	% Rec.	Result % v/v	% Rec.	RPD %	Low %Rec	High %Rec	Max. RPD
Hydrogen	ND	1.0	5.0	3.53	71	3.59	72	1.8	70	130	30
Carbon Dioxide	ND	0.010	10	8.71	87	8.75	87	0.4	70	130	30
Oxygen/Argon	ND	0.50	15	17.1	116	17.2	116	0.5	70	130	30
Nitrogen	ND	1.0	70	74.1	106	74.4	106	0.4	70	130	30
Methane	ND	0.0010	0.10	0.0971	97	0.0966	97	0.5	70	130	30
Carbon Monoxide	ND	0.0010	0.10	0.0955	95	0.0950	95	0.4	70	130	30

ND = Not Detected (below RL)

RL = Reporting Limit

Reviewed/Approved By: 
Mark Johnson
Operations Manager

Date 12-21-17

The cover letter is an integral part of this analytical report




QC Batch No: 171218GC8A1
 Matrix: Air
 Reporting Units: % v/v

**ASTM D1946
 LABORATORY CONTROL SAMPLE SUMMARY**

Lab No.:	METHOD BLANK			LCS		LCSD					
Date Analyzed:	12/18/17 9:25			12/18/17 8:56		12/18/17 9:11					
Analyst Initials:	AS			AS		AS					
Dilution Factor:	1.0			1.0		1.0		Limits			
ANALYTE	Result % v/v	RL % v/v	SPIKE AMT. % v/v	Result % v/v	% Rec.	Result % v/v	% Rec.	RPD %	Low %Rec	High %Rec	Max. RPD
Hydrogen	ND	1.0	5.0	5.92	118	5.90	118	0.3	70	130	30
Carbon Dioxide	ND	0.010	10	9.57	96	9.46	94	1.1	70	130	30
Oxygen/Argon	ND	0.50	15	16.1	109	16.1	109	0.2	70	130	30
Nitrogen	ND	1.0	70	71.8	103	71.7	102	0.2	70	130	30
Methane	ND	0.0010	0.10	0.108	108	0.108	108	0.4	70	130	30
Carbon Monoxide	ND	0.0010	0.10	0.106	106	0.106	106	0.4	70	130	30

ND = Not Detected (below RL)

RL = Reporting Limit

Reviewed/Approved By: 
 Mark Johnson
 Operations Manager

Date 12-21-17

The cover letter is an integral part of this analytical report




QC Batch # 171218GC8A2
Matrix: Air
Units: % v/v

QC for Low Level Hydrogen Analysis

Lab No.:	Blank	LCS	LCSD					
Date Analyzed:	12/18/2017 15:29	12/18/2017 15:20	12/18/2017 15:24					
Analyst Initials:	AS	AS	AS					
Dilution Factor:	1.0	1.0	1.0					
ANALYTE	Results	RL	%Rec	Criteria	%Rec	Criteria	RPD	Criteria
Hydrogen	ND	0.01	100	70-130	102	70-130	1.1	<20

ND = Not Detected (Below RL)

RL = PQL X Dilution Factor

Reviewed/Approved By: 
Mark Johnson
Operations Manager

Date: 12-21-17

The cover letter is an integral part of this analytical report.



ATTACHMENT E
GAS WELLFIELD DATA

ATTACHMENT E-1
WELLFIELD DATA TABLE

December 2017 Wellfield Monitoring Data - Bridgeton Landfill

Well Name	Date Sampled	Methane	CO ₂	O ₂	Balance Gas	Init Temp	Adj Temp	Init Flow	Adj Flow	Init Static Press	Adj Static Press	System Pressure
		(% vol)				°F		scfm		H ₂ O		
GEW-002	12/6/2017 10:23	55.6	40.4	0.0	4.0	105.1	105.2	15.7	15.7	-0.2	-0.2	-14.0
GEW-002	12/11/2017 11:03	55.6	42.1	0.0	2.3	103.8	103.0	35.4	35.4	-0.2	-0.2	-13.5
GEW-002	12/12/2017 9:53	55.3	42.4	0.0	2.3	101.8	101.8	9.2	7.9	0.2	0.2	-14.6
GEW-002	12/12/2017 10:03	55.3	43.4	0.0	1.3	101.6	101.8	0.0	0.0	0.2	0.2	-14.6
GEW-002	12/14/2017 8:03	53.2	45.2	0.0	1.6	101.3	101.3	12.8	3.9	-0.3	-0.3	-14.6
GEW-002	12/20/2017 10:29	54.3	42.2	0.0	3.5	114.5	114.4	5.4	6.0	0.5	0.5	-14.1
GEW-002	12/20/2017 10:33	53.4	43.3	0.0	3.3	118.0	118.1	12.0	12.6	0.3	0.3	-14.1
GEW-002	12/21/2017 10:17	55.6	41.6	0.0	2.8	117.6	117.6	14.7	14.1	0.4	0.4	-14.1
GEW-002	12/21/2017 10:20	54.5	42.5	0.0	3.0	121.5	120.7	25.9	29.8	-0.1	-0.1	-15.0
GEW-002	12/26/2017 13:53	53.8	38.4	0.0	7.8	112.5	112.5	19.3	25.5	-0.5	-0.5	-15.6
GEW-003	12/6/2017 10:27	47.9	37.5	0.0	14.6	108.7	108.9	12.1	14.4	-0.5	-0.5	-14.0
GEW-003	12/11/2017 11:06	52.1	39.8	0.0	8.1	110.8	110.8	16.6	15.6	0.3	0.3	-13.0
GEW-003	12/11/2017 11:08	52.2	39.4	0.0	8.4	110.7	110.7	0.0	0.0	0.3	0.3	-13.1
GEW-003	12/12/2017 10:10	48.4	35.0	0.0	16.6	108.2	108.5	10.7	12.1	-0.5	-0.6	-14.0
GEW-003	12/12/2017 10:18	48.0	38.4	0.0	13.6	108.5	108.5	41.6	42.5	-0.6	-0.6	-14.3
GEW-003	12/15/2017 10:46	48.7	39.2	0.0	12.1	109.5	109.5	28.3	28.7	-0.5	-0.5	-14.2
GEW-003	12/15/2017 10:48	47.7	39.3	0.0	13.0	109.7	109.5	10.3	11.7	-0.5	-0.5	-14.2
GEW-003	12/20/2017 10:37	46.7	39.0	0.0	14.3	111.5	111.5	10.5	15.3	-0.4	-0.4	-13.8
GEW-003	12/26/2017 13:58	44.2	36.9	0.0	18.9	105.5	105.3	18.6	16.4	-0.5	-0.6	-14.2
GEW-003	12/26/2017 14:00	43.1	37.3	0.0	19.6	105.4	105.3	0.0	10.7	-0.5	-0.5	-14.5
GEW-004	12/6/2017 10:30	51.6	39.9	0.0	8.5	113.9	113.8	11.7	14.0	-0.4	-0.4	-14.0
GEW-004	12/11/2017 11:11	52.8	38.5	0.0	8.7	115.0	115.1	12.9	12.9	0.3	0.3	-13.3
GEW-004	12/11/2017 11:12	52.8	40.4	0.0	6.8	116.6	116.7	21.8	7.8	0.2	0.2	-12.7
GEW-004	12/12/2017 10:22	50.9	39.4	0.0	9.7	116.6	116.3	13.5	14.3	-0.6	-0.6	-14.6
GEW-004	12/12/2017 10:29	51.6	39.2	0.0	9.2	116.6	116.6	17.4	11.3	-0.6	-0.7	-14.4
GEW-004	12/15/2017 10:51	49.6	39.5	0.0	10.9	116.3	116.4	15.3	13.5	-0.5	-0.6	-14.2
GEW-004	12/15/2017 10:52	49.4	39.9	0.0	10.7	116.4	116.5	15.5	15.5	-0.5	-0.5	-14.1
GEW-004	12/20/2017 10:40	47.0	37.5	0.0	15.5	117.6	118.1	11.4	12.9	-0.5	-0.5	-13.8
GEW-004	12/26/2017 14:04	44.6	37.8	0.0	17.6	114.3	114.3	12.0	14.6	-0.4	-0.5	-14.4
GEW-004	12/26/2017 14:05	44.6	39.0	0.0	16.4	114.8	114.5	38.7	38.1	-0.5	-0.5	-14.2
GEW-005	12/6/2017 8:34	43.9	36.7	0.0	19.4	87.4	87.4	37.6	16.9	-0.4	-0.4	-14.4
GEW-005	12/6/2017 8:35	44.2	36.2	0.0	19.6	87.0	87.0	43.2	42.1	-0.5	-0.4	-14.1
GEW-005	12/11/2017 8:56	49.7	39.1	0.0	11.2	88.8	88.9	14.9	12.3	0.2	0.2	-14.1
GEW-005	12/11/2017 8:57	49.9	38.0	0.0	12.1	90.2	90.5	22.5	19.5	0.2	0.1	-13.6
GEW-005	12/12/2017 13:33	46.7	34.4	0.1	18.8	90.1	89.8	31.7	30.9	-0.2	-0.2	-13.7
GEW-005	12/12/2017 13:41	45.4	36.3	0.0	18.3	89.6	89.6	13.2	15.4	-0.2	-0.2	-14.0
GEW-005	12/15/2017 10:03	41.7	38.3	0.0	20.0	89.3	89.3	14.6	15.9	-0.5	-0.4	-14.3
GEW-005	12/15/2017 10:04	40.9	36.9	0.0	22.2	88.9	88.9	15.2	11.6	-0.4	-0.4	-14.4
GEW-005	12/20/2017 11:36	39.4	34.7	0.0	25.9	90.5	90.3	18.5	19.7	-0.2	-0.2	-13.5
GEW-005	12/26/2017 14:43	36.4	34.0	0.0	29.6	85.4	85.2	17.2	18.1	-0.4	-0.4	-15.0
GEW-005	12/26/2017 14:44	34.2	34.3	0.0	31.5	81.2	81.0	18.8	18.8	-0.3	-0.3	-14.5

December 2017 Wellfield Monitoring Data - Bridgeton Landfill

Well Name	Date Sampled	Methane	CO ₂	O ₂	Balance Gas	Init Temp	Adj Temp	Init Flow	Adj Flow	Init Static Press	Adj Static Press	System Pressure
		(% vol)				°F		scfm		H ₂ O		
GEW-006	12/6/2017 8:43	47.0	36.2	0.0	16.8	83.6	83.5	36.2	37.3	-0.5	-0.5	-13.8
GEW-006	12/11/2017 9:07	56.0	39.0	0.0	5.0	87.4	87.5	0.0	0.0	0.2	0.2	-13.7
GEW-006	12/11/2017 9:08	56.1	39.2	0.0	4.7	89.6	89.5	0.0	0.0	0.1	0.1	-13.3
GEW-006	12/20/2017 11:43	40.5	35.0	0.0	24.5	90.2	90.3	17.2	20.4	-0.4	-0.5	-14.7
GEW-006	12/20/2017 11:44	40.1	35.3	0.0	24.6	90.3	90.3	21.1	20.8	-0.4	-0.5	-13.2
GEW-006	12/29/2017 10:38	46.5	36.0	0.0	17.5	31.3	31.4	0.0	3.0	0.2	0.2	-14.5
GEW-006	12/29/2017 10:40	46.6	36.2	0.0	17.2	32.0	32.0	7.3	6.0	0.2	0.2	-14.6
GEW-007	12/6/2017 9:15	56.8	39.1	0.1	4.0	83.0	82.9	10.6	10.6	-1.6	-1.6	-14.6
GEW-007	12/11/2017 9:40	59.0	40.1	0.0	0.9	82.1	82.3	0.0	0.0	0.3	0.3	-14.0
GEW-007	12/11/2017 9:41	58.6	41.0	0.0	0.4	84.4	84.2	48.7	48.7	-0.4	-0.4	-14.0
GEW-007	12/20/2017 9:01	57.5	39.2	0.0	3.3	85.4	85.6	11.7	10.7	-2.5	-2.5	-14.4
GEW-007	12/29/2017 14:11	60.2	37.7	0.0	2.1	82.6	82.7	11.3	12.9	-1.4	-1.4	-14.4
GEW-008	12/6/2017 9:19	54.8	40.5	0.0	4.7	110.7	110.8	13.8	19.5	-0.9	-0.9	-14.2
GEW-008	12/11/2017 9:46	54.2	41.5	0.0	4.3	109.9	110.0	15.9	19.4	0.0	-0.1	-13.8
GEW-008	12/11/2017 9:48	53.2	44.3	0.0	2.5	110.0	109.5	0.0	0.0	0.0	0.0	-13.8
GEW-008	12/13/2017 9:19	53.1	42.9	0.0	4.0	110.6	110.7	14.1	15.9	-0.3	-0.4	-13.8
GEW-008	12/13/2017 9:27	53.0	42.9	0.0	4.1	110.5	110.5	43.7	43.5	-0.4	-0.3	-13.8
GEW-008	12/20/2017 9:05	53.1	41.5	0.0	5.4	111.1	110.9	12.1	14.3	-0.9	-0.9	-14.4
GEW-008	12/29/2017 14:16	56.4	34.4	0.0	9.2	108.5	108.7	14.1	11.4	-0.4	-0.3	-14.2
GEW-009	12/6/2017 9:24	46.9	39.0	0.0	14.1	118.4	118.4	10.6	14.0	-0.5	-0.5	-15.5
GEW-009	12/11/2017 9:52	51.5	41.8	0.0	6.7	120.2	120.5	26.7	27.4	-0.1	-0.1	-16.1
GEW-009	12/13/2017 9:07	49.7	39.1	0.0	11.2	121.0	120.8	30.1	29.6	-0.3	-0.3	-16.7
GEW-009	12/13/2017 9:15	48.9	40.2	0.0	10.9	120.7	120.5	35.9	37.2	-0.3	-0.3	-15.1
GEW-009	12/20/2017 9:08	44.5	39.3	0.0	16.2	119.7	119.4	33.7	34.1	-0.5	-0.5	-17.4
GEW-009	12/20/2017 9:10	44.1	39.1	0.0	16.8	119.7	119.7	35.2	34.3	-0.5	-0.5	-16.8
GEW-009	12/29/2017 14:21	53.4	38.6	0.0	8.0	122.3	121.5	0.0	0.0	0.1	0.1	-5.9
GEW-009	12/29/2017 14:22	52.9	40.4	0.0	6.7	122.4	122.3	0.0	0.0	0.1	0.1	-5.7
GEW-010	12/4/2017 9:06	55.3	42.2	0.1	2.4	63.9	63.9	4.0	4.2	-0.3	-0.4	-20.7
GEW-010	12/12/2017 13:27	57.2	40.9	0.0	1.9	45.0	45.2	3.8	3.8	-0.4	-0.4	-20.2
GEW-010	12/12/2017 13:34	56.9	40.0	0.0	3.1	45.5	45.5	2.8	2.5	-0.4	-0.4	-20.2
GEW-010	12/19/2017 14:12	56.3	41.2	0.1	2.4	59.2	59.2	4.1	4.2	-0.3	-0.3	-19.5
GEW-010	12/19/2017 14:14	55.6	41.9	0.0	2.5	59.7	59.7	2.1	2.7	-1.4	-1.4	-19.5
GEW-010	12/26/2017 9:25	58.1	37.0	0.3	4.6	18.0	16.2	7.0	7.0	-2.2	-2.2	-20.6
GEW-013A	12/6/2017 11:40	11.3	37.9	5.9	44.9	113.0	113.1	124.5	125.4	-3.4	-3.4	-16.8
GEW-013A	12/6/2017 11:41	10.9	39.9	5.6	43.6	113.3	113.5	125.7	126.5	-3.3	-3.4	-17.2
GEW-013A	12/21/2017 14:25	11.5	44.9	4.6	39.0	117.2	116.3	112.5	113.0	-2.9	-2.9	-15.2
GEW-015	12/6/2017 13:28	0.6	49.4	0.0	50.0	181.6	182.1	7.6	7.2	-0.8	-0.8	-20.7
GEW-015	12/6/2017 13:29	0.4	52.0	0.0	47.6	182.1	182.1	7.6	5.7	-0.8	-0.8	-20.6
GEW-015	12/21/2017 14:43	0.3	51.9	0.0	47.8	180.2	180.9	6.3	6.8	-0.5	-0.5	-18.4
GEW-015	12/21/2017 14:44	0.3	52.7	0.0	47.0	180.3	180.9	9.6	10.8	-0.5	-0.5	-18.4
GEW-016R	12/6/2017 13:38	9.2	44.9	0.2	45.7	181.5	181.5	NFD		-20.8	-20.8	-21.1

