

Bridgeton Landfill, LLC

Monthly Data Submittals

September, 2015

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

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Provided Separately:

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

October 20, 2015

Commentary on Data

October 20, 2015

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

Gas Volume

- As seen in Attachment B-1, gas collection volumetric rate in for this month averaged 4,018 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 contains gas temperature as measured at the wellheads. Five (5) vertical wells (excluding GIW wells) decreased by 30°F during this reporting period. Additionally, two (2) vertical wells (excluding GIW wells) increased by 30°F or more. Well head temperatures increased at GEW-117 from 89.5°F to 139°F, but are still lower in temperature than surrounding indicating that the well head increase is due to normal temperature mechanisms. Wellhead temperatures at GEW-151 increased from 114.5°F to 196.0°F but are within the range of temperature of nearby vertical landfill gas wells. All remaining wells that exhibited changes greater than 30 degrees are all within the historical gas temperature norms for these wells.
- Attachment E-1 details vertical wells which had oxygen levels over 5% at one or more weekly monitoring events during this reporting period. These consisted of 17 older GEW wells (<#-120) that are experiencing low flows; 11 new GEW wells (>#-120) that are experiencing restricted flows; 8 GIW wells that have low gas flow. By the end of the month, the majority of these wells still exhibited oxygen at the wellhead at or greater than 5%. All these wells, except the new GEWs 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. 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.
- A detailed review of the gas extraction wells in the neck area was conducted. Temperature is consistent with previous months in each of the gas extraction wells in vicinity to the neck. Carbon monoxide (CO) results during this reporting period showed stable month-over-month based on historic levels within the GIW wells. The CO concentrations within the Neck Area vertical wells exhibit stable CO concentrations within historic levels.
- All wells in the North Quarry continue to exhibit a maximum wellhead temperature under 145° F during this reporting period. Monthly carbon monoxide testing has

continued at wells GEW-053 and GEW-054 until well gas temperatures are below 140° F. GEW-053 (63 ppm) and GEW-054 (34 ppm) continues to show low level or non-detect concentrations similar to previous monthly sampling events. Carbon monoxide (CO) results showed non-detect (ND) for all other North quarry wells.

- Review of weekly gas quality in Attachment E reveals that all of the active North Quarry gas wells continue to have low, if any, oxygen and healthy methane and carbon dioxide levels indicating normal wellfield conditions for aged waste at all locations, consistent with GCCS wellfield conditions observed in the North Quarry for some time.

Settlement

- The South Quarry exhibited monthly maximum settlement up to **1.36 feet (see Attachment F)** for this reporting period; which is comparable to last month's rate. The rate of settlement directly south of the neck continues to be small and stable compared to previous months.

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.

ATTACHMENT A

WORK COMPLETED AND PLANNED

Bridgeton Landfill, LLC

Monthly Summary of Work Completed and Planned

Work Completed in September 2015

Gas Collection and Control System

- Continued operation and maintenance of GCCS System and GIW wells.
- Continued additional GCCS System enhancements.

Alternative Heat Extraction System

- Continued operation and maintenance of the HES.

Leachate Management System

- Continued routine operation of previously installed and upgraded features.

Pre-Treatment Facility

- Continued ongoing operation of facility.
- Continued to optimize operation efficiency of pre-treatment facility.

Work Planned for October 2015

Gas Collection and Control System

- Continue operation and maintenance of GCCS system.
- Continue upgrades to GCCS system as required.
- Plan and Initiate winterization processes.
- Plan to install two liquid collection sumps in the South gas interceptor trench.
- Installation of above grade LFG header between CT-1 and CT-2.

Alternative Heat Extraction System

- Continued operation and maintenance of the HES.

Leachate Management System

- Continued routine operation of previously installed and upgraded features.

Pre-Treatment Facility

- Ongoing operation of facility.
- Continue to optimize operation efficiency of pre-treatment facility.

Other Projects:

- Begin acceptance of clean fill materials for future fill projects.

ATTACHMENT B

DAILY FLARE MONITORING DATA

ATTACHMENT B-1

FLOW DATA TABLE

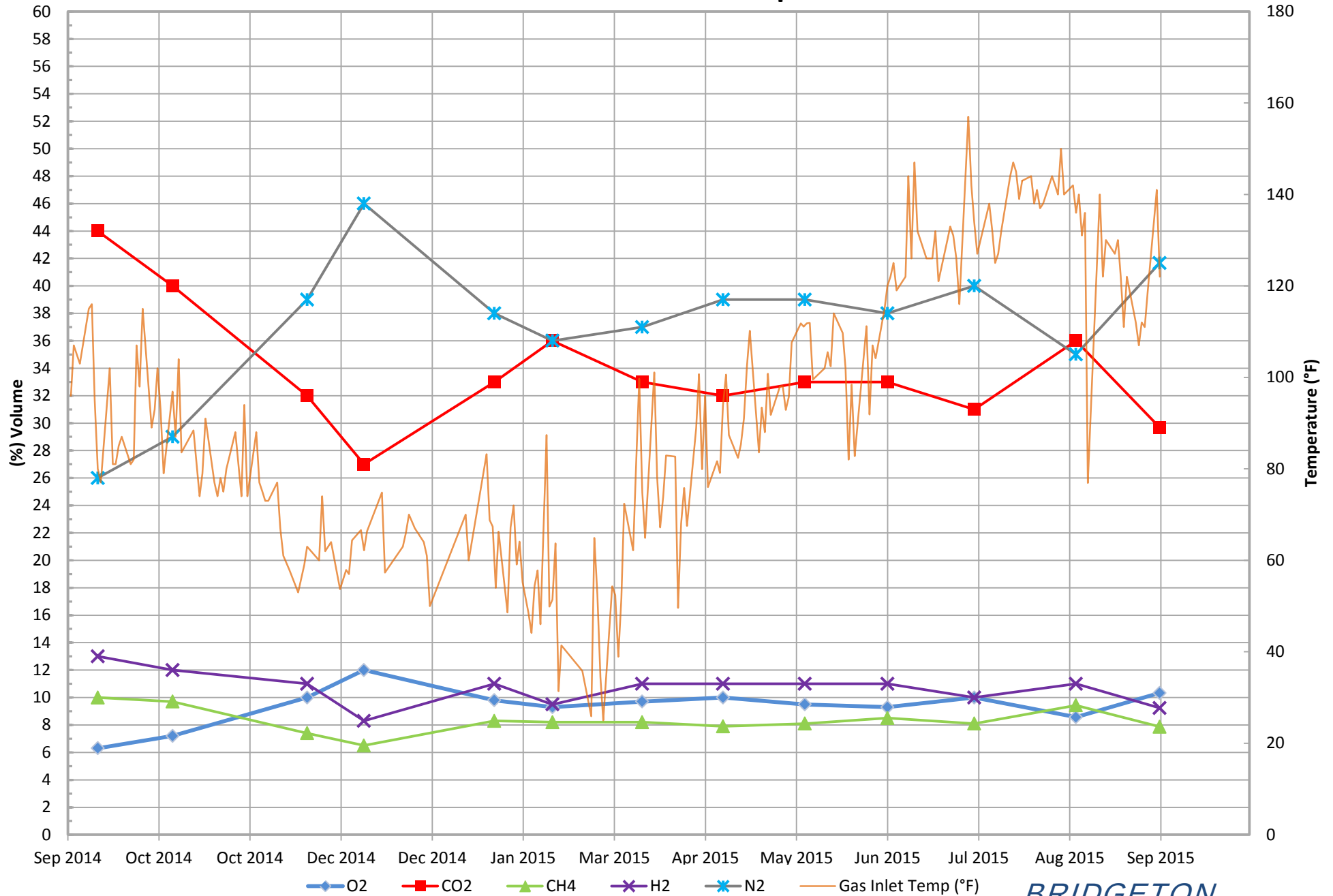
Daily Flare Monitoring Data - Bridgeton Landfill
September 2015

Date	Average Device Flow* (scfm)				Total Avg. Flow** (scfm)
	Utility Flare (FL-100)	Utility Flare (FL-120)	Utility Flare (FL-140)	E. Aux. Utility Flare	
9/1/2015	1,408	1,319	1,605		4,332
9/2/2015	1,393	1,330	1,621		4,345
9/3/2015	1,433	1,305	1,637		4,375
9/4/2015	1,216	1,216	1,576		4,008
9/5/2015	1,334	1,341	1,594		4,269
9/6/2015	1,365	1,281	1,641		4,287
9/7/2015	1,244	1,251	1,603		4,099
9/8/2015	1,061	1,323	1,569		3,953
9/9/2015	1,090	1,251	1,514		3,854
9/10/2015	1,272	1,348	1,625		4,245
9/11/2015	1,320	1,336	1,569		4,225
9/12/2015	1,265	1,317	1,586		4,168
9/13/2015	1,294	1,296	1,574		4,163
9/14/2015	1,480	1,102	1,575		4,158
9/15/2015	1,660	1,025	1,236		3,920
9/16/2015	1,136	822	1,898		3,857
9/17/2015	1,384	867	1,606		3,857
9/18/2015	1,359	1,133	1,689		4,180
9/19/2015	1,200	1,122	1,667		3,989
9/20/2015	1,225	1,100	1,664		3,989
9/21/2015	1,200	1,063	1,737		4,000
9/22/2015	922	1,030	1,824		3,776
9/23/2015	1,013	961	1,730		3,704
9/24/2015	890	1,151	1,607		3,648
9/25/2015	1,356	999	1,570		3,925
9/26/2015	1,314	1,025	1,575		3,914
9/27/2015	1,259	1,084	1,543		3,886
9/28/2015	1,243	1,091	1,492		3,827
9/29/2015	1,177	1,022	1,587		3,786
9/30/2015	1,163	999	1,643		3,805
				Average	4,018

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

ATTACHMENT B-2
FLOW DATA GRAPHS

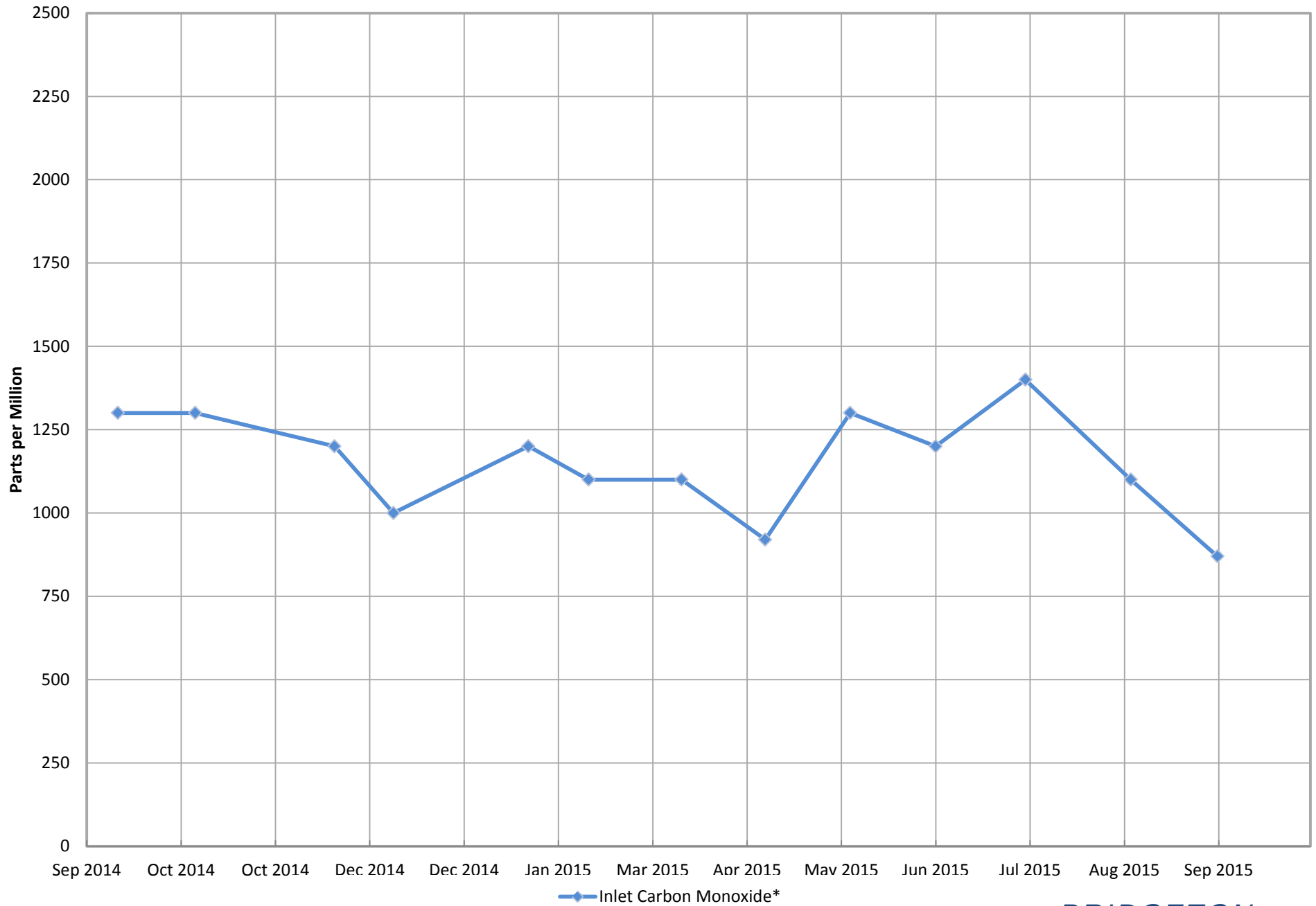
Inlet Gas and Temperature*



*Gas data collected from Laboratory Reports. Temperature data

**BRIDGETON
LANDFILL**

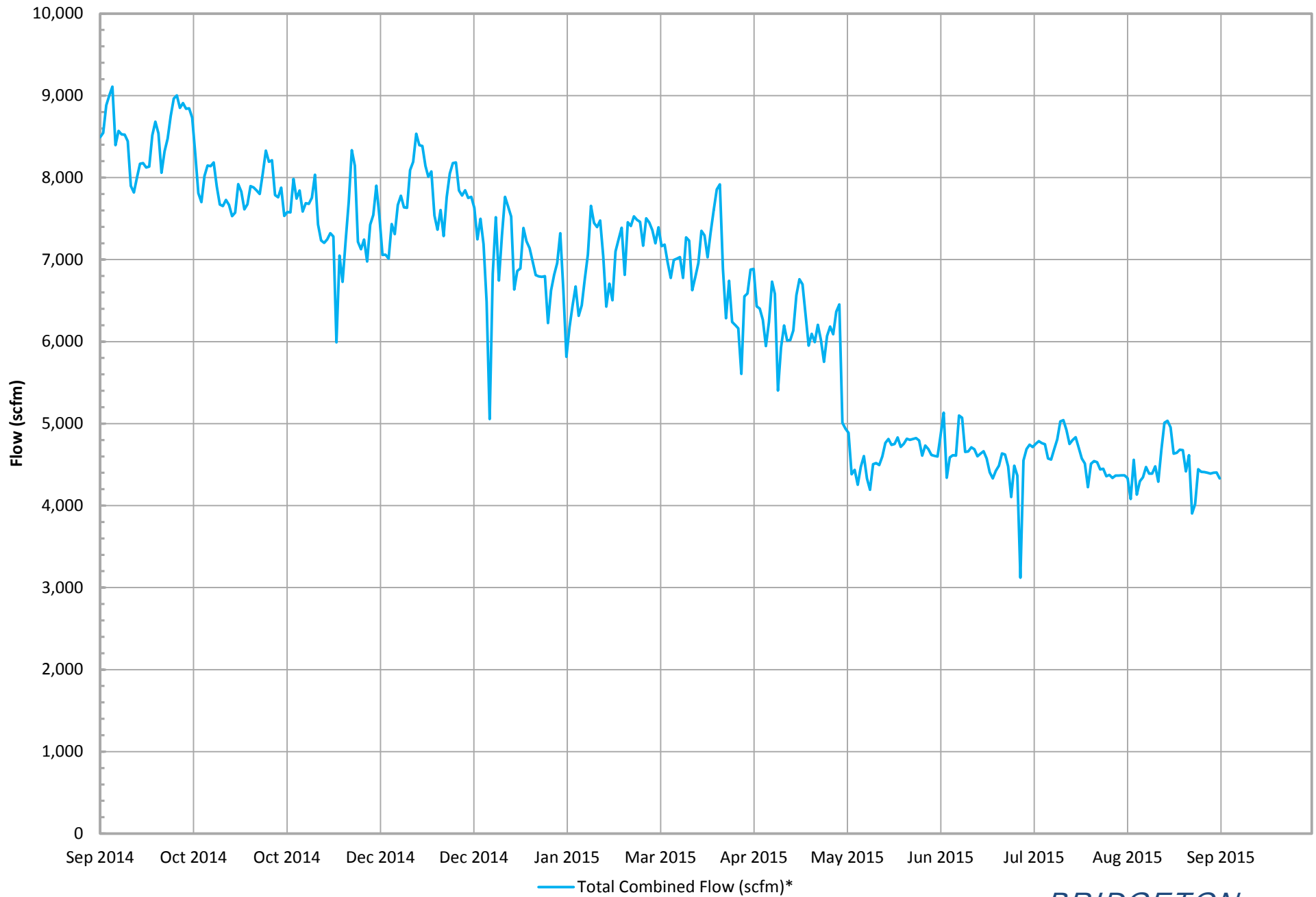
Inlet Carbon Monoxide*



*Data collected from

*BRIDGETON
LANDFILL*

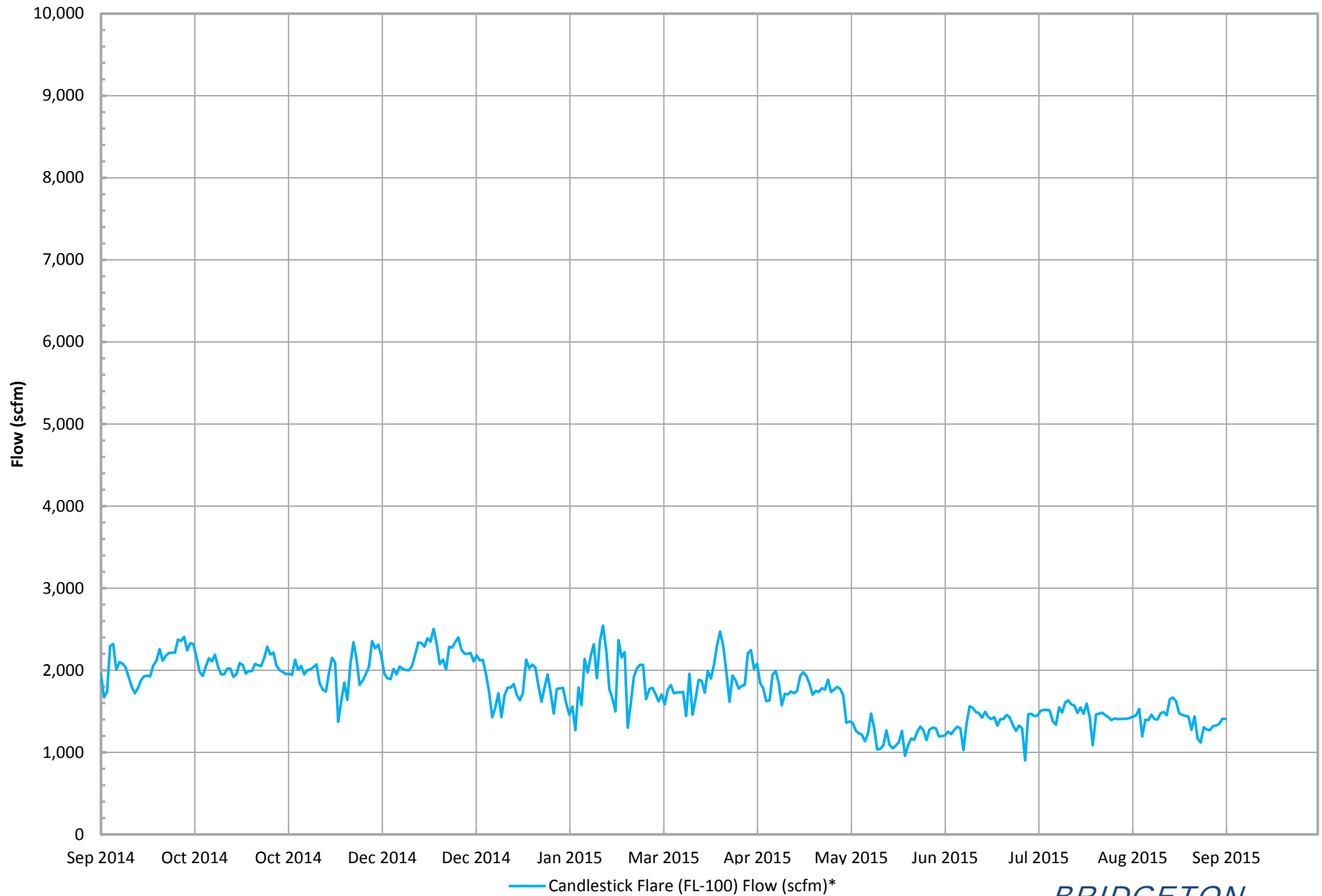
Total Combined Flow (scfm)*



*Combined flow is based on tabulated flow data

*BRIDGETON
LANDFILL*

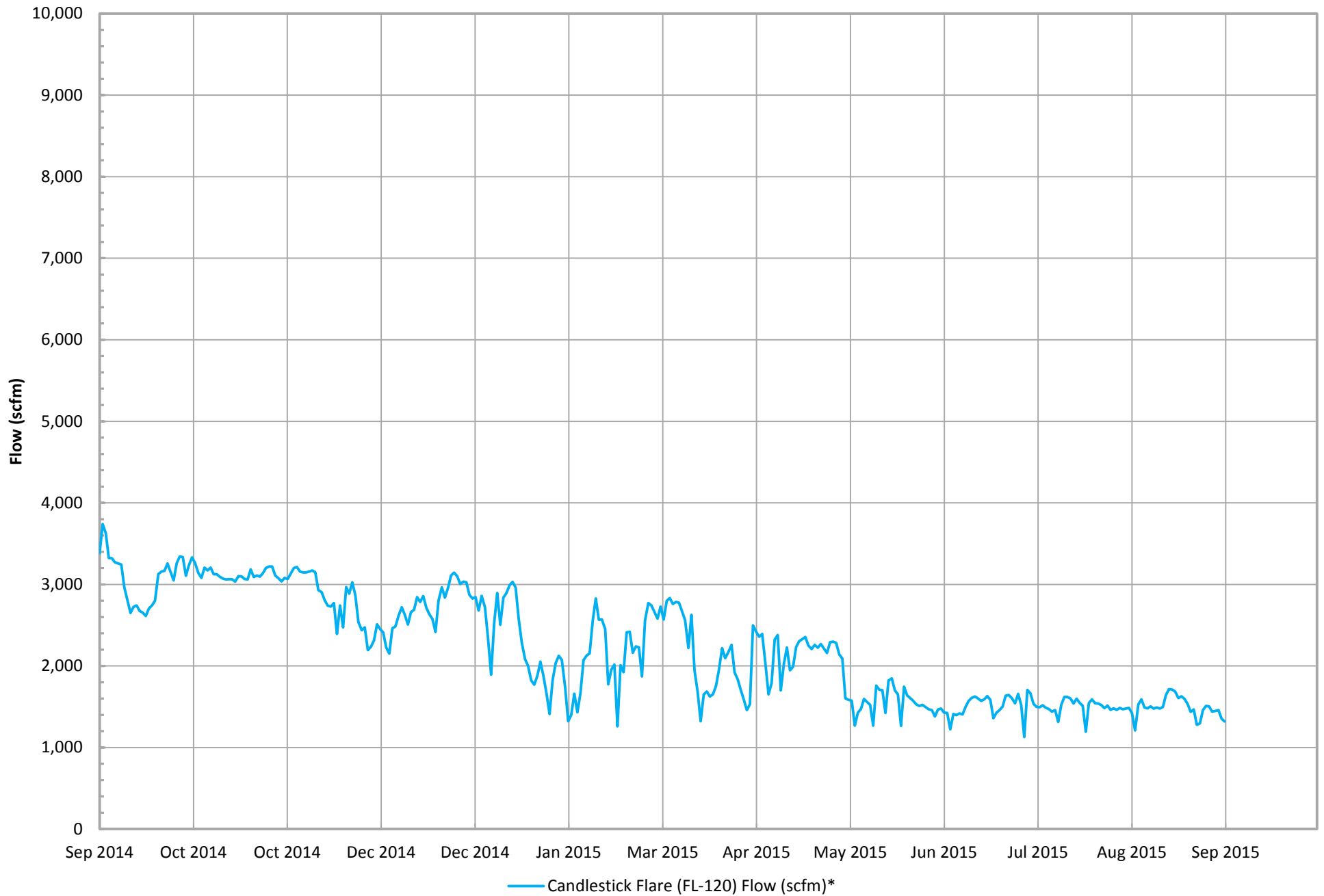
Candlestick Flare (FL-100) Flow (scfm)*



*Flow is based on tabulated flow data collected

*BRIDGETON
LANDFILL*

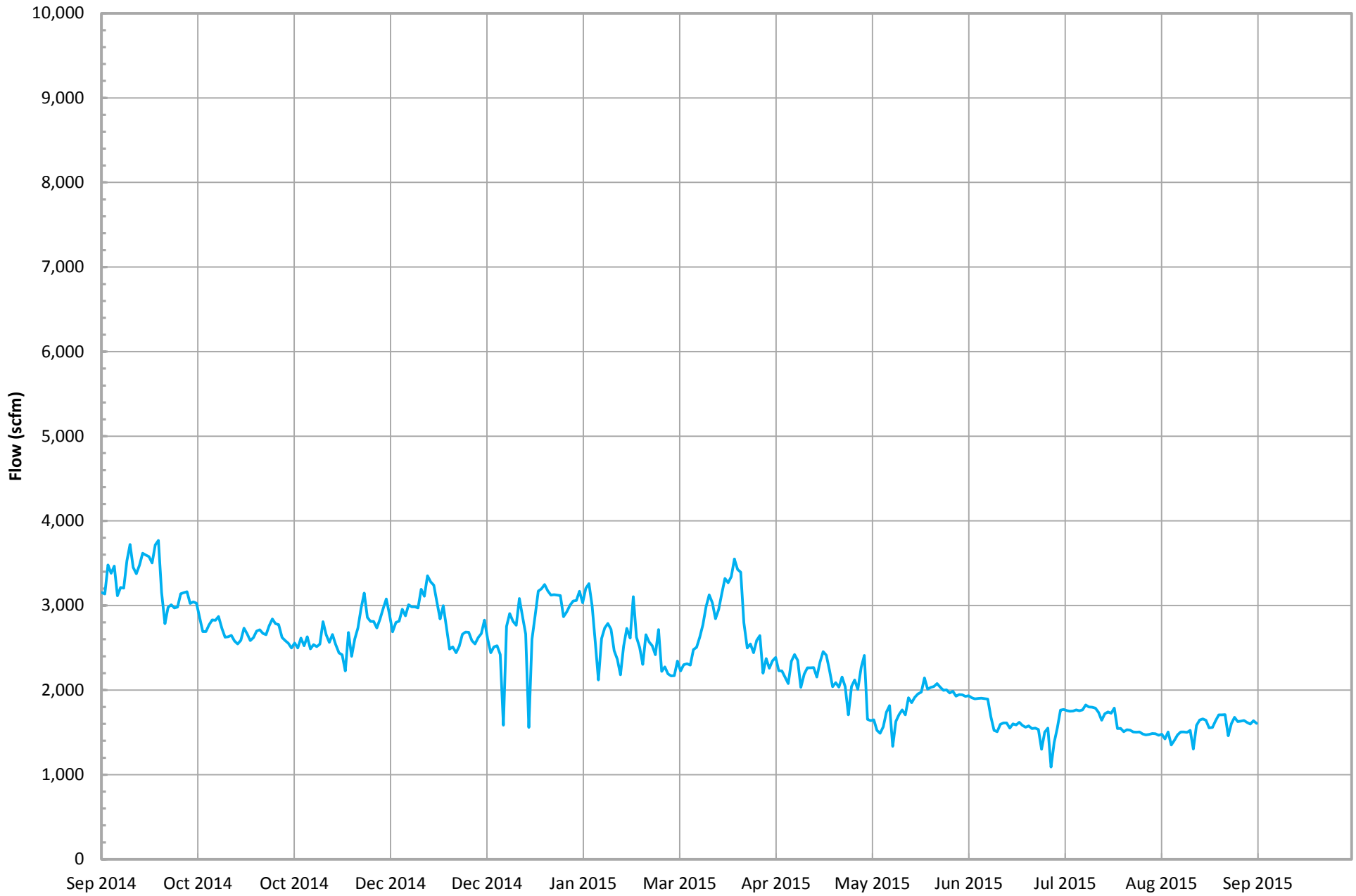
Candlestick Flare (FL-120) Flow (scfm)*



*Flow is based on tabulated flow data collected

*BRIDGETON
LANDFILL*

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

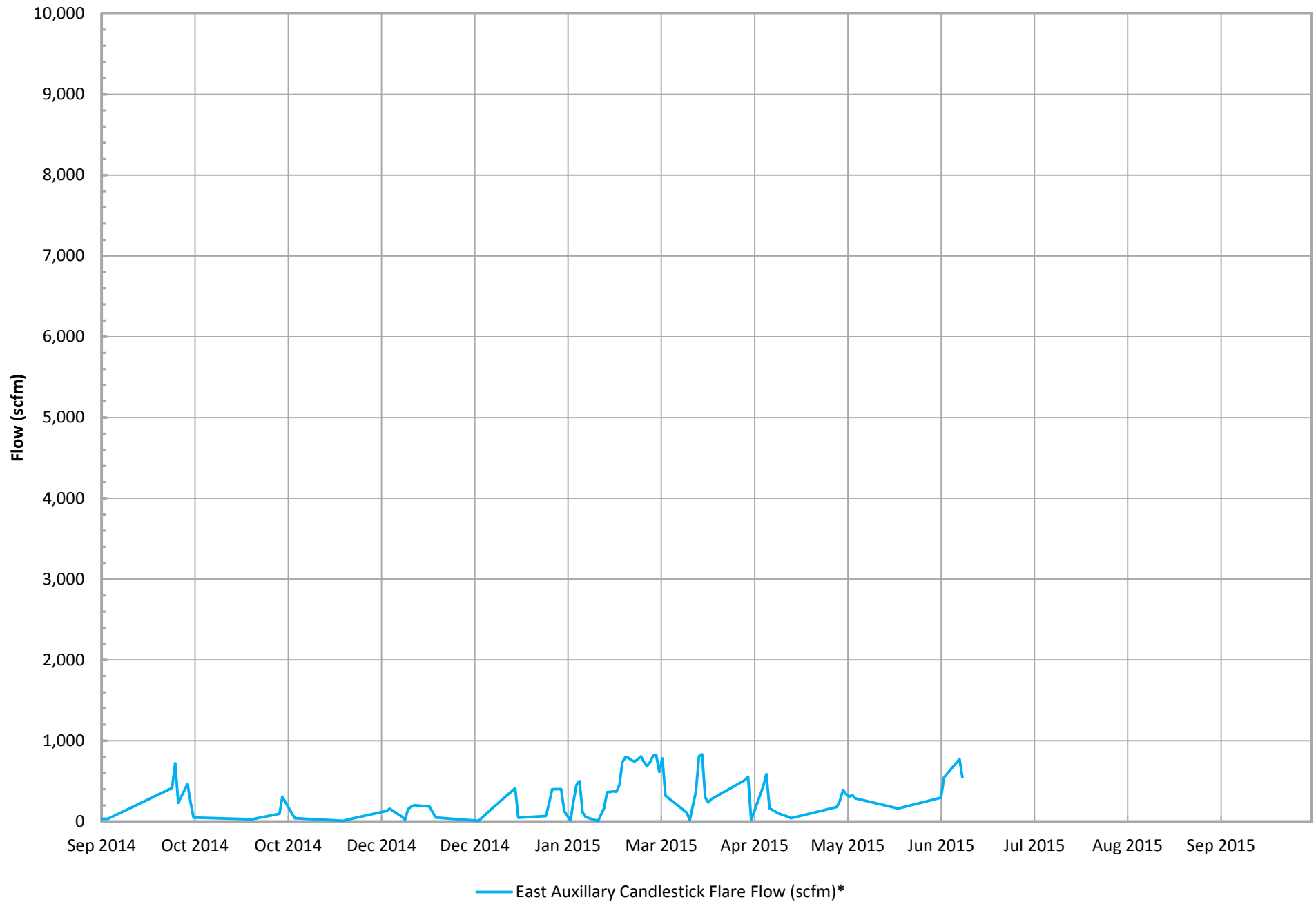


— Candlestick Flare (FL-140) Flow (scfm)*

*Flow is based on tabulated flow data collected

*BRIDGETON
LANDFILL*

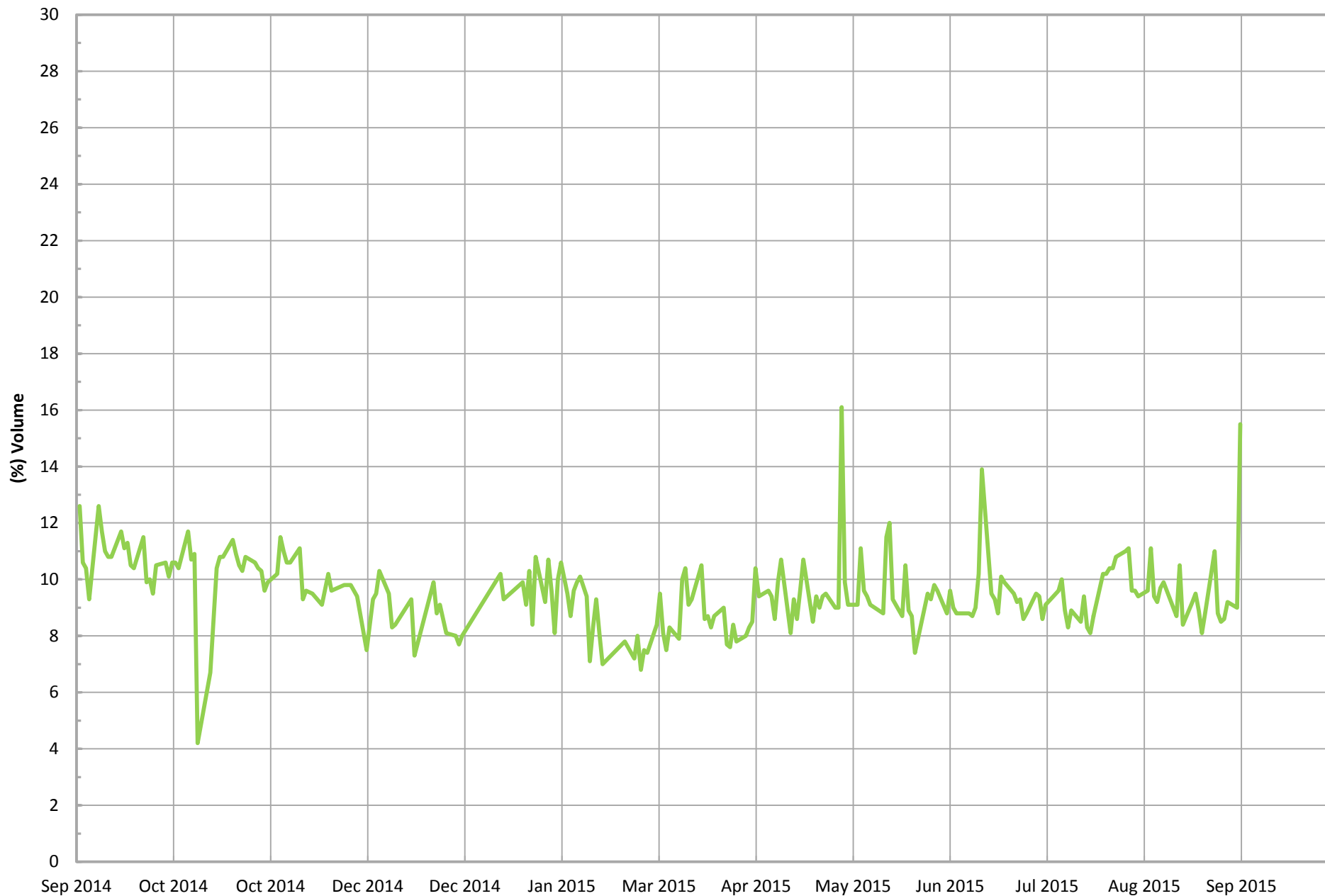
East Auxillary Candlestick Flare Flow (scfm)*



