

Bridgeton Landfill, LLC

Monthly Data Submittals

March, 2016

**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

April 20, 2016

Commentary on Data

April 20, 2016

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 2,869 SCFM, as normalized per the MDNR weekly flow and TRS sampling results.

Gas Quality

- Attachments D and E contain the monthly data related to gas quality as measured at the respective wellheads.
- Attachment E-1 details vertical wells which had oxygen levels over 5% at one or more weekly monitoring events during this reporting period. These consisted of 11 older GEW wells (<#-120) that are experiencing low flows; 17 new GEW wells (>#-120) that are experiencing restricted flows; 5 GIW wells that have low gas flow due to the cooling loops that are installed within these wells. By the end of the month, the majority of these wells still exhibited oxygen at the wellhead at or greater than 5%. All these wells are low-flow/vacuum sensitive wells with valves only slightly open. On-going tuning, maintenance and pump operation is being performed to manage the oxygen content. These wells are in the south quarry area where the flexible membrane liner cap is in place to prevent atmospheric intrusion into the waste mass.
- Attachment E-2 contains gas temperatures as measured at the wellheads. Ten (10) vertical wells (excluding GIW wells) decreased by 30°F during this reporting period. Additionally, seven (7) vertical wells (excluding GIW wells) increased by 30°F or more. Wells GEW-125, GEW-142, and GEW-143 measured gas temperatures drops greater than 30°F that were outside of historical gas temperatures. Based on a review the wellhead monitoring data, the drops in temperature are most likely due to obstructed well screens from liquid levels within the gas well. These wells have a downhole pump which will be inspected and if necessary serviced in the near future. All other wells that exhibited changes greater than 30 degrees are all within the historical gas temperature norms for these wells or within the range of temperatures of nearby vertical wells.
- A detailed review of the gas extraction wells in the neck area was conducted. Wells GEW-157 and GEW-159 exhibited wellhead temperature increases greater than 30°F. Wells GEW-157 and GEW-159 were installed in December 2015 within the south quarry area/neck area and vacuum has been increased slightly over time as part of normal GCCS operations. The wellhead temperatures at GEW-157 and GEW-159 are similar as the wellhead temperatures of nearby wells. Maximum temperatures are 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 Neck Area wells.

- All wells in the North Quarry during this reporting period exhibited a maximum wellhead temperature under 145°F with the exception of GEW-054. The well had a maximum well head temperature of 147°F which is consistent with historic readings. The only North Quarry wells that had detections of carbon monoxide during this reporting period was GEW-053 (65 ppm) and GEW-054 (34 ppm). 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 1.35 feet over 30 days for this reporting period (see Attachment F); which is comparable to last month's rate. The rate of settlement directly south of the neck continues to be small and stable 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.

Low Fill Project Area

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

- Clean fill activities commenced in late December and have continued into early April on a region of differential settlement located in the northeastern and southeast portions of the South Quarry. The total cubic yardage of fill material used is still to be determined. The enclosed figure indicates this fill area as well as clean fill materials stockpile areas on the West Lake OU2 portion of the property and the Bridgeton Landfill North Quarry portion of the property in support of this project. Upon conclusion of the fill project the requested cubic yardage, drainage features (if applicable), and drawings showing the completed location area shall be provided with the following monthly report.

ATTACHMENT A

WORK COMPLETED AND PLANNED

Bridgeton Landfill, LLC
Monthly Summary of Work Completed and Planned

Work Completed in March 2016

Gas Collection and Control System

- Continued operation and maintenance of GCCS System and GIW wells.
- Continued header realignment project to improve condensate management and header vacuum distribution.
- Began installation of five (5) dewatering sumps in a gas interceptor trench on the southern side of the landfill. The total number of sumps to be installed may vary based on field conditions.
- Began the installation of fifteen (15) gas extraction wells.

Alternative Heat Extraction System

- Continued operation and maintenance of the HES.