December 2017 Wellfield Monitoring Data - Bridgeton Landfill

Well Name	Date Sampled	Methane	CO ₂	O ₂	Balance Gas	Init Temp	Adj Temp	Init Flow	Adj Flow	Init Static Press	Adj Static Press	System Pressure
		(% vol)				°F		scfm		H ₂ O		
GEW-016R	12/6/2017 13:39	8.2	47.2	0.1	44.5	181.5	181.5	NFD		-20.3	-20.7	-20.6
GEW-016R	12/21/2017 14:51	7.2	47.8	0.0	45.0	182.1	182.1	NFD		-18.2	-18.2	-18.3
GEW-016R	12/21/2017 14:53	7.2	48.3	0.0	44.5	182.1	181.5	NFD		-18.2	-18.2	-18.1
GEW-018B	12/6/2017 14:38	0.8	48.5	1.3	49.4	157.7	158.1	9.8	9.5	-0.1	-0.1	-20.5
GEW-018B	12/6/2017 14:39	0.7	50.2	1.1	48.0	157.9	157.7	7.5	7.1	-0.1	-0.1	-21.0
GEW-018B	12/22/2017 9:51	0.6	51.0	0.0	48.4	158.1	158.9	3.6	2.9	0.1	0.1	-20.0
GEW-018B	12/22/2017 9:53	0.5	53.1	0.0	46.4	165.2	166.1	1.4	1.4	-0.1	-0.1	-19.8
GEW-022R	12/7/2017 9:26	2.5	39.7	8.7	49.1	36.0	36.0	3.3	2.8	-13.3	-13.3	-22.0
GEW-022R	12/7/2017 9:28	1.8	41.5	8.6	48.1	34.0	33.8	1.8	1.4	-3.2	-3.2	-21.8
GEW-022R	12/22/2017 11:10	4.0	45.9	4.6	45.5	56.0	56.2	3.0	3.8	-6.8	-6.8	-20.1
GEW-038	12/4/2017 10:20	0.9	52.6	1.2	45.3	70.2	70.2	5.5	5.3	-1.0	-0.9	-20.5
GEW-038	12/13/2017 11:25	0.9	54.7	0.0	44.4	58.0	58.0	4.1	3.9	-0.1	-0.2	-20.1
GEW-038	12/13/2017 11:31	0.6	55.1	0.0	44.3	56.3	56.3	3.5	4.3	-0.1	-0.1	-20.1
GEW-038	12/19/2017 15:10	0.9	55.0	0.3	43.8	54.7	54.7	2.5	1.7	-0.3	-0.3	-19.6
GEW-038	12/26/2017 11:12	0.8	45.9	2.8	50.5	18.6	18.6	4.0	3.5	-0.9	-0.9	-21.1
GEW-039	12/4/2017 10:28	46.8	50.1	0.0	3.1	100.1	100.1	13.9	13.7	-0.7	-0.7	-21.3
GEW-039	12/13/2017 12:02	46.3	48.8	0.0	4.9	88.0	88.0	13.0	30.6	-0.6	-0.5	-20.2
GEW-039	12/13/2017 12:07	47.8	47.7	0.0	4.5	89.1	89.1	16.8	15.9	-0.3	-0.4	-19.7
GEW-039	12/19/2017 15:20	46.7	48.5	0.0	4.8	91.8	92.1	16.5	17.5	-0.6	-0.7	-19.7
GEW-039	12/26/2017 11:23	47.5	46.4	0.0	6.1	73.2	73.0	21.6	22.8	-0.7	-0.9	-21.1
GEW-040	12/6/2017 9:56	54.5	41.8	0.0	3.7	49.1	49.1	0.0	0.0	-0.6	-0.6	-14.1
GEW-040	12/11/2017 10:25	55.4	41.7	0.0	2.9	50.8	50.7	38.7	39.5	-0.3	-0.3	-13.6
GEW-040	12/13/2017 9:47	55.0	41.5	0.0	3.5	46.4	46.4	7.8	8.3	-0.5	-0.5	-13.6
GEW-040	12/13/2017 9:54	57.1	40.7	0.0	2.2	46.5	46.4	9.7	12.1	-0.4	-0.5	-13.5
GEW-040	12/20/2017 9:42	55.4	41.1	0.0	3.5	46.7	46.7	6.4	7.6	-0.6	-0.6	-14.2
GEW-040	12/29/2017 9:45	57.7	36.0	0.0	6.3	28.6	28.6	48.3	48.3	-0.6	-0.6	-14.9
GEW-041R	12/6/2017 10:00	56.1	40.1	0.1	3.7	95.5	95.5	40.6	40.5	-0.3	-0.3	-14.1
GEW-041R	12/11/2017 10:28	57.5	40.1	0.0	2.4	94.8	94.8	0.0	0.0	0.0	0.0	-13.4
GEW-041R	12/11/2017 10:30	58.3	39.4	0.0	2.3	95.8	96.0	4.0	0.0	0.0	0.0	-13.3
GEW-041R	12/20/2017 9:46	54.1	37.6	0.0	8.3	97.9	97.9	43.0	43.1	-0.4	-0.4	-14.2
GEW-041R	12/29/2017 9:50	53.3	37.2	0.0	9.5	95.8	95.9	38.1	39.5	-0.3	-0.3	-15.2
GEW-042R	12/6/2017 10:03	57.1	39.7	0.0	3.2	91.3	91.2	30.8	30.6	-0.3	-0.3	-14.0
GEW-042R	12/11/2017 10:34	57.2	41.0	0.0	1.8	91.2	91.0	12.3	12.9	0.4	0.4	-13.6
GEW-042R	12/11/2017 10:37	56.6	41.6	0.0	1.8	96.8	97.0	13.7	12.8	-0.4	-0.4	-13.7
GEW-042R	12/13/2017 10:04	57.0	39.3	0.0	3.7	98.7	98.7	2.8	0.0	-0.5	-0.5	-13.5
GEW-042R	12/13/2017 10:15	56.5	40.8	0.0	2.7	98.7	98.7	7.4	7.9	-0.4	-0.4	-13.4
GEW-042R	12/20/2017 9:49	56.2	39.6	0.0	4.2	96.0	95.9	23.9	23.4	-0.8	-0.8	-14.1
GEW-042R	12/29/2017 10:24	58.1	34.8	0.0	7.1	37.1	37.4	0.0	0.0	0.8	0.8	-11.5
GEW-042R	12/29/2017 10:27	57.9	39.7	0.0	2.4	38.4	38.4	0.0	0.0	0.9	0.9	-11.8
GEW-043R	12/6/2017 10:07	55.2	41.4	0.0	3.4	116.6	116.4	11.0	12.0	-0.7	-0.7	-14.2
GEW-043R	12/11/2017 10:40	55.6	40.8	0.0	3.6	116.9	117.1	0.0	0.0	0.2	0.2	-13.3

December 2017 Wellfield Monitoring Data - Bridgeton Landfill

Well Name	Date Sampled	Methane	CO ₂	O ₂	Balance Gas	Init Temp	Adj Temp	Init Flow	Adj Flow	Init Static Press	Adj Static Press	System Pressure
		(% vol)				°F		scfm		H ₂ O		
GEW-043R	12/11/2017 10:41	56.3	42.7	0.0	1.0	117.9	117.9	0.0	0.0	0.1	0.1	-13.9
GEW-043R	12/20/2017 9:52	55.0	40.6	0.0	4.4	118.9	118.9	27.6	26.8	-1.2	-1.2	-14.4
GEW-043R	12/28/2017 11:07	55.9	41.2	0.0	2.9	116.8	116.8	13.7	14.3	-0.7	-0.7	-15.8
GEW-044	12/6/2017 10:11	54.1	40.4	0.0	5.5	75.9	75.9	45.0	44.8	-0.5	-0.5	-13.9
GEW-044	12/11/2017 10:46	56.1	41.0	0.0	2.9	82.3	82.5	13.6	13.6	0.2	0.2	-13.4
GEW-044	12/11/2017 10:47	57.3	40.8	0.0	1.9	85.4	85.4	0.0	0.0	-0.1	-0.1	-13.2
GEW-044	12/20/2017 9:55	47.5	38.2	0.0	14.3	88.0	87.9	31.3	31.3	-0.9	-0.9	-14.0
GEW-044	12/27/2017 10:42	44.0	37.2	0.0	18.8	77.2	77.5	26.8	29.6	-1.2	-1.2	-15.2
GEW-044	12/27/2017 10:43	42.9	36.1	0.0	21.0	78.6	78.2	7.5	8.5	-1.1	-1.2	-15.2
GEW-045R	12/6/2017 10:15	55.7	38.8	0.0	5.5	71.8	72.0	11.4	10.7	-2.4	-2.4	-14.1
GEW-045R	12/11/2017 10:52	56.6	38.5	0.0	4.9	71.9	72.5	13.6	13.0	-2.4	-2.4	-13.6
GEW-045R	12/12/2017 10:56	60.9	37.4	0.1	1.6	67.2	67.2	8.6	7.6	-2.9	-2.9	-14.2
GEW-045R	12/12/2017 11:05	60.1	38.7	0.0	1.2	63.8	63.7	8.1	8.6	-1.4	-1.4	-14.2
GEW-045R	12/20/2017 9:59	55.7	41.2	0.0	3.1	66.8	65.4	10.2	10.6	0.6	0.6	-14.0
GEW-045R	12/20/2017 10:03	55.4	41.3	0.0	3.3	72.6	72.7	9.7	9.3	-0.2	-0.2	-14.0
GEW-045R	12/26/2017 13:41	57.8	41.1	0.0	1.1	25.6	25.7	6.0	7.4	1.4	1.4	-14.7
GEW-045R	12/26/2017 13:43	55.7	42.8	0.0	1.5	30.0	30.2	0.0	5.2	1.2	1.2	-14.7
GEW-045R	12/27/2017 9:48	57.8	40.4	0.0	1.8	44.4	44.3	0.0	0.0	0.5	0.5	-15.2
GEW-045R	12/27/2017 9:50	56.1	41.7	0.0	2.2	54.5	54.7	8.2	8.7	-0.7	-0.7	-15.2
GEW-046R	12/6/2017 10:19	56.8	38.2	0.0	5.0	94.8	95.0	2.8	0.0	-0.3	-0.3	-13.9
GEW-046R	12/11/2017 10:56	57.0	39.4	0.0	3.6	96.8	96.8	0.0	0.0	0.1	0.2	-13.4
GEW-046R	12/11/2017 10:58	56.4	41.0	0.0	2.6	98.4	98.9	0.0	0.0	0.0	0.1	-13.5
GEW-046R	12/12/2017 9:39	56.6	39.1	0.0	4.3	96.8	96.7	14.5	16.0	-0.7	-0.7	-14.6
GEW-046R	12/12/2017 9:47	56.1	40.2	0.0	3.7	97.2	97.0	12.8	15.3	-0.7	-0.7	-14.5
GEW-046R	12/15/2017 10:42	58.8	35.9	0.0	5.3	97.9	98.2	38.9	38.3	-0.6	-0.6	-14.7
GEW-046R	12/15/2017 10:43	55.6	39.7	0.0	4.7	97.2	97.2	34.3	35.0	-0.6	-0.6	-14.7
GEW-046R	12/20/2017 10:06	52.4	41.1	0.0	6.5	99.6	99.1	8.0	8.9	-0.6	-0.6	-14.3
GEW-046R	12/26/2017 13:48	49.8	38.7	0.0	11.5	92.7	92.6	0.0	0.0	-0.6	-0.6	-14.7
GEW-047R	12/6/2017 8:30	49.4	39.1	0.0	11.5	99.1	99.2	8.4	7.9	-0.4	-0.4	-14.3
GEW-047R	12/11/2017 8:51	53.5	40.8	0.0	5.7	103.2	103.3	0.0	0.0	0.3	0.3	-14.0
GEW-047R	12/11/2017 8:52	53.3	41.3	0.0	5.4	103.8	103.8	0.0	0.0	0.3	0.3	-14.3
GEW-047R	12/12/2017 11:13	50.0	37.8	0.0	12.2	98.4	98.2	15.0	13.7	-0.3	-0.3	-14.6
GEW-047R	12/12/2017 11:21	50.7	38.0	0.1	11.2	97.2	97.2	34.5	34.7	-0.2	-0.2	-14.3
GEW-047R	12/15/2017 9:59	47.3	43.1	0.0	9.6	100.5	100.4	4.8	8.4	-0.4	-0.4	-14.5
GEW-047R	12/15/2017 10:00	47.3	42.1	0.0	10.6	100.6	100.5	8.4	7.9	-0.4	-0.4	-14.7
GEW-047R	12/20/2017 11:33	46.1	36.5	0.0	17.4	110.0	110.0	24.7	24.1	-0.2	-0.2	-13.6
GEW-047R	12/26/2017 14:28	43.4	35.4	0.0	21.2	93.4	93.4	0.0	5.6	-0.4	-0.5	-15.0
GEW-047R	12/26/2017 14:30	42.0	38.2	0.0	19.8	92.4	92.2	35.7	35.7	-0.4	-0.4	-15.0
GEW-048	12/6/2017 8:39	54.8	39.6	0.0	5.6	98.9	98.9	40.2	40.2	-0.7	-0.7	-9.8
GEW-048	12/11/2017 9:01	56.4	39.9	0.0	3.7	100.1	100.1	19.9	19.3	0.1	0.1	-10.0
GEW-048	12/11/2017 9:02	56.3	40.6	0.0	3.1	100.6	100.6	24.6	22.8	-0.1	-0.1	-11.9

December 2017 Wellfield Monitoring Data - Bridgeton Landfill

Well Name	Date Sampled	Methane	CO ₂	O ₂	Balance Gas	Init Temp	Adj Temp	Init Flow	Adj Flow	Init Static Press	Adj Static Press	System Pressure
		(% vol)				°F		scfm		H ₂ O		
GEW-048	12/12/2017 11:30	55.3	37.0	0.0	7.7	99.6	99.6	24.0	16.0	-0.8	-0.7	-12.5
GEW-048	12/12/2017 11:44	54.3	39.1	0.0	6.6	99.6	99.6	21.4	11.5	-0.7	-0.7	-12.2
GEW-048	12/15/2017 10:07	52.0	38.8	0.0	9.2	99.4	99.3	39.9	43.6	-1.0	-0.9	-12.4
GEW-048	12/15/2017 10:09	52.9	40.0	0.0	7.1	98.9	99.1	10.8	16.7	-0.8	-0.8	-8.3
GEW-048	12/20/2017 11:40	52.0	37.3	0.0	10.7	100.8	100.6	19.7	19.5	-0.5	-0.5	-11.6
GEW-048	12/26/2017 14:48	49.0	39.3	0.0	11.7	97.2	97.3	36.8	36.8	-0.7	-0.7	-13.3
GEW-049	12/6/2017 9:01	49.4	37.0	0.0	13.6	103.3	103.0	13.3	13.3	-0.6	-0.6	-14.1
GEW-049	12/11/2017 9:20	57.9	40.1	0.0	2.0	105.5	105.2	16.2	16.2	0.2	0.2	-14.0
GEW-049	12/11/2017 9:22	57.1	40.9	0.0	2.0	106.2	106.2	16.7	17.6	0.2	0.2	-13.9
GEW-049	12/12/2017 13:49	53.8	37.2	0.0	9.0	103.8	103.8	28.1	27.1	-0.3	-0.3	-14.0
GEW-049	12/12/2017 14:05	53.3	38.2	0.1	8.4	103.7	103.8	36.6	36.6	-0.3	-0.3	-14.1
GEW-049	12/20/2017 11:51	47.5	36.8	0.0	15.7	104.9	104.8	11.2	12.8	-0.3	-0.3	-13.7
GEW-049	12/27/2017 10:29	39.9	35.3	0.0	24.8	97.7	97.8	37.7	37.9	-0.8	-0.8	-15.2
GEW-049	12/27/2017 10:30	41.3	35.5	0.0	23.2	98.1	98.2	13.4	11.8	-0.8	-0.8	-15.2
GEW-050	12/6/2017 8:57	53.5	38.0	0.0	8.5	102.4	102.5	12.7	13.6	-0.5	-0.6	-5.5
GEW-050	12/11/2017 9:15	58.5	38.0	0.0	3.5	103.3	103.3	0.0	0.0	0.3	0.2	-7.2
GEW-050	12/11/2017 9:16	57.1	40.1	0.0	2.8	104.5	104.5	0.0	0.0	0.1	0.1	-8.8
GEW-050	12/20/2017 8:53	46.6	37.6	0.0	15.8	105.2	105.2	18.7	18.8	-0.9	-0.9	-11.3
GEW-050	12/27/2017 10:16	41.8	34.5	0.0	23.7	102.8	102.8	15.7	15.7	-0.9	-0.9	-11.3
GEW-050	12/27/2017 10:18	41.5	35.4	0.0	23.1	102.3	102.2	9.6	18.2	-0.8	-0.8	-7.4
GEW-051	12/6/2017 9:06	55.9	40.6	0.0	3.5	120.3	120.5	28.0	13.4	-0.9	-0.9	-13.9
GEW-051	12/11/2017 9:26	55.6	41.1	0.0	3.3	121.3	121.5	15.5	17.8	0.7	0.7	-13.5
GEW-051	12/11/2017 9:28	55.7	42.1	0.0	2.2	123.7	123.6	0.0	0.0	0.5	0.5	-13.5
GEW-051	12/20/2017 9:15	54.4	41.3	0.0	4.3	122.3	122.3	12.5	12.0	-1.1	-1.1	-14.1
GEW-051	12/27/2017 10:36	54.6	36.5	0.0	8.9	117.4	117.6	19.4	19.0	-1.4	-1.4	-15.1
GEW-051	12/27/2017 10:37	57.3	39.9	0.0	2.8	117.6	117.6	13.7	12.2	-1.4	-1.4	-14.9
GEW-052	12/6/2017 9:10	44.3	36.6	0.0	19.1	108.7	108.8	13.8	16.4	-0.5	-0.5	-14.4
GEW-052	12/11/2017 9:32	51.4	39.6	0.0	9.0	112.6	112.4	17.7	14.3	0.0	0.0	-14.0
GEW-052	12/11/2017 9:34	51.7	39.2	0.0	9.1	112.8	112.8	20.3	18.7	-0.1	0.0	-14.0
GEW-052	12/20/2017 8:56	38.2	33.8	0.0	28.0	110.2	110.0	16.5	16.6	-0.7	-0.7	-14.3
GEW-052	12/20/2017 8:58	37.5	34.1	0.0	28.4	110.0	110.0	16.8	16.6	-0.7	-0.6	-14.2
GEW-052	12/27/2017 10:22	35.1	33.2	0.0	31.7	105.7	105.7	17.7	14.1	-0.7	-0.7	-15.2
GEW-052	12/27/2017 10:23	32.1	32.2	0.0	35.7	105.7	105.8	31.9	29.8	-0.7	-0.7	-15.3
GEW-053	12/6/2017 9:30	50.6	41.0	0.0	8.4	135.3	135.3	12.7	12.7	-0.6	-0.6	-14.7
GEW-053	12/6/2017 9:36	52.9	40.5	0.0	6.6	135.6	135.3	13.8	12.4	-0.6	-0.6	-14.1
GEW-053	12/11/2017 9:58	49.6	41.3	0.0	9.1	135.3	135.3	15.3	13.3	0.6	0.6	-14.1
GEW-053	12/11/2017 10:00	51.2	43.0	0.0	5.8	139.0	139.0	23.7	20.7	0.1	0.1	-14.0
GEW-053	12/13/2017 9:32	51.2	40.6	0.0	8.2	136.8	136.8	17.9	19.3	-0.4	-0.4	-13.6
GEW-053	12/13/2017 9:41	50.7	42.1	0.0	7.2	136.5	136.5	21.4	19.7	-0.4	-0.4	-14.1
GEW-053	12/20/2017 9:20	52.5	40.4	0.0	7.1	136.8	136.8	17.1	19.6	-1.5	-1.4	-14.8
GEW-053	12/20/2017 9:27	51.1	41.1	0.0	7.8	137.1	136.8	18.3	20.3	-1.5	-1.5	-14.8