*Flow is based on tabulated flow data collected

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LANDFILL**

Combined Inlet Methane (GEM 2000)*

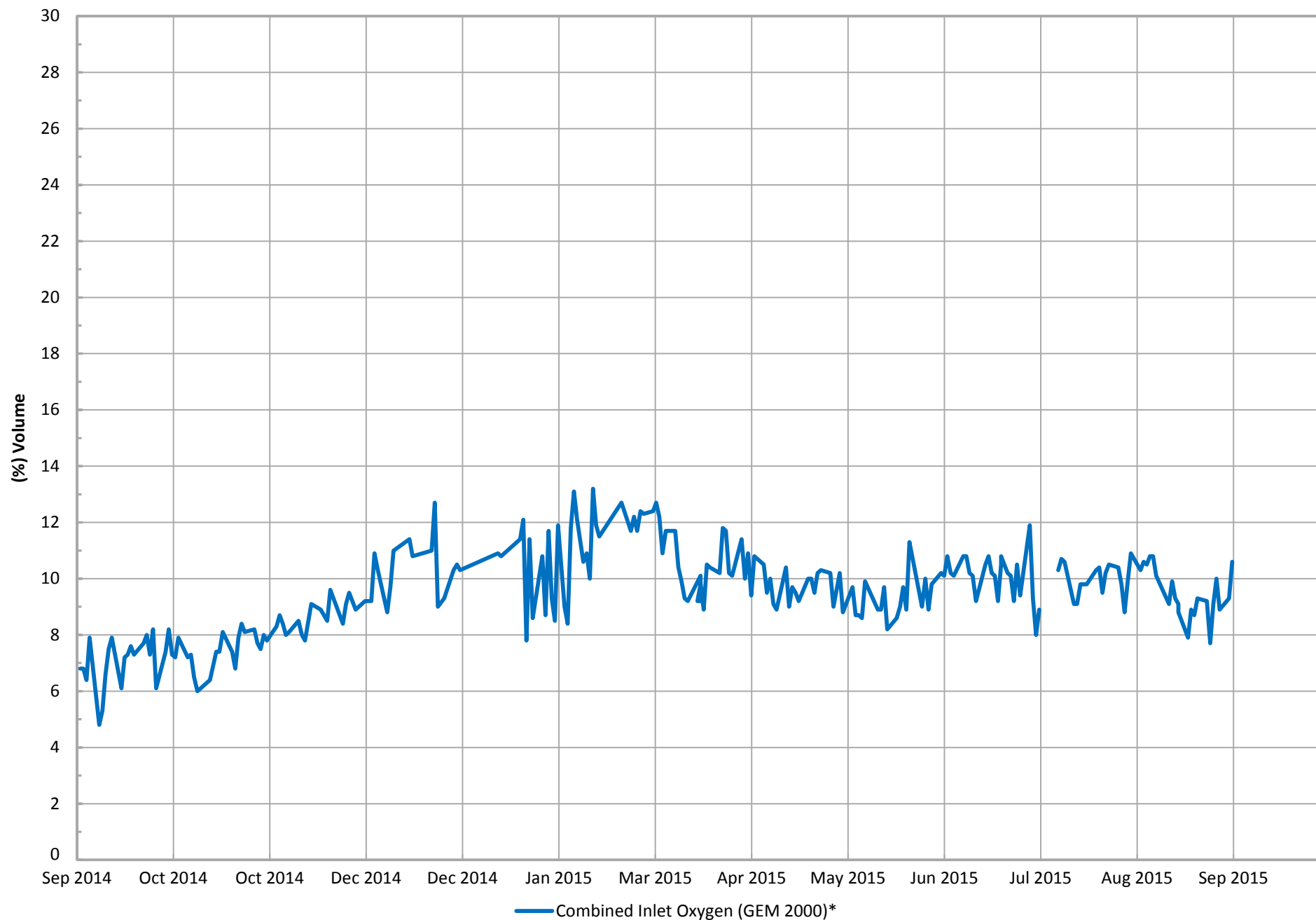


— Combined Inlet Methane (GEM 2000)*

*Gas data collected from GEM 2000

*BRIDGETON
LANDFILL*

Combined Inlet Oxygen (GEM 2000)*

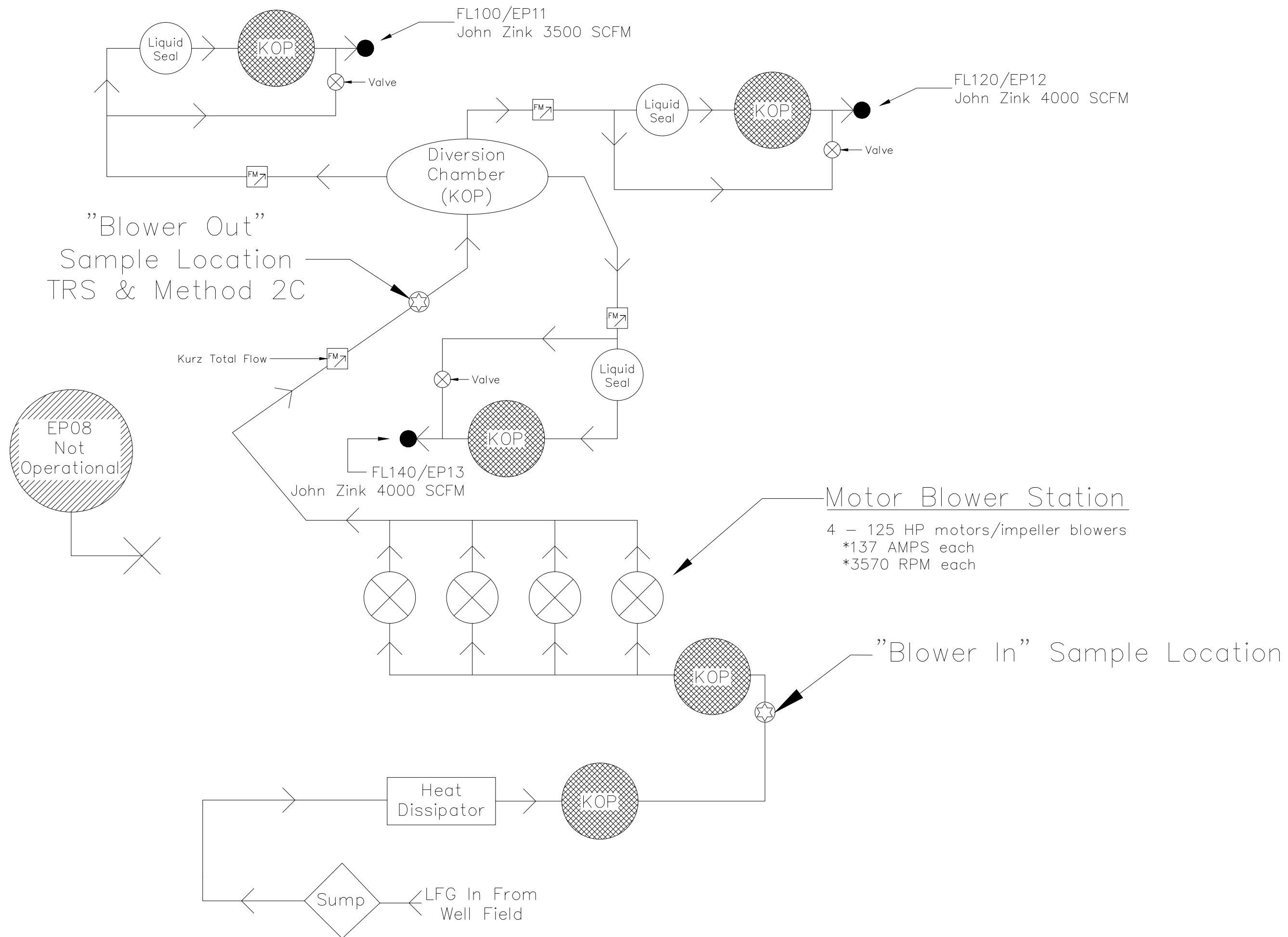


*Gas data collected from GEM 2000

*BRIDGETON
I AND FII I*

ATTACHMENT B-3

FLARE TRS / FLARE STATION FLOW



-Motor Blower Station

- "Blower In" Sample Location

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

Bridgeton Landfill, LLC.
September 01 to October 06, 2015

SAMPLE EVENT #	DATE	VELOCITY ft/sec	FLOW dscfm	② TRS ppm _{vd}
31 ①	10/6/2015	47.73	3491	1400 1500
30	9/29/2015	41.80	3386	1200 1300
29	9/22/2015	39.72	3217	1400 1200
28	9/15/2015	48.77	3950	1200 1200
27 ①	9/10/2015	58.66	4247	1200 1200
26 ①	9/1/2015	60.94	4326	1200 1300

NOTES:

- ① Flow based on EPA Method 2C data collection from the "Blower Outlet"
- ② TRS samples analyzed per EPA Method 15/16 from samples collected from the "Blower Outlet"

PARAMETER					Blower Out
Date	Test Date				9/1/15
Start	Run Start Time				8:17
	Run Finish Time				10:05
	Net Traversing Points				16 (2 x 8)
⊖	Net Run Time, minutes				1:47:10
C _p	Pitot Tube Coefficient				0.99
P _{Br}	Barometric Pressure, inches of Mercury				29.60
% H ₂ O	Moisture Content of LFG, %				7.17
% RH	Relative Humidity, %				50.50
M _{fd}	Dry Mole Fraction				0.928
%CH ₄	Methane, %				7.50
%CO ₂	Carbon Dioxide, %				28.50
%O ₂	Oxygen, %				11.00
%Balance	Assumed as Nitrogen, %				43.50
%H ₂	Hydrogen, %				8.80
M _d	Dry Molecular Weight, lb/lb-Mole				29.63
M _s	Wet Molecular weight, lb/lb-Mole				28.80
P _g	Flue Gas Static Pressure, inches of H ₂ O				23.00
P _s	Absolute Flue Gas Pressure, inches of Mercury				31.29
t _s	Average Stack Gas Temperature, °F				126
ΔP _{avg}	Average Velocity Head, inches of H ₂ O				0.797
v _s	Average LFG Velocity, feet/second				60.94
A _s	Stack Crosssectional Area, square feet				1.35
Q _{sd}	Dry Volumetric Flow Rate, dry scfm				4,326
Q _s	Standard Volumetric Flow Rate, scfm				4,636
Q _{aw}	Actual Wet Volumetric Flue Gas Flow Rate, acfm				4,947
Q _{lb/hr}	Dry Air Flow Rate at Standard Conditions, lb/hr				19,961
LFG _{CH4}	Methane, lb/hr				810.8
	Methane, grains/dscf				21.87
LFG _{CO2}	Carbon Dioxide, lb/hr				8,452.8
	Carbon Dioxide, grains/dscf				227.94
LFG _{O2}	Oxygen, lb/hr				2372.1
	Oxygen, grains/dscf				63.97
LFG _{N2}	Balance gas as Nitrogen, lb/hr				8,212.2
	Balance gas as Nitrogen, grains/dscf				221.46
LFG _{H4}	Hydrogen, lb/hr				119.6
	Hydrogen, grains/dscf				3.22

				Blower Out Sample #1	Blower Out Sample #2
H ₂ S	Hydrogen Sulfide Concentration, ppmvd			29.00	45.00
	Hydrogen Sulfide Rate, lb/hr			0.67	1.03
	Hydrogen Sulfide Rate, grains/dscf			0.018	0.028
COS	Carbonyl Sulfide Concentration, ppmvd			0.56	0.58
	Carbonyl Sulfide Rate, lb/hr			0.02	0.02
	Carbonyl Sulfide Rate, grains/dscf			0.001	0.001
CH ₄ S	Methyl Mercaptan Concentration, ppmvd			140.00	180.00
	Methyl Mercaptan Rate, lb/hr			4.54	5.84
	Methyl Mercaptan Rate, grains/dscf			0.122	0.157
C ₂ H ₆ S	Ethyl Mercaptan Concentration, ppmvd			2.00	2.10
	Ethyl Mercaptan Rate, lb/hr			0.08	0.09
	Ethyl Mercaptan Rate, grains/dscf			0.002	0.002
(CH ₃) ₂ S	Dimethyl Sulfide Concentration, ppmvd			840.00	850.00
	Dimethyl Sulfide Rate, lb/hr			35.17	35.59
	Dimethyl Sulfide Rate, grains/dscf			0.949	0.960
CS ₂	Carbon Disulfide Concentration, ppmvd			0.64	0.69
	Carbon Disulfide Rate, lb/hr			0.03	0.04
	Carbon Disulfide Rate, grains/dscf			0.001	0.001
C ₂ H ₆ S ₂	Dimethyl Disulfide Concentration, ppmvd			88.00	110.00
	Dimethyl Disulfide Rate, lb/hr			5.59	5.64
	Dimethyl Disulfide Rate, grains/dscf			0.151	0.152
① E _{TRS-SO2}	TRS-->SO2 Emission Concentration, ppmvd			1,200.00	1,300.00
	TRS-->SO2 Emission Rate, lb/hr			51.81	56.13
	TRS-->SO2 Emission Rate, grains/dscf			1.397	1.514

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

Tuesday, September 01, 2015

LOCATION	TIME	Q -SCFM		Δ	KURZ	Method 2 vs KURZ
		METHOD 2	FLEETZOOM			
BLOWER OUT	8:17	4,636	4,526	-2.4%	4,376	-5.9%
FL100						
FL120						
FL 140						

September 4, 2015

Republic Services
ATTN: Jim Getting
13570 St. Charles Rock Rd.
Bridgeton, MO 63044



ADE-1461
EPA Methods TO-3, TO14A, TO15 SIM & Scan, ASTM D1946



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

TX Cert T104704450-09-TX
EPA Methods TO14A, TO15

UT Cert CA0133332014-1
EPA Methods TO3, TO14A, TO15, RSK-175

LABORATORY TEST RESULTS

Project Reference: Bridgeton Landfill; 4862452
Lab Number: G090202-01/02

Enclosed are results for sample(s) received 9/2/15 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 Jim Getting, Mike Lambrich and Ryan Ayers on 9/3/15.

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

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



Rev. 03 - 5/7/09

Client: Republic Services
Attn: Jim Getting
Project Name: Bridgeton Landfill
Project No.: NA
Date Received: 09/02/15
Matrix: Air
Reporting Units: % v/v

ASTM D1946

Lab No.:	G090202-01	G090202-02		
Client Sample I.D.:	Outlet A	Outlet B		
Date/Time Sampled:	9/1/15 8:07	9/1/15 8:17		
Date/Time Analyzed:	9/2/15 15:02	9/2/15 15:17		
QC Batch No.:	150902GC8A1	150902GC8A1		
Analyst Initials:	AS	AS		
Dilution Factor:	2.8	2.9		
ANALYTE	Result % v/v	RL % v/v	Result % v/v	RL % v/v
Hydrogen	8.6	2.8	9.0	2.9
Carbon Dioxide	28	0.028	29	0.029
Oxygen/Argon	11	1.4	11	1.4
Nitrogen	44	2.8	43	2.9
Methane	7.4	0.0028	7.6	0.0029

Results normalized including non-methane hydrocarbons

ND = Not Detected (below RL)

RL = Reporting Limit

Reviewed/Approved By: _____

Mark Johnson
Operations Manager

Date

9-3-15

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



QC Batch No.: 150902GC8A1

Matrix: Air

Units: % v/v

QC for ASTM D1946

Lab No.:	Method Blank		LCS		LCSD			
Date/Time Analyzed:	9/2/15 10:11		9/2/15 9:41		9/2/15 9:56			
Analyst Initials:	AS		AS		AS			
Datafile:	02sep004		02sep002		02sep003			
Dilution Factor:	1.0		1.0		1.0			
ANALYTE	Results	RL	% Rec.	Criteria	% Rec.	Criteria	%RPD	Criteria
Hydrogen	ND	1.0	94	70-130%	95	70-130%	0.4	<30
Carbon Dioxide	ND	0.010	96	70-130%	95	70-130%	0.2	<30
Oxygen/Argon	ND	0.50	105	70-130%	105	70-130%	0.1	<30
Nitrogen	ND	1.0	104	70-130%	104	70-130%	0.2	<30
Methane	ND	0.0010	97	70-130%	98	70-130%	1.1	<30

ND = Not Detected (Below RL)

Reviewed/Approved By:



Mark J. Johnson
Operations Manager

Date:

9-3-15

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: Jim Getting
Project Name: Bridgeton Landfill
Project No.: NA
Date Received: 09/02/15
Matrix: Air
Reporting Units: ppmv

Page 4 of 5
 G090202

EPA 15/16

Lab No.:	G090202-01	G090202-02		
Client Sample I.D.:	Outlet A	Outlet B		
Date/Time Sampled:	9/1/15 8:07	9/1/15 8:17		
Date/Time Analyzed:	9/3/15 10:35	9/3/15 11:10		
QC Batch No.:	150903GC3A1	150903GC3A1		
Analyst Initials:	AS	AS		
Dilution Factor:	2.8	2.9		
ANALYTE	Result ppmv	RL ppmv	Result ppmv	RL ppmv
Hydrogen Sulfide	29 d	5.6	45 d	5.8
Carbonyl Sulfide	ND	0.56	ND	0.58
Methyl Mercaptan	140 d	5.6	180 d	5.8
Ethyl Mercaptan	2.0	0.56	2.1	0.58
Dimethyl Sulfide	840 d	56.0	850 d	58.0
Carbon Disulfide	0.64	0.56	0.69	0.58
Dimethyl Disulfide	88 d	5.6	110 d	5.8
Total Reduced Sulfur	1,200	0.56	1,300	0.58

ND = Not Detected (below RL)

RL = Reporting Limit

Reviewed/Approved By: _____

Mark Johnson
 Operations Manager

Date

9-3-15

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

page 1 of 1

QC Batch No.: 150903GC3A1
Matrix: Air
Units: ppmv

Page 5 of 5
G090202

QC for Sulfur Compounds by EPA 15/16

Lab No.:	Method Blank		LCS		LCSD			
Date/Time Analyzed:	9/3/15 9:21		9/3/15 8:58		9/3/15 9:10			
Analyst Initials:	AS		AS		AS			
Datafile:	03sep004		03sep002		03sep003			
Dilution Factor:	1.0		1.0		1.0			
ANALYTE	Results	RL	% Rec.	Criteria	% Rec.	Criteria	%RPD	Criteria
Hydrogen Sulfide	ND	0.20	95	70-130%	95	70-130%	0.7	<30
Carbonyl Sulfide	ND	0.20	103	70-130%	102	70-130%	1.0	<30
Methyl Mercaptan	ND	0.20	105	70-130%	104	70-130%	1.5	<30
Ethyl Mercaptan	ND	0.20	121	70-130%	120	70-130%	1.4	<30
Dimethyl Sulfide	ND	0.20	96	70-130%	98	70-130%	1.4	<30
Carbon Disulfide	ND	0.20	98	70-130%	99	70-130%	1.6	<30
Dimethyl Disulfide	ND	0.20	105	70-130%	105	70-130%	0.2	<30

ND = Not Detected (Below RL)

RL = Reporting Limit

Reviewed/Approved By:



Mark J. Johnson
Operations Manager

Date:

9-3-15

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

PARAMETER					Blower Out
Date	Test Date				9/10/15
Start	Run Start Time				9:05
	Run Finish Time				11:05
	Net Traversing Points				16 (2 x 8)
⊖	Net Run Time, minutes				2:00:10
C _p	Pitot Tube Coefficient				0.99
P _{Br}	Barometric Pressure, inches of Mercury				29.82
% H ₂ O	Moisture Content of LFG, %				4.67
% RH	Relative Humidity, %				36.30
M _{fd}	Dry Mole Fraction				0.953
%CH ₄	Methane, %				8.40
%CO ₂	Carbon Dioxide, %				30.50
%O ₂	Oxygen, %				9.90
%Balance	Assumed as Nitrogen, %				40.50
%H ₂	Hydrogen, %				9.40
M _d	Dry Molecular Weight, lb/lb-Mole				29.47
M _s	Wet Molecular weight, lb/lb-Mole				28.94
P _g	Flue Gas Static Pressure, inches of H ₂ O				17.28
P _s	Absolute Flue Gas Pressure, inches of Mercury				31.09
t _s	Average Stack Gas Temperature, °F				127
ΔP _{avg}	Average Velocity Head, inches of H ₂ O				0.737
v _s	Average LFG Velocity, feet/second				58.66
A _s	Stack Crosssectional Area, square feet				1.35
Q _{sd}	Dry Volumetric Flow Rate, dry scfm				4,247
Q _s	Standard Volumetric Flow Rate, scfm				4,445
Q _{aw}	Actual Wet Volumetric Flue Gas Flow Rate, acfm				4,762
Q _{lb/hr}	Dry Air Flow Rate at Standard Conditions, lb/hr				19,492
LFG _{CH4}	Methane, lb/hr				891.5
	Methane, grains/dscf				24.49
LFG _{CO2}	Carbon Dioxide, lb/hr				8,880.2
	Carbon Dioxide, grains/dscf				243.94
LFG _{O2}	Oxygen, lb/hr				2095.8
	Oxygen, grains/dscf				57.57
LFG _{N2}	Balance gas as Nitrogen, lb/hr				7,505.8
	Balance gas as Nitrogen, grains/dscf				206.18
LFG _{H4}	Hydrogen, lb/hr				125.4
	Hydrogen, grains/dscf				3.44

				Blower Out Sample #1	Blower Out Sample #2
H ₂ S	Hydrogen Sulfide Concentration, ppmvd			19.00	0.56
	Hydrogen Sulfide Rate, lb/hr			0.43	0.01
	Hydrogen Sulfide Rate, grains/dscf			0.012	0.000
COS	Carbonyl Sulfide Concentration, ppmvd			0.56	0.56
	Carbonyl Sulfide Rate, lb/hr			0.02	0.02
	Carbonyl Sulfide Rate, grains/dscf			0.001	0.001
CH ₄ S	Methyl Mercaptan Concentration, ppmvd			160.00	120.00
	Methyl Mercaptan Rate, lb/hr			5.09	3.82
	Methyl Mercaptan Rate, grains/dscf			0.140	0.105
C ₂ H ₆ S	Ethyl Mercaptan Concentration, ppmvd			2.10	1.80
	Ethyl Mercaptan Rate, lb/hr			0.09	0.07
	Ethyl Mercaptan Rate, grains/dscf			0.002	0.002
(CH ₃) ₂ S	Dimethyl Sulfide Concentration, ppmvd			820.00	870.00
	Dimethyl Sulfide Rate, lb/hr			33.71	35.76
	Dimethyl Sulfide Rate, grains/dscf			0.926	0.982
CS ₂	Carbon Disulfide Concentration, ppmvd			0.71	0.70
	Carbon Disulfide Rate, lb/hr			0.04	0.04
	Carbon Disulfide Rate, grains/dscf			0.001	0.001
C ₂ H ₆ S ₂	Dimethyl Disulfide Concentration, ppmvd			100.00	100.00
	Dimethyl Disulfide Rate, lb/hr			6.23	5.04
	Dimethyl Disulfide Rate, grains/dscf			0.171	0.138
① E _{TRS-SO2}	TRS-->SO2 Emission Concentration, ppmvd			1,200.00	1,200.00
	TRS-->SO2 Emission Rate, lb/hr			50.86	50.86
	TRS-->SO2 Emission Rate, grains/dscf			1.397	1.397

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

Thursday, September 10, 2015

LOCATION	TIME	Q -SCFM		Δ	KURZ	Method 2 vs KURZ
		METHOD 2	FLEETZOOM			
BLOWER OUT	9:05	4,445	4,462	0.4%	4,347	-2.3%
FL100						
FL120						
FL 140						

September 15, 2015

Republic Services
ATTN: Jim Getting
13570 St. Charles Rock Rd.
Bridgeton, MO 63044



ADE-1461
EPA Methods TO-3,
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

LABORATORY TEST RESULTS

Project Reference: Bridgeton Landfill
Lab Number: G091105-01/02

Enclosed are results for sample(s) received 9/11/15 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 Jim Getting, Mike Lambrich, Brian Power, Ryan Ayers, David Penoyer, Niki Wuestenberg, Mike Beaudoin, David Randall and Jesse Varsho on 9/15/15.

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

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

Client: Republic Services
Attn: Jim Getting
Project Name: Bridgeton Landfill
Project No.: NA
Date Received: 09/11/15
Matrix: Air
Reporting Units: ppmv

EPA 15/16

Lab No.:	G091105-01	G091105-02		
Client Sample I.D.:	Outlet A	Outlet B		
Date/Time Sampled:	9/10/15 8:22	9/10/15 8:33		
Date/Time Analyzed:	9/14/15 11:58	9/14/15 12:34		
QC Batch No.:	150914GC3A1	150914GC3A1		
Analyst Initials:	AS	AS		
Dilution Factor:	2.8	2.8		
ANALYTE	Result ppmv	RL ppmv	Result ppmv	RL ppmv
Hydrogen Sulfide	19 d	5.6	ND	0.56
Carbonyl Sulfide	ND	0.56	ND	0.56
Methyl Mercaptan	160 d	5.6	120 d	5.6
Ethyl Mercaptan	2.1	0.56	1.8	0.56
Dimethyl Sulfide	820 d	56.0	870 d	56.0
Carbon Disulfide	0.71	0.56	0.70	0.56
Dimethyl Disulfide	100 d	5.6	100 d	5.6
Total Reduced Sulfur	1,200	0.56	1,200	0.56

ND = Not Detected (below RL)

RL = Reporting Limit

d = Reported from a secondary dilution

Reviewed/Approved By: Mark Johnson
Mark Johnson
Operations Manager

Date 9/15/15

The cover letter is an integral part of this analytical report



QC Batch No.: 150914GC3A1
Matrix: Air
Units: ppmv

Page 3 of 5
G091105

QC for Sulfur Compounds by EPA 15/16

Lab No.:	Method Blank		LCS		LCSD			
Date/Time Analyzed:	9/14/15 11:31		9/14/15 11:03		9/14/15 11:17			
Analyst Initials:	AS		AS		AS			
Datafile:	14sep005		14sep003		14sep004			
Dilution Factor:	1.0		1.0		1.0			
ANALYTE	Results	RL	% Rec.	Criteria	% Rec.	Criteria	%RPD	Criteria
Hydrogen Sulfide	ND	0.20	99	70-130%	98	70-130%	1.0	<30
Carbonyl Sulfide	ND	0.20	110	70-130%	108	70-130%	1.8	<30
Methyl Mercaptan	ND	0.20	112	70-130%	107	70-130%	4.3	<30
Ethyl Mercaptan	ND	0.20	126	70-130%	127	70-130%	0.4	<30
Dimethyl Sulfide	ND	0.20	104	70-130%	103	70-130%	0.4	<30
Carbon Disulfide	ND	0.20	103	70-130%	103	70-130%	0.1	<30
Dimethyl Disulfide	ND	0.20	110	70-130%	108	70-130%	1.0	<30

ND = Not Detected (Below RL)

RL = Reporting Limit

Reviewed/Approved By: _____


Mark J. Johnson
Operations Manager

Date: _____



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: Jim Getting
Project Name: Bridgeton Landfill
Project No.: NA
Date Received: 09/11/15
Matrix: Air
Reporting Units: % v/v

ASTM D1946

Lab No.:	G091105-01	G091105-02						
Client Sample I.D.:	Outlet A	Outlet B						
Date/Time Sampled:	9/10/15 8:22	9/10/15 8:33						
Date/Time Analyzed:	9/14/15 13:55	9/14/15 14:09						
QC Batch No.:	150914GC8A1	150914GC8A1						
Analyst Initials:	AS	AS						
Dilution Factor:	2.8	2.8						
ANALYTE	Result % v/v	RL % v/v	Result % v/v	RL % v/v				
Hydrogen	9.3	2.8	9.6	2.8				
Carbon Dioxide	30	0.028	31	0.028				
Oxygen/Argon	10	1.4	9.8	1.4				
Nitrogen	41	2.8	40	2.8				
Methane	8.3	0.0028	8.6	0.0028				

Results normalized including non-methane hydrocarbons

ND = Not Detected (below RL)

RL = Reporting Limit

Reviewed/Approved By: Mark Johnson
Mark Johnson
Operations Manager

Date 9/15/15

The cover letter is an integral part of this analytical report



QC Batch No.: 150914GC8A1

Matrix: Air

Units: % v/v

QC for ASTM D1946

Lab No.:	Method Blank		LCS		LCSD			
Date/Time Analyzed:	9/14/15 11:31		9/14/15 11:01		9/14/15 11:16			
Analyst Initials:	AS		AS		AS			
Datafile:	14sep012		14sep010		14sep011			
Dilution Factor:	1.0		1.0		1.0			
ANALYTE	Results	RL	% Rec.	Criteria	% Rec.	Criteria	%RPD	Criteria
Hydrogen	ND	1.0	93	70-130%	92	70-130%	1.3	<30
Carbon Dioxide	ND	0.010	93	70-130%	91	70-130%	1.8	<30
Oxygen/Argon	ND	0.50	104	70-130%	103	70-130%	1.5	<30
Nitrogen	ND	1.0	103	70-130%	102	70-130%	1.5	<30
Methane	ND	0.0010	107	70-130%	107	70-130%	0.1	<30

ND = Not Detected (Below RL)

Reviewed/Approved By: _____

Mark J. Johnson
Operations Manager

Date: _____

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

Bridgeton Landfill, LLC.
Weekly TRS Sampling Summary

Kurz FM = **3,950** scfm

Fleetzoom Total = **3,977** scfm

$\Delta = 0.7\%$

PARAMETER		Blower Out #1	Blower Out #2
Date	Test Date		9/15/15
Time	Start - Finish	7:48	7:58
%CH ₄	Methane, %	8.00	8.10
%CO ₂	Carbon Dioxide, %	29.00	30.00
%O ₂	Oxygen, %	10.00	10.00
%Balance	Assumed as Nitrogen, %	43.00	42.00
%H ₂	Hydrogen, %	8.50	8.80
P _g	Flue Gas Static Pressure, inches of H ₂ O	24.00	24.00
t _s	Blower Outlet LFG Temperature, °F	125	125
Q _{sd}	Dry Volumetric Flow Rate, dry scfm (assumes 10%H ₂ O)	3,555	
Q _s	Kurz FM, Standard Volumetric Flow Rate, scfm	3,950	
LFG _{CH4}	Methane, lb/hr	710.7	719.6
	Methane, grains/dscf	23.32	23.62
LFG _{CO2}	Carbon Dioxide, lb/hr	7,067.5	7,311.2
	Carbon Dioxide, grains/dscf	231.94	239.94
LFG _{O2}	Oxygen, lb/hr	1,772.0	1,772.0
	Oxygen, grains/dscf	58.15	58.15
LFG _{N2}	Balance gas as Nitrogen, lb/hr	6,670.5	6,515.3
	Balance gas as Nitrogen, grains/dscf	218.91	213.82
LFG _{H4}	Hydrogen, lb/hr	94.9	98.2
	Hydrogen, grains/dscf	3.11	3.22

		Blower Out #1	Blower Out #2
H ₂ S	Hydrogen Sulfide Concentration, ppm	40.00	14.00
	Hydrogen Sulfide Rate, lb/hr	0.75	0.26
	Hydrogen Sulfide Rate, grains/dscf	0.025	0.009
COS	Carbonyl Sulfide Concentration, ppm	0.56	0.56
	Carbonyl Sulfide Rate, lb/hr	0.02	0.02
	Carbonyl Sulfide Rate, grains/dscf	0.001	0.001
CH ₄ S	Methyl Mercaptan Concentration, ppm	160.00	140.00
	Methyl Mercaptan Rate, lb/hr	4.26	3.73
	Methyl Mercaptan Rate, grains/dscf	0.140	0.122
C ₂ H ₆ S	Ethyl Mercaptan Concentration, ppm	2.20	1.90
	Ethyl Mercaptan Rate, lb/hr	0.08	0.07
	Ethyl Mercaptan Rate, grains/dscf	0.002	0.002
(CH ₃) ₂ S	Dimethyl Sulfide Concentration, ppm	800.00	860.00
	Dimethyl Sulfide Rate, lb/hr	27.53	29.59
	Dimethyl Sulfide Rate, grains/dscf	0.903	0.971
CS ₂	Carbon Disulfide Concentration, ppm	0.59	0.60
	Carbon Disulfide Rate, lb/hr	0.02	0.03
	Carbon Disulfide Rate, grains/dscf	0.001	0.001
C ₂ H ₆ S ₂	Dimethyl Disulfide Concentration, ppm	71.00	82.00
	Dimethyl Disulfide Rate, lb/hr	3.70	4.28
	Dimethyl Disulfide Rate, grains/dscf	0.122	0.140
① E _{TRS-SO2}	TRS-->SO2 Emission Concentration, ppm	1,200.00	1,200.00
	TRS-->SO2 Emission Rate, lb/hr	42.57	42.57
	TRS-->SO2 Emission Rate, grains/dscf	1.397	1.397

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

September 21, 2015

Republic Services
ATTN: Jim Getting
13570 St. Charles Rock Rd.
Bridgeton, MO 63044



ADE-1461
EPA Methods TO-3,
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

LABORATORY TEST RESULTS

Project Reference: Bridgeton Landfill
Lab Number: G091604-01/02

Enclosed are results for sample(s) received 9/16/15 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 Jim Getting, Mike Lambrich, Brian Power, Ryan Ayers, David Penoyer, Niki Wuestenberg, Mike Beaudoin, David Randall and Jesse Varsho on 9/21/15.

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

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



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

Project No.:

Report Name:

Report To:

Company:

Street:

City/State/Zip:

Phone& Fax:

e-mail:

Bridgeton Landfill

Jim Getting

Republic Services

13570 St. Charles Rock Rd.

Bridgeton, MO 63044

314-683-3921

JGetting@republicservices.com

LAB USE ONLY

Canister Pressures ("hg)

Canister ID	Sample Start	Sample End	Lab Receive
-------------	--------------	------------	-------------

J1717 -20.46 -3.5 -3

1618 -20.41 -3.5 -3

SAMPLE IDENTIFICATION

SAMPLE DATE	SAMPLE TIME	CONTAINER QTY/TPE	MATRIX	PRESERVA-TION
-------------	-------------	-------------------	--------	---------------

9/15/2015 748 C LFG NA X

9/15/2015 758 C LFG NA X

CHAIN OF CUSTODY RECORD

TURNAROUND TIME	DELIVERABLES	PAGE: 1 OF 1
Standard ☐ 48 hours ☒ 72 hours ☐ 96 hours ☐ Other: 5 day ☐	EDD ☐ EDF ☐ Level 3 ☐ Level 4 ☐	Condition upon receipt: Sealed Yes ☐ No ☐ Intact Yes ☐ No ☐ Chilled _____ deg C

BILLING

P.O. No.: PO4862452

Bill to: Republic Services

Attn: Jim Getting

13570 St. Charles Rock Rd.

Bridgeton, MO 63044

ANALYSIS REQUEST

EPA 15/16 + TRS & ASTM1946 + H2

AUTHORIZATION TO PERFORM WORK: Dave Penoyer

COMPANY: Republic Services

DATE/TIME:

SAMPLED BY: Ryan Ayers

COMPANY: Republic Services

DATE/TIME:

RELINQUISHED BY:

DATE/RECEIVED BY:

DATE/TIME:

RELINQUISHED BY:

DATE/RECEIVED BY:

DATE/TIME: 9/16/15 1328

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, Inc.
Attn: Jim Getting
Project Name: Bridgeton Landfill
Project No.: NA
Date Received: 09/16/15
Matrix: Air
Reporting Units: ppmv

EPA 15/16

Lab No.:	G091604-01		G091604-02					
Client Sample I.D.:	Outlet A		Outlet B					
Date/Time Sampled:	9/15/15 7:48		9/15/15 7:58					
Date/Time Analyzed:	9/17/15 11:57		9/17/15 13:10					
QC Batch No.:	150917GC3A1		150917GC3A1					
Analyst Initials:	AS		AS					
Dilution Factor:	2.8		2.8					
ANALYTE	Result ppmv	RL ppmv	Result ppmv	RL ppmv				
Hydrogen Sulfide	40 d	5.6	14	0.56				
Carbonyl Sulfide	ND	0.56	ND	0.56				
Methyl Mercaptan	160 d	5.6	140 d	5.6				
Ethyl Mercaptan	2.2	0.56	1.9	0.56				
Dimethyl Sulfide	800 d	56.0	860 d	56.0				
Carbon Disulfide	0.59	0.56	0.60	0.56				
Dimethyl Disulfide	71 d	5.6	82 d	5.6				
Total Reduced Sulfur	1,200	0.56	1,200	0.56				

ND = Not Detected (below RL)

RL = Reporting Limit

d = Reported from a secondary dilution

Reviewed/Approved By: Mark Johnson
Mark Johnson
Operations Manager

Date 9/21/15

The cover letter is an integral part of this analytical report



AirTECHNOLOGY Laboratories, Inc.