Leachate Management System

- Continued routine operation of previously installed and upgraded features.
- Began work on West Lift Station including the replacement of flow meters and valves

Pre-Treatment Facility

- Continued ongoing operation of facility.
- Continued to optimize operation efficiency of pre-treatment facility.
- Permeate continued to be discharged directly to MSD – Bissell Point Facility or other approved disposal facilities as determined by MSD. Continued hauling of activated sludge to MSD Bissell Point Facility to reduce solids concentrations in the treatment tank system.

Other Projects

- Continued North Quarry cap enhancements.
- Continued low area fill project in South Quarry.
- Continued acceptance of clean fill.

Work Planned for April 2016

Gas Collection and Control System

- Continue operation and maintenance of GCCS system.
- Continue header realignment project to improve condensate management and header vacuum distribution.
- Continue upgrades to GCCS system as necessary.
- Complete the installation of fifteen (15) gas extraction wells.

Alternative Heat Extraction System

- Continued operation and maintenance of the HES.

Leachate Management System

- Continued routine operation of previously installed and upgraded features.
- Continue work on West Lift Station including of a condensate sump

Pre-Treatment Facility

- Ongoing operation of facility.
- Continue to optimize operation efficiency of pre-treatment facility.
- Permeate continued to be discharged directly to MSD – Bissell Point Facility or other approved disposal facilities as determined by MSD.

Other Projects:

- Continue acceptance of clean fill materials for future fill projects.
- Complete north quarry cap enhancement project (weather permitting).

ATTACHMENT B

DAILY FLARE MONITORING DATA

ATTACHMENT B-1

FLOW DATA TABLE

Daily Flare Monitoring Data - Bridgeton Landfill
March 2016

Date	Average Device Flow* (scfm)				Total Avg. Flow** (scfm)
	Utility Flare (FL-100)	Utility Flare (FL-120)	Utility Flare (FL-140)	Aux. Utility Flare***	
3/1/2016	0	0	2,852	24	2,876
3/2/2016	0	0	2,881		2,881
3/3/2016	0	0	2,863		2,863
3/4/2016	0	0	2,818		2,818
3/5/2016	0	0	2,826		2,826
3/6/2016	0	0	2,836		2,836
3/7/2016	0	0	2,902		2,902
3/8/2016	0	0	2,912		2,912
3/9/2016	0	0	2,999		2,999
3/10/2016	0	0	2,954		2,954
3/11/2016	0	0	2,987		2,987
3/12/2016	0	0	2,962		2,962
3/13/2016	0	0	2,932		2,932
3/14/2016	0	0	2,961	102	3,063
3/15/2016	0	427	2,602		3,028
3/16/2016	0	1,646	1,281		2,927
3/17/2016	0	1,587	1,325		2,912
3/18/2016	0	1,621	1,125	160	2,906
3/19/2016	0	1,654	996	252	2,902
3/20/2016	0	1,525	1,095	251	2,871
3/21/2016	0	1,648	1,031	223	2,902
3/22/2016	0	1,161	1,354	237	2,751
3/23/2016	0	1,227	1,198	283	2,709
3/24/2016	0	1,307	1,125	275	2,707
3/25/2016	0	1,233	1,236	281	2,750
3/26/2016	0	1,219	1,231	285	2,735
3/27/2016	0	1,212	1,221	284	2,717
3/28/2016	0	940	1,568	269	2,777
3/29/2016	0	1,255	1,370	243	2,868
3/30/2016	0	1,398	1,186	271	2,855
3/31/2016	0	1,446	1,195	171	2,811
				Average	2,869