December 2017 Wellfield Monitoring Data - Bridgeton Landfill

Well Name	Date Sampled	Methane	CO ₂	O ₂	Balance Gas	Init Temp	Adj Temp	Init Flow	Adj Flow	Init Static Press	Adj Static Press	System Pressure
		(% vol)				°F		scfm		H ₂ O		
GEW-053	12/28/2017 11:15	51.8	36.0	0.0	12.2	123.8	123.7	11.3	11.3	-0.2	-0.2	-3.1
GEW-054	12/6/2017 9:40	51.9	40.3	0.0	7.8	142.2	142.2	35.2	42.9	-4.4	-4.4	-14.9
GEW-054	12/6/2017 9:41	52.5	42.9	0.0	4.6	142.2	142.2	35.6	36.8	-4.4	-4.4	-14.4
GEW-054	12/11/2017 10:08	55.2	40.8	0.0	4.0	141.9	141.9	49.9	40.8	-3.6	-3.6	-14.5
GEW-054	12/11/2017 10:11	54.0	43.2	0.0	2.8	141.9	141.9	46.1	38.9	-3.6	-3.6	-13.6
GEW-054	12/12/2017 14:12	56.1	35.8	0.0	8.1	141.9	141.9	40.1	50.0	-4.1	-4.1	-14.9
GEW-054	12/12/2017 14:18	54.0	41.8	0.0	4.2	141.9	141.9	42.4	42.4	-4.2	-4.2	-14.1
GEW-054	12/20/2017 9:23	52.5	41.5	0.0	6.0	144.2	144.2	38.3	39.6	-4.3	-4.3	-15.2
GEW-054	12/20/2017 9:25	52.4	42.4	0.0	5.2	144.2	144.2	45.4	44.8	-4.3	-4.3	-14.3
GEW-054	12/28/2017 11:20	55.1	39.5	0.0	5.4	140.6	140.6	40.8	43.3	-4.3	-4.3	-15.8
GEW-054	12/28/2017 11:21	54.5	40.4	0.0	5.1	140.6	140.6	31.3	41.8	-4.3	-4.4	-15.4
GEW-055	12/6/2017 9:51	51.6	41.6	0.1	6.7	133.2	133.0	11.8	11.5	-0.9	-0.9	-14.4
GEW-055	12/6/2017 9:53	51.4	42.2	0.2	6.2	132.3	132.6	13.0	12.7	-0.8	-0.8	-14.3
GEW-055	12/11/2017 10:20	53.4	42.7	0.0	3.9	133.5	133.7	0.0	0.0	0.1	0.1	-13.9
GEW-055	12/11/2017 10:22	53.3	43.4	0.0	3.3	135.0	135.0	39.4	37.6	-0.3	-0.3	-13.9
GEW-055	12/12/2017 14:24	53.1	40.9	0.3	5.7	133.8	133.8	10.8	12.4	-1.0	-1.0	-13.7
GEW-055	12/12/2017 14:37	53.4	41.7	0.4	4.5	132.3	132.3	13.5	7.7	-0.8	-0.8	-14.1
GEW-055	12/20/2017 9:36	51.1	41.2	0.1	7.6	134.1	134.1	12.5	14.2	-1.2	-1.2	-14.6
GEW-055	12/20/2017 9:39	51.4	41.4	0.0	7.2	133.9	133.8	11.5	13.2	-1.2	-1.2	-14.3
GEW-055	12/28/2017 11:31	51.7	41.4	0.0	6.9	118.6	118.9	0.0	0.0	0.1	0.1	-2.4
GEW-055	12/28/2017 11:33	51.6	41.7	0.0	6.7	119.1	119.5	0.0	0.0	0.1	0.1	-2.0
GEW-056R	12/4/2017 9:18	28.6	53.1	0.0	18.3	88.4	88.4	3.8	2.6	-0.5	-0.5	-20.3
GEW-056R	12/12/2017 14:11	29.4	46.7	0.0	23.9	66.3	66.3	2.7	3.2	-0.5	-0.5	-21.6
GEW-056R	12/12/2017 14:17	28.4	47.4	0.0	24.2	65.7	65.8	2.7	2.9	-0.5	-0.6	-21.6
GEW-056R	12/19/2017 14:25	28.9	49.6	0.0	21.5	81.2	81.0	4.4	3.7	-0.5	-0.4	-19.6
GEW-056R	12/26/2017 9:52	28.7	47.9	0.0	23.4	43.8	43.7	3.1	4.2	-0.7	-0.7	-20.3
GEW-057B	12/21/2017 15:22	0.0	2.7	20.4	76.9	64.0	64.2	61.8	59.8	-14.8	-14.7	-29.0
GEW-057B	12/21/2017 15:24	0.0	0.4	20.9	78.7	64.0	64.0	59.3	57.6	-14.7	-14.7	-28.5
GEW-057R	12/21/2017 15:28	0.0	0.0	21.1	78.9	61.5	61.3	53.7	53.5	-15.7	-15.6	-18.8
GEW-057R	12/21/2017 15:29	0.0	0.0	21.0	79.0	60.9	60.9	52.8	52.9	-15.6	-15.6	-18.8
GEW-058	12/7/2017 10:25	1.3	40.6	4.4	53.7	36.9	36.8	11.4	7.8	-3.3	-2.6	-22.2
GEW-058	12/21/2017 14:08	1.6	46.2	2.8	49.4	69.5	69.5	15.0	15.2	-1.7	-1.5	-18.6
GEW-058A	12/7/2017 10:19	0.7	34.8	6.0	58.5	36.0	36.0	2.9	2.2	-0.6	-0.6	-21.9
GEW-058A	12/7/2017 10:21	0.6	35.6	6.1	57.7	36.1	36.0	2.9	2.9	-0.6	-0.6	-22.4
GEW-058A	12/21/2017 14:05	3.6	44.8	1.5	50.1	67.7	67.7	4.0	2.9	-0.2	-0.2	-18.6
GEW-059R	12/7/2017 10:10	16.8	45.7	0.0	37.5	152.1	151.8	10.0	8.2	-21.6	-21.6	-22.4
GEW-059R	12/7/2017 10:11	16.4	47.3	0.0	36.3	152.7	152.9	2.8	7.6	-21.0	-21.0	-21.2
GEW-059R	12/21/2017 13:48	17.2	45.3	0.0	37.5	156.9	156.9	7.9	8.4	-18.2	-18.2	-18.6
GEW-059R	12/21/2017 13:49	15.8	47.0	0.0	37.2	157.3	157.3	8.7	8.9	-18.2	-18.1	-18.6
GEW-067A	12/5/2017 15:56	2.9	35.0	7.0	55.1	92.4	92.3	10.4	5.9	-0.2	-0.3	-20.4
GEW-067A	12/5/2017 16:06	4.2	46.6	2.5	46.7	94.8	94.3	8.5	11.0	-0.2	-0.2	-20.6

December 2017 Wellfield Monitoring Data - Bridgeton Landfill

Well Name	Date Sampled	Methane	CO ₂	O ₂	Balance Gas	Init Temp	Adj Temp	Init Flow	Adj Flow	Init Static Press	Adj Static Press	System Pressure
		(% vol)				°F		scfm		H ₂ O		
GEW-068A	12/7/2017 14:08	15.1	46.2	1.7	37.0	171.0	171.0	28.4	29.8	-18.4	-18.4	-19.3
GEW-068A	12/7/2017 14:09	14.8	47.2	1.7	36.3	170.5	170.5	29.2	29.3	-18.4	-18.4	-19.4
GEW-068A	12/21/2017 15:49	0.0	2.4	20.6	77.0	173.1	172.1	47.8	44.0	-15.7	-14.2	-31.0
GEW-068A	12/21/2017 15:50	0.0	0.3	21.0	78.7	171.6	171.4	44.2	43.0	-14.3	-14.3	-31.5
GEW-078R	12/6/2017 14:08	15.9	44.3	0.0	39.8	156.5	157.3	11.5	8.9	-21.3	-21.3	-21.8
GEW-078R	12/6/2017 14:09	15.5	46.2	0.0	38.3	157.3	157.3	12.1	8.8	-20.8	-20.8	-21.3
GEW-078R	12/21/2017 15:20	13.8	44.2	0.0	42.0	152.5	152.9	8.9	7.9	-18.6	-18.5	-18.9
GEW-078R	12/21/2017 15:22	13.6	46.1	0.0	40.3	153.3	153.0	7.4	6.1	-18.6	-18.7	-18.7
GEW-081	12/7/2017 9:33	0.2	25.2	15.1	59.5	31.5	31.5	3.7	3.0	-21.6	-21.1	-21.6
GEW-081	12/7/2017 9:35	0.2	20.7	16.0	63.1	31.5	31.6	1.7	2.4	-22.1	-21.6	-22.1
GEW-081	12/22/2017 11:01	0.6	24.8	13.7	60.9	50.4	50.5	2.5	2.4	-19.9	-19.9	-19.8
GEW-081	12/22/2017 11:03	0.3	23.4	13.9	62.4	49.9	49.8	3.1	3.1	-19.9	-19.9	-20.1
GEW-082R	12/6/2017 14:34	11.5	38.7	0.0	49.8	178.1	178.6	5.7	5.3	-19.8	-19.4	-21.4
GEW-082R	12/6/2017 14:35	11.6	40.1	0.0	48.3	178.6	178.1	4.8	6.4	-19.6	-19.3	-20.8
GEW-082R	12/22/2017 9:24	12.0	37.8	0.0	50.2	167.1	167.6	4.2	6.4	-18.6	-18.5	-19.8
GEW-082R	12/22/2017 9:25	11.3	40.7	0.0	48.0	165.2	165.3	4.9	4.9	-18.5	-18.5	-19.6
GEW-086	12/6/2017 10:29	12.5	36.1	4.1	47.3	72.3	72.3	14.4	14.2	-0.7	-0.7	-20.9
GEW-086	12/6/2017 10:30	13.5	32.5	4.2	49.8	70.7	70.7	13.1	13.9	-0.6	-0.5	-20.6
GEW-087	12/6/2017 10:34	5.0	17.9	11.3	65.8	106.5	106.8	NFD		-20.6	-20.6	-20.2
GEW-087	12/6/2017 10:35	5.1	16.6	11.4	66.9	107.2	107.2	NFD		-19.7	-19.6	-19.9
GEW-087	12/21/2017 14:31	11.0	30.6	7.8	50.6	111.2	111.0	NFD		-18.5	-18.3	-18.4
GEW-087	12/21/2017 14:32	11.6	28.9	7.5	52.0	111.0	110.8	NFD		-18.4	-18.5	-18.4
GEW-088	12/6/2017 10:24	4.7	45.0	0.4	49.9	185.7	185.7	53.3	53.6	-0.2	-0.2	-15.8
GEW-088	12/6/2017 10:25	3.6	43.4	0.3	52.7	185.7	187.6	49.8	55.4	-0.2	-0.3	-19.3
GEW-090	12/5/2017 15:44	21.2	46.3	0.0	32.5	148.0	149.1	8.6	8.0	-19.8	-20.2	-20.2
GEW-090	12/5/2017 15:45	20.4	47.5	0.0	32.1	146.6	146.3	11.9	10.8	-20.2	-20.2	-20.5
GEW-090	12/21/2017 14:07	21.4	45.4	0.0	33.2	152.9	151.7	4.4	3.6	-18.7	-18.7	-18.9
GEW-090	12/21/2017 14:08	20.2	47.3	0.0	32.5	151.7	152.1	4.0	3.8	-18.6	-18.6	-18.8
GEW-091	12/5/2017 15:35	4.6	51.7	0.0	43.7	115.3	116.1	50.8	48.2	-20.6	-20.2	-20.2
GEW-091	12/21/2017 13:58	2.2	54.6	0.1	43.1	187.6	187.6	11.4	10.2	-16.8	-16.8	-16.8
GEW-091	12/21/2017 13:59	2.2	56.2	0.0	41.6	187.6	187.6	10.3	10.8	-16.8	-17.2	-16.8
GEW-100	12/7/2017 14:20	0.5	49.7	7.2	42.6	43.0	43.0	5.2	5.2	-19.4	-19.5	-19.7
GEW-100	12/7/2017 14:21	0.6	52.2	6.9	40.3	42.9	43.0	5.5	2.7	-18.9	-18.9	-19.2
GEW-100	12/22/2017 9:21	1.2	52.9	3.5	42.4	45.2	45.2	2.9	4.8	-19.7	-20.2	-19.9
GEW-101	12/7/2017 14:13	12.5	46.1	5.9	35.5	55.2	55.2	12.9	12.4	-0.3	-0.3	-20.1
GEW-101	12/7/2017 14:14	12.3	47.7	5.8	34.2	54.7	54.7	10.4	9.6	-0.3	-0.3	-19.8
GEW-101	12/15/2017 9:21	12.7	50.0	6.4	30.9	53.2	53.2	13.2	9.5	-0.2	-0.3	-21.1
GEW-101	12/15/2017 9:22	12.3	52.3	6.2	29.2	53.3	53.3	11.9	8.2	-0.3	-0.2	-21.0
GEW-102	12/15/2017 8:29	2.6	16.1	11.0	70.3	36.3	36.3	3.0	6.1	-20.2	-20.2	-20.5
GEW-102	12/15/2017 8:31	4.4	24.4	10.1	61.1	36.4	36.5	2.4	1.2	-20.0	-20.2	-20.9
GEW-105	12/7/2017 10:48	15.8	41.1	7.3	35.8	133.3	133.2	27.7	31.1	-5.9	-6.4	-16.7