QC Batch No.: 150917GC3A1
Matrix: Air
Units: ppmv

Page 3 of 5
G091604

QC for Sulfur Compounds by EPA 15/16

Lab No.:	Method Blank		LCS		LCSD			
Date/Time Analyzed:	9/17/15 9:44		9/17/15 9:21		9/17/15 9:33			
Analyst Initials:	AS		AS		AS			
Datafile:	17sep004		17sep002		17sep003			
Dilution Factor:	1.0		1.0		1.0			
ANALYTE	Results	RL	% Rec.	Criteria	% Rec.	Criteria	%RPD	Criteria
Hydrogen Sulfide	ND	0.20	92	70-130%	88	70-130%	4.4	<30
Carbonyl Sulfide	ND	0.20	103	70-130%	104	70-130%	0.8	<30
Methyl Mercaptan	ND	0.20	105	70-130%	102	70-130%	2.5	<30
Ethyl Mercaptan	ND	0.20	123	70-130%	122	70-130%	0.8	<30
Dimethyl Sulfide	ND	0.20	98	70-130%	99	70-130%	1.1	<30
Carbon Disulfide	ND	0.20	95	70-130%	95	70-130%	0.2	<30
Dimethyl Disulfide	ND	0.20	99	70-130%	102	70-130%	2.5	<30

ND = Not Detected (Below RL)

RL = Reporting Limit

Reviewed/Approved By: _____

Mark J. Johnson
Operations Manager

Date: _____

9/21/15

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, Inc.
Attn: Jim Getting
Project Name: Bridgeton Landfill
Project No.: NA
Date Received: 09/16/15
Matrix: Air
Reporting Units: % v/v

ASTM D1946

Lab No.:	G091604-01	G091604-02						
Client Sample I.D.:	Outlet A	Outlet B						
Date/Time Sampled:	9/15/15 7:48	9/15/15 7:58						
Date/Time Analyzed:	9/17/15 12:04	9/17/15 12:19						
QC Batch No.:	150917GC8A1	150917GC8A1						
Analyst Initials:	AS	AS						
Dilution Factor:	2.8	2.8						
ANALYTE	Result % v/v	RL % v/v	Result % v/v	RL % v/v				
Hydrogen	8.5	2.8	8.8	2.8				
Carbon Dioxide	29	0.028	30	0.028				
Oxygen/Argon	10	1.4	10	1.4				
Nitrogen	43	2.8	42	2.8				
Methane	8.0	0.0028	8.1	0.0028				

Results normalized including non-methane hydrocarbons

ND = Not Detected (below RL)

RL = Reporting Limit

Reviewed/Approved By: Mark Johnson
Operations Manager

Date 9/17/15

The cover letter is an integral part of this analytical report



QC Batch No.: 150917GC8A1

Matrix: Air

Units: % v/v

QC for ASTM D1946

Lab No.:	Method Blank		LCS		LCSD			
Date/Time Analyzed:	9/17/15 11:05		9/17/15 9:15		9/17/15 9:30			
Analyst Initials:	AS		AS		AS			
Datafile:	17sep007		17sep.ru		17sep001			
Dilution Factor:	1.0		1.0		1.0			
ANALYTE	Results	RL	% Rec.	Criteria	% Rec.	Criteria	%RPD	Criteria
Hydrogen	ND	1.0	106	70-130%	107	70-130%	1.2	<30
Carbon Dioxide	ND	0.010	98	70-130%	100	70-130%	1.7	<30
Oxygen/Argon	ND	0.50	98	70-130%	99	70-130%	1.9	<30
Nitrogen	ND	1.0	98	70-130%	100	70-130%	1.9	<30
Methane	ND	0.0010	99	70-130%	103	70-130%	4.1	<30

ND = Not Detected (Below RL)

Reviewed/Approved By: _____

Mark J. Johnson
Operations Manager

Date: _____

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

Bridgeton Landfill, LLC.
Weekly TRS Sampling Summary

Kurz FM = **3,574** scfm

Fleetzoom Total = **3,563** scfm

$\Delta = -0.3\%$

PARAMETER		Blower Out #1	Blower Out #2
Date	Test Date		9/22/15
Time	Start - Finish	8:07	8:18
%CH ₄	Methane, %	9.70	9.90
%CO ₂	Carbon Dioxide, %	33.00	34.00
%O ₂	Oxygen, %	8.90	8.60
%Balance	Assumed as Nitrogen, %	37.00	37.00
%H ₂	Hydrogen, %	9.70	9.70
P _g	Flue Gas Static Pressure, inches of H ₂ O	18.99	18.99
t _s	Blower Outlet LFG Temperature, °F	107	107
Q _{sd}	Dry Volumetric Flow Rate, dry scfm (assumes 10%H ₂ O)	3,217	
Q _s	Kurz FM, Standard Volumetric Flow Rate, scfm	3,574	
LFG _{CH4}	Methane, lb/hr	779.7	795.8
	Methane, grains/dscf	28.28	28.86
LFG _{CO2}	Carbon Dioxide, lb/hr	7,277.3	7,497.9
	Carbon Dioxide, grains/dscf	263.93	271.93
LFG _{O2}	Oxygen, lb/hr	1,427.0	1,378.9
	Oxygen, grains/dscf	51.76	50.01
LFG _{N2}	Balance gas as Nitrogen, lb/hr	5,193.7	5,193.7
	Balance gas as Nitrogen, grains/dscf	188.37	188.37
LFG _{H4}	Hydrogen, lb/hr	98.0	98.0
	Hydrogen, grains/dscf	3.55	3.55

		Blower Out #1	Blower Out #2
H ₂ S	Hydrogen Sulfide Concentration, ppmv	2.80	0.50
	Hydrogen Sulfide Rate, lb/hr	0.05	0.01
	Hydrogen Sulfide Rate, grains/dscf	0.002	0.000
COS	Carbonyl Sulfide Concentration, ppmv	0.56	0.56
	Carbonyl Sulfide Rate, lb/hr	0.02	0.02
	Carbonyl Sulfide Rate, grains/dscf	0.001	0.001
CH ₄ S	Methyl Mercaptan Concentration, ppmv	150.00	81.00
	Methyl Mercaptan Rate, lb/hr	3.62	1.95
	Methyl Mercaptan Rate, grains/dscf	0.131	0.071
C ₂ H ₆ S	Ethyl Mercaptan Concentration, ppmv	1.80	0.87
	Ethyl Mercaptan Rate, lb/hr	0.06	0.03
	Ethyl Mercaptan Rate, grains/dscf	0.002	0.001
(CH ₃) ₂ S	Dimethyl Sulfide Concentration, ppmv	830.00	890.00
	Dimethyl Sulfide Rate, lb/hr	25.84	27.71
	Dimethyl Sulfide Rate, grains/dscf	0.937	1.005
CS ₂	Carbon Disulfide Concentration, ppmv	0.66	0.64
	Carbon Disulfide Rate, lb/hr	0.03	0.02
	Carbon Disulfide Rate, grains/dscf	0.001	0.001
C ₂ H ₆ S ₂	Dimethyl Disulfide Concentration, ppmv	110.00	200.00
	Dimethyl Disulfide Rate, lb/hr	5.19	9.44
	Dimethyl Disulfide Rate, grains/dscf	0.188	0.342
①E _{TRS-SO2}	TRS-->SO2 Emission Concentration, ppmv	1,200.00	1,400.00
	TRS-->SO2 Emission Rate, lb/hr	38.52	44.94
	TRS-->SO2 Emission Rate, grains/dscf	1.397	1.630

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

September 25, 2015

Republic Services
ATTN: Jim Getting
13570 St. Charles Rock Rd.
Bridgeton, MO 63044



ADE-1461
EPA Methods TO-3,
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

LABORATORY TEST RESULTS

Project Reference: Bridgeton Landfill; 4862452
Lab Number: G092302-01/02

Enclosed are results for sample(s) received 9/23/15 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 Jim Getting, Mike Lambrich, Brian Power, Ryan Ayers, David Penoyer, Niki Wuestenberg, Mike Beaudoin, David Randall and Jesse Varsho on 9/25/15.

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

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

[illegible]

Client: Republic Services, Inc.
Attn: Jim Getting
Project Name: Bridgeton Landfill
Project No.: NA
Date Received: 09/23/15
Matrix: Air
Reporting Units: % v/v

ASTM D1946

Lab No.:	G092302-01	G092302-02		
Client Sample I.D.:	Outlet A	Outlet B		
Date/Time Sampled:	9/22/15 8:07	9/22/15 8:18		
Date/Time Analyzed:	9/24/15 15:16	9/24/15 15:30		
QC Batch No.:	150924GC8A1	150924GC8A1		
Analyst Initials:	AS	AS		
Dilution Factor:	2.8	2.8		
ANALYTE	Result % v/v	RL % v/v	Result % v/v	RL % v/v
Hydrogen	9.7	2.8	9.7	2.8
Carbon Dioxide	33	0.028	34	0.028
Oxygen/Argon	8.9	1.4	8.6	1.4
Nitrogen	37	2.8	37	2.8
Methane	9.7	0.0028	9.9	0.0028

Results normalized including non-methane hydrocarbons

ND = Not Detected (below RL)

RL = Reporting Limit

Reviewed/Approved By: Mark Johnson
 Mark Johnson
 Operations Manager

Date 9/25/15

The cover letter is an integral part of this analytical report



QC Batch No.: 150924GC8A1

Matrix: Air

Units: % v/v

QC for ASTM D1946

Lab No.:	Method Blank		LCS		LCSD			
Date/Time Analyzed:	9/24/15 12:03		9/24/15 11:18		9/24/15 11:33			
Analyst Initials:	AS		AS		AS			
Datafile:	24sep009		24sep006		24sep007			
Dilution Factor:	1.0		1.0		1.0			
ANALYTE	Results	RL	% Rec.	Criteria	% Rec.	Criteria	%RPD	Criteria
Hydrogen	ND	1.0	105	70-130%	105	70-130%	0.4	<30
Carbon Dioxide	ND	0.010	101	70-130%	100	70-130%	0.6	<30
Oxygen/Argon	ND	0.50	100	70-130%	99	70-130%	0.4	<30
Nitrogen	ND	1.0	101	70-130%	100	70-130%	0.4	<30
Methane	ND	0.0010	102	70-130%	101	70-130%	1.2	<30

ND = Not Detected (Below RL)

Reviewed/Approved By:


Mark J. Johnson
Operations Manager

Date:

9/25/15

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, Inc.
Attn: Jim Getting
Project Name: Bridgeton Landfill
Project No.: NA
Date Received: 09/23/15
Matrix: Air
Reporting Units: ppmv

EPA 15/16

Lab No.:	G092302-01	G092302-02		
Client Sample I.D.:	Outlet A	Outlet B		
Date/Time Sampled:	9/22/15 8:07	9/22/15 8:18		
Date/Time Analyzed:	9/24/15 13:16	9/24/15 13:53		
QC Batch No.:	150924GC3A1	150924GC3A1		
Analyst Initials:	AS	AS		
Dilution Factor:	2.8	2.8		
ANALYTE	Result ppmv	RL ppmv	Result ppmv	RL ppmv
Hydrogen Sulfide	2.8	0.56	ND	0.56
Carbonyl Sulfide	ND	0.56	ND	0.56
Methyl Mercaptan	150 d	5.6	81 d	5.6
Ethyl Mercaptan	1.8	0.56	0.87	0.56
Dimethyl Sulfide	830 d	56.0	890 d	56.0
Carbon Disulfide	0.66	0.56	0.64	0.56
Dimethyl Disulfide	110 d	5.6	200 d	56.0
Total Reduced Sulfur	1,200	0.56	1,400	0.56

ND = Not Detected (below RL)

RL = Reporting Limit

d = Reported from a secondary dilution

Reviewed/Approved By: Mark Johnson
Mark Johnson
Operations Manager

Date: 9/25/15

The cover letter is an integral part of this analytical report



QC Batch No.: 150924GC3A1
Matrix: Air
Units: ppmv

Page 5 of 5
G092302

QC for Sulfur Compounds by EPA 15/16

Lab No.:	Method Blank		LCS		LCSD			
Date/Time Analyzed:	9/24/15 11:21		9/24/15 10:58		9/24/15 11:10			
Analyst Initials:	AS		AS		AS			
Datafile:	24sep004		24sep002		24sep003			
Dilution Factor:	1.0		1.0		1.0			
ANALYTE	Results	RL	% Rec.	Criteria	% Rec.	Criteria	%RPD	Criteria
Hydrogen Sulfide	ND	0.20	102	70-130%	102	70-130%	0.3	<30
Carbonyl Sulfide	ND	0.20	104	70-130%	105	70-130%	1.4	<30
Methyl Mercaptan	ND	0.20	109	70-130%	108	70-130%	0.6	<30
Ethyl Mercaptan	ND	0.20	128	70-130%	127	70-130%	0.9	<30
Dimethyl Sulfide	ND	0.20	104	70-130%	102	70-130%	1.9	<30
Carbon Disulfide	ND	0.20	100	70-130%	100	70-130%	0.4	<30
Dimethyl Disulfide	ND	0.20	108	70-130%	107	70-130%	1.0	<30

ND = Not Detected (Below RL)

RL = Reporting Limit

Reviewed/Approved By: _____

Mark J. Johnson
Operations Manager

Date: _____

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

Bridgeton Landfill, LLC.
Weekly TRS Sampling Summary

Kurz FM = **3,762** scfm

Fleetzoom Total = **3,871** scfm

$\Delta = 2.8\%$

PARAMETER		Blower Out #1	Blower Out #2
Date	Test Date		9/29/15
Time	Start - Finish	8:37	8:48
%CH ₄	Methane, %	9.50	9.60
%CO ₂	Carbon Dioxide, %	32.00	33.00
%O ₂	Oxygen, %	9.50	9.30
%Balance	Assumed as Nitrogen, %	39.00	38.00
%H ₂	Hydrogen, %	9.20	9.40
P _g	Flue Gas Static Pressure, inches of H ₂ O	22.89	22.89
t _s	Blower Outlet LFG Temperature, °F	115	115
Q _{sd}	Dry Volumetric Flow Rate, dry scfm (assumes 10%H ₂ O)	3,386	
Q _s	Kurz FM, Standard Volumetric Flow Rate, scfm	3,762	
LFG _{CH4}	Methane, lb/hr	803.8	812.2
	Methane, grains/dscf	27.70	27.99
LFG _{CO2}	Carbon Dioxide, lb/hr	7,427.2	7,659.3
	Carbon Dioxide, grains/dscf	255.94	263.93
LFG _{O2}	Oxygen, lb/hr	1,603.2	1,569.4
	Oxygen, grains/dscf	55.25	54.08
LFG _{N2}	Balance gas as Nitrogen, lb/hr	5,761.8	5,614.1
	Balance gas as Nitrogen, grains/dscf	198.55	193.46
LFG _{H4}	Hydrogen, lb/hr	97.8	99.9
	Hydrogen, grains/dscf	3.37	3.44

		Blower Out #1	Blower Out #2
H ₂ S	Hydrogen Sulfide Concentration, ppmv	36.00	0.95
	Hydrogen Sulfide Rate, lb/hr	0.65	0.02
	Hydrogen Sulfide Rate, grains/dscf	0.022	0.001
COS	Carbonyl Sulfide Concentration, ppmv	0.56	0.56
	Carbonyl Sulfide Rate, lb/hr	0.02	0.02
	Carbonyl Sulfide Rate, grains/dscf	0.001	0.001
CH ₄ S	Methyl Mercaptan Concentration, ppmv	170.00	170.00
	Methyl Mercaptan Rate, lb/hr	4.31	4.31
	Methyl Mercaptan Rate, grains/dscf	0.149	0.149
C ₂ H ₆ S	Ethyl Mercaptan Concentration, ppmv	2.30	2.20
	Ethyl Mercaptan Rate, lb/hr	0.08	0.07
	Ethyl Mercaptan Rate, grains/dscf	0.003	0.002
(CH ₃) ₂ S	Dimethyl Sulfide Concentration, ppmv	830.00	910.00
	Dimethyl Sulfide Rate, lb/hr	27.20	29.82
	Dimethyl Sulfide Rate, grains/dscf	0.937	1.028
CS ₂	Carbon Disulfide Concentration, ppmv	0.59	0.62
	Carbon Disulfide Rate, lb/hr	0.02	0.02
	Carbon Disulfide Rate, grains/dscf	0.001	0.001
C ₂ H ₆ S ₂	Dimethyl Disulfide Concentration, ppmv	81.00	93.00
	Dimethyl Disulfide Rate, lb/hr	4.02	4.62
	Dimethyl Disulfide Rate, grains/dscf	0.139	0.159
① E _{TRS-SO2}	TRS-->SO2 Emission Concentration, ppmv	1,200.00	1,300.00
	TRS-->SO2 Emission Rate, lb/hr	40.54	43.92
	TRS-->SO2 Emission Rate, grains/dscf	1.397	1.514

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

October 5, 2015

Republic Services
ATTN: Jim Getting
13570 St. Charles Rock Rd.
Bridgeton, MO 63044



ADE-1461
EPA Methods TO-3,
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

LABORATORY TEST RESULTS

Project Reference: Bridgeton Landfill; 4862452
Lab Number: G093003-01/02

Enclosed are results for sample(s) received 9/30/15 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 Jim Getting, Mike Lambrich and Ryan Ayers on 10/02/15.

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

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



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

Project No.:

Project Name: Bridgeton Landfill

Report To: Jim Getting

Company: Republic Services

Street: 13570 St. Charles Rock Rd.

City/State/Zip: Bridgeton, MO 63044

Phone & Fax: 314-683-3921

e-mail: JGetting@republicservices.com

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 _____

ANALYSIS REQUEST

P.O. No.: PO4862452
Bill to: Republic Services
Attn: Jim Getting
13570 St. Charles Rock Rd.
Bridgeton, MO 63044

SAMPLE IDENTIFICATION

Canister Pressures ("hg)

Canister ID	Sample Start	Sample End	Lab Receive
1616	-20	-3.5	3
1531	-20.4	-3.5	3

LAB USE ONLY

6093003-01
U -02

SAMPLE DATE	SAMPLE TIME	CONTAINER QTY/TYPE	MATRIX	PRESERVATION
9/29/2015	837	C	LFG	NA
9/29/2015	848	C	LFG	NA

EPA 15/16 + TRS & ASTM1946 + H2

AUTHORIZATION TO PERFORM WORK: Dave Penoyer

SAMPLED BY: Ryan Ayers

RELINQUISHED BY: Ryan Ayers

RELINQUISHED BY: Ryan Ayers

RELINQUISHED BY: Ryan Ayers

DATE/RECEIVED BY: 9-29-15 0930

DATE/RECEIVED BY: 9/30/15 1209

DATE/RECEIVED BY: 9/30/15 1209

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: Jim Getting
Project Name: Bridgeton Landfill
Project No.: NA
Date Received: 09/30/15
Matrix: Air
Reporting Units: % v/v

Page 2 of 5
 G093003

ASTM D1946							
Lab No.:	G093003-01	G093003-02					
Client Sample I.D.:	Outlet A	Outlet B					
Date/Time Sampled:	9/29/15 8:37	9/29/15 8:48					
Date/Time Analyzed:	10/1/15 16:04	10/1/15 16:18					
QC Batch No.:	151001GC8A1	151001GC8A1					
Analyst Initials:	AS	AS					
Dilution Factor:	2.8	2.8					
ANALYTE	Result % v/v	RL % v/v	Result % v/v	RL % v/v			
Hydrogen	9.2	2.8	9.4	2.8			
Carbon Dioxide	32	0.028	33	0.028			
Oxygen/Argon	9.5	1.4	9.3	1.4			
Nitrogen	39	2.8	38	2.8			
Methane	9.5	0.0028	9.6	0.0028			

Results normalized including non-methane hydrocarbons

ND = Not Detected (below RL)

RL = Reporting Limit

Reviewed/Approved By: _____

Mark Johnson
 Operations Manager

Date

10-2-15

The cover letter is an integral part of this analytical report



QC Batch No.: 151001GC8A1

Matrix: Air

Units: % v/v

QC for ASTM D1946

Lab No.:	Method Blank		LCS		LCSD			
Date/Time Analyzed:	10/1/15 15:03		10/1/15 14:19		10/1/15 14:33			
Analyst Initials:	AS		AS		AS			
Datafile:	01oct010		01oct007		01oct008			
Dilution Factor:	1.0		1.0		1.0			
ANALYTE	Results	RL	% Rec.	Criteria	% Rec.	Criteria	%RPD	Criteria
Hydrogen	ND	1.0	116	70-130%	117	70-130%	0.3	<30
Carbon Dioxide	ND	0.010	104	70-130%	104	70-130%	0.1	<30
Oxygen/Argon	ND	0.50	103	70-130%	103	70-130%	0.1	<30
Nitrogen	ND	1.0	104	70-130%	104	70-130%	0.1	<30
Methane	ND	0.0010	96	70-130%	105	70-130%	9.0	<30

ND = Not Detected (Below RL)

Reviewed/Approved By:



Mark J. Johnson
Operations Manager

Date:

10-2-15

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: Jim Getting
Project Name: Bridgeton Landfill
Project No.: NA
Date Received: 09/30/15
Matrix: Air
Reporting Units: ppmv

Page 4 of 5
 G093003

EPA 15/16

Lab No.:	G093003-01	G093003-02		
Client Sample I.D.:	Outlet A	Outlet B		
Date/Time Sampled:	9/29/15 8:37	9/29/15 8:48		
Date/Time Analyzed:	9/30/15 13:52	9/30/15 14:28		
QC Batch No.:	150930GC3A1	150930GC3A1		
Analyst Initials:	AS	AS		
Dilution Factor:	2.8	2.8		
ANALYTE	Result ppmv	RL ppmv	Result ppmv	RL ppmv
Hydrogen Sulfide	36 d	5.6	0.95	0.56
Carbonyl Sulfide	ND	0.56	ND	0.56
Methyl Mercaptan	170 d	5.6	170 d	5.6
Ethyl Mercaptan	2.3	0.56	2.2	0.56
Dimethyl Sulfide	830 d	56.0	910 d	56.0
Carbon Disulfide	0.59	0.56	0.62	0.56
Dimethyl Disulfide	81 d	5.6	93 d	5.6
Total Reduced Sulfur	1,200	0.56	1,300	0.56

ND = Not Detected (below RL)

RL = Reporting Limit

d = Reported from a secondary dilution

Reviewed/Approved By: _____

Mark Johnson
 Operations Manager

Date

10-2-15

The cover letter is an integral part of this analytical report



QC Batch No.: 150930GC3A1
Matrix: Air
Units: ppmv

Page 5 of 5
G093003

QC for Sulfur Compounds by EPA 15/16

Lab No.:	Method Blank		LCS		LCSD			
Date/Time Analyzed:	9/30/15 10:16		9/30/15 9:53		9/30/15 10:05			
Analyst Initials:	AS		AS		AS			
Datafile:	30sep003		30sep001		30sep002			
Dilution Factor:	1.0		1.0		1.0			
ANALYTE	Results	RL	% Rec.	Criteria	% Rec.	Criteria	%RPD	Criteria
Hydrogen Sulfide	ND	0.20	90	70-130%	93	70-130%	3.9	<30
Carbonyl Sulfide	ND	0.20	100	70-130%	100	70-130%	0.1	<30
Methyl Mercaptan	ND	0.20	100	70-130%	98	70-130%	1.5	<30
Ethyl Mercaptan	ND	0.20	116	70-130%	123	70-130%	5.3	<30
Dimethyl Sulfide	ND	0.20	95	70-130%	96	70-130%	1.3	<30
Carbon Disulfide	ND	0.20	85	70-130%	87	70-130%	2.3	<30
Dimethyl Disulfide	ND	0.20	80	70-130%	82	70-130%	2.5	<30

ND = Not Detected (Below RL)

RL = Reporting Limit

Reviewed/Approved By:



Mark J. Johnson
Operations Manager

Date:

10-2-15

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

PARAMETER					Blower Out
Date	Test Date				10/6/15
Start	Run Start Time				12:44
	Run Finish Time				14:04
	Net Traversing Points				16 (2 x 8)
⊖	Net Run Time, minutes				1:20:35
C _p	Pitot Tube Coefficient				0.99
P _{Br}	Barometric Pressure, inches of Mercury				29.56
% H ₂ O	Moisture Content of LFG, %				5.53
% RH	Relative Humidity, %				52.20
M _{fd}	Dry Mole Fraction				0.945
%CH ₄	Methane, %				9.40
%CO ₂	Carbon Dioxide, %				33.50
%O ₂	Oxygen, %				8.95
%Balance	Assumed as Nitrogen, %				37.00
%H ₂	Hydrogen, %				10.00
M _d	Dry Molecular Weight, lb/lb-Mole				29.68
M _s	Wet Molecular weight, lb/lb-Mole				29.04
P _g	Flue Gas Static Pressure, inches of H ₂ O				23.00
P _s	Absolute Flue Gas Pressure, inches of Mercury				31.25
t _s	Average Stack Gas Temperature, °F				118
ΔP _{avg}	Average Velocity Head, inches of H ₂ O				0.499
v _s	Average LFG Velocity, feet/second				47.73
A _s	Stack Crosssectional Area, square feet				1.35
Q _{sd}	Dry Volumetric Flow Rate, dry scfm				3,491
Q _s	Standard Volumetric Flow Rate, scfm				3,684
Q _{aw}	Actual Wet Volumetric Flue Gas Flow Rate, acfm				3,875
Q _{lb/hr}	Dry Air Flow Rate at Standard Conditions, lb/hr				16,134
LFG _{CH4}	Methane, lb/hr				820.0
	Methane, grains/dscf				27.41
LFG _{CO2}	Carbon Dioxide, lb/hr				8,016.5
	Carbon Dioxide, grains/dscf				267.93
LFG _{O2}	Oxygen, lb/hr				1557.2
	Oxygen, grains/dscf				52.05
LFG _{N2}	Balance gas as Nitrogen, lb/hr				5,635.9
	Balance gas as Nitrogen, grains/dscf				188.37
LFG _{H4}	Hydrogen, lb/hr				109.6
	Hydrogen, grains/dscf				3.66

				Blower Out Sample #1	Blower Out Sample #2
H ₂ S	Hydrogen Sulfide Concentration, ppmd			18.00	54.00
	Hydrogen Sulfide Rate, lb/hr			0.33	1.00
	Hydrogen Sulfide Rate, grains/dscf			0.011	0.033
COS	Carbonyl Sulfide Concentration, ppmd			0.58	0.59
	Carbonyl Sulfide Rate, lb/hr			0.02	0.02
	Carbonyl Sulfide Rate, grains/dscf			0.001	0.001
CH ₄ S	Methyl Mercaptan Concentration, ppmd			180.00	200.00
	Methyl Mercaptan Rate, lb/hr			4.71	5.23
	Methyl Mercaptan Rate, grains/dscf			0.157	0.175
C ₂ H ₆ S	Ethyl Mercaptan Concentration, ppmd			2.30	2.50
	Ethyl Mercaptan Rate, lb/hr			0.08	0.08
	Ethyl Mercaptan Rate, grains/dscf			0.003	0.003
(CH ₃) ₂ S	Dimethyl Sulfide Concentration, ppmd			1,000.00	1,000.00
	Dimethyl Sulfide Rate, lb/hr			33.78	33.78
	Dimethyl Sulfide Rate, grains/dscf			1.129	1.129
CS ₂	Carbon Disulfide Concentration, ppmd			0.61	0.61
	Carbon Disulfide Rate, lb/hr			0.03	0.03
	Carbon Disulfide Rate, grains/dscf			0.001	0.001
C ₂ H ₆ S ₂	Dimethyl Disulfide Concentration, ppmd			110.00	110.00
	Dimethyl Disulfide Rate, lb/hr			5.63	4.55
	Dimethyl Disulfide Rate, grains/dscf			0.188	0.152
① E _{TRS-SO2}	TRS-->SO2 Emission Concentration, ppmd			1,400.00	1,500.00
	TRS-->SO2 Emission Rate, lb/hr			48.77	52.25
	TRS-->SO2 Emission Rate, grains/dscf			1.630	1.746

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

Tuesday, October 06, 2015

LOCATION	TIME	Q -SCFM		Δ	KURZ	Method 2 vs KURZ
		METHOD 2	FLEETZOOM			
BLOWER OUT	12:44	3,684	3,730	1.2%	3,673	-0.3%
FL100						
FL120						
FL 140						



18501 E. Gale Ave., Suite 130
City of Industry, CA 91748
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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		

BILLING P.O. No.: PO4862452 Bill to: Republic Services Attn: Jim Getting 13570 St. Charles Rock Rd. Bridgeton, MO 63044	ANALYSIS REQUEST			

[illegible]

COMMENTS	
DATE/TIME:	
DATE/TIME	
DATE/TIME	
DATE/TIME	10/7/15 931
DATE/TIME	

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

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

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

Client: Republic Services
Attn: Jim Getting
Project Name: Bridgeton Landfill
Project No.: NA
Date Received: 10/07/15
Matrix: Air
Reporting Units: ppmv

EPA 15/16

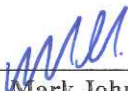
Lab No.:	G100710-01	G100710-02		
Client Sample I.D.:	Outlet A	Outlet B		
Date/Time Sampled:	10/6/15 12:50	10/6/15 13:00		
Date/Time Analyzed:	10/7/15 10:54	10/7/15 11:32		
QC Batch No.:	151007GC3A1	151007GC3A1		
Analyst Initials:	AS	AS		
Dilution Factor:	2.9	3.0		
ANALYTE	Result ppmv	RL ppmv	Result ppmv	RL ppmv
Hydrogen Sulfide	18 d	5.8	54 d	5.9
Carbonyl Sulfide	ND	0.58	ND	0.59
Methyl Mercaptan	180 d	5.8	200 d	5.9
Ethyl Mercaptan	2.3	0.58	2.5	0.59
Dimethyl Sulfide	1,000 d	58.0	1,000 d	59.0
Carbon Disulfide	0.61	0.58	0.61	0.59
Dimethyl Disulfide	110 d	5.8	110 d	5.9
Total Reduced Sulfur	1,400	0.58	1,500	0.59

ND = Not Detected (below RL)

RL = Reporting Limit

d = Reported from a secondary dilution

Reviewed/Approved By: _____


 Mark Johnson
 Operations Manager

Date 10/9/15

The cover letter is an integral part of this analytical report



AirTECHNOLOGY Laboratories, Inc.

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page 1 of 1

QC Batch No.: 151007GC3A1
Matrix: Air
Units: ppmv

QC for Sulfur Compounds by EPA 15/16

Lab No.:	Method Blank		LCS		LCSD			
Date/Time Analyzed:	10/7/15 10:01		10/7/15 9:34		10/7/15 9:48			
Analyst Initials:	AS		AS		AS			
Datafile:	07oct006		07oct004		07oct005			
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%	97	70-130%	5.8	<30
Carbonyl Sulfide	ND	0.20	106	70-130%	104	70-130%	1.6	<30
Methyl Mercaptan	ND	0.20	111	70-130%	109	70-130%	1.7	<30
Ethyl Mercaptan	ND	0.20	128	70-130%	130	70-130%	1.3	<30
Dimethyl Sulfide	ND	0.20	106	70-130%	104	70-130%	2.0	<30
Carbon Disulfide	ND	0.20	104	70-130%	103	70-130%	1.3	<30
Dimethyl Disulfide	ND	0.20	124	70-130%	122	70-130%	1.9	<30

ND = Not Detected (Below RL)

RL = Reporting Limit

Reviewed/Approved By: _____


Mark J. Johnson
Operations Manager

Date: _____

 10/9/15

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: Jim Getting
Project Name: Bridgeton Landfill
Project No.: NA
Date Received: 10/07/15
Matrix: Air
Reporting Units: % v/v

ASTM D1946

Lab No.:	G100710-01	G100710-02		
Client Sample I.D.:	Outlet A	Outlet B		
Date/Time Sampled:	10/6/15 12:50	10/6/15 13:00		
Date/Time Analyzed:	10/7/15 15:49	10/7/15 16:03		
QC Batch No.:	151007GC8A1	151007GC8A1		
Analyst Initials:	AS	AS		
Dilution Factor:	2.9	3.0		
ANALYTE	Result % v/v	RL % v/v	Result % v/v	RL % v/v
Hydrogen	10	2.9	10	3.0
Carbon Dioxide	34	0.029	33	0.030
Oxygen/Argon	9.0	1.4	8.9	1.5
Nitrogen	37	2.9	37	3.0
Methane	9.4	0.0029	9.4	0.0030

Results normalized including non-methane hydrocarbons

ND = Not Detected (below RL)

RL = Reporting Limit

Reviewed/Approved By: _____


Mark Johnson
Operations Manager

Date 10/9/15

The cover letter is an integral part of this analytical report



QC Batch No.: 151007GC8A1

Matrix: Air

Units: % v/v

QC for ASTM D1946

Lab No.:	Method Blank	LCS		LCSD				
Date/Time Analyzed:	10/7/15 10:19	10/7/15 9:35		10/7/15 9:50				
Analyst Initials:	AS	AS		AS				
Datafile:	07oct009	07oct006		07oct007				
Dilution Factor:	1.0	1.0		1.0				
ANALYTE	Results	RL	% Rec.	Criteria	% Rec.	Criteria	%RPD	Criteria
Hydrogen	ND	1.0	111	70-130%	111	70-130%	0.3	<30
Carbon Dioxide	ND	0.010	100	70-130%	100	70-130%	0.3	<30
Oxygen/Argon	ND	0.50	99	70-130%	99	70-130%	0.3	<30
Nitrogen	ND	1.0	100	70-130%	99	70-130%	0.2	<30
Methane	ND	0.0010	90	70-130%	90	70-130%	0.2	<30

ND = Not Detected (Below RL)

Reviewed/Approved By: _____

Mark J. Johnson
Operations Manager

Date: _____

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

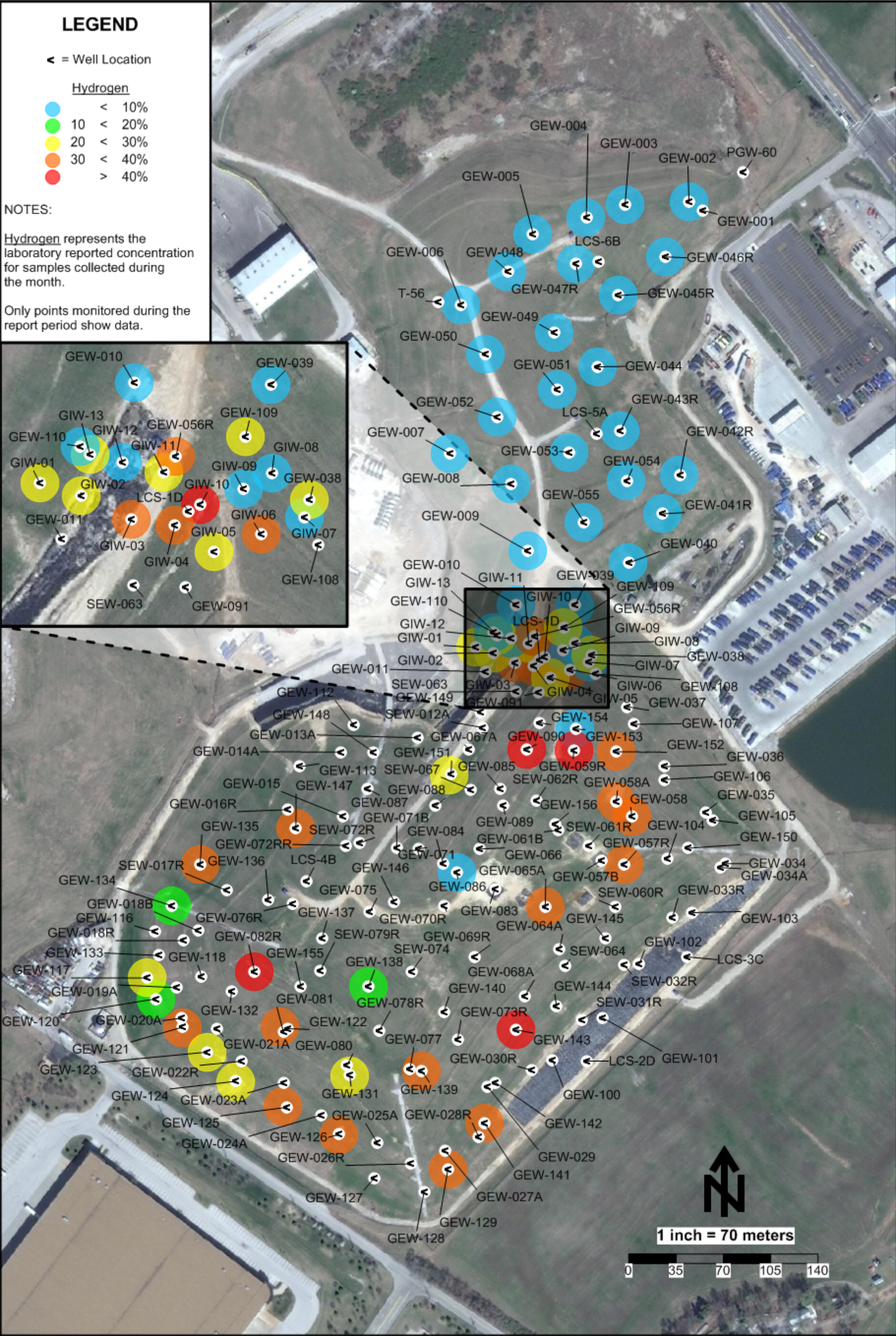


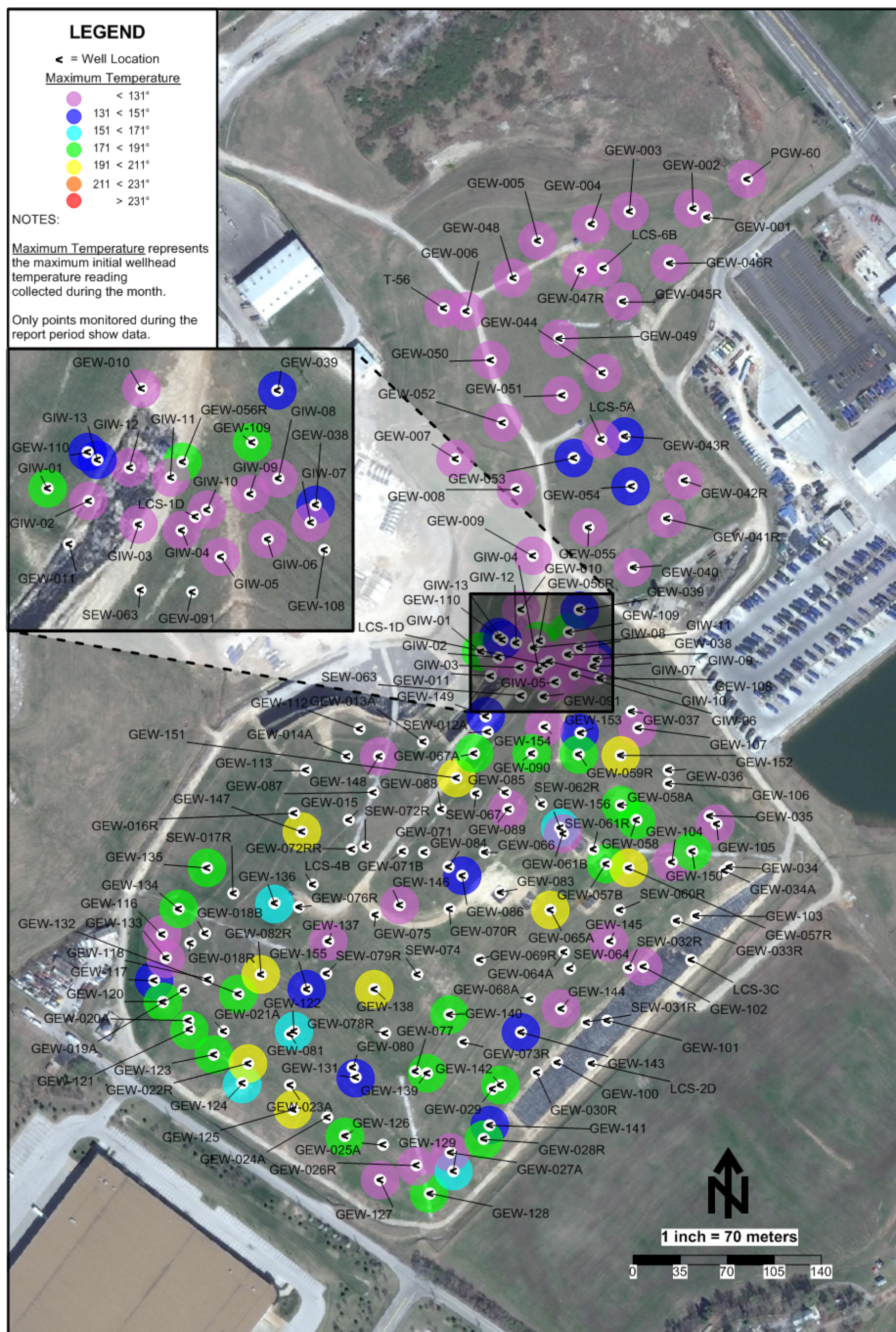
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ATTACHMENT C

