Bridgeton Landfill, LLC

Monthly Data Submittals

December 2016

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

Contents:

Provided Separately:

– Flare Raw Data Excel Spreadsheet
– Gas Wellfield Raw Data Excel Spreadsheet

January 20, 2016

Commentary on Data

January 20, 2016

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 1,825 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 48 GEW wells that are experiencing low or restricted flows, and four (4) GIW wells that have low gas flow due to the cooling loops that are installed within these wells. By the end of the month, the majority of these 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.

- Attachment E-1 notes that GEW-1A has an oxygen concentration greater than 5% at one (1) or more weekly monitoring events during the reporting period. This has been the case since it's installation in December 2015. Bridgeton has made MDNR and St Louis County's Air Pollution Control Program aware of this. The area in which GEW-1A is installed is very saturated. Bridgeton has installed a sump in the vicinity of GEW-1A and will be increasing the force main capacity during the North Quarry capping projects in hope of lowering the potentiometric surface in the area to improve gas quality and reduce ambient air intrusion at the well.

- Attachment E-2 contains gas temperatures as measured at the wellheads. Twenty-five (25) vertical wells (excluding GIW wells) decreased by 30°F during this reporting period. Additionally, one (1) vertical wells (excluding GIW wells) increased 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.

- A detailed review of the gas extraction wells in the neck area was conducted. Wells GEW-010, -108, -109, -160, and -162 exhibited a wellhead temperature decrease greater than 30°F. These wells are installed within the south quarry area/neck area and the vacuum has been adjusted over time as part of normal GCCS operations. The maximum

wellhead temperatures are consistent with previous months in each of the gas extraction wells in the vicinity to the neck.

- All wells in the North Quarry during this reporting period exhibited a maximum wellhead temperature under 145°F with the exception of GEW-054. Well GEW-054 had a maximum well head temperature of 148°F which is consistent with historic readings. Carbon monoxide (CO) results showed non-detect (ND) for North Quarry wells, with the exception of GEW-053 (34 ppm), GEW-054 (43 ppm), and GEW-055 (33 ppm).

- Review of weekly gas quality in Attachment E reveals that all of the active North Quarry gas wells, with the exception of GEW-1A, continue to have low, if any, oxygen and healthy methane and carbon dioxide levels. These levels indicate normal wellfield conditions for aged waste and are consistent with GCCS wellfield conditions observed in the North Quarry for some time. The area in which GEW-1A is installed is very saturated. Bridgeton has installed a sump near GEW-1A and will be increasing the force main capacity during the North Quarry capping projects in hope of lowering the potentiometric surface in the area to improve gas quality and reduce ambient air intrusion at the well.

Settlement

- The South Quarry exhibited monthly maximum settlement up to 1.0 feet over 30 days for this reporting period (see Attachment F) which is comparable to last month's rate. The rate of settlement directly south of the neck continues to be small and stable.

Bird Monitoring and Mitigation

- Bridgeton Landfill conducted bird monitoring during this reporting period in accordance with the Approved Bird Hazard Monitoring and Mitigation Plan. Logs of bird population observations were provided to the Airport on a weekly basis. No change in bird population or bird hazards were observed and no bird mitigation measures were necessary with respect to landfill activities. The Bridgeton Landfill submitted an updated Bird Hazard Monitoring and Mitigation Plan to the airport on 12/2/16.

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.

- Low fill maintenance activities commenced have continued through December. Enclosed is the fill volume figure for November 16 to December 16, 2016 which depicts that approximately 148 cubic yards of fill material was used during that time frame. Therefore, approximately 9,720 cubic yards of fill material has been used in 2016.

ATTACHMENT A

WORK COMPLETED AND PLANNED

Bridgeton Landfill, LLC
Monthly Summary of Work Completed and Planned

Work Completed in December 2016

Gas Collection and Control System (GCCS)

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

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.
- The pump and transducer in LCS-5A became non-operational. While reinstalling the pump and transducer, a pinch in the well casing was observed 198 feet below the top of casing, which prevented installation of the new pump and transducer to the previous elevation. The new pump was set above the pinch in the well casing and the new pump and transducer are fully operation and continue pumping liquid from LCS-5A.

Pre-Treatment Facility

- Continued ongoing operation of facility.
- Continued to optimize operation efficiency of pre-treatment facility.
- Continued to discharge permeate directly to St. Louis Metropolitan Sewer District (MSD) – Bissell Point Facility or other approved disposal facilities as determined by MSD.
- Continued testing of new polymer to improve flocculation.

Other Projects

- Continued acceptance of clean fill.
- Continued construction for the North Quarry EVOH capping project.
- Performed clean out and permeability testing of Interception Trench Sumps (ITS) ITS-1 through ITS-7. This will continue on a monthly basis for the near future, but frequency may reduce based on results.

Work Planned for January 2017

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.
- Begin looking at options for repair or replacement for LCS-5A.

Pre-Treatment Facility

- Ongoing operation of facility.
- Continue to optimize operation efficiency of pre-treatment facility.
- Continue to discharge permeate directly to St. Louis Metropolitan Sewer District (MSD) – Bissell Point Facility or other approved disposal facilities as determined by MSD.
- Continue testing of new polymer to improve flocculation.

Other Projects:

- Continue acceptance of clean fill materials for future fill projects.
- Continue construction for the North Quarry EVOH capping project, weather permitting.
- Take out gravel road on east side of the South Quarry and perform liner repairs.
- Perform clean out and permeability testing of Interception Trench Sumps (ITS) ITS-1 through ITS-7. This will continue on a monthly basis for the near future, but frequency may reduce based on results.

ATTACHMENT B

DAILY FLARE MONITORING DATA

ATTACHMENT B-1

FLOW DATA TABLE

Daily Flare Monitoring Data - Bridgeton Landfill
December 2016

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***	
12/1/2016	0	0	1,683	204	1,887
12/2/2016	0	0	1,740	185	1,924
12/3/2016	0	0	1,736	180	1,916
12/4/2016	0	0	1,724	175	1,900
12/5/2016	0	0	1,625	176	1,802
12/6/2016	0	0	1,561	170	1,731
12/7/2016	0	0	1,554	172	1,726
12/8/2016	0	0	1,582	166	1,747
12/9/2016	0	0	1,606	196	1,802
12/10/2016	0	0	1,599	203	1,802
12/11/2016	0	0	1,600	200	1,800
12/12/2016	0	0	1,621	194	1,815
12/13/2016	0	0	1,645	184	1,829
12/14/2016	0	0	1,682	173	1,855
12/15/2016	0	0	1,675	186	1,862
12/16/2016	0	0	1,635	179	1,814
12/17/2016	0	0	1,607	216	1,823
12/18/2016	0	0	1,549	166	1,715
12/19/2016	0	0	1,450	160	1,610
12/20/2016	0	0	1,652	237	1,889
12/21/2016	0	0	1,711	232	1,942
12/22/2016	0	0	1,666	250	1,916
12/23/2016	0	0	1,628	254	1,882
12/24/2016	0	0	1,622	240	1,862
12/25/2016	0	0	1,650	237	1,887
12/26/2016	0	0	1,631	229	1,860
12/27/2016	0	0	1,656	222	1,879
12/28/2016	0	0	1,635	213	1,849
12/29/2016	0	0	1,574	192	1,765
12/30/2016	0	0	1,552	210	1,761
12/31/2016	0	0	1,526	195	1,721
				Average	**1,825**

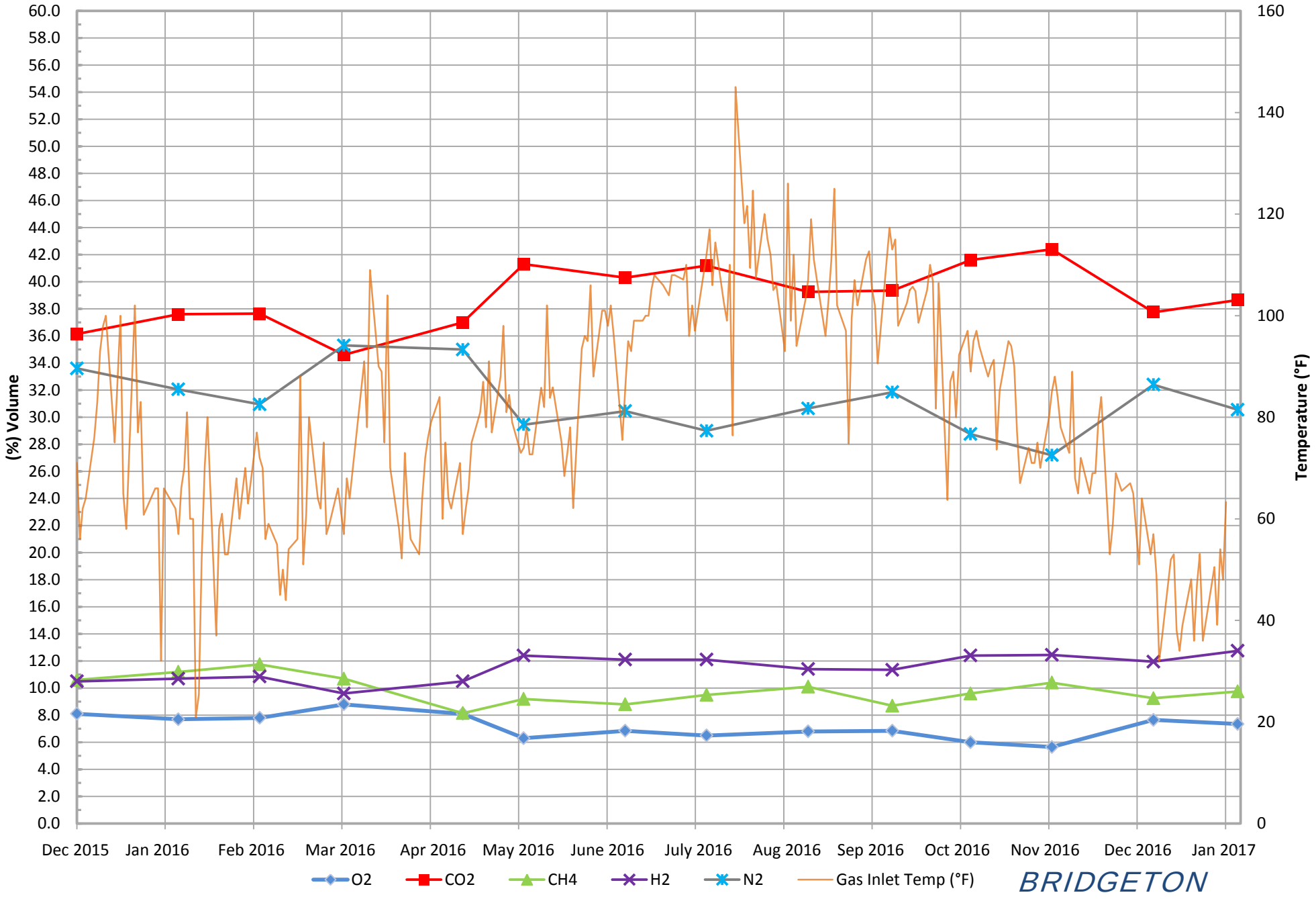
* Flows normalized to **Blower Outlet Flowmeter - EPA Method 2 measurement verified

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

ATTACHMENT B-2

FLOW DATA GRAPHS

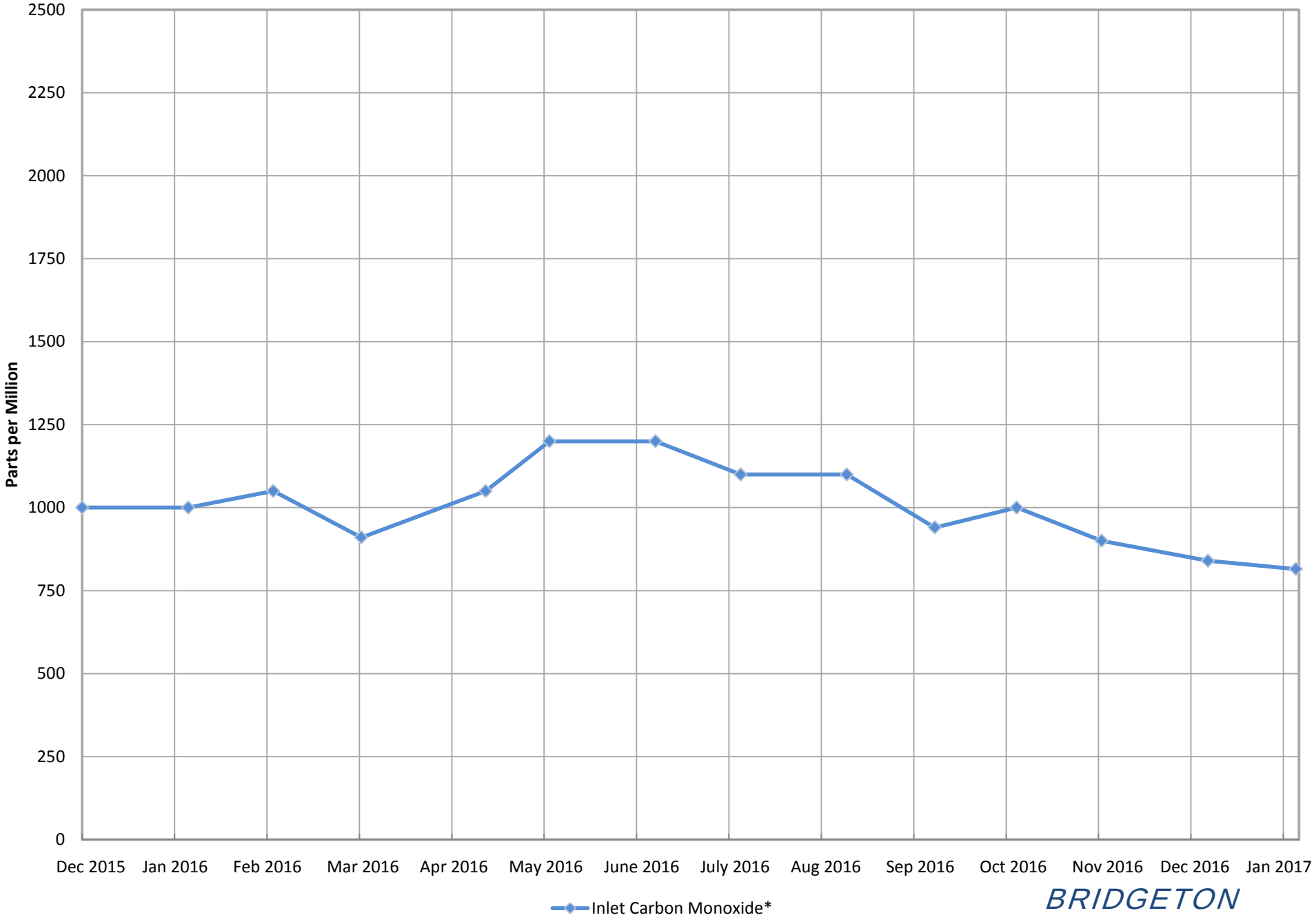
South Quarry Inlet Gas and Temperature*



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

BRIDGETON LANDFILL

South Quarry Inlet Carbon Monoxide*



*Data collected from Laboratory Reports for the South Quarry.

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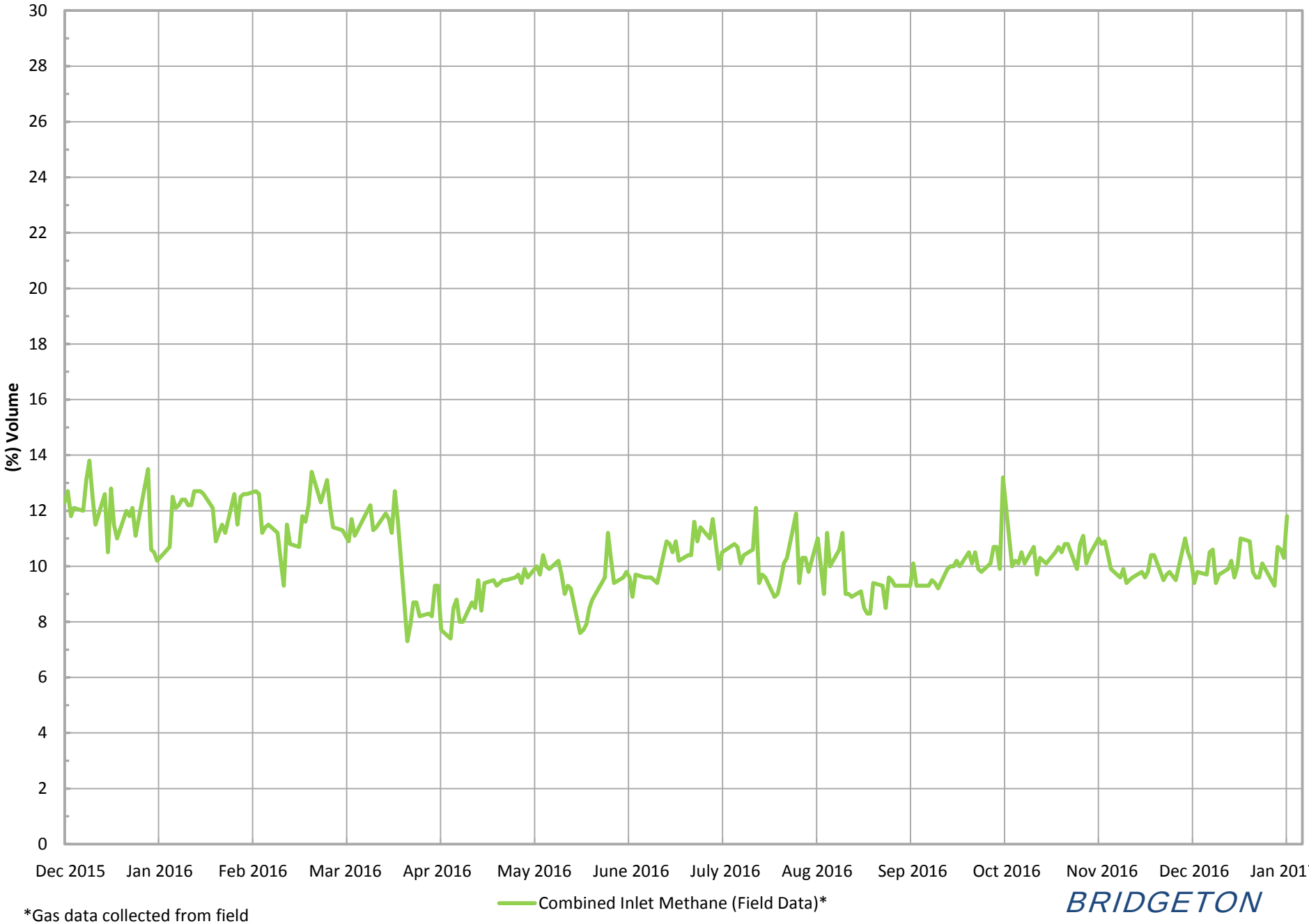
South Quarry Inlet Methane (Field Data)*



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

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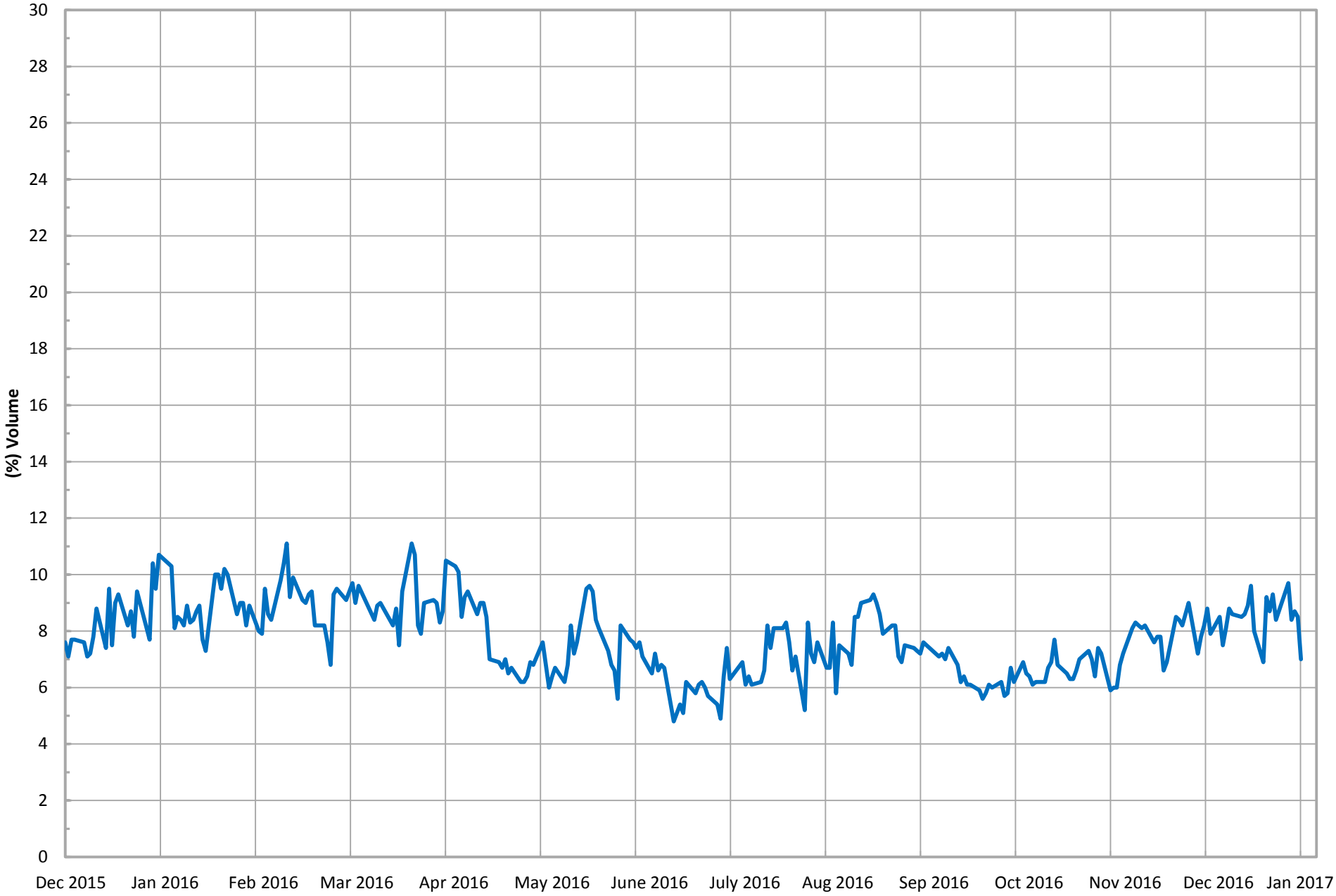
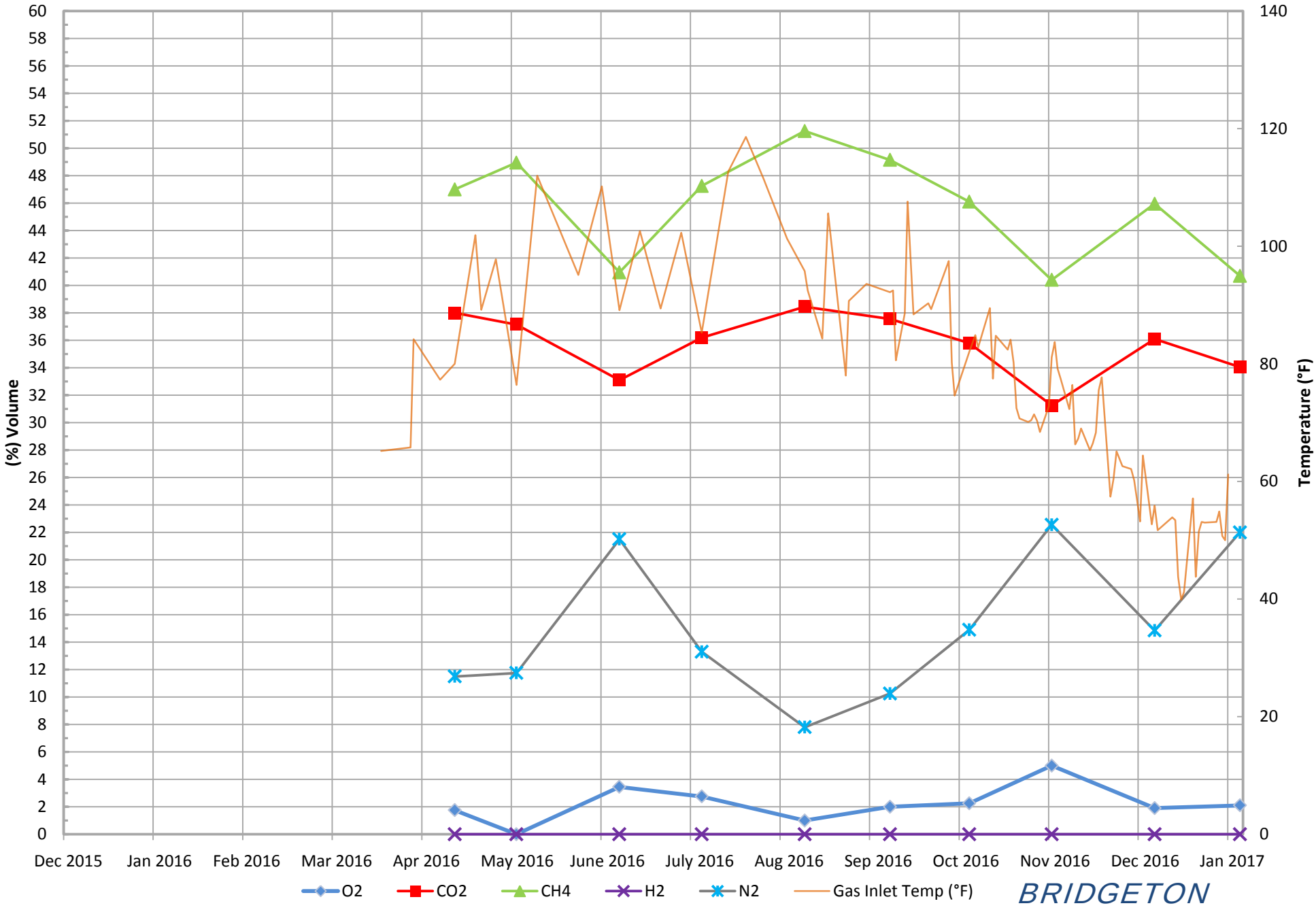
South Quarry Inlet Oxygen (Field Data)*



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

BRIDGETON LANDFILL

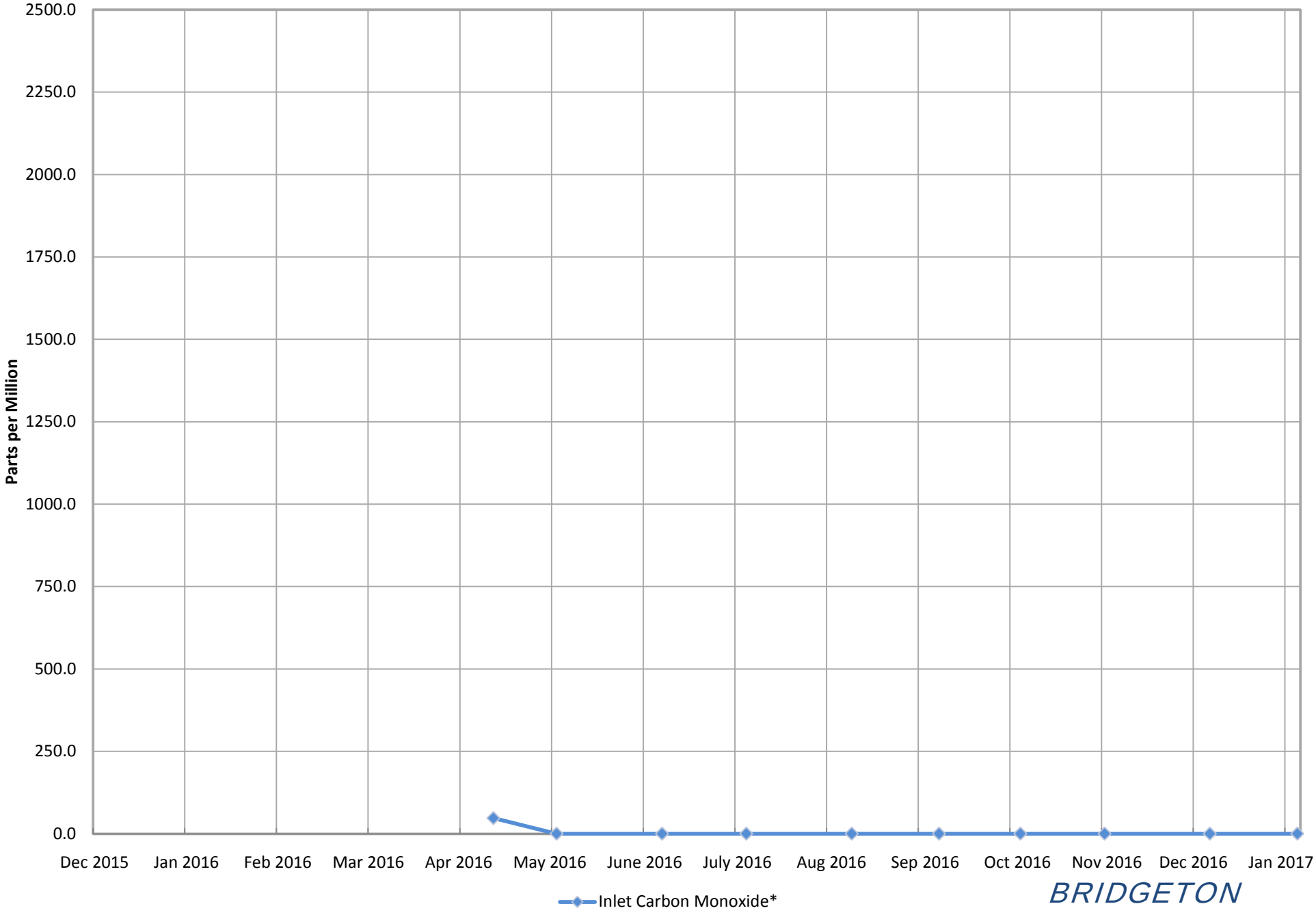
North Quarry Inlet Gas and Temperature*



BRIDGETON LANDFILL

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

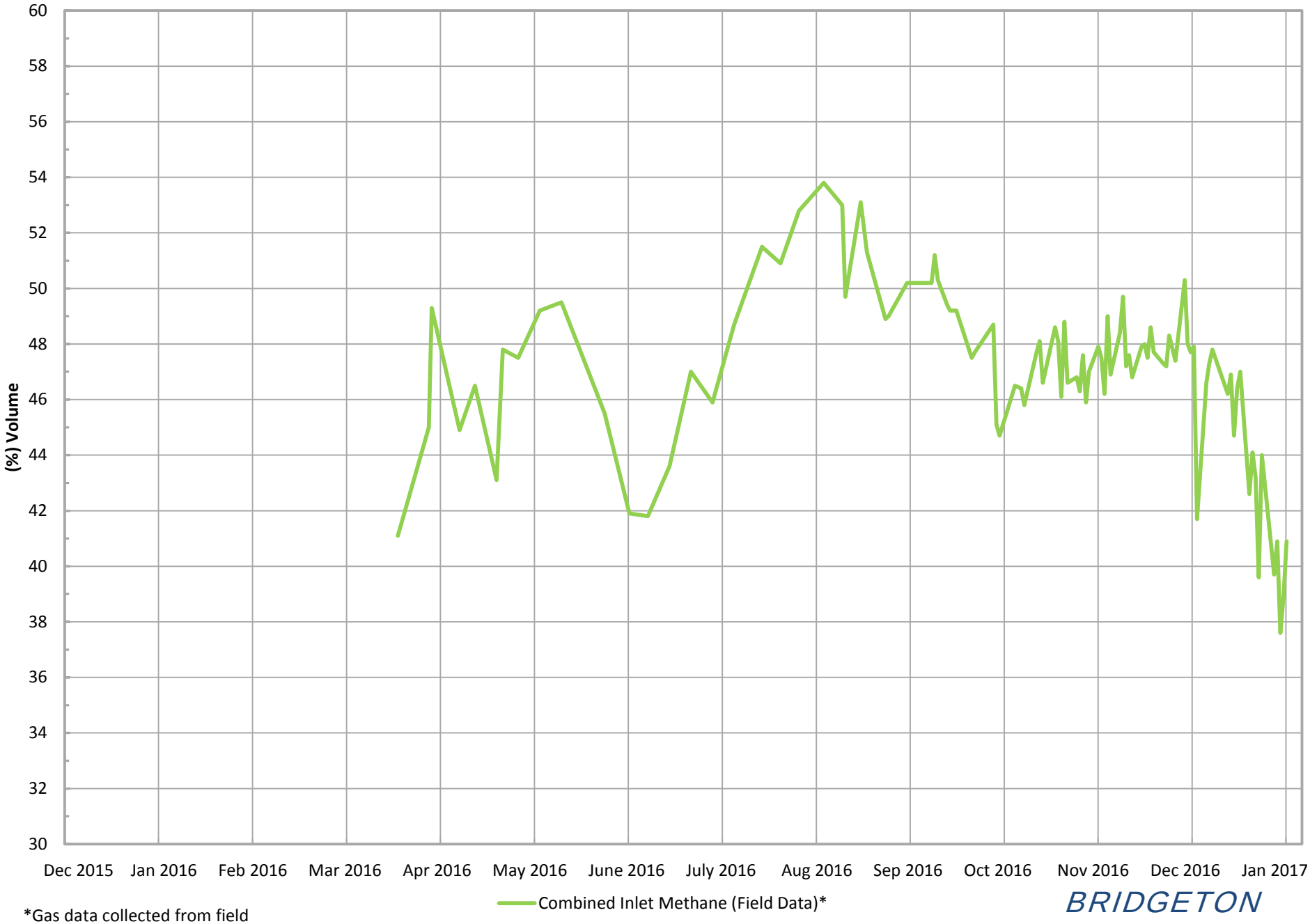
North Quarry Inlet Carbon Monoxide*



*Data collected from Laboratory Reports for the North Quarry.