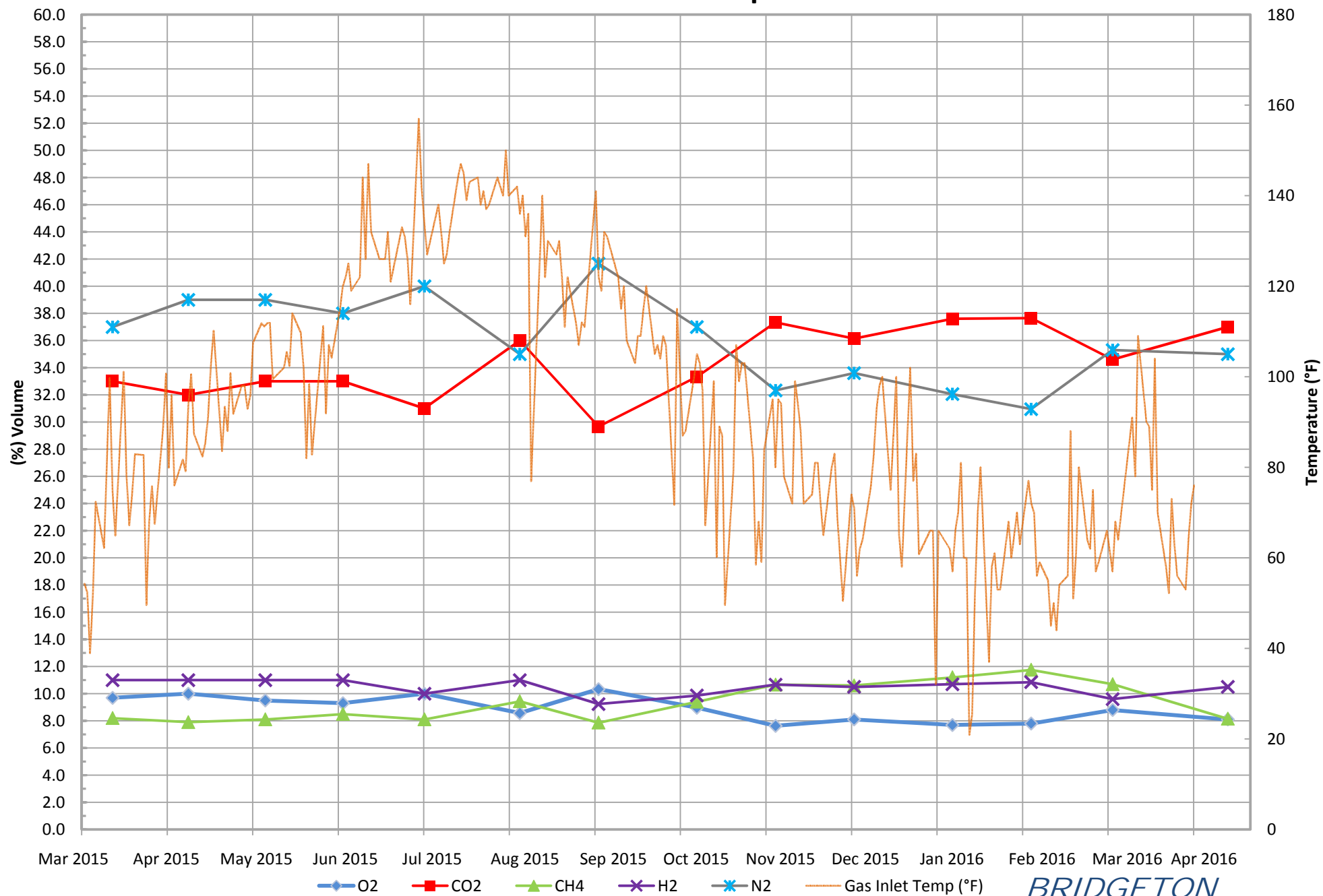
* Flows normalized to **Blower Outlet Flowmeter - EPA Method 2 measurement verified