GAS WELL ANALYSIS MAPS





Initial Temperature Maximums - September 2015 - 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
		North Quarry					(ppm)	
GEW-002	5/12/2015	57	40	ND	ND	ND	ND	
GEW-002	6/2/2015	55	39	ND	4.2	ND	ND	
GEW-002	7/9/2015	46	36	4.1	15	ND	ND	See Note 1
GEW-002	7/22/2015	56	41	ND	ND	ND	ND	See Note 2
GEW-002	8/13/2015	57	40	ND	ND	ND	ND	
GEW-002	9/10/2015	55	41	ND	ND	ND	ND	
GEW-003	5/12/2015	53	38	ND	8.4	0.1	ND	
GEW-003	6/2/2015	53	38	ND	6.8	0.1	ND	
GEW-003	7/9/2015	51	39	ND	9.1	0.1	ND	
GEW-003	7/22/2015	54	40	ND	5.8	0.1	ND	See Note 2
GEW-003	8/13/2015	53	38	1.6	8.1	0.1	ND	
GEW-003	9/10/2015	49	36	2.8	13.0	0.1	ND	See Note 1
GEW-004	5/12/2015	57	39	ND	ND	ND	ND	
GEW-004	6/2/2015	54	39	ND	5.3	ND	ND	
GEW-004	7/9/2015	53	40	ND	6.8	0.1	ND	
GEW-004	8/13/2015	53	39	ND	7.9	0.1	ND	
GEW-004	9/10/2015	53	40	ND	6.3	0.1	ND	
GEW-005	5/12/2015	56	36	ND	6.6	ND	ND	
GEW-005	6/3/2015	48	34	ND	16	ND	ND	
GEW-005	7/10/2015	24	21	9.5	46	ND	ND	See Note 1
GEW-005	8/13/2015	43	35	ND	21	ND	ND	
GEW-005	9/10/2015	52	38	ND	10	0.1	ND	
GEW-006	5/12/2015	57	37	ND	4.9	ND	ND	
GEW-006	9/10/2015	55	38	ND	6.5	ND	ND	
GEW-007	5/13/2015	58	39	ND	ND	ND	ND	
GEW-007	7/9/2015	54	38	ND	6	ND	ND	
GEW-007	9/11/2015	57	40	ND	ND	ND	ND	
GEW-008	5/13/2015	52	42	ND	3.4	2.2	ND	
GEW-008	6/4/2015	52	43	ND	ND	1.7	32	
GEW-008	7/9/2015	46	41	2.4	8.4	1.8	ND	
GEW-008	8/13/2015	51	44	ND	ND	1.5	ND	
GEW-008	9/11/2015	49	47	ND	ND	0.7	ND	
GEW-009	5/13/2015	53	40	ND	5.4	0.7	ND	
GEW-009	6/4/2015	53	40	ND	5	0.6	ND	
GEW-009	7/9/2015	50	41	ND	6.6	0.6	ND	
GEW-009	8/13/2015	53	41	ND	4.3	0.5	ND	
GEW-009	9/11/2015	51	40	1.5	7	0.8	ND	See Note 1
GEW-040	5/12/2015	57	40	ND	ND	ND	ND	
GEW-040	6/3/2015	48	34	3.8	14	ND	ND	
GEW-040	7/9/2015	56	40	ND	ND	ND	ND	
GEW-040	8/13/2015	57	38	ND	3.4	ND	ND	
GEW-040	9/8/2015	56	40	ND	ND	ND	ND	
GEW-041R	5/12/2015	58	39	ND	ND	ND	ND	
GEW-041R	7/9/2015	48	34	3.7	14	ND	ND	See Note 1
GEW-041R	9/8/2015	56	40	ND	3.6	ND	ND	
GEW-042R	5/12/2015	52	34	3	11	ND	ND	
GEW-042R	6/3/2015	49	34	3.1	13	ND	ND	
GEW-042R	7/9/2015	49	35	3.3	12	ND	ND	
GEW-042R	8/13/2015	57	39	ND	3.2	ND	ND	
GEW-042R	9/8/2015	55	41	ND	ND	ND	ND	
GEW-043R	5/12/2015	57	41	ND	ND	0.0	ND	

Laboratory Analysis - Bridgeton Landfill

Well Name	Date Sampled	Methane	CO ₂	O ₂ /Argon	Nitrogen	Hydrogen	Carbon Monoxide	Comments
		(%)					(ppm)	
GEW-043R	7/9/2015	56	42	ND	ND	0.2	ND	
GEW-043R	9/8/2015	54	41	ND	ND	0.2	ND	
GEW-044	5/12/2015	53	34	ND	12	ND	ND	
GEW-044	7/9/2015	43	31	4	22	ND	ND	See Note 1
GEW-044	9/10/2015	55	38	ND	5.9	ND	ND	
GEW-045R	5/12/2015	60	37	ND	ND	ND	ND	
GEW-045R	6/4/2015	57	39	ND	ND	ND	ND	
GEW-045R	7/9/2015	57	38	ND	3	ND	ND	
GEW-045R	8/13/2015	57	37	ND	4.4	ND	ND	
GEW-045R	9/10/2015	58	39	ND	ND	ND	ND	
GEW-046R	5/12/2015	56	38	ND	5.2	0.1	ND	
GEW-046R	6/4/2015	54	37	ND	6.9	ND	ND	
GEW-046R	7/9/2015	52	38	ND	8.2	0.1	ND	
GEW-046R	8/13/2015	54	39	ND	5.9	0.1	ND	
GEW-046R	9/10/2015	53	40	ND	5	0.1	ND	
GEW-047R	5/12/2015	56	40	ND	3.7	ND	ND	
GEW-047R	7/9/2015	43	35	2	20	ND	ND	
GEW-047R	8/13/2015	41	35	ND	22	0.1	ND	
GEW-047R	9/10/2015	49	38	ND	12	0.1	ND	
GEW-048	5/12/2015	57	38	ND	4.3	ND	ND	
GEW-048	6/3/2015	52	36	ND	11	ND	ND	
GEW-048	8/13/2015	54	38	ND	7.6	ND	ND	
GEW-048	9/10/2015	53	39	ND	7.5	ND	ND	
GEW-049	5/12/2015	54	37	ND	7.8	0.1	ND	
GEW-049	6/4/2015	43	32	2	22	ND	ND	
GEW-049	7/10/2015	33	27	6	34	ND	ND	See Note 1
GEW-049	8/13/2015	42	34	ND	23	ND	ND	
GEW-049	9/10/2015	50	35	2.9	12	0.1	ND	See Note 1
GEW-050	5/12/2015	58	39	ND	ND	0.1	ND	
GEW-050	9/10/2015	56	39	ND	4.4	0.1	ND	
GEW-051	5/12/2015	57	39	ND	ND	1.3	ND	
GEW-051	7/10/2015	55	41	ND	ND	1	ND	
GEW-051	9/10/2015	54	41	ND	ND	1	ND	
GEW-052	5/12/2015	54	38	ND	7.7	ND	ND	
GEW-052	7/10/2015	49	39	ND	11	ND	ND	
GEW-052	9/10/2015	52	39	ND	8.1	0.1	ND	
GEW-053	5/13/2015	51	40	ND	ND	5.2	ND	
GEW-053	6/4/2015	51	41	ND	ND	5.8	71	
GEW-053	7/10/2015	49	40	2	6	3.3	41	
GEW-053	8/13/2015	51	41	ND	ND	5.2	59	
GEW-053	9/11/2015	49	41	ND	ND	5.7	63	
GEW-054	5/13/2015	53	41	ND	ND	4.4	ND	
GEW-054	6/4/2015	53	41	ND	ND	2.9	35	
GEW-054	7/10/2015	50	43	ND	ND	4.2	ND	
GEW-054	8/13/2015	54	41	ND	ND	3	33	
GEW-054	9/11/2015	51	41	ND	ND	4.3	34	
GEW-055	5/13/2015	55	41	ND	ND	1.5	ND	
GEW-055	6/3/2015	49	37	3	9	1.2	ND	
GEW-055	7/10/2015	51	40	1.8	6.4	1.5	39	
GEW-055	8/13/2015	54	41	ND	ND	1.5	ND	
GEW-055	9/10/2015	48	39	2.6	9.4	1.4	ND	

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

Laboratory Analysis - Bridgeton Landfill

Well Name	Date Sampled	Methane	CO ₂	O ₂ /Argon	Nitrogen	Hydrogen	Carbon Monoxide	Comments
		(%)					(ppm)	
South Quarry								
GEW-010	5/7/2015	41	36	2.6	20	0.7	75	
GEW-010	6/1/2015	50	36	2.5	9.9	ND	32	
GEW-010	7/9/2015	52	43	ND	3.3	0.2	ND	
GEW-010	8/6/2015	49	36	2.9	11	0.2	ND	See Note 1
GEW-010	9/11/2015	40	39	4.3	16	0.6	78	
GEW-011	5/13/2015	3.4	50	ND	21	23	2,200	
GEW-011	7/22/2015	3	61	ND	ND	32	2,300	See Note 2
GEW-016R	5/13/2015	0.6	55	ND	ND	41	2,500	
GEW-022R	5/13/2015	1.9	62	ND	ND	32	4,000	
GEW-022R	9/21/2015	0.9	65	ND	ND	29	4,100	
GEW-023A	5/13/2015	0.1	65	ND	ND	31	4,800	
GEW-025A	5/13/2015	0.2	64	ND	ND	30	6,000	
GEW-028R	5/13/2015	1.9	50	3.6	13	30	3,400	
GEW-028R	7/9/2015	0.4	40	8.1	29	22	2,700	
GEW-028R	7/22/2015	19	45	6.4	23	23	2,700	See Note 2
GEW-029	5/13/2015	0.2	55	ND	ND	40	4,100	
GEW-038	5/7/2015	0.1	25	12	44	17	1,900	
GEW-038	7/9/2015	0.4	45	5.8	21	27	2,400	
GEW-038	8/6/2015	0.2	47	4.5	16	31	3,100	
GEW-038	9/11/2015	0.3	46	5.4	19	28	3,000	
GEW-039	5/7/2015	36	52	ND	4.9	5.2	250	
GEW-039	6/1/2015	37	53	ND	4.3	5.3	240	
GEW-039	7/9/2015	36	51	ND	7.2	4.2	280	
GEW-039	7/22/2015	37	51	ND	6.9	3.4	280	See Note 2
GEW-039	8/6/2015	40	52	ND	ND	4.2	200	
GEW-039	9/11/2015	39	52	ND	4.8	2.3	190	
GEW-056R	5/7/2015	12	51	ND	9.7	26	1,400	
GEW-056R	6/16/2015	17	44	ND	23	15	890	
GEW-056R	7/9/2015	7.1	31	5.6	44	12	1,100	
GEW-056R	8/6/2015	2.2	52	ND	4.9	38	2,100	
GEW-056R	9/11/2015	0.6	56	ND	ND	39	2,400	
GEW-057R	5/12/2015	0.5	55	ND	3.4	39	2,600	
GEW-057R	7/9/2015	0.5	55	ND	ND	40	2,500	
GEW-057R	9/18/2015	0.4	52	ND	5.4	38	2,400	
GEW-058	5/8/2015	0.9	54	1.7	7.3	35	2,600	
GEW-058	7/9/2015	4	55	ND	ND	37	2,200	
GEW-058	9/18/2015	0.3	46	4	14	33	2,400	
GEW-058A	5/8/2015	0.4	46	4.3	16	33	2,300	
GEW-058A	7/9/2015	0.4	49	2.3	8.2	39	2,700	
GEW-058A	9/18/2015	5.1	55	ND	3.6	34	2,400	
GEW-059R	5/8/2015	1.5	51	1.5	5.3	39	1,600	
GEW-059R	7/9/2015	0.4	52	ND	ND	43	1,900	
GEW-059R	9/18/2015	1.5	51	ND	ND	41	1,700	
GEW-065A	5/12/2015	0.4	59	ND	ND	37	3,400	
GEW-065A	7/9/2015	0.4	45	5.5	20	28	2,800	
GEW-065A	7/22/2015	0.5	58	ND	ND	37	2,900	See Note 2
GEW-065A	9/21/2015	0.4	57	ND	3.7	36	3,100	
GEW-071	5/13/2015	0.5	53	ND	ND	43	2,500	
GEW-080	5/13/2015	0.3	59	ND	3.3	35	4,000	
GEW-081	5/13/2015	0.3	61	ND	ND	35	3,900	

Laboratory Analysis - Bridgeton Landfill

Well Name	Date Sampled	Methane	CO ₂	O ₂ /Argon	Nitrogen	Hydrogen	Carbon Monoxide	Comments
		(%)					(ppm)	
GEW-082R	5/13/2015	0.9	52	1.7	5.8	38	2,500	
GEW-082R	7/9/2015	1	55	ND	ND	40	2,100	
GEW-082R	9/21/2015	0.8	53	ND	3.7	40	2,200	
GEW-086	7/9/2015	13	46	3.2	17	20	1,200	
GEW-086	9/18/2015	12	36	5.3	40	5.6	520	
GEW-090	5/13/2015	6.3	50	ND	ND	39	2,400	
GEW-090	7/9/2015	4.1	50	ND	3.4	41	2,100	
GEW-090	9/18/2015	5	51	ND	ND	40	2,200	
GEW-107	5/13/2015	0.3	50	3.5	13	30	3,200	
GEW-109	5/7/2015	2.6	54	1.7	6	35	2,200	
GEW-109	6/1/2015	2.8	55	ND	ND	38	2,400	
GEW-109	7/9/2015	4	52	ND	10	32	1,700	
GEW-109	7/22/2015	4.2	52	ND	10	31	1,900	See Note 2
GEW-109	8/6/2015	2.7	50	ND	11	33	2,200	
GEW-109	9/11/2015	4.8	49	2.5	14	28	2,000	See Note 1
GEW-110	5/7/2015	11	32	5.4	41	10	970	
GEW-110	6/1/2015	12	37	4.7	32	14	1,200	
GEW-110	8/6/2015	1.4	8.8	18	69	2.6	320	
GEW-110	9/11/2015	7.7	23	11	52	6.6	570	
GEW-117	7/9/2015	10	65	ND	ND	20	1,900	
GEW-117	9/18/2015	4	69	ND	ND	22	2,700	
GEW-120	7/15/2015	26	68	ND	ND	2.2	230	
GEW-120	9/15/2015	11	65	ND	5.1	17	1,600	
GEW-121	7/14/2015	2.4	58	ND	3.3	17	2,200	
GEW-121	9/15/2015	2.2	53	2.7	9.5	31	2,800	
GEW-122	9/15/2015	5.2	50	2.3	8.3	32	2,500	
GEW-123	7/15/2015	5.6	61	ND	3.6	28	2,700	
GEW-123	7/22/2015	ND	64	ND	ND	25	2,800	See Note 2
GEW-123	9/15/2015	6.6	55	3.1	11	23	3,500	
GEW-124	7/13/2015	16	61	ND	4.2	17	1,400	
GEW-124	7/22/2015	19	63	ND	ND	14	1,600	See Note 2
GEW-124	9/15/2015	8.3	56	2.7	9.8	22	2,000	
GEW-125	9/18/2015	1.7	57	ND	ND	36	3,200	
GEW-126	9/15/2015	5.5	54	ND	ND	36	3,700	
GEW-127	7/14/2015	0.7	63	ND	ND	31	3,800	
GEW-128	7/14/2015	1.3	62	ND	ND	30	3,200	
GEW-129	7/14/2015	1.3	52	3.0	11	31	2,700	
GEW-129	9/15/2015	1.8	58	ND	3.4	34	3,500	
GEW-131	7/14/2015	16	51	ND	3.6	27	1,700	
GEW-131	9/15/2015	20	44	2.4	8.8	23	1,500	
GEW-132	7/15/2015	13	52	1.9	9.3	23	1,200	
GEW-134	7/14/2015	10	55	ND	9.7	22	1,700	
GEW-134	9/18/2015	17	57	ND	10	15	990	
GEW-135	7/14/2015	3.9	57	ND	ND	33	1,900	
GEW-135	9/14/2015	3.8	51	2.7	9.8	31	1,900	
GEW-135	9/18/2015	4.7	56	ND	4.9	32	2,000	See Note 2
GEW-138	7/14/2015	4.9	42	3	28	20	2,000	
GEW-138	9/14/2015	11	49	1.7	21	16	1,400	
GEW-138	9/18/2015	11	43	2.4	31	11	960	See Note 2
GEW-139	7/14/2015	0.5	60	ND	ND	35	4,200	
GEW-139	9/14/2015	14	49	3.5	19	14	1,000	
GEW-139	9/15/2015	0.5	59	ND	4.1	34	4,600	See Note 2
GEW-140	7/14/2015	10	57	ND	ND	29	2,500	
GEW-140	7/22/2015	10	56	ND	ND	28	2,400	See Note 2

Laboratory Analysis - Bridgeton Landfill

Well Name	Date Sampled	Methane	CO ₂	O ₂ /Argon	Nitrogen	Hydrogen	Carbon Monoxide	Comments
		(%)					(ppm)	
GEW-141	7/15/2015	4.2	64	ND	3.5	26	2,900	
GEW-141	9/15/2015	2	61	ND	ND	32	3,700	
GEW-143	7/14/2015	0.2	53	ND	ND	40	3,300	
GEW-143	9/15/2015	0.3	46	2.5	9.1	41	3,500	
GEW-147	7/14/2015	3	53	ND	5	36	2,200	
GEW-147	9/15/2015	4.9	52	ND	3.6	37	2,200	
GEW-151	9/15/2015	5.7	50	3.4	14	26	1,800	
GEW-152	7/15/2015	5.8	52	ND	ND	37	2,900	
GEW-152	9/15/2015	5.9	51	ND	3.4	38	3,000	
GEW-153	7/15/2015	20	47	2	15	15	920	
GEW-153	9/15/2015	20	38	ND	31	9.3	340	
GEW-155	7/15/2015	5.8	49	2.5	21	21	1,100	
GIW-01	5/6/2015	4	65	ND	ND	26	2,800	
GIW-01	6/5/2015	3.6	65	ND	ND	27	2,800	
GIW-01	7/15/2015	1.6	67	ND	ND	28	3,000	
GIW-01	8/6/2015	1.6	66	ND	ND	28	3,300	
GIW-01	9/11/2015	2.7	67	ND	ND	25	2,600	
GIW-02	5/6/2015	9.4	41	3.6	26	19	1,300	
GIW-02	6/5/2015	4.9	50	3.3	14	27	1,900	
GIW-02	7/15/2015	0.6	65	ND	ND	31	3,400	
GIW-02	8/6/2015	0.4	59	3.4	12	24	2,900	
GIW-02	9/11/2015	5.2	63	ND	3.1	27	2,500	
GIW-03	5/6/2015	0.4	51	3.4	12	31	2,800	
GIW-03	6/5/2015	0.4	49	4.2	15	30	2,800	
GIW-03	7/15/2015	0.3	37	9.5	34	19	2,200	
GIW-03	8/6/2015	0.3	50	4.5	16	28	2,900	
GIW-03	9/11/2015	0.4	60	ND	ND	36	3,400	
GIW-04	5/6/2015	0.4	49	3.4	12	34	2,800	
GIW-04	6/5/2015	0.5	51	ND	4.8	42	3,200	
GIW-04	7/15/2015	0.5	52	2	7.2	38	2,800	
GIW-04	8/6/2015	0.7	54	ND	ND	42	2,800	
GIW-04	9/11/2015	0.6	43	4.2	15	36	2,100	
GIW-05	5/6/2015	2.1	48	4.7	17	28	2,200	
GIW-05	6/5/2015	1.8	34	7.8	28	28	1,700	
GIW-05	7/15/2015	1.6	41	6.6	24	26	1,800	
GIW-05	8/6/2015	2.5	58	ND	ND	35	2,200	
GIW-05	9/11/2015	2.4	48	4.4	16	28	1,900	
GIW-06	4/8/2015	0.8	63	ND	ND	32	1,900	
GIW-06	5/6/2015	0.8	64	ND	ND	32	2,300	
GIW-06	6/5/2015	0.6	40	7	25	27	1,600	
GIW-06	7/15/2015	0.8	63	ND	ND	33	1,800	
GIW-06	8/6/2015	0.8	61	ND	ND	34	2,100	
GIW-06	9/11/2015	0.9	59	ND	3.9	34	2,000	
GIW-07	5/6/2015	28	58	ND	3.2	9.7	970	
GIW-07	6/5/2015	26	61	ND	ND	11	1,200	
GIW-07	7/15/2015	21	65	ND	ND	11	990	
GIW-07	8/6/2015	23	60	ND	3.7	12	1,200	
GIW-07	9/11/2015	25	56	2.5	8.8	7.5	730	
GIW-08	4/8/2015	23	65	ND	3.3	7.5	1,100	
GIW-08	5/6/2015	23	66	ND	ND	7	1,300	

Laboratory Analysis - Bridgeton Landfill

Well Name	Date Sampled	Methane	CO ₂	O ₂ /Argon	Nitrogen	Hydrogen	Carbon Monoxide	Comments
		(%)					(ppm)	
GIW-08	6/5/2015	22	66	ND	ND	8.7	1,500	
GIW-08	7/15/2015	17	53	5.5	23	2	460	
GIW-08	8/6/2015	18	48	6.9	25	2.4	590	
GIW-08	9/11/2015	13	45	3.6	37	1.1	300	
GIW-09	5/6/2015	0.8	67	ND	3.5	26	3,400	
GIW-09	6/5/2015	0.8	64	1.6	5.7	26	3,200	
GIW-09	7/15/2015	12	44	3.3	30	10	850	
GIW-09	8/6/2015	15	36	6.7	35	6.8	590	
GIW-09	9/11/2015	2.5	17	12	64	4.2	400	
GIW-10	5/6/2015	3.5	53	ND	ND	39	2,600	
GIW-10	6/5/2015	3.8	54	ND	ND	39	2,700	
GIW-10	7/15/2015	0.3	35	7.2	26	31	3,500	
GIW-10	8/6/2015	0.4	38	5.6	21	35	3,500	
GIW-10	9/11/2015	0.3	54	ND	ND	43	3,300	
GIW-11	5/6/2015	2.1	54	2.5	9.9	30	2,700	
GIW-11	6/5/2015	2.3	44	5	21	27	2,200	
GIW-11	7/15/2015	34	3.1	8	37	18	1,600	
GIW-11	8/6/2015	1.7	52	3.1	13	30	3,000	
GIW-11	9/11/2015	2.9	44	5.4	24	23	2,200	
GIW-12	4/10/2015	2.3	55	3.4	14	25	2,300	
GIW-12	5/6/2015	3.5	62	1.6	6.9	25	2,500	
GIW-12	6/5/2015	4.3	46	4.8	23	21	1,900	
GIW-12	7/15/2015	5.1	20	11	60	4.1	490	
GIW-12	8/6/2015	6.7	24	8.9	54	5.3	470	
GIW-12	9/11/2015	7.1	23	9.4	55	5.2	440	
GIW-13	5/6/2015	3.7	60	ND	3.7	30	2,400	
GIW-13	6/5/2015	6.1	56	1.5	7.3	28	2,300	
GIW-13	7/15/2015	1.4	60	ND	ND	34	2,800	
GIW-13	8/6/2015	2.9	62	ND	ND	31	2,800	
GIW-13	9/11/2015	10	62	ND	5.6	20	1,600	
Flare Station ²	5/5/2015	7.9	32	9.7	39	10	1,300	
Flare Station ²	6/2/2015	8.3	31	9.9	40	11	1,100	
Flare Station ²	7/1/2015	8.1	31	10	40	10	1,400	
Flare Station ²	8/11/2015	9.5	32	9.1	38	10	1,500	
Flare Station ²	9/1/2015	7.9	29.7	10.3	41.7	9.2	870	

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

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

September 4, 2015

Weaver Consultants Group
ATTN: David Randall
6301 East Highway AB
Columbia, MO 65201



ADE-1461
EPA Methods TO-3, TO14A, TO15 SIM & Scan, ASTM D1946



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

TX Cert T104704450-09-TX
EPA Methods TO14A, TO15

UT Cert CA0133332014-1
EPA Methods TO3, TO14A, TO15, RSK-175

LABORATORY TEST RESULTS

Project Name: Bridgeton Monthly Permit Flare LFG Testing
Project Number: 0120-131-10-27
Lab Number: G090204-01/03

Enclosed are results for sample(s) received 9/02/15 by Air Technology Laboratories. Samples were received intact. Analyses were performed according to specifications on the chain of custody provided with the sample(s).

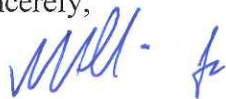
Report Narrative:

- 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 for were e-mailed to David Randall on 9/03/15.

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.



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

Rev. 03 - 5/7/09

—

Client: Weaver
Attn: David Randall
Project Name: Bridgeton Monthly Permit Flare LFG Testing
Project No.: 0120-131-10-27
Date Received: 09/02/15
Matrix: Air
Reporting Units: % v/v

ASTM D1946

Lab No.:	G090204-01	G090204-02	G090204-03					
Client Sample I.D.:	FL100 (EP11): Can #1 = #1340	FL120 (EP12): Can #2 = #5952	FL140 (EP13) Can #3 = #1418					
Date/Time Sampled:	9/1/15 8:30	9/1/15 9:12	9/1/15 9:47					
Date/Time Analyzed:	9/2/15 14:19	9/2/15 14:33	9/2/15 14:48					
QC Batch No.:	150902GC8A1	150902GC8A1	150902GC8A1					
Analyst Initials:	AS	AS	AS					
Dilution Factor:	3.0	3.2	3.0					
ANALYTE	Result % v/v	RL % v/v	Result % v/v	RL % v/v	Result % v/v	RL % v/v		
Hydrogen	8.9	3.0	9.4	3.2	9.4	3.0		
Carbon Dioxide	29	0.030	30	0.032	30	0.030		
Oxygen/Argon	11	1.5	10	1.6	10	1.5		
Nitrogen	43	3.0	41	3.2	41	3.0		
Methane	7.7	0.0030	7.9	0.0032	8.0	0.0030		
Carbon Monoxide	0.082	0.0030	0.088	0.0032	0.091	0.0030		
Net Heating Value (BTU/ft3)	115	3.0	122	3.2	127	3.0		
Gross Heating Value (BTU/ft3)	131	3.0	139	3.2	144	3.0		

Results normalized including non-methane hydrocarbons

BTU values based on D1946 analysis and non-methane analysis assumed as propane

ND = Not Detected (below RL)

RL = Reporting Limit

Reviewed/Approved By:



Mark Johnson
Operations Manager

Date

9-3-15

The cover letter is an integral part of this analytical report



QC Batch No.: 150902GC8A1

Matrix: Air

Units: % v/v

QC for ASTM D1946

Lab No.:	Method Blank		LCS		LCSD			
Date/Time Analyzed:	9/2/15 10:11		9/2/15 9:41		9/2/15 9:56			
Analyst Initials:	AS		AS		AS			
Datafile:	02sep004		02sep002		02sep003			
Dilution Factor:	1.0		1.0		1.0			
ANALYTE	Results	RL	% Rec.	Criteria	% Rec.	Criteria	%RPD	Criteria
Hydrogen	ND	1.0	94	70-130%	95	70-130%	0.4	<30
Carbon Dioxide	ND	0.010	96	70-130%	95	70-130%	0.2	<30
Oxygen/Argon	ND	0.50	105	70-130%	105	70-130%	0.1	<30
Nitrogen	ND	1.0	104	70-130%	104	70-130%	0.2	<30
Methane	ND	0.0010	97	70-130%	98	70-130%	1.1	<30
Carbon Monoxide	ND	0.0010	109	70-130%	109	70-130%	0.0	<30

ND = Not Detected (Below RL)

Reviewed/Approved By:



Mark J. Johnson
Operations Manager

Date:

9-3-15

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

September 23, 2015

Republic Services
ATTN: Jim Getting
13570 St. Charles Rock Rd.
Bridgeton, MO 63044



ADE-1461
EPA Methods TO-3,
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

LABORATORY TEST RESULTS

Project Reference: Bridgeton Landfill
Lab Number: G091603-01/43

Enclosed are results for sample(s) received 9/16/15 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 Jim Getting, Mike Lambrich, Brian Power, Ryan Ayers, David Penoyer, Niki Wuestenberg, Mike Beaudoin, David Randall and Jesse Varsho on 9/23/15.

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

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



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

Project No.:

Project Name:

Report To:

Company:

Street:

City/State/Zip:

Phone& Fax:

e-mail:

Bridgeton Landfill

Jim Getting

Republic Services

13570 St. Charles Rock Rd.

Bridgeton, MO 63044

314-683-3921

JGetting@republicservices.com

LAB USE ONLY

Canister Pressures ("hg)

Canister ID	Sample Start	Sample End	Lab Receive
A7813	-20.25	-3.95	-4
3440	-20.5	-5	-5
3124	-20.1	-5	-5
5812	-20	-5	-5
A7820	-19.55	-5	-6
6132	-20.05	-5	-5.5
5817	-20.5	-5.1	-5.5
3162	-20.2	-5.15	-5.5
A8072	-19.35	-5.1	-5

SAMPLE IDENTIFICATION

SAMPLE DATE	SAMPLE TIME	CONTAINER QTY/TYPE	MATRIX	PRESERVATION
9/8/2015	1406	C	LFG	NA
9/8/2015	1424	C	LFG	NA
9/8/2015	1443	C	LFG	NA
9/8/2015	1507	C	LFG	NA
9/10/2015	1322	C	LFG	NA
9/10/2015	1336	C	LFG	NA
9/10/2015	1347	C	LFG	NA
9/10/2015	1357	C	LFG	NA
9/10/2015	1409	C	LFG	NA

D1946 + CO, H2

CHAIN OF CUSTODY RECORD

TURNAROUND TIME	DELIVERABLES	PAGE: 1 OF 5
Standard ☐ 48 hours	EDD ☐	Condition upon receipt:
Same Day ☐ 72 hours	EDF ☐	Sealed Yes ☐ No ☐
24 hours ☐ 96 hours	Level 3 ☐	Intact Yes ☐ No ☐
Other: ☐ 5 day	Level 4 ☐	Chilled ☐ deg C

ANALYSIS REQUEST

P.O. No.:	PO4862452
Bill to:	Republic Services
	Attn: Mike Lambrich
	13570 St. Charles Rock Rd.
	Bridgeton, MO 63044

AUTHORIZATION TO PERFORM WORK: Dave Penoyer

COMPANY: Republic Services

DATE/TIME:

SAMPLED BY: Ryan Ayers

COMPANY: Republic Services

DATE/TIME:

RELINQUISHED BY:

DATE/RECEIVED BY

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



AIR TECHNOLOGY

Laboratories, Inc.

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

Project No.:

Report Name:

Report To:

Company:

Street:

City/State/Zip:

Phone & Fax:

e-mail:

Bridgeton Landfill

Jim Getting

Republic Services

13570 St. Charles Rock Rd.

Bridgeton, MO 63044

314-683-3921

JGetting@republicservices.com

LAB USE ONLY

Canister Pressures ("hg)

Canister ID	Sample Start	Sample End	Lab Receive
A7772	-20.3	-5.1	-5
A4658	-19.8	-5.1	-6
5837	-19.55	-5	-6
A8064	-20.2	-5	-6
A7659	-18.7	-5	-5
3126	-20.4	-5.08	-5
3837	-20.2	-5	-5
6134	-20.3	-5	-5
A7803	-20.02	-5.06	-5

SAMPLE IDENTIFICATION

GEW-4
GEW-47R
GEW-5
GEW-48
GEW-49
GEW-6
GEW-50
GEW-52
GEW-51

SAMPLE DATE	SAMPLE TIME	CONTAINER QTY/TYPE	MATRIX	PRESERVATION
9/10/2015	1421	C	LFG	NA
9/10/2015	1449	C	LFG	NA
9/10/2015	1526	C	LFG	NA
9/10/2015	1537	C	LFG	NA
9/10/2015	1549	C	LFG	NA
9/10/2015	1750	C	LFG	NA
9/10/2015	1819	C	LFG	NA
9/10/2015	1832	C	LFG	NA
9/10/2015	1846	C	LFG	NA

D1946 + CO₂ H₂

BILLING

P.O. No.:	PO4862452
Bill to:	Republic Services
	Attn: Mike Lambrich
	13570 St. Charles Rock Rd.
	Bridgeton, MO 63044

ANALYSIS REQUEST

EDD	☐
EDF	☐
Level 3	☐
Level 4	☐
5 day	☒

TURNAROUND TIME	DELIVERABLES	PAGE: 2 OF 5
Standard	☐	Condition upon receipt:
Same Day	☐	Sealed Yes ☐ No ☐
24 hours	☐	Intact Yes ☐ No ☐
Other:	☐	Chilled _____ deg C

AUTHORIZATION TO PERFORM WORK: Dave Penoyer

COMPANY: Republic Services

DATE/TIME:

COMMENTS

SAMPLED BY: Ryan Ayers

COMPANY: Republic Services

DATE/TIME:

DATE/RECEIVED BY

9-11-15 1430

DATE/RECEIVED BY

9/16/15 1328

DATE/RECEIVED BY

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

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

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

Rev. 03 - 5/7/09



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

Project No.:

Project Name:

Report To:

Company:

Street:

City/State/Zip:

Phone& Fax:

e-mail:

Bridgeton Landfill

Jim Getting

Republic Services

13570 St. Charles Rock Rd.

Bridgeton, MO 63044

314-683-3921

JGetting@republicservices.com

LAB USE ONLY

Canister Pressures ("hg)

Canister ID	Sample Start	Sample End	Lab Receive
5934	-19.3	-4.95	-5
5309	-20.4	-5	-4
A7791	-20.43	-4.75	-4
6158	-20.4	-5	-4.5
5916	-20.35	-4.9	-4.5
3128	-20.11	-4.85	-4
6130	-20.65	-5	-4.5
A8083	-20.28	-4.9	-4.5
A8090	-20.46	-4.94	-5

SAMPLE IDENTIFICATION

SAMPLE DATE	SAMPLE TIME	CONTAINER QTY/TYPE	MATRIX	PRESERVATION
9/10/2015	1910	C	LFG	NA
9/11/2015	929	C	LFG	NA
9/11/2015	950	C	LFG	NA
9/11/2015	1020	C	LFG	NA
9/11/2015	1035	C	LFG	NA
9/11/2015	1052	C	LFG	NA
9/11/2015	1141	C	LFG	NA
9/11/2015	1154	C	LFG	NA
9/11/2015	1208	C	LFG	NA

D1946 + CO, H2

CHAIN OF CUSTODY RECORD

TURNAROUND TIME	DELIVERABLES	PAGE: 3 OF 5
Standard ☐ 48 hours	EDD ☐	Condition upon receipt:
Same Day ☐ 72 hours	EDF ☐	Sealed Yes ☐ No ☐
24 hours ☐ 96 hours	Level 3 ☐	Intact Yes ☐ No ☐
Other: ☐ 5 day	Level 4 ☐	Chilled ☐ deg C

BILLING	ANALYSIS REQUEST
P.O. No.: PO4862452	
Bill to: Republic Services	
Attn: Mike Lambrich	
13570 St. Charles Rock Rd.	
Bridgeton, MO 63044	

COMMENTS

AUTHORIZATION TO PERFORM WORK: Dave Penoyer	DATE/TIME: _____
SAMPLED BY: Ryan Ayers	DATE/TIME: _____
RELINQUISHED BY: [Signature]	DATE/TIME: 9-11-15 1430
RELINQUISHED BY: [Signature]	DATE/TIME: 9/16/15 1328
RELINQUISHED BY: [Signature]	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



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

Project No.:

Project Name:

Report To: Bridgeton Landfill

Company: Jim Getting

Company: Republic Services

Street: 13570 St. Charles Rock Rd.