BRIDGETON LANDFILL

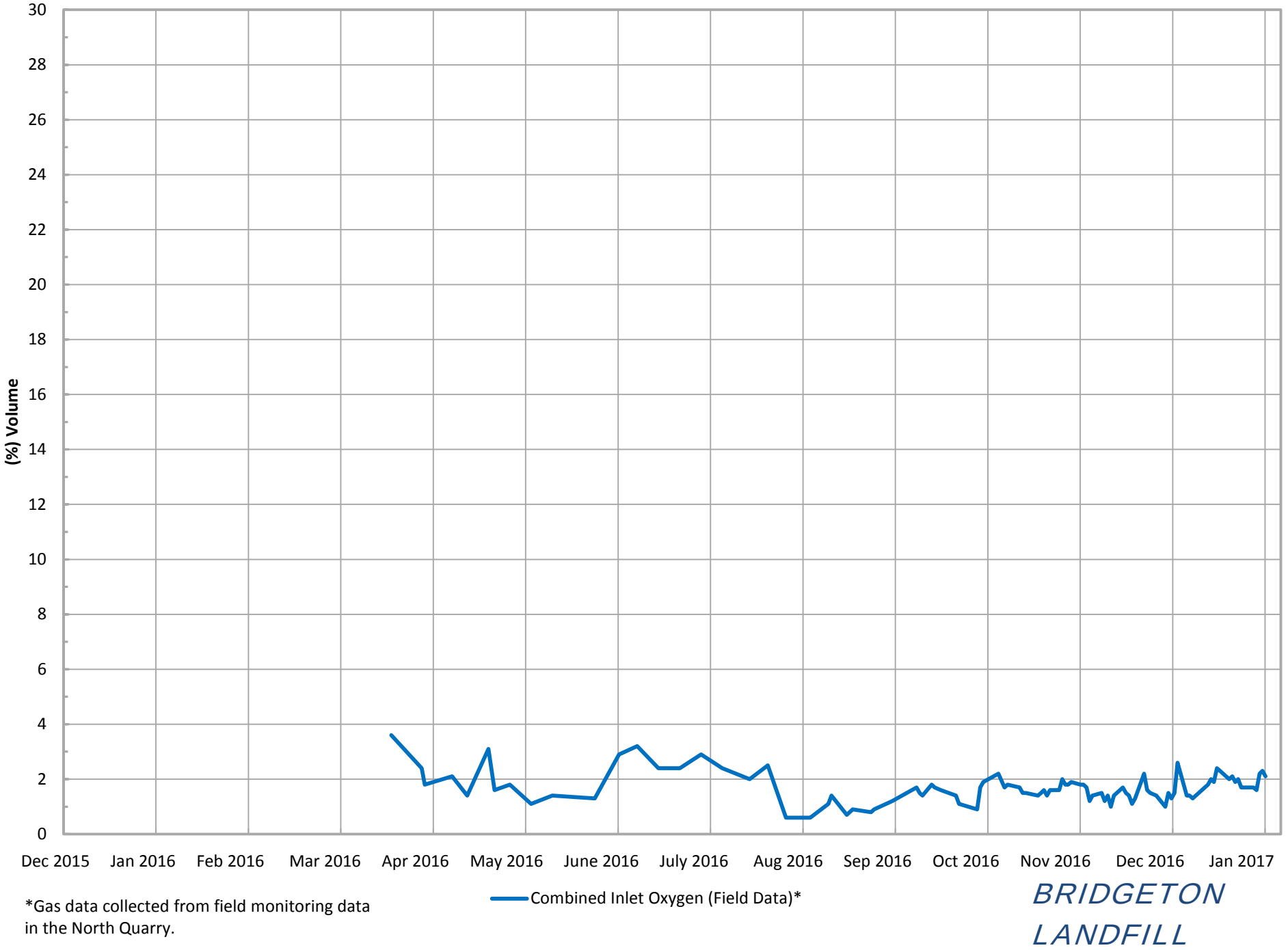
North Quarry Inlet Methane (Field Data)*



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

BRIDGETON LANDFILL

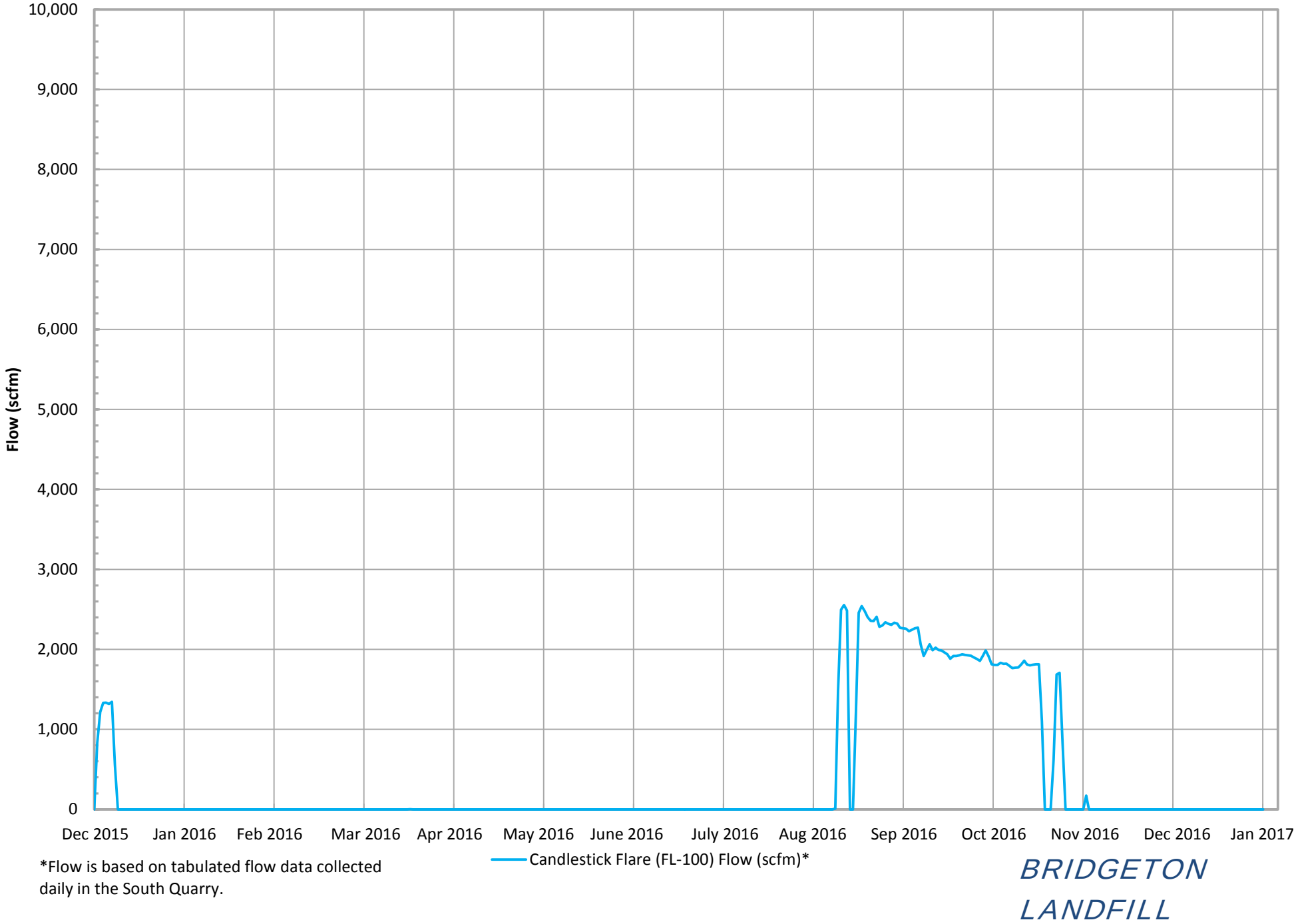
North Quarry Inlet Oxygen (Field Data)*



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

BRIDGETON LANDFILL

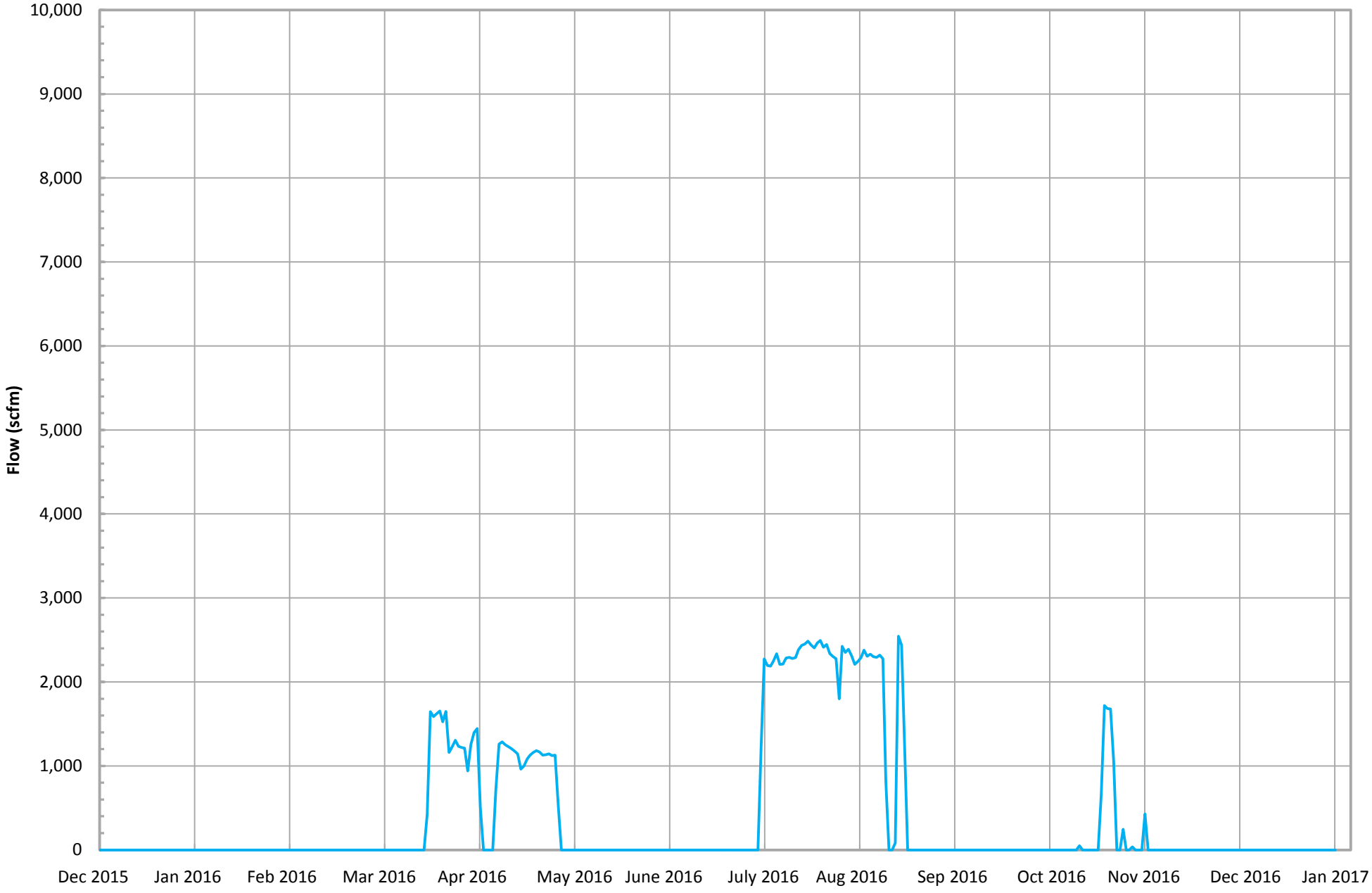
Candlestick Flare (FL-100) Flow (scfm)*



*Flow is based on tabulated flow data collected daily in the South Quarry.

BRIDGETON LANDFILL

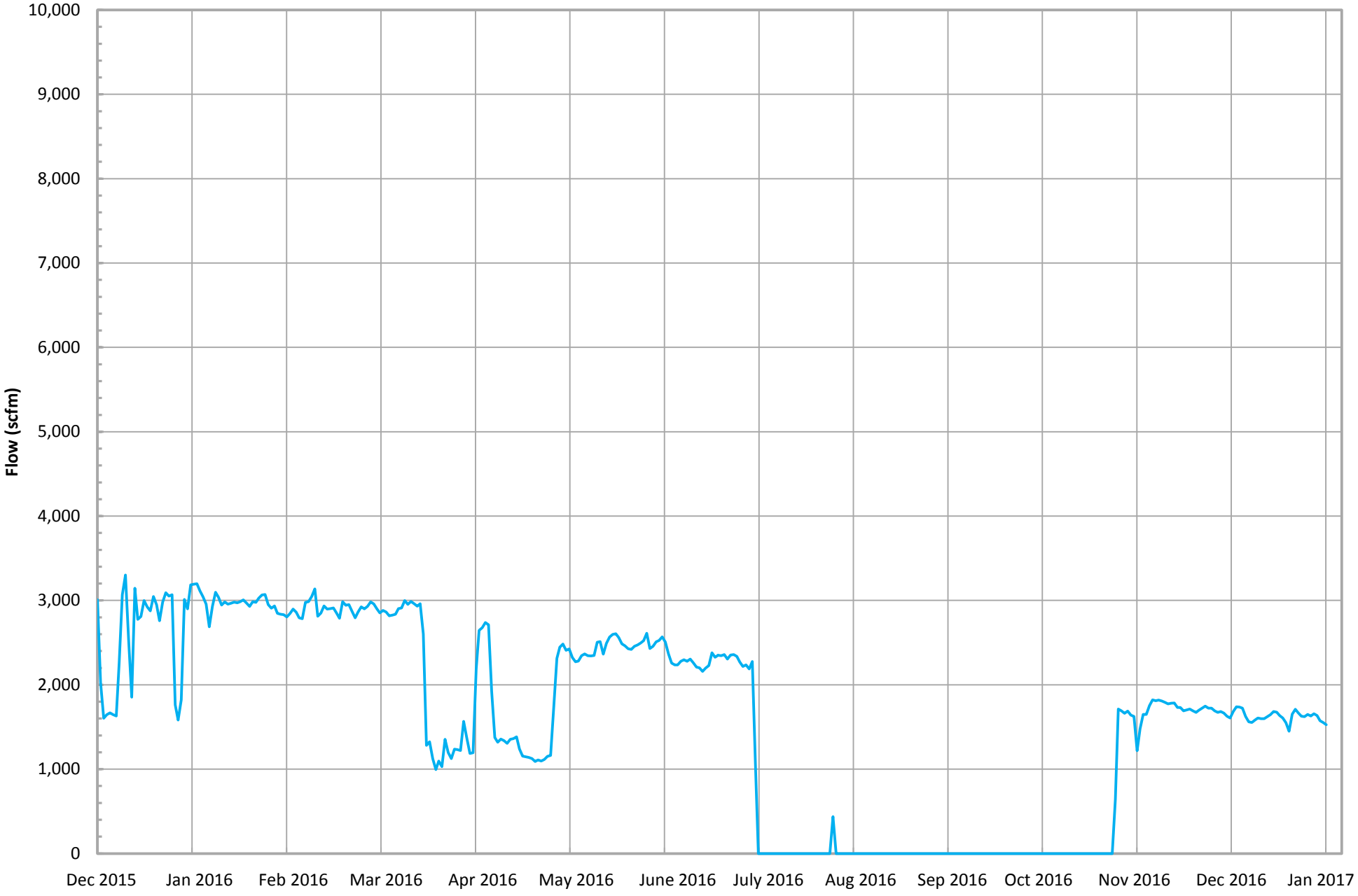
Candlestick Flare (FL-120) Flow (scfm)*



*Flow is based on tabulated flow data collected daily in the South Quarry.

BRIDGETON LANDFILL

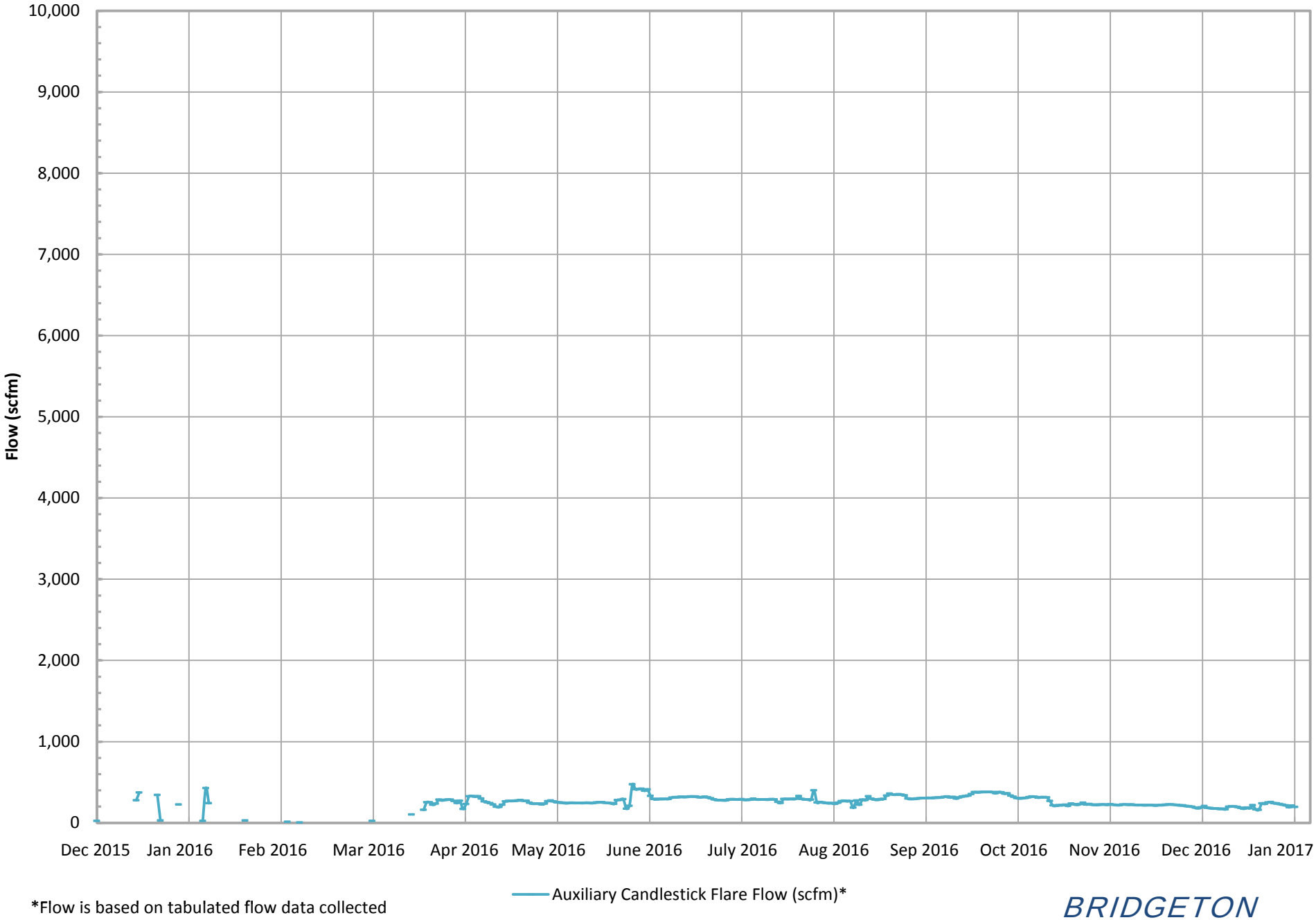
Candlestick Flare (FL-140) Flow (scfm)*



*Flow is based on tabulated flow data collected daily in the South Quarry.

BRIDGETON LANDFILL

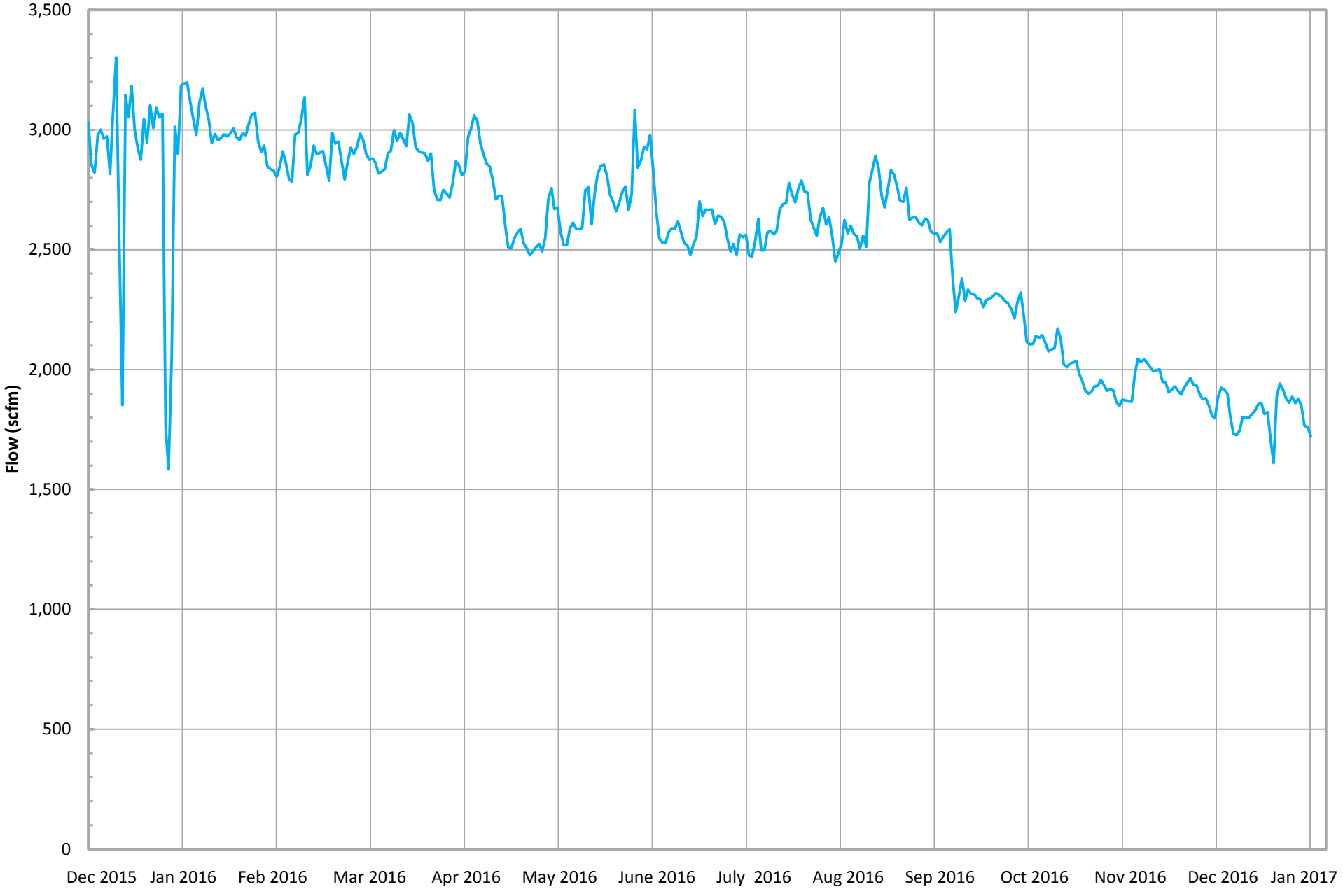
Auxiliary Candlestick Flare Flow (scfm)*



*Flow is based on tabulated flow data collected daily in the North Quarry.

BRIDGETON LANDFILL

Total Combined Flow (scfm)*

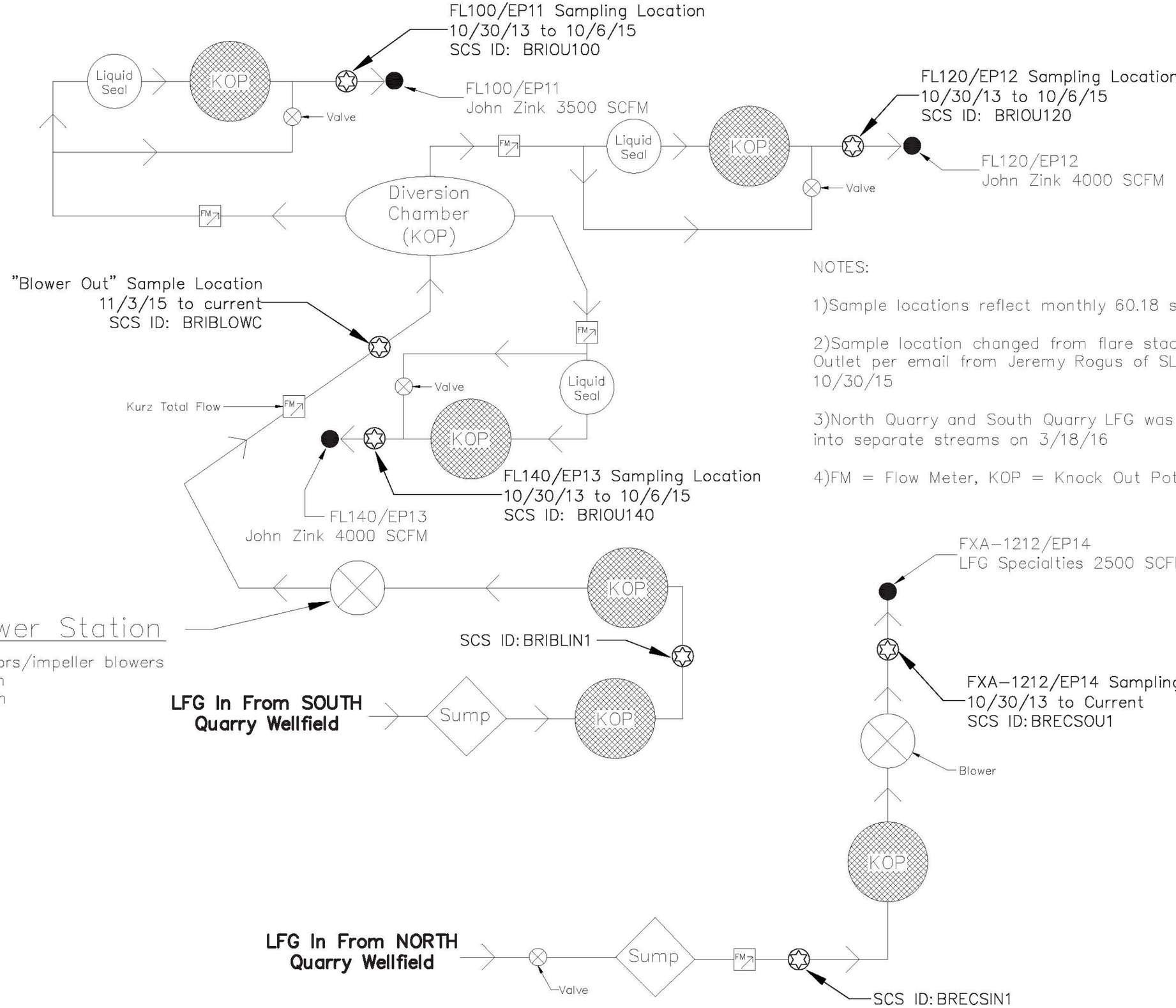


*Combined flow is based on tabulated flow data collected daily from FL-100, FL-120, FL-140, and the Auxillary Candlestick Flare.

BRIDGETON LANDFILL

ATTACHMENT B-3

FLARE TRS / FLARE STATION FLOW



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

PREPARED FOR:
BRIDGETON LANDFILL, LLC

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

No.	DATE	REVISION DESCRIPTION
1	9/19/2016	EP-08 Removed, shown only to represent SQ LFG flow

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

TABLE 1 **Bridgeton Landfill, LLC.**

Summary of Key LFG Tested Parameters **December 6, 2016 to January 4, 2017**

Flare Compound: Blower Outlet

SAMPLE EVENT #	DATE	VELOCITY ft/sec	FLOW dscfm	TRS ppm_{vd}
96-01[1]	1/4/2017	17.84	1526	1500
				1500
95-52[2]	12/27/2016	19.16	1552	1300
				1300
94-51[2]	12/20/2016	18.54	1502	1500
				1600
93-50[2]	12/13/2016	18.84	1526	1300
				1400
92-49[1]	12/6/2016	17.27	1445	1600
				1600

Notes:

[1]Indicates velocity/flow determined by EPA Method 2

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

Bridgeton Landfill, LLC
Weekly TRS
Monthly Method 2C
Event 96-01
01/04/2017

	PARAMETER	Blower Out
SOUTH QUARRY LFG ONLY - MAIN FLARE COMPOUND BLOWER OUTLET (FL140)		
Date	Test Date	1/4/17
Start	Run Start Time	14:03
	Run Finish Time	15:23
	Net Traversing Points	8 (2 x 4)
Θ	Net Run Time, minutes	1:19:55
C_p	Pitot Tube Coeficient	0.99
P_{Br}	Barometric Pressure, inches of Mercury	29.82
% H_2O	Moisture Content of LFG, %	0.87
% RH	Relative Humidity, %	76.10
M_{fd}	Dry Mole Fraction	0.991
%CH_4	Methane, %	9.75
%CO_2	Carbon Dioxide, %	38.65
%O_2	Oxygen, %	7.35
%Balance	Assumed as Nitrogen, %	30.55
%H_2	Hydrogen, %	12.75
%CO	Carbon Monoxide, %	0.08
M_d	Dry Molecular Weight, lb/lb-Mole	29.76
M_s	Wet Molecular weight, lb/lb-Mole	29.66
P_g	Flue Gas Static Pressure, inches of H_2O	15.18
P_s	Absolute Flue Gas Pressure, inches of Mercury	30.80
t_s	Average Stack Gas Temperature, °F	51
ΔP_{avg}	Average Velocity Head, inches of H_2O	0.079
v_s	Average LFG Velocity, feet/second	17.84
A_s	Stack Crossectional Area, square feet	1.35
Q_{sd}	Dry Volumetric Flow Rate, dry scfm	1,526
Q_s	Standard Volumetric Flow Rate, scfm	1,539
Q_{aw}	Actual Wet Volumetric Flue Gas Flow Rate, acfm	1,448
$Q_{lb/hr}$	Dry Air Flow Rate at Standard Conditions, lb/hr	7,071
NHV	Net Heating Value, Btu/scf	143.8
LFG_{CH4}	Methane, lb/hr	371.7
	Methane, grains/dscf	28.43
LFG_{CO2}	Carbon Dioxide, lb/hr	4,042.5
	Carbon Dioxide, grains/dscf	309.12
LFG_{O2}	Oxygen, lb/hr	558.9
	Oxygen, grains/dscf	42.74
LFG_{N2}	Balance gas as Nitrogen, lb/hr	2,033.9
	Balance gas as Nitrogen, grains/dscf	155.53
LFG_{H2}	Hydrogen, lb/hr	61.1
	Hydrogen, grains/dscf	4.67
LFG_{CO}	Carbon Monoxide, lb/hr	5.4
	Carbon Monoxide, grains/dscf	0.41

		Outlet A	Outlet B
H_2S	Hydrogen Sulfide Concentration, ppmd	27	30
	Hydrogen Sulfide Rate, lb/hr	0.22	0.24
	Hydrogen Sulfide Rate, grains/dscf	0.017	0.019
COS	Carbonyl Sulfide Concentration, ppmd	0.56	0.56
	Carboynl Sulfide Rate, lb/hr	0.01	0.01
	Carbonyl Sulfide Rate, grains/dscf	0.001	0.001
CH_4S	Methyl Mercaptan Concentration, ppmd	230	230
	Methyl Mercaptan Rate, lb/hr	2.63	2.63
	Methyl Mercaptan Rate, grains/dscf	0.201	0.201
C_2H_6S	Ethyl Mercaptan Concentration, ppmd	2.5	2.7
	Ethyl Mercaptan Rate, lb/hr	0.04	0.04
	Ethyl Mercaptan Rate, grains/dscf	0.003	0.003
$(CH_3)_2S$	Dimethyl Sulfide Concentration, ppmd	1,100	1,100
	Dimethyl Sulfide Rate, lb/hr	16.24	16.24
	Dimethyl Sulfide Rate, grains/dscf	1.242	1.242
CS_2	Carbon Disulfide Concentration, ppmd	0.71	0.74
	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, ppmd	69	67
	Dimethyl Disulfide Rate, lb/hr	1.54	1.21
	Dimethyl Disulfide Rate, grains/dscf	0.118	0.093

❶$E_{TRS-SO2}$	TRS-->SO2 Emission Concentration, ppmd	1,500	1,500
	TRS-->SO2 Emission Rate, lb/hr	22.84	22.84
	TRS-->SO2 Emission Rate, grains/dscf	1.746	1.746

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

Wednesday, January 04, 2017

LOCATION	TIME	FLOW -SCFM			Method 2 vs. Fleetzoom	Method 2 vs Kurz	Kurz vs Fleetzoom
		Method 2	FleetZoom	Kurz FM			
BLOWER OUT	**14:03**	**1,539**	**1,468**	**1,538**	**4.6%**	**0.0%**	**4.6%**

Bridgeton Landfill, LLC
Weekly TRS
Monthly Method 2C
Event 42-01*
01/04/2017

	PARAMETER	Blower Out
	EP14 NORTH QUARRY LFG ONLY	
Date	Test Date	1/4/17
Start	Run Start Time	11:00
	Run Finish Time	12:12
	Net Traversing Points	8 (2 x 4)
Θ	Net Run Time, minutes	1:12:00
C_p	Pitot Tube Coeficient	0.99
P_{Br}	Barometric Pressure, inches of Mercury	29.82
% H_2O	Moisture Content of LFG, %	1.01
% RH	Relative Humidity, %	95.60
M_{fd}	Dry Mole Fraction	0.990
%CH_4	Methane, %	40.70
%CO_2	Carbon Dioxide, %	34.05
%O_2	Oxygen, %	2.10
%Balance	Assumed as Nitrogen, %	22.00
%H_2	Hydrogen, % (** reported at the laboratory detection limit*)	2.80
%CO	Carbon Monoxide, % (** reported at the laboratory detection limit*)	0.00280
M_d	Dry Molecular Weight, lb/lb-Mole	28.41
M_s	Wet Molecular weight, lb/lb-Mole	28.30
P_g	Flue Gas Static Pressure, inches of H_2O	1.09
P_s	Absolute Flue Gas Pressure, inches of Mercury	29.90
t_s	Average Stack Gas Temperature, °F	47
ΔP_{avg}	Average Velocity Head, inches of H_2O	0.030
v_s	Average LFG Velocity, feet/second	11.35
A_s	Stack Crossectional Area, square feet	0.51
Q_{sd}	Dry Volumetric Flow Rate, dry scfm	360
Q_s	Standard Volumetric Flow Rate, scfm	364
Q_{aw}	Actual Wet Volumetric Flue Gas Flow Rate, acfm	349
$Q_{lb/hr}$	Dry Air Flow Rate at Standard Conditions, lb/hr	1,592
NHV	Net Heating Value, Btu/scf	370.2
LFG_{CH4}	Methane, lb/hr	366.1
	Methane, grains/dscf	118.66
LFG_{CO2}	Carbon Dioxide, lb/hr	840.2
	Carbon Dioxide, grains/dscf	272.33
LFG_{O2}	Oxygen, lb/hr	37.7
	Oxygen, grains/dscf	12.21
LFG_{N2}	Balance gas as Nitrogen, lb/hr	345.5
	Balance gas as Nitrogen, grains/dscf	112.00
LFG_{H4}	Hydrogen, lb/hr	3.2
	Hydrogen, grains/dscf	1.03
LFG_{CO}	Carbon Monoxide, lb/hr	0.0
	Carbon Monoxide, grains/dscf	0.01

*Starting with calendar year 2017, event numbering for NQ follows the same procedure for the SQ. The first number represents the total number of sample events performed, second number represents the number of sample events for the current calendar year. Ex: this is the 42nd sample collected solely from the NQ, 1st of the calendar year 2017. In the past, numbering for NQ was identical to the SQ numbering.

		Outlet A	Outlet B
H_2S	Hydrogen Sulfide Concentration, ppmd	47	42
	Hydrogen Sulfide Rate, lb/hr	0.09	0.08
	Hydrogen Sulfide Rate, grains/dscf	0.029	0.026
COS	Carbonyl Sulfide Concentration, ppmd	0.56	0.56
	Carboynl Sulfide Rate, lb/hr	0.00	0.00
	Carbonyl Sulfide Rate, grains/dscf	0.001	0.001
CH_4S	Methyl Mercaptan Concentration, ppmd	2.5	2.6
	Methyl Mercaptan Rate, lb/hr	0.01	0.01
	Methyl Mercaptan Rate, grains/dscf	0.002	0.002
C_2H_6S	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
$(CH_3)_2S$	Dimethyl Sulfide Concentration, ppmd	10.0	10
	Dimethyl Sulfide Rate, lb/hr	0.03	0.03
	Dimethyl Sulfide Rate, grains/dscf	0.011	0.011
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
$C_2H_6S_2$	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

❶**$E_{TRS-SO2}$**	TRS-->SO2 Emission Concentration, ppmd	60	56
	TRS-->SO2 Emission Rate, lb/hr	0.22	0.20
	TRS-->SO2 Emission Rate, grains/dscf	0.070	0.065

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

Air TECHNOLOGY Laboratories, Inc.

January 6, 2017

ADE-1461
EPA Methods TO3, TO14A, TO15 SIM & SCAN
ASTM D1946

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

Republic Services
ATTN: Nick Bauer
13570 St. Charles Rock Rd.
Bridgeton, MO 63044

LABORATORY TEST RESULTS

Project Reference: Bridgeton Landfill
Lab Number: I010506-01/04

Enclosed are results for sample(s) received 1/05/17 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 Nick Bauer, Mike Lambrich and Ryan Ayers; David Randall, Dustin Thoenen and Don Murphy, Weaver Consultants Group, on 1/06/17.

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,

Mark Johnson
Operations Manager
MJohnson@AirTechLabs.com

Enclosures

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

CHAIN OF CUSTODY RECORD

AirTECHNOLOGY Laboratories, Inc.

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

TURNAROUND TIME				DELIVERABLES		PAGE: 1 OF 1
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

Project No.:	
Project Name:	Bridgeton LF Monthly Permit Flare LFG Testing
Report To:	Nick Bauers/Ryan Ayers/David Randall
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.:	PO5881099
Bill to:	Republic Services
	Attn: Nick Bauer
	13570 St. Charles Rock Rd.
	Bridgeton, MO 63044

LAB USE ONLY	Canister Pressures ("hg)				SAMPLE IDENTIFICATION	SAMPLE DATE	SAMPLE TIME	CONTAINER QTY/TYPE	MATRIX	PRESERVATION	ANALYSIS REQUEST					
	Canister ID	Sample Start	Sample End	Lab Receive							EPA 15/16 + TRS	ASTM 1946 +H2 + CO & BTU/SCF		ASTM 1946 +H2 + CO & BTU/SCF (by CH4 ONLY)		
I610506-01	5987	-20.8	-3.5	-3	SQ Blower Outlet A	1/4/2016*	1300	C -6L	LFG	He	X	X				
-02	5962	-20.2	-3.5	-3	SQ Blower Outlet B	1/4/2016*	1320	C -6L	LFG	He	X	X				
-03	5966	-19.8	-3.5	-3	NQ EP14 A	1/4/2016*	1004	C -6L	LFG	He	X			X		
-04	5950	-19.5	-3.5	-3	NQ EP14 B	1/4/2016*	1024	C -6L	LFG	He	X			X		

AUTHORIZATION TO PERFORM WORK: **Dave Penoyer** COMPANY: **Republic Services** DATE/TIME:

SAMPLED BY: **Ryan Ayers** COMPANY: **Republic Services** DATE/TIME

RELINQUISHED BY	Ryan Ayers	1-4-17	1445	RECEIVED BY	DATE/TIME
RELINQUISHED BY	FEDEX			RECEIVED BY	1/5/17 0916 DATE/TIME
RELINQUISHED BY				RECEIVED BY	DATE/TIME

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

COMMENTS:

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*

*Sample date misprinted on COC, should read 1/4/2017

Client: Republic Services
Attn: Nick Bauer
Project Name: Bridgeton LF Monthly Permit Flare LFG Testing
Project No.: NA
Date Received: 01/05/17
Matrix: Air
Reporting Units: ppmv

EPA Methods 15/16

Lab No.:	I010506-01		I010506-02		I010506-03		I010506-04	
Client Sample I.D.:	SQ Blower Outlet A		SQ Blower Outlet B		NQ EP14 A		NQ EP14 B	
Date/Time Sampled:	1/4/17 13:00		1/4/17 13:20		1/4/17 10:04		1/4/17 10:24	
Date/Time Analyzed:	1/5/17 12:23		1/5/17 12:36		1/5/17 12:48		1/5/17 13:00	
QC Batch No.:	170104GC3A1		170104GC3A1		170104GC3A1		170104GC3A1	
Analyst Initials:	VM		VM		VM		VM	
Dilution Factor:	2.8		2.8		2.8		2.8	
ANALYTE	Result ppmv	RL ppmv	Result ppmv	RL ppmv	Result ppmv	RL ppmv	Result ppmv	RL ppmv
Hydrogen Sulfide	27	0.56	30 d	0.56	47 d	5.6	42 d	5.6
Carbonyl Sulfide	ND	0.56	ND	0.56	ND	0.56	ND	0.56
Methyl Mercaptan	230 d	5.6	230 d	5.6	2.5	0.56	2.6	0.56
Ethyl Mercaptan	2.5	0.56	2.7	0.56	ND	0.56	ND	0.56
Dimethyl Sulfide	1,100 d	56	1,100 d	56	10.0	0.56	10	0.56
Carbon Disulfide	0.71	0.56	0.74	0.56	ND	0.56	ND	0.56
Dimethyl Disulfide	69 d	5.6	67 d	5.6	ND	0.56	ND	0.56
Total Reduced Sulfur	1,500	0.56	1,500	0.56	60	0.56	56	0.56

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

Reviewed/Approved By: _____ Date 1/6/17
Mark Johnson
Operations Manager

The cover letter is an integral part of this analytical report

AirTECHNOLOGY Laboratories, Inc.
18501 E. Gale Avenue, Suite 130 ♦ City of Industry, CA 91748 ♦ Ph: (626) 964-4032 ♦ Fx: (626) 964-5832

QC Batch No.: 170104GC3A1
Matrix: Air
Units: ppmv

QC for Sulfur Compounds by EPA 15/16

Lab No.:	Method Blank		LCS		LCSD			
Date/Time Analyzed:	1/4/17 16:23		1/4/17 15:59		1/4/17 16:11			
Analyst Initials:	AS		AS		AS			
Datafile:	29dec006		29dec009		29dec010			
Dilution Factor:	1.0		1.0		1.0			
ANALYTE	Results	RL	% Rec.	Criteria	% Rec.	Criteria	%RPD	Criteria
Hydrogen Sulfide	ND	0.20	103	70-130%	106	70-130%	2.9	<30
Carbonyl Sulfide	ND	0.20	102	70-130%	104	70-130%	1.8	<30
Methyl Mercaptan	ND	0.20	104	70-130%	107	70-130%	2.8	<30
Ethyl Mercaptan	ND	0.20	109	70-130%	110	70-130%	1.3	<30
Dimethyl Sulfide	ND	0.20	95	70-130%	96	70-130%	0.9	<30
Carbon Disulfide	ND	0.20	115	70-130%	117	70-130%	1.2	<30
Dimethyl Disulfide	ND	0.20	84	70-130%	85	70-130%	0.9	<30

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

Reviewed/Approved By: _____ Date: 1/6/17
Mark J. Johnson
Operations Manager

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

Client: Republic Services
Attn: Nick Bauer
Project Name: Bridgeton LF Monthly Permit Flare LFG Testing
Project No.: NA
Date Received: 01/05/17
Matrix: Air
Reporting Units: % v/v

ASTM D1946

Lab No.:	I010506-01		I010506-02					
Client Sample I.D.:	SQ Blower Outlet A		SQ Blower Outlet B					
Date/Time Sampled:	1/4/17 13:00		1/4/17 13:20					
Date/Time Analyzed:	1/5/17 15:25		1/5/17 15:40					
QC Batch No.:	170105GC8A1		170105GC8A1					
Analyst Initials:	MJ		MJ					
Dilution Factor:	2.8		2.8					
ANALYTE	Result % v/v	RL % v/v	Result % v/v	RL % v/v				
Hydrogen	12.8	2.8	12.7	2.8				
Carbon Dioxide	38.6	0.028	38.7	0.028				
Oxygen/Argon	7.4	1.4	7.3	1.4				
Nitrogen	30.6	2.8	30.5	2.8				
Methane	9.7	0.0028	9.8	0.0028				
Carbon Monoxide	0.082	0.0028	0.081	0.0028				
Net Heating Value (BTU/ft3)	143.5	2.8	144.1	2.8				
Gross Heating Value (BTU/ft3)	163.8	2.8	164.4	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: _____ Date 1-9-17

Mark Johnson
Operations Manager

The cover letter is an integral part of this analytical report

AirTECHNOLOGY Laboratories, Inc.
18501 E. Gale Avenue, Suite 130 ♦ City of Industry, CA 91748 ♦ Ph: (626) 964-4032 ♦ Fx: (626) 964-5832