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

ATTACHMENT B-2

FLOW DATA GRAPHS

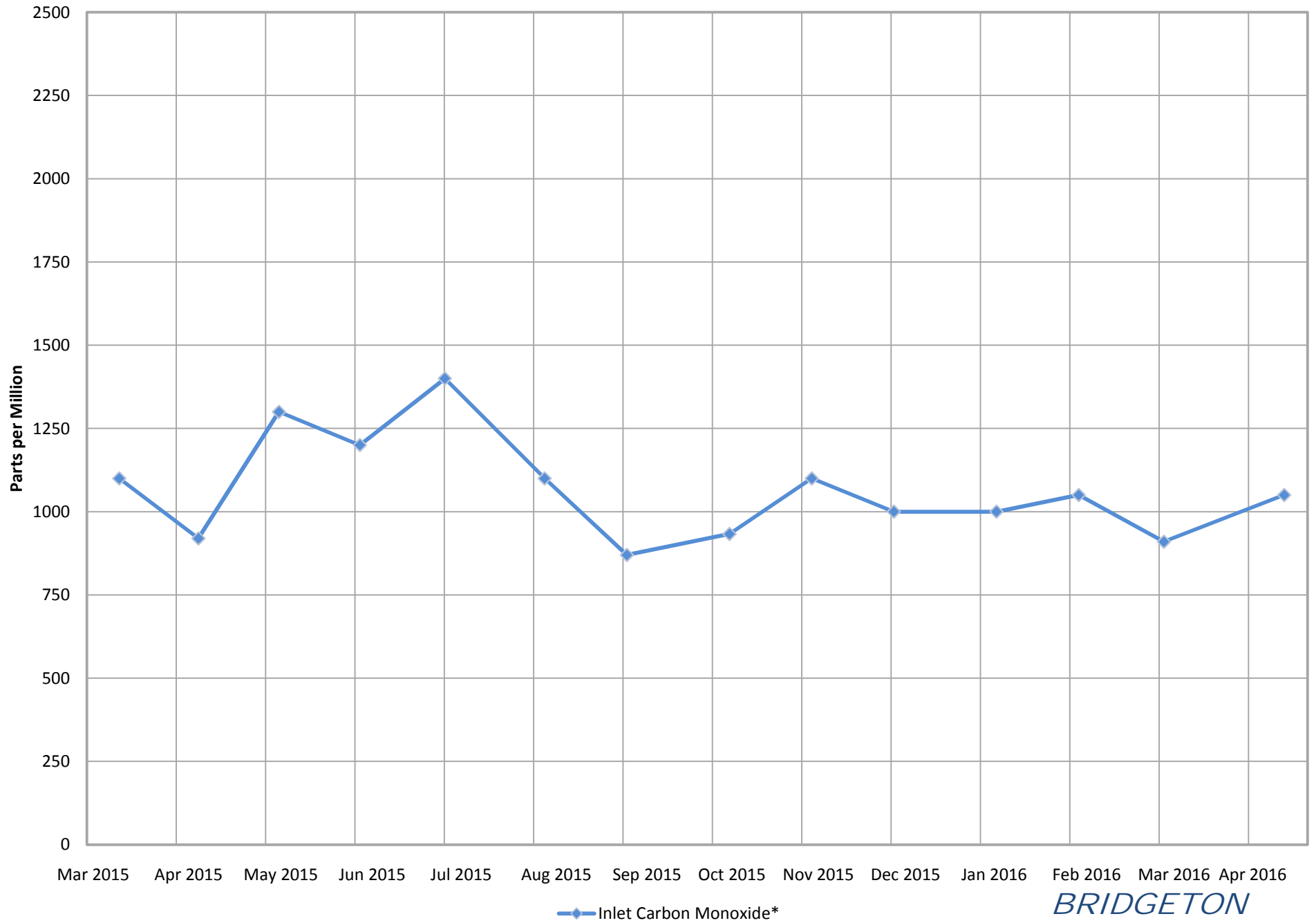
Inlet Gas and Temperature*