City/State/Zip: Bridgeton, MO 63044

Phone & Fax: 314-683-3921

e-mail: JGetting@republicservices.com

CHAIN OF CUSTODY RECORD

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

BILLING		ANALYSIS REQUEST	
P.O. No.:	PO4862452		
Bill to:	Republic Services		
	Attn: Mike Lambrich		
	13570 St. Charles Rock Rd.		
	Bridgeton, MO 63044		

LAB USE ONLY	Canister Pressures ("hg)				SAMPLE IDENTIFICATION				PRESERVATION
	Canister ID	Sample Start	Sample End	Lab Receive	SAMPLE DATE	SAMPLE TIME	CONTAINER QTY/TPE	MATRIX	
6091603-28	5825	-20.05	-4.95	-4.5	9/11/2015	1222	C	LFG	NA
-29	A7744	-18.9	-5	-4.5	9/11/2015	1235	C	LFG	NA
-30	A7779	-20.55	-5	-4.5	9/11/2015	1258	C	LFG	NA
-31	A8078	-20.4	-5	-4	9/11/2015	852	C	LFG	NA
-32	A8068	-20.4	-5	-4	9/11/2015	904	C	LFG	NA
-33	A8076	-20.4	-5	-4	9/11/2015	913	C	LFG	NA
-34	6141	-20.2	-5	-4.5	9/11/2015	923	C	LFG	NA
-35	A7648	-20.4	-5	-4	9/11/2015	930	C	LFG	NA
-36	3441	-20.5	-5	-4	9/11/2015	941	C	LFG	NA

AUTHORIZATION TO PERFORM WORK: Dave Penoyer		DATE/TIME: _____	
SAMPLED BY: Ryan Ayers		DATE/TIME: _____	
RELINQUISHED BY: [Signature]		DATE/TIME: 9-11-15 1430	
RELINQUISHED BY: [Signature]		DATE/TIME: 9/16/15 1328	
RELINQUISHED BY: [Signature]		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, Inc.
Attn: Jim Getting
Project Name: Bridgeton Landfill
Project No.: NA
Date Received: 09/16/15
Matrix: Air
Reporting Units: % v/v

ASTM D1946

Lab No.:	G091603-01		G091603-02		G091603-03		G091603-04	
Client Sample I.D.:	GEW-40		GEW-41R		GEW-42R		GEW-43R	
Date/Time Sampled:	9/8/15 14:06		9/8/15 14:24		9/8/15 14:43		9/8/15 15:07	
Date/Time Analyzed:	9/21/15 10:40		9/21/15 10:54		9/21/15 11:09		9/21/15 11:23	
QC Batch No.:	150921GC8A1		150921GC8A1		150921GC8A1		150921GC8A1	
Analyst Initials:	AS		AS		AS		AS	
Dilution Factor:	3.0		3.2		3.2		3.2	
ANALYTE	Result % v/v	RL % v/v	Result % v/v	RL % v/v	Result % v/v	RL % v/v	Result % v/v	RL % v/v
Hydrogen	ND d	0.030	ND d	0.032	ND d	0.032	0.20 d	0.032
Carbon Dioxide	40	0.030	40	0.032	41	0.032	41	0.032
Oxygen/Argon	ND	1.5	ND	1.6	ND	1.6	ND	1.6
Nitrogen	ND	3.0	3.6	3.2	ND	3.2	ND	3.2
Methane	56	0.0030	56	0.0032	55	0.0032	54	0.0032
Carbon Monoxide	ND	0.0030	ND	0.0032	ND	0.0032	ND	0.0032

Results normalized including non-methane hydrocarbons

ND = Not Detected (below RL)

RL = Reporting Limit

d = Reported from a secondary analysis. QC Batch: 150922GC8A2

Reviewed/Approved By: Mark Johnson
Mark Johnson
Operations Manager

Date 9/23/15

The cover letter is an integral part of this analytical report



Client: Republic Services, Inc.
Attn: Jim Getting
Project Name: Bridgeton Landfill
Project No.: NA
Date Received: 09/16/15
Matrix: Air
Reporting Units: % v/v

ASTM D1946

Lab No.:	G091603-05		G091603-06		G091603-07		G091603-08	
Client Sample I.D.:	GEW-44		GEW-45R		GEW-46R		GEW-2	
Date/Time Sampled:	9/10/15 13:22		9/10/15 13:36		9/10/15 13:47		9/10/15 13:57	
Date/Time Analyzed:	9/21/15 11:38		9/21/15 11:52		9/21/15 12:07		9/21/15 12:21	
QC Batch No.:	150921GC8A1		150921GC8A1		150921GC8A1		150921GC8A1	
Analyst Initials:	AS		AS		AS		AS	
Dilution Factor:	3.4		3.3		3.3		3.3	
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	0.034	ND d	0.033	0.12 d	0.033	ND d	0.033
Carbon Dioxide	38	0.034	39	0.033	40	0.033	41	0.033
Oxygen/Argon	ND	1.7	ND	1.6	ND	1.6	ND	1.6
Nitrogen	5.9	3.4	ND	3.3	5.0	3.3	ND	3.3
Methane	55	0.0034	58	0.0033	53	0.0033	55	0.0033
Carbon Monoxide	ND	0.0034	ND	0.0033	ND	0.0033	ND	0.0033

Results normalized including non-methane hydrocarbons

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Reviewed/Approved By: Mark Johnson
Mark Johnson
Operations Manager

Date 9/23/15

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Attn: Jim Getting
Project Name: Bridgeton Landfill
Project No.: NA
Date Received: 09/16/15
Matrix: Air
Reporting Units: % v/v

ASTM D1946

Lab No.:	G091603-09		G091603-10		G091603-11		G091603-12	
Client Sample I.D.:	GEW-3		GEW-4		GEW-47R		GEW-5	
Date/Time Sampled:	9/10/15 14:09		9/10/15 14:21		9/10/15 14:49		9/10/15 15:26	
Date/Time Analyzed:	9/21/15 12:36		9/21/15 12:51		9/21/15 13:05		9/21/15 13:20	
QC Batch No.:	150921GC8A1		150921GC8A1		150921GC8A1		150921GC8A1	
Analyst Initials:	AS		AS		AS		AS	
Dilution Factor:	3.2		3.2		3.4		3.4	
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	0.081 d	0.032	0.11 d	0.032	0.075 d	0.034	0.063 d	0.034
Carbon Dioxide	36	0.032	40	0.032	38	0.034	38	0.034
Oxygen/Argon	2.8	1.6	ND	1.6	ND	1.7	ND	1.7
Nitrogen	13	3.2	6.3	3.2	12	3.4	9.6	3.4
Methane	49	0.0032	53	0.0032	49	0.0034	52	0.0034
Carbon Monoxide	ND	0.0032	ND	0.0032	ND	0.0034	ND	0.0034

Results normalized including non-methane hydrocarbons

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d = Reported from a secondary analysis. QC Batch: 150922GC8A2

Reviewed/Approved By: Mark Johnson
Mark Johnson
Operations Manager

Date 9/23/15

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Client: Republic Services, Inc.
Attn: Jim Getting
Project Name: Bridgeton Landfill
Project No.: NA
Date Received: 09/16/15
Matrix: Air
Reporting Units: % v/v

ASTM D1946

Lab No.:	G091603-13		G091603-14		G091603-15		G091603-16	
Client Sample I.D.:	GEW-48		GEW-49		GEW-6		GEW-50	
Date/Time Sampled:	9/10/15 15:37		9/10/15 15:49		9/10/15 17:50		9/10/15 18:19	
Date/Time Analyzed:	9/21/15 15:16		9/21/15 15:31		9/21/15 15:45		9/21/15 16:00	
QC Batch No.:	150921GC8A2		150921GC8A2		150921GC8A2		150921GC8A2	
Analyst Initials:	AS		AS		AS		AS	
Dilution Factor:	3.4		3.2		3.2		3.2	
ANALYTE	Result % v/v	RL % v/v	Result % v/v	RL % v/v	Result % v/v	RL % v/v	Result % v/v	RL % v/v
Hydrogen	ND d	0.034	0.065 d	0.032	ND d	0.032	0.085 d	0.032
Carbon Dioxide	39	0.034	35	0.032	38	0.032	39	0.032
Oxygen/Argon	ND	1.7	2.9	1.6	ND	1.6	ND	1.6
Nitrogen	7.5	3.4	12	3.2	6.5	3.2	4.4	3.2
Methane	53	0.0034	50	0.0032	55	0.0032	56	0.0032
Carbon Monoxide	ND	0.0034	ND	0.0032	ND	0.0032	ND	0.0032

Results normalized including non-methane hydrocarbons

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Reviewed/Approved By: Mark Johnson
Mark Johnson
Operations Manager

Date 9/23/15

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Client: Republic Services, Inc.
Attn: Jim Getting
Project Name: Bridgeton Landfill
Project No.: NA
Date Received: 09/16/15
Matrix: Air
Reporting Units: % v/v

ASTM D1946

Lab No.:	G091603-17		G091603-18		G091603-19		G091603-20	
Client Sample I.D.:	GEW-52		GEW-51		GEW-55		GEW-53	
Date/Time Sampled:	9/10/15 18:32		9/10/15 18:46		9/10/15 19:10		9/11/15 9:29	
Date/Time Analyzed:	9/21/15 16:14		9/21/15 16:29		9/21/15 16:43		9/21/15 16:58	
QC Batch No.:	150921GC8A2		150921GC8A2		150921GC8A2		150921GC8A2	
Analyst Initials:	AS		AS		AS		AS	
Dilution Factor:	3.2		3.2		3.2		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	0.053 d	0.032	0.96 d	0.032	1.4 d	0.032	5.7	3.0
Carbon Dioxide	39	0.032	41	0.032	39	0.032	41	0.030
Oxygen/Argon	ND	1.6	ND	1.6	2.6	1.6	ND	1.5
Nitrogen	8.1	3.2	ND	3.2	9.4	3.2	ND	3.0
Methane	52	0.0032	54	0.0032	48	0.0032	49	0.0030
Carbon Monoxide	ND	0.0032	ND	0.0032	ND	0.0032	0.0063	0.0030

Results normalized including non-methane hydrocarbons

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Reviewed/Approved By: Mark Johnson
Mark Johnson
Operations Manager

Date 9/23/15

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Client: Republic Services, Inc.
Attn: Jim Getting
Project Name: Bridgeton Landfill
Project No.: NA
Date Received: 09/16/15
Matrix: Air
Reporting Units: % v/v

ASTM D1946

Lab No.:	G091603-21		G091603-22		G091603-23		G091603-24	
Client Sample I.D.:	GEW-54		GEW-7		GEW-8		GEW-9	
Date/Time Sampled:	9/11/15 9:50		9/11/15 10:20		9/11/15 10:35		9/11/15 10:52	
Date/Time Analyzed:	9/21/15 17:12		9/21/15 17:27		9/21/15 17:42		9/21/15 17:56	
QC Batch No.:	150921GC8A2		150921GC8A2		150921GC8A2		150921GC8A2	
Analyst Initials:	AS		AS		AS		AS	
Dilution Factor:	3.0		3.1		3.1		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	4.3	3.0	ND d	0.031	0.67 d	3.1	0.76 d	0.033
Carbon Dioxide	41	0.030	40	0.031	47	0.031	40	0.030
Oxygen/Argon	ND	1.5	ND	1.5	ND	1.5	1.5	1.5
Nitrogen	ND	3.0	ND	3.1	ND	3.1	7.0	3.0
Methane	51	0.0030	57	0.0031	49	0.0031	51	0.0030
Carbon Monoxide	0.0034	0.0030	ND	0.0031	ND	0.0031	ND	0.0030

Results normalized including non-methane hydrocarbons

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Reviewed/Approved By: Mark Johnson
 Operations Manager

Date 9/23/15

The cover letter is an integral part of this analytical report



Client: Republic Services, Inc.
Attn: Jim Getting
Project Name: Bridgeton Landfill
Project No.: NA
Date Received: 09/16/15
Matrix: Air
Reporting Units: % v/v

ASTM D1946

Lab No.:	G091603-25		G091603-26		G091603-27		G091603-28	
Client Sample I.D.:	GEW-38		GEW-39		GEW-109		GEW-56R	
Date/Time Sampled:	9/11/15 11:41		9/11/15 11:54		9/11/15 12:08		9/11/15 12:22	
Date/Time Analyzed:	9/21/15 18:11		9/21/15 18:25		9/21/15 18:40		9/21/15 18:55	
QC Batch No.:	150921GC8A2		150921GC8A2		150921GC8A2		150921GC8A2	
Analyst Initials:	AS		AS		AS		AS	
Dilution Factor:	3.1		3.1		3.2		3.1	
ANALYTE	Result % v/v	RL % v/v	Result % v/v	RL % v/v	Result % v/v	RL % v/v	Result % v/v	RL % v/v
Hydrogen	28	3.1	2.3	d 0.031	28	3.2	39	3.1
Carbon Dioxide	46	0.031	52	0.031	49	0.032	56	0.031
Oxygen/Argon	5.4	1.5	ND	1.5	2.5	1.6	ND	1.5
Nitrogen	19	3.1	4.8	3.1	14	3.2	ND	3.1
Methane	0.31	0.0031	39	0.0031	4.8	0.0032	0.56	0.0031
Carbon Monoxide	0.30	0.0031	0.019	0.0031	0.20	0.0032	0.24	0.0031

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Reviewed/Approved By: Mark Johnson
Mark Johnson
Operations Manager

Date 9/23/15

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



Client: Republic Services, Inc.
Attn: Jim Getting
Project Name: Bridgeton Landfill
Project No.: NA
Date Received: 09/16/15
Matrix: Air
Reporting Units: % v/v

ASTM D1946

Lab No.:	G091603-29		G091603-30		G091603-31		G091603-32	
Client Sample I.D.:	GEW-10		GEW-110		GIW-8		GIW-11	
Date/Time Sampled:	9/11/15 12:35		9/11/15 12:58		9/11/15 8:52		9/11/15 9:04	
Date/Time Analyzed:	9/21/15 19:09		9/21/15 19:24		9/21/15 19:38		9/22/15 10:20	
QC Batch No.:	150921GC8A2		150921GC8A2		150921GC8A2		150922GC8A1	
Analyst Initials:	AS		AS		AS		AS	
Dilution Factor:	3.1		3.1		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	0.58 d 0.031	6.6	3.1	1.1 d 0.030	0.030	23	3.0
	Carbon Dioxide	39 0.031	23	0.031	45 0.030	0.030	44	0.030
	Oxygen/Argon	4.3 1.5	11	1.5	3.6 1.5	1.5	5.4	1.5
	Nitrogen	16 3.1	52	3.1	37 3.0	3.0	24	3.0
	Methane	40 0.0031	7.7	0.0031	13 0.0030	0.0030	2.9	0.0030
	Carbon Monoxide	0.0078 0.0031	0.057	0.0031	0.030 0.0030	0.0030	0.22	0.0030

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Reviewed/Approved By: Mark Johnson
Mark Johnson
Operations Manager

Date 9/23/15

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Client: Republic Services, Inc.
Attn: Jim Getting
Project Name: Bridgeton Landfill
Project No.: NA
Date Received: 09/16/15
Matrix: Air
Reporting Units: % v/v

ASTM D1946

Lab No.:	G091603-33		G091603-34		G091603-35		G091603-36	
Client Sample I.D.:	GIW-12		GIW-13		GIW-1		GIW-5	
Date/Time Sampled:	9/11/15 9:13		9/11/15 9:23		9/11/15 9:30		9/11/15 9:41	
Date/Time Analyzed:	9/22/15 11:05		9/22/15 10:50		9/22/15 11:19		9/22/15 11:34	
QC Batch No.:	150922GC8A1		150922GC8A1		150922GC8A1		150922GC8A1	
Analyst Initials:	AS		AS		AS		AS	
Dilution Factor:	3.0		3.1		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	5.2	3.0	20	3.1	25	3.0	28	3.0
Carbon Dioxide	23	0.030	62	0.031	67	0.030	48	0.030
Oxygen/Argon	9.4	1.5	ND	1.5	ND	1.5	4.4	1.5
Nitrogen	55	3.0	5.6	3.1	ND	3.0	16	3.0
Methane	7.1	0.0030	10	0.0031	2.7	0.0030	2.4	0.0030
Carbon Monoxide	0.044	0.0030	0.16	0.0031	0.26	0.0030	0.19	0.0030

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Reviewed/Approved By: Mark Johnson
Mark Johnson
Operations Manager

Date 9/23/15

The cover letter is an integral part of this analytical report



Client: Republic Services, Inc.
Attn: Jim Getting
Project Name: Bridgeton Landfill
Project No.: NA
Date Received: 09/16/15
Matrix: Air
Reporting Units: % v/v

ASTM D1946

Lab No.:	G091603-37	G091603-38	G091603-39	G091603-40				
Client Sample I.D.:	GIW-6	GIW-7	GIW-9	GIW-10				
Date/Time Sampled:	9/11/15 10:16	9/11/15 10:26	9/11/15 10:35	9/11/15 10:44				
Date/Time Analyzed:	9/22/15 11:49	9/22/15 12:03	9/22/15 12:18	9/22/15 12:33				
QC Batch No.:	150922GC8A1	150922GC8A1	150922GC8A1	150922GC8A1				
Analyst Initials:	AS	AS	AS	AS				
Dilution Factor:	3.2	3.0	3.0	3.1				
ANALYTE	Result % v/v	RL % v/v	Result % v/v	RL % v/v	Result % v/v	RL % v/v	Result % v/v	RL % v/v
Hydrogen	34	3.2	7.5	3.0	4.2	3.0	43	3.1
Carbon Dioxide	59	0.032	56	0.030	17	0.030	54	0.031
Oxygen/Argon	ND	1.6	2.5	1.5	12	1.5	ND	1.5
Nitrogen	3.9	3.2	8.8	3.0	64	3.0	ND	3.1
Methane	0.90	0.0032	25	0.0030	2.5	0.0030	0.28	0.0031
Carbon Monoxide	0.20	0.0032	0.073	0.0030	0.040	0.0030	0.33	0.0031

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Operations Manager

Date 9/23/15

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Client: Republic Services, Inc.
Attn: Jim Getting
Project Name: Bridgeton Landfill
Project No.: NA
Date Received: 09/16/15
Matrix: Air
Reporting Units: % v/v

Page 12 of 17
 G091603

ASTM D1946

Lab No.:	G091603-41	G091603-42	G091603-43					
Client Sample I.D.:	GIW-4	GIW-3	GIW-2					
Date/Time Sampled:	9/11/15 10:54	9/11/15 11:04	9/11/15 11:13					
Date/Time Analyzed:	9/22/15 12:49	9/22/15 13:59	9/22/15 14:14					
QC Batch No.:	150922GC8A1	150922GC8A1	150922GC8A1					
Analyst Initials:	AS	AS	AS					
Dilution Factor:	3.1	3.1	3.1					
ANALYTE	Result % v/v	RL % v/v	Result % v/v	RL % v/v	Result % v/v	RL % v/v		
Hydrogen	36	3.1	36	3.1	27	3.1		
Carbon Dioxide	43	0.031	60	0.031	63	0.031		
Oxygen/Argon	4.2	1.5	ND	1.5	ND	1.5		
Nitrogen	15	3.1	ND	3.1	3.1	3.1		
Methane	0.57	0.0031	0.35	0.0031	5.2	0.0031		
Carbon Monoxide	0.21	0.0031	0.34	0.0031	0.25	0.0031		

Results normalized including non-methane hydrocarbons

ND = Not Detected (below RL)

RL = Reporting Limit

Reviewed/Approved By: _____

Mark Johnson

Mark Johnson
Operations Manager

Date 9/23/15

The cover letter is an integral part of this analytical report



QC Batch No.: 150921GC8A1

Matrix: Air

Units: % v/v

QC for ASTM D1946

Lab No.:	Method Blank		LCS		LCSD			
Date/Time Analyzed:	9/21/15 9:38		9/21/15 8:54		9/21/15 9:09			
Analyst Initials:	AS		AS		AS			
Datafile:	21sep006		21sep003		21sep004			
Dilution Factor:	1.0		1.0		1.0			
ANALYTE	Results	RL	% Rec.	Criteria	% Rec.	Criteria	%RPD	Criteria
Hydrogen	ND	1.0	102	70-130%	103	70-130%	1.7	<30
Carbon Dioxide	ND	0.010	95	70-130%	97	70-130%	1.7	<30
Oxygen/Argon	ND	0.50	98	70-130%	100	70-130%	1.8	<30
Nitrogen	ND	1.0	99	70-130%	101	70-130%	1.9	<30
Methane	ND	0.0010	115	70-130%	113	70-130%	1.7	<30
Carbon Monoxide	ND	0.0010	126	70-130%	124	70-130%	1.3	<30

ND = Not Detected (Below RL)

Reviewed/Approved By:


Mark J. Johnson
Operations Manager

Date:


9/23/15

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.: 150921GC8A2

Matrix: Air

Units: % v/v

QC for ASTM D1946

Lab No.:	Method Blank		LCS		LCSD			
Date/Time Analyzed:	9/21/15 15:01		9/21/15 14:18		9/21/15 14:32			
Analyst Initials:	AS		AS		AS			
Datafile:	21sep028		21sep025		21sep026			
Dilution Factor:	1.0		1.0		1.0			
ANALYTE	Results	RL	% Rec.	Criteria	% Rec.	Criteria	%RPD	Criteria
Hydrogen	ND	1.0	102	70-130%	101	70-130%	0.4	<30
Carbon Dioxide	ND	0.010	97	70-130%	96	70-130%	1.3	<30
Oxygen/Argon	ND	0.50	100	70-130%	99	70-130%	1.2	<30
Nitrogen	ND	1.0	101	70-130%	100	70-130%	1.2	<30
Methane	ND	0.0010	121	70-130%	117	70-130%	3.1	<30
Carbon Monoxide	ND	0.0010	126	70-130%	125	70-130%	0.8	<30

ND = Not Detected (Below RL)

Reviewed/Approved By:


Mark J. Johnson
Operations Manager

Date:

9/23/15

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.: 150922GC8A1

Matrix: Air

Units: % v/v

QC for ASTM D1946

Lab No.:	Method Blank		LCS		LCSD			
Date/Time Analyzed:	9/22/15 9:51		9/22/15 8:53		9/22/15 9:08			
Analyst Initials:	AS		AS		AS			
Datafile:	22sep006		22sep003		22sep004			
Dilution Factor:	1.0		1.0		1.0			
ANALYTE	Results	RL	% Rec.	Criteria	% Rec.	Criteria	%RPD	Criteria
Hydrogen	ND	1.0	100	70-130%	100	70-130%	0.8	<30
Carbon Dioxide	ND	0.010	96	70-130%	97	70-130%	0.7	<30
Oxygen/Argon	ND	0.50	102	70-130%	102	70-130%	0.9	<30
Nitrogen	ND	1.0	102	70-130%	103	70-130%	0.8	<30
Methane	ND	0.0010	124	70-130%	121	70-130%	2.0	<30
Carbon Monoxide	ND	0.0010	125	70-130%	124	70-130%	1.3	<30

ND = Not Detected (Below RL)

Reviewed/Approved By: _____

Mark J. Johnson
Operations Manager

Date: _____

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 # 150922GC11A2
Matrix: Air
Units: % v/v

QC for Low Level Hydrogen Analysis

Lab No.:	Blank		LCS		LCSD			
Date Analyzed:	9/22/2015 15:59		9/22/2015 15:50		9/22/2015 15:54			
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	0.5	<20

ND = Not Detected (Below RL)

RL = PQL X Dilution Factor

Reviewed/Approved By:


Mark Johnson
Operations Manager

Date:

9/23/15

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



QC Batch # 150923GC11A1
Matrix: Air
Units: % v/v

QC for Low Level Hydrogen Analysis

Lab No.:	Blank		LCS		LCSD			
Date Analyzed:	9/23/2015 08:26		9/23/2015 08:17		9/23/2015 08:21			
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	88	70-130	89	70-130	0.8	<20

ND = Not Detected (Below RL)

RL = PQL X Dilution Factor

Reviewed/Approved By:


Mark Johnson
Operations Manager

Date:

9/23/15

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



September 29, 2015

Republic Services
ATTN: Jim Getting
13570 St. Charles Rock Rd.
Bridgeton, MO 63044



ADE-1461
EPA Methods TO-3,
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

LABORATORY TEST RESULTS

Project Reference: Bridgeton Landfill
Lab Number: G092201-01/32

Enclosed are results for sample(s) received 9/22/15 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 Jim Getting, Mike Lambrich, Brian Power, Ryan Ayers, David Penoyer, Niki Wuestenberg, Mike Beaudoin, David Randall and Jesse Varsho on 9/29/15.

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

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



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

CHAIN OF CUSTODY RECORD

TURNAROUND TIME		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			

BILLING		ANALYSIS REQUEST			
P.O. No.:	PO4862452				
Bill to:	Republic Services				
	Attn: Mike Lambrich				
	13570 St. Charles Rock Rd.				
	Bridgeton, MO 63044				

SAMPLE DATE	SAMPLE TIME	CONTAINER QTY/TYPE	MATRIX	PRESERVATION	D1946 + CC				
9/14/2015	1538	C	LFG	NA	X				
9/14/2015	1618	C	LFG	NA	X				
9/14/2015	1638	C	LFG	NA	X				
9/15/2015	838	C	LFG	NA	X				
9/15/2015	901	C	LFG	NA	X				
9/15/2015	919	C	LFG	NA	X				
9/15/2015	939	C	LFG	NA	X				
9/15/2015	957	C	LFG	NA	X				
9/15/2015	1030	C	LFG	NA	X				

COMMENTS	
DATE/TIME:	
DATE/TIME	
DATE/TIME	
DATE/TIME	6111 5415 1119
DATE/TIME	

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

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

LAB USE ONLY	Canister Pressures ("hg)				SAMPLE IDENTIFICATION
	Canister ID	Sample Start	Sample End	Lab Receive	
G092201-01	5906	-20.45	-4.9	-5	GEW-138
-02	A8059	-20.4	-4.75	-5	GEW-135
-03	A7805	-20.1	-4.85	-5	GEW-139
-04	5305	-20.65	-4.8	-4.5	GEW-120
-05	A7792	-20.75	-4.65	-4	GEW-121
-06	5320	-20.15	-5	-4.5	GEW-123
-07	5288	-20.4	-5	-5	GEW-124
-08	A7795	-20.6	-4.95	-5	GEW-122
-09	4655	-19.55	-5	-5	GEW-131

AUTHORIZATION TO PERFORM WORK:		Dave Penoyer		COMPANY: Republic Services	
SAMPLED BY: Ryan Ayers				COMPANY: Republic Services	
RELINQUISHED BY	<i>[Signature]</i>	DATE/RECEIVED BY	9-21-15	1000	
RELINQUISHED BY	<i>[Signature]</i>	DATE/RECEIVED BY			
RELINQUISHED BY	<i>[Signature]</i>	DATE/RECEIVED BY			
METHOD OF TRANSPORT (circle one):			Walk-In	FedEx	UPS
			Courier	ATLI	Other

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



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

Project No.:

Report To:

Company:

Street:

City/State/Zip:

Phone& Fax:

e-mail:

Bridgeton Landfill

Jim Getting

Republic Services

13570 St. Charles Rock Rd.

Bridgeton, MO 63044

314-683-3921

JGetting@republicservices.com

CHAIN OF CUSTODY RECORD

TURNAROUND TIME	DELIVERABLES	PAGE: 2 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

BILLING

P.O. No.: PO4862452

Bill to: Republic Services

Attn: Mike Lambrich

13570 St. Charles Rock Rd.

Bridgeton, MO 63044

ANALYSIS REQUEST

D1946 + CO ₂ H ₂					
--	--	--	--	--	--

SAMPLE IDENTIFICATION

Canister Pressures ("hg)

LAB USE ONLY	Canister ID	Sample Start	Sample End	Lab Receive
6092201-10	A8098	-20.6	-5	-5
-11	A7818	-20.89	-5	-4.5
-12	5921	-20.68	-5	-4
-13	A7665	-20.45	-5	-4.5
-14	5823	-20.49	-5	-5
-15	3834	-20.46	-5	-5
-16	A7761	-20.49	-5	-5
-17	A7819	-20.86	-5	-5
-18	A7764	-20.37	-5	-5

COMMENTS

AUTHORIZATION TO PERFORM WORK: Dave Penoyer		DATE/TIME:
COMPANY: Republic Services		DATE/TIME
SAMPLED BY: Ryan Ayers		DATE/TIME
RELINQUISHED BY: [Signature]		DATE/RECEIVED BY: 9/22/15 1119
RELINQUISHED BY: [Signature]		DATE/RECEIVED BY: 9/22/15 1119
RELINQUISHED BY: [Signature]		DATE/RECEIVED BY: 9/22/15 1119
METHOD OF TRANSPORT (circle one): Walk-In FedEx UPS Courier ATLI Other		

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

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

Rev. 03 - 5/7/09



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

Project No.:

Project Name: Bridgeton Landfill

Report To: Jim Getting

Company: Republic Services

Street: 13570 St. Charles Rock Rd.

City/State/Zip: Bridgeton, MO 63044

Phone & Fax: 314-683-3921

e-mail: JGetting@republicservices.com

CHAIN OF CUSTODY RECORD

TURNAROUND TIME		DELIVERABLES		PAGE: 3 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

ANALYSIS REQUEST

P.O. No.:	PO4862452
Bill to:	Republic Services
	Attn: Mike Lambrich
	13570 St. Charles Rock Rd.
	Bridgeton, MO 63044

SAMPLE IDENTIFICATION

Canister Pressures ("hg)

LAB USE ONLY	Canister ID	Sample Start	Sample End	Lab Receive
6092201-19	A8099	-19.9	-4.95	-6
-20	5818	-20.05	-4.95	-6
-21	A8075	-19.2	-5	-6
-22	A8082	-20.35	-5	-5.5
-23	5912	-20.15	-5	-6
-24	5319	-20.1	-5	-6
-25	A8073	-19.95	-5.05	-6
-26	5840	-19.75	-5.05	-6
-27	A7808	-20.1	-5	-6

ANALYSIS REQUEST

SAMPLE DATE	SAMPLE TIME	CONTAINER QTY/TYPE	MATRIX	PRESERVATION
9/18/2015	1100	C	LFG	NA
9/18/2015	1116	C	LFG	NA
9/18/2015	1137	C	LFG	NA
9/18/2015	1154	C	LFG	NA
9/18/2015	1432	C	LFG	NA
9/18/2015	1448	C	LFG	NA
9/18/2015	1503	C	LFG	NA
9/18/2015	1519	C	LFG	NA
9/18/2015	1601	C	LFG	NA

AUTHORIZATION TO PERFORM WORK: Dave Penoyer

SAMPLED BY: Ryan Ayers

RELINQUISHED BY: [Signature]

RELINQUISHED BY: [Signature]

RELINQUISHED BY: [Signature]

COMPANY: Republic Services

COMPANY: Republic Services

DATE/RECEIVED BY

DATE/RECEIVED BY

DATE/RECEIVED BY

COMMENTS

DATE/TIME:

DATE/TIME:

DATE/TIME:

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



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

Project No.:

Report To:

Report To:

Company:

Street:

City/State/Zip:

Phone & Fax:

e-mail:

Bridgeton Landfill

Jim Getting

Republic Services

13570 St. Charles Rock Rd.

Bridgeton, MO 63044

314-683-3921

JGetting@republicservices.com

LAB USE ONLY

Canister Pressures ("hg)

Canister ID	Sample Start	Sample End	Lab Receive
5907	-19.75	-5.05	-6
5833	-19.95	-5	-5
A7793	-20.3	-5	-4.5
A7663	-20.5	-5	-5
A7804	-20.4	-5	-4.5

SAMPLE IDENTIFICATION

GEW-86
GEW-90
GEW-65A
GEW-82R
GEW-22R

SAMPLE DATE	SAMPLE TIME	CONTAINER QTY/TYP	MATRIX	PRESERVATION
9/18/2015	1634	C	LFG	NA
9/18/2015	1649	C	LFG	NA
9/21/2015	842	C	LFG	NA
9/21/2015	852	C	LFG	NA
9/21/2015	904	C	LFG	NA

D1946 + CO, H2

CHAIN OF CUSTODY RECORD

TURNAROUND TIME	DELIVERABLES	PAGE:	4	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 ☐			

ANALYSIS REQUEST

P.O. No.: PO4862452

Bill to: Republic Services

Attn: Mike Lambrich

13570 St. Charles Rock Rd.

Bridgeton, MO 63044

AUTHORIZATION TO PERFORM WORK: Dave Penoyer

COMPANY: Republic Services

DATE/TIME:

SAMPLED BY: Ryan Ayers

COMPANY: Republic Services

DATE/TIME:

RELINQUISHED BY:

DATE/RECEIVED BY: 9-21-15 1000

DATE/RECEIVED BY:

RELINQUISHED BY:

DATE/RECEIVED BY: 9/22/15 1119

DATE/TIME:

RELINQUISHED 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, Inc.
Attn: Jim Getting
Project Name: Bridgeton Landfill
Project No.: NA
Date Received: 09/22/15
Matrix: Air
Reporting Units: % v/v

ASTM D1946

Lab No.:	G092201-01	G092201-02	G092201-03	G092201-04				
Client Sample I.D.:	GEW-138	GEW-135	GEW-139	GEW-120				
Date/Time Sampled:	9/14/15 15:38	9/14/15 16:18	9/14/15 16:38	9/15/15 8:38				
Date/Time Analyzed:	9/25/15 10:07	9/25/15 10:51	9/25/15 10:36	9/25/15 11:20				
QC Batch No.:	150925GC8A1	150925GC8A1	150925GC8A1	150925GC8A1				
Analyst Initials:	AS	AS	AS	AS				
Dilution Factor:	3.2	3.2	3.2	3.1				
ANALYTE	Result % v/v	RL % v/v	Result % v/v	RL % v/v	Result % v/v	RL % v/v	Result % v/v	RL % v/v
Hydrogen	16	3.2	31	3.2	14	3.2	17	3.1
Carbon Dioxide	49	0.032	51	0.032	49	0.032	65	0.031
Oxygen/Argon	1.7	1.6	2.7	1.6	3.5	1.6	ND	1.5
Nitrogen	21	3.2	9.8	3.2	19	3.2	5.1	3.1
Methane	11	0.0032	3.8	0.0032	14	0.0032	11	0.0031
Carbon Monoxide	0.14	0.0032	0.19	0.0032	0.10	0.0032	0.16	0.0031

Results normalized including non-methane hydrocarbons

ND = Not Detected (below RL)

RL = Reporting Limit

Reviewed/Approved By: Mark Johnson
 Mark Johnson
 Operations Manager

Date: 9/29/15

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



Client: Republic Services, Inc.
Attn: Jim Getting
Project Name: Bridgeton Landfill
Project No.: NA
Date Received: 09/22/15
Matrix: Air
Reporting Units: % v/v

ASTM D1946

Lab No.:	G092201-05		G092201-06		G092201-07		G092201-08	
Client Sample I.D.:	GEW-121		GEW-123		GEW-124		GEW-122	
Date/Time Sampled:	9/15/15 9:01		9/15/15 9:19		9/15/15 9:39		9/15/15 9:57	
Date/Time Analyzed:	9/25/15 11:35		9/25/15 11:49		9/25/15 12:04		9/25/15 12:18	
QC Batch No.:	150925GC8A1		150925GC8A1		150925GC8A1		150925GC8A1	
Analyst Initials:	AS		AS		AS		AS	
Dilution Factor:	3.0		3.1		3.2		3.2	
ANALYTE	Result % v/v	RL % v/v	Result % v/v	RL % v/v	Result % v/v	RL % v/v	Result % v/v	RL % v/v
Hydrogen	31	3.0	23	3.1	22	3.2	32	3.2
Carbon Dioxide	53	0.030	55	0.031	56	0.032	50	0.032
Oxygen/Argon	2.7	1.5	3.1	1.5	2.7	1.6	2.3	1.6
Nitrogen	9.5	3.0	11	3.1	9.8	3.2	8.3	3.2
Methane	2.2	0.0030	6.6	0.0031	8.3	0.0032	5.2	0.0032
Carbon Monoxide	0.28	0.0030	0.35	0.0031	0.20	0.0032	0.25	0.0032

Results normalized including non-methane hydrocarbons

ND = Not Detected (below RL)

RL = Reporting Limit

Reviewed/Approved By: Mark Johnson
Mark Johnson
Operations Manager

Date: 9/29/15

The cover letter is an integral part of this analytical report



Client: Republic Services, Inc.
Attn: Jim Getting
Project Name: Bridgeton Landfill
Project No.: NA
Date Received: 09/22/15
Matrix: Air
Reporting Units: % v/v

ASTM D1946

Lab No.:	G092201-09		G092201-10		G092201-11		G092201-12	
Client Sample I.D.:	GEW-131		GEW-126		GEW-147		GEW-151	
Date/Time Sampled:	9/15/15 10:30		9/15/15 10:59		9/15/15 8:21		9/15/15 8:40	
Date/Time Analyzed:	9/25/15 12:33		9/25/15 12:48		9/25/15 13:02		9/25/15 13:17	
QC Batch No.:	150925GC8A1		150925GC8A1		150925GC8A1		150925GC8A1	
Analyst Initials:	AS		AS		AS		AS	
Dilution Factor:	3.2		3.2		3.1		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	23	3.2	36	3.2	37	3.1	26	3.0
Carbon Dioxide	44	0.032	54	0.032	52	0.031	50	0.030
Oxygen/Argon	2.4	1.6	ND	1.6	ND	1.5	3.4	1.5
Nitrogen	8.8	3.2	ND	3.2	3.6	3.1	14	3.0
Methane	20	0.0032	5.5	0.0032	4.9	0.0031	5.7	0.0030
Carbon Monoxide	0.15	0.0032	0.37	0.0032	0.22	0.0031	0.18	0.0030

Results normalized including non-methane hydrocarbons

ND = Not Detected (below RL)

RL = Reporting Limit

Reviewed/Approved By: _____

Mark Johnson
Operations Manager

Date _____

The cover letter is an integral part of this analytical report



Client: Republic Services, Inc.
Attn: Jim Getting
Project Name: Bridgeton Landfill
Project No.: NA
Date Received: 09/22/15
Matrix: Air
Reporting Units: % v/v

ASTM D1946

Lab No.:	G092201-13	G092201-14	G092201-15	G092201-16				
Client Sample I.D.:	GEW-153	GEW-152	GEW-143	GEW-141				
Date/Time Sampled:	9/15/15 8:58	9/15/15 10:18	9/15/15 10:46	9/15/15 11:00				
Date/Time Analyzed:	9/25/15 13:31	9/25/15 13:46	9/25/15 14:00	9/25/15 14:15				
QC Batch No.:	150925GC8A1	150925GC8A1	150925GC8A1	150925GC8A1				
Analyst Initials:	AS	AS	AS	AS				
Dilution Factor:	3.1	3.2	3.2	3.2				
ANALYTE	Result % v/v	RL % v/v	Result % v/v	RL % v/v	Result % v/v	RL % v/v	Result % v/v	RL % v/v
Hydrogen	9.3	3.1	38	3.2	41	3.2	32	3.2
Carbon Dioxide	38	0.031	51	0.032	46	0.032	61	0.032
Oxygen/Argon	ND	1.5	ND	1.6	2.5	1.6	ND	1.6
Nitrogen	31	3.1	3.4	3.2	9.1	3.2	ND	3.2
Methane	20	0.0031	5.9	0.0032	0.25	0.0032	2.0	0.0032
Carbon Monoxide	0.034	0.0031	0.30	0.0032	0.35	0.0032	0.37	0.0032

Results normalized including non-methane hydrocarbons

ND = Not Detected (below RL)

RL = Reporting Limit

Reviewed/Approved By: Mark Johnson
Mark Johnson
Operations Manager

Date: 9/29/15

The cover letter is an integral part of this analytical report



Client: Republic Services, Inc.
Attn: Jim Getting
Project Name: Bridgeton Landfill
Project No.: NA
Date Received: 09/22/15
Matrix: Air
Reporting Units: % v/v