Client: Republic Services
Attn: Nick Bauer
Project Name: Bridgeton LF Monthly Permit Flare LFG Testing
Project No.: NA
Date Received: 01/05/17
Matrix: Air
Reporting Units: % v/v

ASTM D1946

Lab No.:	I010506-03		I010506-04					
Client Sample I.D.:	NQ EP14 A		NQ EP14 B					
Date/Time Sampled:	1/4/17 10:04		1/4/17 10:24					
Date/Time Analyzed:	1/5/17 15:54		1/5/17 16:09					
QC Batch No.:	170105GC8A1		170105GC8A1					
Analyst Initials:	MJ		MJ					
Dilution Factor:	2.8		2.8					
ANALYTE	Result % v/v	RL % v/v	Result % v/v	RL % v/v				
Hydrogen	ND	2.8	ND	2.8				
Carbon Dioxide	34.1	0.028	34.0	0.028				
Oxygen/Argon	2.1	1.4	2.1	1.4				
Nitrogen	22.1	2.8	21.9	2.8				
Methane	40.7	0.0028	40.7	0.0028				
Carbon Monoxide	ND	0.0028	ND	0.0028				
Net Heating Value (BTU/ft3) methane only	369.8	2.8	370.6	2.8				
Gross Heating Value (BTU/ft3) methane only	410.8	2.8	411.6	2.8				

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: _____ Date 1-9-17

Mark Johnson
Operations Manager

The cover letter is an integral part of this analytical report

AirTECHNOLOGY Laboratories, Inc.
18501 E. Gale Avenue, Suite 130 ♦ City of Industry, CA 91748 ♦ Ph: (626) 964-4032 ♦ Fx: (626) 964-5832

QC Batch No.: 170105GC8A1
Matrix: Air
Units: % v/v

QC for ASTM D1946

Lab No.:	Method Blank		LCS		LCSD			
Date/Time Analyzed:	1/5/17 12:21		1/5/17 11:08		1/5/17 11:23			
Analyst Initials:	MJ		MJ		MJ			
Datafile:	05jan011		05jan006		05jan007			
Dilution Factor:	1.0		1.0		1.0			
ANALYTE	Results	RL	% Rec.	Criteria	% Rec.	Criteria	%RPD	Criteria
Hydrogen	ND	1.0	118	70-130%	115	70-130%	1.9	<30
Carbon Dioxide	ND	0.010	99	70-130%	96	70-130%	2.5	<30
Oxygen/Argon	ND	0.50	102	70-130%	100	70-130%	1.7	<30
Nitrogen	ND	1.0	97	70-130%	96	70-130%	1.1	<30
Methane	ND	0.0010	107	70-130%	106	70-130%	1.2	<30
Carbon Monoxide	ND	0.0010	101	70-130%	100	70-130%	1.2	<30

ND = Not Detected (Below RL)

Reviewed/Approved By: _____ Date: 1-6-17

Mark J. Johnson
Operations Manager

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

Bridgeton Landfill, LLC.
Weekly TRS Sampling Summary
Event 95-52
12/27/2016

Kurz FM =	**1,634**	**scfm**	
Fleetzoom Total =	**1,688**	**scfm**	**Δ = 3.2%**

	PARAMETER	Outlet A	Outlet B
SOUTH QUARRY LFG ONLY - MAIN FLARE COMPOUND BLOWER OUTLET (FL140)			
Date	Test Date		12/27/16
Time	Start	14:05	14:13
***%CH_4**	Methane, %	10.60	10.10
***%CO_2**	Carbon Dioxide, %	39.70	40.20
***'%O_2**	Oxygen, %	8.50	8.70
***%Balance**	Assumed as Nitrogen, %	41.20	41.00
P_g	Flue Gas Static Pressure, inches of H_2O	14.88	14.97
t_s	Blower Outlet LFG Temperature, °F	77	77
Q_{sd}	Dry Volumetric Flow Rate, dry scfm (assumes 5%H2O)	1,552	
Q_s	Kurz FM, Standard Volumetric Flow Rate, scfm	1,634	
LFG_{CH4}	Methane, lb/hr	411.2	391.8
	Methane, grains/dscf	30.90	29.45
LFG_{CO2}	Carbon Dioxide, lb/hr	4,224.8	4,278.0
	Carbon Dioxide, grains/dscf	317.52	321.52
LFG_{O2}	Oxygen, lb/hr	657.7	673.2
	Oxygen, grains/dscf	49.43	50.59
LFG_{N2}	Balance gas as Nitrogen, lb/hr	2,790.8	2,777.2
	Balance gas as Nitrogen, grains/dscf	209.75	208.73

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

		Outlet A	Outlet B
H_2S	Hydrogen Sulfide Concentration, ppmd	7.30	1.50
	Hydrogen Sulfide Rate, lb/hr	0.06	0.01
	Hydrogen Sulfide Rate, grains/dscf	0.005	0.001
COS	Carbonyl Sulfide Concentration, ppmd	0.59	0.59
	Carboynl Sulfide Rate, lb/hr	0.01	0.01
	Carbonyl Sulfide Rate, grains/dscf	0.001	0.001
CH_4S	Methyl Mercaptan Concentration, ppmd	160.00	150.00
	Methyl Mercaptan Rate, lb/hr	1.86	1.74
	Methyl Mercaptan Rate, grains/dscf	0.140	0.131
C_2H_6S	Ethyl Mercaptan Concentration, ppmd	1.90	1.60
	Ethyl Mercaptan Rate, lb/hr	0.03	0.02
	Ethyl Mercaptan Rate, grains/dscf	0.002	0.002
$(CH_3)_2S$	Dimethyl Sulfide Concentration, ppmd	1,000.00	1,000.00
	Dimethyl Sulfide Rate, lb/hr	15.02	15.02
	Dimethyl Sulfide Rate, grains/dscf	1.129	1.129
CS_2	Carbon Disulfide Concentration, ppmd	0.63	0.64
	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, ppmd	69.00	77.00
	Dimethyl Disulfide Rate, lb/hr	1.57	1.75
	Dimethyl Disulfide Rate, grains/dscf	0.118	0.132
❶$E_{TRS-SO2}$	TRS-->SO2 Emission Concentration, ppmd	1,300.00	1,300.00
	TRS-->SO2 Emission Rate, lb/hr	20.14	20.14
	TRS-->SO2 Emission Rate, grains/dscf	1.514	1.514
	TPY =	88.21	88.21

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

Bridgeton Landfill, LLC.
Weekly TRS Sampling Summary
Event 95-52
12/27/2016

Fleetzoom Total = **227** scfm

	PARAMETER	EP14 NQ	EP14 NQ-2
EP14 NORTH QUARRY LFG ONLY			
Date	Test Date		12/27/16
Time	Start	13:25	13:34
***%CH_4**	Methane, %	38.90	38.90
***%CO_2**	Carbon Dioxide, %	36.30	33.70
***'%O_2**	Oxygen, %	1.60	1.60
***%Balance**	Assumed as Nitrogen, %	23.20	25.80
P_g	Flue Gas Static Pressure, inches of H_2O	1.33	1.28
t_s	Blower Outlet LFG Temperature, °F	64.70	66.30
Q_{sd}	Dry Volumetric Flow Rate, dry scfm (assumes 5%H2O)	216	
Q_s	Fleetzoom Standard Volumetric Flow Rate, scfm	227	
LFG_{CH4}	Methane, lb/hr	209.7	209.7
	Methane, grains/dscf	113.41	113.41
LFG_{CO2}	Carbon Dioxide, lb/hr	536.9	498.4
	Carbon Dioxide, grains/dscf	290.33	269.53
LFG_{O2}	Oxygen, lb/hr	17.2	17.2
	Oxygen, grains/dscf	9.30	9.30
LFG_{N2}	Balance gas as Nitrogen, lb/hr	218.4	242.9
	Balance gas as Nitrogen, grains/dscf	118.11	131.35

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

		EP14 NQ	EP14 NQ-2
H_2S	Hydrogen Sulfide Concentration, ppmd	34.00	39.00
	Hydrogen Sulfide Rate, lb/hr	0.04	0.04
	Hydrogen Sulfide Rate, grains/dscf	0.021	0.024
COS	Carbonyl Sulfide Concentration, ppmd	0.58	0.58
	Carboynl Sulfide Rate, lb/hr	0.00	0.00
	Carbonyl Sulfide Rate, grains/dscf	0.001	0.001
CH_4S	Methyl Mercaptan Concentration, ppmd	1.60	1.80
	Methyl Mercaptan Rate, lb/hr	0.00	0.00
	Methyl Mercaptan Rate, grains/dscf	0.001	0.002
C_2H_6S	Ethyl Mercaptan Concentration, ppmd	0.58	0.58
	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	7.00	7.70
	Dimethyl Sulfide Rate, lb/hr	0.01	0.02
	Dimethyl Sulfide Rate, grains/dscf	0.008	0.009
CS_2	Carbon Disulfide Concentration, ppmd	0.58	0.58
	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	0.58	0.58
	Dimethyl Disulfide Rate, lb/hr	0.00	0.00
	Dimethyl Disulfide Rate, grains/dscf	0.001	0.001
❶$E_{TRS-SO2}$	TRS-->SO2 Emission Concentration, ppmd	44.00	50.00
	TRS-->SO2 Emission Rate, lb/hr	0.09	0.11
	TRS-->SO2 Emission Rate, grains/dscf	0.051	0.058
	TPY =	0.41	0.47

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

Air TECHNOLOGY Laboratories, Inc.

January 6, 2017

ADE-1461
EPA Methods TO3, TO14A, TO15 SIM & SCAN
ASTM D1946

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

Republic Services
ATTN: Nick Bauer
13570 St. Charles Rock Rd.
Bridgeton, MO 63044

LABORATORY TEST RESULTS

Project Reference: Bridgeton Landfill
Lab Number: H122802-01/04

Enclosed are results for sample(s) received 12/28/16 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 Nick Bauer, Mike Lambrich and Ryan Ayers; David Randall, Dustin Thoenen and Don Murphy, Weaver Consultants Group, on 1/05/17.

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,

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

TURNAROUND TIME

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

DELIVERABLES

EDD	☐
EDF	☐
Level 3	☐
Level 4	☐

PAGE: 1 OF 1

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

Project No.:
Project Name: Bridgeton Landfill
Report To: Nick Bauer
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.: ~~PO4862452~~ 6234000 PO 1/4/16
Bill to: Republic Services
Attn: Nick Bauer
13570 St. Charles Rock Rd.
Bridgeton, MO 63044

ANALYSIS REQUEST

LAB USE ONLY	Canister Pressures ("hg) Canister ID	Sample Start	Sample End	Lab Receive	SAMPLE IDENTIFICATION	SAMPLE DATE	SAMPLE TIME	CONTAINER QTY/TYPE	MATRIX	PRESERVATION	EPA 15/16 + TRS					
H122802-01	R1346	-19.8	-3.5	-3.5	NQ EP14 A	12/27/2016	1325	C	LFG	NA	X					
-02	R1372	-19.7	-3.5	-3.5	NQ EP14 B	12/27/2016	1334	C	LFG	NA	X					
-03	J1721	-19	-3.5	-4	SQ Blower Outlet A	12/27/2016	1405	C	LFG	NA	X					
-04	1532	-19	-3.5	-4	SQ Blower Outlet B	12/27/2016	1413	C	LFG	NA	X					

AUTHORIZATION TO PERFORM WORK: Dave Penoyer	COMPANY: Republic Services	DATE/TIME:	
SAMPLED BY: Ryan Ayers	COMPANY: Republic Services	DATE/TIME	
RELINQUISHED BY: Ryan Ayers 12-27-16 1500	DATE/ RECEIVED BY	DATE/TIME	
RELINQUISHED BY: FED EX	DATE/ RECEIVED BY	DATE/TIME 12/28/16 0921	
RELINQUISHED BY	DATE/ RECEIVED BY	DATE/TIME	

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

COMMENTS

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*

Client: Republic Services
Attn: Nick Bauer
Project Name: Bridgeton Landfill
Project No.: NA
Date Received: 12/28/16
Matrix: Air
Reporting Units: ppmv

EPA Methods 15/16

Lab No.:	H122802-01		H122802-02		H122802-03		H122802-04	
Client Sample I.D.:	NQ EP14 A		NQ EP14 B		SQ Blower Outlet A		SQ Blower Outlet B	
Date/Time Sampled:	12/27/16 13:25		12/27/16 13:34		12/27/16 14:05		12/27/16 14:13	
Date/Time Analyzed:	12/29/16 14:30		12/29/16 14:42		12/29/16 14:57		12/29/16 15:10	
QC Batch No.:	161229GC3A1		161229GC3A1		161229GC3A1		161229GC3A1	
Analyst Initials:	AS		AS		AS		AS	
Dilution Factor:	2.9		2.9		3.0		3.0	
ANALYTE	Result ppmv	RL ppmv	Result ppmv	RL ppmv	Result ppmv	RL ppmv	Result ppmv	RL ppmv
Hydrogen Sulfide	34 d	5.8	39 d	5.8	7.3	0.59	1.5	0.59
Carbonyl Sulfide	ND	0.58	ND	0.58	ND	0.59	ND	0.59
Methyl Mercaptan	1.6	0.58	1.8	0.58	160 d	5.9	150 d	5.9
Ethyl Mercaptan	ND	0.58	ND	0.58	1.9	0.59	1.6	0.59
Dimethyl Sulfide	7.0	0.58	7.7	0.58	1,000 d	59	1,000 d	59
Carbon Disulfide	ND	0.58	ND	0.58	0.63	0.59	0.64	0.59
Dimethyl Disulfide	ND	0.58	ND	0.58	69 d	5.9	77 d	5.9
Total Reduced Sulfur	44	0.58	50	0.58	1,300	0.59	1,300	0.59

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

Reviewed/Approved By: Mark Johnson
Operations Manager

Date 1/5/17

The cover letter is an integral part of this analytical report

AirTECHNOLOGY Laboratories, Inc.
18501 E. Gale Avenue, Suite 130 ♦ City of Industry, CA 91748 ♦ Ph: (626) 964-4032 ♦ Fx: (626) 964-5832

QC Batch No.: 161229GC3A1
Matrix: Air
Units: ppmv

QC for Sulfur Compounds by EPA 15/16

Lab No.:	Method Blank		LCS		LCSD			
Date/Time Analyzed:	12/29/16 13:15		12/29/16 14:01		12/29/16 14:14			
Analyst Initials:	AS		AS		AS			
Datafile:	29dec006		29dec009		29dec010			
Dilution Factor:	1.0		1.0		1.0			
ANALYTE	Results	RL	% Rec.	Criteria	% Rec.	Criteria	%RPD	Criteria
Hydrogen Sulfide	ND	0.20	100	70-130%	99	70-130%	0.3	<30
Carbonyl Sulfide	ND	0.20	98	70-130%	99	70-130%	0.7	<30
Methyl Mercaptan	ND	0.20	99	70-130%	98	70-130%	0.3	<30
Ethyl Mercaptan	ND	0.20	101	70-130%	100	70-130%	0.5	<30
Dimethyl Sulfide	ND	0.20	88	70-130%	88	70-130%	0.3	<30
Carbon Disulfide	ND	0.20	109	70-130%	106	70-130%	2.6	<30
Dimethyl Disulfide	ND	0.20	73	70-130%	72	70-130%	2.2	<30

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

Reviewed/Approved By: _____ Date: 1/5/17
Mark J. Johnson
Operations Manager

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

Bridgeton Landfill, LLC.
Weekly TRS Sampling Summary
Event 94-51
12/20/2016

Kurz FM =	**1,581**	**scfm**	
Fleetzoom Total =	**1,504**	**scfm**	**Δ = -5.1%**

	PARAMETER	Outlet A	Outlet B
SOUTH QUARRY LFG ONLY - MAIN FLARE COMPOUND BLOWER OUTLET (FL140)			
Date	Test Date		12/20/16
Time	Start	10:53	11:03
***%CH_4**	Methane, %	11.40	11.00
***%CO_2**	Carbon Dioxide, %	40.10	40.10
***'%O_2**	Oxygen, %	8.30	8.40
***%Balance**	Assumed as Nitrogen, %	40.20	40.50
P_g	Flue Gas Static Pressure, inches of H_2O	17.55	17.17
t_s	Blower Outlet LFG Temperature, °F	55	55
Q_{sd}	Dry Volumetric Flow Rate, dry scfm (assumes 5%H2O)	1,502	
Q_s	Kurz FM, Standard Volumetric Flow Rate, scfm	1,581	
LFG_{CH4}	Methane, lb/hr	427.9	412.9
	Methane, grains/dscf	33.24	32.07
LFG_{CO2}	Carbon Dioxide, lb/hr	4,129.0	4,129.0
	Carbon Dioxide, grains/dscf	320.72	320.72
LFG_{O2}	Oxygen, lb/hr	621.4	628.9
	Oxygen, grains/dscf	48.27	48.85
LFG_{N2}	Balance gas as Nitrogen, lb/hr	2,634.8	2,654.5
	Balance gas as Nitrogen, grains/dscf	204.66	206.18

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

		Outlet A	Outlet B
H_2S	Hydrogen Sulfide Concentration, ppmd	26.00	27.00
	Hydrogen Sulfide Rate, lb/hr	0.21	0.22
	Hydrogen Sulfide Rate, grains/dscf	0.016	0.017
COS	Carbonyl Sulfide Concentration, ppmd	0.56	0.56
	Carboynl Sulfide Rate, lb/hr	0.01	0.01
	Carbonyl Sulfide Rate, grains/dscf	0.001	0.001
CH_4S	Methyl Mercaptan Concentration, ppmd	210.00	210.00
	Methyl Mercaptan Rate, lb/hr	2.36	2.36
	Methyl Mercaptan Rate, grains/dscf	0.184	0.184
C_2H_6S	Ethyl Mercaptan Concentration, ppmd	2.40	2.60
	Ethyl Mercaptan Rate, lb/hr	0.03	0.04
	Ethyl Mercaptan Rate, grains/dscf	0.003	0.003
$(CH_3)_2S$	Dimethyl Sulfide Concentration, ppmd	1,100.00	1,200.00
	Dimethyl Sulfide Rate, lb/hr	15.99	17.44
	Dimethyl Sulfide Rate, grains/dscf	1.242	1.355
CS_2	Carbon Disulfide Concentration, ppmd	0.71	0.79
	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, ppmd	54.00	62.00
	Dimethyl Disulfide Rate, lb/hr	1.19	1.37
	Dimethyl Disulfide Rate, grains/dscf	0.092	0.106
❶$E_{TRS-SO2}$	TRS-->SO2 Emission Concentration, ppmd	1,500.00	1,600.00
	TRS-->SO2 Emission Rate, lb/hr	22.48	23.98
	TRS-->SO2 Emission Rate, grains/dscf	1.746	1.863
	TPY =	98.48	105.04

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

Bridgeton Landfill, LLC.
Weekly TRS Sampling Summary
Event 94-51
12/20/2016

Fleetzoom Total = 241 scfm

	PARAMETER	EP14 NQ	EP14 NQ-2
EP14 NORTH QUARRY LFG ONLY			
Date	Test Date		12/20/16
Time	Start	10:27	10:35
***%CH_4**	Methane, %	42.90	42.90
***%CO_2**	Carbon Dioxide, %	35.30	33.30
***'%O_2**	Oxygen, %	2.10	2.10
***%Balance**	Assumed as Nitrogen, %	19.70	21.70
P_g	Flue Gas Static Pressure, inches of H_2O	1.51	1.43
t_s	Blower Outlet LFG Temperature, °F	56.80	58.50
Q_{sd}	Dry Volumetric Flow Rate, dry scfm (assumes 5%H2O)	229	
Q_s	Fleetzoom Standard Volumetric Flow Rate, scfm	241	
LFG_{CH4}	Methane, lb/hr	245.4	245.4
	Methane, grains/dscf	125.07	125.07
LFG_{CO2}	Carbon Dioxide, lb/hr	553.9	522.5
	Carbon Dioxide, grains/dscf	282.33	266.33
LFG_{O2}	Oxygen, lb/hr	24.0	24.0
	Oxygen, grains/dscf	12.21	12.21
LFG_{N2}	Balance gas as Nitrogen, lb/hr	196.8	216.7
	Balance gas as Nitrogen, grains/dscf	100.29	110.47

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

		EP14 NQ	EP14 NQ-2
H_2S	Hydrogen Sulfide Concentration, ppmd	45.00	48.00
	Hydrogen Sulfide Rate, lb/hr	0.05	0.06
	Hydrogen Sulfide Rate, grains/dscf	0.028	0.030
COS	Carbonyl Sulfide Concentration, ppmd	0.53	0.56
	Carboynl Sulfide Rate, lb/hr	0.00	0.00
	Carbonyl Sulfide Rate, grains/dscf	0.001	0.001
CH_4S	Methyl Mercaptan Concentration, ppmd	2.00	2.10
	Methyl Mercaptan Rate, lb/hr	0.00	0.00
	Methyl Mercaptan Rate, grains/dscf	0.002	0.002
C_2H_6S	Ethyl Mercaptan Concentration, ppmd	0.53	0.56
	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	8.60	9.20
	Dimethyl Sulfide Rate, lb/hr	0.02	0.02
	Dimethyl Sulfide Rate, grains/dscf	0.010	0.010
CS_2	Carbon Disulfide Concentration, ppmd	0.53	0.56
	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	0.53	0.56
	Dimethyl Disulfide Rate, lb/hr	0.00	0.00
	Dimethyl Disulfide Rate, grains/dscf	0.001	0.001
❶$E_{TRS-SO2}$	TRS-->SO2 Emission Concentration, ppmd	56.00	60.00
	TRS-->SO2 Emission Rate, lb/hr	0.13	0.14
	TRS-->SO2 Emission Rate, grains/dscf	0.065	0.070
	TPY =	0.56	0.60

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

Air TECHNOLOGY Laboratories, Inc.

December 29, 2016

ADE-1461
EPA Methods TO3, TO14A, TO15 SIM & SCAN
ASTM D1946

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

Republic Services
ATTN: Nick Bauer
13570 St. Charles Rock Rd.
Bridgeton, MO 63044

LABORATORY TEST RESULTS

Project Reference: Bridgeton Landfill
Lab Number: H122202-01/04

Enclosed are results for sample(s) received 12/22/16 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 Nick Bauer, Mike Lambrich and Ryan Ayers; David Randall, Dustin Thoenen and Don Murphy, Weaver Consultants Group, on 12/29/16.

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,

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

TURNAROUND TIME				DELIVERABLES		PAGE: 1 OF 1
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

Project No.:	
Project Name:	Bridgeton Landfill
Report To:	Nick Bauer
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.:	PO4862452 6239000
Bill to:	Republic Services 4500476916
	Attn: Nick Bauer
	13570 St. Charles Rock Rd.
	Bridgeton, MO 63044

LAB USE ONLY	Canister Pressures ("hg)				SAMPLE IDENTIFICATION	SAMPLE DATE	SAMPLE TIME	CONTAINER QTY/TYPE	MATRIX	PRESERVATION	ANALYSIS REQUEST: EPA 15/16 + TRS					
	Canister ID	Sample Start	Sample End	Lab Receive												
H122202-01	R1156	-20.6	-3.5	-2	NQ EP14 A	12/20/2016	1027	C	LFG	NA	X					
-02	R1369	-20.7	-3.5	-3	NQ EP14 B	12/20/2016	1035	C	LFG	NA	X					
-03	1614	-20.4	-3.5	-3	SQ Blower Outlet A	12/20/2016	1053	C	LFG	NA	X					
-04	1620	-20.3	-3.5	-3	SQ Blower Outlet B	12/20/2016	1103	C	LFG	NA	X					

AUTHORIZATION TO PERFORM WORK: Dave Penoyer	COMPANY: Republic Services	DATE/TIME:	**COMMENTS**
SAMPLED BY: Ryan Ayers	COMPANY: Republic Services	DATE/TIME	
RELINQUISHED BY: Ryan Ayers	DATE: 12-20-16 1200	RECEIVED BY	DATE/TIME
RELINQUISHED BY: FED EX	DATE:	RECEIVED BY	DATE/TIME
RELINQUISHED BY	DATE:	RECEIVED BY: 12/22/16 1137	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 *Rev. 03 - 5/7/09*

Client:	**Republic Services**
Attn:	**Nick Bauer**
Project Name:	**Bridgeton Landfill**
Project No.:	**NA**
Date Received:	**12/22/16**
Matrix:	**Air**
Reporting Units:	**ppmv**

EPA Methods 15/16

Lab No.:	H122202-01		H122202-02		H122202-03		H122202-04	
Client Sample I.D.:	NQ EP14 A		NQ EP14 B		SQ Blower Outlet A		SQ Blower Outlet B	
Date/Time Sampled:	12/20/16 10:27		12/20/16 10:35		12/20/16 10:53		12/20/16 11:03	
Date/Time Analyzed:	12/22/16 13:14		12/22/16 13:26		12/22/16 13:39		12/22/16 13:51	
QC Batch No.:	161222GC3A1		161222GC3A1		161222GC3A1		161222GC3A1	
Analyst Initials:	AS		AS		AS		AS	
Dilution Factor:	2.7		2.8		2.8		2.8	
ANALYTE	**Result ppmv**	**RL ppmv**	**Result ppmv**	**RL ppmv**	**Result ppmv**	**RL ppmv**	**Result ppmv**	**RL ppmv**
Hydrogen Sulfide	45 d	5.3	48 d	5.6	26	0.56	27	0.56
Carbonyl Sulfide	ND	0.53	ND	0.56	ND	0.56	ND	0.56
Methyl Mercaptan	2.0	0.53	2.1	0.56	210 d	5.6	210 d	5.6
Ethyl Mercaptan	ND	0.53	ND	0.56	2.4	0.56	2.6	0.56
Dimethyl Sulfide	8.6	0.53	9.2	0.56	1,100 d	56	1,200 d	56
Carbon Disulfide	ND	0.53	ND	0.56	0.71	0.56	0.79	0.56
Dimethyl Disulfide	ND	0.53	ND	0.56	54 d	5.6	62 d	5.6
Total Reduced Sulfur	56	0.53	60	0.56	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: _____ **Date** 12/28/16

Mark Johnson
Operations Manager

The cover letter is an integral part of this analytical report

AirTECHNOLOGY Laboratories, Inc.
18501 E. Gale Avenue, Suite 130 ♦ City of Industry, CA 91748 ♦ Ph: (626) 964-4032 ♦ Fx: (626) 964-5832

QC for Sulfur Compounds by EPA 15/16

Lab No.:	Method Blank		LCS		LCSD			
Date/Time Analyzed:	12/22/16 10:26		12/22/16 10:01		12/22/16 10:13			
Analyst Initials:	AS		AS		AS			
Datafile:	22dec009		22dec007		22dec008			
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%	0.0	<30
Carbonyl Sulfide	ND	0.20	94	70-130%	93	70-130%	1.1	<30
Methyl Mercaptan	ND	0.20	92	70-130%	92	70-130%	0.1	<30
Ethyl Mercaptan	ND	0.20	98	70-130%	99	70-130%	0.9	<30
Dimethyl Sulfide	ND	0.20	101	70-130%	101	70-130%	0.2	<30
Carbon Disulfide	ND	0.20	97	70-130%	96	70-130%	1.0	<30
Dimethyl Disulfide	ND	0.20	80	70-130%	80	70-130%	0.4	<30

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

Reviewed/Approved By: _____ Date: 12/28/16
Mark J. Johnson
Operations Manager

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

Bridgeton Landfill, LLC.
Weekly TRS Sampling Summary
Event 93-50
12/13/2016

Kurz FM =	**1,606**	scfm
Fleetzoom Total =	**1,471**	scfm

$\Delta =$ **-9.2%**

	PARAMETER	Outlet A	Outlet B
SOUTH QUARRY LFG ONLY - MAIN FLARE COMPOUND BLOWER OUTLET (FL140)			
Date	Test Date		12/13/16
Time	Start	11:09	11:18
***%CH_4**	Methane, %	9.90	9.60
***%CO_2**	Carbon Dioxide, %	38.80	38.70
***'%O_2**	Oxygen, %	9.10	9.20
***%Balance**	Assumed as Nitrogen, %	42.20	42.50
P_g	Flue Gas Static Pressure, inches of H_2O	15.35	15.22
t_s	Blower Outlet LFG Temperature, °F	53	53
Q_{sd}	Dry Volumetric Flow Rate, dry scfm (assumes 5%H2O)	1,526	
Q_s	Kurz FM, Standard Volumetric Flow Rate, scfm	1,606	
LFG_{CH4}	Methane, lb/hr	377.5	366.1
	Methane, grains/dscf	28.86	27.99
LFG_{CO2}	Carbon Dioxide, lb/hr	4,059.3	4,048.8
	Carbon Dioxide, grains/dscf	310.32	309.52
LFG_{O2}	Oxygen, lb/hr	692.2	699.8
	Oxygen, grains/dscf	52.92	53.50
LFG_{N2}	Balance gas as Nitrogen, lb/hr	2,810.3	2,830.2
	Balance gas as Nitrogen, grains/dscf	214.84	216.37

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

		Outlet A	Outlet B
H_2S	Hydrogen Sulfide Concentration, ppmd	26.00	28.00
	Hydrogen Sulfide Rate, lb/hr	0.21	0.23
	Hydrogen Sulfide Rate, grains/dscf	0.016	0.017
COS	Carbonyl Sulfide Concentration, ppmd	0.56	0.56
	Carboynl Sulfide Rate, lb/hr	0.01	0.01
	Carbonyl Sulfide Rate, grains/dscf	0.001	0.001
CH_4S	Methyl Mercaptan Concentration, ppmd	200.00	210.00
	Methyl Mercaptan Rate, lb/hr	2.29	2.40
	Methyl Mercaptan Rate, grains/dscf	0.175	0.184
C_2H_6S	Ethyl Mercaptan Concentration, ppmd	2.20	2.50
	Ethyl Mercaptan Rate, lb/hr	0.03	0.04
	Ethyl Mercaptan Rate, grains/dscf	0.002	0.003
$(CH_3)_2S$	Dimethyl Sulfide Concentration, ppmd	1,000.00	1,100.00
	Dimethyl Sulfide Rate, lb/hr	14.77	16.25
	Dimethyl Sulfide Rate, grains/dscf	1.129	1.242
CS_2	Carbon Disulfide Concentration, ppmd	0.66	0.72
	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, ppmd	48.00	52.00
	Dimethyl Disulfide Rate, lb/hr	1.07	1.16
	Dimethyl Disulfide Rate, grains/dscf	0.082	0.089
❶$E_{TRS-SO2}$	TRS-->SO2 Emission Concentration, ppmd	1,300.00	1,400.00
	TRS-->SO2 Emission Rate, lb/hr	19.80	21.32
	TRS-->SO2 Emission Rate, grains/dscf	1.514	1.630
	TPY =	86.72	93.39

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

Bridgeton Landfill, LLC.
Weekly TRS Sampling Summary
Event 93-50
12/13/2016

Fleetzoom Total = 164 scfm

	PARAMETER	EP14 NQ	EP14 NQ-2
EP14 NORTH QUARRY LFG ONLY			
Date	Test Date		12/13/16
Time	Start	10:34	10:43
***%CH_4**	Methane, %	44.40	45.80
***%CO_2**	Carbon Dioxide, %	35.70	32.10
***'%O_2**	Oxygen, %	2.00	2.10
***%Balance**	Assumed as Nitrogen, %	17.90	20.00
P_g	Flue Gas Static Pressure, inches of H_2O	0.87	0.88
t_s	Blower Outlet LFG Temperature, °F	49.40	49.00
Q_{sd}	Dry Volumetric Flow Rate, dry scfm (assumes 5%H2O)	156	
Q_s	Fleetzoom Standard Volumetric Flow Rate, scfm	164	
LFG_{CH4}	Methane, lb/hr	173.1	178.6
	Methane, grains/dscf	129.45	133.53
LFG_{CO2}	Carbon Dioxide, lb/hr	381.8	343.3
	Carbon Dioxide, grains/dscf	285.53	256.74
LFG_{O2}	Oxygen, lb/hr	15.6	16.3
	Oxygen, grains/dscf	11.63	12.21
LFG_{N2}	Balance gas as Nitrogen, lb/hr	121.9	136.2
	Balance gas as Nitrogen, grains/dscf	91.13	101.82

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

		EP14 NQ	EP14 NQ-2
H_2S	Hydrogen Sulfide Concentration, ppmd	51.00	51.00
	Hydrogen Sulfide Rate, lb/hr	0.04	0.04
	Hydrogen Sulfide Rate, grains/dscf	0.032	0.032
COS	Carbonyl Sulfide Concentration, ppmd	0.55	0.55
	Carboynl Sulfide Rate, lb/hr	0.00	0.00
	Carbonyl Sulfide Rate, grains/dscf	0.001	0.001
CH_4S	Methyl Mercaptan Concentration, ppmd	2.00	2.00
	Methyl Mercaptan Rate, lb/hr	0.00	0.00
	Methyl Mercaptan Rate, grains/dscf	0.002	0.002
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	8.50	8.70
	Dimethyl Sulfide Rate, lb/hr	0.01	0.01
	Dimethyl Sulfide Rate, grains/dscf	0.010	0.010
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
❶$E_{TRS-SO2}$	TRS-->SO2 Emission Concentration, ppmd	63.00	62.00
	TRS-->SO2 Emission Rate, lb/hr	0.10	0.10
	TRS-->SO2 Emission Rate, grains/dscf	0.073	0.072
	TPY =	0.43	0.42

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

Air TECHNOLOGY Laboratories, Inc.

December 21, 2016

ADE-1461
EPA Methods TO3, TO14A, TO15 SIM & SCAN
ASTM D1946

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

Republic Services
ATTN: Nick Bauer
13570 St. Charles Rock Rd.
Bridgeton, MO 63044

LABORATORY TEST RESULTS

Project Reference: Bridgeton Landfill
Lab Number: H121407-01/04

Enclosed are results for sample(s) received 12/14/16 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 Nick Bauer, Mike Lambrich and Ryan Ayers; David Randall, Dustin Thoenen and Don Murphy, Weaver Consultants Group, on 12/21/16.