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

*BRIDGETON
LANDFILL*

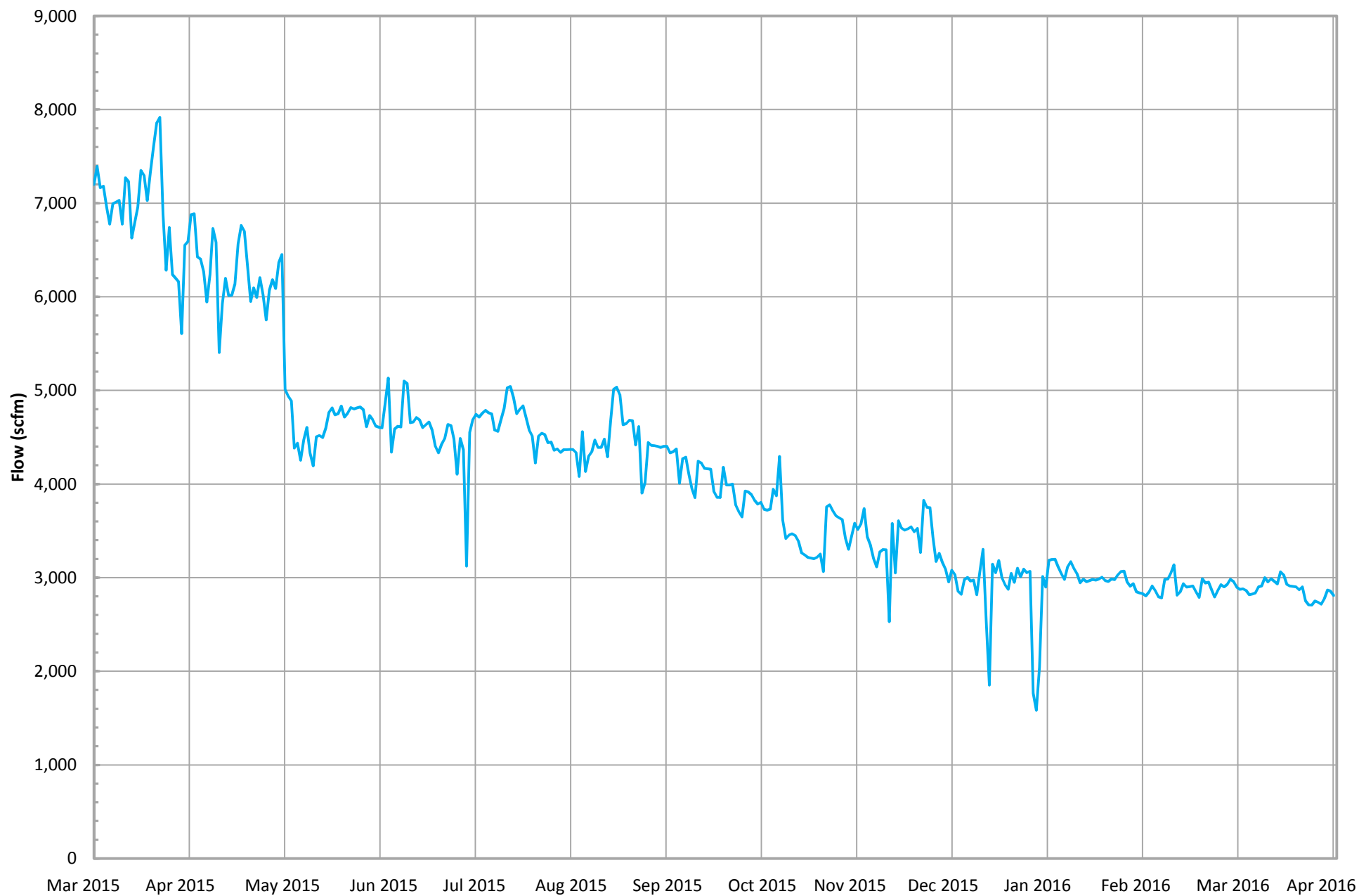
Inlet Carbon Monoxide*



*Data collected from Laboratory Reports.