ASTM D1946

Lab No.:	G092201-17		G092201-18		G092201-19		G092201-20	
Client Sample I.D.:	GEW-129		GEW-139		GEW-135		GEW-134	
Date/Time Sampled:	9/15/15 11:09		9/15/15 11:45		9/18/15 11:00		9/18/15 11:16	
Date/Time Analyzed:	9/25/15 14:30		9/25/15 14:44		9/25/15 14:59		9/28/15 11:20	
QC Batch No.:	150925GC8A1		150925GC8A1		150925GC8A1		150928GC8A1	
Analyst Initials:	AS		AS		AS		AS	
Dilution Factor:	3.2		3.2		3.4		3.4	
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	34	3.2	34	3.2	32	3.4	15	3.4
Carbon Dioxide	58	0.032	59	0.032	56	0.034	57	0.034
Oxygen/Argon	ND	1.6	ND	1.6	ND	1.7	ND	1.7
Nitrogen	3.4	3.2	4.1	3.2	4.9	3.4	10	3.4
Methane	1.8	0.0032	0.52	0.0032	4.7	0.0034	17	0.0034
Carbon Monoxide	0.35	0.0032	0.46	0.0032	0.20	0.0034	0.099	0.0034

Results normalized including non-methane hydrocarbons

ND = Not Detected (below RL)

RL = Reporting Limit

Reviewed/Approved By: Mark Johnson
Operations Manager

Date 9/29/15

The cover letter is an integral part of this analytical report



Client: Republic Services, Inc.
Attn: Jim Getting
Project Name: Bridgeton Landfill
Project No.: NA
Date Received: 09/22/15
Matrix: Air
Reporting Units: % v/v

ASTM D1946

Lab No.:	G092201-21		G092201-22		G092201-23		G092201-24	
Client Sample I.D.:	GEW-125		GEW-138		GEW-58		GEW-58A	
Date/Time Sampled:	9/18/15 11:37		9/18/15 11:54		9/18/15 14:32		9/18/15 14:48	
Date/Time Analyzed:	9/28/15 11:34		9/28/15 11:49		9/28/15 12:03		9/28/15 12:18	
QC Batch No.:	150928GC8A1		150928GC8A1		150928GC8A1		150928GC8A1	
Analyst Initials:	AS		AS		AS		AS	
Dilution Factor:	3.4		3.3		3.4		3.4	
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	36	3.4	11	3.3	33	3.4	34	3.4
Carbon Dioxide	57	0.034	43	0.033	46	0.034	55	0.034
Oxygen/Argon	ND	1.7	2.4	1.6	4.0	1.7	ND	1.7
Nitrogen	ND	3.4	31	3.3	14	3.4	3.6	3.4
Methane	1.7	0.0034	11	0.0033	0.32	0.0034	5.1	0.0034
Carbon Monoxide	0.32	0.0034	0.096	0.0033	0.24	0.0034	0.24	0.0034

Results normalized including non-methane hydrocarbons

ND = Not Detected (below RL)

RL = Reporting Limit

Reviewed/Approved By: Mark Johnson
 Operations Manager

Date 9/28/15

The cover letter is an integral part of this analytical report



Client: Republic Services, Inc.
Attn: Jim Getting
Project Name: Bridgeton Landfill
Project No.: NA
Date Received: 09/22/15
Matrix: Air
Reporting Units: % v/v

ASTM D1946

Lab No.:	G092201-25		G092201-26		G092201-27		G092201-28	
Client Sample I.D.:	GEW-57R		GEW-59R		GEW-117		GEW-86	
Date/Time Sampled:	9/18/15 15:03		9/18/15 15:19		9/18/15 16:01		9/18/15 16:34	
Date/Time Analyzed:	9/28/15 12:33		9/28/15 12:47		9/28/15 13:02		9/28/15 13:16	
QC Batch No.:	150928GC8A1		150928GC8A1		150928GC8A1		150928GC8A1	
Analyst Initials:	AS		AS		AS		AS	
Dilution Factor:	3.4		3.4		3.4		3.4	
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	38	3.4	41	3.4	22	3.4	5.6	3.4
Carbon Dioxide	52	0.034	51	0.034	69	0.034	36	0.034
Oxygen/Argon	ND	1.7	ND	1.7	ND	1.7	5.3	1.7
Nitrogen	5.4	3.4	ND	3.4	ND	3.4	40	3.4
Methane	0.39	0.0034	1.5	0.0034	4.4	0.0034	12	0.0034
Carbon Monoxide	0.24	0.0034	0.17	0.0034	0.27	0.0034	0.052	0.0034

Results normalized including non-methane hydrocarbons

ND = Not Detected (below RL)

RL = Reporting Limit

Reviewed/Approved By: Mark Johnson
 Operations Manager

Date: 9/29/15

The cover letter is an integral part of this analytical report



Client: Republic Services, Inc.
Attn: Jim Getting
Project Name: Bridgeton Landfill
Project No.: NA
Date Received: 09/22/15
Matrix: Air
Reporting Units: % v/v

ASTM D1946

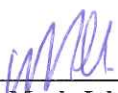
Lab No.:	G092201-29	G092201-30	G092201-31	G092201-32				
Client Sample I.D.:	GEW-90	GEW-65A	GEW-82R	GEW-22R				
Date/Time Sampled:	9/18/15 16:49	9/21/15 8:42	9/21/15 8:52	9/21/15 9:04				
Date/Time Analyzed:	9/28/15 13:31	9/28/15 13:45	9/28/15 14:34	9/28/15 15:03				
QC Batch No.:	150928GC8A1	150928GC8A1	150928GC8A1	150928GC8A1				
Analyst Initials:	AS	AS	AS	AS				
Dilution Factor:	3.2	3.1	3.2	3.1				
ANALYTE	Result % v/v	RL % v/v	Result % v/v	RL % v/v	Result % v/v	RL % v/v	Result % v/v	RL % v/v
Hydrogen	40	3.2	36	3.1	40	3.2	29	3.1
Carbon Dioxide	51	0.032	57	0.031	53	0.032	65	0.031
Oxygen/Argon	ND	1.6	ND	1.5	ND	1.6	ND	1.5
Nitrogen	ND	3.2	3.7	3.1	3.7	3.2	ND	3.1
Methane	5.0	0.0032	0.36	0.0031	0.78	0.0032	0.93	0.0031
Carbon Monoxide	0.22	0.0032	0.31	0.0031	0.22	0.0032	0.41	0.0031

Results normalized including non-methane hydrocarbons

ND = Not Detected (below RL)

RL = Reporting Limit

Reviewed/Approved By: _____


Mark Johnson
 Operations Manager

Date 9/29/15

The cover letter is an integral part of this analytical report



QC Batch No.: 150925GC8A1

Matrix: Air

Units: % v/v

QC for ASTM D1946

Lab No.:	Method Blank		LCS		LCSD			
Date/Time Analyzed:	9/25/15 9:36		9/25/15 8:52		9/25/15 9:07			
Analyst Initials:	AS		AS		AS			
Datafile:	25sep005		25sep002		25sep003			
Dilution Factor:	1.0		1.0		1.0			
ANALYTE	Results	RL	% Rec.	Criteria	% Rec.	Criteria	%RPD	Criteria
Hydrogen	ND	1.0	104	70-130%	99	70-130%	5.0	<30
Carbon Dioxide	ND	0.010	101	70-130%	96	70-130%	5.2	<30
Oxygen/Argon	ND	0.50	101	70-130%	97	70-130%	4.9	<30
Nitrogen	ND	1.0	102	70-130%	97	70-130%	4.4	<30
Methane	ND	0.0010	129	70-130%	120	70-130%	7.4	<30
Carbon Monoxide	ND	0.0010	121	70-130%	120	70-130%	1.4	<30

ND = Not Detected (Below RL)

Reviewed/Approved By:

Mark J. Johnson
Operations Manager

Date:

9/25/15

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.: 150928GC8A1

Matrix: Air

Units: % v/v

QC for ASTM D1946

Lab No.:	Method Blank		LCS		LCSD			
Date/Time Analyzed:	9/28/15 10:05		9/28/15 9:05		9/28/15 9:20			
Analyst Initials:	AS		AS		AS			
Datafile:	28sep007		28sep004		28sep005			
Dilution Factor:	1.0		1.0		1.0			
ANALYTE	Results	RL	% Rec.	Criteria	% Rec.	Criteria	%RPD	Criteria
Hydrogen	ND	1.0	83	70-130%	84	70-130%	1.3	<30
Carbon Dioxide	ND	0.010	92	70-130%	94	70-130%	3.0	<30
Oxygen/Argon	ND	0.50	100	70-130%	103	70-130%	3.1	<30
Nitrogen	ND	1.0	100	70-130%	103	70-130%	3.1	<30
Methane	ND	0.0010	99	70-130%	98	70-130%	0.8	<30
Carbon Monoxide	ND	0.0010	113	70-130%	112	70-130%	0.6	<30

ND = Not Detected (Below RL)

Reviewed/Approved By: _____

Mark J. Johnson
Operations Manager

Date: _____

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

ATTACHMENT E
GAS WELLFIELD DATA

ATTACHMENT E-1
WELLFIELD DATA TABLE

September 2015 Wellfield Monitoring Data - Bridgeton Landfill

Well Name	Date Sampled	Methane	CO ₂	O ₂	Balance Gas	Init Temp	Adj Temp	Init Flow	Adj Flow	Init Static Press	Adj Static Press	System Pressure
		(% vol)				°F		scfm		H ₂ O		
GEW-002	9/10/2015 13:54	55.9	41.3	0.0	2.8	121.8		31	30	-0.4	-0.4	-31.0
GEW-002	9/10/2015 14:02	56.3	40.9	0.0	2.8	122.3		40	40	-0.5	-0.4	-30.3
GEW-002	9/17/2015 14:12	56.6	40.6	0.0	2.8	122.4		47	47	-1.1	-1.1	-30.8
GEW-002	9/17/2015 14:16	55.8	41.2	0.0	3.0	121.0		30	33	-0.3	-0.3	-30.5
GEW-002	9/21/2015 15:34	56.2	41.0	0.0	2.8	118.0		12	12	-0.1	-0.2	-32.0
GEW-002	9/28/2015 14:54	56.4	42.1	0.1	1.4	117.6		36	40	-0.8	-0.9	-31.7
GEW-002	9/28/2015 14:56	56.0	41.3	0.0	2.7	117.9		28	27	-0.3	-0.3	-31.5
GEW-003	9/10/2015 14:06	54.1	40.1	0.0	5.8	116.0		22	23	-0.4	-0.4	-30.2
GEW-003	9/10/2015 14:13	54.3	39.9	0.0	5.8	116.0		28	28	-0.3	-0.4	-29.2
GEW-003	9/17/2015 14:25	55.4	39.1	0.0	5.5	115.2		29	28	-0.2	-0.2	-30.9
GEW-003	9/21/2015 15:39	54.3	40.2	0.0	5.5	117.8		18	17	-0.3	-0.3	-31.6
GEW-003	9/28/2015 15:04	53.4	39.2	0.1	7.3	118.3		12	11	-0.2	-0.2	-31.6
GEW-004	9/10/2015 14:18	53.5	40.1	0.0	6.4	121.8		17	14	-0.3	-0.3	-30.2
GEW-004	9/10/2015 14:24	53.6	39.9	0.0	6.5	122.1		34	33	-0.3	-0.3	-30.0
GEW-004	9/17/2015 14:30	54.2	40.1	0.0	5.7	121.8		19	19	-0.2	-0.2	-29.4
GEW-004	9/21/2015 15:44	53.0	39.7	0.0	7.3	121.5		34	34	-0.5	-0.5	-29.5
GEW-004	9/28/2015 15:11	53.4	39.9	0.0	6.7	122.1		15	18	-0.3	-0.3	-31.6
GEW-005	9/1/2015 10:55	43.0	35.8	0.0	21.2	96.1		13	12	-0.1	-0.1	-28.4
GEW-005	9/1/2015 10:58	42.8	35.8	0.0	21.4	96.0		29	28	-0.1	-0.1	-28.3
GEW-005	9/10/2015 15:23	52.5	37.8	0.0	9.7	97.9		31	31	-0.1	-0.2	-29.9
GEW-005	9/10/2015 15:30	52.3	38.0	0.0	9.7	98.1		29	29	-0.1	-0.1	-30.0
GEW-005	9/17/2015 14:54	53.4	38.6	0.0	8.0	99.1		22	23	0.1	0.1	-30.9
GEW-005	9/17/2015 14:56	53.1	38.6	0.0	8.3	100.2		24	26	-0.1	-0.1	-29.9
GEW-005	9/21/2015 16:00	47.2	37.3	0.0	15.5	97.3		18	20	-0.3	-0.3	-30.9
GEW-005	9/21/2015 16:02	47.0	37.1	0.0	15.9	97.5		16	12	-0.2	-0.2	-31.7
GEW-005	9/28/2015 15:25	48.1	37.8	0.0	14.1	98.1		19	19	-0.1	-0.1	-31.2
GEW-005	9/28/2015 15:27	48.4	37.2	0.0	14.4	98.1		16	16	-0.1	-0.1	-31.5
GEW-006	9/10/2015 17:45	55.8	39.2	0.0	5.0	93.2		17	21	-0.2	-0.2	-31.8
GEW-006	9/10/2015 17:54	56.0	39.0	0.0	5.0	93.2		21	21	-0.3	-0.3	-32.1
GEW-006	9/17/2015 15:05	56.8	38.2	0.0	5.0	93.6		24	25	-0.1	-0.1	-30.4
GEW-006	9/21/2015 16:10	55.8	38.8	0.0	5.4	92.8		15	20	-0.3	-0.3	-31.6
GEW-006	9/28/2015 15:37	55.2	38.4	0.0	6.4	93.4		24	20	-0.2	-0.2	-31.3
GEW-007	9/1/2015 11:39	56.6	40.7	0.2	2.5	102.4		13	10	-0.9	-0.9	-28.4
GEW-007	9/1/2015 11:42	56.6	40.7	0.2	2.5	102.3		7	7	-0.4	-0.4	-29.1
GEW-007	9/11/2015 10:16	57.4	40.9	0.0	1.7	97.9		34	34	-0.6	-0.6	-29.2
GEW-007	9/11/2015 10:24	57.7	40.6	0.0	1.7	98.5		42	42	-0.6	-0.6	-30.2
GEW-007	9/17/2015 18:09	58.1	40.1	0.0	1.8	100.3		0	0	0.1	0.1	-30.9
GEW-007	9/17/2015 18:13	58.1	39.3	0.0	2.6	100.8		9	9	-0.1	-0.1	-31.3
GEW-007	9/21/2015 17:52	57.8	42.0	0.0	0.2	101.0		12	12	-1.2	-1.2	-32.4
GEW-007	9/21/2015 17:55	57.8	40.0	0.0	2.2	100.5		11	11	-0.5	-0.5	-31.7
GEW-007	9/28/2015 16:19	57.3	40.2	0.1	2.4	101.1		6	6	0.0	0.1	-31.5
GEW-007	9/28/2015 16:21	56.8	40.2	0.0	3.0	101.3		5	5	-0.1	-0.1	-31.8

September 2015 Wellfield Monitoring Data - Bridgeton Landfill

Well Name	Date Sampled	Methane	CO ₂	O ₂	Balance Gas	Init Temp	Adj Temp	Init Flow	Adj Flow	Init Static Press	Adj Static Press	System Pressure
		(% vol)				°F		scfm		H ₂ O		
GEW-008	9/1/2015 11:46	49.9	44.8	0.3	5.0	116.0		17	20	-0.8	-0.8	-28.0
GEW-008	9/1/2015 11:48	49.7	44.9	0.2	5.2	115.4		11	12	-0.2	-0.2	-28.6
GEW-008	9/11/2015 10:31	49.9	46.7	0.0	3.4	114.3		15	15	-0.1	-0.1	-28.7
GEW-008	9/11/2015 10:40	50.4	46.5	0.0	3.1	114.5		15	15	-0.1	-0.1	-29.9
GEW-008	9/17/2015 18:19	50.4	45.2	0.0	4.4	115.2		0	0	0.1	0.1	-31.2
GEW-008	9/17/2015 18:20	50.5	45.5	0.0	4.0	115.5		0	0	-0.1	-0.1	-30.1
GEW-008	9/21/2015 17:59	50.5	44.8	0.0	4.7	115.0		17	19	-0.7	-0.7	-32.4
GEW-008	9/21/2015 18:01	50.1	45.5	0.0	4.4	114.7		14	15	-0.4	-0.4	-32.0
GEW-008	9/28/2015 16:26	50.3	44.5	0.1	5.1	115.5		14	14	0.1	0.1	-31.5
GEW-008	9/28/2015 16:27	50.3	44.4	0.0	5.3	115.5		19	18	-0.2	-0.2	-31.0
GEW-009	9/1/2015 11:51	51.9	42.1	0.2	5.8	124.6		15	13	-0.3	-0.3	-23.3
GEW-009	9/11/2015 10:48	53.5	42.1	0.0	4.4	124.4		14	11	-0.3	-0.3	-20.9
GEW-009	9/11/2015 11:00	53.6	42.1	0.0	4.3	124.9		0	0	-0.4	-0.4	-22.4
GEW-009	9/17/2015 18:24	54.3	42.7	0.0	3.0	126.3		26	25	-0.2	-0.2	-23.2
GEW-009	9/21/2015 18:05	53.2	42.8	0.0	4.0	124.3		37	36	-0.4	-0.4	-23.9
GEW-009	9/28/2015 16:31	53.4	42.4	0.0	4.2	125.1		33	34	-0.3	-0.3	-30.2
GEW-010	9/2/2015 14:23	47.1	45.4	0.9	6.6	110.4				-6.5	-6.5	-17.7
GEW-010	9/11/2015 12:31	48.3	45.6	1.1	5.0	99.4				-11.1	-11.1	-21.0
GEW-010	9/11/2015 12:45	49.3	45.2	0.6	4.9	101.6				-12.0	-12.1	-21.2
GEW-010	9/18/2015 9:29	38.3	50.1	2.3	9.3	101.7				-15.8	-15.9	-24.5
GEW-010	9/18/2015 18:01	43.9	49.1	0.9	6.1	107.9				-15.6	-15.7	-24.5
GEW-010	9/22/2015 14:20	38.1	50.7	1.5	9.7	112.3				-14.7	-14.7	-26.1
GEW-010	9/28/2015 17:53	40.4	42.6	2.9	14.1	105.6				-15.6	-15.4	-31.0
GEW-022R	9/21/2015 9:03	1.4	64.0	0.0	34.6	191.3				-21.6	-21.0	-21.8
GEW-022R	9/21/2015 9:07	1.3	66.4	0.0	32.3	191.4				-20.8	-20.0	-21.8
GEW-026R	9/23/2015 11:06	0.2	12.0	20.3	67.5	95.5				-22.1	-22.1	-22.8
GEW-026R	9/23/2015 11:06	0.1	7.7	20.7	71.5	95.6				-22.1	-22.1	-22.0
GEW-027A	9/23/2015 11:10	0.1	37.3	10.0	52.6	121.5				-1.0	-0.8	-23.0
GEW-027A	9/23/2015 11:10	0.1	37.2	10.1	52.6	121.5				-0.9	-0.5	-23.1
GEW-028R	9/23/2015 11:12	0.1	34.2	13.0	52.7	187.4				-8.9	-8.9	-24.6
GEW-028R	9/23/2015 11:13	0.1	27.7	13.1	59.1	189.1				-13.8	-13.9	-24.6
GEW-038	9/2/2015 13:56	0.2	44.4	5.7	49.7	136.0				-25.4	-25.4	-25.4
GEW-038	9/2/2015 13:57	0.2	46.0	5.5	48.3	135.0				-25.0	-25.4	-24.5
GEW-038	9/11/2015 11:36	0.3	52.6	4.1	43.0	104.3				-29.1	-28.6	-28.6
GEW-038	9/11/2015 11:44	0.2	51.4	4.0	44.4	104.3				-29.7	-29.7	-29.9
GEW-038	9/18/2015 9:23	1.4	41.0	6.3	51.3	103.0				-31.1	-31.1	-30.2
GEW-038	9/18/2015 17:36	0.4	45.9	5.0	48.7	115.7				-31.3	-31.7	-31.5
GEW-038	9/18/2015 17:38	0.2	48.0	4.6	47.2	116.3				-31.2	-31.9	-31.4
GEW-038	9/22/2015 14:13	0.9	29.4	12.8	56.9	114.0				-32.7	-32.7	-32.8
GEW-038	9/28/2015 17:29	0.3	38.0	8.4	53.3	110.2				-32.6	-32.2	-32.3
GEW-038	9/28/2015 17:31	0.2	38.4	8.0	53.4	110.9				-32.3	-32.4	-32.3
GEW-039	9/2/2015 14:01	39.4	47.7	0.0	12.9	134.0				-0.5	-0.5	-23.7

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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 ₂ O		
GEW-039	9/2/2015 14:03	39.7	49.5	0.0	10.8	134.3				-0.5	-0.5	-23.3
GEW-039	9/11/2015 11:49	41.0	51.8	0.0	7.2	132.4				-0.8	-0.8	-27.1
GEW-039	9/11/2015 11:58	40.7	51.3	0.0	8.0	132.4				-0.8	-0.8	-26.7
GEW-039	9/18/2015 9:27	39.1	54.3	0.0	6.6	132.7				-0.8	-0.8	-28.8
GEW-039	9/18/2015 17:42	41.2	52.4	0.1	6.3	133.7				-0.7	-0.7	-29.3
GEW-039	9/18/2015 17:44	41.0	51.1	0.0	7.9	133.5				-0.7	-0.7	-28.6
GEW-039	9/22/2015 14:17	38.1	53.1	0.0	8.8	134.6				-0.7	-0.7	-29.4
GEW-039	9/28/2015 17:36	41.8	51.7	0.0	6.5	133.0				-0.7	-0.7	-29.6
GEW-039	9/28/2015 17:38	41.9	49.9	0.1	8.1	133.3				-0.7	-0.7	-30.9
GEW-040	9/8/2015 14:00	57.5	40.2	0.0	2.3	96.4		14	14	-0.4	-0.4	-30.8
GEW-040	9/8/2015 14:12	58.0	40.2	0.0	1.8	96.4		11	10	-0.4	-0.4	-30.3
GEW-040	9/17/2015 13:28	58.1	39.4	0.0	2.5	96.9		0	0	-0.5	-0.5	-31.4
GEW-040	9/21/2015 15:03	57.2	40.6	0.0	2.2	96.4		8	8	-0.4	-0.4	-29.3
GEW-041R	9/8/2015 14:19	56.9	41.3	0.0	1.8	107.9		17	18	-0.4	-0.4	-31.4
GEW-041R	9/8/2015 14:29	57.7	40.5	0.0	1.8	107.9		0	0	-0.4	-0.4	-31.2
GEW-041R	9/17/2015 13:33	56.7	39.9	0.0	3.4	107.9		30	31	-0.3	-0.3	-31.4
GEW-041R	9/21/2015 15:06	56.8	40.1	0.0	3.1	107.8		17	17	-0.3	-0.4	-27.1
GEW-042R	9/8/2015 14:37	56.3	42.1	0.0	1.6	101.7		10	10	-0.3	-0.3	-26.5
GEW-042R	9/8/2015 14:47	56.6	41.9	0.0	1.5	101.1		11	11	-0.3	-0.3	-26.5
GEW-042R	9/17/2015 13:38	56.3	41.0	0.0	2.7	102.8		10	10	-0.1	-0.1	-27.3
GEW-042R	9/21/2015 15:10	56.8	40.2	0.0	3.0	100.9		11	11	-0.2	-0.2	-25.6
GEW-042R	9/28/2015 14:12	56.4	41.0	0.0	2.6	101.9		8	8	0.0	0.0	-26.2
GEW-042R	9/28/2015 14:13	56.6	40.9	0.0	2.5	103.4		8	10	-0.1	-0.1	-26.7
GEW-043R	9/8/2015 15:03	55.2	42.7	0.0	2.1	129.9		30	30	-0.6	-0.6	-30.8
GEW-043R	9/8/2015 15:14	55.2	42.7	0.0	2.1	129.9		33	32	-0.4	-0.4	-32.0
GEW-043R	9/17/2015 15:44	55.5	40.3	0.0	4.2	122.9		20	24	-0.2	-0.2	-31.5
GEW-043R	9/21/2015 15:17	55.4	41.1	0.0	3.5	122.6		21	19	-0.3	-0.4	-31.0
GEW-043R	9/28/2015 14:17	55.3	41.3	0.0	3.4	130.8		18	18	0.4	0.4	-30.4
GEW-043R	9/28/2015 14:19	55.1	41.7	0.0	3.2	131.9		30	30	-0.1	-0.1	-32.4
GEW-044	9/10/2015 13:15	56.1	37.8	0.0	6.1	96.5		12	13	-0.2	-0.2	-24.5
GEW-044	9/10/2015 13:27	55.8	38.9	0.0	5.3	95.8		10	9	-0.2	-0.2	-27.0
GEW-044	9/17/2015 13:51	57.3	38.3	0.0	4.4	98.1		3	4	-0.1	-0.1	-31.2
GEW-044	9/21/2015 15:22	52.0	38.9	0.0	9.1	95.0		0	0	-0.1	-0.1	-29.9
GEW-044	9/28/2015 14:24	56.7	39.9	0.0	3.4	98.7		8	7	-0.1	-0.1	-27.6
GEW-045R	9/10/2015 13:34	58.1	39.6	0.0	2.3	90.3		8	6	-0.3	-0.3	-30.3
GEW-045R	9/10/2015 13:40	58.9	38.8	0.0	2.3	90.4		9	10	-0.3	-0.3	-30.5
GEW-045R	9/17/2015 13:56	58.3	39.2	0.0	2.5	90.7		7	6	-0.3	-0.3	-31.4
GEW-045R	9/21/2015 15:26	58.4	39.1	0.0	2.5	87.3		8	8	-0.5	-0.5	-31.7
GEW-045R	9/28/2015 14:32	58.6	39.3	0.0	2.1	96.4		0	3	0.0	0.0	-31.5
GEW-045R	9/28/2015 14:33	59.1	39.1	0.0	1.8	97.1		0	0	-0.3	-0.3	-31.6
GEW-046R	9/10/2015 13:44	54.1	40.9	0.0	5.0	100.9		0	0	-0.2	-0.2	-29.2
GEW-046R	9/10/2015 13:50	54.9	40.1	0.0	5.0	100.9		14	13	-0.2	-0.2	-29.9

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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 ₂ O		
GEW-046R	9/17/2015 14:03	54.6	40.2	0.0	5.2	101.5		0	0	-0.2	-0.2	-30.3
GEW-046R	9/21/2015 15:30	55.0	40.2	0.0	4.8	100.7		19	20	-0.2	-0.2	-31.8
GEW-046R	9/28/2015 14:39	55.3	40.7	0.0	4.0	101.1		15	12	-0.2	-0.2	-31.7
GEW-047R	9/1/2015 11:06	42.2	37.1	0.2	20.5	114.2		0	0	-0.1	-0.1	-28.5
GEW-047R	9/1/2015 11:08	42.4	36.9	0.2	20.5	114.1		0	0	-0.1	-0.1	-28.6
GEW-047R	9/10/2015 14:43	50.1	39.1	0.0	10.8	115.7		42	42	-0.2	-0.2	-30.0
GEW-047R	9/10/2015 14:53	50.5	38.8	0.0	10.7	115.7		19	20	-0.1	-0.1	-29.6
GEW-047R	9/17/2015 14:47	51.6	39.3	0.0	9.1	116.8		31	31	0.0	0.0	-30.7
GEW-047R	9/17/2015 14:48	50.8	39.2	0.0	10.0	118.8		20	17	-0.1	-0.1	-30.5
GEW-047R	9/21/2015 15:51	45.9	37.6	0.1	16.4	115.0		32	31	-0.4	-0.4	-30.7
GEW-047R	9/21/2015 15:55	48.0	37.8	0.2	14.0	112.0		0	0	-0.1	-0.1	-30.5
GEW-047R	9/28/2015 15:18	53.2	40.1	0.0	6.7	113.8		7	9	0.1	0.1	-31.5
GEW-047R	9/28/2015 15:20	52.7	40.5	0.0	6.8	118.8		12	20	-0.1	-0.1	-31.5
GEW-048	9/10/2015 15:35	53.4	39.4	0.0	7.2	107.4		18	20	-0.2	-0.2	-29.9
GEW-048	9/10/2015 15:41	53.8	38.7	0.0	7.5	107.4		18	18	-0.2	-0.1	-28.0
GEW-048	9/17/2015 15:01	54.6	39.2	0.0	6.2	107.4		30	29	-0.1	-0.1	-29.1
GEW-048	9/21/2015 16:07	55.4	39.3	0.0	5.3	106.7		18	20	-0.3	-0.3	-31.6
GEW-048	9/28/2015 15:33	54.9	39.6	0.0	5.5	107.2		16	17	-0.2	-0.2	-31.3
GEW-049	9/10/2015 15:45	55.6	39.6	0.0	4.8	111.1		0	0	-0.1	-0.1	-25.0
GEW-049	9/10/2015 15:54	56.8	38.8	0.0	4.4	111.4		0	0	-0.2	-0.2	-27.3
GEW-049	9/17/2015 15:33	56.3	39.3	0.0	4.4	114.0		0	0	0.0	0.1	-26.0
GEW-049	9/17/2015 15:35	56.1	39.8	0.0	4.1	115.0		0	0	-0.1	-0.1	-31.4
GEW-049	9/21/2015 16:24	50.2	37.6	0.0	12.2	110.9		4	5	-0.3	-0.3	-29.9
GEW-049	9/21/2015 16:26	50.7	38.1	0.0	11.2	110.6		11	11	-0.3	-0.3	-26.8
GEW-049	9/28/2015 16:00	53.0	39.0	0.0	8.0	113.0		11	0	-0.2	-0.2	-27.2
GEW-050	9/10/2015 18:14	56.3	40.2	0.0	3.5	109.5		19	14	-0.3	-0.3	-29.7
GEW-050	9/10/2015 18:22	56.8	39.8	0.0	3.4	109.5		19	18	-0.4	-0.4	-27.2
GEW-050	9/17/2015 15:14	56.6	39.4	0.0	4.0	109.6		15	17	0.1	0.0	-26.0
GEW-050	9/17/2015 15:15	56.6	39.6	0.0	3.8	109.7		20	21	-0.1	-0.2	-28.5
GEW-050	9/21/2015 16:17	57.2	39.0	0.0	3.8	109.0		16	19	-0.2	-0.2	-25.0
GEW-050	9/28/2015 15:49	57.0	39.2	0.0	3.8	109.5		14	18	-0.1	-0.1	-24.9
GEW-051	9/10/2015 18:42	55.0	41.7	0.0	3.3	126.3		24	24	-0.7	-0.7	-28.6
GEW-051	9/10/2015 18:52	55.1	41.9	0.0	3.0	125.4		13	12	-0.4	-0.4	-29.9
GEW-051	9/17/2015 15:39	55.0	39.9	0.0	5.1	128.4		19	20	0.1	0.1	-30.3
GEW-051	9/17/2015 15:40	54.3	40.9	0.0	4.8	129.6		26	26	-0.1	-0.1	-29.3
GEW-051	9/21/2015 16:30	55.5	40.3	0.0	4.2	126.4		21	23	-0.7	-0.7	-31.7
GEW-051	9/21/2015 16:32	55.5	41.2	0.0	3.3	126.0		15	17	-0.5	-0.5	-31.3
GEW-051	9/28/2015 16:03	54.9	40.8	0.0	4.3	127.8		16	14	-0.2	-0.2	-30.9
GEW-052	9/10/2015 18:27	54.0	40.7	0.0	5.3	116.3		14	10	-0.2	-0.2	-28.3
GEW-052	9/10/2015 18:36	54.4	40.6	0.0	5.0	116.2		0	0	-0.2	-0.2	-29.5
GEW-052	9/17/2015 15:22	54.8	39.9	0.0	5.3	117.3		0	0	0.1	0.1	-31.1
GEW-052	9/17/2015 15:24	55.1	40.1	0.0	4.8	118.1		0	0	-0.1	-0.1	-30.5

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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 ₂ O		
GEW-052	9/21/2015 16:20	55.2	39.1	0.0	5.7	114.8		20	21	-0.4	-0.4	-32.2
GEW-052	9/28/2015 15:52	53.3	39.5	0.0	7.2	115.7		18	17	-0.3	-0.3	-31.4
GEW-053	9/11/2015 9:36	50.7	42.7	0.0	6.6	139.7		11	8	-0.4	-0.4	-29.0
GEW-053	9/17/2015 17:48	52.4	41.7	0.0	5.9	136.6		16	17	0.0	0.0	-30.7
GEW-053	9/17/2015 17:50	52.4	42.3	0.0	5.3	138.3		20	16	-0.1	-0.1	-30.1
GEW-053	9/21/2015 16:40	52.2	42.3	0.0	5.5	136.8		32	19	-0.6	-0.6	-31.1
GEW-053	9/21/2015 16:44	52.8	41.8	0.0	5.4	135.7		8	4	-0.4	-0.4	-32.0
GEW-053	9/28/2015 16:07	51.1	41.0	0.0	7.9	140.7		12	11	0.0	0.0	-31.2
GEW-053	9/28/2015 16:09	51.0	42.3	0.0	6.7	140.7		15	15	-0.1	-0.1	-30.9
GEW-054	9/11/2015 9:17	50.5	42.6	0.0	6.9	139.3		12	11	-0.3	-0.3	-28.6
GEW-054	9/11/2015 9:43	52.4	42.5	0.0	5.1	142.9		34	34	-1.0	-1.0	-29.1
GEW-054	9/11/2015 10:01	53.6	40.7	0.0	5.7	141.1		16	10	-0.4	-0.4	-31.1
GEW-054	9/17/2015 17:56	52.8	41.8	0.0	5.4	142.9		21	19	0.1	0.0	-30.4
GEW-054	9/17/2015 18:01	52.6	41.7	0.0	5.7	143.6		0	0	-0.1	-0.1	-30.4
GEW-054	9/21/2015 16:52	52.8	42.4	0.0	4.8	142.2		26	27	-0.4	-0.4	-31.2
GEW-054	9/21/2015 16:54	52.6	42.0	0.0	5.4	141.5		17	18	-0.3	-0.3	-32.9
GEW-055	9/1/2015 11:28	53.3	42.3	0.2	4.2	126.9		11	13	-0.4	-0.4	-29.1
GEW-055	9/1/2015 11:30	53.3	42.1	0.2	4.4	126.3		0	0	-0.4	-0.4	-27.1
GEW-055	9/10/2015 18:59	53.2	43.2	0.0	3.6	127.2		0	0	-0.3	-0.3	-29.3
GEW-055	9/10/2015 19:15	53.1	43.3	0.0	3.6	126.6		0	0	-0.3	-0.3	-30.0
GEW-055	9/17/2015 18:49	54.0	42.3	0.0	3.7	127.5		0	0	0.0	0.0	-30.3
GEW-055	9/17/2015 18:52	53.7	42.0	0.0	4.3	128.7		0	0	-0.1	-0.1	-30.7
GEW-055	9/21/2015 16:59	53.6	42.4	0.0	4.0	128.4		9	9	-0.3	-0.3	-30.5
GEW-056R	9/2/2015 14:15	0.9	56.4	0.1	42.6	117.3				0.4	0.5	-13.9
GEW-056R	9/2/2015 14:18	0.8	57.8	0.0	41.4	126.1				-0.2	-0.2	-14.2
GEW-056R	9/10/2015 15:05	0.7	58.2	0.1	41.0	170.7				-0.8	-0.8	-16.7
GEW-056R	9/10/2015 15:16	0.6	59.0	0.1	40.3	160.1				-0.4	-0.4	-18.3
GEW-056R	9/11/2015 12:18	0.7	59.1	0.0	40.2	137.6				-0.2	-0.2	-16.9
GEW-056R	9/11/2015 12:26	0.6	56.6	0.0	42.8	137.7				-0.1	-0.2	-17.4
GEW-056R	9/18/2015 9:33	2.1	61.0	0.2	36.7	93.2				0.3	0.3	-19.1
GEW-056R	9/18/2015 9:34	1.2	60.8	0.0	38.0	99.4				-0.2	-0.2	-19.8
GEW-056R	9/18/2015 17:55	0.9	57.5	0.0	41.6	150.5				0.0	0.0	-21.4
GEW-056R	9/18/2015 18:16	1.3	59.3	0.0	39.4	170.7				-0.5	-0.5	-22.7
GEW-056R	9/22/2015 14:25	10.2	46.9	0.3	42.6	178.6				-1.7	-1.7	-23.8
GEW-056R	9/28/2015 17:47	16.6	42.1	0.5	40.8	173.1				-3.4	-3.4	-25.5
GEW-056R	9/28/2015 17:49	16.6	41.8	0.5	41.1	173.5				-3.4	-3.4	-25.7
GEW-057B	9/23/2015 13:48	0.5	57.2	0.0	42.3	184.1				-13.4	-13.7	-13.3
GEW-057B	9/23/2015 13:49	0.6	59.5	0.0	39.9	184.1				-14.8	-15.3	-14.7
GEW-057R	9/18/2015 14:58	0.6	52.8	0.8	45.8	191.9				-23.0	-22.6	-22.8
GEW-057R	9/18/2015 15:07	0.6	53.8	0.8	44.8	192.5				-22.5	-22.0	-22.4
GEW-058	9/18/2015 14:26	6.3	56.2	0.3	37.2	188.5				-28.8	-27.4	-29.3
GEW-058	9/18/2015 14:36	6.0	58.2	0.3	35.5	188.1				-27.3	-27.3	-27.9