December 2017 Wellfield Monitoring Data - Bridgeton Landfill

Well Name	Date Sampled	Methane	CO ₂	O ₂	Balance Gas	Init Temp	Adj Temp	Init Flow	Adj Flow	Init Static Press	Adj Static Press	System Pressure
		(% vol)				°F		scfm		H ₂ O		
GEW-105	12/7/2017 11:16	19.9	40.0	6.6	33.5	130.3	126.7	25.1	11.3	-16.6	-15.4	-17.1
GEW-106	12/7/2017 10:40	13.0	53.4	1.4	32.2	37.1	37.1	3.1	3.1	-1.4	-1.4	-14.9
GEW-106	12/21/2017 14:14	12.9	56.1	1.8	29.2	66.8	66.8	4.1	4.1	-0.9	-0.8	-10.0
GEW-107	12/7/2017 9:44	46.2	47.2	0.2	6.4	67.2	67.1	27.5	28.4	-21.9	-21.7	-22.3
GEW-107	12/21/2017 13:55	38.1	53.9	0.0	8.0	114.3	114.5	12.2	11.7	-18.6	-18.6	-18.6
GEW-108	12/7/2017 9:38	31.5	40.4	0.5	27.6	135.0	135.6	8.0	8.1	-22.2	-21.5	-22.3
GEW-108	12/7/2017 9:39	33.5	44.1	0.1	22.3	137.8	137.6	7.3	12.4	-21.6	-21.9	-22.0
GEW-108	12/21/2017 13:38	31.4	44.6	0.0	24.0	141.4	141.3	10.0	12.4	-18.6	-18.6	-18.8
GEW-108	12/21/2017 13:39	30.9	46.3	0.0	22.8	142.2	142.2	5.3	5.3	-18.6	-18.6	-18.7
GEW-109	12/4/2017 10:26	31.7	41.2	0.0	27.1	72.6	72.7	3.5	3.5	-6.9	-6.9	-21.1
GEW-109	12/13/2017 11:51	31.7	38.6	0.0	29.7	60.4	60.4	9.6	4.5	-6.0	-6.3	-20.0
GEW-109	12/13/2017 11:58	30.6	40.3	0.0	29.1	60.4	60.4	6.6	6.6	-6.3	-6.3	-20.0
GEW-109	12/19/2017 15:18	31.8	40.6	0.0	27.6	59.0	59.0	3.8	3.0	-5.9	-5.9	-19.7
GEW-109	12/26/2017 11:19	32.4	38.4	0.0	29.2	22.7	22.7	5.0	5.0	-6.7	-6.7	-20.7
GEW-110	12/4/2017 9:09	15.4	50.4	0.0	34.2	67.5	67.5	11.6	18.9	-0.2	-0.3	-20.4
GEW-110	12/12/2017 13:38	13.2	42.0	3.3	41.5	50.2	50.3	10.1	9.0	-0.1	-0.1	-19.9
GEW-110	12/12/2017 13:45	11.1	41.0	3.8	44.1	51.1	51.0	12.7	16.1	-0.2	-0.3	-21.8
GEW-110	12/19/2017 14:18	13.5	49.2	0.7	36.6	64.1	64.0	13.3	15.5	-0.2	-0.3	-19.2
GEW-110	12/26/2017 9:29	10.7	35.7	6.0	47.6	18.3	18.2	27.4	23.6	-0.5	-0.6	-20.9
GEW-110	12/26/2017 9:30	9.8	36.8	6.2	47.2	16.7	16.5	25.4	20.7	-0.3	-0.3	-20.7
GEW-113	12/6/2017 13:33	12.1	51.6	0.9	35.4	154.8	154.8	18.3	15.0	-7.6	-7.6	-22.1
GEW-113	12/6/2017 13:35	12.5	50.6	0.9	36.0	155.1	154.9	16.4	17.4	-7.6	-7.6	-22.2
GEW-113	12/21/2017 14:47	9.6	48.8	2.0	39.6	154.0	154.0	18.9	15.9	-7.1	-7.1	-19.2
GEW-113	12/21/2017 14:49	9.8	47.6	2.0	40.6	154.4	154.4	17.7	17.1	-7.1	-7.1	-18.9
GEW-116	12/6/2017 14:46	7.9	55.6	1.1	35.4	183.9	183.9	6.5	6.2	-8.1	-8.1	-21.5
GEW-116	12/6/2017 14:47	7.9	58.3	1.0	32.8	183.9	183.9	5.3	5.4	-8.1	-8.1	-21.4
GEW-116	12/22/2017 10:04	6.9	58.6	0.2	34.3	184.5	184.5	3.8	8.3	-7.3	-7.3	-20.0
GEW-116	12/22/2017 10:05	7.0	61.1	0.2	31.7	184.5	184.5	6.0	7.4	-7.2	-7.2	-20.6
GEW-117	12/6/2017 15:25	44.2	51.4	0.0	4.4	117.6	117.9	NR	NR	-13.4	-13.5	-21.1
GEW-117	12/22/2017 10:09	42.9	53.5	0.0	3.6	111.4	111.5	NR	NR	-6.8	-6.9	-19.8
GEW-118	12/6/2017 15:33	2.4	58.6	1.8	37.2	190.3	190.2	81.8	81.7	-0.2	-0.2	-20.7
GEW-118	12/6/2017 15:45	2.5	61.8	0.0	35.7	194.3	194.3	92.9	92.9	-0.1	-0.1	-20.9
GEW-118	12/22/2017 10:23	2.3	54.0	0.0	43.7	193.7	193.6	17.2	17.7	0.1	0.1	-20.1
GEW-118	12/22/2017 10:25	1.7	57.1	0.0	41.2	193.6	193.6	17.4	17.2	-0.1	-0.1	-19.8
GEW-120	12/6/2017 15:28	17.2	52.0	0.0	30.8	164.7	164.7	32.3	32.4	-19.8	-19.8	-21.0
GEW-120	12/6/2017 15:30	17.1	53.0	0.0	29.9	164.7	164.5	32.1	32.8	-19.8	-19.8	-20.9
GEW-120	12/22/2017 10:13	14.3	44.5	0.4	40.8	163.8	163.8	34.2	32.3	-18.5	-18.6	-19.8
GEW-120	12/22/2017 10:14	14.0	46.0	0.4	39.6	163.8	163.8	30.2	32.2	-18.5	-18.8	-19.8
GEW-121	12/7/2017 9:17	9.7	41.8	0.4	48.1	168.1	168.1	17.8	22.7	-19.2	-19.6	-20.5
GEW-121	12/7/2017 9:18	9.1	44.9	0.3	45.7	168.1	168.1	22.8	24.9	-19.6	-19.5	-20.0
GEW-121	12/22/2017 10:17	7.3	43.7	0.6	48.4	171.0	171.0	21.3	21.7	-18.0	-18.0	-19.2

December 2017 Wellfield Monitoring Data - Bridgeton Landfill

Well Name	Date Sampled	Methane	CO ₂	O ₂	Balance Gas	Init Temp	Adj Temp	Init Flow	Adj Flow	Init Static Press	Adj Static Press	System Pressure
		(% vol)				°F		scfm		H ₂ O		
GEW-121	12/22/2017 10:18	6.6	43.7	0.6	49.1	171.0	171.0	22.5	21.4	-18.0	-18.0	-18.9
GEW-122	12/7/2017 9:38	11.5	34.2	0.7	53.6	151.0	150.6	22.2	25.6	-20.6	-21.1	-21.6
GEW-122	12/7/2017 9:39	11.4	35.6	0.5	52.5	151.0	151.0	19.8	19.8	-20.6	-20.6	-21.5
GEW-122	12/22/2017 10:57	12.2	34.9	0.7	52.2	156.0	156.0	19.5	19.8	-19.4	-19.4	-18.7
GEW-122	12/22/2017 10:59	11.6	36.7	0.6	51.1	156.0	156.0	19.4	19.7	-19.4	-19.4	-18.5
GEW-123	12/7/2017 9:22	15.0	49.2	0.0	35.8	162.4	162.9	15.1	14.7	-14.3	-14.3	-21.2
GEW-123	12/7/2017 9:23	14.9	50.0	0.0	35.1	162.4	162.9	16.8	16.6	-14.3	-14.3	-22.3
GEW-123	12/22/2017 11:07	11.5	43.2	0.0	45.3	163.3	162.9	22.7	22.1	-13.1	-13.1	-20.0
GEW-123	12/22/2017 11:08	11.5	45.6	0.0	42.9	163.5	163.3	22.5	21.9	-13.1	-13.1	-20.3
GEW-124	12/7/2017 10:13	47.5	36.2	2.8	13.5	38.4	38.2	5.8	5.7	-19.1	-19.1	-20.3
GEW-124	12/22/2017 11:14	34.0	35.3	6.3	24.4	48.5	48.5	2.4	2.7	-18.5	-18.5	-19.5
GEW-124	12/22/2017 11:15	36.0	37.1	5.3	21.6	48.3	48.3	3.3	3.4	-18.1	-18.0	-19.4
GEW-125	12/7/2017 10:32	5.6	38.2	2.7	53.5	181.6	181.6	20.6	25.1	-16.2	-16.2	-20.7
GEW-125	12/7/2017 10:34	3.8	42.7	2.6	50.9	181.5	181.5	19.7	20.9	-15.7	-15.7	-20.2
GEW-125	12/22/2017 11:40	4.4	43.9	2.8	48.9	175.3	175.8	26.0	25.0	-14.6	-14.3	-19.7
GEW-125	12/22/2017 11:42	4.1	45.3	2.8	47.8	175.9	175.8	25.2	26.4	-14.1	-14.1	-19.7
GEW-126	12/7/2017 10:43	18.8	49.3	0.0	31.9	48.2	48.1	10.5	9.2	-10.5	-10.3	-10.4
GEW-126	12/22/2017 11:35	19.6	49.0	0.0	31.4	53.4	53.4	11.6	3.6	-8.1	-8.0	-7.9
GEW-127	12/7/2017 10:58	9.0	58.2	0.4	32.4	177.5	178.1	22.6	26.4	-18.1	-18.1	-19.1
GEW-127	12/7/2017 10:59	8.9	58.9	0.4	31.8	177.5	178.0	20.8	20.6	-16.8	-17.2	-17.5
GEW-127	12/22/2017 11:04	7.8	46.8	3.6	41.8	169.0	169.0	29.9	34.6	-19.7	-19.2	-19.7
GEW-127	12/22/2017 11:05	7.7	47.1	3.5	41.7	169.5	169.8	34.8	34.8	-19.2	-19.2	-20.1
GEW-128	12/7/2017 11:07	13.9	62.9	0.0	23.2	168.5	168.1	22.6	25.3	-20.1	-20.1	-20.7
GEW-128	12/7/2017 11:09	13.6	64.3	0.0	22.1	168.5	168.7	23.3	22.1	-20.6	-21.1	-21.6
GEW-128	12/22/2017 10:51	14.5	58.1	0.0	27.4	164.3	164.3	23.9	22.0	-19.2	-19.2	-19.7
GEW-128	12/22/2017 10:53	14.5	59.2	0.0	26.3	164.3	164.3	26.3	23.0	-19.2	-19.2	-19.7
GEW-129	12/7/2017 11:34	12.1	60.8	0.0	27.1	105.5	104.5	6.9	6.1	-19.7	-20.6	-20.2
GEW-129	12/22/2017 10:20	12.5	60.3	0.0	27.2	144.5	144.5	5.9	11.9	-19.7	-19.7	-20.2
GEW-129	12/22/2017 10:22	12.5	62.9	0.0	24.6	145.2	145.2	9.5	8.6	-19.7	-19.7	-20.1
GEW-130	12/7/2017 10:47	6.1	40.9	6.8	46.2	164.7	164.7	48.9	41.5	-12.8	-12.7	-22.3
GEW-130	12/7/2017 10:54	4.6	42.4	6.7	46.3	167.6	168.1	28.2	29.9	-6.2	-6.1	-22.4
GEW-130	12/12/2017 9:45	4.3	49.1	4.7	41.9	178.7		29.0	30.7	-4.1	-4.0	-20.7
GEW-130	12/12/2017 14:11	5.7	47.9	4.7	41.7	169.7		37.5	36.8	-8.1	-7.8	-20.8
GEW-130	12/22/2017 10:35	3.9	40.0	7.3	48.8	170.4	170.5	45.0	26.5	-8.1	-7.0	-20.5
GEW-130	12/22/2017 10:38	4.0	39.0	7.5	49.5	171.0	171.0	36.7	28.3	-7.0	-7.0	-20.1
GEW-131	12/7/2017 10:38	20.0	42.0	0.0	38.0	163.3	163.3	12.6	14.5	-13.2	-13.3	-20.8
GEW-131	12/7/2017 10:40	20.0	41.5	0.0	38.5	163.3	163.5	15.4	15.9	-13.3	-13.2	-22.0
GEW-131	12/22/2017 11:26	20.6	41.5	0.0	37.9	161.1	161.1	15.1	13.6	-12.4	-12.4	-20.4
GEW-131	12/22/2017 11:27	20.6	42.5	0.0	36.9	161.2	161.2	13.5	14.2	-12.5	-12.6	-20.2
GEW-132	12/7/2017 9:11	2.3	19.1	9.1	69.5	164.3	163.9	6.5	5.2	-1.1	-1.1	-21.6
GEW-132	12/7/2017 9:13	2.1	21.9	8.9	67.1	125.3	121.8	1.9	3.4	-0.2	-0.2	-21.3

December 2017 Wellfield Monitoring Data - Bridgeton Landfill

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		(% vol)				°F		scfm		H ₂ O		
GEW-132	12/22/2017 10:31	0.4	57.9	0.0	41.7	135.0	135.0	2.6	2.1	0.1	0.1	-20.0
GEW-132	12/22/2017 10:32	0.4	57.7	0.0	41.9	186.4	186.4	8.1	5.9	-0.2	-0.2	-20.0
GEW-133	12/6/2017 14:50	11.6	53.9	0.0	34.5	151.7	151.7	16.8	16.8	-17.8	-17.8	-20.6
GEW-133	12/6/2017 14:51	11.7	53.0	0.0	35.3	151.7	152.0	13.6	12.1	-17.8	-17.8	-22.2
GEW-134	12/6/2017 14:43	16.2	40.4	1.7	41.7	122.9	122.9	3.2	2.7	-0.8	-0.8	-20.8
GEW-134	12/22/2017 9:56	11.4	42.3	1.7	44.6	118.1	117.3	2.2	1.9	-0.8	-0.8	-20.1
GEW-135	12/6/2017 13:51	8.0	40.5	2.4	49.1	154.6	154.8	26.2	28.0	-7.0	-7.1	-21.6
GEW-135	12/6/2017 13:52	7.8	42.4	2.4	47.4	154.8	154.4	31.8	32.8	-6.6	-7.0	-20.9
GEW-135	12/21/2017 15:06	8.2	48.0	1.7	42.1	152.9	152.9	29.3	29.4	-5.8	-5.9	-18.8
GEW-135	12/21/2017 15:07	8.7	47.0	1.6	42.7	153.3	153.3	26.7	29.0	-5.7	-5.9	-18.9
GEW-136	12/6/2017 13:56	4.8	35.8	4.4	55.0	128.0	128.0	5.4	6.2	-0.1	-0.1	-13.7
GEW-136	12/21/2017 15:10	5.5	40.5	3.6	50.4	128.6	128.8	5.2	4.5	-0.1	-0.1	-10.8
GEW-137	12/6/2017 14:00	28.3	37.2	0.2	34.3	58.7	58.7	2.9	2.4	-9.6	-9.6	-20.7
GEW-137	12/21/2017 15:14	27.0	37.4	0.1	35.5	70.8	70.7	0.5	1.0	-10.0	-10.0	-18.8
GEW-138	12/6/2017 14:05	11.3	34.1	1.1	53.5	99.4	98.9	5.2	3.9	-0.2	-0.3	-21.3
GEW-138	12/21/2017 15:18	12.3	37.2	0.0	50.5	103.5	103.3	3.2	4.1	-0.2	-0.2	-18.7
GEW-139	12/7/2017 11:44	0.9	55.3	0.0	43.8	146.3	146.3	3.0	2.7	0.1	0.1	-8.4
GEW-139	12/7/2017 11:48	1.1	56.8	0.0	42.1	147.3	147.5	3.6	5.4	-0.3	-0.2	-10.4
GEW-139	12/22/2017 9:38	3.6	52.1	0.0	44.3	144.9	144.9	4.7	3.9	-3.4	-3.4	-19.7
GEW-139	12/22/2017 9:39	3.5	56.6	0.0	39.9	145.2	145.2	2.1	5.6	-3.4	-3.4	-19.7
GEW-140	12/7/2017 13:35	0.3	8.0	19.9	71.8	45.2	45.7	3.4	3.4	-15.1	-15.1	-20.5
GEW-140	12/7/2017 13:36	0.1	2.9	21.0	76.0	46.1	46.1	3.4	3.4	-15.2	-15.2	-20.1
GEW-140	12/22/2017 9:46	3.0	56.3	0.0	40.7	46.4	50.2	3.3	2.6	2.0	-1.3	-20.1
GEW-140	12/22/2017 9:47	2.4	56.5	0.0	41.1	51.8	52.1	4.3	3.3	-1.5	-1.5	-19.9
GEW-142	12/7/2017 13:46	0.0	5.2	20.7	74.1	42.8	42.8	1.3	1.3	-16.7	-16.7	-20.5
GEW-142	12/7/2017 13:47	0.0	2.3	21.1	76.6	43.1	43.1	2.1	2.7	-16.6	-16.6	-20.1
GEW-142	12/22/2017 9:32	0.0	15.5	18.1	66.4	44.0	44.1	5.3	5.4	-15.9	-15.9	-19.6
GEW-142	12/22/2017 9:34	0.0	11.6	18.5	69.9	44.2	44.3	3.2	2.9	-16.7	-16.4	-19.7
GEW-143	12/7/2017 14:20	0.0	1.7	19.5	78.8	39.8	39.9	3.4	2.4	-17.9	-17.9	-19.8
GEW-143	12/7/2017 14:23	0.1	11.8	17.0	71.1	41.6	41.6	2.0	1.1	-19.5	-19.5	-20.1
GEW-143	12/22/2017 9:15	1.6	9.4	17.4	71.6	44.3	44.3	3.4	4.5	-19.2	-19.2	-20.1
GEW-143	12/22/2017 9:17	0.9	8.5	17.2	73.4	44.4	44.3	2.7	2.9	-19.2	-19.2	-19.7
GEW-144	12/28/2017 15:16	0.8	22.5	14.7	62.0	23.1	23.1	2.6	3.6	-18.9	-19.1	-19.2
GEW-144	12/28/2017 15:18	1.0	21.2	13.7	64.1	23.2	23.3	2.2	2.2	-18.9	-18.8	-19.1
GEW-145	12/15/2017 8:34	0.4	13.9	18.5	67.2	36.3	36.3	5.1	5.4	-14.8	-14.8	-20.9
GEW-145	12/15/2017 8:35					36.3	36.4	5.2	5.2	-8.5	-8.5	-20.6
GEW-146	12/6/2017 13:08	3.1	9.8	15.2	71.9	83.1	83.1	9.1	8.9	-0.1	-0.1	-21.2
GEW-146	12/6/2017 13:09	3.3	6.8	15.6	74.3	82.8	82.9	8.4	8.1	-0.1	-0.1	-19.6
GEW-146	12/21/2017 14:37	3.8	12.3	13.1	70.8	85.6	85.6	8.2	8.0	0.0	0.0	-18.7
GEW-146	12/21/2017 14:38	3.9	10.3	13.4	72.4	86.1	86.0	7.2	8.4	-0.1	-0.1	-18.5
GEW-147	12/6/2017 13:42	10.4	44.7	0.0	44.9	183.3	183.3	43.5	41.7	-18.4	-18.4	-21.1