*BRIDGETON
LANDFILL*

Total Combined Flow (scfm)*

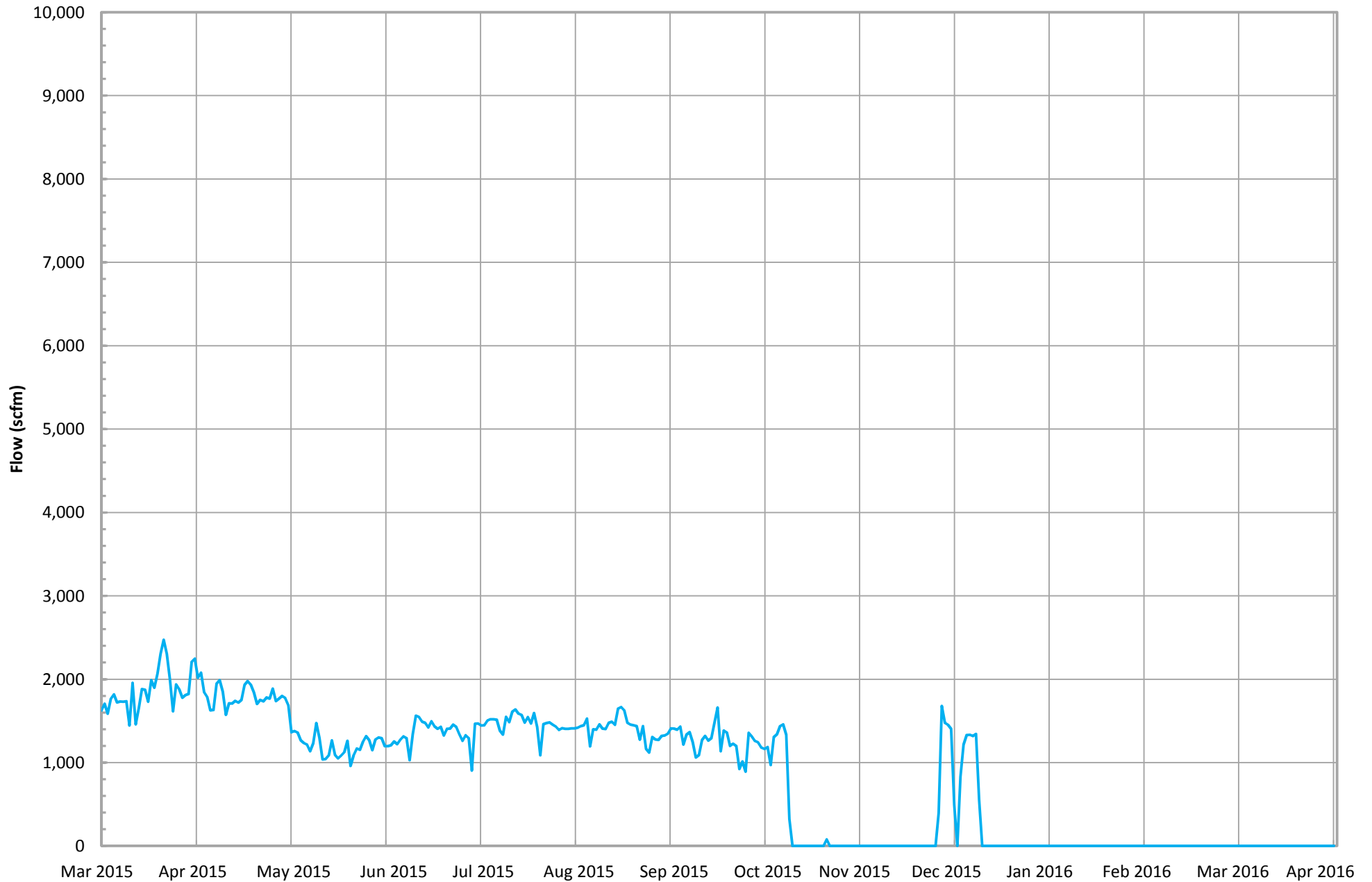


*Combined flow is based on tabulated flow data collected daily from each device.