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,

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

TURNAROUND TIME

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

DELIVERABLES

EDD	☐
EDF	☐
Level 3	☐
Level 4	☐

PAGE: 1 OF 1

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

Project No.:	
Project Name:	Bridgeton Landfill
Report To:	Nick Bauer
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.:	PO4862452
Bill to:	Republic Services
	Attn: Nick Bauer
	13570 St. Charles Rock Rd.
	Bridgeton, MO 63044

ANALYSIS REQUEST

LAB USE ONLY	Canister Pressures ("hg) Canister ID	Sample Start	Sample End	Lab Receive	SAMPLE IDENTIFICATION	SAMPLE DATE	SAMPLE TIME	CONTAINER QTY/TYPE	MATRIX	PRESERVATION	EPA 15/16 + TRS					
#121407-01	J1722	-20.3	-3.5	-2.5	NQ EP14 A	12/13/2016	1034	C	LFG	NA	X					
-02	1618	-20.3	-3.5	-2.5	NQ EP14 B	12/13/2016	1043	C	LFG	NA	X					
-03	R1159	-20	-3.5	-3	SQ Blower Outlet A	12/13/2016	1109	C	LFG	NA	X					
-04	R1373	-19.9	-3.5	-3	SQ Blower Outlet B	12/13/2016	1118	C	LFG	NA	X					

AUTHORIZATION TO PERFORM WORK: Dave Penoyer		COMPANY: Republic Services	DATE/TIME:
SAMPLED BY: Ryan Ayers		COMPANY: Republic Services	DATE/TIME
RELINQUISHED BY: Ryan Ayers	12-13-16 1200	DATE/ RECEIVED BY	DATE/TIME
RELINQUISHED BY: FED EX		DATE/ RECEIVED BY	DATE/TIME
RELINQUISHED BY		DATE/ RECEIVED BY	DATE/TIME

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

COMMENTS

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*

Client: Republic Services
Attn: Nick Bauer
Project Name: Bridgeton Landfill
Project No.: NA
Date Received: 12/14/16
Matrix: Air
Reporting Units: ppmv

EPA Methods 15/16

Lab No.:	H121407-01		H121407-02		H121407-03		H121407-04	
Client Sample I.D.:	NQ EP14 A		NQ EP14 B		SQ Blower Outlet A		SQ Blower Outlet B	
Date/Time Sampled:	12/13/16 10:34		12/13/16 10:43		12/13/16 11:09		12/13/16 11:18	
Date/Time Analyzed:	12/16/16 13:39		12/16/16 13:51		12/16/16 14:04		12/16/16 14:16	
QC Batch No.:	161216GC3A2		161216GC3A2		161216GC3A2		161216GC3A2	
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	51 d	5.5	51 d	5.5	26	0.56	28	0.56
Carbonyl Sulfide	ND	0.55	ND	0.55	ND	0.56	ND	0.56
Methyl Mercaptan	2.0	0.55	2.0	0.55	200 d	5.6	210 d	5.6
Ethyl Mercaptan	ND	0.55	ND	0.55	2.2	0.56	2.5	0.56
Dimethyl Sulfide	8.5	0.55	8.7	0.55	1,000 d	56	1,100 d	56
Carbon Disulfide	ND	0.55	ND	0.55	0.66	0.56	0.72	0.56
Dimethyl Disulfide	ND	0.55	ND	0.55	48 d	5.6	52 d	5.6
Total Reduced Sulfur	63	0.55	62	0.55	1,300	0.56	1,400	0.56

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

Reviewed/Approved By: _____ Date 12/21/16
Mark Johnson
Operations Manager

The cover letter is an integral part of this analytical report

AirTECHNOLOGY Laboratories, Inc.
18501 E. Gale Avenue, Suite 130 ♦ City of Industry, CA 91748 ♦ Ph: (626) 964-4032 ♦ Fx: (626) 964-5832

QC Batch No.: 161216GC3A2
Matrix: Air
Units: ppmv

QC for Sulfur Compounds by EPA 15/16

Lab No.:	Method Blank		LCS		LCSD			
Date/Time Analyzed:	12/16/16 11:55		12/16/16 11:31		12/16/16 11:43			
Analyst Initials:	AS		AS		AS			
Datafile:	16dec010		16dec008		16dec009			
Dilution Factor:	1.0		1.0		1.0			
ANALYTE	Results	RL	% Rec.	Criteria	% Rec.	Criteria	%RPD	Criteria
Hydrogen Sulfide	ND	0.20	104	70-130%	103	70-130%	0.6	<30
Carbonyl Sulfide	ND	0.20	101	70-130%	99	70-130%	1.6	<30
Methyl Mercaptan	ND	0.20	98	70-130%	98	70-130%	0.4	<30
Ethyl Mercaptan	ND	0.20	99	70-130%	98	70-130%	0.8	<30
Dimethyl Sulfide	ND	0.20	95	70-130%	93	70-130%	2.0	<30
Carbon Disulfide	ND	0.20	109	70-130%	108	70-130%	0.9	<30
Dimethyl Disulfide	ND	0.20	85	70-130%	85	70-130%	0.7	<30

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

Reviewed/Approved By: _____ Date: 12/21/16
Mark J. Johnson
Operations Manager

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

Bridgeton Landfill, LLC
Weekly TRS
Monthly Method 2C
Event 92-49
12/06/2016

	PARAMETER	Blower Out
SOUTH QUARRY LFG ONLY - MAIN FLARE COMPOUND BLOWER OUTLET (FL140)		
Date	Test Date	12/6/16
Start	Run Start Time	13:58
	Run Finish Time	15:10
	Net Traversing Points	8 (2 x 4)
Θ	Net Run Time, minutes	1:12:20
C_p	Pitot Tube Coeficient	0.99
P_{Br}	Barometric Pressure, inches of Mercury	29.40
% H_2O	Moisture Content of LFG, %	0.72
% RH	Relative Humidity, %	66.20
M_{fd}	Dry Mole Fraction	0.993
%CH_4	Methane, %	9.25
%CO_2	Carbon Dioxide, %	37.75
%O_2	Oxygen, %	7.65
%Balance	Assumed as Nitrogen, %	32.40
%H_2	Hydrogen, %	11.95
%CO	Carbon Monoxide, %	0.08
M_d	Dry Molecular Weight, lb/lb-Mole	29.89
M_s	Wet Molecular weight, lb/lb-Mole	29.80
P_g	Flue Gas Static Pressure, inches of H_2O	17.29
P_s	Absolute Flue Gas Pressure, inches of Mercury	30.56
t_s	Average Stack Gas Temperature, °F	60
ΔP_{avg}	Average Velocity Head, inches of H_2O	0.073
v_s	Average LFG Velocity, feet/second	17.27
A_s	Stack Crossectional Area, square feet	1.35
Q_{sd}	Dry Volumetric Flow Rate, dry scfm	1,445
Q_s	Standard Volumetric Flow Rate, scfm	1,455
Q_{aw}	Actual Wet Volumetric Flue Gas Flow Rate, acfm	1,402
$Q_{lb/hr}$	Dry Air Flow Rate at Standard Conditions, lb/hr	6,725
NHV	Net Heating Value, Btu/scf	139.4
LFG_{CH4}	Methane, lb/hr	334.0
	Methane, grains/dscf	26.97
LFG_{CO2}	Carbon Dioxide, lb/hr	3,739.5
	Carbon Dioxide, grains/dscf	301.93
LFG_{O2}	Oxygen, lb/hr	551.0
	Oxygen, grains/dscf	44.49
LFG_{N2}	Balance gas as Nitrogen, lb/hr	2,042.9
	Balance gas as Nitrogen, grains/dscf	164.95
LFG_{H2}	Hydrogen, lb/hr	54.2
	Hydrogen, grains/dscf	4.38
LFG_{CO}	Carbon Monoxide, lb/hr	5.3
	Carbon Monoxide, grains/dscf	0.43

		Outlet A	Outlet B
H_2S	Hydrogen Sulfide Concentration, ppmd	25	25
	Hydrogen Sulfide Rate, lb/hr	0.19	0.19
	Hydrogen Sulfide Rate, grains/dscf	0.015	0.015
COS	Carbonyl Sulfide Concentration, ppmd	0.58	0.56
	Carboynl Sulfide Rate, lb/hr	0.01	0.01
	Carbonyl Sulfide Rate, grains/dscf	0.001	0.001
CH_4S	Methyl Mercaptan Concentration, ppmd	240	240
	Methyl Mercaptan Rate, lb/hr	2.60	2.60
	Methyl Mercaptan Rate, grains/dscf	0.210	0.210
C_2H_6S	Ethyl Mercaptan Concentration, ppmd	2.7	2.9
	Ethyl Mercaptan Rate, lb/hr	0.04	0.04
	Ethyl Mercaptan Rate, grains/dscf	0.003	0.003
$(CH_3)_2S$	Dimethyl Sulfide Concentration, ppmd	1,200	1,200
	Dimethyl Sulfide Rate, lb/hr	16.78	16.78
	Dimethyl Sulfide Rate, grains/dscf	1.355	1.355
CS_2	Carbon Disulfide Concentration, ppmd	0.89	0.97
	Carbon Disulfide Rate, lb/hr	0.02	0.02
	Carbon Disulfide Rate, grains/dscf	0.001	0.001
$C_2H_6S_2$	Dimethyl Disulfide Concentration, ppmd	62	62
	Dimethyl Disulfide Rate, lb/hr	1.31	1.06
	Dimethyl Disulfide Rate, grains/dscf	0.106	0.086

❶ **$E_{TRS-SO2}$**	TRS-->SO2 Emission Concentration, ppmd	1,600	1,600
	TRS-->SO2 Emission Rate, lb/hr	23.07	23.07
	TRS-->SO2 Emission Rate, grains/dscf	1.863	1.863

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

Tuesday, December 06, 2016

LOCATION	TIME	FLOW -SCFM			Method 2 vs. Fleetzoom	Method 2 vs Kurz	Kurz vs Fleetzoom
		Method 2	FleetZoom	Kurz FM			
BLOWER OUT	**13:58**	**1,455**	**1,461**	**1,565**	**-0.4%**	**-7.5%**	**6.6%**

**NOTE: Kurz flow meter sent to manufacture for check and calibration 09/01/2016, in it's place backup Kurz FM put in for temporary monitoring. This unit not yet field calibrated, despite this the, Fleetzoom FM (TSI 95) for FL100 accurately monitoring flow.*

**NOTE: individual LFG flow meters that monitor each flare's respective flow, and reported to Fleetzoom database were manufactured calibrated and certified in the field, insitu, 10/11/2016. Subsequently 10/19 and 10/31 system and Kurz FM were scaled when brought on line.*

Bridgeton Landfill, LLC
Weekly TRS
Monthly Method 2C
Event 92-49
12/06/2016

	PARAMETER	Blower Out
	EP14 NORTH QUARRY LFG ONLY	
Date	Test Date	12/6/16
Start	Run Start Time	11:15
	Run Finish Time	12:33
	Net Traversing Points	8 (2 x 4)
Θ	Net Run Time, minutes	1:17:30
C_p	Pitot Tube Coeficient	0.99
P_{Br}	Barometric Pressure, inches of Mercury	29.40
% H_2O	Moisture Content of LFG, %	1.54
% RH	Relative Humidity, %	96.40
M_{fd}	Dry Mole Fraction	0.985
%CH_4	Methane, %	45.95
%CO_2	Carbon Dioxide, %	36.10
%O_2	Oxygen, %	1.90
%Balance	Assumed as Nitrogen, %	14.85
%H_2	Hydrogen, % (** reported at the laboratory detection limit*)	2.85
%CO	Carbon Monoxide, % (** reported at the laboratory detection limit*)	0.00285
M_d	Dry Molecular Weight, lb/lb-Mole	28.09
M_s	Wet Molecular weight, lb/lb-Mole	27.93
P_g	Flue Gas Static Pressure, inches of H_2O	0.82
P_s	Absolute Flue Gas Pressure, inches of Mercury	29.46
t_s	Average Stack Gas Temperature, °F	56
ΔP_{avg}	Average Velocity Head, inches of H_2O	0.012
v_s	Average LFG Velocity, feet/second	7.34
A_s	Stack Crossectional Area, square feet	0.51
Q_{sd}	Dry Volumetric Flow Rate, dry scfm	224
Q_s	Standard Volumetric Flow Rate, scfm	228
Q_{aw}	Actual Wet Volumetric Flue Gas Flow Rate, acfm	226
$Q_{lb/hr}$	Dry Air Flow Rate at Standard Conditions, lb/hr	981
NHV	Net Heating Value, Btu/scf	418.2
LFG_{CH4}	Methane, lb/hr	257.5
	Methane, grains/dscf	133.97
LFG_{CO2}	Carbon Dioxide, lb/hr	554.9
	Carbon Dioxide, grains/dscf	288.73
LFG_{O2}	Oxygen, lb/hr	21.2
	Oxygen, grains/dscf	11.05
LFG_{N2}	Balance gas as Nitrogen, lb/hr	145.3
	Balance gas as Nitrogen, grains/dscf	75.60
LFG_{H4}	Hydrogen, lb/hr	2.0
	Hydrogen, grains/dscf	1.04
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	47
	Hydrogen Sulfide Rate, lb/hr	0.06	0.06
	Hydrogen Sulfide Rate, grains/dscf	0.030	0.029
COS	Carbonyl Sulfide Concentration, ppmd	0.58	0.56
	Carboynl Sulfide Rate, lb/hr	0.00	0.00
	Carbonyl Sulfide Rate, grains/dscf	0.001	0.001
CH_4S	Methyl Mercaptan Concentration, ppmd	3.2	3.2
	Methyl Mercaptan Rate, lb/hr	0.01	0.01
	Methyl Mercaptan Rate, grains/dscf	0.003	0.003
C_2H_6S	Ethyl Mercaptan Concentration, ppmd	0.58	0.56
	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	13	12
	Dimethyl Sulfide Rate, lb/hr	0.03	0.03
	Dimethyl Sulfide Rate, grains/dscf	0.015	0.014
CS_2	Carbon Disulfide Concentration, ppmd	0.58	0.56
	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	0.58	0.56
	Dimethyl Disulfide Rate, lb/hr	0.00	0.00
	Dimethyl Disulfide Rate, grains/dscf	0.001	0.001

❶$E_{TRS-SO2}$	TRS-->SO2 Emission Concentration, ppmd	65	64
	TRS-->SO2 Emission Rate, lb/hr	0.15	0.14
	TRS-->SO2 Emission Rate, grains/dscf	0.076	0.075

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

Air TECHNOLOGY Laboratories, Inc.

December 8, 2016

ADE-1461
EPA Methods TO3, TO14A, TO15 SIM & SCAN
ASTM D1946

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

Republic Services
ATTN: Nick Bauer
13570 St. Charles Rock Rd.
Bridgeton, MO 63044

LABORATORY TEST RESULTS

Project Reference: Bridgeton LF Monthly Permit Flare LFG Testing
Lab Number: H120701-01/04

Enclosed are results for sample(s) received 12/07/16 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 Nick Bauer, Mike Lambrich and Ryan Ayers; David Randall, Dustin Thoenen and Don Murphy, Weaver Consultants Group, on 12/08/16.

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,

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

TURNAROUND TIME				DELIVERABLES		PAGE: 1 OF 1
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

Project No.:	
Project Name:	Bridgeton LF Monthly Permit Flare LFG Testing
Report To:	Nick Bauers/Ryan Ayers/David Randall
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.:	PO5881099
Bill to:	Republic Services
	Attn: Nick Bauer
	13570 St. Charles Rock Rd.
	Bridgeton, MO 63044

LAB USE ONLY	Canister Pressures ("hg)				SAMPLE IDENTIFICATION	SAMPLE DATE	SAMPLE TIME	CONTAINER QTY/TYPE	MATRIX	PRESERVATION	ANALYSIS REQUEST: EPA 15/16 + TRS	ASTM 1946 +H2 + CO & BTU/SCF		ASTM 1946 +H2 + CO & BTU/SCF (by CH4 ONLY)		
	Canister ID	Sample Start	Sample End	Lab Receive												
H120781-01	4431	-21	-3.5	-3.5	SQ Blower Outlet A	12/6/2016	1300	C -6L	LFG	He	X	X				
-02	1302	-21	-3.5	-3	SQ Blower Outlet B	12/6/2016	1322	C -6L	LFG	He	X	X				
-03	6013	-20.6	-3.5	-3.5	NQ EP14 A	12/6/2016	1017	C -6L	LFG	He	X			X		
-04	1296	-20.8	-3.5	-3	NQ EP14 B	12/6/2016	1040	C -6L	LFG	He	X			X		

AUTHORIZATION TO PERFORM WORK: Dave Penoyer	COMPANY: Republic Services	DATE/TIME:	COMMENTS:
SAMPLED BY: Ryan Ayers	COMPANY: Republic Services	DATE/TIME	
RELINQUISHED BY: R. Ayers 12-6-16 1430	DATE/RECEIVED BY	DATE/TIME	
RELINQUISHED BY: FED EX	DATE/RECEIVED BY: 12/7/16 0911	DATE/TIME	
RELINQUISHED BY	DATE/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 *Rev. 03 - 5/7/09*

Client: Republic Services
Attn: Nick Bauer
Project Name: Bridgeton LF Monthly Permit Flare LFG Testing
Project No.: NA
Date Received: 12/07/16
Matrix: Air
Reporting Units: ppmv

EPA Methods 15/16

Lab No.:	H120701-01		H120701-02		H120701-03		H120701-04	
Client Sample I.D.:	SQ Blower Outlet A		SQ Blower Outlet B		NQ EP14 A		NQ EP14 B	
Date/Time Sampled:	12/6/16 13:00		12/6/16 13:22		12/6/16 10:17		12/6/16 10:40	
Date/Time Analyzed:	12/7/16 15:19		12/7/16 15:31		12/7/16 15:44		12/7/16 15:56	
QC Batch No.:	161207GC3A1		161207GC3A1		161207GC3A1		161207GC3A1	
Analyst Initials:	AS		AS		AS		AS	
Dilution Factor:	2.9		2.8		2.9		2.8	
ANALYTE	Result ppmv	RL ppmv	Result ppmv	RL ppmv	Result ppmv	RL ppmv	Result ppmv	RL ppmv
Hydrogen Sulfide	25	0.58	25	0.56	48 d	5.8	47 d	5.6
Carbonyl Sulfide	ND	0.58	ND	0.56	ND	0.58	ND	0.56
Methyl Mercaptan	240 d	5.8	240 d	5.6	3.2	0.58	3.2	0.56
Ethyl Mercaptan	2.7	0.58	2.9	0.56	ND	0.58	ND	0.56
Dimethyl Sulfide	1,200 d	58	1,200 d	56	13	0.58	12	0.56
Carbon Disulfide	0.89	0.58	0.97	0.56	ND	0.58	ND	0.56
Dimethyl Disulfide	62 d	5.8	62 d	5.6	ND	0.58	ND	0.56
Total Reduced Sulfur	1,600	0.58	1,600	0.56	65	0.58	64	0.56

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

Reviewed/Approved By: _____ Date 12/8/16
Mark Johnson
Operations Manager

The cover letter is an integral part of this analytical report

AirTECHNOLOGY Laboratories, Inc.
18501 E. Gale Avenue, Suite 130 ♦ City of Industry, CA 91748 ♦ Ph: (626) 964-4032 ♦ Fx: (626) 964-5832

QC Batch No.: 161207GC3A1
Matrix: Air
Units: ppmv

QC for Sulfur Compounds by EPA 15/16

Lab No.:	Method Blank		LCS		LCSD			
Date/Time Analyzed:	12/7/16 15:06		12/7/16 14:42		12/7/16 14:54			
Analyst Initials:	AS		AS		AS			
Datafile:	07dec005		07dec003		07dec004			
Dilution Factor:	1.0		1.0		1.0			
ANALYTE	Results	RL	% Rec.	Criteria	% Rec.	Criteria	%RPD	Criteria
Hydrogen Sulfide	ND	0.20	111	70-130%	112	70-130%	0.8	<30
Carbonyl Sulfide	ND	0.20	106	70-130%	106	70-130%	0.7	<30
Methyl Mercaptan	ND	0.20	106	70-130%	106	70-130%	0.5	<30
Ethyl Mercaptan	ND	0.20	105	70-130%	104	70-130%	0.4	<30
Dimethyl Sulfide	ND	0.20	99	70-130%	99	70-130%	0.5	<30
Carbon Disulfide	ND	0.20	113	70-130%	112	70-130%	0.5	<30
Dimethyl Disulfide	ND	0.20	83	70-130%	83	70-130%	0.2	<30

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

Reviewed/Approved By: _____ Date: 12/8/16
Mark J. Johnson
Operations Manager

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

Client: Republic Services
Attn: Nick Bauer
Project Name: Bridgeton LF Monthly Permit Flare LFG Testing
Project No.: NA
Date Received: 12/07/16
Matrix: Air
Reporting Units: % v/v

ASTM D1946

Lab No.:	H120701-01		H120701-02					
Client Sample I.D.:	SQ Blower Outlet A		SQ Blower Outlet B					
Date/Time Sampled:	12/6/16 13:00		12/6/16 13:22					
Date/Time Analyzed:	12/7/16 14:34		12/7/16 14:49					
QC Batch No.:	161207GC8A1		161207GC8A1					
Analyst Initials:	AS		AS					
Dilution Factor:	2.9		2.8					
ANALYTE	Result % v/v	RL % v/v	Result % v/v	RL % v/v				
Hydrogen	11.9	2.9	12.0	2.8				
Carbon Dioxide	37.8	0.029	37.7	0.028				
Oxygen/Argon	7.6	1.4	7.7	1.4				
Nitrogen	32.4	2.9	32.4	2.8				
Methane	9.3	0.0029	9.2	0.0028				
Carbon Monoxide	0.084	0.0029	0.084	0.0028				
Net Heating Value (BTU/ft3)	138.5	2.9	140.2	2.8				
Gross Heating Value (BTU/ft3)	157.8	2.9	159.6	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: _____ Date 12/8/16
Mark Johnson
Operations Manager

The cover letter is an integral part of this analytical report

AirTECHNOLOGY Laboratories, Inc.
18501 E. Gale Avenue, Suite 130 ♦ City of Industry, CA 91748 ♦ Ph: (626) 964-4032 ♦ Fx: (626) 964-5832

Client: Republic Services
Attn: Nick Bauer
Project Name: Bridgeton LF Monthly Permit Flare LFG Testing
Project No.: NA
Date Received: 12/07/16
Matrix: Air
Reporting Units: % v/v

ASTM D1946

Lab No.:	H120701-03		H120701-04					
Client Sample I.D.:	NQ EP14 A		NQ EP14 B					
Date/Time Sampled:	12/6/16 10:17		12/6/16 10:40					
Date/Time Analyzed:	12/7/16 15:03		12/7/16 15:18					
QC Batch No.:	161207GC8A1		161207GC8A1					
Analyst Initials:	AS		AS					
Dilution Factor:	2.9		2.8					
ANALYTE	Result % v/v	RL % v/v	Result % v/v	RL % v/v				
Hydrogen	ND	2.9	ND	2.8				
Carbon Dioxide	35.9	0.029	36.3	0.028				
Oxygen/Argon	2.0	1.4	1.8	1.4				
Nitrogen	15.1	2.9	14.6	2.8				
Methane	45.9	0.0029	46.0	0.0028				
Carbon Monoxide	ND	0.0029	ND	0.0028				
Net Heating Value (BTU/ft3) methane only	417.7	2.9	418.6	2.8				
Gross Heating Value (BTU/ft3) methane only	463.9	2.9	464.9	2.8				

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: _____ Date 12/8/16
Mark Johnson
Operations Manager

The cover letter is an integral part of this analytical report

AirTECHNOLOGY Laboratories, Inc.
18501 E. Gale Avenue, Suite 130 ♦ City of Industry, CA 91748 ♦ Ph: (626) 964-4032 ♦ Fx: (626) 964-5832

QC Batch No: 161207GC8A1
Matrix: Air
Reporting Units: % v/v

ASTM D1946
LABORATORY CONTROL SAMPLE SUMMARY

Lab No.:	METHOD BLANK			LCS		LCSD					
Date Analyzed:	12/7/16 14:19			12/7/16 13:35		12/7/16 13:50					
Analyst Initials:	AS			AS		AS					
Dilution Factor:	1.0			1.0		1.0					
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	5.23	105	5.29	106	1.1	70	130	30
Carbon Dioxide	ND	0.010	10	9.54	95	9.51	95	0.3	70	130	30
Oxygen/Argon	ND	0.50	15	15.3	103	15.3	103	0.0	70	130	30
Nitrogen	ND	1.0	70	69.8	100	69.8	100	0.1	70	130	30
Methane	ND	0.0010	0.10	0.119	119	0.118	118	0.3	70	130	30
Carbon Monoxide	ND	0.0010	0.10	0.104	104	0.104	104	0.2	70	130	30

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

Reviewed/Approved By: _____ Date 12/8/16
Mark Johnson
Operations Manager

The cover letter is an integral part of this analytical report

ATTACHMENT C

GAS WELL ANALYSIS MAPS

LEGEND

< = Well Location

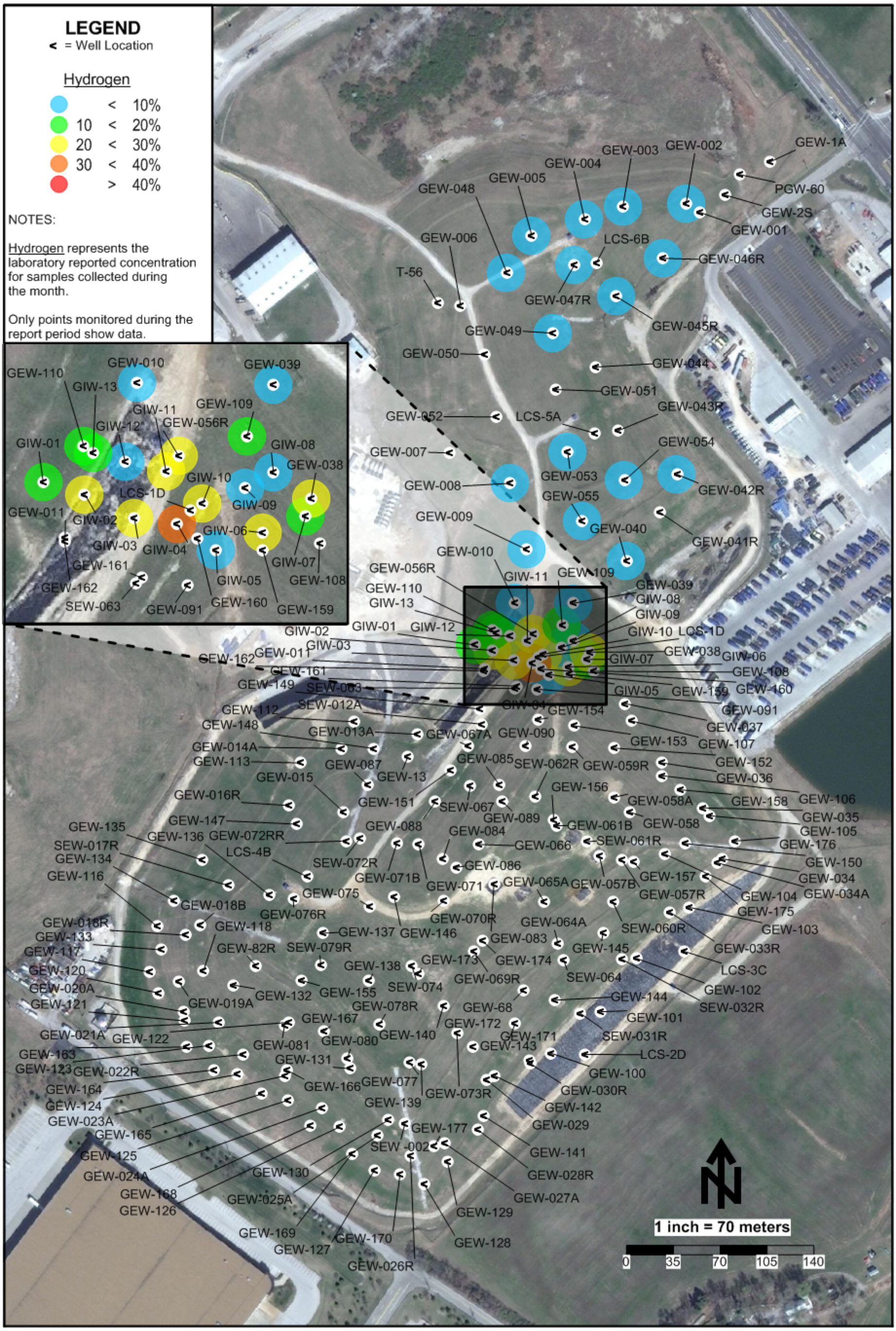
Hydrogen

	<	10%
10	<	20%
20	<	30%
30	<	40%
	>	40%

NOTES:

Hydrogen represents the laboratory reported concentration for samples collected during the month.

Only points monitored during the report period show data.



Hydrogen Data Map - December 2016 - Bridgeton Landfill

LEGEND

< = Well Location

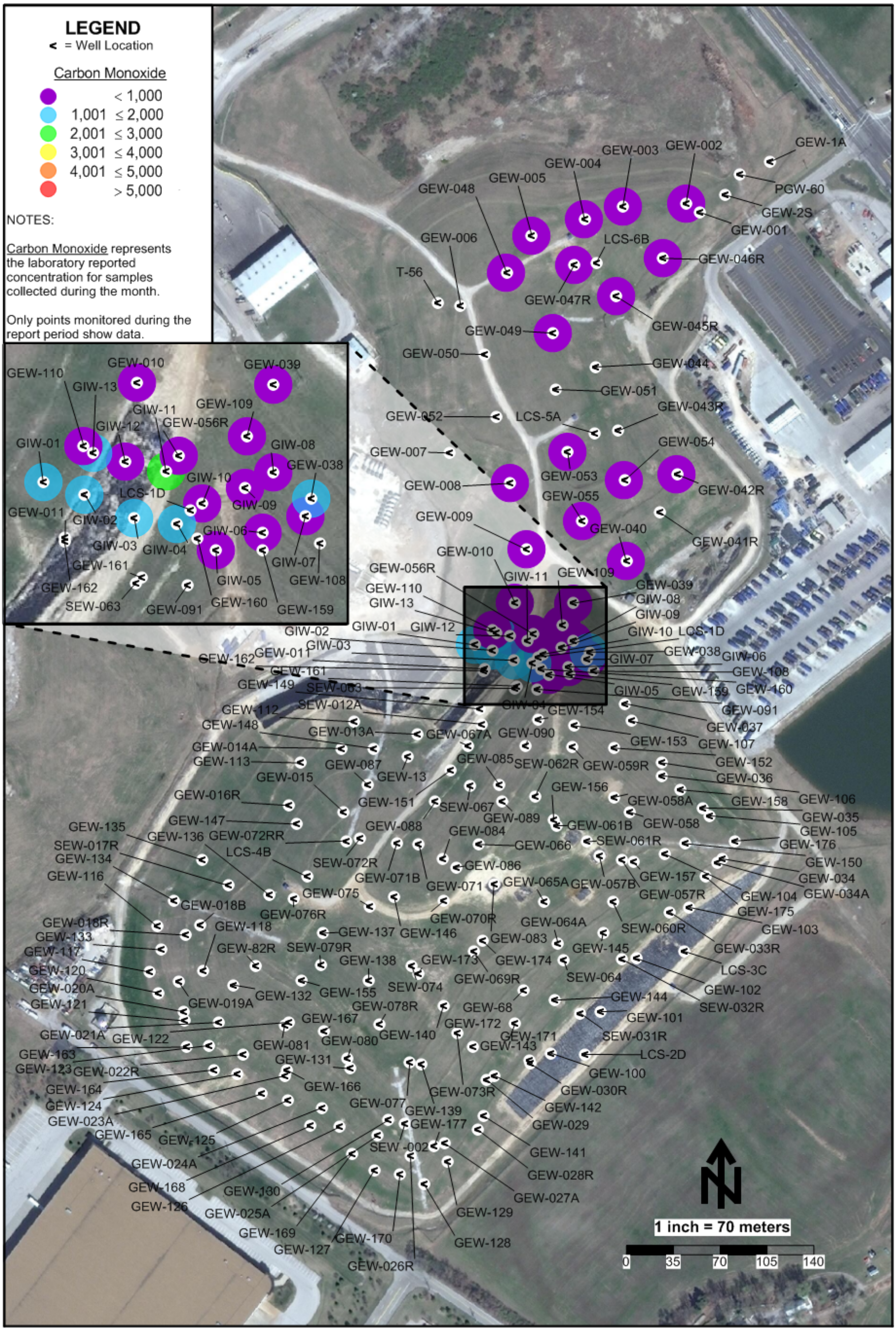
Carbon Monoxide

	< 1,000
	1,001 ≤ 2,000
	2,001 ≤ 3,000
	3,001 ≤ 4,000
	4,001 ≤ 5,000
	> 5,000

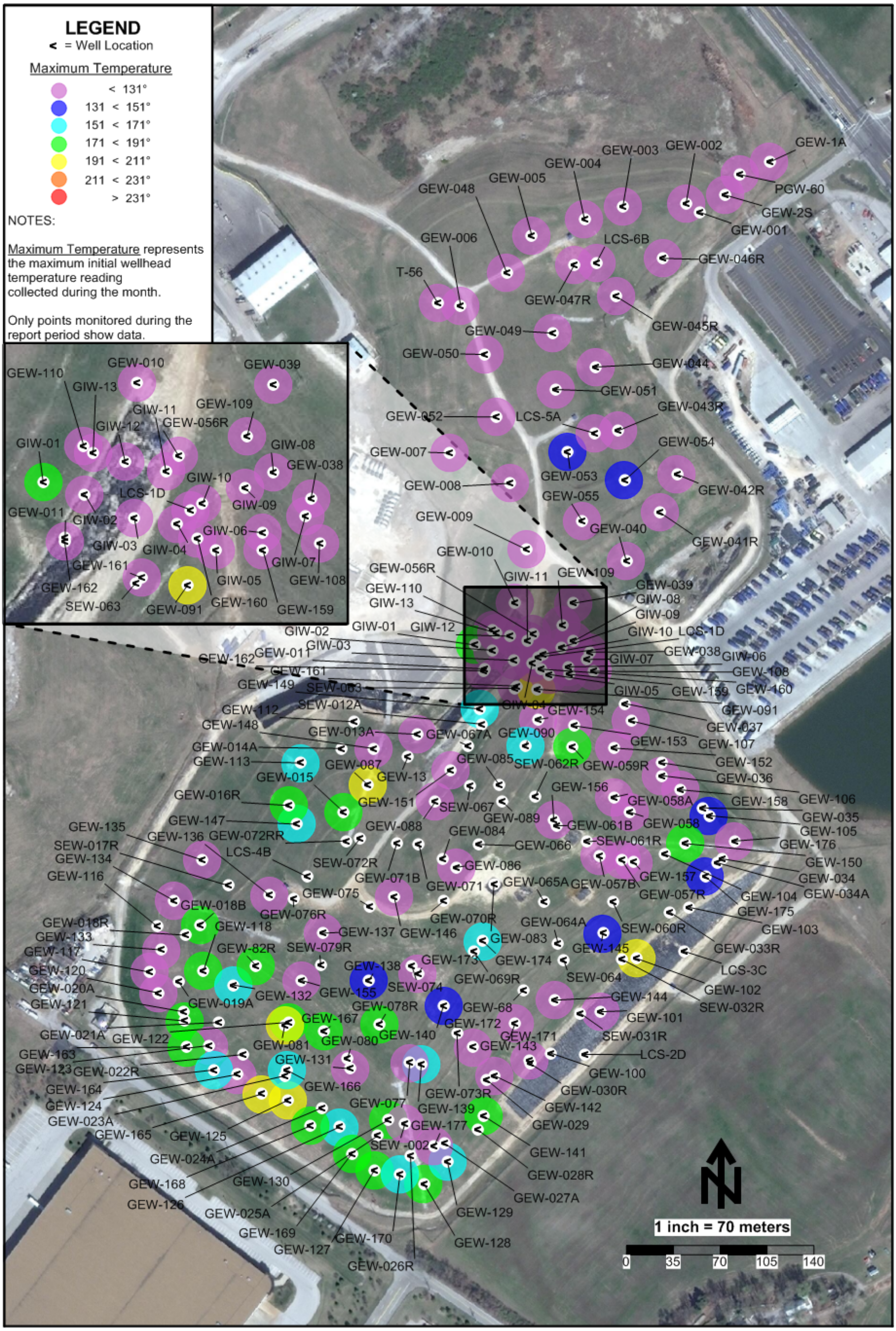
NOTES:

Carbon Monoxide represents the laboratory reported concentration for samples collected during the month.

Only points monitored during the report period show data.



Carbon Monoxide Data Map - December 2016 - Bridgeton Landfill



Initial Temperature Maximums - December 2016 - 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	Comments
		(%)					(ppm)	
North Quarry								
GEW-01A	9/12/2016	2.9	2.3	21	74	ND	43	See Note 4
GEW-002	9/7/2016	55	40	ND	4.1	ND	ND	
GEW-002	10/6/2016	54	41	ND	3.9	ND	ND	
GEW-002	11/7/2016	55	41	ND	3.2	ND	ND	
GEW-002	12/7/2016	51	42	1.7	5.8	ND	ND	See Note 3
GEW-02S	9/12/2016	49	33	4	14	ND	ND	See Note 3
GEW-02S	11/7/2016	55	42	ND	ND	ND	ND	
GEW-003	8/10/2016	55.6	39.9	ND	3.8	0.1	ND	
GEW-003	9/7/2016	53	40	ND	5.8	0.1	ND	
GEW-003	10/6/2016	54	40	ND	4.4	0.1	ND	
GEW-003	11/7/2016	50	38	ND	10	0.1	ND	
GEW-003	12/7/2016	54	40	ND	5.7	0.1	ND	
GEW-004	8/10/2016	55.3	40.8	ND	3.4	0.1	ND	
GEW-004	9/7/2016	54	41	ND	4.3	0.1	ND	
GEW-004	10/6/2016	55	41	ND	ND	0.1	ND	
GEW-004	11/7/2016	51	40	ND	7.9	0.1	ND	
GEW-004	12/7/2016	51	38	ND	9.7	0.1	ND	
GEW-005	8/10/2016	50.3	36.6	ND	12.5	0.04	ND	
GEW-005	9/8/2016	51	36	ND	12	ND	ND	
GEW-005	10/6/2016	51	37	ND	11	ND	ND	
GEW-005	11/7/2016	47	37	ND	15	0.04	ND	
GEW-005	12/7/2016	48	36	ND	15	ND	ND	
GEW-006	9/8/2016	56	39	ND	4.5	ND	ND	
GEW-006	11/7/2016	45	35	2.3	18	ND	ND	See Note 3
GEW-007	9/12/2016	54	38	1.8	6.2	ND	ND	See Note 3
GEW-007	11/7/2016	56	40	ND	ND	ND	ND	
GEW-008	8/10/2016	50.5	45.6	ND	ND	0.9	ND	
GEW-008	9/12/2016	49	42	1.8	6.1	1.1	ND	See Note 3
GEW-008	10/6/2016	53	44	ND	ND	0.9	ND	
GEW-008	11/7/2016	53	43	ND	ND	1.1	ND	
GEW-008	12/7/2016	53	42	ND	3	0.8	ND	
GEW-009	8/10/2016	53.3	43	ND	ND	0.6	ND	
GEW-009	9/12/2016	51	41	ND	6.4	0.5	ND	
GEW-009	10/6/2016	50	42	ND	7.1	0.5	ND	
GEW-009	11/7/2016	48	41	ND	8.6	0.6	ND	
GEW-009	12/7/2016	47	39	ND	12	0.5	ND	
GEW-040	8/10/2016	56.3	39.7	ND	ND	ND	ND	
GEW-040	9/7/2016	57	40	ND	ND	ND	ND	
GEW-040	10/6/2016	57	40	ND	ND	ND	ND	
GEW-040	11/7/2016	57	40	ND	ND	ND	ND	
GEW-040	12/7/2016	56	39	ND	4	ND	ND	
GEW-041R	9/7/2016	53	37	2.1	8.1	ND	ND	See Note 3
GEW-041R	11/7/2016	52	37	1.6	9.7	ND	ND	See Note 4
GEW-042R	8/10/2016	55.4	40.8	ND	ND	ND	ND	
GEW-042R	9/7/2016	55	42	ND	ND	ND	ND	
GEW-042R	10/6/2016	54	42	ND	3.3	ND	ND	
GEW-042R	11/7/2016	50	38	2.7	9.6	ND	ND	See Note 3
GEW-042R	12/7/2016	55	39	ND	5.1	ND	ND	
GEW-043R	9/7/2016	54	42	ND	3.5	0.2	ND	
GEW-043R	11/7/2016	53	42	ND	4.7	0.2	ND	
GEW-044	9/7/2016	57	40	ND	ND	ND	ND	
GEW-044	11/7/2016	55	39	ND	5	ND	ND	
GEW-045R	8/10/2016	54.2	41.2	ND	3.5	ND	ND	
GEW-045R	9/7/2016	55	43	ND	ND	ND	ND	
GEW-045R	10/6/2016	56	37	ND	5.1	ND	ND	
GEW-045R	11/7/2016	55	42	ND	ND	ND	ND	

Laboratory Analysis - Bridgeton Landfill

Well Name	Date Sampled	Methane	CO_2	O_2/Argon	Nitrogen	Hydrogen	Carbon Monoxide	Comments
		(%)					(ppm)	
GEW-045R	12/7/2016	42	31	6	21	ND	ND	See Note 3
GEW-046R	8/10/2016	54.4	40.4	ND	4.4	0.1	ND	
GEW-046R	9/7/2016	55	41	ND	3.1	0.1	ND	
GEW-046R	10/6/2016	53	39	ND	6.2	0.1	ND	
GEW-046R	11/7/2016	55	41	ND	ND	0.1	ND	
GEW-046R	12/7/2016	53	39	1.7	6.3	0.1	ND	See Note 3
GEW-047R	8/10/2016	52.3	39.9	ND	7.2	0.1	ND	
GEW-047R	9/8/2016	50	39	ND	10	0.1	ND	
GEW-047R	10/6/2016	46	38	ND	15	ND	ND	
GEW-047R	11/7/2016	48	38	ND	12	ND	ND	
GEW-047R	12/7/2016	48	39	ND	12	ND	ND	
GEW-048	8/10/2016	56.7	40.6	ND	ND	ND	ND	
GEW-048	9/8/2016	12	8.1	18	63	ND	ND	See Note 1 and 3
GEW-048	10/6/2016	53	38	ND	7.7	ND	ND	
GEW-048	11/7/2016	53	40	ND	6.2	0.04	ND	
GEW-048	12/7/2016	53	39	ND	7.5	ND	ND	
GEW-049	8/10/2016	56.1	39.7	ND	3.6	0.1	ND	
GEW-049	9/8/2016	52	38	ND	9.1	ND	ND	
GEW-049	10/6/2016	36	32	2.2	29	ND	ND	See Note 3
GEW-049	11/7/2016	51	38	ND	9.9	0.1	ND	
GEW-049	12/7/2016	45	35	ND	18	0.03	ND	
GEW-050	9/12/2016	56	39	ND	3.4	0.1	ND	
GEW-050	11/7/2016	53	39	ND	6.6	0.1	ND	
GEW-051	9/8/2016	54	41	ND	ND	1	ND	
GEW-051	11/7/2016	53	40	ND	4.6	1.2	ND	
GEW-052	9/12/2016	54	40	ND	4.5	0.03	ND	
GEW-052	11/7/2016	52	40	ND	7.4	0.1	ND	
GEW-053	8/10/2016	49.6	42.9	ND	ND	4.8	61	
GEW-053	9/8/2016	49	43	ND	ND	4.6	61	
GEW-053	10/6/2016	50	42	ND	3.9	3	49	
GEW-053	11/7/2016	49	40	ND	5.9	4.2	59	
GEW-053	12/7/2016	48	39	ND	9.9	2.1	34	
GEW-054	8/10/2016	52.5	41.9	ND	ND	2.7	ND	
GEW-054	9/12/2016	50	40	ND	5.6	2.2	ND	
GEW-054	10/6/2016	51	41	ND	5.2	2.2	ND	
GEW-054	11/7/2016	46	38	2.8	12	2	ND	See Note 3
GEW-054	12/7/2016	50	40	ND	6.9	1.8	43	
GEW-055	8/10/2016	52.9	43.5	ND	ND	1.8	ND	
GEW-055	9/12/2016	53	42	ND	ND	1.6	ND	
GEW-055	10/6/2016	52	41	ND	4.1	1.6	ND	
GEW-055	11/7/2016	51	42	ND	3.8	2	ND	
GEW-055	12/7/2016	50	40	1.6	5.7	2.2	33	See Note 3
Flare Station²	8/9/2016	51.3	38.5	1	7.8	ND	ND	See Note 5
Flare Station²	9/7/2016	49.2	37.6	2	10.3	ND	ND	See Note 5
Flare Station	10/4/2016	46.1	35.8	2.3	14.9	ND	ND	See Note 5
Flare Station²	11/1/2016	40.4	31.3	5	22.6	ND	ND	See Note 5
Flare Station²	12/6/2016	46.0	36.1	1.9	14.9	ND	ND	See Note 5
Flare Station²	1/4/2017	40.7	34.1	2.1	22	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.