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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 ₂ O		
GEW-058A	9/18/2015 14:41	0.2	51.1	2.7	46.0	180.8				-14.6	-15.2	-29.6
GEW-058A	9/18/2015 14:51	0.2	50.1	2.5	47.2	182.0				-14.3	-14.0	-28.8
GEW-059R	9/18/2015 15:13	2.2	53.4	0.4	44.0	186.8				-17.6	-17.7	-31.8
GEW-059R	9/18/2015 15:22	2.2	55.8	0.4	41.6	186.8				-17.6	-17.6	-30.7
GEW-061B	9/23/2015 13:52	0.1	18.8	19.4	61.7	95.3				-30.5	-30.8	-31.3
GEW-061B	9/23/2015 13:53	0.1	9.9	20.1	69.9	96.8				-30.0	-30.5	-31.8
GEW-065A	9/21/2015 8:41	0.6	63.0	0.0	36.4	195.4				-9.4	-11.3	-12.7
GEW-065A	9/21/2015 8:45	0.5	52.8	0.0	46.7	195.4				-10.8	-10.8	-13.0
GEW-067A	9/23/2015 14:12	0.8	34.3	9.1	55.8	190.2				-0.6	-0.3	-14.6
GEW-067A	9/23/2015 14:12	1.1	38.5	9.1	51.3	190.1				-0.2	-0.4	-12.8
GEW-082R	9/21/2015 8:51	1.1	58.7	0.0	40.2	192.5				-21.1	-21.1	-21.8
GEW-082R	9/21/2015 8:55	0.6	43.5	0.0	55.9	192.5				-22.3	-22.2	-22.3
GEW-086	9/18/2015 16:27	15.1	37.0	4.5	43.4	137.0				-27.4	-28.8	-27.7
GEW-086	9/18/2015 16:36	16.4	36.2	4.2	43.2	137.3				-27.9	-29.4	-28.8
GEW-089	9/23/2015 14:19	0.7	28.0	18.0	53.3	101.5				-30.3	-30.2	-30.8
GEW-089	9/23/2015 14:19	0.1	9.1	20.6	70.2	101.5				-31.3	-31.3	-32.1
GEW-090	9/18/2015 16:43	8.8	54.2	0.1	36.9	188.5				-21.2	-21.5	-21.0
GEW-090	9/18/2015 16:52	9.3	51.2	0.1	39.4	188.5				-21.0	-22.4	-21.0
GEW-102	9/8/2015 17:14	3.7	59.7	0.7	35.9	82.3				-29.4	-29.3	-30.2
GEW-104	9/18/2015 15:30	0.8	51.2	3.8	44.2	110.9				-12.3	-12.1	-12.2
GEW-105	9/23/2015 13:43	7.9	37.7	8.9	45.5	100.2				-4.6	-4.7	-18.4
GEW-105	9/23/2015 13:44	8.1	41.0	7.8	43.1	100.1				-9.5	-9.5	-22.0
GEW-107	9/18/2015 15:36	0.6	14.9	15.6	68.9	99.6				-30.2	-31.8	-30.4
GEW-107	9/22/2015 18:30	1.3	20.3	14.0	64.4	92.7				-34.6	-33.7	-34.7
GEW-109	9/2/2015 14:09	5.2	54.4	0.0	40.4	180.8				-22.6	-22.5	-22.7
GEW-109	9/2/2015 14:10	4.7	55.0	0.0	40.3	180.3				-22.9	-23.0	-23.3
GEW-109	9/11/2015 12:04	6.1	55.8	0.0	38.1	177.7				-27.1	-28.1	-28.1
GEW-109	9/11/2015 12:12	5.4	55.7	0.0	38.9	177.7				-25.8	-25.6	-27.1
GEW-109	9/18/2015 9:25	4.7	49.8	0.4	45.1	176.1				-27.7	-27.9	-27.8
GEW-109	9/18/2015 17:48	6.9	54.3	0.0	38.8	177.2				-30.3	-29.8	-31.0
GEW-109	9/18/2015 17:50	6.4	54.4	0.0	39.2	177.2				-30.7	-29.9	-31.3
GEW-109	9/22/2015 14:15	6.9	52.9	0.2	40.0	177.2				-29.4	-29.4	-29.4
GEW-109	9/28/2015 17:42	8.2	50.1	0.0	41.7	177.3				-30.9	-29.9	-30.7
GEW-109	9/28/2015 17:43	7.2	53.3	0.0	39.5	177.2				-31.2	-31.0	-32.2
GEW-110	9/2/2015 14:33	9.8	22.0	9.8	58.4	131.1				-0.5	-0.5	-18.5
GEW-110	9/2/2015 14:34	10.1	22.9	9.7	57.3	132.4				-0.5	-0.5	-18.6
GEW-110	9/11/2015 12:54	8.8	23.0	11.2	57.0	130.0				-0.7	-0.6	-21.4
GEW-110	9/11/2015 13:03	8.3	24.2	11.1	56.4	134.0				-0.6	-0.6	-21.0
GEW-110	9/18/2015 9:31	5.4	24.0	14.1	56.5	133.3				-0.4	-0.4	-23.6
GEW-110	9/18/2015 18:10	5.9	17.6	12.2	64.3	136.0				-0.4	-0.4	-24.0
GEW-110	9/18/2015 18:12	5.8	17.5	12.2	64.5	135.3				-0.4	-0.4	-23.3
GEW-110	9/22/2015 14:23	5.2	18.7	13.9	62.2	124.6				-0.4	-0.4	-24.7

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		(% vol)				°F		scfm		H ₂ O		
GEW-110	9/28/2015 18:04	4.7	13.0	13.8	68.5	113.4				-0.4	-0.4	-30.7
GEW-110	9/28/2015 18:07	4.5	13.0	13.9	68.6	114.7				-0.5	-0.5	-30.4
GEW-116	9/23/2015 11:18	3.1	15.2	16.3	65.4	104.3		1	0	-13.1	-13.3	-21.5
GEW-116	9/23/2015 11:19	3.5	18.0	15.3	63.2	105.0		5	2	-14.9	-14.9	-21.9
GEW-117	9/18/2015 15:55	7.5	67.0	0.2	25.3	139.0				-20.6	-20.7	-19.5
GEW-117	9/18/2015 16:05	6.6	66.0	0.2	27.2	139.0				-20.6	-20.6	-20.5
GEW-120	9/1/2015 15:06	7.3	36.5	8.1	48.1	119.7				-16.6	-16.6	-16.5
GEW-120	9/1/2015 15:09	7.8	37.5	7.7	47.0	118.2				-16.6	-16.2	-16.8
GEW-120	9/15/2015 8:32	13.2	63.5	0.0	23.3	176.7				-4.2	-4.3	-3.9
GEW-120	9/15/2015 8:44	13.0	62.2	0.0	24.8	176.7				-3.8	-3.8	-3.9
GEW-121	9/1/2015 15:15	3.9	61.5	0.4	34.2	188.5				-13.7	-13.9	-14.5
GEW-121	9/1/2015 15:16	3.9	61.5	0.4	34.2	188.5				-14.7	-13.9	-15.3
GEW-121	9/15/2015 8:53	3.2	58.3	0.0	38.5	189.1				-17.0	-18.2	-17.5
GEW-121	9/15/2015 9:04	3.0	59.7	0.0	37.3	189.1				-17.4	-17.4	-18.0
GEW-122	9/1/2015 15:36	7.2	56.5	0.4	35.9	184.6				-13.3	-14.2	-13.8
GEW-122	9/1/2015 15:37	9.1	58.4	0.3	32.2	184.6				-13.8	-14.2	-14.4
GEW-122	9/15/2015 9:49	7.3	54.5	0.0	38.2	181.9				-12.2	-12.0	-12.2
GEW-122	9/15/2015 10:02	7.4	53.9	0.0	38.7	181.9				-12.4	-12.4	-12.5
GEW-123	9/2/2015 11:56	8.3	61.9	0.0	29.8	183.5				-12.9	-11.3	-13.2
GEW-123	9/2/2015 11:58	8.8	59.1	0.1	32.0	183.5				-10.3	-9.8	-10.5
GEW-123	9/15/2015 9:11	9.0	61.7	0.0	29.3	176.2				-19.7	-19.7	-19.6
GEW-123	9/15/2015 9:23	10.4	61.3	0.0	28.3	177.7				-20.2	-20.2	-19.1
GEW-124	9/1/2015 15:22	5.1	64.2	0.5	30.2	137.3				-16.1	-16.2	-16.3
GEW-124	9/1/2015 15:23	5.1	64.1	0.4	30.4	137.6				-15.1	-15.6	-15.1
GEW-124	9/15/2015 9:36	11.7	59.6	0.0	28.7	162.3				-16.3	-16.8	-16.5
GEW-124	9/15/2015 9:43	11.0	59.2	0.0	29.8	157.6				-17.3	-17.7	-17.2
GEW-125	9/1/2015 15:28	2.8	65.5	0.4	31.3	191.3				-14.7	-15.1	-15.7
GEW-125	9/1/2015 15:31	3.3	61.8	0.4	34.5	191.3				-14.5	-14.7	-15.4
GEW-125	9/18/2015 11:28	2.6	57.5	0.1	39.8	191.3				-18.2	-18.5	-18.3
GEW-125	9/18/2015 11:41	3.2	56.9	0.1	39.8	191.3				-18.5	-18.4	-18.9
GEW-126	9/2/2015 8:49	6.1	45.4	3.5	45.0	178.2				-18.1	-18.1	-17.2
GEW-126	9/2/2015 8:51	6.5	49.7	4.0	39.8	180.8				-18.0	-18.4	-17.7
GEW-126	9/15/2015 10:51	9.6	53.8	0.1	36.5	176.7				-20.2	-21.2	-19.4
GEW-126	9/15/2015 11:06	9.4	54.3	0.1	36.2	176.2				-20.3	-19.6	-19.6
GEW-127	9/2/2015 8:56	0.6	50.6	5.2	43.6	91.3				-16.2	-16.5	-16.3
GEW-127	9/2/2015 8:59	0.8	56.1	3.3	39.8	93.6				-16.7	-17.1	-17.7
GEW-127	9/15/2015 11:30	1.4	37.4	9.8	51.4	95.4				-20.2	-19.8	-21.2
GEW-127	9/15/2015 11:34	1.6	38.8	9.1	50.5	95.6				-20.1	-20.4	-17.7
GEW-128	9/2/2015 9:03	1.9	59.2	0.1	38.8	181.4				-17.5	-17.5	-17.2
GEW-128	9/2/2015 9:05	2.1	59.6	0.1	38.2	181.4				-16.7	-16.5	-17.1
GEW-128	9/15/2015 11:43	5.6	57.8	0.2	36.4	100.7				-20.7	-20.9	-20.6
GEW-128	9/15/2015 11:48	5.4	57.3	0.1	37.2	100.6				-20.5	-20.2	-20.3

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		(% vol)				°F		scfm		H ₂ O		
GEW-129	9/2/2015 9:09	1.5	56.6	0.1	41.8	162.3				-18.1	-18.3	-18.2
GEW-129	9/2/2015 9:11	1.8	56.5	0.0	41.7	162.6				-18.4	-18.1	-18.6
GEW-129	9/15/2015 11:06	3.3	56.1	1.4	39.2	101.8				-21.1	-21.1	-21.3
GEW-129	9/15/2015 11:12	3.6	57.2	0.6	38.6	102.3				-20.6	-20.2	-20.7
GEW-131	9/2/2015 8:43	23.9	49.2	0.1	26.8	149.2				-17.6	-17.6	-17.6
GEW-131	9/2/2015 8:44	23.9	49.7	0.0	26.4	149.1				-18.1	-17.6	-18.1
GEW-131	9/15/2015 10:23	27.1	48.2	0.0	24.7	146.6				-19.8	-19.2	-20.0
GEW-131	9/15/2015 10:36	29.1	48.6	0.0	22.3	147.0				-19.2	-18.8	-19.1
GEW-132	9/1/2015 15:42	13.3	49.5	2.5	34.7	180.3				-10.7	-10.8	-15.1
GEW-132	9/1/2015 15:43	14.0	48.8	2.5	34.7	180.3				-10.3	-10.3	-15.8
GEW-132	9/15/2015 10:10	10.2	38.6	6.8	44.4	177.7				-13.0	-13.3	-18.1
GEW-132	9/15/2015 10:15	10.5	37.7	6.8	45.0	177.5				-17.8	-18.3	-17.7
GEW-133	9/15/2015 8:24	0.4	20.0	15.1	64.5	81.9				-20.2	-20.2	-19.9
GEW-133	9/15/2015 8:25	0.4	22.5	13.4	63.7	81.9		4	6	-19.8	-19.8	-19.7
GEW-134	9/1/2015 14:59	15.2	57.6	0.3	26.9	179.3				-16.6	-16.7	-16.2
GEW-134	9/1/2015 15:00	16.3	58.3	0.3	25.1	179.3				-16.7	-17.1	-16.4
GEW-134	9/14/2015 16:28	16.0	52.6	0.5	30.9	175.4				-19.9	-19.8	-19.6
GEW-134	9/14/2015 16:41	17.6	51.5	0.5	30.4	175.3				-19.9	-19.9	-19.9
GEW-134	9/18/2015 11:11	18.8	54.6	0.5	26.1	173.2				-19.6	-19.3	-19.3
GEW-134	9/18/2015 11:19	19.5	52.7	0.5	27.3	173.6				-19.3	-19.2	-19.2
GEW-135	9/1/2015 14:53	4.3	60.8	0.3	34.6	189.6				-12.7	-12.8	-13.6
GEW-135	9/1/2015 14:54	4.3	60.8	0.3	34.6	189.6				-13.3	-13.2	-12.8
GEW-135	9/14/2015 16:10	5.4	56.0	0.1	38.5	187.9				-16.5	-16.7	-15.8
GEW-135	9/14/2015 16:23	5.2	57.3	0.1	37.4	187.9				-16.5	-17.0	-19.1
GEW-135	9/18/2015 10:53	6.0	57.8	0.2	36.0	187.4				-15.5	-15.5	-16.3
GEW-135	9/18/2015 11:04	5.7	59.9	0.1	34.3	187.4				-16.3	-16.0	-16.7
GEW-136	9/1/2015 14:24	9.4	39.0	3.9	47.7	151.8				-1.4	-1.4	-16.5
GEW-136	9/1/2015 14:26	9.5	39.0	3.9	47.6	152.7				-1.4	-1.4	-17.5
GEW-136	9/14/2015 14:37	7.3	38.4	2.5	51.8	151.7				-1.4	-1.4	-17.5
GEW-136	9/14/2015 14:47	7.7	35.5	3.8	53.0	158.3				-12.6	-12.6	-12.5
GEW-137	9/1/2015 14:17	34.2	51.4	1.2	13.2	108.4				-2.8	-3.0	-3.6
GEW-137	9/1/2015 14:19	34.9	52.2	1.0	11.9	108.8				-2.8	-2.4	-2.6
GEW-137	9/14/2015 14:53	25.1	48.7	0.5	25.7	113.8				-14.9	-14.0	-15.0
GEW-137	9/14/2015 14:56	25.1	48.2	0.5	26.2	113.8				-14.5	-14.9	-14.5

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		(% vol)				°F		scfm		H ₂ O		
GEW-138	9/1/2015 16:11	6.8	59.1	0.4	33.7	189.8				-1.0	-0.7	-1.6
GEW-138	9/1/2015 16:12	6.8	60.1	0.4	32.7	190.2				-2.3	-2.3	-2.8
GEW-138	9/14/2015 15:04	3.1	56.2	0.0	40.7	191.3				-2.0	-1.9	-13.1
GEW-138	9/14/2015 15:30	12.4	49.3	0.1	38.2	187.4				-4.3	-4.3	-12.7
GEW-138	9/14/2015 15:43	12.2	50.0	0.0	37.8	186.8				-4.1	-4.3	-11.3
GEW-138	9/18/2015 11:49	14.5	45.0	0.7	39.8	173.1				-3.4	-3.8	-10.9
GEW-138	9/18/2015 11:59	15.0	44.7	0.7	39.6	176.2				-3.6	-3.7	-11.2
GEW-139	9/2/2015 9:46	2.7	58.5	0.1	38.7	190.8				-10.3	-10.3	-11.1
GEW-139	9/2/2015 9:48	3.0	59.6	0.1	37.3	190.8				-10.8	-11.2	-12.7
GEW-139	9/15/2015 11:42	1.2	63.4	0.4	35.0	190.2				-12.5	-13.3	-13.4
GEW-139	9/15/2015 11:47	0.8	58.1	0.4	40.7	190.2				-12.8	-13.4	-14.4
GEW-140	9/2/2015 9:40	15.0	58.5	0.1	26.4	184.6				4.0	3.9	4.3
GEW-140	9/2/2015 9:42	17.8	57.3	0.0	24.9	185.7				-0.1	0.0	0.5
GEW-140	9/15/2015 11:32	11.2	59.6	0.1	29.1	184.6				3.3	3.5	3.5
GEW-140	9/16/2015 10:31	8.7	52.6	0.2	38.5	181.4				10.0	9.5	10.4
GEW-141	9/2/2015 9:16	5.9	61.7	0.1	32.3	147.7				-13.7	-13.7	-19.6
GEW-141	9/2/2015 9:17	6.1	61.5	0.0	32.4	148.1				-14.1	-14.0	-19.6
GEW-141	9/15/2015 10:57	4.2	60.5	0.8	34.5	127.8				-22.1	-22.1	-22.6
GEW-141	9/15/2015 11:02	4.1	58.7	0.7	36.5	126.0				-22.1	-21.7	-22.6
GEW-142	9/2/2015 9:23	0.7	56.2	0.2	42.9	185.2				-9.2	-9.5	-9.4
GEW-142	9/2/2015 9:24	1.3	57.9	0.1	40.7	185.4				-9.3	-9.6	-9.7
GEW-142	9/15/2015 10:54	0.5	63.1	0.0	36.4	141.1				0.6	0.4	1.0
GEW-142	9/16/2015 10:38	0.4	56.4	0.0	43.2	119.4				9.0	9.0	9.0
GEW-143	9/2/2015 9:28	4.3	57.8	0.0	37.9	149.3				1.1	1.0	1.3
GEW-143	9/2/2015 9:30	4.2	57.6	0.0	38.2	149.7				1.5	1.3	1.7
GEW-143	9/15/2015 10:44	0.5	46.8	3.0	49.7	91.3				-6.3	-6.2	-6.5
GEW-143	9/15/2015 10:49	0.6	45.4	3.0	51.0	92.8				-6.7	-6.6	-6.8
GEW-144	9/2/2015 9:35	5.4	55.2	1.8	37.6	102.2				-11.9	-16.0	-12.7
GEW-144	9/15/2015 10:40	1.8	48.4	5.2	44.6	93.3				-16.2	-18.7	-16.5
GEW-144	9/16/2015 10:50	0.9	43.4	6.8	48.9	95.0				-13.1	-13.1	-13.0
GEW-145	9/2/2015 10:46	2.2	9.5	17.7	70.6	98.1				-24.2	-23.4	-26.5
GEW-145	9/2/2015 10:48	2.3	8.7	17.8	71.2	98.3				-24.4	-22.6	-24.9
GEW-145	9/15/2015 10:34	0.1	15.9	19.3	64.7	84.2				-24.1	-24.1	-24.7
GEW-145	9/16/2015 11:17	0.0	2.2	20.8	77.0	89.0				-15.1	-15.3	-14.7
GEW-146	9/2/2015 8:10	11.2	34.9	4.6	49.3	103.4				-3.7	-3.8	-11.1
GEW-147	9/2/2015 8:16	6.2	54.0	0.2	39.6	191.8				-12.7	-12.6	-13.5
GEW-147	9/2/2015 8:18	6.2	54.7	0.2	38.9	191.7				-12.6	-13.1	-13.2
GEW-147	9/15/2015 8:18	6.1	54.2	0.3	39.4	183.1				-20.2	-20.3	-20.7
GEW-147	9/15/2015 8:25	5.8	54.1	0.1	40.0	183.1				-18.7	-18.7	-19.1
GEW-148	9/2/2015 8:25	0.4	29.1	10.7	59.8	89.2				-2.0	-2.4	-2.0
GEW-148	9/2/2015 8:27	0.5	31.7	9.9	57.9	89.7				-1.5	-1.4	-1.4
GEW-149	9/2/2015 11:30	16.3	44.7	2.4	36.6	143.9				-2.1	-2.3	-12.3

September 2015 Wellfield Monitoring Data - Bridgeton Landfill

Well Name	Date Sampled	Methane	CO ₂	O ₂	Balance Gas	Init Temp	Adj Temp	Init Flow	Adj Flow	Init Static Press	Adj Static Press	System Pressure
		(% vol)				°F		scfm		H ₂ O		
GEW-149	9/2/2015 11:32	16.8	45.3	2.4	35.5	145.1				-2.6	-2.4	-17.1
GEW-150	9/2/2015 10:33	9.8	65.3	0.1	24.8	181.4				-7.8	-8.0	-8.6
GEW-150	9/2/2015 10:34	11.1	63.7	0.0	25.2	181.9				-8.4	-8.5	-8.4
GEW-150	9/15/2015 10:25	5.2	66.5	0.0	28.3	160.1				16.0	15.9	16.0
GEW-150	9/16/2015 11:02	4.3	62.8	0.1	32.8	166.4				3.0	3.1	3.4
GEW-151	9/2/2015 11:43	6.0	58.5	0.0	35.5	196.0				-2.1	-2.4	-25.9
GEW-151	9/2/2015 11:45	6.1	58.0	0.0	35.9	196.0				-0.7	-0.4	-26.4
GEW-151	9/15/2015 8:37	6.6	52.2	2.9	38.3	173.6				-27.8	-27.5	-29.2
GEW-151	9/15/2015 8:43	6.3	51.0	2.8	39.9	173.8				-28.8	-28.5	-29.5
GEW-152	9/2/2015 10:55	13.8	49.9	2.2	34.1	193.7				-22.0	-22.4	-27.4
GEW-152	9/2/2015 10:56	16.5	49.1	2.2	32.2	193.7				-23.5	-23.5	-28.1
GEW-152	9/15/2015 10:15	7.9	53.5	0.3	38.3	190.2				-29.4	-29.8	-30.6
GEW-152	9/15/2015 10:20	7.3	50.7	0.1	41.9	190.2				-29.4	-29.7	-30.3
GEW-153	9/2/2015 11:05	23.5	41.3	0.1	35.1	131.1				-26.6	-26.6	-26.9
GEW-153	9/2/2015 11:07	23.2	42.9	0.0	33.9	131.1				-29.4	-27.9	-29.9
GEW-153	9/15/2015 8:54	22.1	40.5	0.0	37.4	131.4				-29.5	-29.7	-29.6
GEW-153	9/15/2015 9:00	23.2	37.8	0.0	39.0	131.4				-30.4	-30.3	-30.5
GEW-154	9/2/2015 11:11	1.6	48.7	1.3	48.4	93.7				-0.5	-0.5	-13.8
GEW-155	9/1/2015 14:11	11.0	38.1	4.2	46.7	146.2				-1.4	-0.8	-1.1
GEW-155	9/1/2015 14:12	11.0	38.5	4.2	46.3	146.2				-0.6	-1.1	-0.6
GEW-155	9/14/2015 14:24	7.0	27.8	6.2	59.0	128.1				-6.7	-6.6	-6.8
GEW-155	9/14/2015 14:26	7.1	28.1	6.1	58.7	128.5				-6.2	-6.2	-6.2
GEW-156	9/2/2015 10:24	34.4	50.9	0.3	14.4	140.1				-24.0	-24.0	-26.0
GEW-156	9/2/2015 10:26	35.6	52.6	0.3	11.5	140.4				-23.5	-23.8	-25.5
GEW-156	9/15/2015 9:05	5.7	18.8	12.5	63.0	155.9				-3.1	-3.1	-29.1
GIW-01	9/3/2015 11:39	5.0	64.6	0.1	30.3	188.5		31	19	-16.2	-14.9	-18.0
GIW-01	9/3/2015 11:41	4.6	65.3	0.1	30.0	188.5		36	28	-11.5	-13.7	-12.0
GIW-01	9/11/2015 9:28	3.4	62.5	0.0	34.1	187.6		35	36	-18.6	-18.7	-20.1
GIW-01	9/11/2015 9:32	3.2	58.3	0.3	38.2	187.4		38	31	-17.6	-15.2	-18.2
GIW-01	9/18/2015 8:42	4.0	57.1	0.0	38.9	189.6		48	47	-14.6	-15.1	-19.3
GIW-01	9/18/2015 8:43	3.7	63.9	0.0	32.4	189.6		39	39	-12.6	-17.0	-12.5
GIW-01	9/22/2015 13:57	4.2	62.7	0.0	33.1	189.6		48	49	-16.7	-17.6	-22.1
GIW-01	9/22/2015 13:58	3.3	67.9	0.1	28.7	189.6		35	33	-11.3	-11.2	-23.9
GIW-02	9/3/2015 10:25	4.2	62.1	0.1	33.6	98.9		6	6	-0.7	-0.7	-19.6
GIW-02	9/3/2015 10:29	4.2	63.2	0.0	32.6	100.4		4	0	-0.7	-0.7	-16.9
GIW-02	9/11/2015 11:10	4.4	44.2	1.2	50.2	72.4		12	12	-0.7	-0.7	-21.4
GIW-02	9/11/2015 11:14	3.8	44.8	0.7	50.7	73.8		12	12	-0.7	-0.7	-19.9
GIW-02	9/18/2015 8:38	6.3	58.1	2.5	33.1	80.6		13	11	-0.7	-0.7	-21.0
GIW-03	9/3/2015 10:16	0.4	50.0	4.8	44.8	96.0		11	0	-0.6	-0.7	-21.0
GIW-03	9/3/2015 10:17	0.4	50.0	5.5	44.1	96.7		0	0	-0.6	-0.6	-19.1
GIW-03	9/11/2015 11:01	0.4	58.6	0.1	40.9	73.6		0	20	-0.1	0.0	-21.5
GIW-03	9/11/2015 11:06	0.2	54.0	5.4	40.4	73.5		7	5	-0.7	-0.9	-21.6

September 2015 Wellfield Monitoring Data - Bridgeton Landfill

Well Name	Date Sampled	Methane	CO ₂	O ₂	Balance Gas	Init Temp	Adj Temp	Init Flow	Adj Flow	Init Static Press	Adj Static Press	System Pressure
		(% vol)				°F		scfm		H ₂ O		
GIW-03	9/18/2015 8:34	0.3	42.4	7.5	49.8	80.4		18	18	-1.5	-1.5	-21.5
GIW-03	9/22/2015 13:49	0.3	43.2	7.0	49.5	94.2		10	0	-1.8	-1.8	-22.6
GIW-03	9/22/2015 13:53	6.6	55.6	2.6	35.2	93.2		12	11	-0.7	-0.7	-22.5
GIW-04	9/3/2015 10:05	0.8	54.6	0.1	44.5	91.7		8	8	2.4	2.4	-20.5
GIW-04	9/3/2015 10:09	1.0	54.7	0.0	44.3	92.7		8	5	-1.5	-1.5	-20.0
GIW-04	9/11/2015 10:51	0.9	39.0	4.4	55.7	73.8		9	10	-7.0	-7.0	-20.0
GIW-04	9/11/2015 10:58	0.6	40.2	3.7	55.5	73.7		11	11	-8.1	-8.1	-20.0
GIW-04	9/18/2015 8:30	1.1	39.5	12.1	47.3	80.1		0	0	-0.7	-0.6	-21.5
GIW-04	9/22/2015 13:46	0.3	23.4	18.0	58.3	88.9		0	0	-1.2	-1.2	-21.8
GIW-05	9/3/2015 11:49	3.2	40.9	7.3	48.6	97.4		0	0	-17.6	-17.7	-18.9
GIW-05	9/3/2015 11:52	3.4	40.4	7.4	48.8	97.9		0	0	-17.7	-18.1	-19.9
GIW-05	9/11/2015 9:38	2.4	42.8	6.4	48.4	69.7		4	0	-20.2	-20.2	-20.5
GIW-05	9/11/2015 9:43	2.9	38.8	6.3	52.0	69.7		11	11	-19.2	-19.2	-21.7
GIW-05	9/18/2015 8:53	3.5	59.5	0.0	37.0	81.6		16	14	10.8	10.9	-17.6
GIW-05	9/18/2015 8:53	3.2	61.9	0.0	34.9	81.5		0	0	0.9	0.6	-22.0
GIW-05	9/22/2015 14:08	3.5	40.5	9.7	46.3	93.8		0	0	-21.6	-21.5	-23.2
GIW-06	9/3/2015 9:26	1.3	60.9	0.0	37.8	94.4		0	12	31.2	31.2	-20.4
GIW-06	9/3/2015 9:29	1.3	61.2	0.0	37.5	95.2		2	4	-3.2	-3.1	-17.7
GIW-06	9/11/2015 10:14	1.3	56.8	0.1	41.8	72.2		0	10	23.2	23.2	-19.4
GIW-06	9/11/2015 10:19	0.9	60.1	0.0	39.0	73.6		0	0	23.3	23.2	-21.6
GIW-06	9/18/2015 8:15	1.2	63.1	0.0	35.7	80.8		15	17	25.5	25.5	-20.5
GIW-06	9/18/2015 8:16	1.2	64.8	0.0	34.0	80.6		0	0	-10.2	-10.7	-20.6
GIW-06	9/22/2015 13:31	1.3	56.4	1.5	40.8	91.5		5	11	-22.3	-22.5	-23.1
GIW-07	9/3/2015 9:38	20.4	64.0	0.1	15.5	94.5		3	3	-0.2	-0.2	-0.1
GIW-07	9/3/2015 9:39	20.4	63.4	0.1	16.1	95.0		7	6	-0.2	-0.2	0.0
GIW-07	9/11/2015 10:24	26.0	58.8	1.7	13.5	72.4		12	0	-29.5	-29.8	-29.4
GIW-07	9/11/2015 10:29	28.6	52.4	1.8	17.2	73.4		13	11	-27.6	-27.5	-28.8
GIW-07	9/18/2015 8:19	10.2	72.9	0.0	16.9	79.9		14	13	4.3	4.3	-30.8
GIW-07	9/18/2015 8:20	10.1	72.6	0.0	17.3	80.2		0	0	-7.3	-7.6	-30.8
GIW-07	9/22/2015 13:34	19.6	45.7	4.2	30.5	93.4		10	8	-31.0	-31.0	-32.2
GIW-07	9/22/2015 13:35	25.3	50.2	3.1	21.4	94.7		12	11	-23.9	-23.9	-32.4
GIW-08	9/3/2015 11:56	17.7	44.8	3.5	34.0	99.1		343	347	-27.2	-27.9	-28.1
GIW-08	9/3/2015 12:00	18.7	45.1	3.1	33.1	99.4		341	341	-26.8	-26.5	-28.5
GIW-08	9/11/2015 8:49	15.3	41.9	1.8	41.0	69.2		294	294	-18.3	-18.3	-28.7
GIW-08	9/11/2015 8:56	15.1	42.5	1.8	40.6	69.5		296	296	-18.7	-18.7	-29.0
GIW-08	9/18/2015 8:56	12.3	55.4	2.3	30.0	82.8		325	326	-23.4	-23.5	-30.8
GIW-08	9/22/2015 14:10	14.0	44.9	3.3	37.8	93.6		333	333	-25.1	-25.1	-32.2
GIW-09	9/3/2015 9:47	3.8	21.4	9.4	65.4	98.1		277	293	-17.4	-18.8	-28.2
GIW-09	9/3/2015 9:49	3.8	20.0	9.5	66.7	98.4		271	256	-16.0	-14.3	-29.5
GIW-09	9/11/2015 10:33	2.8	21.1	11.6	64.5	83.4		216	216	-9.8	-9.7	-29.2
GIW-09	9/11/2015 10:38	2.8	16.9	11.9	68.4	82.7		221	219	-10.2	-10.3	-30.9
GIW-09	9/18/2015 8:24	2.4	30.0	12.8	54.8	87.0		229	229	-11.4	-11.4	-30.0

September 2015 Wellfield Monitoring Data - Bridgeton Landfill

Well Name	Date Sampled	Methane	CO ₂	O ₂	Balance Gas	Init Temp	Adj Temp	Init Flow	Adj Flow	Init Static Press	Adj Static Press	System Pressure
		(% vol)				°F		scfm		H ₂ O		
GIW-09	9/22/2015 13:39	2.6	12.6	14.0	70.8	94.4		232	233	-11.4	-11.5	-32.6
GIW-10	9/3/2015 9:58	0.5	45.0	3.8	50.7	95.0		8	7	-18.6	-18.7	-19.4
GIW-10	9/3/2015 10:00	0.5	44.2	3.8	51.5	95.0		0	3	-18.4	-18.6	-20.2
GIW-10	9/11/2015 10:42	0.6	53.1	0.1	46.2	72.9		12	13	0.4	0.4	-21.0
GIW-10	9/11/2015 10:48	0.2	55.1	0.1	44.6	73.9		8	8	-0.2	-0.2	-20.0
GIW-10	9/18/2015 8:27	3.8	57.3	0.1	38.8	80.8		11	11	-1.8	-1.8	-20.8
GIW-10	9/18/2015 8:28	3.4	57.7	0.0	38.9	80.8		11	11	-2.4	-2.4	-21.6
GIW-10	9/22/2015 13:43	4.3	54.4	0.0	41.3	94.9		12	11	-3.3	-3.3	-22.0
GIW-11	9/3/2015 11:16	3.7	42.1	5.6	48.6	101.3		245	243	-12.8	-12.7	-19.6
GIW-11	9/3/2015 11:19	4.0	42.7	5.7	47.6	101.2		198	208	-8.2	-8.8	-15.6
GIW-11	9/11/2015 9:02	3.5	42.6	5.4	48.5	84.9		243	235	-12.3	-11.9	-20.3
GIW-11	9/11/2015 9:07	3.3	44.4	5.4	46.9	85.5		220	242	-10.3	-12.3	-21.1
GIW-11	9/18/2015 8:50	4.6	40.4	6.1	48.9	92.6		243	231	-12.6	-11.2	-21.8
GIW-11	9/22/2015 14:05	6.0	26.7	6.4	60.9	96.9		228	255	-10.9	-13.7	-24.0
GIW-12	9/3/2015 11:23	8.7	23.7	8.7	58.9	107.2		246	249	-13.1	-13.2	-19.1
GIW-12	9/3/2015 11:25	8.4	22.6	9.1	59.9	106.0		203	201	-8.4	-8.4	-19.6
GIW-12	9/11/2015 9:11	6.9	27.9	9.2	56.0	95.9		229	226	-11.3	-11.2	-20.9
GIW-12	9/11/2015 9:16	7.6	23.6	9.5	59.3	96.0		224	224	-10.8	-10.7	-21.7
GIW-12	9/18/2015 8:48	6.3	30.3	9.7	53.7	98.8		225	229	-10.9	-11.3	-21.1
GIW-12	9/22/2015 14:03	5.3	35.3	9.4	50.0	100.0		223	224	-10.7	-10.4	-23.2
GIW-13	9/3/2015 11:29	11.7	59.3	0.7	28.3	144.4		203	209	-8.8	-9.4	-8.7
GIW-13	9/3/2015 11:31	11.6	59.4	0.6	28.4	143.3		173	181	-6.5	-7.0	-6.8
GIW-13	9/11/2015 9:20	11.3	59.9	1.3	27.5	134.4		195	198	-8.8	-9.0	-8.9
GIW-13	9/11/2015 9:25	11.4	57.5	0.6	30.5	134.0		200	207	-9.1	-9.8	-8.9
GIW-13	9/18/2015 8:46	10.5	71.2	0.9	17.4	82.6		225	227	-10.7	-10.7	-10.5
GIW-13	9/22/2015 14:01	9.7	59.4	0.7	30.2	96.1		226	226	-10.7	-10.7	-10.8
LCS-5A	9/11/2015 9:05	58.1	40.1	0.0	1.8	91.9				-27.8	-27.3	-29.2
LCS-5A	9/17/2015 17:43	58.7	40.1	0.0	1.2	94.6				-28.8	-28.8	-30.7
LCS-5A	9/21/2015 16:48	58.7	39.7	0.0	1.6	94.6				-29.8	-30.2	-31.0
LCS-5A	9/28/2015 16:12	57.8	40.7	0.0	1.5	94.8				-29.7	-30.2	-30.6
LCS-6B	9/10/2015 14:29	54.6	41.4	0.2	3.8	97.2		7	7	-0.2	-0.2	-30.1
LCS-6B	9/10/2015 14:37	54.6	41.1	0.2	4.1	97.0		7	7	-0.2	-0.2	-29.6
LCS-6B	9/17/2015 14:39	55.2	41.3	0.0	3.5	99.7		5	5	0.3	0.3	-31.6
LCS-6B	9/17/2015 14:42	55.7	40.8	0.0	3.5	99.6		8	6	-0.2	-0.2	-30.7
LCS-6B	9/21/2015 15:48	53.0	40.0	0.5	6.5	92.8		3	5	-0.6	-0.6	-30.7
LCS-6B	9/28/2015 15:15	55.1	42.0	0.3	2.6	99.2		7	7	-0.3	-0.3	-31.6
PGW-60	9/11/2015 8:34	53.0	39.4	0.5	7.1	81.3		12	9	-22.8	-23.0	-24.2
PGW-60	9/11/2015 8:45	56.6	41.6	0.0	1.8	80.6		11	12	-3.1	-3.1	-23.0
PGW-60	9/17/2015 15:49	50.5	39.3	0.6	9.6	91.2		20	11	-26.4	-26.9	-26.5
PGW-60	9/21/2015 17:06	42.4	34.2	3.6	19.8	89.7		15	13	-31.7	-31.7	-31.6
PGW-60	9/21/2015 17:16	46.8	36.4	2.4	14.4	89.8		11	11	-14.2	-14.2	-31.8
PGW-60	9/28/2015 16:45	54.9	40.9	0.1	4.1	88.4		9	1	-11.7	-11.7	-25.2

September 2015 Wellfield Monitoring Data - Bridgeton Landfill

Well Name	Date Sampled	Methane	CO ₂	O ₂	Balance Gas	Init Temp	Adj Temp	Init Flow	Adj Flow	Init Static Press	Adj Static Press	System Pressure
		(% vol)				°F		scfm		H ₂ O		
T-56	9/1/2015 11:18	45.1	33.1	0.1	21.7	85.3		23	23	-0.3	-0.2	-27.4
T-56	9/1/2015 11:22	45.0	33.2	0.1	21.7	87.0		18	17	-0.1	-0.1	-27.9
T-56	9/10/2015 17:59	59.3	38.4	0.0	2.3	87.8		15	17	-0.1	-0.1	-31.7
T-56	9/10/2015 18:09	59.5	38.2	0.0	2.3	87.2		20	21	-0.2	-0.1	-32.1
T-56	9/17/2015 15:09	57.4	37.2	0.0	5.4	84.7		19	20	-0.1	-0.1	-29.6
T-56	9/21/2015 16:13	48.6	36.7	0.0	14.7	82.7		13	13	-0.1	-0.1	-32.0
T-56	9/28/2015 15:43	48.9	35.7	0.0	15.4	82.2		10	15	-0.1	-0.1	-31.1
T-56	9/28/2015 15:44	49.0	34.3	0.0	16.7	81.9		17	17	-0.1	-0.1	-31.0