December 2017 Wellfield Monitoring Data - Bridgeton Landfill

Well Name	Date Sampled	Methane	CO ₂	O ₂	Balance Gas	Init Temp	Adj Temp	Init Flow	Adj Flow	Init Static Press	Adj Static Press	System Pressure
		(% vol)				°F		scfm		H ₂ O		
GEW-147	12/6/2017 13:43	10.5	45.6	0.0	43.9	183.9	183.9	41.7	42.6	-18.7	-18.8	-21.1
GEW-147	12/21/2017 14:55	10.3	48.5	0.0	41.2	183.3	183.3	40.5	40.1	-16.3	-16.3	-18.3
GEW-147	12/21/2017 14:56	10.6	47.8	0.0	41.6	182.7	182.7	41.4	42.0	-16.8	-16.8	-19.2
GEW-148	12/6/2017 10:40	0.1	6.8	20.9	72.2	54.4	54.7	3.1	1.7	-19.2	-19.7	-19.3
GEW-148	12/6/2017 10:41	0.0	3.0	21.6	75.4	55.5	55.5	2.3	3.3	-18.6	-18.6	-18.8
GEW-148	12/21/2017 14:28	4.3	53.1	0.3	42.3	76.0	76.1	3.1	3.0	-16.9	-16.9	-18.5
GEW-149	12/5/2017 15:53	8.3	37.6	3.4	50.7	118.6	118.6	14.1	15.6	-0.2	-0.2	-17.2
GEW-150	12/7/2017 11:30	25.3	41.2	4.3	29.2	48.6	48.6	3.7	3.1	-0.1	-0.1	-17.1
GEW-150	12/21/2017 15:12	16.7	48.6	4.4	30.3	62.1	63.1	11.5	8.6	0.4	0.2	-9.3
GEW-150	12/21/2017 15:14	16.6	48.0	5.1	30.3	63.5	63.5	8.7	8.4	0.3	0.3	-8.5
GEW-150	12/21/2017 15:16	18.2	47.9	5.1	28.8	63.7	63.7	8.6	8.5	0.2	0.2	-8.5
GEW-151	12/6/2017 10:20	12.4	36.6	2.9	48.1	86.8	86.5	26.1	26.1	-17.3	-17.3	-20.2
GEW-152	12/7/2017 10:06	32.3	42.4	1.0	24.3	105.2	105.3	1.1	3.1	-11.1	-10.9	-22.2
GEW-152	12/21/2017 14:00	27.0	47.7	0.0	25.3	122.9	123.1	2.6	3.0	-7.4	-7.4	-18.5
GEW-153	12/7/2017 10:14	35.8	40.1	0.0	24.1	58.6	58.7	7.0	8.5	-6.4	-6.4	-21.5
GEW-153	12/21/2017 13:44	38.2	37.9	0.0	23.9	103.9	104.0	5.9	5.6	-3.0	-3.0	-18.6
GEW-154	12/5/2017 15:40	1.0	13.2	17.5	68.3	57.5	57.5	2.1	2.1	-1.7	-1.7	-20.2
GEW-154	12/5/2017 15:41	1.1	6.9	18.6	73.4	57.7	57.8	2.7	2.7	-1.8	-1.7	-20.0
GEW-154	12/21/2017 14:03	4.9	16.6	12.2	66.3	70.9	70.9	3.8	4.9	-1.0	-0.9	-17.3
GEW-154	12/21/2017 14:04	5.4	13.4	12.7	68.5	70.5	70.4	1.5	1.4	-0.8	-0.9	-16.8
GEW-155	12/6/2017 14:30	1.7	25.0	0.3	73.0	92.4	92.7	5.2	4.7	-0.1	-0.1	-20.5
GEW-155	12/22/2017 9:18	5.9	25.4	0.2	68.5	83.5	83.7	4.2	3.7	-0.1	-0.1	-17.9
GEW-156	12/7/2017 11:41	5.2	21.8	14.3	58.7	76.4	76.4	29.2	14.6	-0.5	-0.5	-20.8
GEW-156	12/7/2017 11:42	4.8	13.1	15.6	66.5	76.8	76.9	8.8	17.0	-0.5	-0.5	-20.6
GEW-156	12/21/2017 15:35	7.0	7.7	16.0	69.3	93.1	92.4	23.0	9.5	-0.4	-0.2	-23.5
GEW-156	12/21/2017 15:37	7.1	8.6	15.7	68.6	92.6	92.6	6.8	10.2	-0.2	-0.2	-23.4
GEW-158	12/7/2017 10:43	24.6	56.1	0.0	19.3	85.4	85.8	103.6	91.3	-1.6	-1.6	-1.8
GEW-158	12/21/2017 14:19	25.2	54.9	0.0	19.9	106.9	107.0	10.4	9.0	-0.9	-0.9	-9.0
GEW-159	12/7/2017 9:35	28.7	39.7	0.3	31.3	63.3	63.3	6.5	7.7	-10.8	-10.8	-22.2
GEW-159	12/21/2017 13:35	32.0	40.3	0.0	27.7	72.5	72.5	12.0	12.1	-16.7	-16.7	-18.8
GEW-160	12/5/2017 15:26	8.5	43.7	1.4	46.4	52.0	52.1	14.5	10.0	-20.6	-20.2	-20.2
GEW-160	12/21/2017 13:49	4.5	52.2	0.0	43.3	83.2	83.3	6.5	8.8	-17.2	-17.2	-17.1
GEW-161	12/5/2017 15:29	0.3	16.4	16.8	66.5	51.8	51.9	5.2	3.5	-20.6	-20.6	-20.4
GEW-161	12/5/2017 15:30	0.3	15.2	17.4	67.1	51.8	52.0	2.6	1.2	-20.1	-20.5	-19.9
GEW-161	12/21/2017 13:53	0.1	29.5	11.7	58.7	62.9	63.0	5.9	5.3	-17.1	-16.8	-16.8
GEW-161	12/21/2017 13:54	0.1	22.6	12.9	64.4	63.6	63.7	2.9	2.9	-16.9	-17.0	-16.9
GEW-162	12/5/2017 15:50	21.6	63.6	0.0	14.8	51.4	51.5	3.4	3.6	-15.8	-15.8	-19.9
GEW-162	12/21/2017 14:20	19.7	61.7	0.0	18.6	64.1	64.1	6.2	5.7	-15.4	-15.4	-18.4
GEW-163	12/4/2017 10:44	11.1	41.7	5.8	41.4	174.2	174.2	16.2	10.8	-0.1	-0.2	-18.7
GEW-163	12/4/2017 10:46	10.8	42.4	5.8	41.0	174.2	174.2	15.0	15.7	-0.1	-0.1	-19.4
GEW-163	12/12/2017 14:33	8.4	38.0	8.8	44.8	169.7		15.9	15.6	-0.2	-0.2	-20.8

December 2017 Wellfield Monitoring Data - Bridgeton Landfill

Well Name	Date Sampled	Methane	CO ₂	O ₂	Balance Gas	Init Temp	Adj Temp	Init Flow	Adj Flow	Init Static Press	Adj Static Press	System Pressure
		(% vol)				°F		scfm		H ₂ O		
GEW-163	12/12/2017 15:05	3.3	66.1	3.4	27.2	185.0		60.3	60.7	-1.2	-1.2	-22.8
GEW-163	12/14/2017 10:26	10.8	22.7	13.0	53.5	136.8	136.5	50.9	57.8	-1.8	-1.8	-22.4
GEW-163	12/14/2017 10:31	10.0	26.8	12.3	50.9	130.3	130.0	7.2	4.4	-0.1	-0.1	-20.4
GEW-163	12/21/2017 8:02	2.2	26.7	12.2	58.9	168.6	169.0	9.8	3.4	-0.1	-0.1	-18.7
GEW-163	12/21/2017 8:04	2.2	27.1	12.3	58.4	169.5	169.5	11.2	10.1	-0.1	-0.1	-18.5
GEW-163	12/26/2017 11:31	2.9	24.7	13.4	59.0	156.5	156.0	13.8	12.2	-0.1	-0.1	-19.8
GEW-163	12/26/2017 11:33	1.6	23.5	14.0	60.9	156.0	155.6	14.7	13.2	-0.1	-0.1	-20.4
GEW-164	12/4/2017 10:49	20.4	55.1	1.9	22.6	164.8	164.7	40.4	34.6	-0.6	-0.6	-19.5
GEW-164	12/4/2017 10:50	20.2	55.4	1.9	22.5	164.7	164.3	22.7	22.1	-0.7	-0.6	-20.2
GEW-164	12/14/2017 10:34	20.3	49.1	3.8	26.8	162.0	162.5	26.9	32.9	-0.7	-0.7	-22.0
GEW-164	12/14/2017 10:35	19.7	50.4	3.6	26.3	162.0	161.9	37.8	45.1	-0.4	-0.4	-22.0
GEW-164	12/21/2017 8:11	22.8	55.0	1.8	20.4	160.8	161.1	19.0	19.1	-0.5	-0.5	-19.6
GEW-164	12/21/2017 8:13	22.8	55.2	1.7	20.3	161.1	161.1	38.4	27.0	-0.5	-0.5	-19.9
GEW-164	12/26/2017 11:36	20.6	45.9	3.8	29.7	155.2	154.7	36.5	30.2	-0.6	-0.6	-21.1
GEW-164	12/26/2017 11:38	20.1	47.1	3.5	29.3	154.4	155.2	37.6	31.6	-0.6	-0.6	-20.8
GEW-165	12/4/2017 10:53	9.1	55.3	2.6	33.0	183.3	183.3	20.9	28.3	-0.9	-0.8	-19.6
GEW-165	12/4/2017 10:55	8.9	57.5	2.6	31.0	183.3	183.3	27.7	24.8	-0.8	-0.8	-19.7
GEW-165	12/14/2017 10:39	9.4	52.6	3.9	34.1	180.3	180.7	29.9	27.0	-1.0	-1.0	-21.2
GEW-165	12/14/2017 10:41	9.4	53.9	3.8	32.9	180.9	180.8	32.4	31.2	-1.0	-0.9	-21.5
GEW-165	12/21/2017 8:20	11.6	59.0	1.6	27.8	175.8	176.9	15.3	15.5	-0.6	-0.6	-18.8
GEW-165	12/21/2017 8:22	12.2	58.9	1.8	27.1	179.7	179.7	29.7	41.5	-0.6	-0.5	-18.8
GEW-165	12/26/2017 11:41	12.1	51.2	2.7	34.0	180.3	179.9	26.6	26.9	-0.8	-0.8	-20.0
GEW-165	12/26/2017 11:43	11.3	53.1	2.7	32.9	179.7	180.3	29.8	31.0	-0.7	-0.7	-20.3
GEW-166	12/4/2017 10:58	0.9	57.3	0.5	41.3	195.0	195.0	35.7	30.6	-13.8	-13.8	-18.4
GEW-166	12/4/2017 11:00	0.9	58.0	0.5	40.6	194.9	194.7	30.2	33.8	-14.8	-14.8	-18.8
GEW-166	12/14/2017 10:47	1.2	53.7	0.6	44.5	194.3	194.3	33.4	32.2	-15.7	-15.5	-20.7
GEW-166	12/14/2017 10:48	1.1	56.4	0.5	42.0	194.3	194.3	29.7	27.8	-15.9	-15.8	-20.4
GEW-166	12/21/2017 8:27	1.2	58.4	0.6	39.8	193.6	193.6	42.3	23.3	-13.7	-13.3	-18.6
GEW-166	12/21/2017 8:29	1.1	57.3	0.6	41.0	193.6	193.6	20.6	17.7	-13.7	-14.2	-18.3
GEW-166	12/26/2017 11:46	2.9	49.7	0.7	46.7	192.3	192.3	34.8	32.5	-16.0	-15.8	-20.0
GEW-166	12/26/2017 11:48	1.0	53.5	0.6	44.9	192.6	192.9	31.9	32.5	-15.9	-15.8	-19.6
GEW-167	12/4/2017 11:03	0.3	55.1	1.8	42.8	192.3	192.3	13.2	14.7	-0.1	-0.1	-18.3
GEW-167	12/4/2017 11:04	0.4	54.2	1.8	43.6	192.3	192.3	12.4	15.8	-0.1	-0.1	-18.2
GEW-167	12/14/2017 10:52	0.7	41.8	7.5	50.0	187.0	187.6	13.5	12.0	-0.3	-0.2	-19.1
GEW-167	12/14/2017 10:54	0.6	40.6	6.9	51.9	187.0	186.4	8.7	12.5	-0.1	-0.1	-20.6
GEW-167	12/21/2017 8:37	0.4	56.2	0.0	43.4	192.3	192.9	8.1	8.9	0.0	0.0	-18.4
GEW-167	12/21/2017 8:39	0.5	57.4	0.0	42.1	192.9	192.4	26.7	25.9	-0.3	-0.3	-18.8
GEW-167	12/26/2017 13:38	0.3	41.2	4.3	54.2	188.3	188.3	9.3	2.3	-0.1	-0.1	-18.0
GEW-167	12/26/2017 13:40	0.3	43.1	4.1	52.5	188.3	188.0	10.4	8.4	-0.2	-0.1	-17.8
GEW-168	12/4/2017 11:07	9.7	59.8	0.0	30.5	178.6	178.6	176.3	177.2	-2.0	-1.9	-18.8
GEW-168	12/4/2017 11:08	9.6	61.5	0.0	28.9	178.6	178.0	179.4	180.1	-2.0	-1.9	-19.4