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	Comments
		(%)					(ppm)	
South Quarry								
GEW-010	8/10/2016	46.9	42.6	2	8.2	0.2	ND	See Note 4
GEW-010	9/6/2016	56	41	ND	ND	0.2	ND	
GEW-010	10/4/2016	14	10	17	60	ND	ND	See Note 3
GEW-010	11/9/2016	43	48	ND	7.3	0.1	ND	
GEW-010	12/9/2016	42	49	1.7	7.7	0.1	ND	See Note 4
GEW-022R	9/14/2016	0.02	0.1	22	78	ND	ND	See Note 3
GEW-022R	11/11/2016	1.2	66	ND	ND	30	3,300	
GEW-038	8/8/2016	0.5	50.4	4.3	15.6	27.3	2,700	See Note 4
GEW-038	9/6/2016	0.8	58	2.1	7.4	30	2,800	See Note 4
GEW-038	10/4/2016	8.9	58	ND	5.3	25	2,100	
GEW-038	11/9/2016	8.1	40	6.3	23	22	1,000	See Note 4
GEW-038	12/9/2016	8.8	45	4.4	18	23	1,100	See Note 4
GEW-039	8/10/2016	24.3	35.5	4	35.7	0.5	75	See Note 4
GEW-039	9/6/2016	43	55	ND	ND	0.2	ND	
GEW-039	10/4/2016	44	54	ND	ND	0.2	ND	
GEW-039	11/8/2016	44	53	ND	ND	0.1	ND	
GEW-039	12/8/2016	11	12	17	60	ND	ND	See Note 3
GEW-056R	8/10/2016	18.9	50.8	ND	13.4	15.6	600	
GEW-056R	9/6/2016	20	47	ND	22	10	430	
GEW-056R	10/4/2016	13	54	ND	ND	30	1,200	
GEW-056R	11/9/2016	10	51	ND	7.2	30	1,200	
GEW-056R	12/9/2016	13	49	ND	12	25	990	
GEW-058	11/11/2016	0.4	39	6.2	22	32	1,700	See Note 4
GEW-058A	9/14/2016	22	45	1.9	6.7	23	1,400	See Note 3
GEW-058A	11/11/2016	24	37	4.7	18	16	880	See Note 4
GEW-059R	9/14/2016	4.2	45	3.1	11	36	1,400	See Note 4
GEW-059R	11/10/2016	5.5	43	2.8	9.7	38	1,300	See Note 4
GEW-082R	9/14/2016	4.7	50	ND	5.6	37	1,700	
GEW-082R	11/11/2016	4.9	53	ND	ND	39	1,700	
GEW-086	11/11/2016	10	28	7.3	53	2	160	See Note 4
GEW-090	9/14/2016	14	46	ND	5.6	31	1,500	
GEW-090	11/11/2016	11	45	ND	4.3	38	1,700	
GEW-102	9/13/2016	5	59	ND	ND	30	980	
GEW-102	11/10/2016	3.9	55	ND	3.9	35	760	
GEW-109	8/8/2016	10	42.5	ND	30.2	15.5	540	
GEW-109	9/6/2016	20	52	ND	9.7	16	610	
GEW-109	10/4/2016	21	52	ND	9.7	16	640	
GEW-109	11/8/2016	20	48	ND	14	17	720	
GEW-109	12/8/2016	13	28	9.6	38	12	420	See Note 3
GEW-110	8/10/2016	1.5	10.8	17.5	64.3	5.8	380	See Note 4
GEW-110	9/6/2016	1.1	4.9	20	73	1.5	120	See Note 4
GEW-110	10/4/2016	6	28	9	46	11	600	See Note 4
GEW-110	11/9/2016	1.9	31	9.3	38	20	1,100	See Note 4
GEW-110	12/9/2016	2.5	24	11	46	16	870	See Note 4
GEW-117	9/14/2016	16	55	1.9	20	5.9	290	See Note 3
GEW-117	11/11/2016	7.3	63	ND	4.5	23	1,800	
GEW-118	9/14/2016	1.8	51	3	13	30	1,400	See Note 4
GEW-118	11/11/2016	2	47	3.7	18	29	1,200	See Note 4
GEW-120	9/13/2016	15	52	3	24	5.6	280	See Note 3
GEW-120	11/10/2016	22	52	4.1	16	5.2	250	See Note 3
GEW-121	9/13/2016	8.2	52	2.4	11	25	1,600	See Note 3
GEW-121	11/11/2016	8.7	58	ND	5	27	1,600	
GEW-122	9/13/2016	16	53	ND	ND	27	2,000	
GEW-123	9/13/2016	21	58	2.7	9.8	7.5	770	See Note 3
GEW-123	11/11/2016	8.9	56	2.5	11	21	1,800	See Note 4
GEW-124	9/13/2016	9	60	ND	5.4	22	2,100	

Laboratory Analysis - Bridgeton Landfill

Well Name	Date Sampled	Methane	CO_2	O_2/Argon	Nitrogen	Hydrogen	Carbon Monoxide	Comments
		(%)					(ppm)	
GEW-125	9/13/2016	0.9	59	ND	ND	35	2,700	
GEW-125	11/11/2016	2.9	44	3.5	18	31	2,200	See Note 3
GEW-126	9/13/2016	12	48	2.7	11	24	2,500	See Note 3
GEW-126	11/11/2016	22	53	ND	4.4	19	1,800	
GEW-127	9/13/2016	3.9	67	ND	ND	24	3,400	
GEW-127	11/11/2016	3.3	65	ND	4.2	26	3,300	
GEW-128	9/12/2016	5	47	7	25	16	1,800	See Note 4
GEW-128	11/11/2016	5.6	64	ND	3.3	26	2,800	
GEW-129	9/12/2016	1.6	63	ND	ND	30	3,000	
GEW-129	11/11/2016	1.9	66	2.2	7.7	22	3,000	See Note 3
GEW-130	9/13/2016	6.3	52	4.4	17	18	2,400	See Note 4
GEW-130	11/11/2016	3.4	43	5.9	23	23	2,400	See Note 4
GEW-131	9/14/2016	0.3	52	ND	ND	43	3,200	
GEW-131	11/11/2016	5.4	47	ND	ND	45	2,700	
GEW-132	11/10/2016	11	46	1.7	24	16	920	See Note 4
GEW-133	9/13/2016	3	57	2.7	9.5	27	2,000	See Note 3
GEW-134	9/13/2016	7.4	38	4.9	47	2.2	340	See Note 3
GEW-134	11/10/2016	7.1	32	6.6	51	2.8	300	See Note 4
GEW-135	9/13/2016	3.4	48	3.2	11	33	1,700	See Note 3
GEW-135	11/10/2016	5.1	41	5.1	31	18	900	See Note 4
GEW-136	11/10/2016	3.7	22	12	54	8.9	380	See Note 4
GEW-137	9/13/2016	38	41	ND	19	0.1	ND	
GEW-137	11/10/2016	0.5	59	ND	ND	38	2,700	
GEW-138	11/10/2016	3.7	26	6.8	53	10	680	See Note 4
GEW-139	9/13/2016	5.5	56	1.9	8.5	26	2,600	See Note 4
GEW-139	11/11/2016	3.8	44	4.3	17	30	2,400	See Note 4
GEW-140	9/13/2016	0.3	56	ND	3.9	36	3,200	
GEW-140	11/11/2016	8.6	51	1.9	8.4	30	1,600	See Note 4
GEW-141	9/13/2016	0.2	60	ND	ND	35	4,100	
GEW-141	11/11/2016	0.3	48	4.3	15	31	3,400	See Note 4
GEW-142	9/13/2016	0.03	2	21	76	0.5	98	See Note 3
GEW-143	9/14/2016	0.01	1	22	77	0.4	65	See Note 3
GEW-144	9/14/2016	ND	0.04	22	78	ND	ND	See Note 3
GEW-145	9/13/2016	1.6	53	2.1	7.4	33	2,100	See Note 4
GEW-145	11/10/2016	1	51	2.2	7.8	36	2,100	See Note 4
GEW-146	9/12/2016	6.4	27	6.1	58	2	120	See Note 4
GEW-147	9/13/2016	11	48	2.9	10	27	1,400	See Note 3
GEW-147	11/11/2016	4.8	48	1.7	5.7	39	2,000	See Note 3
GEW-149	11/10/2016	11	52	2	17	17	1,000	See Note 4
GEW-150	11/10/2016	1.9	55	3.3	12	27	1,800	See Note 3
GEW-151	11/10/2016	2.5	54	1.6	5.8	35	1,600	See Note 4
GEW-152	9/14/2016	0.1	0.4	22	78	0.1	ND	See Note 3
GEW-152	11/9/2016	18	48	ND	3	29	1,800	
GEW-153	9/14/2016	20	30	6.5	34	8.5	280	See Note 3
GEW-153	11/9/2016	28	40	ND	20	11	360	
GEW-155	11/10/2016	0.5	58	ND	ND	38	2,800	
GEW-157	9/14/2016	9.8	52	2.3	8.3	27	1,900	See Note 3
GEW-159	9/14/2016	22	50	ND	25	2	91	
GEW-159	11/8/2016	5.6	35	7.6	27	25	1,500	See Note 4
GEW-160	9/12/2016	4.1	56	ND	5.8	31	2,100	
GEW-160	11/10/2016	3.8	57	ND	ND	36	2,000	
GEW-161	9/12/2016	0.5	51	2.1	7.4	37	2,500	See Note 4
GEW-162	9/12/2016	7.1	61	1.9	6.9	22	1,600	See Note 3
GEW-162	11/10/2016	7	62	ND	ND	27	1,800	
GEW-163	11/11/2016	4.8	30	9.5	47	7.9	580	See Note 4
GEW-164	9/13/2016	3.8	70	ND	5.3	18	2,400	
GEW-164	11/11/2016	8.7	69	ND	ND	18	1,900	

Laboratory Analysis - Bridgeton Landfill

Well Name	Date Sampled	Methane	CO_2	O_2/Argon	Nitrogen	Hydrogen	Carbon Monoxide	Comments
		(%)					(ppm)	
GEW-165	9/13/2016	1.3	66	ND	3.4	26	3,200	
GEW-165	11/11/2016	1.7	63	ND	3.3	30	2,900	
GEW-166	9/13/2016	0.3	60	ND	ND	35	3,500	
GEW-166	11/11/2016	2.1	36	9.2	32	20	1,700	See Note 3
GEW-167	9/14/2016	5	36	6.2	35	17	1,300	See Note 4
GEW-167	11/11/2016	1.4	58	ND	ND	38	2,600	
GEW-168	9/13/2016	3.1	61	ND	3.8	29	2,900	
GEW-168	11/11/2016	0.6	57	ND	ND	39	3,400	
GEW-169	9/13/2016	5.5	61	2.1	7.7	22	2,900	See Note 4
GEW-169	11/11/2016	1.8	40	8.1	29	20	2,100	See Note 4
GEW-170	9/13/2016	7.5	59	2.6	11	18	2,600	See Note 4
GEW-170	11/11/2016	3.2	57	3.5	13	22	2,900	See Note 4
GEW-171	9/13/2016	4.1	42	7.5	27	18	1,700	See Note 3
GEW-172	9/13/2016	5.3	55	ND	3.2	34	2,600	
GEW-174	9/13/2016	5.5	34	5.5	42	12	910	See Note 4
GEW-174	11/10/2016	4.5	31	7.5	42	15	1,000	See Note 4
GEW-175	9/14/2016	ND	0.1	22	78	ND	ND	See Note 3
GEW-175	11/10/2016	10	33	7.9	43	6.1	420	See Note 4
GEW-176	9/14/2016	0.9	3.3	21	74	0.5	64	See Note 3
GEW-176	11/10/2016	11	49	4.1	20	16	970	See Note 4
GEW-177	9/13/2016	1.2	63	ND	ND	31	3,900	
GIW-01	8/10/2016	1	31.1	12.1	43.4	11.8	1,300	See Note 4
GIW-01	9/6/2016	3.2	63	1.9	10	20	2,100	See Note 4
GIW-01	10/4/2016	2.4	70	ND	ND	24	2,300	
GIW-01	11/9/2016	3.1	69	ND	ND	24	2,100	
GIW-01	12/8/2016	3.5	51	5.8	21	18	1,400	See Note 3
GIW-02	8/10/2016	6.9	36.7	9.4	39.1	7.6	470	See Note 4
GIW-02	9/6/2016	3.9	29	12	50	4.4	280	See Note 4
GIW-02	10/4/2016	4.2	34	11	41	9.4	550	See Note 4
GIW-02	11/9/2016	2.7	64	ND	5.6	26	1,900	
GIW-02	12/8/2016	3.1	65	1.7	5.6	24	1,700	See Note 3
GIW-03	8/8/2016	0.7	60.7	2.3	8.2	26.8	2,600	See Note 4
GIW-03	9/6/2016	1	49	6.2	22	21	1,900	See Note 4
GIW-03	10/4/2016	0.7	62	2	7	26	2,200	See Note 4
GIW-03	11/9/2016	0.7	64	ND	5	27	2,200	
GIW-03	12/8/2016	1	53	5.1	18	22	1,600	See Note 4
GIW-04	8/8/2016	0.7	56.2	ND	3.7	37.7	2,600	
GIW-04	9/6/2016	0.7	56	2	6.9	34	2,400	See Note 4
GIW-04	10/4/2016	0.9	43	5.8	21	28	1,900	See Note 3
GIW-04	11/9/2016	1.1	51	2.4	8.2	37	2,200	See Note 4
GIW-04	12/8/2016	0.8	42	5	18	34	2,000	See Note 3
GIW-05	8/8/2016	2.4	57.3	ND	5.6	32.6	1,400	
GIW-05	9/12/2016	1.9	60	ND	ND	34	1,400	
GIW-05	10/4/2016	ND	0.1	22	78	ND	ND	See Note 4
GIW-05	11/9/2016	0.01	1	22	77	ND	ND	See Note 4
GIW-05	12/8/2016	0.03	0.5	22	77	ND	ND	See Note 4
GIW-06	8/8/2016	3.2	52.7	ND	17.4	24.3	840	
GIW-06	9/6/2016	4.1	52	ND	19	23	740	
GIW-06	10/4/2016	0.1	0.9	22	77	0.3	ND	See Note 1 and 3
GIW-06	11/8/2016	17	54	ND	6.3	20	700	
GIW-06	12/9/2016	26	48	ND	4.1	20	550	
GIW-07	8/10/2016	7.2	40.1	10.2	36.9	5.3	590	See Note 4

Laboratory Analysis - Bridgeton Landfill

Well Name	Date Sampled	Methane	CO_2	O_2/Argon	Nitrogen	Hydrogen	Carbon Monoxide	Comments
		(%)					(ppm)	
GIW-07	9/6/2016	1.4	15	18	64	2.4	190	See Note 4
GIW-07	10/4/2016	11	65	2.8	10	10	640	See Note 4
GIW-07	11/8/2016	12	58	2.1	7.3	20	1,000	See Note 4
GIW-07	12/9/2016	26	50	1.7	6.1	16	720	See Note 4
GIW-08	8/8/2016	15.1	62.4	ND	19.8	1.6	190	
GIW-08	9/6/2016	16	63	ND	18	1.8	220	
GIW-08	10/4/2016	22	64	ND	11	1.2	160	
GIW-08	11/8/2016	23	60	ND	16	0.8	130	
GIW-08	12/9/2016	31	52	2.8	14	0.3	77	See Note 3
GIW-09	8/8/2016	2.8	26.8	6.1	61.6	2.5	190	See Note 4
GIW-09	9/6/2016	2.2	16	12	67	2.3	150	See Note 4
GIW-09	10/4/2016	5.3	22	9	61	2.5	140	See Note 4
GIW-09	11/9/2016	0.8	8.5	18	71	1.8	110	See Note 4
GIW-09	12/9/2016	ND	16	13	65	1.5	92	See Note 4
GIW-10	8/8/2016	0.8	54.4	ND	3.8	39.7	2,300	
GIW-10	9/6/2016	0.6	50	2.6	10	36	2,000	See Note 3
GIW-10	10/4/2016	3.7	52	ND	9.6	33	1,600	
GIW-10	11/9/2016	4.1	49	ND	11	34	1,700	
GIW-10	12/8/2016	6.9	41	4.8	23	24	1,000	See Note 3
GIW-11	8/8/2016	6.5	60.7	1.9	11.1	19	2,000	See Note 4
GIW-11	9/6/2016	6.9	61	1.9	11	18	1,900	See Note 4
GIW-11	10/4/2016	6.2	62	1.6	9.9	20	1,900	See Note 4
GIW-11	11/9/2016	0.9	63	ND	ND	33	2,700	
GIW-11	12/9/2016	2	62	ND	6.2	28	2,100	
GIW-12	8/8/2016	6.2	34	7.7	42.8	8.9	670	See Note 4
GIW-12	9/6/2016	6.2	32	9.6	45	7	470	See Note 4
GIW-12	10/4/2016	13	41	5.3	29	10	610	See Note 4
GIW-12	11/9/2016	7.7	35	7.5	42	7.9	460	See Note 4
GIW-12	12/9/2016	7.6	31	9.3	45	6.3	320	See Note 4
GIW-13	8/8/2016	10.1	66.2	ND	ND	20.1	1,300	
GIW-13	9/6/2016	12	63	ND	5.9	17	1,000	
GIW-13	10/4/2016	12	59	2.7	9.8	16	970	See Note 3
GIW-13	11/9/2016	10	65	ND	ND	20	1,300	
GIW-13	12/9/2016	12	65	ND	3.5	19	1,100	
Flare Station²	8/9/2016	10.1	39.3	6.8	30.7	11.4	1,100	See Note 6
Flare Station²	9/7/2016	8.7	39.4	6.9	31.9	11.4	940	See Note 6
Flare Station²	10/4/2016	9.6	41.6	6.0	28.8	12.4	1,000	See Note 6
Flare Station²	11/1/2016	10.4	42.4	5.7	27.2	12.5	900	See Note 6
Flare Station²	12/6/2016	9.3	37.8	7.7	32.4	12.0	840	See Note 6
Flare Station²	1/4/2017	9.8	38.7	7.4	30.6	12.8	815	See Note 6

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) Flare station gas concentration based on data from Outlet B in the South Quarry.

ND = Analyte not detected in sample.

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

ATTACHMENT D-2

LAB ANALYSIS REPORTS

AirTECHNOLOGY
Laboratories, Inc.

December 21, 2016

ADE-1461
EPA Methods TO3, TO14A, TO15 SIM & SCAN
ASTM D1946

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

Republic Services
ATTN: Nick Bauer
13570 St. Charles Rock Rd.
Bridgeton, MO 63044

LABORATORY TEST RESULTS

Project Reference: Bridgeton Landfill
Lab Number: H121303-01/35

Enclosed are results for sample(s) received 12/13/16 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 Nick Bauer, Mike Lambrich and Ryan Ayers; David Randall, Dustin Thoenen and Don Murphy, Weaver Consultants Group, on 12/20/16.

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,

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

TURNAROUND TIME				DELIVERABLES		PAGE: 1 OF 4
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

Project No.:	
Project Name:	Bridgeton Landfill
Report To:	Nick Bauer
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.:	PO4862452 (623900 SDD 12491)
Bill to:	Republic Services
	Attn: Nick Bauer
	13570 St. Charles Rock Rd.
	Bridgeton, MO 63044

LAB USE ONLY	Canister Pressures ("hg)				SAMPLE IDENTIFICATION	SAMPLE DATE	SAMPLE TIME	CONTAINER QTY/TYPE	MATRIX	PRESERVATION	ANALYSIS REQUEST: D1946 + CO, H2					
	Canister ID	Sample Start	Sample End	Lab Receive												
#121303-01	A7646	-20.6	-5	-3.5	GEW-40	12/7/2016	828	C	LFG	NA	X					
-02	5817	-20.6	-5	-4	GEW-42R	12/7/2016	852	C	LFG	NA	X					
-03	5916	-17	-5	-4	GEW-45R	12/7/2016	946	C	LFG	NA	X					
-04	4658	-20.3	-5	-3.5	GEW-46R	12/7/2016	1006	C	LFG	NA	X					
-05	4657	-20.5	-5	-4	GEW-2	12/7/2016	1022	C	LFG	NA	X					
-06	5813	-20.4	-5	-4	GEW-3	12/7/2016	1043	C	LFG	NA	X					
-07	3837	-20.6	-5	-4	GEW-4	12/7/2016	1059	C	LFG	NA	X					
-08	A8064	-20.5	-5	-4	GEW-47R	12/7/2016	1118	C	LFG	NA	X					
-09	3162	-20.1	-5	-4	GEW-5	12/7/2016	1131	C	LFG	NA	X					

AUTHORIZATION TO PERFORM WORK: Dave Penoyer	COMPANY: Republic Services	DATE/TIME:	COMMENTS
SAMPLED BY: Ryan Ayers	COMPANY: Republic Services	DATE/TIME	
RELINQUISHED BY: [signature] 12-12-16 0900	DATE/ RECEIVED BY	DATE/TIME	
RELINQUISHED BY: FED EX	DATE/ RECEIVED BY: [signature] 12/13/16	DATE/TIME 1135	
RELINQUISHED BY	DATE/ 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 *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

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

DELIVERABLES

EDD	☐
EDF	☐
Level 3	☐
Level 4	☐

PAGE: 2 **OF** 4

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

Project No.:	
Project Name:	Bridgeton Landfill
Report To:	Nick Bauer
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.:	PO4862452
Bill to:	Republic Services
	Attn: Nick Bauer
	13570 St. Charles Rock Rd.
	Bridgeton, MO 63044

ANALYSIS REQUEST

LAB USE ONLY	Canister Pressures ("hg)				SAMPLE IDENTIFICATION	SAMPLE DATE	SAMPLE TIME	CONTAINER QTY/TYPE	MATRIX	PRESERVATION	D1946 + CO, H2					
	Canister ID	Sample Start	Sample End	Lab Receive												
H121303-10	6144	-20.3	-5	-4	GEW-48	12/7/2016	1145	C	LFG	NA	X					
-11	3128	-20.6	-5	-4	GEW-49	12/7/2016	1412	C	LFG	NA	X					
-12	5269	-20.3	-5	-4	GEW-53	12/7/2016	1438	C	LFG	NA	X					
-13	A8072	-20.9	-5	-4	GEW-54	12/7/2016	1452	C	LFG	NA	X					
-14	A7798	-20.9	-5	-4	GEW-55	12/7/2016	1523	C	LFG	NA	X					
-15	A7794	-20.5	-5	-4	GEW-8	12/7/2016	1549	C	LFG	NA	X					
-16	3130	-20.6	-5	-4	GEW-9	12/7/2016	1602	C	LFG	NA	X					
-17	5936	-21	-5	-3	GIW-1	12/8/2016	901	C	LFG	NA	X					
-18	5304	-21	-5	-3	GIW-2	12/8/2016	919	C	LFG	NA	X					

AUTHORIZATION TO PERFORM WORK: Dave Penoyer	COMPANY: Republic Services	DATE/TIME:	
SAMPLED BY: Ryan Ayers	COMPANY: Republic Services	DATE/TIME	
RELINQUISHED BY: Ryan Ayers	DATE/ RECEIVED BY	DATE/TIME	
12-12-16 0900			
RELINQUISHED BY: FED EX	DATE/ RECEIVED BY: [signature]	DATE/TIME: 12/13/16 1135	
RELINQUISHED BY	DATE/ RECEIVED BY	DATE/TIME	

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

COMMENTS

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*

CHAIN OF CUSTODY RECORD

Air TECHNOLOGY Laboratories, Inc.

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

TURNAROUND TIME				DELIVERABLES		Condition upon receipt:
Standard	☐	48 hours	☐	EDD	☐	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	☐	

Project No.:	
Project Name:	Bridgeton Landfill
Report To:	Nick Bauer
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.:	PO4862452
Bill to:	Republic Services
	Attn: Nick Bauer
	13570 St. Charles Rock Rd.
	Bridgeton, MO 63044

LAB USE ONLY	Canister Pressures ("hg)				SAMPLE IDENTIFICATION	SAMPLE DATE	SAMPLE TIME	CONTAINER QTY/TYPE	MATRIX	PRESERVATION	ANALYSIS REQUEST: D1946 + CO, H2					
	Canister ID	Sample Start	Sample End	Lab Receive												
H121303-19	A7643	-21	-5	-3	GIW-3	12/8/2016	948	C	LFG	NA	X					
-20	5922	-21	-5	-3	GIW-4	12/8/2016	1002	C	LFG	NA	X					
-21	A7771	-20.8	-5	-3.5	GIW-10	12/8/2016	1052	C	LFG	NA	X					
-22	A7795	-21.4	-5	-2	GIW-5	12/8/2016	1148	C	LFG	NA	X					
-23	6131	-21.1	-5	-3	GEW-109	12/8/2016	1414	C	LFG	NA	X					
-24	A7781	-20.8	-5	-3	GEW-39	12/8/2016	1434	C	LFG	NA	X					
-25	5828	-21.7	-5	-2.5	GEW-10	12/9/2016	847	C	LFG	NA	X					
-26	5907	-21.5	-5	-3	GEW-110	12/9/2016	907	C	LFG	NA	X					
-27	5927	-21.4	-5	-3	GIW-13	12/9/2016	922	C	LFG	NA	X					

AUTHORIZATION TO PERFORM WORK: Dave Penoyer	COMPANY: Republic Services	DATE/TIME:	**COMMENTS**
SAMPLED BY: Ryan Ayers	COMPANY: Republic Services	DATE/TIME	
RELINQUISHED BY: R. Ayers	DATE: 12-12-16 0900	RECEIVED BY	DATE/TIME
RELINQUISHED BY: FED EX	DATE:	RECEIVED BY	DATE/TIME: 12/13/16 1135
RELINQUISHED BY	DATE:	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 *Rev. 03 - 5/7/09*

Air TECHNOLOGY 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

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

DELIVERABLES

EDD	☐
EDF	☐
Level 3	☐
Level 4	☐

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

Project No.:
Project Name: Bridgeton Landfill
Report To: Nick Bauer
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.: PO4862452
Bill to: Republic Services
Attn: Nick Bauer
13570 St. Charles Rock Rd.
Bridgeton, MO 63044

LAB USE ONLY	Canister Pressures ("hg)				SAMPLE IDENTIFICATION	SAMPLE DATE	SAMPLE TIME	CONTAINER QTY/TYPE	MATRIX	PRESERVATION	ANALYSIS REQUEST: D1946 + CO, H2					
	Canister ID	Sample Start	Sample End	Lab Receive												
H121303-28	A8067	-21.1	-5	-3	GEW-56R	12/9/2016	938	C	LFG	NA	X					
-29	6151	-21.3	-5	-3	GIW-12	12/9/2016	1031	C	LFG	NA	X					
-30	A8088	-20.8	-5	-3	GIW-11	12/9/2016	1047	C	LFG	NA	X					
-31	A8078	-19.9	-5	-3	GIW-8	12/9/2016	1100	C	LFG	NA	X					
-32	A7760	-21.2	-5	-3	GEW-38	12/9/2016	1112	C	LFG	NA	X					
-33	5910	-21.5	-5	-3	GIW-6	12/9/2016	1130	C	LFG	NA	X					
-34	A7779	-20.9	-5	-3	GIW-7	12/9/2016	1142	C	LFG	NA	X					
-35	A7666	-21	-5	-3	GIW-9	12/9/2016	1412	C	LFG	NA	X					

AUTHORIZATION TO PERFORM WORK: Dave Penoyer — COMPANY: Republic Services — DATE/TIME:

SAMPLED BY: Ryan Ayers — COMPANY: Republic Services — DATE/TIME

RELINQUISHED BY	DATE/TIME	RECEIVED BY	DATE/TIME
Ryan Ayers	12-12-16 0900		
FED EX		[illegible]	12/13/16 1135

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

COMMENTS

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: Nick Bauer
Project Name: Bridgeton Landfill
Project No.: NA
Date Received: 12/13/16
Matrix: Air
Reporting Units: % v/v

ASTM D1946

Lab No.:	H121303-01		H121303-02		H121303-03		H121303-04	
Client Sample I.D.:	GEW-40		GEW-42R		GEW-45R		GEW-46R	
Date/Time Sampled:	12/7/16 8:28		12/7/16 8:52		12/7/16 9:46		12/7/16 10:06	
Date/Time Analyzed:	12/19/16 10:04		12/19/16 10:19		12/19/16 10:34		12/19/16 10:48	
QC Batch No.:	161219GC8A1		161219GC8A1		161219GC8A1		161219GC8A1	
Analyst Initials:	AS		AS		AS		AS	
Dilution Factor:	2.9		3.0		3.0		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	ND d	0.029	ND d	0.030	ND d	0.030	0.066 d	0.029
Carbon Dioxide	39	0.029	39	0.030	31	0.030	39	0.029
Oxygen/Argon	ND	1.4	ND	1.5	6.0	1.5	1.7	1.4
Nitrogen	4.0	2.9	5.1	3.0	21	3.0	6.3	2.9
Methane	56	0.0029	55	0.0030	42	0.0030	53	0.0029
Carbon Monoxide	ND	0.0029	ND	0.0030	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 dilution. QC Batch: 161220GC8A1

Reviewed/Approved By: _____ Date 12/20/16
Mark Johnson
Operations Manager

The cover letter is an integral part of this analytical report

AirTECHNOLOGY Laboratories, Inc.
18501 E. Gale Avenue, Suite 130 ♦ City of Industry, CA 91748 ♦ Ph: (626) 964-4032 ♦ Fx: (626) 964-5832

Client: Republic Services
Attn: Nick Bauer
Project Name: Bridgeton Landfill
Project No.: NA
Date Received: 12/13/16
Matrix: Air
Reporting Units: % v/v

ASTM D1946

Lab No.:	H121303-05		H121303-06		H121303-07		H121303-08	
Client Sample I.D.:	GEW-2		GEW-3		GEW-4		GEW-47R	
Date/Time Sampled:	12/7/16 10:22		12/7/16 10:43		12/7/16 10:59		12/7/16 11:18	
Date/Time Analyzed:	12/19/16 11:03		12/19/16 11:17		12/19/16 11:32		12/19/16 11:47	
QC Batch No.:	161219GC8A1		161219GC8A1		161219GC8A1		161219GC8A1	
Analyst Initials:	AS		AS		AS		AS	
Dilution Factor:	3.0		3.0		3.0		3.0	
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	ND d	0.030	0.070 d	0.030	0.091 d	0.030	ND d	0.030
Carbon Dioxide	42	0.030	40	0.030	38	0.030	39	0.030
Oxygen/Argon	1.7	1.5	ND	1.5	ND	1.5	ND	1.5
Nitrogen	5.8	3.0	5.7	3.0	9.7	3.0	12	3.0
Methane	51	0.0030	54	0.0030	51	0.0030	48	0.0030
Carbon Monoxide	ND	0.0030	ND	0.0030	ND	0.0030	ND	0.0030

Results normalized including non-methane hydrocarbons
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Reviewed/Approved By: _____ Date 12/20/16
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Operations Manager

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Client: Republic Services
Attn: Nick Bauer
Project Name: Bridgeton Landfill
Project No.: NA
Date Received: 12/13/16
Matrix: Air
Reporting Units: % v/v

ASTM D1946

Lab No.:	H121303-09		H121303-10		H121303-11		H121303-12	
Client Sample I.D.:	GEW-5		GEW-48		GEW-49		GEW-53	
Date/Time Sampled:	12/7/16 11:31		12/7/16 11:45		12/7/16 14:12		12/7/16 14:38	
Date/Time Analyzed:	12/19/16 12:01		12/19/16 12:16		12/19/16 12:30		12/19/16 12:45	
QC Batch No.:	161219GC8A1		161219GC8A1		161219GC8A1		161219GC8A1	
Analyst Initials:	AS		AS		AS		AS	
Dilution Factor:	3.0		3.0		3.0		3.0	
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	ND d	0.030	ND d	0.030	0.032 d	0.030	2.1 d	0.030
Carbon Dioxide	36	0.030	39	0.030	35	0.030	39	0.030
Oxygen/Argon	ND	1.5	ND	1.5	ND	1.5	ND	1.5
Nitrogen	15	3.0	7.5	3.0	18	3.0	9.9	3.0
Methane	48	0.0030	53	0.0030	45	0.0030	48	0.0030
Carbon Monoxide	ND	0.0030	ND	0.0030	ND	0.0030	0.0034	0.0030

Results normalized including non-methane hydrocarbons
ND = Not Detected (below RL)
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Reviewed/Approved By: _____ Date 12/20/16
Mark Johnson
Operations Manager

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Client: Republic Services
Attn: Nick Bauer
Project Name: Bridgeton Landfill
Project No.: NA
Date Received: 12/13/16
Matrix: Air
Reporting Units: % v/v

ASTM D1946

Lab No.:	H121303-13		H121303-14		H121303-15		H121303-16	
Client Sample I.D.:	GEW-54		GEW-55		GEW-8		GEW-9	
Date/Time Sampled:	12/7/16 14:52		12/7/16 15:23		12/7/16 15:49		12/7/16 16:02	
Date/Time Analyzed:	12/19/16 13:00		12/19/16 13:14		12/19/16 13:29		12/19/16 13:44	
QC Batch No.:	161219GC8A1		161219GC8A1		161219GC8A1		161219GC8A1	
Analyst Initials:	AS		AS		AS		AS	
Dilution Factor:	3.0		3.0		3.0		3.0	
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	1.8 d	0.030	2.2 d	0.030	0.82 d	0.030	0.49 d	0.030
Carbon Dioxide	40	0.030	40	0.030	42	0.030	39	0.030
Oxygen/Argon	ND	1.5	1.6	1.5	ND	1.5	ND	1.5
Nitrogen	6.9	3.0	5.7	3.0	3.0	3.0	12	3.0
Methane	50	0.0030	50	0.0030	53	0.0030	47	0.0030
Carbon Monoxide	0.0043	0.0030	0.0033	0.0030	ND	0.0030	ND	0.0030

Results normalized including non-methane hydrocarbons
ND = Not Detected (below RL)
RL = Reporting Limit
d = Reported from a secondary dilution. QC Batch: 161220GC8A1

Reviewed/Approved By: _____ Date 12/20/16
Mark Johnson
Operations Manager

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Client:	**Republic Services**
Attn:	**Nick Bauer**
Project Name:	**Bridgeton Landfill**
Project No.:	**NA**
Date Received:	**12/13/16**
Matrix:	**Air**
Reporting Units:	**% v/v**

ASTM D1946

Lab No.:	H121303-17		H121303-18		H121303-19		H121303-20	
Client Sample I.D.:	GIW-1		GIW-2		GIW-3		GIW-4	
Date/Time Sampled:	12/8/16 9:01		12/8/16 9:19		12/8/16 9:48		12/8/16 10:02	
Date/Time Analyzed:	12/19/16 15:37		12/19/16 16:03		12/19/16 16:17		12/19/16 16:32	
QC Batch No.:	161219GC8A2		161219GC8A2		161219GC8A2		161219GC8A2	
Analyst Initials:	AS		AS		AS		AS	
Dilution Factor:	2.8		2.8		2.8		2.8	
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	18	2.8	24	2.8	22	2.8	34	2.8
Carbon Dioxide	51	0.028	65	0.028	53	0.028	42	0.028
Oxygen/Argon	5.8	1.4	1.7	1.4	5.1	1.4	5.0	1.4
Nitrogen	21	2.8	5.6	2.8	18	2.8	18	2.8
Methane	3.5	0.0028	3.1	0.0028	0.97	0.0028	0.79	0.0028
Carbon Monoxide	0.14	0.0028	0.17	0.0028	0.16	0.0028	0.20	0.0028

Results normalized including non-methane hydrocarbons
ND = Not Detected (below RL)
RL = Reporting Limit

Reviewed/Approved By: _____ **Date** 12/20/16

Mark Johnson
Operations Manager

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Client: Republic Services
Attn: Nick Bauer
Project Name: Bridgeton Landfill
Project No.: NA
Date Received: 12/13/16
Matrix: Air
Reporting Units: % v/v

ASTM D1946

Lab No.:	H121303-21		H121303-22		H121303-23		H121303-24	
Client Sample I.D.:	GIW-10		GIW-5		GEW-109		GEW-39	
Date/Time Sampled:	12/8/16 10:52		12/8/16 11:48		12/8/16 14:14		12/8/16 14:34	
Date/Time Analyzed:	12/19/16 16:46		12/20/16 8:35		12/20/16 8:49		12/19/16 17:30	
QC Batch No.:	161219GC8A2		161219GC8A2		161219GC8A2		161219GC8A2	
Analyst Initials:	AS		AS		AS		AS	
Dilution Factor:	2.9		2.7		2.8		2.8	
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	24	2.9	ND d	0.027	12	2.8	ND d	0.028
Carbon Dioxide	41	0.029	0.52	0.027	28	0.028	12	0.028
Oxygen/Argon	4.8	1.4	22	1.3	9.6	1.4	17	1.4
Nitrogen	23	2.9	77	2.7	38	2.8	60	2.8
Methane	6.9	0.0029	0.025	0.0027	13	0.0028	11	0.0028
Carbon Monoxide	0.10	0.0029	ND	0.0027	0.042	0.0028	ND	0.0028

Results normalized including non-methane hydrocarbons
ND = Not Detected (below RL)
RL = Reporting Limit
d = Reported from a secondary dilution. QC Batch: 161220GC8A1

Reviewed/Approved By: _____ Date 12/20/16
Mark Johnson
Operations Manager

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

Client: Republic Services
Attn: Nick Bauer
Project Name: Bridgeton Landfill
Project No.: NA
Date Received: 12/13/16
Matrix: Air
Reporting Units: % v/v

ASTM D1946

Lab No.:	H121303-25		H121303-26		H121303-27		H121303-28	
Client Sample I.D.:	GEW-10		GEW-110		GIW-13		GEW-56R	
Date/Time Sampled:	12/9/16 8:47		12/9/16 9:07		12/9/16 9:22		12/9/16 9:38	
Date/Time Analyzed:	12/19/16 17:45		12/19/16 17:59		12/19/16 18:14		12/19/16 18:29	
QC Batch No.:	161219GC8A2		161219GC8A2		161219GC8A2		161219GC8A2	
Analyst Initials:	AS		AS		AS		AS	
Dilution Factor:	2.7		2.8		2.8		2.8	
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	0.088 d	0.027	16	2.8	19	2.8	25	2.8
Carbon Dioxide	49	0.027	24	0.028	65	0.028	49	0.028
Oxygen/Argon	1.7	1.4	11	1.4	ND	1.4	ND	1.4
Nitrogen	7.7	2.7	46	2.8	3.5	2.8	12	2.8
Methane	42	0.0027	2.5	0.0028	12	0.0028	13	0.0028
Carbon Monoxide	ND	0.0027	0.087	0.0028	0.11	0.0028	0.099	0.0028

Results normalized including non-methane hydrocarbons
ND = Not Detected (below RL)
RL = Reporting Limit
d = Reported from a secondary dilution. QC Batch: 161220GC8A1

Reviewed/Approved By: _____ Date 12/20/16
Mark Johnson
Operations Manager

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Client: Republic Services
Attn: Nick Bauer
Project Name: Bridgeton Landfill
Project No.: NA
Date Received: 12/13/16
Matrix: Air
Reporting Units: % v/v