ATTACHMENT E-2

MAXIMUM WELLHEAD TEMPERATURE TABLE

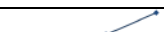
Wellfield Temperature - Bridgeton Landfill

Well Name	Maximum Initial Temperature From All Monthly Wellhead Readings (in °F)				Temp Trend ><30°F	Comments
	June 2015	July 2015	August 2015	September 2015		
GEW-001	--	--	--	--		
GEW-002	122.6	126.0	124.2	122.4		
GEW-003	125.6	124.9	118.3	118.3		
GEW-004	124.0	122.7	123.1	122.1		
GEW-005	100.6	98.2	102.1	100.2		
GEW-006	101.8	93.1	92.9	93.6		
GEW-007	100.0	107.6	102.3	102.4		
GEW-008	118.1	119.4	119.2	116.0		
GEW-009	125.3	126.4	126.9	126.3		
GEW-010	98.5	110.5	93.7	112.3		
GEW-011	187.0	185.2	--	--		
GEW-013A	--	--	--	--		
GEW-014A	91.1	--	--	--		
GEW-015	--	--	--	--		
GEW-016R	--	--	--	--		
GEW-018B	--	--	--	--		
GEW-018R	92.2	--	--	--		
GEW-019A	--	--	--	--		
GEW-020A	99.8	70.9	--	--		
GEW-021A	158.5	115.8	--	--		
GEW-022R	191.6	187.6	--	191.4		
GEW-023A	--	--	--	--		
GEW-024A	201.6	200.1	--	--		
GEW-025A	117.5	--	--	--		
GEW-026R	131.4	84.9	91.9	95.6		
GEW-027A	181.9	175.8	115.3	121.5		
GEW-028R	179.7	184.6	188.5	189.1		
GEW-029	89.1	--	--	--		
GEW-030R	--	--	--	--		
GEW-033R	--	--	--	--		
GEW-034	--	--	--	--		
GEW-034A	--	--	--	--		
GEW-035	111.0	87.7	--	--		
GEW-036	--	--	--	--		
GEW-037	--	94.6	--	--		
GEW-038	138.1	149.3	118.4	136.0		
GEW-039	136.0	135.7	134.3	134.0		
GEW-040	95.2	97.4	96.8	96.9		
GEW-041R	110.2	110.9	110.4	107.9		
GEW-042R	97.7	104.5	101.5	103.4		
GEW-043R	136.0	134.7	135.9	131.9		
GEW-044	100.0	96.1	96.0	98.7		
GEW-045R	98.2	101.4	100.6	97.1		
GEW-046R	100.9	101.5	101.8	101.5		
GEW-047R	117.3	118.6	121.8	118.8		

Wellfield Temperature - Bridgeton Landfill

Well Name	Maximum Initial Temperature From All Monthly Wellhead Readings (in °F)				Temp Trend ><30°F	Comments
	June 2015	July 2015	August 2015	September 2015		
GEW-048	107.1	109.8	108.5	107.4		
GEW-049	114.5	112.2	114.7	115.0		
GEW-050	109.6	111.5	111.1	109.7		
GEW-051	127.0	127.5	128.3	129.6		
GEW-052	115.5	116.6	115.8	118.1		
GEW-053	141.5	140.6	140.5	140.7		
GEW-054	148.0	152.9	150.6	143.6		
GEW-055	127.2	128.7	128.0	128.7		
GEW-056R	169.0	168.1	173.1	178.6		
GEW-057B	178.4	--	179.8	184.1		
GEW-057R	185.7	178.0	184.1	192.5		
GEW-058	188.5	189.8	189.6	188.5		
GEW-058A	176.2	179.7	181.4	182.0		
GEW-059R	183.0	187.2	185.2	186.8		
GEW-061B	99.2	92.1	89.9	96.8		
GEW-064A	--	--	--	--		
GEW-065A	197.9	196.0	196.0	195.4		
GEW-066	195.0	--	--	--		
GEW-067A	195.4	165.7	185.2	190.2		
GEW-068A	--	--	--	--		
GEW-069R	97.7	--	--	--		
GEW-070R	102.8	--	--	--		
GEW-071	113.5	--	--	--		
GEW-071B	--	--	--	--		
GEW-072RR	--	--	--	--		
GEW-073R	--	--	--	--		
GEW-075	93.1	--	--	--		
GEW-076R	--	--	--	--		
GEW-077	--	--	--	--		
GEW-078R	--	--	--	--		
GEW-080	197.2	--	--	--		
GEW-081	129.7	--	--	--		
GEW-082R	195.0	195.0	192.5	192.5		
GEW-083	112.9	--	--	--		
GEW-084	96.2	--	--	--		
GEW-085	108.1	107.0	--	--		
GEW-086	--	--	190.2	137.3		
GEW-087	--	--	--	--		
GEW-088	--	--	--	--		
GEW-089	99.1	93.1	84.9	101.5		
GEW-090	191.6	189.1	190.8	188.5		
GEW-091	--	--	--	--		
GEW-100	--	--	--	--		
GEW-101	107.5	130.6	--	--		
GEW-102	--	--	--	82.3		

Wellfield Temperature - Bridgeton Landfill

Well Name	Maximum Initial Temperature From All Monthly Wellhead Readings (in °F)				Temp Trend ><30°F	Comments
	June 2015	July 2015	August 2015	September 2015		
GEW-103	--	--	--	--		
GEW-104	90.3	88.1	104.7	110.9		
GEW-105	111.0	98.9	94.4	100.2		
GEW-106	--	--	--	--		
GEW-107	85.9	70.2	94.8	99.6		
GEW-108	--	--	--	--		
GEW-109	179.7	178.7	175.8	180.8		
GEW-110	170.0	131.6	118.3	136.0		
GEW-112	100.3	--	--	--		
GEW-113	--	--	--	--		
GEW-116	--	65.6	93.6	105.0		
GEW-117	97.8	68.2	89.5	139.0		
GEW-118	--	--	--	--		
GEW-120	165.2	129.7	159.6	176.7		
GEW-121	200.1	189.6	191.8	189.1		
GEW-122	87.2	191.9	196.6	184.6		
GEW-123	189.8	189.6	186.3	183.5		
GEW-124	190.9	146.3	147.3	162.3		
GEW-125	194.3	99.8	194.2	191.3		
GEW-126	197.9	196.0	190.8	180.8		
GEW-127	187.0	188.9	189.1	95.6		
GEW-128	181.5	182.1	182.8	181.4		
GEW-129	163.3	164.6	164.5	162.6		
GEW-130	--	--	--	--		
GEW-131	147.7	148.1	154.9	149.1		
GEW-132	185.1	184.7	185.2	180.3		
GEW-133	114.4	123.7	--	81.9		
GEW-134	190.6	194.8	188.5	179.3		
GEW-135	194.3	190.7	192.3	189.6		
GEW-136	147.0	171.2	175.2	158.3		
GEW-137	183.9	125.6	123.7	113.8		
GEW-138	183.3	190.1	185.1	191.3		
GEW-139	195.0	194.3	193.7	190.8		
GEW-140	188.9	187.4	184.5	185.7		
GEW-141	125.0	135.6	140.7	148.1		
GEW-142	184.5	187.0	173.1	185.4		
GEW-143	195.5	194.3	197.9	149.7		
GEW-144	145.2	113.8	115.5	102.2		
GEW-145	--	--	90.3	98.3		
GEW-146	99.2	106.2	109.0	103.4		
GEW-147	196.4	194.3	193.6	191.8		
GEW-148	187.0	109.9	108.2	89.7		
GEW-149	145.2	144.4	147.7	145.1		
GEW-150	149.7	131.4	181.5	181.9		
GEW-151	98.6	103.9	114.5	196.0		

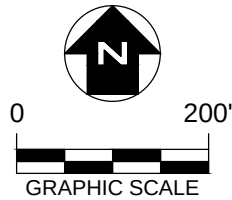
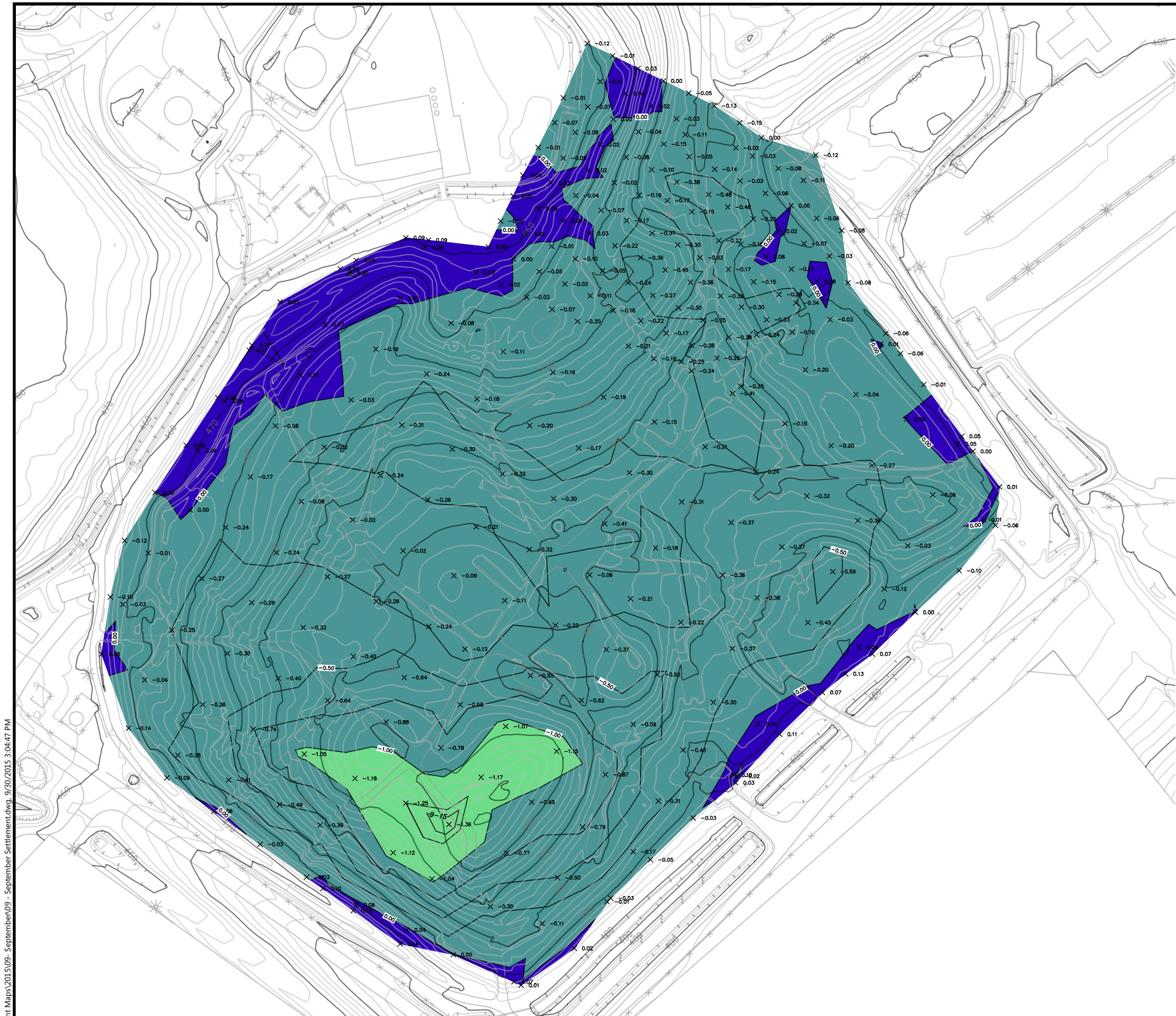
Wellfield Temperature - Bridgeton Landfill

Well Name	Maximum Initial Temperature From All Monthly Wellhead Readings (in °F)				Temp Trend ><30°F	Comments
	June 2015	July 2015	August 2015	September 2015		
GEW-152	107.0	127.2	180.3	193.7		
GEW-153	95.6	109.7	121.5	131.4		
GEW-154	127.8	134.3	175.9	93.7		
GEW-155	150.2	187.9	179.8	146.2		
GEW-156	186.4	141.1	141.2	155.9		
GIW-01	193.0	176.7	189.1	189.6		
GIW-02	100.4	103.9	89.9	100.4		
GIW-03	97.8	103.0	91.3	96.7		
GIW-04	97.7	105.1	89.2	92.7		
GIW-05	96.3	96.2	91.9	97.9		
GIW-06	98.2	101.8	95.6	95.2		
GIW-07	95.6	99.8	92.7	95.0		
GIW-08	113.1	98.7	91.1	99.4		
GIW-09	192.0	103.0	95.4	98.4		
GIW-10	97.7	100.6	78.8	95.0		
GIW-11	169.4	112.8	98.7	101.3		
GIW-12	166.9	116.1	114.7	107.2		
GIW-13	162.8	96.2	124.9	144.4		
LCS-1D	--	--	--	--		
LCS-2D	--	91.5	--	--		
LCS-3C	--	--	--	--		
LCS-4B	--	--	--	--		
LCS-5A	95.3	95.8	96.7	94.8		
LCS-6B	102.8	99.7	98.2	99.7		
PGW-60	90.8	91.7	89.9	91.2		
SEW-002	--	157.5	138.7	--		
SEW-012A	--	--	--	--		
SEW-017R	107.3	96.0	--	--		
SEW-031R	194.9	197.2	--	--		
SEW-032R	--	--	--	--		
SEW-060R	--	--	--	--		
SEW-061R	100.1	--	--	--		
SEW-062R	87.5	--	--	--		
SEW-063	190.9	144.9	--	--		
SEW-064	152.9	--	--	--		
SEW-067	115.0	--	--	--		
SEW-072R	96.4	--	--	--		
SEW-074	92.2	--	--	--		
SEW-079R	101.1	--	--	--		
T-56	82.2	92.2	--	87.8		

-- = 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 10, 2015.
- 2. FOR CLARITY, NOT ALL SITE FEATURES MAY BE SHOWN.
- 3. ELEVATION DIFFERENCE DETERMINED BY SUBTRACTING SPOT ELEVATIONS SURVEYED ON 8-17-15 FROM SPOT ELEVATIONS SURVEYED ON 9-15-15.
- 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

- X -0.42 SPOT ELEVATION DIFFERENCE (9-15-15 TO 8-17-15)
- MINOR ELEVATION CHANGE CONTOUR (0.25 FEET)
- 0.50 MAJOR ELEVATION CHANGE CONTOUR (0.50 FEET)
- 9-15 SETTLEMENT FRONT CONTOUR FOR AREA WITH 1.35' PER 30 DAYS FOR CURRENT PERIOD OF DAYS (AREA REPRESENTS 1.305' OVER 29 DAYS BASED ON CONVERSION)

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	62082.61	
5	-1.00	0.00	1335876.76	
6	0.00	1.00	142918.54	

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REV. NO.	DATE	DESCRIPTION

BRIDGETON LANDFILL



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

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BRIDGETON LANDFILL
BRIDGETON, MO

SETTLEMENT MAP
AUGUST 17, 2015 THROUGH SEPTEMBER 15, 2015

DRAWN BY: ORC

APPROVED BY: JPV

PROJ. NO.: 155162

DATE: OCTOBER 2015

ATTACHMENT G

SUMMARY OF ODOR COMPLAINTS

September 1, 2015 – September 30, 2015 / MDNR ODOR COMPLAINTS

Name: Tonya Mason

Message: Odor logged September 2, 2015, at 7:43 pm strength of 9

Follow-up: The following odor concern has been investigated by Bridgeton Landfill staff. Winds were of a consistently western to southwestern origin throughout this date, placing this location directly upwind of the Bridgeton Landfill. A garbage odor associated with another known odor source was observed in close proximity to this point during two different odor patrols on this date. This was not a Bridgeton Landfill odor.

Name: Margery Doss

Message: Odor logged September 1, 2015, at 7:27 pm strength of 8

Follow-up: The following odor concern has been investigated by Bridgeton Landfill staff. This concern location is of substantial distance from the Bridgeton Landfill and directly upwind based on a very consistent southern wind vector throughout this date. This was not a Bridgeton Landfill odor.

Name: NA

Message: Odor logged September 3, 2015, at 8:00 pm strength of 9

Follow-up: The following odor concern has been investigated by Bridgeton Landfill staff. Winds were of a consistently southern to southwestern origin throughout this date, placing this location directly upwind of the Bridgeton Landfill. A garbage odor associated with another known odor source was observed in close proximity to this point during two different odor patrols on this date. This was not a Bridgeton Landfill odor.

Name: NA

Message: Odor logged September 4, 2015, at 5:00 am strength of 10

Follow-up: The following odor concern has been investigated by Bridgeton Landfill staff. Winds were of a low velocity and south to southwestern origin at the time of this concern, placing this location upwind of the Bridgeton Landfill. Odor patrols performed on the morning of this date observed a rotten garbage odor pervasive throughout the area including multiple points in close proximity to this location. This was clearly originating from a point to the west of this location, not the Bridgeton Landfill.

Name: NA

Message: Odor logged September 8, 2015, at 2:28 pm strength of 10

Follow-up: The following odor concern has been investigated by Bridgeton Landfill staff. The time cited in this concern coincides with a Bridgeton Landfill self-inspection which did not observe odor related to the Bridgeton Landfill at multiple points in close proximity to this concern location.

Name: NA

Message: Odor logged September 8, 2015, at 2:28 pm strength of 10

Follow-up: The following odor concern has been investigated by Bridgeton Landfill staff. The time cited in this concern coincides with a Bridgeton Landfill self-inspection which did not observe odor related to the Bridgeton Landfill at multiple points between this location and the Bridgeton Landfill.

Name: David Blackwell

Message: Odor logged September 10, 2015, at 8:00 am strength of 7

Follow-up: The following odor concern has been investigated by Bridgeton Landfill staff. Bridgeton Landfill staff performed an odor patrol approximately two hours after this concern. A garbage odor was detected at two points in close proximity to this concern on that patrol. This was determined to originate from a source located to the west of the concern, not the Bridgeton Landfill.

Name: Sharon Bishop

Message: Odor logged September 11, 2015, at 1:18 pm strength of 10

Follow-up: The following odor concern was investigated by Bridgeton Landfill staff immediately upon receipt. Odor observations performed at two locations in close proximity to the concern location did not observe any odor related to the Bridgeton Landfill.

Name: Robbin Dailey

Message: Odor logged September 11, 2015, at 3:00 pm strength of 7

Follow-up: The following odor concern was investigated by Bridgeton Landfill staff immediately upon receipt, but as this was submitted almost one and a half hours after submittal this could not be investigated within Bridgeton Landfill real-time response parameters. No odor associated with the Bridgeton Landfill was observed at this location at that time or at an odor patrol with observation points documented in close proximity to this

concern location approximately one and a half hours prior to the stated observation time. This is not believed to have been a Bridgeton landfill odor.

Name: Michael Dailey

Message: Odor logged September 11, 2015, at 3:00 pm strength of 7

Follow-up: The following odor concern was investigated by Bridgeton Landfill staff immediately upon receipt, but as this was submitted almost one and a half hours after submittal this could not be investigated within Bridgeton Landfill real-time response parameters. No odor associated with the Bridgeton Landfill was observed at this location at that time or at an odor patrol with observation points documented in close proximity to this concern location approximately one and a half hours prior to the stated observation time. This is not believed to have been a Bridgeton landfill odor.

Name: Elaine Steimel

Message: Odor logged September 11, 2015, at 5:35 pm strength of 8

Follow-up: The following odor concern has been investigated by Bridgeton Landfill staff. This concern location is immediately adjacent to another known odor source with frequent off-site odor emissions and is of significant distance from the Bridgeton Landfill. This is not believed to have been a Bridgeton Landfill odor.

Name: Renee Thompson

Message: Odor logged September 11, 2015, at 5:39 pm strength of 6

Follow-up: The following odor concern has been investigated by Bridgeton Landfill staff. This concern location is of close proximity to and directly downwind of another known odor source with frequent off-site odor emissions and is of significant distance from the Bridgeton Landfill. This is not believed to have been a Bridgeton Landfill odor.

Name: John Steimel

Message: Odor logged September 11, 2015, at 5:40 pm strength of 6

Follow-up: The following odor concern has been investigated by Bridgeton Landfill staff. This concern location is of significantly closer proximity to another known odor source than it is to the Bridgeton Landfill and directly downwind of that source at the time of this concern. Odor related to the Bridgeton Landfill has never been documented by Bridgeton Landfill staff or regulatory agencies at any point in the last several years. This is not believed to have been a Bridgeton Landfill odor.

Name: Rhonda Steelman

Message: Odor logged September 11, 2015, at 4:28 pm strength of 6

Follow-up: The following odor concern has been investigated by Bridgeton Landfill staff. This concern location is immediately adjacent to another known odor source with frequent off-site odor emissions and is of significant distance from the Bridgeton Landfill. This is not believed to have been a Bridgeton Landfill odor.

Name: Elaine Steimel

Message: Odor logged September 12, 2015, at 1:11 pm strength of 9

Follow-up: The following odor concern has been investigated by Bridgeton Landfill staff. This concern location is immediately adjacent to another known odor source with frequent off-site odor emissions and is of significant distance from the Bridgeton Landfill. This is not believed to have been a Bridgeton Landfill odor.

Name: Kathy Bell

Message: Odor logged September 12, 2015, at 1:27 pm strength of 5

Follow-up: The following odor concern has been investigated by Bridgeton Landfill staff. At the time of this concern winds were of a western origin, placing this location upwind of the Bridgeton Landfill and downwind of another known odor source. On-site Bridgeton Landfill staff reported no technical disruptions at this time and odor patrols prior to and following this concern time did not observed Bridgeton Landfill related odor. This is not believed to have been a Bridgeton Landfill odor.

Name: Meagan

Message: Odor logged September 12, 2015, at 8:52 pm strength of 10

Follow-up: The following odor concern has been investigated by Bridgeton Landfill staff. The location specified in this concern is directly adjacent to another known odor source during a period of western winds, placing this location upwind of the Bridgeton landfill and directly downwind of this other odor source with frequent off-site odor emissions. A Bridgeton Landfill odor patrol performed following this concern did not observe Bridgeton Landfill related odor around the entire site perimeter. This is not believed to have been a Bridgeton Landfill odor.

Name: Greg and Ellen Wortham

Message: Odor logged September 12, 2015, at 9:13 pm strength of 6

Follow-up: The following odor concern has been investigated by Bridgeton Landfill staff. At the time of this concern winds were of a western origin, placing this location upwind of the Bridgeton Landfill and downwind of another known odor source. On-site Bridgeton Landfill staff reported no technical disruptions at this time and odor patrols prior to and following this concern time did not observed Bridgeton Landfill related odor. This is not believed to have been a Bridgeton Landfill odor.

Name: Margie Menke

Message: Odor logged September 12, 2015, at 6:44 am strength of 10

Follow-up: The following odor concern has been investigated by Bridgeton Landfill staff. At the time of this concern winds were of a western to southwestern origin, placing this location upwind of the Bridgeton Landfill and downwind of another known odor source. On-site Bridgeton Landfill staff reported no technical disruptions at this time and an odor patrol following this concern time did not observed Bridgeton Landfill related odor. This is not believed to have been a Bridgeton Landfill odor.

Name: Jan Huber

Message: Odor logged September 12, 2015, at 9:30 pm strength of 10

Follow-up: The following odor concern has been investigated by Bridgeton Landfill staff. At the time of this concern winds were of a western origin. While this concern was submitted approximately 18 hours after the stated observation time an odor patrol was performed within approximately one hour of this concern and did not observe any Bridgeton Landfill related odor off-site, including multiple points between this location and the Bridgeton Landfill. This is not believed to have been a Bridgeton Landfill odor.

Name: Becky

Message: Odor logged September 14, 2015, at 8:30 am strength of 4

Follow-up: The following odor concern has been investigated by Bridgeton Landfill staff. This location was of significant distance from the Bridgeton Landfill and on the date of this concern was well upwind as winds were of a consistent southern origin throughout. Bridgeton Landfill odor patrols on this date did not observe any off-site odor related to the Bridgeton landfill. This is not believed to have been a Bridgeton Landfill odor.

Name: Tonya Mason

Message: Odor logged September 18, 2015, at 8:53 am strength of 10

Follow-up: The following odor concern has been investigated by Bridgeton Landfill staff. This concern was submitted directly after Bridgeton Landfill performed an odor patrol with multiple observations in the immediate vicinity of this concern. Winds were of a southern to southwestern origin throughout. Two competing odors, an asphaltic odor and a garbage odor, were both observed in this area. Neither of these odors originated from the Bridgeton Landfill. This was not a Bridgeton Landfill odor.

Name: Martina Sandheinrich

Message: Odor logged September 19, 2015, at 7:44 am strength of 5

Follow-up: The following odor concern has been investigated by Bridgeton Landfill staff. The location cited with this concern is of significant distance from the Bridgeton Landfill. At the time of this concern this location was directly downwind of another known odor source with frequent off-site odor emissions throughout the past several months. On-site Bridgeton Landfill staff observed no odors escaping the Bridgeton Landfill site on this date and no technical disruptions with the potential to cause odor occurred. This was not a Bridgeton Landfill odor.

Name: Rhonda Steelman

Message: Odor logged September 20, 2015, at 7:53 am strength of 10

Follow-up: The following odor concern has been investigated by Bridgeton Landfill staff. While this concern was submitted approximately seven hours after the stated observation time Bridgeton Landfill staff did perform an odor patrol within 10 minutes of the stated time of odor observation in this concern. No odor related to the Bridgeton Landfill was detected on that patrol. Winds were of low velocity/still at the time of this concern. As this concern is in closer proximity to two other known odor sources and this odor was clearly not a Bridgeton Landfill odor it is highly likely this odor was from one of those two other sources. This was not a Bridgeton Landfill odor.

Name: Margie Menke

Message: Odor logged September 21, 2015, at 6:30 am strength of 10

Follow-up: The following odor concern has been investigated by Bridgeton Landfill staff. On the morning of this concern a strong decaying garbage odor was observed throughout the area, likely originating from a known nearby odor source with frequent off-site emissions that match this odor descriptor. This was not a Bridgeton Landfill odor.

Name: Kathy Bell

Message: Odor logged September 21, 2015, at 5:30 am strength of 7

Follow-up: The following odor concern has been investigated by Bridgeton Landfill staff. On the morning of this concern a strong decaying garbage odor was observed throughout the area, likely originating from a known nearby odor source with frequent off-site emissions that match this odor descriptor. This was not a Bridgeton Landfill odor.

Name: Richard Chatfield

Message: Odor logged September 21, 2015, at 6:15 am strength of 10

Follow-up: No valid location data was submitted with this concern; as such this concern is invalid for investigative purposes.

Name: meagan

Message: Odor logged September 22, 2015, at 8:52 am strength of 7

Follow-up: The following concern was investigated by Bridgeton Landfill staff immediately following receipt of this concern. No odor was observed at multiple observation points throughout the area. This was not a Bridgeton Landfill odor.

Name: meagan

Message: Odor logged September 22, 2015, at 8:40 am strength of 8

Follow-up: The following concern was investigated by Bridgeton Landfill staff immediately following receipt of this concern. No odor was observed at multiple observation points throughout the area. This was not a Bridgeton Landfill odor.

Name: Kathy Bell

Message: Odor logged September 23, 2015, at 5:33 am strength of 5

Follow-up: The following concern was investigated by Bridgeton Landfill staff immediately following receipt of this concern. A pervasive rotten garbage odor was observed throughout the area of this concern location on this date. This odor originated from a known odor source located to the west of this concern location. This was not a Bridgeton Landfill odor.

Name: NA

Message: Odor logged September 23, 2015, at 8:15 am strength of 4

Follow-up: The following concern was investigated by Bridgeton Landfill staff immediately following receipt of this concern. A pervasive rotten garbage odor was observed throughout

the area of this concern location on this date. This odor originated from a known odor source located to the west of this concern location. This was not a Bridgeton Landfill odor.

Name: Darin Dillaha

Message: Odor logged September 23, 2015, at 11:46 am strength of 10

Follow-up: The following concern references a time during a Bridgeton Landfill Odor Patrol. Observations were collected at multiple points between this location and the Bridgeton Landfill within 15 to 20 minutes of this concern. No odor related to the Bridgeton Landfill was observed.

Name: John Guptill

Message: Odor logged September 23, 2015, at 7:10 pm strength of 8

Follow-up: The following concern references a time approximately six hours in the future from when the concern was submitted. This is an invalid concern.

Name: John Guptill

Message: Odor logged September 23, 2015, at 7:15 am strength of 10

Follow-up: The following concern has been investigated by Bridgeton Landfill staff. As this concern was submitted approximately six hours after the stated observation time this could not be investigated in real-time. A pervasive rotten garbage odor was observed throughout the area of this concern location on this date. This odor originated from a known odor source located to the west of this concern location. This was not a Bridgeton Landfill odor.

Name: Michelle Favignano

Message: Odor logged September 23, 2015, at 8:17 am strength of 9

Follow-up: The following concern has been investigated by Bridgeton Landfill staff. As this concern was submitted approximately seven hours after the stated observation time this could not be investigated in real-time. A pervasive rotten garbage odor was observed throughout the area of this concern location on this date. This odor originated from a known odor source located to the west of this concern location. This was not a Bridgeton Landfill odor.

Name: Debbie Neuman

Message: Odor logged September 23, 2015, at 8:00 am strength of 10

Follow-up: The following concern has been investigated by Bridgeton Landfill staff. As this concern was submitted approximately nine hours after the stated observation time this could not be investigated in real-time. A pervasive rotten garbage odor was observed throughout the area of this concern location on this date. This odor originated from a known odor source located to the west of this concern location. This was not a Bridgeton Landfill odor.

Name: Rhonda Steelman

Message: Odor logged September 23, 2015, at 8:00 am strength of 10

Follow-up: The following concern has been investigated by Bridgeton Landfill staff. As this concern was submitted approximately eleven hours after the stated observation time this could not be investigated in real-time. A pervasive rotten garbage odor was observed throughout the area of this concern location on this date. This odor originated from a known odor source located immediately adjacent to this odor concern location. This was not a Bridgeton Landfill odor.

Name: Maria Moehle

Message: Odor logged September 24, 2015, at 8:01 am strength of 10

Follow-up: The following concern has been investigated by Bridgeton Landfill staff. At the time of this concern a garbage odor was observed at multiple points throughout the area. The location of this concern is in the immediate vicinity of the suspected source of this odor. This was not a Bridgeton Landfill odor.

Name: NA

Message: Odor logged September 24, 2015, at 8:04 am strength of 8

Follow-up: The following concern has been investigated by Bridgeton Landfill staff. At the time of this concern a garbage odor was observed at multiple points throughout the area. The location of this concern is in the immediate vicinity of the suspected source of this odor. This was not a Bridgeton Landfill odor.

Name: Ann Williamson

Message: Odor logged September 25, 2015, at 6:00 am strength of 7

Follow-up: The following concern is approximately eight miles away from the Bridgeton Landfill. This was not a Bridgeton Landfill odor.

Name: Melinda conners

Message: Odor logged September 25, 2015, at 7:45 am strength of 6

Follow-up: The following concern is approximately seven miles away from the Bridgeton Landfill. This was not a Bridgeton Landfill odor.

Name: Tim wright

Message: Odor logged September 25, 2015, at 8:28 am strength of 8

Follow-up: The following concern cites the default location within the Bridgeton Landfill property and is therefore invalid.

Name: Sheila gray

Message: Odor logged September 25, 2015, at 8:54 am strength of 5

Follow-up: The following concern cites a time during a Bridgeton Landfill odor patrol. No odor related to the Bridgeton Landfill was detected on this patrol. The location cited is directly adjacent to two known odor sources with frequent off-site odor emissions. This was not a Bridgeton Landfill odor.

Name: Sheila gray

Message: Odor logged September 25, 2015, at 8:54 am strength of 5

Follow-up: The following concern was submitted more than 24 hours after the stated time of observation. This concern location is in close proximity to a known odor source with observed off-site odor emissions on the date of this concern. This was not a Bridgeton Landfill odor.

Name: Sharon Kenny

Message: Odor logged September 25, 2015, at 9:59 am strength of 4

Follow-up: The following concern is approximately twenty five miles away from the Bridgeton Landfill. This was not a Bridgeton Landfill odor.

Name: NA

Message: Odor logged September 25, 2015, at 9:10 PM strength of 10

Follow-up: This concern cites a time eight hours in the future from when it was filed. This is an invalid concern.

Name: NA

Message: Odor logged September 24, 2015, at 8:12 PM strength of 7

Follow-up: The following concern is approximately six miles away from the Bridgeton Landfill. No odor originating from the Bridgeton Landfill was observed during odor patrols on this date. This concern was submitted approximately 18 hours after the cited time of observation. This was not a Bridgeton Landfill odor.

Name: Kathy Baumann

Message: Odor logged September 28, 2015, at 9:00 PM strength of 7

Follow-up: The following concern coincided with a Bridgeton Landfill odor patrol that detected no odor related to the Bridgeton Landfill at any point. Winds were of a southern origin placing this location a significant distance upwind of the Bridgeton Landfill. This was not a Bridgeton Landfill odor.

Name: NA

Message: Odor logged September 28, 2015, at 4:16 PM strength of 10

Follow-up: The following concern was submitted approximately six hours after the stated time of observation. Winds were of a persistently southern origin throughout this time period. No odor originating from the Bridgeton Landfill was observed during odor patrols before or after this event. This was not a Bridgeton Landfill odor.

Name: Bob LaBeaume

Message: Odor logged September 29, 2015, at 5:35 AM strength of 9

Follow-up: The following concern has been investigated by Bridgeton Landfill staff. Winds were of generally southern and western origins throughout the morning on this date, placing this location outside the downwind pathway of the Bridgeton Landfill. A garbage odor was detected by Bridgeton Landfill staff during odor patrols on this date, originating from a known odor source upwind of this location at the time of this concern. This was not a Bridgeton Landfill odor.

Name: NA

Message: Odor logged September 29, 2015, at 8:25 AM strength of 10

Follow-up: The following concern coincided with a Bridgeton Landfill odor patrol that observed a distinct garbage odor at locations in close proximity to this concern location. This was not a Bridgeton Landfill odor.

Name: NA

Message: Odor logged September 29, 2015, at 8:00 AM strength of 10

Follow-up: The following concern coincided with a Bridgeton Landfill odor patrol. No odor related to the Bridgeton Landfill was observed at points between this concern location and the Bridgeton Landfill. This was not a Bridgeton Landfill odor.

Name: Kathy Baumann

Message: Odor logged September 29, 2015, at 8:30 AM strength of 8

Follow-up: The following concern has been investigated by Bridgeton Landfill staff. Winds were of generally southern and western origins throughout the morning on this date, placing this location outside the downwind pathway of the Bridgeton Landfill. A garbage odor was detected by Bridgeton Landfill staff during odor patrols on this date, originating from a known odor source upwind of this location at the time of this concern. This was not a Bridgeton Landfill odor.

Name: Debbie Neuman

Message: Odor logged September 29, 2015, at 8:30 PM strength of 10

Follow-up: The following concern cited an inaccurate time and was meant to be AM instead of PM. The revised time coincided with a Bridgeton Landfill odor patrol. A garbage odor was detected by Bridgeton Landfill staff originating from a known odor source. This was not a Bridgeton Landfill odor.

Name: Kathy Bell

Message: Odor logged September 30, 2015, at 4:16 PM strength of 5

Follow-up: The following concern was investigated by Bridgeton Landfill. Observations on this date detected garbage odor at multiple points in close proximity to this location. This was not a Bridgeton Landfill odor.

Name: Steve Commuso

Message: Odor logged September 30, 2015, at 8:00 PM strength of 6

Follow-up: The following concern has been investigated by Bridgeton Landfill staff. An odor patrol was performed shortly following receipt of this concern and no odor related to the Bridgeton Landfill was observed. This concern is of far closer proximity to two other known odor sources than the Bridgeton Landfill. This was not a Bridgeton Landfill odor.

ATTACHMENT H

LIQUID CHARACTERIZATION DATA AND DISCHARGE LOG

Bridgeton Landfill - Leachate PreTreatment Plant

September 2015

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
9/1/2015	LPTP Activated Sludge/ Permeate	Tank 1 (T1)	MBI	0
9/2/2015				0
9/3/2015				0
9/4/2015				0
9/5/2015				0
9/6/2015				0
9/7/2015				0
9/8/2015				0
9/9/2015				0
9/10/2015				0
9/11/2015				0
9/12/2015				0
9/13/2015				0
9/14/2015				0
9/15/2015				0
9/16/2015				0
9/17/2015				0
9/18/2015				0
9/19/2015				0
9/20/2015				0
9/21/2015				0
9/22/2015				0
9/23/2015				0
9/24/2015				0
9/25/2015				0
9/26/2015				0
9/27/2015				0
9/28/2015				0
9/29/2015				0
9/30/2015				0

Total= 0

Direct Discharge to MSD

Date	Waste	Source	Quantity (gal)
9/1/2015	LPTP Permeate	Through Tank AST 97k (MSD Sampling Point 013)	255,324
9/2/2015			120,476
9/3/2015			247,288
9/4/2015			246,232
9/5/2015			199,672
9/6/2015			203,712
9/7/2015			232,931
9/8/2015			239,425
9/9/2015			218,320
9/10/2015			259,077
9/11/2015			276,265
9/12/2015			225,138
9/13/2015			218,343
9/14/2015			251,135
9/15/2015			230,006
9/16/2015			100,388
9/17/2015			155,890
9/18/2015			203,717
9/19/2015			288,357
9/20/2015			289,822
9/21/2015			258,600
9/22/2015			295,352
9/23/2015			240,800
9/24/2015			287,491
9/25/2015			290,109
9/26/2015			260,674
9/27/2015			259,252
9/28/2015			228,461
9/29/2015			240,500
9/30/2015			266,083

Total = 7,088,839