December 2017 Wellfield Monitoring Data - Bridgeton Landfill

Well Name	Date Sampled	Methane	CO ₂	O ₂	Balance Gas	Init Temp	Adj Temp	Init Flow	Adj Flow	Init Static Press	Adj Static Press	System Pressure
		(% vol)				°F		scfm		H ₂ O		
GEW-168	12/14/2017 10:58	10.8	58.5	0.0	30.7	176.8	176.4	177.5	177.9	-2.7	-2.7	-21.2
GEW-168	12/14/2017 10:59	10.9	59.2	0.0	29.9	176.4	176.4	177.2	178.1	-2.7	-2.7	-21.2
GEW-168	12/21/2017 8:44	12.1	60.0	0.2	27.7	172.6	172.6	176.5	176.7	-3.0	-3.0	-19.6
GEW-168	12/21/2017 8:45	12.5	59.9	0.3	27.3	172.6	173.1	174.9	175.6	-3.0	-3.0	-19.6
GEW-168	12/26/2017 13:44	10.9	54.5	0.4	34.2	167.6	167.6	178.0	177.4	-3.1	-3.1	-20.1
GEW-168	12/26/2017 13:45	11.0	55.8	0.3	32.9	167.6	167.9	178.0	177.5	-3.1	-3.1	-20.2
GEW-169	12/4/2017 11:11	2.9	62.1	0.3	34.7	190.9	190.2	9.0	10.1	-0.8	-0.8	-19.8
GEW-169	12/4/2017 11:13	3.0	62.8	0.3	33.9	190.9	190.8	15.8	15.1	-1.0	-1.0	-19.7
GEW-169	12/14/2017 11:03	2.6	53.1	3.2	41.1	187.6	187.0	15.1	12.4	-1.3	-1.3	-21.2
GEW-169	12/14/2017 11:04	2.5	54.5	3.2	39.8	187.2	187.2	9.5	10.8	-1.1	-1.1	-21.5
GEW-169	12/21/2017 8:50	2.8	56.0	2.8	38.4	187.1	187.6	8.3	13.8	-0.9	-0.8	-19.6
GEW-169	12/21/2017 8:51	2.7	56.3	2.8	38.2	187.6	187.6	14.1	8.3	-0.8	-0.8	-19.3
GEW-169	12/26/2017 13:48	2.3	50.3	3.2	44.2	185.7	185.1	14.2	16.7	-1.0	-1.0	-20.4
GEW-169	12/26/2017 13:49	2.0	52.0	3.2	42.8	185.7	185.7	13.6	12.8	-1.0	-1.0	-20.4
GEW-170	12/7/2017 11:03	11.3	55.6	2.2	30.9	165.2	165.2	27.5	28.4	-9.2	-9.2	-17.8
GEW-170	12/7/2017 11:04	11.5	56.1	2.3	30.1	165.7	165.2	31.0	31.3	-9.3	-8.9	-18.3
GEW-170	12/22/2017 10:57	8.1	43.2	6.8	41.9	164.7	164.7	22.2	21.4	-8.5	-7.9	-12.6
GEW-170	12/22/2017 10:59	8.1	43.2	6.9	41.8	164.8	165.1	25.0	24.8	-7.5	-7.5	-10.9
GEW-172	12/7/2017 13:41	0.4	54.7	1.8	43.1	41.2	41.2	9.4	8.9	-20.9	-20.9	-20.6
GEW-172	12/22/2017 9:27	0.2	49.1	4.0	46.7	46.1	46.2	4.0	2.8	-20.2	-20.2	-20.1
GEW-173	12/7/2017 13:31	33.1	38.3	1.2	27.4	86.5	87.0	6.1	6.1	-0.1	-0.1	-18.9
GEW-173	12/22/2017 9:52	32.4	47.5	0.0	20.1	80.3	80.0	5.6	10.4	-0.1	-0.1	-19.7
GEW-174	12/7/2017 14:02	19.4	42.6	0.4	37.6	138.7	138.4	32.3	40.9	-4.5	-4.5	-20.1
GEW-174	12/7/2017 14:04	18.7	45.4	0.1	35.8	139.1	139.1	26.2	22.0	-4.5	-4.5	-20.5
GEW-174	12/21/2017 15:43	6.5	11.4	15.5	66.6	144.9	144.8	64.3	70.2	-3.4	-3.3	-23.6
GEW-174	12/21/2017 15:45	7.0	11.7	15.2	66.1	144.5	144.9	63.7	64.9	-3.2	-3.2	-23.4
GEW-175	12/7/2017 11:25	15.2	33.3	8.0	43.5	115.0	115.0	52.6	43.0	-0.7	-0.7	-22.5
GEW-175	12/7/2017 11:27	14.4	35.6	7.9	42.1	115.5	115.3	51.1	51.1	-0.6	-0.6	-22.0
GEW-175	12/15/2017 8:08	16.0	38.9	6.7	38.4	122.7	122.6	51.9	53.6	-0.6	-0.6	-21.9
GEW-175	12/15/2017 8:09	16.1	41.6	6.6	35.7	123.1	123.1	51.7	60.1	-0.6	-0.6	-21.2
GEW-175	12/21/2017 15:04	12.7	25.3	11.0	51.0	121.1	121.0	51.5	55.0	-0.5	-0.5	-21.2
GEW-175	12/21/2017 15:05	12.3	25.7	10.9	51.1	121.1	121.2	48.4	55.7	-0.5	-0.5	-22.3
GEW-176	12/7/2017 11:20	22.6	32.7	7.4	37.3	45.5	45.5	10.1	10.0	-0.5	-0.5	-21.0
GEW-176	12/7/2017 11:22	22.9	33.9	7.2	36.0	45.9	45.9	8.5	9.1	-0.5	-0.5	-20.5
GEW-176	12/21/2017 14:37	16.5	32.9	8.5	42.1	65.6	65.5	8.2	7.3	-0.2	-0.1	-31.9
GEW-176	12/21/2017 14:39	15.6	33.9	8.5	42.0	65.4	65.3	10.8	11.8	-0.1	-0.1	-27.8
GEW-177	12/7/2017 11:38	0.7	66.8	4.4	28.1	42.5	42.2	7.5	7.5	-20.6	-20.2	-20.6
GEW-177	12/7/2017 11:40	0.3	59.0	2.7	38.0	42.5	42.6	7.0	8.0	-20.0	-20.5	-20.2
GEW-177	12/22/2017 10:28	0.3	60.8	2.2	36.7	50.8	50.8	10.1	9.8	-20.2	-20.1	-20.1
GEW-177	12/22/2017 10:30	0.3	61.8	2.2	35.7	50.4	50.4	5.5	6.2	-20.1	-19.9	-20.0
GEW-178	12/27/2017 9:33	14.3	44.8	4.7	36.2	47.3	47.5	5.0	5.0	-0.1	-0.1	-18.5

December 2017 Wellfield Monitoring Data - Bridgeton Landfill

Well Name	Date Sampled	Methane	CO ₂	O ₂	Balance Gas	Init Temp	Adj Temp	Init Flow	Adj Flow	Init Static Press	Adj Static Press	System Pressure
		(% vol)				°F		scfm		H ₂ O		
GEW-179	12/29/2017 14:26	0.0	0.1	21.0	78.9	28.2	28.3	1.3	1.3	-12.1	-12.1	-20.1
GEW-179	12/29/2017 14:30	11.5	39.6	8.2	40.7	28.5	28.6	4.8	5.0	-19.4	-19.4	-19.7
GEW-180	12/29/2017 14:35	2.1	30.5	12.5	54.9	29.0	29.0	1.2	1.8	-19.9	-19.9	-20.1
GEW-180	12/29/2017 14:37	1.0	17.9	16.5	64.6	28.7	28.7	1.8	1.8	-19.9	-19.9	-20.2
GEW-181	12/27/2017 10:10	7.6	42.2	8.0	42.2	28.7	28.7	2.6	1.8	-1.6	-1.6	-18.7
GEW-181	12/27/2017 10:17	7.0	42.5	8.2	42.3	25.6	25.6	1.8	2.2	-9.9	-10.0	-18.7
GEW-182	12/27/2017 11:23	4.9	45.4	4.1	45.6	30.6	30.9	1.5	1.4	-0.1	-0.1	-19.2
GEW-184	12/27/2017 11:43	31.3	55.9	0.7	12.1	58.0	58.0	3.2	2.7	-0.4	-0.4	-19.2
GEW-185	12/28/2017 14:07	17.0	56.6	0.0	26.4	127.2	127.5	2.8	2.6	0.1	0.1	-19.0
GEW-185	12/28/2017 14:09	15.2	60.7	0.0	24.1	136.2	136.8	5.7	4.9	-0.3	-0.3	-19.0
GEW-186	12/27/2017 10:35	14.0	62.1	0.0	23.9	42.1	42.2	3.1	3.1	-0.2	-0.2	-19.2
GEW-187	12/28/2017 14:53	11.6	49.8	2.4	36.2	75.9	75.9	1.7	2.1	-0.6	-0.6	-19.5
GEW-188	12/28/2017 14:24	0.6	51.2	0.0	48.2	21.9	21.9	22.9	22.9	0.6	0.6	0.5
GEW-188	12/28/2017 14:27	0.4	53.2	0.0	46.4	21.9	21.9	22.3	22.4	0.6	0.6	0.1
GEW-188	12/29/2017 15:37	0.9	44.0	2.0	53.1	183.9	183.9	38.8	39.3	-8.8	-8.7	-18.8
GEW-188	12/29/2017 15:38	0.6	46.2	2.0	51.2	183.9	184.3	39.4	39.9	-8.7	-8.9	-20.4
GEW-1A	12/6/2017 10:39	1.9	11.5	19.2	67.4	53.6	53.7	4.9	4.6	-14.1	-14.0	-14.2
GEW-1A	12/6/2017 10:40	1.5	3.6	20.7	74.2	54.5	54.5	2.9	6.8	-14.0	-14.1	-13.8
GEW-1A	12/11/2017 11:21	0.9	6.4	19.8	72.9	63.5	63.6	3.3	5.9	-13.0	-13.0	-13.3
GEW-1A	12/11/2017 11:22	0.3	1.1	20.9	77.7	64.4	64.5	3.9	1.7	-13.0	-13.0	-13.5
GEW-1A	12/11/2017 16:32	1.1	7.1	19.4	72.4	52.7	52.7	4.5	6.3	-13.7	-13.7	-13.8
GEW-1A	12/11/2017 16:33	1.3	2.3	20.2	76.2	52.6	52.6	5.4	6.1	-13.7	-13.8	-13.8
GEW-1A	12/20/2017 10:11	0.6	3.7	20.9	74.8	54.0	53.9	2.1	1.2	-13.6	-14.0	-14.0
GEW-1A	12/20/2017 10:13	0.6	2.6	21.2	75.6	53.1	53.1	1.2	1.2	-13.5	-13.5	-14.1
GEW-1A	12/29/2017 8:39	1.0	15.1	18.3	65.6	26.4	26.5	6.9	6.2	-14.6	-14.7	-14.9
GEW-1A	12/29/2017 8:41	0.4	9.3	19.2	71.1	26.5	26.5	5.0	5.0	-14.8	-14.8	-14.6
GEW-2S	12/6/2017 10:48	59.9	37.2	0.3	2.6	57.7	57.7	6.3	7.0	-4.2	-4.2	-10.8
GEW-2S	12/11/2017 11:30	58.5	38.1	0.4	3.0	65.5	65.6	2.1	5.8	-5.2	-5.2	-9.6
GEW-2S	12/13/2017 8:33	56.9	41.1	0.1	1.9	45.2	45.2	4.0	5.0	0.6	0.6	-10.9
GEW-2S	12/13/2017 8:35	56.4	41.7	0.0	1.9	45.6	45.5	2.8	2.6	-0.6	-0.7	-12.1
GEW-2S	12/22/2017 11:34	54.0	36.9	1.1	8.0	47.0	47.0	3.8	3.8	-0.4	-0.4	-10.3
GEW-2S	12/29/2017 8:53	58.9	37.6	0.0	3.5	26.0	26.2	4.5	4.3	-0.5	-0.6	-14.9
GIW-01	12/4/2017 9:26	16.9	63.9	0.1	19.1	73.0	73.1	6.9	5.2	-20.4	-20.2	-20.8
GIW-01	12/12/2017 14:45	15.5	45.8	4.9	33.8	54.4	54.4	4.6	4.6	-20.9	-20.9	-21.4
GIW-01	12/12/2017 14:53	15.9	44.0	5.3	34.8	50.8	50.6	2.7	2.7	-5.5	-5.5	-21.6
GIW-01	12/19/2017 14:41	4.4	60.2	0.0	35.4	109.5	109.2	3.2	5.4	35.9	35.9	-19.5
GIW-01	12/19/2017 14:44	3.9	63.7	0.0	32.4	179.7	179.7	18.7	20.6	-2.5	-2.5	-19.8
GIW-01	12/26/2017 10:05	14.4	43.8	4.5	37.3	41.5	41.5	5.0	7.1	-20.2	-20.2	-20.7
GIW-02	12/4/2017 9:29	8.9	46.5	3.3	41.3	67.7	67.7	1.2	2.1	-0.1	-0.1	-20.8
GIW-02	12/12/2017 14:57	6.3	36.7	6.1	50.9	44.3	44.3	1.8	1.8	-0.1	-0.1	-21.6
GIW-02	12/12/2017 15:03	6.1	34.6	6.4	52.9	44.5	44.5	2.2	2.2	-0.1	-0.1	-21.3

December 2017 Wellfield Monitoring Data - Bridgeton Landfill

Well Name	Date Sampled	Methane	CO ₂	O ₂	Balance Gas	Init Temp	Adj Temp	Init Flow	Adj Flow	Init Static Press	Adj Static Press	System Pressure
		(% vol)				°F		scfm		H ₂ O		
GIW-02	12/19/2017 14:48	4.8	40.2	6.5	48.5	57.7	57.7	2.5	1.2	-0.1	-0.1	-19.5
GIW-02	12/19/2017 14:49	4.8	39.2	6.6	49.4	57.3	57.3	1.7	2.1	-0.1	-0.1	-19.6
GIW-02	12/26/2017 10:09	3.7	30.5	10.7	55.1	15.5	15.5	1.3	1.9	-0.1	-0.1	-21.2
GIW-02	12/26/2017 10:10	3.3	30.2	10.9	55.6	15.3	15.3	1.3	1.3	0.0	-0.1	-21.1
GIW-03	12/4/2017 9:31	1.3	59.3	0.0	39.4	65.7	65.7	3.8	3.4	-1.1	-1.1	-17.8
GIW-03	12/12/2017 15:17	1.3	59.3	0.0	39.4	43.1	43.1	4.2	4.5	-0.1	-0.2	-17.4
GIW-03	12/12/2017 15:23	1.2	57.8	0.0	41.0	42.5	42.5	3.8	1.8	-0.3	-0.2	-17.6
GIW-03	12/19/2017 14:51	6.4	57.8	0.1	35.7	56.2	56.2	2.7	3.5	-3.6	-3.6	-15.2
GIW-03	12/26/2017 10:13	1.2	60.7	0.0	38.1	17.4	17.2	5.0	4.8	0.9	0.9	-16.2
GIW-03	12/26/2017 10:16	1.0	61.5	0.0	37.5	16.5	16.5	4.2	3.5	-0.2	-0.2	-16.0
GIW-04	12/4/2017 9:34	0.1	12.0	18.7	69.2	65.8	65.8	3.5	3.5	-17.2	-17.2	-21.0
GIW-04	12/4/2017 9:35	0.1	6.7	19.7	73.5	66.2	66.3	1.6	2.0	-17.3	-17.3	-20.3
GIW-04	12/12/2017 15:27	0.0	14.5	18.6	66.9	43.8	43.8	4.8	5.2	-16.3	-16.2	-20.7
GIW-04	12/12/2017 15:35	0.0	4.7	20.4	74.9	43.9	43.9	1.2	2.1	-17.3	-17.3	-21.6
GIW-04	12/19/2017 14:54	0.7	51.3	0.8	47.2	56.5	56.5	2.1	1.7	-1.2	-1.2	-19.6
GIW-04	12/26/2017 10:19	0.6	53.3	0.8	45.3	16.4	16.4	3.8	3.3	-1.4	-1.4	-21.1
GIW-05	12/4/2017 9:41	0.7	20.3	13.7	65.3	66.7	66.8	2.8	4.0	-1.4	-1.4	-20.7
GIW-05	12/4/2017 9:43	0.5	20.3	14.6	64.6	67.4	67.5	2.8	4.0	-1.1	-1.0	-19.8
GIW-05	12/12/2017 15:51	0.2	12.9	18.8	68.1	40.5	40.8	2.9	4.8	-0.9	-0.9	-21.5
GIW-05	12/12/2017 15:58	0.2	6.1	19.2	74.5	40.9	40.8	0.0	0.0	-2.5	-2.5	-21.6
GIW-05	12/19/2017 15:00	0.5	22.3	14.1	63.1	55.7	55.7	2.8	2.8	-2.3	-2.2	-19.5
GIW-05	12/19/2017 15:01	0.3	15.0	15.8	68.9	55.8	55.8	4.0	4.0	-2.2	-2.1	-19.6
GIW-05	12/26/2017 10:28	0.0	11.9	20.5	67.6	14.5	14.8	0.0	0.0	0.0	0.0	-21.1
GIW-05	12/26/2017 10:29	0.0	8.8	21.3	69.9	14.9	14.8	0.0	0.0	0.0	0.0	-21.1
GIW-06	12/4/2017 10:12	16.5	43.4	0.6	39.5	69.3	69.3	3.9	3.3	-10.4	-10.4	-19.8
GIW-06	12/13/2017 10:54	2.1	51.3	0.3	46.3	55.0	55.0	2.1	3.2	-2.8	-2.8	-20.1
GIW-06	12/13/2017 11:01	1.5	51.9	0.3	46.3	54.7	54.7	4.9	2.1	-2.9	-2.9	-20.1
GIW-06	12/19/2017 15:04	14.9	45.2	0.2	39.7	55.5	55.5	3.8	1.7	-5.3	-5.3	-19.6
GIW-06	12/26/2017 11:03	1.7	50.2	0.5	47.6	20.4	20.4	4.7	5.7	-2.9	-2.9	-20.8
GIW-07	12/4/2017 10:15	21.9	59.6	0.3	18.2	70.2	70.2	4.4	4.1	-6.5	-6.5	-20.8
GIW-07	12/13/2017 11:05	20.6	56.5	0.5	22.4	54.8	54.9	4.9	4.7	-6.7	-6.7	-20.2
GIW-07	12/13/2017 11:12	21.0	57.4	0.7	20.9	57.2	57.2	4.2	4.2	-6.8	-6.7	-19.6
GIW-07	12/19/2017 15:06	20.9	56.2	0.9	22.0	54.7	54.7	4.2	4.2	-6.3	-6.3	-19.5
GIW-07	12/26/2017 11:06	20.9	58.9	0.6	19.6	18.1	18.1	6.9	6.5	-6.9	-7.0	-20.6
GIW-08	12/4/2017 10:17	27.1	55.3	0.0	17.6	71.6	71.6	2.6	2.6	-3.5	-3.5	-20.7
GIW-08	12/13/2017 11:15	24.6	53.1	0.0	22.3	58.8	58.7	3.6	3.6	-3.8	-3.8	-19.7
GIW-08	12/13/2017 11:21	25.4	50.3	0.0	24.3	58.2	58.2	11.8	4.9	-3.8	-3.8	-20.0
GIW-08	12/19/2017 15:08	26.2	55.4	0.0	18.4	55.2	55.2	1.7	1.7	-3.3	-3.3	-19.6
GIW-08	12/26/2017 11:09	25.0	53.1	0.0	21.9	21.9	21.9	4.5	4.3	-3.2	-3.2	-20.6
GIW-09	12/4/2017 10:22	3.5	23.4	9.8	63.3	70.5	70.5	2.9	1.7	-1.5	-1.5	-20.8
GIW-09	12/4/2017 10:24	3.8	18.4	10.2	67.6	70.7	70.7	1.7	1.7	-1.6	-1.6	-20.8