— Total Combined Flow (scfm)*

*BRIDGETON
LANDFILL*

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

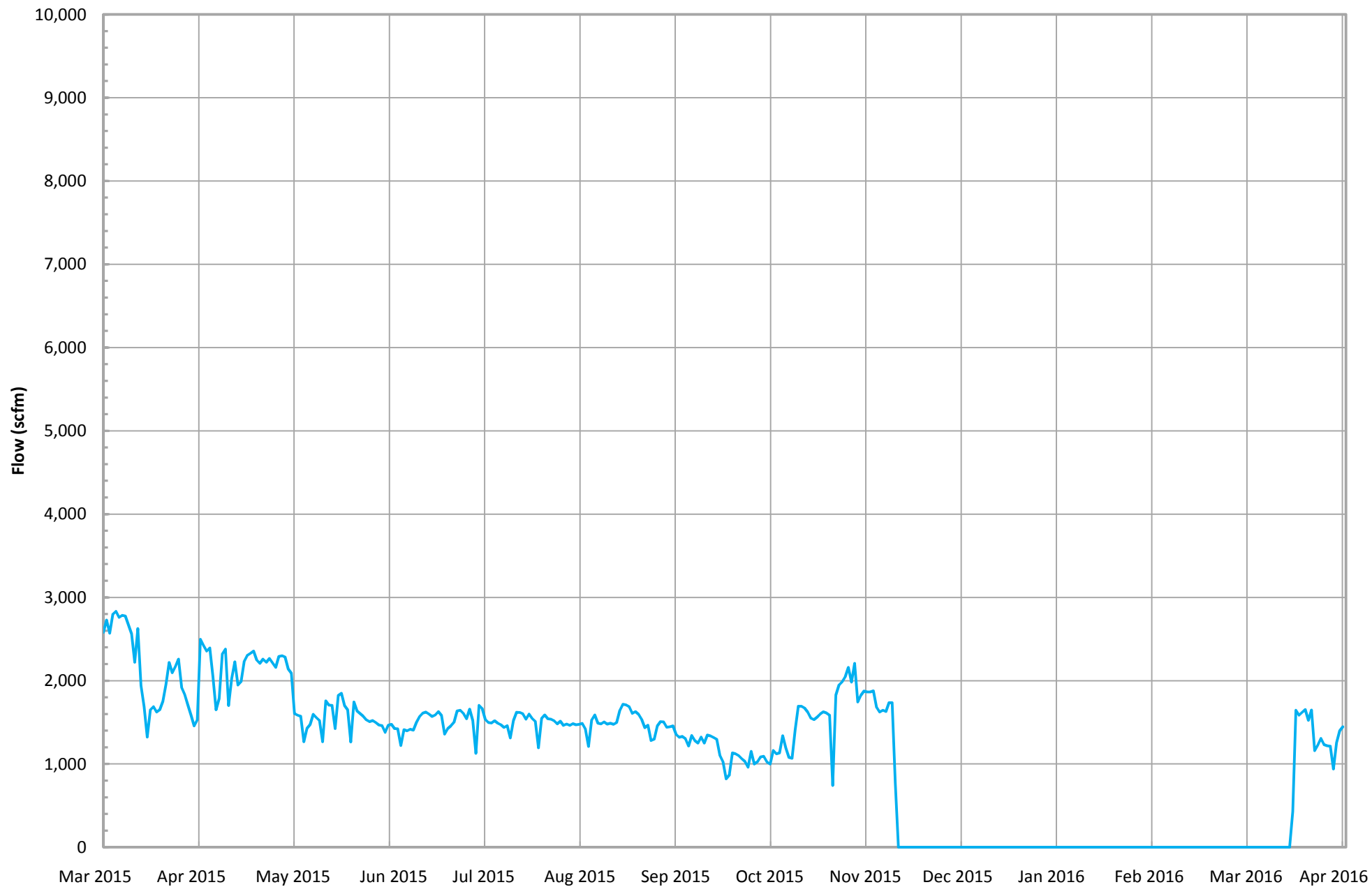


*Flow is based on tabulated flow data collected daily.