ASTM D1946

Lab No.:	H121303-29		H121303-30		H121303-31		H121303-32	
Client Sample I.D.:	GIW-12		GIW-11		GIW-8		GEW-38	
Date/Time Sampled:	12/9/16 10:31		12/9/16 10:47		12/9/16 11:00		12/9/16 11:12	
Date/Time Analyzed:	12/19/16 18:43		12/19/16 18:58		12/19/16 19:12		12/19/16 19:27	
QC Batch No.:	161219GC8A2		161219GC8A2		161219GC8A2		161219GC8A2	
Analyst Initials:	AS		AS		AS		AS	
Dilution Factor:	2.8		2.8		2.8		2.8	
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	6.3	2.8	28	2.8	0.29 d	0.028	23	2.8
Carbon Dioxide	31	0.028	62	0.028	52	0.028	45	0.028
Oxygen/Argon	9.3	1.4	ND	1.4	2.8	1.4	4.4	1.4
Nitrogen	45	2.8	6.2	2.8	14	2.8	18	2.8
Methane	7.6	0.0028	2.0	0.0028	31	0.0028	8.8	0.0028
Carbon Monoxide	0.032	0.0028	0.21	0.0028	0.0077	0.0028	0.11	0.0028

Results normalized including non-methane hydrocarbons
ND = Not Detected (below RL)
RL = Reporting Limit
d = Reported from a secondary dilution. QC Batch: 161220GC8A1

Reviewed/Approved By: _____ Date 12/20/16
Mark Johnson
Operations Manager

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Client: Republic Services
Attn: Nick Bauer
Project Name: Bridgeton Landfill
Project No.: NA
Date Received: 12/13/16
Matrix: Air
Reporting Units: % v/v

ASTM D1946

Lab No.:	H121303-33		H121303-34		H121303-35			
Client Sample I.D.:	GIW-6		GIW-7		GIW-9			
Date/Time Sampled:	12/9/16 11:30		12/9/16 11:42		12/9/16 14:12			
Date/Time Analyzed:	12/19/16 19:42		12/19/16 19:56		12/20/16 13:34			
QC Batch No.:	161219GC8A2		161219GC8A2		161219GC8A2			
Analyst Initials:	AS		AS		AS			
Dilution Factor:	2.8		2.8		2.8			
ANALYTE	Result % v/v	RL % v/v	Result % v/v	RL % v/v	Result % v/v	RL % v/v		
Hydrogen	20	2.8	16	2.8	1.5 d	0.028		
Carbon Dioxide	48	0.028	50	0.028	16	0.028		
Oxygen/Argon	ND	1.4	1.7	1.4	13	1.4		
Nitrogen	4.1	2.8	6.1	2.8	65	2.8		
Methane	26	0.0028	26	0.0028	ND	0.0028		
Carbon Monoxide	0.055	0.0028	0.072	0.0028	0.0092	0.0028		

Results normalized including non-methane hydrocarbons
ND = Not Detected (below RL)
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d = Reported from a secondary dilution. QC Batch: 161220GC8A2

Reviewed/Approved By: _____ Date 12/20/16
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Operations Manager

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QC Batch No: 161219GC8A1
Matrix: Air
Reporting Units: % v/v

ASTM D1946
LABORATORY CONTROL SAMPLE SUMMARY

Lab No.:	METHOD BLANK			LCS		LCSD					
Date Analyzed:	12/19/16 9:43			12/19/16 8:58		12/19/16 9:13					
Analyst Initials:	AS			AS		AS					
Dilution Factor:	1.0			1.0		1.0					
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	4.94	99	5.16	103	4.2	70	130	30
Carbon Dioxide	ND	0.010	10	8.97	90	9.32	93	3.8	70	130	30
Oxygen/Argon	ND	0.50	15	14.6	99	15.2	102	3.7	70	130	30
Nitrogen	ND	1.0	70	66.0	94	68.5	98	3.7	70	130	30
Methane	ND	0.0010	0.10	0.117	117	0.116	116	0.4	70	130	30
Carbon Monoxide	ND	0.0010	0.10	0.107	107	0.107	107	0.4	70	130	30

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

Reviewed/Approved By: _____ Date 12/20/16
Mark Johnson
Operations Manager

The cover letter is an integral part of this analytical report

QC Batch No: 161219GC8A2
Matrix: Air
Reporting Units: % v/v

ASTM D1946
LABORATORY CONTROL SAMPLE SUMMARY

Lab No.:	METHOD BLANK			LCS		LCSD					
Date Analyzed:	12/19/16 15:20			12/19/16 14:36		12/19/16 14:51					
Analyst Initials:	AS			AS		AS					
Dilution Factor:	1.0			1.0		1.0					
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	5.14	103	5.11	102	0.4	70	130	30
Carbon Dioxide	ND	0.010	10	9.46	94	9.49	95	0.3	70	130	30
Oxygen/Argon	ND	0.50	15	15.4	104	15.5	104	0.4	70	130	30
Nitrogen	ND	1.0	70	69.6	99	69.8	100	0.3	70	130	30
Methane	ND	0.0010	0.10	0.116	116	0.115	115	0.2	70	130	30
Carbon Monoxide	ND	0.0010	0.10	0.106	106	0.106	106	0.0	70	130	30

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

Reviewed/Approved By: _____ Date 12/20/16
Mark Johnson
Operations Manager

The cover letter is an integral part of this analytical report

QC Batch # 161220GC8A1
Matrix: Air
Units: % v/v

QC for Low Level Hydrogen Analysis

Lab No.:	Blank		LCS		LCSD			
Date Analyzed:	12/20/2016 10:28		12/20/2016 10:19		12/20/2016 10:24			
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	96	70-130	95	70-130	0.6	<20

ND = Not Detected (Below RL)
RL = PQL X Dilution Factor

Reviewed/Approved By: _____ Date: 12/20/16
Mark Johnson
Operations Manager

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

QC Batch # 161220GC8A2
Matrix: Air
Units: % v/v

QC for Low Level Hydrogen Analysis

Lab No.:	Blank		LCS		LCSD			
Date Analyzed:	12/20/2016 12:29		12/20/2016 12:20		12/20/2016 12:24			
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	97	70-130	97	70-130	0.4	<20

ND = Not Detected (Below RL)
RL = PQL X Dilution Factor

Reviewed/Approved By: _____ Date: 12/20/16

Mark Johnson
Operations Manager

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

ATTACHMENT E

GAS WELLFIELD DATA

ATTACHMENT E-1

WELLFIELD DATA TABLE

December 2016 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_2O		
GEW-002	12/7/2016 10:19	54.0	43.1	0.0	2.9	117.3		0	0	0.9	0.9	-13.7
GEW-002	12/7/2016 10:29	54.7	43.2	0.0	2.1	123.1		25	24	0.4	0.4	-14.2
GEW-002	12/16/2016 10:00	56.3	39.6	0.1	4.0	120.8		44	45	-0.8	-0.9	-14.4
GEW-002	12/16/2016 10:01	55.2	41.0	0.0	3.8	121.3		16	16	-0.6	-0.6	-13.7
GEW-002	12/21/2016 10:01	56.3	40.1	0.0	3.6	124.6		35	35	0.2	0.2	-13.5
GEW-002	12/21/2016 10:02	54.8	41.9	0.0	3.3	124.7		23	27	0.1	0.0	-13.2
GEW-002	12/28/2016 9:49	55.8	41.1	0.0	3.1	117.3		45	43	-0.6	-0.6	-14.0
GEW-003	12/7/2016 10:39	54.1	41.1	0.0	4.8	116.0		8	17	-0.7	-0.7	-12.9
GEW-003	12/7/2016 10:48	55.0	40.3	0.0	4.7	115.5		0	0	-0.7	-0.7	-13.6
GEW-003	12/16/2016 10:05	52.0	39.7	0.0	8.3	111.1		0	0	-0.4	-0.4	-13.2
GEW-003	12/21/2016 10:06	52.8	40.6	0.0	6.6	112.5		19	19	-0.6	-0.6	-13.0
GEW-003	12/28/2016 9:52	51.3	39.6	0.0	9.1	110.2		17	10	-0.6	-0.6	-13.1
GEW-004	12/7/2016 10:55	52.2	38.8	0.0	9.0	116.0		19	8	-0.6	-0.6	-12.7
GEW-004	12/7/2016 11:03	52.1	40.1	0.0	7.8	116.0		22	26	-0.7	-0.6	-13.3
GEW-004	12/16/2016 10:09	50.7	39.5	0.0	9.8	114.2		21	11	-0.3	-0.3	-13.3
GEW-004	12/21/2016 10:09	48.8	38.6	0.0	12.6	116.6		16	12	-0.7	-0.7	-13.2
GEW-004	12/28/2016 9:56	47.0	37.7	0.0	15.3	113.3		9	10	-0.7	-0.6	-13.3
GEW-004	12/28/2016 9:57	46.5	38.0	0.0	15.5	113.5		13	13	-0.6	-0.6	-13.2
GEW-005	12/7/2016 11:28	47.8	37.0	0.0	15.2	88.6		29	29	-0.1	-0.1	-13.4
GEW-005	12/7/2016 11:35	48.6	37.2	0.0	14.2	88.9		29	29	-0.1	-0.1	-13.3
GEW-005	12/16/2016 10:27	48.3	38.7	0.0	13.0	88.1		22	21	0.0	0.0	-13.3
GEW-005	12/21/2016 10:20	40.6	34.4	0.0	25.0	91.9		17	18	-0.6	-0.6	-12.9
GEW-005	12/22/2016 8:56	37.2	31.1	0.0	31.7	87.2		0	0	-1.1	-1.1	-13.5
GEW-005	12/28/2016 10:11	36.6	32.8	0.0	30.6	90.7		26	24	-0.4	-0.4	-12.7
GEW-005	12/28/2016 10:12	37.4	33.6	0.0	29.0	91.1		29	31	-0.4	-0.4	-13.0
GEW-006	12/7/2016 13:48	50.1	32.4	0.0	17.5	82.8		26	23	-0.6	-0.6	-11.8
GEW-006	12/16/2016 11:10	52.4	32.2	0.0	15.4	87.7		17	16	-0.1	0.0	-12.8
GEW-006	12/21/2016 10:27	42.2	35.5	0.0	22.3	86.5		26	26	-0.8	-0.8	-13.3
GEW-006	12/21/2016 10:28	40.9	33.7	0.0	25.4	86.5		20	26	-0.9	-0.8	-12.7
GEW-006	12/28/2016 10:22	37.8	33.4	0.0	28.8	88.8		25	24	-0.7	-0.6	-12.1
GEW-006	12/28/2016 10:23	37.0	32.8	0.0	30.2	88.6		24	23	-0.6	-0.6	-12.9
GEW-007	12/7/2016 15:40	57.0	39.2	0.0	3.8	76.1		25	26	-0.5	-0.5	-13.3
GEW-007	12/16/2016 14:02	55.5	42.2	0.0	2.3	73.7		31	32	-0.1	-0.1	-12.2
GEW-007	12/21/2016 8:51	55.5	39.5	0.3	4.7	86.7		11	10	-3.1	-3.1	-13.2
GEW-007	12/21/2016 8:54	56.0	38.5	0.2	5.3	86.3		12	13	-2.8	-2.8	-13.4
GEW-007	12/28/2016 10:41	54.9	36.9	0.3	7.9	89.7		10	11	-2.3	-2.3	-13.3
GEW-007	12/28/2016 10:42	55.3	38.7	0.3	5.7	89.0		9	9	-1.6	-1.6	-13.3
GEW-008	12/7/2016 15:45	54.1	41.1	0.0	4.8	107.5		16	19	-0.6	-0.6	-13.2
GEW-008	12/7/2016 15:53	54.4	42.3	0.0	3.3	107.0		14	13	-0.6	-0.6	-13.3
GEW-008	12/16/2016 13:57	54.4	42.2	0.0	3.4	108.2		17	17	-0.2	-0.2	-12.2
GEW-008	12/21/2016 8:58	53.6	38.0	0.1	8.3	110.7		19	16	-1.5	-1.5	-13.5
GEW-008	12/21/2016 9:00	51.3	40.9	0.0	7.8	110.5		18	16	-1.4	-1.4	-13.0
GEW-008	12/28/2016 10:47	53.7	37.4	0.0	8.9	109.2		19	21	-1.1	-1.1	-13.2

December 2016 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_2O		
GEW-008	12/28/2016 10:49	51.4	41.6	0.0	7.0	109.2		16	17	-1.0	-1.0	-13.3
GEW-009	12/7/2016 15:58	47.8	39.4	0.0	12.8	118.1		28	26	-0.4	-0.4	-19.4
GEW-009	12/7/2016 16:05	48.4	39.2	0.0	12.4	117.6		16	14	-0.5	-0.5	-19.6
GEW-009	12/16/2016 13:52	50.8	41.4	0.0	7.8	122.6		18	18	0.0	0.0	-18.2
GEW-009	12/21/2016 9:04	43.6	38.1	0.0	18.3	117.9		20	17	-0.6	-0.5	-17.9
GEW-009	12/28/2016 10:54	42.9	36.6	0.1	20.4	116.5		25	28	-0.5	-0.5	-18.7
GEW-009	12/28/2016 10:56	41.5	38.2	0.0	20.3	116.3		34	34	-0.5	-0.5	-18.7
GEW-010	12/9/2016 8:42	43.2	47.0	0.7	9.1	49.0		5	2	-14.3	-14.3	-19.6
GEW-010	12/9/2016 8:52	42.6	46.4	0.8	10.2	49.2		2	2	-14.3	-14.3	-19.1
GEW-010	12/14/2016 15:21	42.5	48.6	0.8	8.1	51.8		2	0	-13.8	-13.8	-18.4
GEW-010	12/16/2016 14:28	39.6	49.3	0.8	10.3	38.9		5	4	-10.0	-10.0	-18.7
GEW-010	12/21/2016 14:47	39.8	55.5	0.2	4.5	61.4		3	3	-3.7	-3.7	-18.0
GEW-010	12/27/2016 14:30	48.1	49.8	0.2	1.9	63.6		1	2	-3.8	-3.8	-18.1
GEW-013A	12/28/2016 9:54	14.7	36.6	7.2	41.5	118.0		NFD		-7.8	-7.8	-15.5
GEW-013A	12/28/2016 9:55	15.1	35.4	7.3	42.2	117.8		NFD		-8.5	-8.3	-16.6
GEW-015	12/6/2016 9:13	5.7	42.1	4.0	48.2	181.5		NFD		-4.5	-4.5	-11.8
GEW-015	12/6/2016 9:15	5.7	45.7	3.7	44.9	181.7		NFD		-4.6	-4.6	-11.9
GEW-016R	12/6/2016 9:19	5.6	48.8	1.3	44.3	188.3		NFD		-18.3	-18.3	-18.1
GEW-016R	12/6/2016 9:20	5.7	52.4	1.2	40.7	188.2		NFD		-18.9	-18.8	-18.5
GEW-018B	12/29/2016 13:55	2.0	35.7	0.0	62.3	190.2		NFD		-7.0	-6.8	-7.2
GEW-018B	12/29/2016 13:55	1.7	51.7	0.0	46.6	190.2		NFD		-7.0	-7.1	-6.7
GEW-038	12/9/2016 11:08	9.8	44.0	4.2	42.0	44.6		9	4	-8.6	-8.6	-10.5
GEW-038	12/9/2016 11:17	9.3	45.9	4.2	40.6	46.5		7	11	-8.9	-8.9	-10.0
GEW-038	12/14/2016 12:17	11.4	43.6	3.5	41.5	35.3		3	3	-8.0	-8.0	-9.0
GEW-038	12/16/2016 14:18	9.5	45.9	3.9	40.7	28.8		12	6	-7.1	-7.1	-10.2
GEW-038	12/21/2016 14:16	9.9	46.6	3.8	39.7	57.3		1	2	-4.8	-4.8	-7.5
GEW-038	12/27/2016 13:44	12.1	41.5	4.4	42.0	58.5		2	2	-4.8	-4.8	-7.7
GEW-039	12/8/2016 14:25	45.3	50.5	0.0	4.2	95.5		9	13	-0.2	-0.2	-18.4
GEW-039	12/8/2016 14:41	47.9	48.7	0.0	3.4	99.4		4	8	-0.2	-0.2	-19.0
GEW-039	12/14/2016 12:02	49.0	46.0	0.1	4.9	99.2		7	9	-0.2	-0.2	-15.3
GEW-039	12/21/2016 14:00	51.7	43.5	0.0	4.8	105.2		8	9	-0.3	-0.3	-17.6
GEW-039	12/27/2016 13:38	52.3	39.4	0.1	8.2	102.4		8	15	-0.2	-0.2	-17.4
GEW-040	12/7/2016 8:24	57.0	41.5	0.1	1.4	76.6		10	9	-0.4	-0.4	-13.3
GEW-040	12/7/2016 8:33	58.1	39.8	0.1	2.0	76.8		41	41	-0.3	-0.3	-14.2
GEW-040	12/16/2016 8:57	53.7	43.9	0.0	2.4	76.1		11	14	-0.4	-0.4	-13.5
GEW-040	12/21/2016 9:09	56.4	38.6	0.0	5.0	79.6		8	9	-0.4	-0.4	-13.3
GEW-040	12/28/2016 8:48	57.6	39.4	0.0	3.0	78.9		36	36	-0.2	-0.2	-7.8
GEW-041R	12/7/2016 8:43	52.1	37.1	0.9	9.9	87.3		0	0	-0.4	-0.4	-10.2
GEW-041R	12/16/2016 9:02	54.3	38.3	0.0	7.4	25.6		87	87	0.6	0.6	1.9
GEW-041R	12/16/2016 9:03	51.9	41.7	0.0	6.4	25.6		73	72	0.5	0.5	1.7
GEW-041R	12/21/2016 9:12	53.5	39.4	0.0	7.1	43.4		9	10	0.5	0.5	2.3
GEW-041R	12/21/2016 9:14	52.2	41.8	0.0	6.0	43.6		7	8	0.5	0.5	2.4
GEW-041R	12/28/2016 8:52	56.6	40.2	0.0	3.2	47.7		0	0	0.1	0.1	-4.5

December 2016 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_2O		
GEW-041R	12/28/2016 8:55	57.1	39.4	0.0	3.5	48.7		4	3	0.2	0.2	-6.6
GEW-042R	12/7/2016 8:49	55.7	38.3	0.4	5.6	82.1		32	32	-1.3	-1.3	-12.1
GEW-042R	12/7/2016 8:58	56.5	38.3	0.5	4.7	79.2		32	33	-1.1	-1.1	-13.5
GEW-042R	12/16/2016 9:08	56.2	40.9	0.0	2.9	29.5		0	0	0.8	0.8	2.9
GEW-042R	12/16/2016 9:11	56.4	40.7	0.0	2.9	29.6		0	0	0.8	0.7	2.6
GEW-042R	12/21/2016 9:17	56.9	41.3	0.0	1.8	45.3		8	7	0.7	0.7	0.7
GEW-042R	12/21/2016 9:18	57.4	41.0	0.0	1.6	46.1		8	7	0.7	0.7	0.7
GEW-042R	12/22/2016 8:35	58.1	38.6	0.0	3.3	75.1		11	5	-2.1	-2.1	-12.9
GEW-042R	12/22/2016 8:37	57.5	39.2	0.0	3.3	75.2		0	14	-2.1	-2.1	-12.8
GEW-042R	12/28/2016 8:58	57.6	38.8	0.0	3.6	73.4		31	31	-0.7	-0.7	-9.1
GEW-042R	12/28/2016 9:00	57.2	39.2	0.0	3.6	74.8		0	0	-0.8	-0.8	-8.1
GEW-043R	12/7/2016 9:18	54.5	38.5	0.6	6.4	115.5		41	41	-0.8	-0.8	-14.2
GEW-043R	12/7/2016 9:20	53.2	39.0	0.9	6.9	112.7		40	39	-0.7	-0.7	-13.5
GEW-043R	12/16/2016 9:17	51.0	38.7	0.1	10.2	116.0		27	26	-1.3	-1.4	-14.4
GEW-043R	12/16/2016 9:18	50.3	39.3	0.1	10.3	115.8		26	26	-1.3	-1.3	-13.2
GEW-043R	12/21/2016 9:22	52.8	39.7	0.0	7.5	118.1		24	24	-1.6	-1.6	-13.4
GEW-043R	12/21/2016 9:24	52.0	39.3	0.1	8.6	117.9		24	27	-1.5	-1.5	-13.9
GEW-043R	12/28/2016 9:05	47.8	36.6	0.3	15.3	115.2		21	23	-1.9	-1.9	-13.2
GEW-043R	12/28/2016 9:07	46.8	37.8	0.5	14.9	114.3		31	31	-1.5	-1.5	-13.5
GEW-044	12/7/2016 16:29	59.0	36.0	0.4	4.6	77.4		10	10	-1.7	-1.7	-13.2
GEW-044	12/16/2016 9:23	52.3	38.7	0.2	8.8	71.4		3	5	-0.8	-0.8	-13.3
GEW-044	12/16/2016 9:25	52.0	39.1	0.2	8.7	70.9		32	32	-0.9	-0.9	-13.3
GEW-044	12/21/2016 9:28	46.6	36.8	0.2	16.4	75.7		39	39	-1.4	-1.4	-13.3
GEW-044	12/21/2016 9:29	46.6	36.6	0.1	16.7	76.2		0	8	-1.3	-1.4	-13.3
GEW-044	12/28/2016 9:11	40.6	33.4	0.3	25.7	78.0		41	41	-1.3	-1.3	-13.3
GEW-044	12/28/2016 9:13	38.9	34.3	0.2	26.6	76.8		5	4	-1.2	-1.2	-13.4
GEW-045R	12/7/2016 9:42	56.3	38.2	0.4	5.1	74.5		17	17	-0.7	-0.7	-13.5
GEW-045R	12/7/2016 9:54	55.1	41.3	0.1	3.5	74.1		9		-0.4		-13.5
GEW-045R	12/29/2016 15:39	47.1	34.1	0.7	18.1	75.2		0	0	-4.4	-4.4	-13.4
GEW-045R	12/29/2016 15:41	46.9	33.9	0.5	18.7	74.5		6	6	-2.8	-2.8	-13.3
GEW-046R	12/7/2016 10:02	55.9	40.6	0.0	3.5	94.0		26	26	-0.4	-0.4	-13.3
GEW-046R	12/7/2016 10:10	56.8	40.8	0.1	2.3	93.9		0	0	-0.4	-0.4	-13.3
GEW-046R	12/16/2016 9:40	56.8	39.3	0.0	3.9	89.1		0	0	-0.2	-0.2	-13.5
GEW-046R	12/21/2016 9:40	57.3	40.3	0.0	2.4	91.7		9	7	-0.2	-0.2	-13.0
GEW-046R	12/28/2016 9:28	59.1	37.8	0.0	3.1	93.0		17	17	-0.2	-0.2	-12.7
GEW-047R	12/7/2016 11:14	49.0	38.4	0.0	12.6	101.6		34	34	-0.2	-0.2	-13.2
GEW-047R	12/7/2016 11:21	50.0	38.7	0.0	11.3	101.3		0	0	-0.2	-0.2	-13.3
GEW-047R	12/16/2016 10:22	51.7	40.8	0.0	7.5	114.0		35	35	-0.1	-0.1	-13.1
GEW-047R	12/21/2016 10:17	38.0	33.5	0.0	28.5	110.7		21	15	-0.8	-0.9	-12.8
GEW-047R	12/28/2016 10:05	34.7	34.3	0.0	31.0	109.9		32	32	-0.8	-0.8	-12.9
GEW-047R	12/28/2016 10:06	33.7	33.6	0.0	32.7	109.5		30	32	-0.7	-0.7	-13.2
GEW-048	12/7/2016 11:41	53.7	38.7	0.0	7.6	98.7		18	11	-0.3	-0.4	-7.5
GEW-048	12/7/2016 11:48	54.6	38.6	0.0	6.8	98.7		28	31	-0.3	-0.3	-8.1

December 2016 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_2O		
GEW-048	12/16/2016 10:31	53.6	38.4	0.0	8.0	98.7		13	14	0.0	0.0	-10.2
GEW-048	12/21/2016 10:24	51.1	36.9	0.0	12.0	100.8		22	25	-0.9	-0.9	-10.1
GEW-048	12/28/2016 10:16	49.8	35.5	0.1	14.6	99.8		37	38	-0.7	-0.7	-7.0
GEW-048	12/28/2016 10:17	48.3	36.8	0.0	14.9	99.4		38	41	-0.7	-0.7	-8.8
GEW-049	12/7/2016 14:08	46.3	35.7	0.0	18.0	103.3		17	18	-0.4	-0.4	-13.3
GEW-049	12/7/2016 14:16	46.9	36.1	0.1	16.9	103.0		42	41	-0.4	-0.4	-13.2
GEW-049	12/16/2016 11:19	54.9	38.1	0.0	7.0	105.1		33	33	0.0	-0.1	-12.5
GEW-049	12/21/2016 8:08	35.6	34.9	0.9	28.6	104.0		26	24	-1.5	-1.5	-12.9
GEW-049	12/21/2016 8:09	37.0	33.8	0.8	28.4	103.5		19	19	-1.4	-1.4	-13.6
GEW-049	12/28/2016 8:18	37.8	34.3	0.5	27.4	104.8		30	30	-1.0	-1.0	-13.9
GEW-049	12/28/2016 8:20	39.8	35.0	0.3	24.9	104.3		28	26	-0.9	-0.9	-13.5
GEW-050	12/7/2016 13:55	50.6	35.8	0.0	13.6	104.2		0	0	-0.6	-0.7	-7.0
GEW-050	12/16/2016 11:24	51.3	38.0	0.0	10.7	105.0		37	36	-0.1	-0.2	-10.2
GEW-050	12/21/2016 10:34	44.6	31.7	0.0	23.7	106.7		23	21	-1.2	-1.3	-12.4
GEW-050	12/21/2016 10:36	43.6	35.3	0.0	21.1	106.6		20	24	-1.1	-1.1	-5.5
GEW-050	12/28/2016 10:31	39.6	32.8	0.0	27.6	105.2		18	23	-1.0	-0.9	-6.4
GEW-050	12/28/2016 10:32	39.1	33.8	0.0	27.1	105.0		37	37	-0.9	-0.9	-10.4
GEW-051	12/7/2016 14:23	55.2	39.4	0.0	5.4	119.4		17	15	-0.4	-0.4	-13.0
GEW-051	12/16/2016 11:33	55.0	39.6	0.0	5.4	121.5		0	0	0.6	0.6	-13.0
GEW-051	12/16/2016 11:35	53.9	40.8	0.0	5.3	128.6		25	28	-0.2	-0.2	-11.9
GEW-051	12/21/2016 8:26	56.1	38.4	0.0	5.5	122.9		34	32	-2.3	-2.2	-12.3
GEW-051	12/21/2016 8:28	54.2	38.7	0.0	7.1	122.3		23	24	-1.9	-1.9	-12.7
GEW-051	12/28/2016 8:25	52.7	40.7	0.0	6.6	121.5		24	16	-1.5	-1.4	-12.9
GEW-051	12/28/2016 8:27	52.4	39.8	0.0	7.8	120.4		17	9	-1.3	-1.3	-13.2
GEW-052	12/7/2016 13:59	46.3	34.4	0.0	19.3	108.2		34	35	-0.3	-0.3	-13.0
GEW-052	12/16/2016 11:29	51.7	39.5	0.0	8.8	109.5		23	23	0.0	0.0	-12.4
GEW-052	12/21/2016 10:39	35.0	34.5	0.0	30.5	110.7		24	25	-0.8	-0.8	-12.9
GEW-052	12/21/2016 10:40	31.4	32.6	0.0	36.0	110.7		23	25	-0.8	-0.8	-13.1
GEW-052	12/28/2016 10:36	27.5	30.4	0.0	42.1	108.9		0	8	-0.8	-0.8	-12.9
GEW-052	12/28/2016 10:37	25.9	29.8	0.0	44.3	108.8		26	28	-0.7	-0.7	-13.5
GEW-053	12/7/2016 14:33	49.7	38.8	0.0	11.5	133.8		53	51	-3.3	-3.1	-13.3
GEW-053	12/7/2016 14:40	49.9	39.8	0.1	10.2	133.5		49	49	-3.5	-3.5	-12.2
GEW-053	12/16/2016 13:31	53.1	34.6	0.0	12.3	132.8		55	57	-3.0	-3.0	-12.6
GEW-053	12/16/2016 13:33	49.3	38.8	0.0	11.9	133.2		58	57	-3.2	-3.1	-13.3
GEW-053	12/21/2016 8:31	49.7	37.1	0.0	13.2	132.6		53	55	-4.3	-4.3	-13.5
GEW-053	12/21/2016 8:33	48.5	39.3	0.0	12.2	132.9		53	55	-4.3	-4.4	-13.7
GEW-053	12/28/2016 8:31	46.5	36.1	0.0	17.4	130.5		50	51	-4.4	-4.5	-13.7
GEW-054	12/7/2016 14:49	52.1	39.4	0.1	8.4	137.1		54	52	-5.6	-5.6	-12.1
GEW-054	12/7/2016 14:56	51.9	39.2	0.3	8.6	137.0		43	50	-5.6	-5.6	-11.6
GEW-054	12/16/2016 13:39	51.9	37.0	0.0	11.1	139.9		0	0	2.3	2.2	2.3
GEW-054	12/16/2016 13:40	53.0	41.1	0.0	5.9	139.6		0	0	2.3	2.4	2.3
GEW-054	12/21/2016 8:38	52.7	40.0	0.0	7.3	87.2		0	0	2.4	2.4	2.4
GEW-054	12/21/2016 8:39	51.9	42.3	0.0	5.8	86.6		0	0	2.4	2.4	2.4

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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_2O		
GEW-054	12/22/2016 8:23	52.8	39.8	0.0	7.4	148.0		0	0	-6.6	-6.9	-10.8
GEW-054	12/22/2016 8:25	52.3	41.1	0.0	6.6	148.0		0	0	-6.3	-6.1	-8.7
GEW-054	12/28/2016 8:36	53.0	39.3	0.0	7.7	144.0		47	43	-3.0	-3.1	-4.8
GEW-054	12/28/2016 8:38	51.6	40.3	0.0	8.1	144.0		49	66	-3.5	-4.2	-5.5
GEW-055	12/7/2016 15:07	53.1	41.4	0.1	5.4	118.6		30	30	-0.4	-0.4	-10.3
GEW-055	12/7/2016 15:26	52.8	41.4	0.4	5.4	118.4		9	11	-0.6	-0.6	-10.5
GEW-055	12/16/2016 13:45	52.4	41.6	0.0	6.0	122.6		11	9	0.2	0.2	-7.8
GEW-055	12/16/2016 13:46	52.3	42.0	0.0	5.7	123.0		12	8	0.1	0.2	-8.0
GEW-055	12/21/2016 8:43	52.7	40.7	0.0	6.6	123.9		11	14	-0.8	-0.8	-9.0
GEW-055	12/21/2016 8:45	53.1	41.1	0.0	5.8	124.5		14	13	-0.7	-0.7	-8.7
GEW-055	12/28/2016 8:44	55.0	40.4	0.0	4.6	114.5		7	0	-0.6	-0.6	-2.6
GEW-056R	12/9/2016 9:35	13.7	50.0	0.0	36.3	84.6		2	0	-0.5	-0.5	-19.0
GEW-056R	12/9/2016 9:42	14.5	47.0	0.0	38.5	87.2		2	4	-0.5	-0.5	-19.1
GEW-056R	12/14/2016 15:32	13.9	49.3	0.0	36.8	79.7		3	2	-0.4	-0.4	-18.6
GEW-056R	12/21/2016 14:42	11.5	50.5	0.0	38.0	101.8		2	3	-0.2	-0.2	-17.8
GEW-056R	12/27/2016 14:38	11.6	55.2	0.0	33.2	96.9		3	1	-0.3	-0.3	-18.0
GEW-057B	12/23/2016 11:13	6.2	40.0	3.3	50.5	39.6		20	13	-10.8	-9.9	-10.7
GEW-057R	12/23/2016 11:16	0.9	38.9	2.2	58.0	40.0		6	4	-7.9	-8.1	-10.3
GEW-058	12/23/2016 11:20	8.0	39.0	4.3	48.7	65.4		11	11	-18.4	-18.1	-18.7
GEW-058A	12/23/2016 11:23	15.6	35.7	5.8	42.9	94.6		6	6	-11.8	-11.8	-15.4
GEW-058A	12/23/2016 11:25	17.2	32.1	5.8	44.9	92.9		6	5	-11.8	-11.8	-16.5
GEW-059R	12/29/2016 8:34	0.9	47.8	0.0	51.3	173.1		7	7	6.0	5.8	5.8
GEW-059R	12/29/2016 8:35	0.8	51.8	0.0	47.4	171.7		2	6	5.8	6.1	5.8
GEW-077	12/29/2016 8:25	0.5	45.6	0.5	53.4	83.4		NFD		-16.0	-15.9	-15.3
GEW-078R	12/31/2016 8:36	11.9	47.0	0.0	41.1	178.6		19	12	-16.6	-16.0	-16.4
GEW-078R	12/31/2016 8:37	10.4	51.1	0.0	38.5	178.6		17	16	-16.8	-16.4	-16.6
GEW-081	12/31/2016 8:45	0.9	43.3	0.0	55.8	193.0		NR	NR	1.4	1.4	1.4
GEW-081	12/31/2016 8:46	0.8	59.8	0.0	39.4	193.0		NR	NR	1.4	1.3	1.4
GEW-082R	12/28/2016 10:49	3.7	55.0	0.1	41.2	187.7		4	6	-6.3	-6.3	-6.3
GEW-082R	12/28/2016 10:50	3.7	54.7	0.0	41.6	187.4		5	6	-6.3	-6.3	-6.3
GEW-086	12/29/2016 9:07	8.1	19.1	11.6	61.2	71.4		35	29	-4.9	-5.2	-20.3
GEW-086	12/29/2016 9:08	8.1	24.0	11.4	56.5	71.4		19	40	-5.0	-4.4	-19.5
GEW-087	12/29/2016 9:19	2.6	47.2	0.6	49.6	188.8		NR	NR	-16.9	-16.9	-16.1
GEW-087	12/29/2016 9:19	2.3	60.7	3.0	34.0	191.2		NR	NR	-16.9	-16.3	-17.3
GEW-088	12/29/2016 9:13	10.4	30.6	8.8	50.2	110.6		61	59	-11.0	-11.0	-19.0
GEW-088	12/29/2016 9:15	10.2	33.6	8.7	47.5	110.6		25	25	-2.8	-2.9	-19.0
GEW-090	12/29/2016 15:21	10.2	48.3	0.0	41.5	154.5		10	12	-18.0	-18.6	-17.7
GEW-090	12/29/2016 15:22	12.1	49.2	0.0	38.7	152.6		13	16	-17.9	-18.6	-17.7
GEW-091	12/29/2016 15:16	5.7	56.0	0.0	38.3	192.6		14	16	-16.8	-15.9	-16.7
GEW-091	12/29/2016 15:17	4.1	58.5	0.0	37.4	193.2		19	26	-16.2	-16.8	-16.4
GEW-101	12/22/2016 13:29	7.6	42.0	8.9	41.5	69.1		35	60	-2.0	-2.6	-6.8
GEW-101	12/22/2016 13:30	7.5	42.2	9.0	41.3	68.8		43	23	-2.4	-1.9	-9.3
GEW-102	12/22/2016 13:43	7.2	51.3	0.3	41.2	192.3		NFD		-15.3	-15.7	-15.7

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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_2O		
GEW-102	12/22/2016 13:44	5.0	55.6	0.1	39.3	192.9		NFD		-14.3	-13.3	-14.3
GEW-105	12/23/2016 11:01	12.9	36.9	7.3	42.9	141.8		56	68	-20.2	-20.6	-13.3
GEW-106	12/29/2016 8:49	8.8	54.4	1.7	35.1	88.0		22	1	-16.7	-14.2	-19.8
GEW-107	12/29/2016 8:39	0.9	52.3	0.0	46.8	46.9		5	6	2.7	2.6	2.7
GEW-108	12/29/2016 8:53	0.1	10.5	21.0	68.4	44.5		4	5	9.1	9.1	8.8
GEW-108	12/29/2016 8:54	0.0	4.8	21.7	73.5	44.5		3	5	9.1	9.1	8.8
GEW-109	12/8/2016 14:09	24.6	46.9	0.0	28.5	66.1		3	6	-16.2	-16.2	-19.4
GEW-109	12/8/2016 14:20	23.9	48.6	0.0	27.5	65.5		4	4	-16.2	-16.2	-18.2
GEW-109	12/14/2016 12:05	27.2	39.8	0.0	33.0	72.0		4	3	-13.9	-14.0	-16.8
GEW-109	12/16/2016 14:23	24.3	43.1	0.0	32.6	44.3		4	4	-12.4	-12.3	-15.7
GEW-109	12/21/2016 14:12	23.2	43.1	0.0	33.7	78.2		2	5	-13.5	-13.5	-17.9
GEW-109	12/27/2016 13:41	23.2	44.2	0.0	32.6	78.5		4	2	-13.6	-13.7	-18.3
GEW-110	12/9/2016 9:04	2.1	27.9	11.5	58.5	37.5		4	4	-0.1	0.0	-19.2
GEW-110	12/9/2016 9:11	2.7	24.6	11.8	60.9	38.1		2	2	-0.1	-0.1	-19.1
GEW-110	12/14/2016 15:26	2.9	28.1	12.2	56.8	36.6		3	3	-0.1	-0.1	-18.4
GEW-110	12/14/2016 15:28	1.4	28.5	12.3	57.8	36.5		2	5	-0.1	-0.1	-18.3
GEW-110	12/21/2016 14:51	8.9	38.9	5.5	46.7	68.8		1	3	-0.1	-0.1	-17.9
GEW-110	12/21/2016 14:54	6.4	42.3	5.9	45.4	68.6		1	0	-0.1	-0.1	-17.8
GEW-110	12/27/2016 14:34	8.4	37.7	6.5	47.4	74.6		1	2	0.0	0.0	-17.8
GEW-110	12/27/2016 14:35	6.1	39.3	6.6	48.0	74.5		2	1	0.0	0.0	-17.6
GEW-113	12/6/2016 9:28	10.4	50.1	0.5	39.0	154.0		NFD		-4.4	-4.3	-18.2
GEW-113	12/6/2016 9:30	10.0	54.3	0.3	35.4	155.2		NFD		-4.4	-4.4	-18.6
GEW-117	12/9/2016 14:46	5.7	46.6	5.5	42.2	42.7		NFD		-18.7	-18.1	-18.7
GEW-117	12/9/2016 14:47	5.7	45.0	4.8	44.5	41.8		NFD		-17.5	-17.7	-17.6
GEW-118	12/9/2016 14:51	3.3	47.3	3.5	45.9	173.6		83	94	-8.0	-8.8	-15.9
GEW-118	12/9/2016 14:53	2.9	48.2	3.5	45.4	173.6		87	89	-8.5	-8.9	-16.7
GEW-120	12/9/2016 14:58	24.4	54.2	1.8	19.6	34.9		1	9	-14.3	-14.6	-14.3
GEW-120	12/14/2016 8:37	42.2	46.9	0.0	10.9	30.2		22	18	-11.7	-13.6	-12.4
GEW-120	12/29/2016 8:35	21.0	43.7	7.6	27.7	44.6		3	11	-11.0	-11.0	-11.5
GEW-120	12/29/2016 8:42	17.7	37.3	9.8	35.2	45.2		6	3	-11.3	-11.0	-11.6
GEW-121	12/9/2016 15:01	13.0	52.2	0.0	34.8	152.9		16	24	-15.6	-16.0	-15.2
GEW-121	12/9/2016 15:03	11.1	56.4	0.0	32.5	153.1		32	28	-17.0	-17.7	-18.2
GEW-121	12/14/2016 8:40	13.4	52.0	0.0	34.6	174.2		35	30	-15.7	-15.9	-16.8
GEW-121	12/14/2016 8:41	11.7	54.7	0.0	33.6	174.0		29	6	-16.2	-14.5	-17.1
GEW-121	12/28/2016 16:19	10.9	51.8	0.3	37.0	163.8		28	22	-14.6	-14.3	-16.0
GEW-121	12/28/2016 16:21	10.9	54.9	0.0	34.2	163.8		24	32	-15.3	-13.5	-15.7
GEW-122	12/14/2016 8:55	14.2	56.6	0.0	29.2	177.5		26	23	-16.2	-16.2	-16.6
GEW-122	12/14/2016 8:56	18.0	50.9	0.0	31.1	177.5		25	23	-16.2	-16.2	-17.1
GEW-122	12/28/2016 15:47	19.9	49.6	0.0	30.5	174.2		27	24	-14.0	-13.8	-14.9
GEW-122	12/28/2016 15:49	20.7	50.3	0.0	29.0	174.3		26	24	-14.3	-14.3	-14.7
GEW-123	12/9/2016 15:06	6.9	52.2	0.5	40.4	40.1		6	7	-18.7	-18.1	-18.7
GEW-123	12/14/2016 8:43	2.2	40.4	12.1	45.3	40.5		4	1	-17.2	-17.2	-17.2
GEW-123	12/14/2016 8:45	0.3	27.5	15.8	56.4	41.5		6	7	-17.2	-17.2	-17.1