December 2017 Wellfield Monitoring Data - Bridgeton Landfill

Well Name	Date Sampled	Methane	CO ₂	O ₂	Balance Gas	Init Temp	Adj Temp	Init Flow	Adj Flow	Init Static Press	Adj Static Press	System Pressure
		(% vol)				°F		scfm		H ₂ O		
GIW-09	12/13/2017 11:35	12.5	29.1	3.7	54.7	54.5	54.5	1.7	1.7	-1.5	-1.5	-19.6
GIW-09	12/13/2017 11:46	13.8	23.6	4.1	58.5	55.5	55.5	2.5	6.5	-1.4	-1.4	-20.0
GIW-09	12/19/2017 15:12	2.4	21.1	10.5	66.0	55.0	54.9	2.8	2.8	-1.1	-1.1	-19.6
GIW-09	12/19/2017 15:13	2.7	16.8	11.0	69.5	54.9	54.9	2.5	2.5	-1.1	-1.1	-19.8
GIW-09	12/26/2017 11:15	1.3	20.1	14.5	64.1	20.3	20.4	4.0	4.0	-1.3	-1.3	-20.9
GIW-09	12/26/2017 11:16	1.6	14.7	15.5	68.2	20.4	20.4	1.9	3.0	-1.3	-1.3	-20.6
GIW-10	12/4/2017 9:38	6.6	45.8	0.1	47.5	67.7	67.7	2.7	2.7	-3.5	-3.5	-20.7
GIW-10	12/12/2017 15:40	6.8	46.0	0.0	47.2	45.2	45.2	1.2	2.5	-3.9	-4.0	-21.5
GIW-10	12/12/2017 15:46	5.5	45.3	0.0	49.2	44.5	44.4	2.2	3.3	-3.9	-3.9	-21.2
GIW-10	12/19/2017 14:56	7.6	46.0	0.0	46.4	56.3	56.3	2.4	2.4	-3.7	-3.7	-19.5
GIW-10	12/26/2017 10:22	6.6	44.2	0.0	49.2	17.4	17.5	4.0	2.3	-4.4	-4.4	-21.0
GIW-11	12/4/2017 9:21	9.8	51.0	0.0	39.2	68.1	68.1	2.7	1.7	-1.0	-1.0	-18.5
GIW-11	12/12/2017 14:20	11.5	49.4	0.0	39.1	45.5	45.5	3.1	2.8	-1.2	-1.3	-20.7
GIW-11	12/12/2017 14:27	9.9	50.2	0.0	39.9	47.0	46.9	5.3	6.0	-1.3	-1.3	-19.3
GIW-11	12/19/2017 14:28	10.5	46.7	0.0	42.8	57.2	57.2	4.6	3.7	-1.1	-1.1	-19.0
GIW-11	12/26/2017 9:56	10.5	44.5	0.1	44.9	16.4	16.4	3.3	3.3	-1.5	-1.4	-16.0
GIW-12	12/4/2017 9:14	1.7	60.2	0.0	38.1	63.3	63.3	2.8	2.9	0.0	0.0	-19.3
GIW-12	12/4/2017 9:16	1.4	62.6	0.0	36.0	64.5	64.6	1.2	1.2	-0.1	-0.1	-18.2
GIW-12	12/12/2017 13:59	14.7	38.0	5.1	42.2	46.1	46.2	4.7	2.5	-0.1	-0.1	-19.5
GIW-12	12/12/2017 14:05	14.9	35.9	5.4	43.8	47.3	47.3	3.1	1.2	-0.1	-0.1	-20.2
GIW-12	12/19/2017 14:23	5.9	45.7	3.9	44.5	57.0	57.0	2.5	2.1	-0.1	-0.1	-17.7
GIW-12	12/26/2017 9:46	3.3	41.6	5.6	49.5	15.4	15.4	2.7	2.7	-0.1	-0.1	-16.5
GIW-12	12/26/2017 9:48	3.1	41.0	5.7	50.2	15.1	14.8	3.6	3.6	-0.2	-0.2	-16.3
GIW-13	12/4/2017 9:12	17.4	60.4	0.0	22.2	63.8	63.9	4.2	3.2	-1.0	-1.1	-13.9
GIW-13	12/12/2017 13:48	17.8	58.5	0.0	23.7	45.8	45.8	3.5	4.7	-1.4	-1.5	-16.1
GIW-13	12/12/2017 13:55	16.5	57.5	0.0	26.0	45.8	45.7	2.5	3.5	-1.5	-1.5	-15.8
GIW-13	12/19/2017 14:20	18.0	57.2	0.0	24.8	57.1	57.1	4.4	3.7	-1.2	-1.2	-13.7
GIW-13	12/26/2017 9:43	19.8	55.7	0.0	24.5	17.4	17.4	4.6	5.3	-1.5	-1.5	-13.8
LCS-1D	12/22/2017 15:43	52.4	33.6	3.0	11.0	64.5	64.7	12.0	11.5	-17.9	-17.9	-19.7
LCS-5A	12/6/2017 9:33	52.5	42.3	0.7	4.5	82.4	82.5	NFD		-14.1	-14.1	-14.2
LCS-5A	12/11/2017 10:05	55.4	40.4	0.5	3.7	76.8	76.8	NFD		-13.5	-13.5	-13.7
LCS-5A	12/20/2017 9:17	51.9	39.1	1.2	7.8	76.3	75.9	NFD		-14.1	-14.0	-14.2
LCS-5A	12/28/2017 11:11	54.2	38.7	1.4	5.7	76.5	75.4	NFD		-15.9	-15.8	-15.3
LCS-5B	12/6/2017 9:45	52.7	41.7	0.0	5.6	144.1	143.9	26.1	25.9	-13.7	-13.7	-14.0
LCS-5B	12/6/2017 9:47	52.9	42.2	0.0	4.9	142.5	142.5	22.8	20.7	-13.9	-14.0	-14.0
LCS-5B	12/11/2017 10:14	54.5	41.9	0.0	3.6	139.3	139.3	24.3	21.9	-13.5	-13.5	-13.7
LCS-5B	12/11/2017 10:16	54.3	42.0	0.0	3.7	139.9	140.0	23.1	23.7	-13.5	-13.5	-13.7
LCS-5B	12/20/2017 9:30	53.3	41.6	0.0	5.1	148.0	148.0	22.9	24.8	-13.9	-13.9	-14.3
LCS-5B	12/20/2017 9:32	52.8	41.8	0.0	5.4	148.0	148.0	24.9	23.2	-13.9	-13.7	-14.3
LCS-5B	12/28/2017 11:25	53.1	40.9	0.0	6.0	139.6	139.6	18.1	24.7	-15.2	-15.2	-15.2
LCS-5B	12/28/2017 11:26	54.0	41.2	0.0	4.8	140.3	140.3	23.2	24.8	-15.2	-15.2	-15.2


December 2017 Wellfield Monitoring Data - Bridgeton Landfill

Well Name	Date Sampled	Methane	CO ₂	O ₂	Balance Gas	Init Temp	Adj Temp	Init Flow	Adj Flow	Init Static Press	Adj Static Press	System Pressure
		(% vol)				°F		scfm		H ₂ O		
LCS-6B	12/6/2017 8:26	52.4	42.0	0.0	5.6	92.7	92.9	20.2	19.8	-1.6	-1.6	-14.2
LCS-6B	12/11/2017 8:48	49.4	39.2	0.3	11.1	89.8	90.2	28.4	28.1	-0.4	-0.4	-14.1
LCS-6B	12/20/2017 10:42	52.5	40.2	0.0	7.3	92.9	93.4	22.9	22.9	-1.2	-1.2	-13.7
LCS-6B	12/26/2017 14:34	51.1	40.7	0.0	8.2	100.9	100.8	18.6	18.4	-1.0	-1.0	-14.7
SEW-002	12/22/2017 10:13	7.1	42.5	7.7	42.7	57.1	57.1	7.1	6.5	-0.2	-0.2	-19.9
SEW-002	12/22/2017 10:15	6.6	43.9	7.8	41.7	57.3	57.4	6.5	9.2	-0.2	-0.2	-19.7
T-56	12/6/2017 8:53	31.8	30.4	0.0	37.8	55.7	55.8	23.4	17.2	-0.1	-0.1	-13.5
T-56	12/11/2017 9:11	43.3	34.2	0.0	22.5	54.4	54.4	21.4	17.2	-0.1	-0.1	-13.8
T-56	12/20/2017 11:47	33.0	30.5	0.2	36.3	55.5	55.5	16.8	20.3	-0.1	-0.1	-13.7
T-56	12/27/2017 10:11	20.5	26.2	1.9	51.4	44.7	44.7	12.1	18.8	0.0	-0.1	-15.1


ATTACHMENT E-2

MAXIMUM WELLHEAD TEMPERATURE TABLE

Wellfield Temperature - Bridgeton Landfill

Well Name					Temp Trend ><30°F	Comments
	September 2017	October 2017	November 2017	December 2017		
GEW-001 *	--	--	--	--		
GEW-002	124.2	121.0	107.1	121.5		
GEW-003	115.8	114.7	111.4	111.5		
GEW-004	118.9	118.1	116.2	117.6		
GEW-005	94.2	91.5	89.4	90.5		
GEW-006	91.7	87.5	86.5	90.3		
GEW-007	97.2	93.6	91.5	85.4		
GEW-008	113.4	111.5	111.7	111.1		
GEW-009	124.5	121.5	121.8	122.4		
GEW-010	104.7	84.9	61.8	63.9		
GEW-011 *	--	--	--	--		
GEW-013A	130.0	129.7	119.7	117.2		
GEW-014A *	--	--	--	--		
GEW-015	162.6	156.9	183.1	182.1		
GEW-016R	180.5	183.3	183.3	182.1		
GEW-018B	179.7	181.3	171.0	165.2		
GEW-018R *	--	--	--	--		
GEW-019A *	--	--	--	--		
GEW-020A *	--	--	--	--		
GEW-021A *	--	--	--	--		
GEW-022R	123.4	102.3	92.5	56.0		
GEW-023A *	--	--	--	--		
GEW-024A *	--	--	--	--		
GEW-025A *	--	--	--	--		
GEW-026R *	--	--	--	--		
GEW-027A *	--	--	--	--		
GEW-028R *	--	--	--	--		
GEW-029 *	--	--	--	--		
GEW-030R *	--	--	--	--		
GEW-033R *	--	--	--	--		
GEW-034 *	--	--	--	--		
GEW-034A *	--	--	--	--		
GEW-035 *	--	--	--	--		
GEW-036 *	--	--	--	--		
GEW-037 *	--	--	--	--		
GEW-038	110.0	90.6	71.6	70.2		
GEW-039	120.5	113.7	106.5	100.1		
GEW-040	85.6	79.6	62.8	50.8		
GEW-041R	105.0	104.5	99.9	97.9		
GEW-042R	109.2	107.0	97.9	98.7		
GEW-043R	121.0	119.7	118.4	118.9		
GEW-044	97.0	95.0	85.6	88.0		
GEW-045R	98.6	96.3	87.7	72.6		
GEW-046R	103.3	99.4	97.0	99.6		

Wellfield Temperature - Bridgeton Landfill

Well Name					Temp Trend ><30°F	Comments
	September 2017	October 2017	November 2017	December 2017		
GEW-047R	91.7	80.0	103.8	110.0		
GEW-048	104.5	103.3	100.6	100.8		
GEW-049	110.1	108.7	106.5	106.2		
GEW-050	107.2	106.2	104.3	105.2		
GEW-051	125.8	123.9	122.1	123.7		
GEW-052	116.0	112.0	111.5	112.8		
GEW-053	136.4	134.6	137.1	139.0		
GEW-054	143.6	142.9	143.2	144.2		
GEW-055	135.9	132.0	132.6	135.0		
GEW-056R	129.4	111.0	96.5	88.4		
GEW-057B	107.1	74.1	55.5	64.0		
GEW-057R	--	85.6	69.5	61.5		
GEW-058	139.9	84.7	71.8	69.5		
GEW-058A	123.1	85.4	67.5	67.7		
GEW-059R	172.6	168.5	161.1	157.3		
GEW-061B *	--	--	--	--		
GEW-064A *	--	--	--	--		
GEW-065A *	--	--	--	--		
GEW-066	--	--	--	--		
GEW-067A	150.2	169.5	151.7	94.8		
GEW-068A	192.9	183.3	179.7	173.1		
GEW-069R *	--	--	--	--		
GEW-070R *	--	--	--	--		
GEW-071 *	--	--	--	--		
GEW-071B *	--	--	--	--		
GEW-072RR *	--	--	--	--		
GEW-073R *	--	--	--	--		
GEW-075 *	--	--	--	--		
GEW-076R *	--	--	--	--		
GEW-077	120.0	--	--	--		
GEW-078R	167.1	169.0	162.4	157.3		
GEW-080 *	--	--	--	--		
GEW-081	90.3	87.5	80.0	50.4		
GEW-082R	182.7	183.3	177.5	178.6		
GEW-083 *	--	--	--	--		
GEW-084 *	--	--	--	--		
GEW-085 *	--	--	--	--		
GEW-086	106.9	99.4	101.8	72.3		
GEW-087	166.6	169.0	128.6	111.2		
GEW-088	181.5	197.2	190.9	185.7		
GEW-089 *	--	--	--	--		
GEW-090	163.8	170.1	162.6	152.9		
GEW-091	195.7	199.3	185.7	187.6		
GEW-100	--	91.9	57.8	45.2		

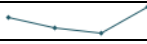
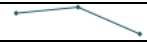
Wellfield Temperature - Bridgeton Landfill

Well Name					Temp Trend ><30°F	Comments
	September 2017	October 2017	November 2017	December 2017		
GEW-101	103.8	--	81.4	55.2		
GEW-102	110.0	85.6	62.3	36.4		
GEW-103 *	--	--	--	--		
GEW-104	172.6	173.6	55.2	--		
GEW-105	140.9	81.7	78.9	133.3		
GEW-106	108.0	76.2	62.3	66.8		
GEW-107	110.2	78.9	62.9	114.3		
GEW-108	164.3	146.3	141.9	142.2		
GEW-109	110.0	92.7	78.4	72.6		
GEW-110	128.0	89.6	70.0	67.5		
GEW-112 *	--	--	--	--		
GEW-113	158.5	159.4	157.3	155.1		
GEW-116	190.2	190.9	187.0	184.5		
GEW-117	144.9	139.9	132.9	117.6		
GEW-118	192.9	195.0	193.0	194.3		
GEW-120	167.1	158.1	162.9	164.7		
GEW-121	178.0	175.3	174.7	171.0		
GEW-122	159.4	158.5	157.7	156.0		
GEW-123	184.5	173.6	187.1	163.5		
GEW-124	91.3	86.3	75.2	48.5		
GEW-125	189.6	181.0	184.5	181.6		
GEW-126	101.6	96.5	86.6	53.4		
GEW-127	188.6	86.8	190.2	177.5		
GEW-128	183.3	181.5	171.0	168.5		
GEW-129	91.5	158.1	146.2	145.2		
GEW-130	188.8	188.9	168.5	178.7		
GEW-131	173.6	170.5	164.4	163.3		
GEW-132	162.9	162.0	195.7	186.4		
GEW-133	168.5	170	159.4	151.7		
GEW-134	142.8	143.2	129.2	122.9		
GEW-135	170.5	156.5	153.3	154.8		
GEW-136	127.5	111.4	134.8	128.6		
GEW-137	106.7	95.9	79.5	70.8		
GEW-138	148.4	130.0	121.5	103.5		
GEW-139	176.9	181.6	168.5	147.3		
GEW-140	106.0	93.4	75.9	51.8		
GEW-141	--	--	--	--		
GEW-142	83.5	--	76.6	44.2		
GEW-143	--	92.9	77.1	44.4		
GEW-144	92.9	--	--	23.2		
GEW-145	104.5	83.3	60.4	36.3		
GEW-146	103.0	101.6	87.8	86.1		
GEW-147	185.7	185.1	174.2	183.9		
GEW-148	148.8	158.9	51.7	76.0		

Wellfield Temperature - Bridgeton Landfill

Well Name					Temp Trend ><30°F	Comments
	September 2017	October 2017	November 2017	December 2017		
GEW-149	139.6	142.5	98.5	118.6		
GEW-150	156.5	140.9	116.0	63.7		
GEW-151	107	82.2	122.6	86.8		
GEW-152	146.7	127.4	125.0	122.9		
GEW-153	116.6	89.1	81.5	103.9		
GEW-154	126.1	104.3	88.5	70.9		
GEW-155	125.2	124.3	112.0	92.4		
GEW-156	118.9	102.4	87.2	93.1		
GEW-157	104.3	75.6	68.4	--		
GEW-158	125.0	107.8	96.3	106.9		
GEW-159	138.3	116.8	102.3	72.5		
GEW-160	155.2	156.0	48.8	83.2		
GEW-161	176.4	178.6	47.4	63.6		
GEW-162	137.2	113.2	69.6	64.1		
GEW-163	192.3	165.2	178.7	185.0		
GEW-164	176.2	173.6	167.6	164.8		
GEW-165	187.9	188.3	183.9	183.3		
GEW-166	196.4	196.4	195.7	195.0		
GEW-167	193.5	195.0	191.7	192.9		
GEW-168	189.6	187.0	181.6	178.6		
GEW-169	196.4	195.0	193.6	190.9		
GEW-170	176.4	164.3	168.1	165.7		
GEW-171	--	--	--	--		
GEW-172	--	--	80.0	46.1		
GEW-173	115.3	106.7	98.4	86.5		
GEW-174	144.5	--	152.9	144.9		
GEW-175	132.9	127.0	124.4	123.1		
GEW-176	109.5	87.9	69.0	65.6		
GEW-177	88.4	60.2	80.7	50.8		
GEW-178	--	--	--	47.3		
GEW-179	--	--	--	28.5		
GEW-180	--	--	--	29.0		
GEW-181	--	--	--	28.7		
GEW-182	--	--	--	30.6		
GEW-184	--	--	--	58.0		
GEW-185	--	--	--	136.2		
GEW-186	--	--	--	42.1		
GEW-187	--	--	--	75.9		
GEW-188	--	--	--	183.9		
GEW-1A	88.7	83.3	71.1	64.4		
GEW-2S	96.5	87.0	72.8	65.5		
GIW-01	182.5	178.0	173.1	179.7		
GIW-02	110.0	88.2	70.9	67.7		
GIW-03	101.0	82.9	65.8	65.7		

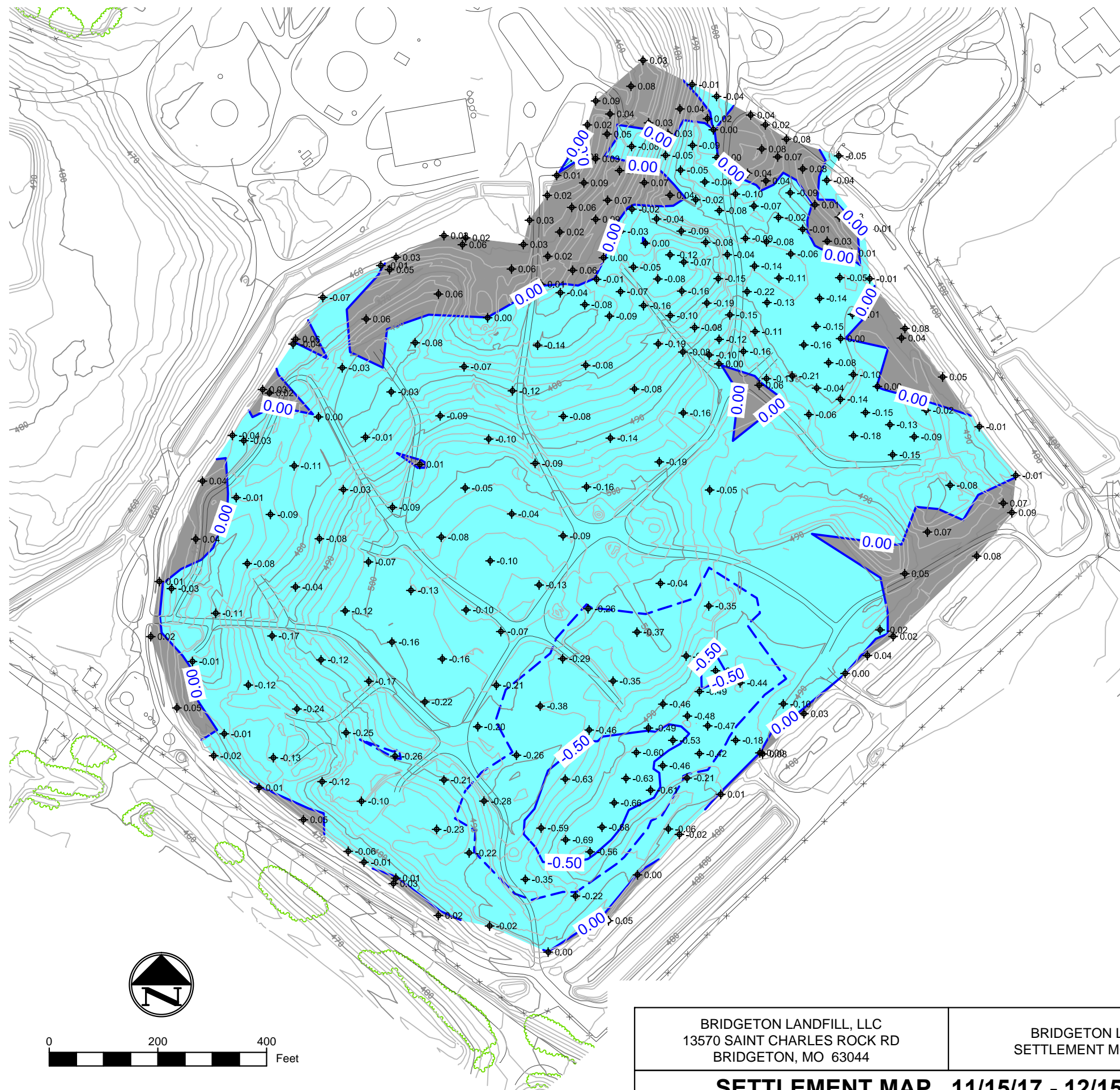
Wellfield Temperature - Bridgeton Landfill

Well Name					Temp Trend ><30°F	Comments
	September 2017	October 2017	November 2017	December 2017		
GIW-04	101.8	85.6	69.5	66.2		
GIW-05	102.1	87.0	70.4	67.4		
GIW-06	104.5	89.0	73.4	69.3		
GIW-07	105.2	90.9	78.0	70.2		
GIW-08	107.0	92.0	74.5	71.6		
GIW-09	108.0	90.6	73.8	70.7		
GIW-10	108.0	86.3	72.5	67.7		
GIW-11	104.8	85.3	67.9	68.1		
GIW-12	105.5	81.0	60.1	64.5		
GIW-13	106.2	86.2	65.0	63.8		
LCS-1D	92.0	87.5	69.8	64.5		
LCS-2D	--	--	--	--		
LCS-3C *	--	--	--	--		
LCS-4B	--	--	--	--		
LCS-5A	96.5	92.0	84.1	82.4		
LCS-6B	130.1	113.0	104.2	148.0		
PGW-60	94	91	84	100.9		
SEW-002	--	98.9	111.7	57.3		
SEW-012A *	--	--	--	--		
SEW-017R *	--	--	--	--		
SEW-031R *	--	--	--	--		
SEW-032R *	--	--	--	--		
SEW-060R *	--	--	--	--		
SEW-061R *	--	--	--	--		
SEW-062R *	--	--	--	--		
SEW-063 *	--	--	--	--		
SEW-064 *	--	--	--	--		
SEW-067 *	--	--	--	--		
SEW-072R *	--	--	--	--		
SEW-074 *	--	--	--	--		
SEW-079R *	--	--	--	--		
T-56	80.3	78.5	60.7	55.7		

-- = Indicates no data available.

As of 12/31/17, any gas well with an asterisk (*) has been abandoned. These wells will not be reported in the upcoming year.

ATTACHMENT F
SETTLEMENT FRONT MAP



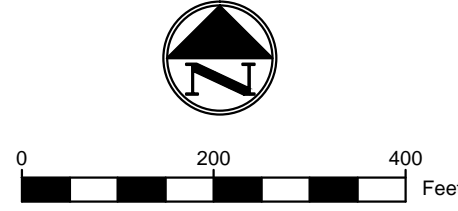
Thickness Map				
Range	Minimum Depth	Maximum Depth	2D Area (Sq. Ft.)	Color
1	-5.00	-4.00	0.00	
2	-4.00	-3.00	0.00	
3	-3.00	-2.00	0.00	
4	-2.00	-1.00	0.00	
5	-1.00	0.00	1,305,923.88	
6	0.00	1.00	227,976.24	

LEGEND

- 12-2-2016 TOPOGRAPHY (2' CONTOUR)
 - 500 12-2-2016 TOPOGRAPHY (10' CONTOUR)
 - .25 MINOR ELEVATION CHANGE CONTOUR (0.25 FEET)
 - .50 MAJOR ELEVATION CHANGE CONTOUR (0.50 FEET)
 - 0.03 SPOT ELEVATION DIFFERENCE (TO 11-15-2017 TO 12-15-2017)
 - 11-2017 *SETTLEMENT FRONT CONTOUR FOR AREA WITH 1.35' PER 30 DAYS FOR CURRENT PERIOD OF DAYS
- *NONE FOR DECEMBER 2017

NOTES:

1. EXISTING CONTOURS DEVELOPED FROM SITE AERIAL TOPOGRAPHIC SURVEY BY COOPER AERIAL SURVEYS CO. ON DECEMBER 2, 2016.
2. FOR CLARITY, NOT ALL SITE FEATURES MAY BE SHOWN.
3. ELEVATION DIFFERENCE DETERMINED BY SUBTRACTING SPOT ELEVATIONS SURVEYED ON 11-15-17 FROM SPOT ELEVATIONS SURVEYED ON 12-15-17.
4. SURVEY POINTS WERE PERFORMED USING GPS METHODS.
5. SETTLEMENT RANGE SURFACE WAS GENERATED FROM THE SPOT ELEVATION DIFFERENCES.
6. ELEVATION DIFFERENCES THAT ARE SHOWN AS NEGATIVE INDICATE SPOTS OF SETTLEMENT.
7. ANY POINTS THAT ARE NOT A GROUND-TO-GROUND COMPARISON TO THE PREVIOUS MONTH'S POINTS, OR THAT WERE NOT SURVEYED IN THE SAME LOCATION AS THE PREVIOUS MONTH ARE NOT INCLUDED AND WERE NOT USED IN ANY SURFACE GENERATION.



BRIDGETON LANDFILL, LLC 13570 SAINT CHARLES ROCK RD BRIDGETON, MO 63044	BRIDGETON LANDFILL SETTLEMENT MONITORING		DECEMBER 2017 DESIGNED BY: PML APPROVED BY: DRF	DRAWING NO.: 001
SETTLEMENT MAP 11/15/17 - 12/15/2017		FEEZOR ENGINEERING, INC.	REVISION DATE	
PROJECT NUMBER: BT-145 FILE PATH: C:\Users\jplne\Dropbox (Feezor Engineering)\BT-145 Agreed Order Reporting\Monthly Reports\12-2017 Report\Internal Draft\Settlement3_deliverables\Settlement Area Fill 12-15-17.dwg				

ATTACHMENT G

SUMMARY OF ODOR COMPLAINTS

December 1, 2017 – December 31, 2017 / MDNR ODOR COMPLAINTS

Name: Susan Rohde

Message: Odor logged December 1, 2017, at 10:00 am strength of 8

Follow-up: The following concern has been investigated by Bridgeton Landfill staff. Odor from another known odor source was observed at this location within an hour of the time cited in this concern. Odor patrols performed before and after the time cited in this concern did not observe Bridgeton Landfill odor. The location cited in this concern is in close proximity to another known odor source. This was not a Bridgeton Landfill odor.

Name: Rohde

Message: Odor logged December 2, 2017, at 12:36 am strength of 8

Follow-up: The following concern has been investigated by Bridgeton Landfill staff. No odor was observed at this location just over an hour after the time cited in this concern. Odor patrols performed before and after the time cited in this concern did not observe Bridgeton Landfill odor. The location cited in this concern is in close proximity to another known odor source. At the time cited in this concern winds were of a southern origin placing this location upwind of the Bridgeton Landfill. There is no evidence to suggest that this was a Bridgeton Landfill odor.

Name: N/A

Message: No date, time, or odor strength was provided.

Follow-up: No information was provided in this odor concern received on December 6, 2017, therefore Bridgeton Landfill staff could not investigate.

Name: Henry Oder

Message: Odor logged December 11, 2017, at 11:30 am strength of 8

Follow-up: The location provided in this odor concern was in the state of New York. This was not a valid odor concern.

Name: Sharon Bishop

Message: Odor logged December 15, 2017, at 12:20 pm strength of 8

Follow-up: The following concern has been investigated by Bridgeton Landfill staff. Bridgeton Landfill staff observed a weak (< 2 Nasal Ranger D/T value) odor potentially attributable to Bridgeton Landfill at the location cited in this concern within an hour of the time cited in this concern. Bridgeton Landfill staff revisited the location cited in this concern within an hour of the time cited in this concern and did not observe any odors. Odor patrols performed before and after the time cited in this concern did not observe Bridgeton Landfill odor.

Name: N/A

Message: No date, time, or odor strength was provided.

Follow-up: No information was provided in this odor concern received on December 20, 2017, therefore Bridgeton Landfill staff could not investigate.

ATTACHMENT H

LIQUID CHARACTERIZATION DATA AND DISCHARGE LOG

Bridgeton Landfill - Leachate PreTreatment Plant December 2017

Liquid Characterization Data

Liquid characterization data is made available to MDNR on an ongoing basis. No additional lechate characterization data, beyond that produced for MSD, was collected during the prior month.

Hauled Disposal to MSD – Bissell Point

Date	Waste	Source	Transporter	Quantity
12/1/2017				0
12/2/2017				0
12/3/2017				0
12/4/2017				0
12/5/2017				0
12/6/2017				0
12/7/2017				0
12/8/2017				0
12/9/2017				0
12/10/2017				0
12/11/2017				0
12/12/2017				0
12/13/2017				0
12/14/2017				0
12/15/2017				0
12/16/2017	LPTP Activated Sludge/ Permeate	Tank 1 (T1)	MBI	0
12/17/2017				0
12/18/2017				0
12/19/2017				0
12/20/2017				0
12/21/2017				0
12/22/2017				0
12/23/2017				0
12/24/2017				0
12/25/2017				0
12/26/2017				0
12/27/2017				0
12/28/2017				0
12/29/2017				0
12/30/2017				0
12/31/2017				0
Total				0

Direct Discharge to MSD

Date	Waste	Source	Quantity (gal)
12/1/2017			112,152
12/2/2017			76,836
12/3/2017			239,360
12/4/2017			110,024
12/5/2017			108,424
12/6/2017			90,744
12/7/2017			84,904
12/8/2017			86,716
12/9/2017			84,380
12/10/2017			83,108
12/11/2017			81,172
12/12/2017			89,144
12/13/2017			115,252
12/14/2017			175,060
12/15/2017		Through Tank AST 97k	248,604
12/16/2017	LPTP Permeate	(MSD Sampling Point 013)	70,764
12/17/2017			135,192
12/18/2017			117,244
12/19/2017			109,088
12/20/2017			123,650
12/21/2017			153,412
12/22/2017			229,048
12/23/2017			133,140
12/24/2017			168,124
12/25/2017			170,304
12/26/2017			161,184
12/27/2017			131,088
12/28/2017			71,948
12/29/2017			52,324
12/30/2017			87,224
12/31/2017			70,660
Total			3,770,274

ATTACHMENT I

LOW FILL PROJECT AREA

ATTACHMENT I-1
LOW FILL AREA BOUNDARY



LEGEND

— BOUNDARY OF FILL AREA FOR 11-15-2017 THROUGH 12-15-2017

NOTES:

1. SITE AERIAL TOPOGRAPHIC SURVEY BY COOPER AERIAL SURVEYS CO. ON DECEMBER 2, 2016.
2. FOR CLARITY, NOT ALL SITE FEATURES MAY BE SHOWN.
3. SURVEY POINTS WERE PERFORMED USING GPS METHODS.



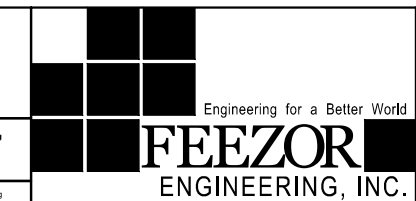
0 350 700 Feet

BRIDGETON LANDFILL, LLC
13570 SAINT CHARLES ROCK RD
BRIDGETON, MO 63044

BRIDGETON LANDFILL
SETTLEMENT MONITORING

LOW FILL AREA BOUNDARY 11/15/2017 - 12/15/2017

PROJECT NUMBER: BT-145 | FILE PATH: C:\Users\plms\Dropbox (FEEZOR Engineering)\BT-145 Agreed Order Reporting\Monthly Reports\12-2017 Report\Internal Draft\Settlement3_deliverables\Settlement And Fil 12-15-17.dwg



DECEMBER 2017
DESIGNED BY: PML
APPROVED BY: DRF

REVISION DATE

DRAWING NO.:

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