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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_2O		
GEW-123	12/28/2016 16:06	1.8	29.5	18.1	50.6	56.5		8	3	-15.7	-16.2	-15.7
GEW-123	12/28/2016 16:09	0.1	7.0	21.2	71.7	55.5		1	7	-15.3	-15.7	-15.7
GEW-124	12/14/2016 8:50	2.9	58.3	0.0	38.8	32.4		7	7	13.2	13.7	-16.6
GEW-124	12/14/2016 8:52	3.7	60.4	0.0	35.9	35.5		19	2	6.8	-12.3	-16.5
GEW-125	12/14/2016 8:59	5.7	46.0	0.0	48.3	191.6		30	30	-17.2	-16.7	-17.1
GEW-125	12/14/2016 9:00	2.2	58.2	0.0	39.6	191.6		22	23	-16.7	-16.7	-17.3
GEW-125	12/28/2016 15:27	2.6	57.1	0.0	40.3	180.3		27	10	-14.8	-15.2	-14.9
GEW-125	12/28/2016 15:28	2.4	58.7	0.0	38.9	180.8		18	17	-15.3	-15.1	-15.4
GEW-126	12/14/2016 9:03	18.8	57.2	0.0	24.0	163.8		5	8	-16.2	-15.9	-17.8
GEW-126	12/14/2016 9:03	19.3	56.0	0.0	24.7	164.7		6	5	-16.2	-16.2	-17.2
GEW-126	12/28/2016 15:16	17.0	50.4	0.2	32.4	157.5		4	9	-12.9	-12.9	-14.3
GEW-126	12/28/2016 15:18	22.8	52.2	0.0	25.0	158.3		9	7	-14.8	-14.3	-14.9
GEW-127	12/14/2016 9:09	6.1	53.7	1.8	38.4	179.2		17	29	-17.2	-16.7	-15.8
GEW-127	12/14/2016 9:10	4.8	57.9	1.6	35.7	179.2		29	25	-16.7	-16.8	-17.4
GEW-127	12/28/2016 14:53	4.6	55.6	2.3	37.5	173.1		27	17	-12.9	-12.4	-13.3
GEW-127	12/28/2016 14:55	4.4	57.5	2.3	35.8	172.7		29	25	-14.5	-13.5	-14.9
GEW-128	12/14/2016 9:12	6.9	61.6	0.0	31.5	174.2		23	22	-14.2	-14.2	-16.9
GEW-128	12/14/2016 9:13	7.3	63.9	0.0	28.8	174.2		20	25	-13.8	-13.9	-17.1
GEW-128	12/28/2016 14:44	7.0	56.4	0.1	36.5	166.4		24	26	-12.3	-12.3	-15.5
GEW-128	12/28/2016 14:45	6.9	62.2	0.0	30.9	166.9		26	26	-13.8	-13.8	-15.6
GEW-129	12/14/2016 9:15	3.3	59.2	0.0	37.5	170.5		21	27	-16.7	-16.7	-16.5
GEW-129	12/14/2016 9:16	2.4	63.6	0.0	34.0	170.6		14	23	-16.8	-17.4	-17.5
GEW-129	12/28/2016 14:35	1.2	39.3	8.4	51.1	53.7		12	8	-15.3	-15.3	-15.4
GEW-129	12/28/2016 14:41	1.6	46.1	4.8	47.5	54.9		3	4	-14.8	-14.9	-15.7
GEW-130	12/14/2016 9:20	0.6	28.0	2.3	69.1	185.7		65	59	-14.5	-14.5	-16.3
GEW-130	12/14/2016 9:21	4.8	55.7	1.5	38.0	185.7		36	55	-13.3	-14.8	-14.1
GEW-130	12/28/2016 14:59	0.3	56.2	0.0	43.5	189.6		41	24	1.0	1.2	0.4
GEW-130	12/28/2016 15:01	0.2	57.9	0.0	41.9	190.2		36	27	1.1	1.1	0.4
GEW-131	12/14/2016 9:24	5.0	50.6	0.2	44.2	40.8		NFD		0.2	0.2	0.1
GEW-131	12/14/2016 9:25	5.5	50.4	0.1	44.0	42.8		NFD		0.2	0.2	0.0
GEW-131	12/28/2016 15:06	11.2	49.8	0.0	39.0	55.9		NFD		1.3	1.3	1.5
GEW-131	12/28/2016 15:07	11.4	49.5	0.0	39.1	55.6		NFD		1.3	1.3	1.4
GEW-132	12/14/2016 9:28	10.8	42.5	3.5	43.2	157.7		12	12	-2.0	-2.0	-15.7
GEW-132	12/14/2016 9:29	11.3	39.8	3.5	45.4	158.3		11	10	-2.0	-2.0	-17.7
GEW-132	12/29/2016 8:29	7.8	30.1	9.1	53.0	152.1		3	2	-1.9	-1.8	-13.3
GEW-132	12/29/2016 8:31	7.5	32.3	8.9	51.3	147.0		13	12	-0.9	-0.9	-15.8
GEW-133	12/14/2016 9:32	3.4	29.8	17.9	48.9	35.9		3	4	-1.8	-1.9	-17.4
GEW-133	12/14/2016 9:33	0.2	9.0	20.5	70.3	38.4		2	6	-3.5	-3.5	-17.2
GEW-133	12/29/2016 8:46	0.9	16.9	21.1	61.1	45.9		6	4	-4.0	-4.0	-17.8
GEW-133	12/29/2016 8:48	0.1	4.8	22.6	72.5	46.0		6	3	-4.9	-4.9	-17.4
GEW-134	12/14/2016 9:36	10.6	39.9	5.0	44.5	120.5		18	17	-7.4	-7.4	-18.5
GEW-134	12/29/2016 8:51	11.9	39.3	5.7	43.1	101.8		12	13	-4.2	-4.2	-17.8
GEW-134	12/29/2016 8:53	11.5	40.8	5.5	42.2	90.5		3	4	-1.0	-1.0	-17.4

December 2016 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_2O		
GEW-135	12/14/2016 9:38	1.4	43.8	3.3	51.5	40.8		10	6	-17.7	-17.6	-17.5
GEW-135	12/29/2016 8:59	2.1	24.2	19.3	54.4	47.0		7	4	-17.0	-17.2	-17.5
GEW-135	12/29/2016 9:00	0.1	5.5	22.8	71.6	47.3		4	4	-17.2	-17.2	-17.5
GEW-136	12/14/2016 9:41	3.3	37.4	8.6	50.7	103.8		6	12	-0.8	-0.8	-14.6
GEW-136	12/14/2016 9:42	3.6	30.3	9.0	57.1	104.5		9	9	-0.8	-0.8	-15.4
GEW-136	12/29/2016 9:11	3.8	30.7	7.9	57.6	86.8		9	3	-0.9	-0.8	-13.6
GEW-136	12/29/2016 9:12	3.8	29.3	8.1	58.8	87.0		4	11	-0.8	-0.8	-13.0
GEW-137	12/14/2016 9:44	12.7	31.6	1.7	54.0	49.8		4	3	-14.7	-14.8	-17.0
GEW-137	12/29/2016 9:16	12.1	31.7	1.6	54.6	53.9		3	5	-11.5	-11.4	-16.8
GEW-137	12/29/2016 9:17	13.3	30.1	1.5	55.1	55.2		10	6	-16.3	-16.3	-16.9
GEW-138	12/14/2016 9:46	6.4	26.8	7.5	59.3	149.5		35	25	-3.7	-5.5	-17.0
GEW-138	12/14/2016 9:47	3.7	25.0	7.8	63.5	149.8		37	28	-4.9	-4.3	-17.1
GEW-138	12/29/2016 9:20	4.8	24.3	8.2	62.7	113.3		18	28	-4.9	-5.9	-18.3
GEW-138	12/29/2016 9:22	3.2	21.9	8.5	66.4	99.9		7	4	-0.2	-0.2	-17.5
GEW-139	12/14/2016 9:53	3.6	37.9	5.9	52.6	164.3		28	25	-9.4	-9.9	-15.7
GEW-139	12/14/2016 9:54	3.2	41.6	5.7	49.5	164.3		31	27	-9.7	-9.9	-15.9
GEW-139	12/30/2016 10:28	4.3	44.4	3.8	47.5	125.8		21	24	-10.1	-10.7	-14.2
GEW-140	12/14/2016 9:50	5.0	24.9	10.1	60.0	135.3		18	20	-7.4	-7.4	-17.1
GEW-140	12/14/2016 9:51	5.7	30.4	9.9	54.0	135.0		16	18	-7.8	-7.8	-17.1
GEW-140	12/29/2016 9:32	6.1	25.5	11.5	56.9	116.6		19	23	-5.7	-5.9	-16.9
GEW-140	12/29/2016 9:34	5.7	28.5	11.3	54.5	111.0		17	13	-2.7	-2.7	-17.8
GEW-140	12/30/2016 9:46	0.6	55.5	1.0	42.9	46.2		4	14	-11.5	-11.8	-11.5
GEW-141	12/14/2016 9:57	2.0	45.6	0.1	52.3	175.3		21	20	-5.5	-5.5	-12.5
GEW-141	12/14/2016 9:58	2.7	62.4	0.0	34.9	176.0		21	22	-5.5	-5.5	-12.7
GEW-142	12/14/2016 12:21	0.1	17.4	16.4	66.1	36.0		5	7	-10.8	-10.8	-10.5
GEW-142	12/14/2016 12:22	0.1	23.2	15.3	61.4	36.8		9	4	-9.4	-9.4	-9.4
GEW-143	12/14/2016 10:00	0.7	40.0	14.1	45.2	43.0		15	14	-13.8	-13.8	-17.1
GEW-143	12/14/2016 10:01	0.2	22.7	13.2	63.9	43.8		1	7	-16.7	-16.7	-16.8
GEW-143	12/29/2016 9:43	0.2	33.0	15.9	50.9	47.9		2	3	-11.8	-11.8	-17.7
GEW-143	12/29/2016 9:44	0.1	19.1	16.7	64.1	48.5		6	5	-12.1	-11.9	-17.7
GEW-144	12/14/2016 10:03	0.0	21.5	12.3	66.2	57.5		9	10	-15.7	-13.3	-15.4
GEW-144	12/14/2016 10:05	1.2	44.2	5.1	49.5	62.1		15	27	-12.8	-13.7	-13.5
GEW-144	12/29/2016 9:48	3.1	33.5	11.6	51.8	55.2		6	8	-10.8	-10.5	-11.0
GEW-144	12/29/2016 9:50	3.3	33.7	11.5	51.5	56.0		15	16	-11.9	-12.1	-12.3
GEW-145	12/14/2016 10:08	1.4	55.0	0.4	43.2	148.0		17	9	-11.3	-11.8	-11.0
GEW-145	12/14/2016 10:08	1.4	54.4	0.2	44.0	149.9		11	9	-18.6	-18.6	-18.5
GEW-145	12/29/2016 10:58	1.8	56.7	0.1	41.4	86.9		3	7	-11.9	-12.0	-12.6
GEW-145	12/29/2016 10:59	1.6	57.5	0.0	40.9	86.0		7	7	-12.0	-12.0	-12.6
GEW-146	12/14/2016 10:20	1.3	32.0	16.8	49.9	73.6		4	13	-0.2	-0.2	-17.3
GEW-146	12/14/2016 10:21	1.8	10.5	19.3	68.4	73.4		12	10	-0.2	-0.2	-17.5
GEW-146	12/29/2016 9:56	1.8	21.0	18.2	59.0	68.9		7	14	-0.3	-0.3	-18.5
GEW-146	12/29/2016 9:58	1.7	5.8	20.4	72.1	69.0		12	9	-0.4	-0.3	-18.5
GEW-147	12/14/2016 10:24	5.8	18.9	0.5	74.8	165.6		12	13	-10.8	-10.8	-17.6

December 2016 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_2O		
GEW-147	12/14/2016 10:25	15.6	51.5	0.0	32.9	165.7		13	12	-10.8	-10.8	-17.6
GEW-147	12/29/2016 9:05	13.7	51.3	0.1	34.9	168.5		15	12	-8.9	-8.9	-18.2
GEW-147	12/29/2016 9:07	12.5	53.8	0.0	33.7	169.5		20	21	-14.6	-14.8	-18.0
GEW-148	12/14/2016 10:29	1.0	22.9	19.3	56.8	38.1		11	11	-17.2	-16.4	-17.5
GEW-148	12/14/2016 10:30	0.2	8.6	21.5	69.7	39.8		14	11	-17.6	-17.2	-17.5
GEW-148	12/29/2016 11:15	0.0	0.3	21.1	78.6	52.1		10	10	-16.3	-16.3	-16.5
GEW-148	12/29/2016 11:16	0.0	0.2	21.1	78.7	52.1		18	7	-16.2	-16.2	-17.2
GEW-149	12/14/2016 10:33	10.3	24.3	7.1	58.3	153.5		15	24	-0.7	-0.7	-18.6
GEW-149	12/14/2016 10:34	10.4	33.7	6.5	49.4	153.7		12	22	-0.8	-1.1	-18.9
GEW-149	12/30/2016 9:34	15.0	39.8	3.7	41.5	141.0		23	20	-0.7	-1.1	-18.8
GEW-149	12/30/2016 9:36	14.6	43.1	3.4	38.9	140.6		25	27	-0.4	-0.6	-18.8
GEW-150	12/14/2016 10:54	9.1	31.6	4.1	55.2	171.0		1	5	-0.9	-1.0	-19.6
GEW-150	12/14/2016 10:55	10.4	49.6	3.6	36.4	171.0		6	7	-0.9	-0.9	-18.6
GEW-150	12/30/2016 7:55	9.7	46.9	5.1	38.3	152.9		6	9	-1.0	-1.0	-18.5
GEW-150	12/30/2016 7:57	9.2	48.6	4.7	37.5	148.7		7	6	-0.8	-0.8	-18.7
GEW-151	12/14/2016 10:37	4.8	39.4	0.0	55.8	37.4		16	3	-17.2	-17.6	-17.2
GEW-151	12/30/2016 10:21	2.3	35.2	7.5	55.0	52.3		9	9	-16.5	-16.5	-16.8
GEW-151	12/30/2016 10:22	2.1	46.7	8.6	42.6	52.4		5	9	-16.4	-14.8	-16.8
GEW-152	12/14/2016 10:46	10.5	38.6	15.8	35.1	35.3		9	4	-18.1	-18.1	-17.9
GEW-152	12/14/2016 10:47	1.9	13.7	19.8	64.6	36.4		4	4	-18.7	-18.2	-18.5
GEW-152	12/30/2016 8:50	0.1	4.0	22.7	73.2	45.6		13	11	-11.1	-12.1	-12.0
GEW-152	12/30/2016 8:52	0.0	1.9	23.0	75.1	44.6		2	2	-9.1	-9.1	-13.0
GEW-153	12/14/2016 10:43	25.4	47.5	0.0	27.1	60.0		9	7	1.3	1.3	1.0
GEW-153	12/14/2016 10:44	28.7	48.1	0.0	23.2	58.7		6	4	1.4	1.4	1.0
GEW-153	12/30/2016 8:56	1.1	34.4	0.2	64.3	49.2		9	7	6.5	6.5	5.8
GEW-153	12/30/2016 8:57	0.9	52.1	0.0	47.0	50.7		5	13	6.5	6.3	5.8
GEW-154	12/14/2016 10:40	5.5	43.8	4.4	46.3	34.9		6	12	-17.2	-16.7	-16.2
GEW-154	12/30/2016 9:12	0.3	8.3	21.9	69.5	43.0		10	6	-17.6	-17.9	-18.0
GEW-154	12/30/2016 9:13	0.1	2.7	22.8	74.4	42.4		12	8	-18.2	-17.9	-19.3
GEW-155	12/14/2016 12:17	0.9	5.3	12.2	81.6	116.0		19	28	-2.1	-2.3	-16.8
GEW-155	12/14/2016 12:18	1.2	12.7	11.3	74.8	116.4		6	30	-2.2	-2.1	-16.9
GEW-155	12/29/2016 8:23	2.2	21.1	12.1	64.6	110.2		30	21	-2.0	-2.1	-17.3
GEW-155	12/29/2016 8:24	1.3	14.3	12.7	71.7	106.7		18	14	-0.8	-1.0	-17.5
GEW-156	12/14/2016 10:50	6.9	10.9	14.0	68.2	86.4		4	5	-0.6	-0.6	-18.0
GEW-156	12/14/2016 10:51	8.6	16.7	13.3	61.4	87.0		6	7	-0.6	-0.6	-18.5
GEW-156	12/30/2016 7:48	10.5	30.0	11.4	48.1	77.3		6	7	-0.4	-0.4	-17.7
GEW-156	12/30/2016 7:50	11.4	27.3	11.5	49.8	78.0		8	8	-0.4	-0.4	-18.0
GEW-157	12/14/2016 11:01	0.6	37.4	16.8	45.2	38.3		7	6	-13.2	-13.1	-13.0
GEW-157	12/14/2016 11:02	0.1	12.2	20.8	66.9	40.2		2	13	-13.2	-12.4	-13.1
GEW-157	12/30/2016 8:18	0.6	9.7	20.1	69.6	46.8		8	7	-0.6	-0.4	-0.9
GEW-157	12/30/2016 8:20	0.3	7.7	20.0	72.0	47.3		4	4	-0.7	-0.7	-0.9
GEW-158	12/14/2016 10:58	1.5	50.3	2.0	46.2	39.5		12	13	-18.6	-18.5	-18.3

December 2016 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_2O		
GEW-158	12/30/2016 8:12	0.9	23.2	19.8	56.1	39.3		5	6	-18.2	-18.2	-18.7
GEW-158	12/30/2016 8:14	0.6	14.1	20.9	64.4	39.8		5	4	-15.9	-15.9	-19.0
GEW-159	12/14/2016 11:08	0.1	1.8	22.1	76.0	39.8		3	6	34.8	25.5	-9.2
GEW-159	12/14/2016 11:09	0.3	1.0	22.1	76.6	41.7		7	6	34.7	-2.3	-9.0
GEW-159	12/30/2016 9:04	1.4	11.4	14.4	72.8	49.1		4	4	5.8	5.5	-9.9
GEW-159	12/30/2016 9:06	1.2	10.0	15.7	73.1	45.5		6	6	-6.4	-6.7	-10.4
GEW-160	12/14/2016 11:11	0.7	4.6	0.7	94.0	43.1		18	14	-7.4	-6.9	-7.2
GEW-160	12/30/2016 9:18	5.8	55.9	0.0	38.3	49.1		11	12	-8.0	-8.1	-8.5
GEW-160	12/30/2016 9:19	5.5	54.9	0.0	39.6	49.6		21	17	-7.8	-7.9	-8.4
GEW-161	12/14/2016 11:13	2.6	35.4	15.6	46.4	35.1		14	13	-7.8	-7.8	-7.8
GEW-161	12/14/2016 11:15	0.5	12.7	17.9	68.9	35.9		3	2	-6.9	-6.9	-7.1
GEW-161	12/30/2016 9:22	0.8	56.8	0.0	42.4	41.9		3	4	19.3	19.3	-8.4
GEW-161	12/30/2016 9:24	0.5	58.2	0.0	41.3	44.6		11	9	-5.0	-5.1	-7.7
GEW-162	12/14/2016 11:17	4.2	23.7	0.9	71.2	112.7		15	11	-17.7	-18.1	-17.7
GEW-162	12/30/2016 9:27	0.1	36.1	18.1	45.7	42.8		5	11	-17.9	-17.9	-17.8
GEW-162	12/30/2016 9:30	0.0	11.1	21.8	67.1	43.4		4	8	-17.9	-17.9	-18.3
GEW-163	12/6/2016 14:11	2.1	62.6	0.1	35.2	186.8		9	16	-0.3	-0.3	-8.9
GEW-163	12/6/2016 14:12	2.0	65.5	0.0	32.5	187.0		19	27	-0.5	-0.5	-8.9
GEW-163	12/14/2016 12:02	5.5	48.7	8.1	37.7	185.7		6	29	-0.5	-0.5	-14.6
GEW-163	12/14/2016 12:03	3.0	42.1	8.7	46.2	185.7		0	7	-0.7	-0.6	-14.6
GEW-163	12/22/2016 11:03	2.7	49.4	3.7	44.2	184.5		27	29	-0.3	-0.3	-11.4
GEW-163	12/22/2016 11:04	2.6	51.9	3.6	41.9	185.1		31	27	-0.5	-0.6	-11.8
GEW-163	12/28/2016 16:13	3.4	22.7	14.1	59.8	150.5		113	128	-8.5	-8.6	-13.5
GEW-163	12/28/2016 16:15	3.6	22.7	14.1	59.6	150.1		22	22	-0.5	-0.5	-13.8
GEW-164	12/6/2016 13:46	12.3	60.4	0.7	26.6	152.9		20	18	-12.0	-12.1	-11.9
GEW-164	12/6/2016 13:47	12.2	61.1	0.6	26.1	152.5		20	25	-11.3	-11.2	-11.2
GEW-164	12/14/2016 11:59	10.1	46.0	2.5	41.4	163.3		15	11	-16.7	-16.7	-16.4
GEW-164	12/14/2016 12:00	11.7	56.2	2.2	29.9	163.3		33	25	-16.7	-16.7	-16.3
GEW-164	12/22/2016 10:57	8.7	40.9	8.8	41.6	108.2		86	89	-10.5	-10.6	-15.4
GEW-164	12/22/2016 10:59	9.7	37.9	8.9	43.5	108.4		84	89	-10.3	-10.3	-15.7
GEW-164	12/28/2016 16:01	10.0	38.0	9.3	42.7	129.9		98	103	-7.7	-7.6	-15.5
GEW-164	12/28/2016 16:04	10.5	44.5	7.0	38.0	139.7		38	34	-0.6	-0.6	-16.0
GEW-165	12/6/2016 14:17	5.4	64.1	0.0	30.5	173.1		22	25	-14.6	-15.0	-14.4
GEW-165	12/6/2016 14:19	5.0	67.3	0.0	27.7	169.0		27	23	-14.1	-14.5	-14.4
GEW-165	12/14/2016 11:50	4.1	58.1	0.0	37.8	194.6		7	7	-16.2	-15.9	-15.9
GEW-165	12/14/2016 11:51	4.7	63.5	0.0	31.8	195.0		16	28	-16.2	-16.2	-15.9
GEW-165	12/22/2016 10:35	4.1	59.1	0.0	36.8	172.1		10	27	-14.8	-14.8	-14.8
GEW-165	12/22/2016 10:36	4.0	61.9	0.0	34.1	170.5		0	13	-14.8	-14.8	-14.8
GEW-165	12/28/2016 15:32	2.2	57.2	0.0	40.6	181.9		17	16	-14.8	-14.8	-15.1
GEW-165	12/28/2016 15:33	3.2	62.9	0.0	33.9	181.9		20	19	-14.8	-14.8	-14.8
GEW-166	12/6/2016 14:23	2.7	35.4	9.6	52.3	155.0		20	30	-13.7	-14.5	-13.7
GEW-166	12/6/2016 14:26	2.8	33.5	9.8	53.9	156.0		32	25	-11.6	-14.0	-13.2
GEW-166	12/14/2016 11:53	2.9	48.9	9.2	39.0	170.0		39	33	-15.3	-15.2	-16.9

December 2016 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_2O		
GEW-166	12/14/2016 11:54	1.9	29.6	10.7	57.8	169.5		41	31	-15.3	-15.2	-17.2
GEW-166	12/22/2016 10:40	1.6	42.2	10.0	46.2	155.6		34	42	-13.5	-13.7	-15.4
GEW-166	12/22/2016 10:42	1.5	28.6	11.5	58.4	155.6		34	33	-12.3	-12.3	-15.7
GEW-166	12/28/2016 15:37	3.7	40.6	6.3	49.4	167.3		30	29	-11.8	-11.5	-15.4
GEW-166	12/28/2016 15:39	3.7	38.9	6.3	51.1	167.8		32	30	-9.4	-9.4	-15.7
GEW-167	12/6/2016 14:30	3.9	41.4	6.4	48.3	172.1		17	16	-0.5	-0.5	-15.8
GEW-167	12/6/2016 14:32	3.8	42.7	6.4	47.1	172.6		10	8	-0.6	-0.6	-15.1
GEW-167	12/14/2016 11:56	2.7	30.5	8.6	58.2	179.7		32	30	-0.9	-1.0	-16.2
GEW-167	12/14/2016 11:57	2.9	34.0	8.3	54.8	179.7		35	35	-1.0	-1.1	-16.3
GEW-167	12/22/2016 10:46	3.3	35.3	7.3	54.1	164.5		67	66	-0.7	-0.7	-15.5
GEW-167	12/22/2016 10:53	2.6	42.0	4.9	50.5	169.0		39	40	-1.0	-1.1	-14.9
GEW-167	12/28/2016 15:42	2.7	45.6	2.9	48.8	180.3		11	14	-0.4	-0.4	-12.8
GEW-167	12/28/2016 15:43	2.5	48.5	2.9	46.1	180.3		25	26	-0.5	-0.5	-13.2
GEW-168	12/6/2016 14:37	3.5	46.1	6.5	43.9	148.4		11	7	-13.5	-13.2	-14.4
GEW-168	12/6/2016 14:38	3.9	48.9	5.7	41.5	147.7		11	9	-12.6	-12.6	-14.4
GEW-168	12/14/2016 11:47	3.3	50.9	0.8	45.0	177.3		144	145	-10.4	-10.3	-16.8
GEW-168	12/14/2016 11:48	4.2	57.6	0.7	37.5	177.5		137	142	-10.4	-10.4	-16.0
GEW-168	12/22/2016 10:29	4.4	55.5	0.6	39.5	163.3		135	125	-8.8	-8.8	-14.0
GEW-168	12/22/2016 10:30	4.7	58.5	0.3	36.5	163.8		136	135	-8.8	-8.8	-14.3
GEW-168	12/28/2016 15:22	4.9	55.6	0.5	39.0	174.1		153	152	-8.3	-8.4	-15.2
GEW-168	12/28/2016 15:23	4.8	58.3	0.5	36.4	174.6		150	153	-8.0	-8.2	-14.8
GEW-169	12/6/2016 14:42	2.4	45.1	7.4	45.1	169.0		26	25	-2.7	-2.7	-15.1
GEW-169	12/6/2016 14:44	2.3	46.4	7.3	44.0	168.5		22	20	-2.8	-2.8	-15.7
GEW-169	12/14/2016 11:44	3.4	39.8	9.4	47.4	173.1		17	18	-5.5	-5.5	-16.6
GEW-169	12/14/2016 11:45	3.0	38.8	9.5	48.7	173.1		24	23	-5.6	-5.8	-16.8
GEW-169	12/22/2016 10:23	3.2	54.8	0.0	42.0	179.2		36	36	-1.1	-1.1	-16.6
GEW-169	12/22/2016 10:25	2.4	62.0	0.0	35.6	178.0		43	45	-4.7	-4.7	-15.1
GEW-169	12/28/2016 15:12	5.4	50.4	4.1	40.1	185.0		53	58	-4.7	-4.7	-15.1
GEW-170	12/14/2016 11:41	2.8	49.6	8.3	39.3	165.2		54	57	-7.4	-7.4	-16.9
GEW-170	12/14/2016 11:42	4.4	43.8	8.5	43.3	165.5		50	55	-7.4	-7.4	-17.1
GEW-170	12/28/2016 14:48	4.6	50.2	6.5	38.7	159.6		61	63	-6.5	-6.4	-16.1
GEW-170	12/28/2016 14:50	4.9	47.0	6.5	41.6	160.8		59	53	-4.6	-4.6	-15.3
GEW-171	12/14/2016 12:24	1.3	41.4	0.8	56.5	129.9		11	21	-13.7	-14.2	-13.6
GEW-172	12/14/2016 11:35	0.8	47.0	0.8	51.4	43.8		25	14	-9.9	-10.3	-7.6
GEW-172	12/29/2016 9:39	0.5	41.5	2.8	55.2	52.1		13	8	-7.5	-7.6	-5.9
GEW-173	12/14/2016 11:32	3.7	19.6	13.4	63.3	86.8		39	41	-0.8	-0.8	-17.8
GEW-173	12/14/2016 11:33	4.1	14.8	13.9	67.2	86.5		42	46	-0.8	-0.8	-17.6
GEW-173	12/29/2016 9:26	3.2	18.4	14.7	63.7	97.2		34	37	-0.7	-0.7	-18.0
GEW-173	12/29/2016 9:28	3.5	14.6	15.2	66.7	98.3		39	33	-0.7	-0.7	-18.8
GEW-174	12/14/2016 11:29	6.9	38.2	10.3	44.6	159.4		59	65	-1.8	-1.8	-15.3
GEW-174	12/14/2016 11:29	3.8	26.3	11.3	58.6	158.5		40	43	-1.8	-1.7	-15.4
GEW-174	12/30/2016 8:42	3.8	15.5	12.0	68.7	152.1		73	50	-1.4	-1.4	-12.0
GEW-174	12/30/2016 8:43	3.7	26.3	11.0	59.0	153.3		38	30	-0.6	-0.6	-14.4

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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_2O		
GEW-175	12/14/2016 11:24	21.4	48.9	2.0	27.7	142.9		46	34	-0.7	-0.7	-19.7
GEW-175	12/14/2016 11:25	20.3	52.1	1.8	25.8	143.2		56	42	-0.8	-0.8	-18.6
GEW-175	12/30/2016 8:00	17.5	49.6	2.4	30.5	135.9		54	51	-0.7	-0.7	-19.2
GEW-175	12/30/2016 8:02	19.8	51.0	2.3	26.9	136.2		57	60	-1.2	-1.2	-19.5
GEW-176	12/14/2016 11:22	19.8	48.6	2.5	29.1	123.7		16	14	-0.5	-0.5	-19.1
GEW-176	12/30/2016 8:06	21.9	49.2	2.5	26.4	110.9		15	14	-0.7	-0.8	-19.1
GEW-176	12/30/2016 8:07	22.2	50.3	2.4	25.1	114.5		23	24	-0.9	-1.1	-20.3
GEW-177	12/14/2016 11:38	0.2	53.8	5.5	40.5	39.8		6	16	-14.8	-14.3	-14.9
GEW-177	12/14/2016 11:39	0.1	52.6	4.4	42.9	40.8		21	20	-15.2	-14.8	-15.0
GEW-177	12/28/2016 14:29	0.7	52.2	2.9	44.2	54.7		18	11	-15.4	-15.9	-15.3
GEW-1A	12/16/2016 9:45	1.3	10.9	19.5	68.3	26.8		6	7	-9.2	-9.1	-13.7
GEW-1A	12/16/2016 9:47	0.3	4.5	21.0	74.2	26.7		3	5	-9.6	-9.6	-13.6
GEW-1A	12/21/2016 9:46	0.6	5.1	20.7	73.6	46.5		3	3	-7.9	-7.9	-13.3
GEW-1A	12/21/2016 9:48	0.2	1.4	21.5	76.9	46.4		2	1	-8.3	-8.3	-13.3
GEW-1A	12/28/2016 9:34	2.4	14.1	19.4	64.1	49.1		4	5	-8.3	-8.2	-12.9
GEW-1A	12/28/2016 9:36	0.6	4.9	21.1	73.4	48.4		5	3	-7.5	-7.5	-12.9
GEW-2S	12/16/2016 9:56	56.2	40.7	0.0	3.1	26.9		16	2	-9.6	-9.4	-13.8
GEW-2S	12/21/2016 9:56	57.1	39.3	0.2	3.4	48.2		4	0	-11.4	-11.5	-13.3
GEW-2S	12/28/2016 9:45	58.3	38.5	0.0	3.2	45.9		6	21	-8.5	-8.5	-13.3
GIW-01	12/8/2016 8:54	5.1	62.3	0.4	32.2	151.3		13	16	-6.3	-5.9	-20.6
GIW-01	12/8/2016 9:06	5.2	60.8	0.6	33.4	147.7		14	14	-6.4	-5.9	-20.3
GIW-01	12/14/2016 15:37	13.5	54.3	1.4	30.8	157.8		10	9	-11.8	-10.9	-18.6
GIW-01	12/14/2016 15:39	12.2	57.2	1.0	29.6	158.0		3	3	-12.3	-12.3	-18.6
GIW-01	12/21/2016 15:03	6.4	52.8	0.0	40.8	174.2		9	10	-2.3	-2.3	-18.8
GIW-01	12/21/2016 15:04	4.0	62.6	0.0	33.4	174.7		9	9	-2.1	-2.1	-18.7
GIW-01	12/27/2016 14:11	10.5	53.4	0.3	35.8	174.6		12	12	-2.6	-2.6	-18.4
GIW-02	12/8/2016 9:15	3.7	67.1	0.0	29.2	28.2		7	6	-0.1	-0.1	-19.8
GIW-02	12/8/2016 9:28	3.8	67.3	0.0	28.9	28.6		7	5	-0.1	-0.1	-19.7
GIW-02	12/14/2016 15:43	5.4	62.3	0.1	32.2	30.9		5	3	0.0	0.0	-18.8
GIW-02	12/21/2016 15:08	5.1	61.9	0.0	33.0	56.7		4	3	0.1	0.1	-18.1
GIW-02	12/21/2016 15:09	5.4	63.5	0.0	31.1	56.0		4	3	-0.1	-0.1	-17.9
GIW-02	12/27/2016 14:17	12.8	56.0	1.5	29.7	59.1		2	3	-0.1	-0.1	-18.1
GIW-03	12/8/2016 9:45	1.4	52.8	3.3	42.5	36.0		4	4	-0.7	-0.6	-11.6
GIW-03	12/8/2016 9:52	1.2	55.8	3.6	39.4	36.3		5	5	-0.6	-0.6	-11.9
GIW-03	12/14/2016 15:50	1.2	66.0	0.0	32.8	29.6		8	8	-2.0	-1.9	-9.9
GIW-03	12/21/2016 15:13	2.5	56.4	2.4	38.7	56.7		4	2	-0.8	-0.8	-8.3
GIW-03	12/27/2016 14:21	9.3	50.7	1.5	38.5	61.1		2	2	-0.2	-0.2	-7.7
GIW-04	12/8/2016 9:59	1.1	54.1	0.4	44.4	33.8		2	2	-7.0	-6.9	-11.7
GIW-04	12/8/2016 10:10	1.0	52.3	0.7	46.0	36.4		5	5	-7.0	-7.0	-11.4
GIW-04	12/14/2016 15:53	0.8	52.7	1.8	44.7	29.5		13	10	-7.1	-7.2	-9.8
GIW-04	12/21/2016 15:16	0.7	38.5	11.8	49.0	54.5		3	5	-7.6	-7.5	-8.0
GIW-04	12/21/2016 15:18	0.3	27.6	13.3	58.8	54.5		0	3	-7.4	-7.4	-8.0
GIW-04	12/27/2016 14:24	0.9	54.3	0.8	44.0	63.4		0	4	-1.3	-1.3	-8.2

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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_2O		
GIW-05	12/8/2016 11:44	0.0	6.4	21.0	72.6	33.1		0	0	-2.2	-2.1	-10.3
GIW-05	12/8/2016 11:54	0.0	1.2	22.5	76.3	33.4		8	12	-0.5	-0.5	-10.2
GIW-05	12/14/2016 12:28	0.0	14.4	19.4	66.2	30.9		0	0	-0.5	-0.5	-7.1
GIW-05	12/14/2016 12:31	0.0	4.5	21.4	74.1	30.5		0	0	-0.3	-0.2	-7.0
GIW-05	12/21/2016 14:28	0.3	8.9	21.0	69.8	57.2		0	0	-0.5	-0.5	-5.5
GIW-05	12/21/2016 14:29	0.1	4.7	22.0	73.2	57.5		4	4	-0.6	-0.6	-5.1
GIW-05	12/27/2016 13:57	1.4	26.1	17.2	55.3	54.4		0	0	-0.4	-0.3	-5.3
GIW-05	12/27/2016 13:59	0.1	8.1	20.4	71.4	55.2		0	0	-0.6	-0.4	-5.6
GIW-06	12/9/2016 11:27	27.3	49.5	0.1	23.1	40.2		2	2	-7.5	-7.5	-10.3
GIW-06	12/9/2016 11:33	26.7	46.9	0.1	26.3	38.8		14	1	-7.5	-7.9	-10.3
GIW-06	12/14/2016 12:24	3.5	36.4	0.6	59.5	31.7		2	0	-7.0	-7.0	-8.9
GIW-06	12/21/2016 14:34	21.2	30.9	0.3	47.6	58.7		6	6	-6.0	-6.1	-7.5
GIW-06	12/27/2016 14:02	1.5	21.8	1.5	75.2	58.6		4	4	-6.0	-6.0	-7.8
GIW-07	12/9/2016 11:38	28.0	45.0	1.2	25.8	40.5		4	3	-3.1	-3.1	-9.3
GIW-07	12/9/2016 11:47	26.9	48.3	1.2	23.6	36.2		4	4	-2.9	-2.9	-9.7
GIW-07	12/14/2016 12:20	22.1	46.1	0.9	30.9	34.1		4	3	-1.9	-1.9	-9.4
GIW-07	12/21/2016 14:36	32.4	45.0	0.3	22.3	57.8		6	7	-1.1	-1.1	-7.8
GIW-07	12/27/2016 14:05	33.8	51.2	0.4	14.6	59.0		5	6	-0.5	-0.5	-8.2
GIW-08	12/9/2016 10:56	34.6	54.5	0.0	10.9	40.7		4	2	-4.7	-4.7	-10.7
GIW-08	12/9/2016 11:05	35.9	51.7	0.0	12.4	42.5		3	6	-4.7	-4.7	-10.3
GIW-08	12/14/2016 12:14	17.5	31.3	0.1	51.1	35.0		1	2	-4.1	-4.1	-9.7
GIW-08	12/21/2016 14:18	22.7	44.5	0.0	32.8	59.2		4	2	-3.3	-3.3	-7.9
GIW-08	12/27/2016 13:47	29.8	41.2	0.0	29.0	55.9		4	3	-3.3	-3.3	-8.3
GIW-09	12/9/2016 14:08	5.4	17.9	11.5	65.2	42.1		1	6	-0.8	-0.8	-10.6
GIW-09	12/9/2016 14:16	5.3	15.2	11.9	67.6	41.5		5	1	-0.8	-0.8	-10.5
GIW-09	12/14/2016 12:09	5.7	21.8	8.2	64.3	36.5		5	5	-0.6	-0.6	-9.4
GIW-09	12/14/2016 12:11	5.8	21.1	8.3	64.8	36.1		3	3	-0.6	-0.6	-9.2
GIW-09	12/21/2016 14:22	17.4	30.3	6.8	45.5	60.2		2	5	-0.4	-0.4	-7.5
GIW-09	12/21/2016 14:23	17.7	28.5	7.0	46.8	60.2		3	3	-0.4	-0.4	-7.9
GIW-09	12/27/2016 13:50	22.0	34.3	4.6	39.1	57.6		6	6	-0.4	-0.4	-7.7
GIW-10	12/8/2016 10:48	10.2	49.9	0.0	39.9	38.1		6	5	-2.0	-1.9	-11.8
GIW-10	12/8/2016 11:35	10.0	51.9	0.0	38.1	38.9		4	4	-1.9	-1.9	-11.1
GIW-10	12/14/2016 12:39	7.1	45.8	0.2	46.9	31.8		5	5	-1.2	-1.2	-9.7
GIW-10	12/21/2016 14:39	13.1	42.5	0.0	44.4	58.4		4	5	-0.4	-0.4	-8.0
GIW-10	12/27/2016 13:54	15.7	39.5	0.0	44.8	59.0		4	4	-0.5	-0.5	-8.1
GIW-11	12/9/2016 10:43	2.3	60.8	0.0	36.9	35.2		3	3	-0.5	-0.5	-18.5
GIW-11	12/9/2016 10:51	1.6	59.0	0.0	39.4	35.7		2	4	-0.5	-0.5	-19.0
GIW-11	12/14/2016 15:04	3.0	61.6	0.2	35.2	30.0		4	6	-0.4	-0.4	-18.1
GIW-11	12/21/2016 15:47	1.3	61.0	0.0	37.7	52.4		4	2	-0.1	0.0	-18.2
GIW-11	12/27/2016 14:50	1.3	62.3	0.0	36.4	59.6		0	2	0.0	0.0	-18.0
GIW-12	12/9/2016 10:27	7.7	31.2	9.2	51.9	36.0		10	15	-0.6	-0.7	-14.5
GIW-12	12/9/2016 10:37	8.3	30.9	9.1	51.7	37.1		19	24	-0.9	-1.1	-17.0
GIW-12	12/14/2016 15:08	8.4	35.8	8.7	47.1	31.5		21	23	-1.0	-1.0	-16.1

December 2016 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_2O		
GIW-12	12/14/2016 15:10	8.4	35.0	8.8	47.8	30.1		18	20	-0.4	-0.5	-17.1
GIW-12	12/21/2016 15:42	3.2	56.8	0.0	40.0	52.3		5	4	0.0	0.0	-16.3
GIW-12	12/21/2016 15:44	2.3	60.9	0.0	36.8	52.3		3	3	0.0	0.0	-16.2
GIW-12	12/27/2016 14:45	2.6	61.8	0.0	35.6	60.1		2	2	0.0	0.0	-15.5
GIW-12	12/27/2016 14:47	1.9	62.9	0.0	35.2	60.8		2	2	0.0	0.0	-15.5
GIW-13	12/9/2016 9:18	13.7	59.4	0.0	26.9	34.3		2	2	-2.2	-2.2	-15.2
GIW-13	12/9/2016 9:28	11.9	60.5	0.0	27.6	35.9		3	3	-2.1	-2.1	-13.7
GIW-13	12/14/2016 15:15	13.1	59.9	0.0	27.0	30.1		4	3	-2.0	-1.9	-14.4
GIW-13	12/21/2016 15:22	11.9	57.3	0.0	30.8	54.3		6	6	-1.6	-1.6	-14.6
GIW-13	12/27/2016 14:41	12.4	59.8	0.0	27.8	61.4		4	4	-1.5	-1.5	-14.9
LCS-1D	12/23/2016 9:41	57.9	36.4	0.2	5.5	49.9		3	5	-13.8	-13.7	-19.2
LCS-5A	12/7/2016 14:27	56.0	38.7	0.0	5.3	55.2		NFD		-13.2	-13.2	-12.9
LCS-5A	12/16/2016 13:28	69.8	21.7	0.5	8.0	42.6		NFD		-12.4	-12.4	-12.3
LCS-5A	12/22/2016 9:10	59.4	35.6	0.6	4.4	51.3		NFD		-13.5	-13.5	-13.7
LCS-5A	12/30/2016 15:03	58.1	34.8	0.2	6.9	89.8		NFD		-11.3	-11.4	-11.3
LCS-6B	12/7/2016 11:09	53.4	37.8	0.3	8.5	53.5		8	9	-1.0	-1.0	-13.2
LCS-6B	12/16/2016 10:14	55.2	40.9	0.0	3.9	36.0		8	8	0.5	0.5	-2.9
LCS-6B	12/16/2016 10:16	54.5	42.1	0.0	3.4	35.2		7	9	0.7	0.7	-7.9
LCS-6B	12/21/2016 10:12	40.7	35.2	0.9	23.2	94.1		9	9	-5.0	-5.0	-13.0
LCS-6B	12/21/2016 10:13	39.4	35.1	0.8	24.7	92.4		8	9	-4.5	-4.5	-13.0
LCS-6B	12/23/2016 9:14	38.5	34.7	1.0	25.8	77.3		13	11	-4.7	-4.7	-13.5
LCS-6B	12/23/2016 9:16	39.5	35.4	0.8	24.3	70.9		9	9	-1.6	-1.6	-13.8
LCS-6B	12/28/2016 10:01	46.6	36.9	0.6	15.9	56.4		7	7	-1.2	-1.2	-13.0
PGW-60	12/16/2016 9:51	62.9	33.3	0.3	3.5	30.6		18	18	-13.6	-13.5	-13.7
PGW-60	12/21/2016 9:53	42.6	29.4	3.5	24.5	47.0		13	7	-13.2	-13.1	-13.3
PGW-60	12/28/2016 9:41	60.4	34.4	1.0	4.2	50.1		55	50	-13.5	-13.4	-13.3
SEW-002	12/28/2016 10:54	1.6	76.8	0.1	21.5	49.4		15	15	1.7	1.8	-15.1
T-56	12/7/2016 13:50	36.3	27.4	1.1	35.2	52.7		23	25	-0.1	-0.2	-12.8
T-56	12/16/2016 11:14	51.6	35.1	0.0	13.3	47.2		23	24	0.0	0.0	-13.2
T-56	12/21/2016 10:31	40.4	33.2	0.7	25.7	48.2		22	20	-0.2	-0.1	-14.1
T-56	12/28/2016 10:26	45.5	33.2	0.3	21.0	47.9		26	24	-0.2	-0.2	-12.7

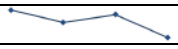
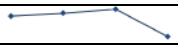
Notes: NFD = No flow device installed

NR = Flow information was not recorded due to data collection error

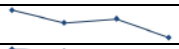
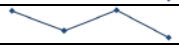
ATTACHMENT E-2

MAXIMUM WELLHEAD TEMPERATURE TABLE

Wellfield Temperature - Bridgeton Landfill

Well Name	Maximum Initial Temperature From All Monthly Wellhead Readings (in °F)				Temp Trend ><30°F	Comments
	September 2016	October 2016	November 2016	December 2016		
GEW-001	--	--	--	--		
GEW-002	123.1	123.1	121.2	124.7		
GEW-003	116.7	117.9	116.6	116		
GEW-004	120.5	122.3	121.5	116.6		
GEW-005	96.7	96.1	94.1	91.9		
GEW-006	93.4	90.5	89.4	88.8		
GEW-007	100.6	97.9	94.6	89.7		
GEW-008	115	114.5	114	110.7		
GEW-009	126.4	125.5	125	122.6		
GEW-010	108	88.2	100.6	63.6		
GEW-011	--	--	--	--		
GEW-013A	172.7	180.3	191.6	118		
GEW-014A	--	--	--	--		
GEW-015	--	--	--	181.7		
GEW-016R	--	--	191.2	188.3		
GEW-018B	--	--	196.7	190.2		
GEW-018R	--	--	--	--		
GEW-019A	--	--	--	--		
GEW-020A	--	--	--	--		
GEW-021A	--	--	--	--		
GEW-022R	180.3	63	67.9	--		
GEW-023A	--	--	--	--		
GEW-024A	--	--	--	--		
GEW-025A	--	--	--	--		
GEW-026R	--	--	--	--		
GEW-027A	--	--	--	--		
GEW-028R	92.2	70.9	--	--		
GEW-029	--	--	--	--		
GEW-030R	--	--	--	--		
GEW-033R	--	--	--	--		
GEW-034	--	--	--	--		
GEW-034A	--	--	--	--		
GEW-035	--	--	--	--		
GEW-036	--	--	--	--		
GEW-037	--	--	--	--		
GEW-038	96.2	86.8	86.3	58.5		
GEW-039	126.9	124.6	121.6	105.2		
GEW-040	96.9	93.6	91.7	79.6		
GEW-041R	107.8	104.5	100.8	87.3		
GEW-042R	109.7	103.8	106.5	82.1		
GEW-043R	130	129.4	128.9	118.1		

Wellfield Temperature - Bridgeton Landfill

Well Name	Maximum Initial Temperature From All Monthly Wellhead Readings (in °F)				Temp Trend ><30°F	Comments
	September 2016	October 2016	November 2016	December 2016		
GEW-044	93.8	92.7	84.5	78		
GEW-045R	100.6	89.8	92.7	75.2		
GEW-046R	101.4	101.6	98.4	94		
GEW-047R	116.2	113.2	110.5	114		
GEW-048	105.7	104.7	104.3	100.8		
GEW-049	111.6	114.3	111.2	105.1		
GEW-050	108.7	108.2	108.5	106.7		
GEW-051	128.1	126.9	126.1	128.6		
GEW-052	114.5	113.7	113.7	110.7		
GEW-053	143.5	142.9	141.8	133.8		
GEW-054	148.4	144.9	144.9	148		
GEW-055	129.4	129.4	127.5	124.5		
GEW-056R	174.2	126.6	126.9	101.8		
GEW-057B	102.1	73	82.1	39.6		
GEW-057R	127.8	119.6	105	40		
GEW-058	164.9	130.2	175.9	65.4		
GEW-058A	144	107	145.6	94.6		
GEW-059R	187.4	186.4	185.7	173.1		
GEW-061B	--	--	--	--		
GEW-064A	--	--	--	--		
GEW-065A	--	--	--	--		
GEW-066	--	--	--	--		
GEW-067A	146.3	161.6	171.6	--		
GEW-068A	--	--	--	--		
GEW-069R	--	--	--	--		
GEW-070R	--	--	--	--		
GEW-071	--	--	--	--		
GEW-071B	--	--	--	--		
GEW-072RR	--	--	--	--		
GEW-073R	--	--	--	--		
GEW-075	--	--	--	--		
GEW-076R	--	--	--	--		
GEW-077	187	176.4	156.5	83.4		
GEW-078R	186.4	185.1	183.9	178.6		
GEW-080	80.8	67	--	--		
GEW-081	--	67.1	194.3	193		
GEW-082R	188.6	96.7	182.4	187.7		
GEW-083	--	--	--	--		
GEW-084	--	--	--	--		
GEW-085	--	--	--	--		
GEW-086	105.8	90.1	91.2	71.4		

Wellfield Temperature - Bridgeton Landfill

Well Name	Maximum Initial Temperature From All Monthly Wellhead Readings (in °F)				Temp Trend ><30°F	Comments
	September 2016	October 2016	November 2016	December 2016		
GEW-087	--	--	196.4	191.2		
GEW-088	--	194.6	122.6	110.6		
GEW-089	93.4	59.4	--	--		
GEW-090	183	181.5	174.7	154.5		
GEW-091	197.2	--	196.4	193.2		
GEW-100	--	--	--	--		
GEW-101	--	93.9	93.2	69.1		
GEW-102	188.3	194.3	196.4	192.9		
GEW-103	--	--	--	--		
GEW-104	91.3	72.1	85.4	--		
GEW-105	--	180.4	197.9	141.8		
GEW-106	--	--	100.6	88		
GEW-107	--	--	81.7	46.9		
GEW-108	89.1	130.6	79.4	44.5		
GEW-109	134	123.7	121.8	78.5		
GEW-110	118.4	115.8	89.3	74.6		
GEW-112	--	--	--	--		
GEW-113	173.7	173.6	171	155.2		
GEW-116	--	--	--	--		
GEW-117	150.9	73.6	82.8	42.7		
GEW-118	193.1	195	193.7	173.6		
GEW-120	153.3	149.7	78.9	45.2		
GEW-121	178.6	180.4	177.2	174.2		
GEW-122	188.5	188.3	183.3	177.5		
GEW-123	102.1	150.9	176.2	56.5		
GEW-124	97.7	95	--	35.5		
GEW-125	193.6	190.8	192.3	191.6		
GEW-126	180.9	178.2	103.2	164.7		
GEW-127	189.6	188.9	187.1	179.2		
GEW-128	176.7	176.6	172.6	174.2		
GEW-129	180.9	180.1	174.2	170.6		
GEW-130	171.7	177.4	176.4	190.2		
GEW-131	107.6	98.5	71.6	55.9		
GEW-132	165.1	166.4	166.4	158.3		
GEW-133	103.8	93.2	72.9	46		
GEW-134	150.1	135.6	121.8	120.5		
GEW-135	191.5	173.3	161.5	47.3		
GEW-136	126.1	127.6	115.8	104.5		
GEW-137	86	96.6	75	55.2		
GEW-138	164.7	164.1	155.4	149.8		
GEW-139	176.2	177.5	151.3	164.3		

Wellfield Temperature - Bridgeton Landfill

Well Name	Maximum Initial Temperature From All Monthly Wellhead Readings (in °F)				Temp Trend ><30°F	Comments
	September 2016	October 2016	November 2016	December 2016		
GEW-140	140	88.8	146.3	135.3		
GEW-141	187.9	189.6	155.7	176		
GEW-142	150.9	153.3	55.5	36.8		
GEW-143	101.5	80.3	65.7	48.5		
GEW-144	106.6	91.5	81.2	62.1		
GEW-145	175.7	82.8	160.2	149.9		
GEW-146	104.8	100.6	90.1	73.6		
GEW-147	186.4	185.3	189.6	169.5		
GEW-148	159.8	97.8	75.3	52.1		
GEW-149	163.4	170	165.5	153.7		
GEW-150	181.4	184.7	183.3	171		
GEW-151	141.5	141.2	76.2	52.4		
GEW-152	175.2	179.2	180.3	45.6		
GEW-153	144.9	142.2	137.7	60		
GEW-154	123.2	120.2	62.2	43		
GEW-155	139.6	140.9	126.4	116.4		
GEW-156	114.7	127.5	101	87		
GEW-157	183.4	120.7	70.4	47.3		
GEW-158	156.9	199.3	183.3	39.8		
GEW-159	131.9	81.9	62.3	49.1		
GEW-160	187.6	185.7	169	49.6		
GEW-161	105.2	110.4	63.8	44.6		
GEW-162	180.1	175.8	165	112.7		
GEW-163	156	197.4	192.9	187		
GEW-164	114.5	152.5	170.2	163.3		
GEW-165	193.7	194.4	195.1	195		
GEW-166	197.9	197.2	196.8	170		
GEW-167	168.5	191.9	189.6	180.3		
GEW-168	184.5	183	177.9	177.5		
GEW-169	184.5	179.8	191.6	185		
GEW-170	160.7	164.6	188.9	165.5		
GEW-171	192.2	193.6	142.2	129.9		
GEW-172	191.6	89.2	70.6	52.1		
GEW-173	115.5	120.7	123.4	98.3		
GEW-174	171.2	171.6	171.6	159.4		
GEW-175	145.9	142.8	138.3	143.2		
GEW-176	144	161	141.2	123.7		
GEW-177	190.9	184.5	65.8	54.7		
GEW-1A	112	94.3	86.3	49.1		
GEW-2S	99.9	94.8	90.8	48.2		
GIW-01	185.7	185.7	183.9	174.7		

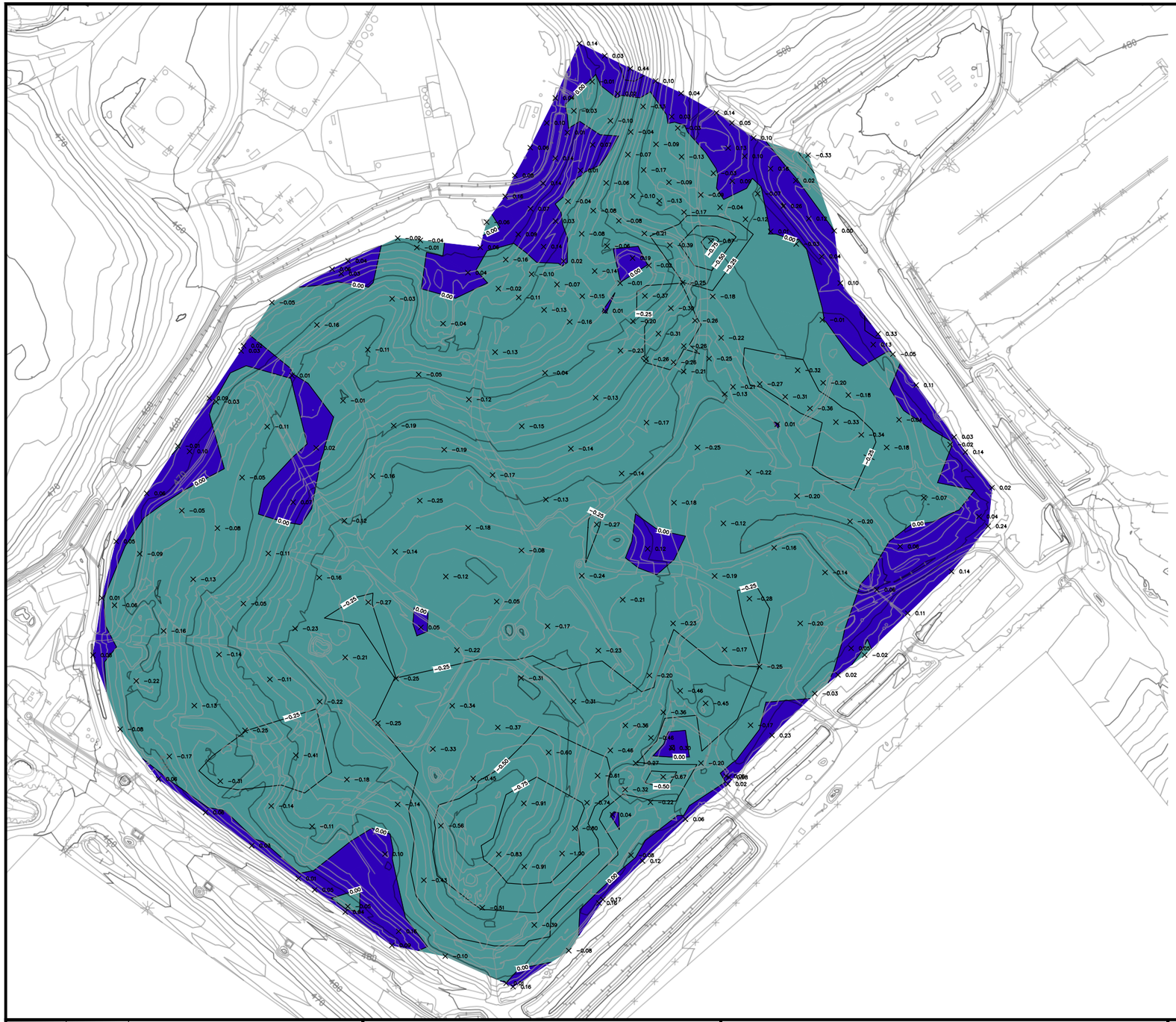
Wellfield Temperature - Bridgeton Landfill

Well Name	Maximum Initial Temperature From All Monthly Wellhead Readings (in °F)				Temp Trend ><30°F	Comments
	September 2016	October 2016	November 2016	December 2016		
GIW-02	107.2	90.6	75	59.1		
GIW-03	110.2	93.3	82.2	61.1		
GIW-04	107.5	90.5	80.3	63.4		
GIW-05	102.5	87.7	76.4	57.5		
GIW-06	93.2	84.4	83	58.7		
GIW-07	101.1	87.4	75	59		
GIW-08	99.2	88	76.8	59.2		
GIW-09	96.2	99	80.3	60.2		
GIW-10	99.4	86.8	79.8	59		
GIW-11	105.5	87.7	83.4	59.6		
GIW-12	98.3	87.8	84.1	60.8		
GIW-13	99.5	87.6	80	61.4		
LCS-1D	--	87.9	107.5	49.9		
LCS-2D	--	--	--	--		
LCS-3C	--	68.1	--	--		
LCS-4B	--	--	--	--		
LCS-5A	96.2	94.9	94.4	89.8		
LCS-6B	110	98.9	96.2	94.1		
PGW-60	91.9	94.1	81.9	50.1		
SEW-002	96.5	64	81	49.4		
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	83.8	76.4	71.6	52.7		

-- = Indicates no data available.

ATTACHMENT F

SETTLEMENT FRONT MAP



NOTES

1. EXISTING CONTOURS DEVELOPED FROM SITE AERIAL TOPOGRAPHIC SURVEY BY COOPER AERIAL SURVEYS, CO. ON FEBRUARY 27, 2016.
2. FOR CLARITY, NOT ALL SITE FEATURES MAY BE SHOWN.
3. ELEVATION DIFFERENCE DETERMINED BY SUBTRACTING SPOT ELEVATIONS SURVEYED ON 11-16-16 FROM SPOT ELEVATIONS SURVEYED ON 12-16-16.
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.

LEGEND

× −0.42	SPOT ELEVATION DIFFERENCE (12-16-16 TO 11-16-16)
———	MINOR ELEVATION CHANGE CONTOUR (0.25 FEET)
———−0.50———	MAJOR ELEVATION CHANGE CONTOUR (0.50 FEET)
———12−16———	SETTLEMENT FRONT CONTOUR FOR AREA WITH 1.35' PER 30 DAYS FOR CURRENT PERIOD OF DAYS

ELEVATION CHANGE (FEET)

Number	Minimum Elev. Change	Maximum Elev. Change	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	1323568.97	
6	0.00	1.00	218011.95	

REV. NO.	DATE	DESCRIPTION

BRIDGETON LANDFILL

CB&I Environmental & Infrastructure, Inc.

STATE OF ILLINOIS LICENSED DESIGN FIRM #184004093

BRIDGETON LANDFILL
BRIDGETON, MO

SETTLEMENT MAP
NOVEMBER 16, 2016 THROUGH DECEMBER 16, 2016

DRAWN BY:	ORC	APPROVED BY:	DJD	PROJ. NO.:	155162	DATE:	JANUARY 2016

ATTACHMENT G

SUMMARY OF ODOR COMPLAINTS

December 1, 2016 – December 31, 2016 / MDNR ODOR COMPLAINTS

Name: Bob Labeaume

Message: Odor logged December 1, 2016, at 4:31 pm strength of 10

Follow-up: The following concern has been investigated by Bridgeton Landfill staff. No odor 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. At the time of this concern winds were of a west southwestern origin placing this location directly downwind of another known odor source with frequent off-site odor emissions. There is no evidence to suggest that this was a Bridgeton Landfill odor.

Name: N/A

Message: Odor logged December 1, 2016, at 12:31 pm strength of 5

Follow-up: The following concern has been investigated by Bridgeton Landfill staff. This concern was reported over 11 hours after the observation time so real time follow-up was not possible. Odor patrols performed before and after the time cited in this concern did not observe Bridgeton Landfill odor. There is no evidence to suggest that this was a Bridgeton Landfill odor.

Name: Meghan Rocha

Message: Odor logged December 4, 2016, at 5:35 pm strength of 4

Follow-up: The following concern has been investigated by Bridgeton Landfill staff. No odor was observed at this location within an hour of the time cited in this concern. An odor patrol performed after the time cited in this concern did not observe Bridgeton Landfill odor. At the time cited in this concern winds were of a west northwestern origin placing this location upwind of the Bridgeton Landfill. There is no evidence to suggest that this was a Bridgeton Landfill odor.

Name: Elizabeth Webb

Message: Odor logged November 5, 2016, at 10:35 pm strength of 9

Follow-up: The following concern has been investigated by Bridgeton Landfill staff. This concern was reported one month after the observation time so real time follow-up was not possible. Odor patrols performed before and after the time cited in this concern did not observe Bridgeton Landfill odor. At the time cited in this concern winds were of a southeast origin placing this location outside the downwind pathway of the Bridgeton Landfill. There is no evidence to suggest that this was a Bridgeton Landfill odor.

Name: Elizabeth

Message: Odor logged December 1, 2016, at 10:40 pm strength of 9

Follow-up: The following concern has been investigated by Bridgeton Landfill staff. This concern was reported over 3 days after the observation time so real time follow-up was not possible. Odor patrols performed before and after the time cited in this concern did not observe Bridgeton Landfill odor. At the time cited in this concern winds were of a southwest origin placing this location outside the downwind pathway of the Bridgeton Landfill. There is no evidence to suggest that this was a Bridgeton Landfill odor.

Name: Elizabeth Webb

Message: Odor logged November 15, 2016, at 10:30 pm strength of 9

Follow-up: The following concern has been investigated by Bridgeton Landfill staff. This concern was reported over 19 days after the observation time so real time follow-up was not possible. Odor patrols performed before and after the time cited in this concern did not observe Bridgeton Landfill odor. At the time cited in this concern winds were of a southwest origin placing this location outside the downwind pathway of the Bridgeton Landfill. There is no evidence to suggest that this was a Bridgeton Landfill odor.

Name: Renee Thompson

Message: Odor logged December 7, 2016, at 1:56 am strength of 9

Follow-up: The following concern has been investigated by Bridgeton Landfill staff. Odor patrols performed before and after the time cited in this concern did not observe Bridgeton Landfill odor. At the time cited in this concern winds were of a northwest origin placing this location outside the downwind pathway of the Bridgeton Landfill. There is no evidence to suggest that this was a Bridgeton Landfill odor.

Name: Eliane Steimel

Message: Odor logged December 6, 2016, at 1:58 pm strength of 9

Follow-up: The following concern has been investigated by Bridgeton Landfill staff. This concern was reported over 12 hours after the observation time so real time follow-up was not possible. Odor patrols performed before and after the time cited in this concern did not observe Bridgeton Landfill odor at multiple observation points between this location and the Bridgeton Landfill. At the time cited in this concern winds were of a west northwest origin placing this location directly downwind of another known odor source with frequent off-site odor emissions. This location is in close proximity to another known odor source with frequent off-site odor emissions. There is no evidence to suggest that this was a Bridgeton Landfill odor.

Name: Eliane Steimel

Message: Odor logged December 9, 2016, at 9:00 am strength of 6

Follow-up: The following concern has been investigated by Bridgeton Landfill staff. No odor 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. At the time cited in this concern winds were of a western origin placing this location outside the downwind pathway of the Bridgeton Landfill. The location cited in this concern is in close proximity to another known odor source with frequent off-site odor emissions. There is no evidence to suggest that this was a Bridgeton Landfill odor.

Name: Renee Thompson

Message: Odor logged December 9, 2016, at 9:05 am strength of 4

Follow-up: The following concern has been investigated by Bridgeton Landfill staff. No odor 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. At the time cited in this concern winds were of a western origin placing this location outside the downwind pathway of the Bridgeton Landfill. There is no evidence to suggest that this was a Bridgeton Landfill odor.

Name: Liz Spector

Message: Odor logged December 17, 2016, at 5:06 am strength of 8

Follow-up: The following concern has been investigated by Bridgeton Landfill staff. Odor patrols performed before and after the time cited in this concern did not observe Bridgeton Landfill odor. At the time cited in this concern winds were calm. Another known odor source with frequent off-site odor emissions is located between the location cited in this concern and the Bridgeton Landfill. There is no evidence to suggest that this was a Bridgeton Landfill odor.

Name: Sharon Bishop

Message: Odor logged December 21, 2016, at 8:28 pm strength of 10

Follow-up: The following concern has been investigated by Bridgeton Landfill staff. No odor 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. There is no evidence to suggest that this was a Bridgeton Landfill odor.

Name: Kirbi Pemberton

Message: Odor logged December 21, 2016, at 8:39 pm strength of 6

Follow-up: The following concern has been investigated by Bridgeton Landfill staff. No odor 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. At the time cited in this concern winds were of a western origin placing this location outside the downwind pathway of the Bridgeton Landfill. There is no evidence to suggest that this was a Bridgeton Landfill odor.

Name: Kirbi Pemberton

Message: Odor logged December 28, 2016, at 5:46 pm strength of 10

Follow-up: The following concern has been investigated by Bridgeton Landfill staff. Odor from another known odor source with frequent off-site odor emissions 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. This location is in close proximity to another known odor source with frequent off-site odor emissions. This was not a Bridgeton Landfill odor.

Name: N/A

Message: Odor logged December 28, 2016, at 2:12 pm strength of 7

Follow-up: The following concern has been investigated by Bridgeton Landfill staff. This concern was reported over 4 hours after the observation time so real time follow-up was not possible. Odor patrols performed before and after the time cited in this concern did not observe Bridgeton Landfill odor. At the time cited in this concern winds were of a southern origin placing this location outside the downwind pathway of the Bridgeton Landfill. There is no evidence to suggest that this was a Bridgeton Landfill odor.

Name: Dan Hyatt

Message: Odor logged December 28, 2016, at 4:15 pm strength of 2

Follow-up: The following concern has been investigated by Bridgeton Landfill staff. This concern was reported over 2 days after the observation time so real time follow-up was not possible. Odor patrols performed before and after the time cited in this concern did not observe Bridgeton Landfill odor. At the time cited in this concern winds were of a west northwestern origin placing this location directly downwind of another known odor source with frequent off-site odor emissions. There is no evidence to suggest that this was a Bridgeton Landfill odor.

Name: Dan Hyatt

Message: Odor logged December 28, 2016, at 5:00 pm strength of 10

Follow-up: The following concern has been investigated by Bridgeton Landfill staff. This concern was reported over 2 days after the observation time so real time follow-up was not possible. Odor patrols performed before and after the time cited in this concern did not observe Bridgeton Landfill odor. No odor was observed at several odor patrol observation points in close proximity to this location before and after the time cited in this concern. There is no evidence to suggest that this was a Bridgeton Landfill odor.

Name: Kirbi Pemberton

Message: Odor logged December 31, 2016, at 6:48 pm strength of 8

Follow-up: The following concern has been investigated by Bridgeton Landfill staff. No odor 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. At the time cited in this concern winds were of a northern origin placing this location directly downwind of another known odor source with frequent off-site odor emissions. There is no evidence to suggest that this was a Bridgeton Landfill odor.

ATTACHMENT H

LIQUID CHARACTERIZATION DATA AND DISCHARGE LOG

Bridgeton Landfill - Leachate PreTreatment Plant

December 2016

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
12/1/2016	LPTP Activated Sludge/ Permeate	Tank 1 (T1)	MBI	0
12/2/2016				0
12/3/2016				0
12/4/2016				0
12/5/2016				0
12/6/2016				0
12/7/2016				0
12/8/2016				0
12/9/2016				0
12/10/2016				0
12/11/2016				0
12/12/2016				0
12/13/2016				0
12/14/2016				0
12/15/2016				0
12/16/2016				0
12/17/2016				0
12/18/2016				0
12/19/2016				0
12/20/2016				0
12/21/2016				0
12/22/2016				0
12/23/2016				0
12/24/2016				0
12/25/2016				0
12/26/2016				0
12/27/2016				0
12/28/2016				0
12/29/2016				0
12/30/2016				0
12/31/2016				0
			Total=	**0**

Direct Discharge to MSD

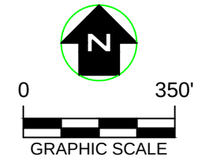
Date	Waste	Source	Quantity (gal)
12/1/2016	LPTP Permeate	Through Tank AST 97k (MSD Sampling Point 013)	188,740
12/2/2016			189,042
12/3/2016			189,576
12/4/2016			191,346
12/5/2016			115,732
12/6/2016			193,006
12/7/2016			141,894
12/8/2016			107,488
12/9/2016			168,362
12/10/2016			161,898
12/11/2016			85,392
12/12/2016			107,712
12/13/2016			94,752
12/14/2016			95,328
12/15/2016			118,412
12/16/2016			142,770
12/17/2016			141,526
12/18/2016			135,804
12/19/2016			140,244
12/20/2016			127,882
12/21/2016			84,830
12/22/2016			173,458
12/23/2016			271,340
12/24/2016			265,048
12/25/2016			233,168
12/26/2016			170,472
12/27/2016			176,492
12/28/2016			177,448
12/29/2016			173,168
12/30/2016			159,526
12/31/2016			164,696
		Total =	**4,886,552**

ATTACHMENT I

LOW FILL PROJECT AREA

ATTACHMENT I-1

LOW FILL AREA BOUNDARY



NOTES

1. SITE AERIAL TOPOGRAPHIC SURVEY BY COOPER AERIAL SURVEYS, CO. ON AUGUST 1, 2015.
2. FOR CLARITY, NOT ALL SITE FEATURES MAY BE SHOWN.
3. SURVEY POINTS WERE PERFORMED USING GPS METHODS.

LEGEND

- BOUNDARY OF FILL AREA FOR 11-16-16 THROUGH 12-16-16
- BOUNDARY OF STOCKPILE AREA FOR 11-16-16 THROUGH 12-16-16

REV. NO.	DATE	DESCRIPTION

BRIDGETON LANDFILL

CB&I Environmental & Infrastructure, Inc.

STATE OF ILLINOIS LICENSED DESIGN FIRM #184004093

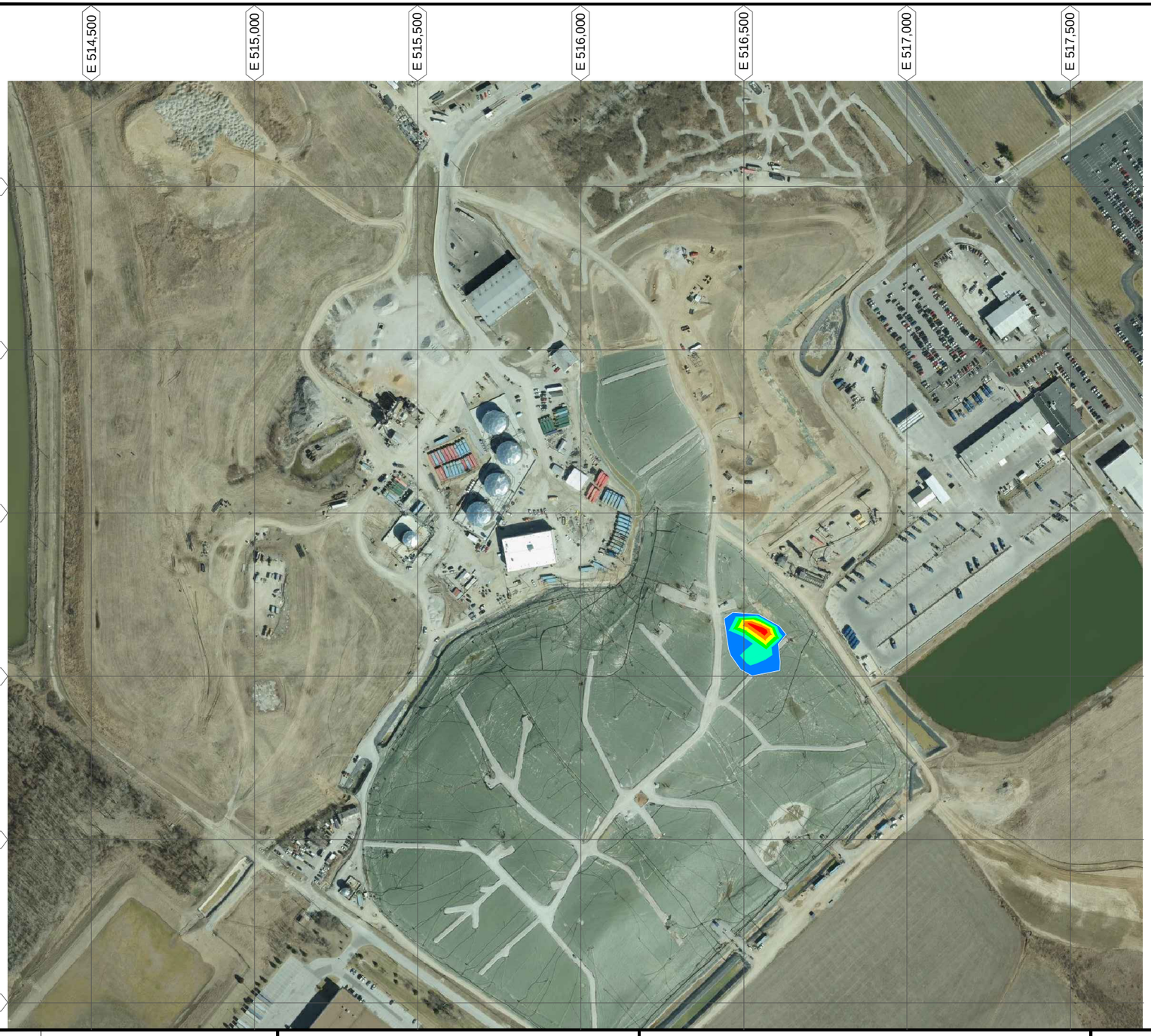
BRIDGETON LANDFILL
BRIDGETON, MO

LOW FILL AREA BOUNDARY
NOVEMBER 16, 2016 THROUGH DECEMBER 16, 2016

DRAWN BY:	ORC	APPROVED BY:	DJD	PROJ. NO.:	155162	DATE:	JANUARY 2016

ATTACHMENT I-2

FILL THICKNESS AND VOLUME



N

0 350'

GRAPHIC SCALE

THICKNESS (FT.)		
MIN.	MAX.	COLOR
0.0	0.1	
0.1	0.2	
0.2	0.3	
0.3	0.4	
0.4	0.5	
0.5	0.6+	

NOTES

1. SITE AERIAL TOPOGRAPHIC SURVEY BY COOPER AERIAL SURVEYS, CO. ON AUGUST 1, 2015.
2. FOR CLARITY, NOT ALL SITE FEATURES MAY BE SHOWN.
3. ELEVATION DIFFERENCE DETERMINED BY SUBTRACTING SPOT ELEVATIONS SURVEYED ON 11-16-16 FROM SPOT ELEVATIONS SURVEYED ON 12-16-16, THAT WERE CORRECTED FOR ELEVATION LOSS DUE TO SETTLEMENT.
4. SURVEY POINTS WERE PERFORMED USING GPS METHODS.
5. ANY POINTS THAT ARE NOT A GROUND-TO-GROUND COMPARISON WITH 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.
6. THE APPROXIMATE FILL VOLUME WAS 148 CUBIC YARDS BETWEEN NOVEMBER 2016 & DECEMBER 2016.

REV. NO.	DATE	DESCRIPTION

BRIDGETON LANDFILL

CB&I Environmental & Infrastructure, Inc.
STATE OF ILLINOIS LICENSED DESIGN FIRM #184004093

BRIDGETON LANDFILL
BRIDGETON, MO

FILL THICKNESS AND VOLUME
NOVEMBER 2016 - DECEMBER 2016

DRAWN BY:	APPROVED BY:	PROJ. NO.:	DATE:
NV	DJD	155162	DEC. 2016