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

*BRIDGETON
LANDFILL*

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

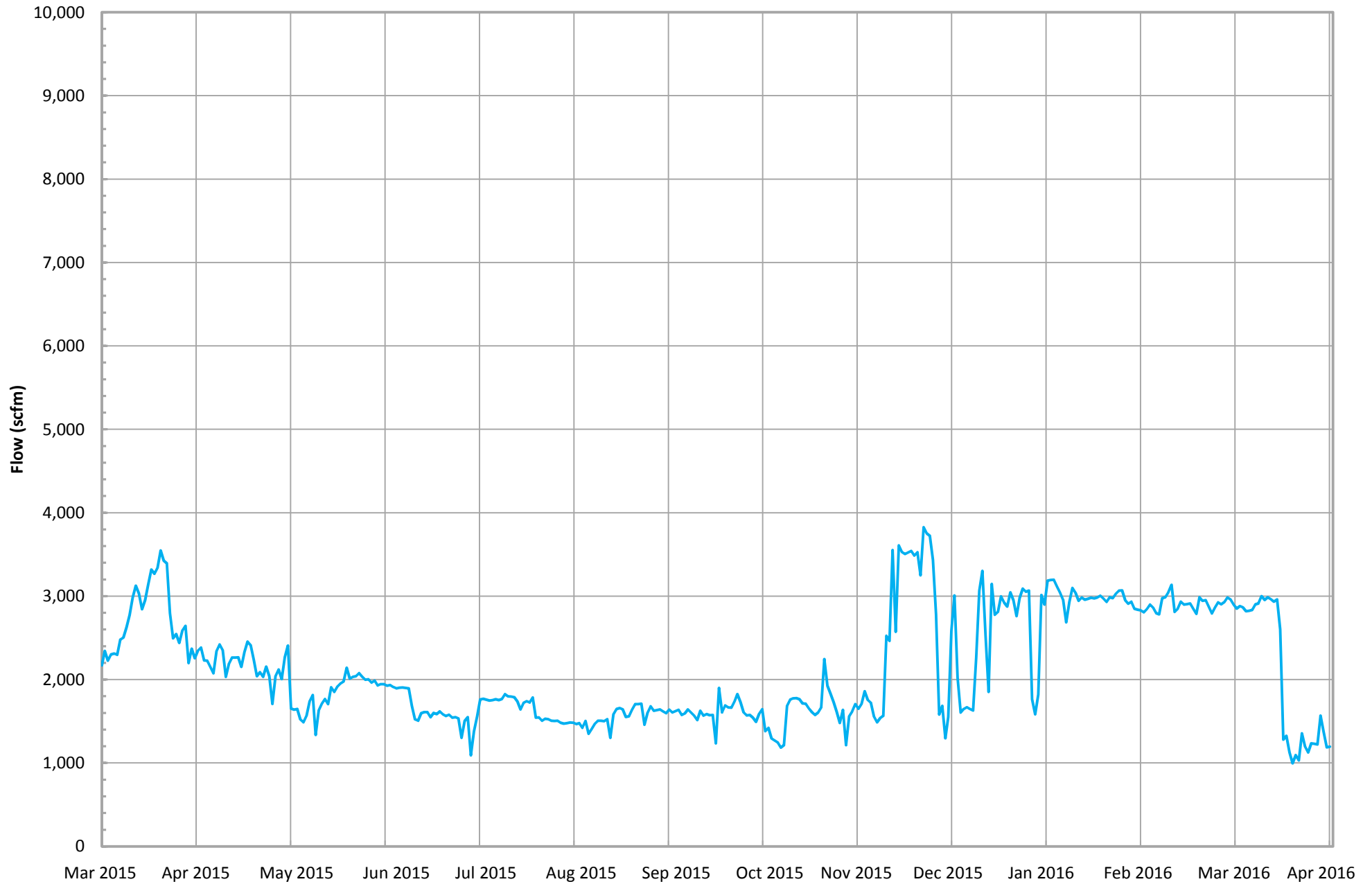


*Flow is based on tabulated flow data collected daily.

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

*BRIDGETON
LANDFILL*

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

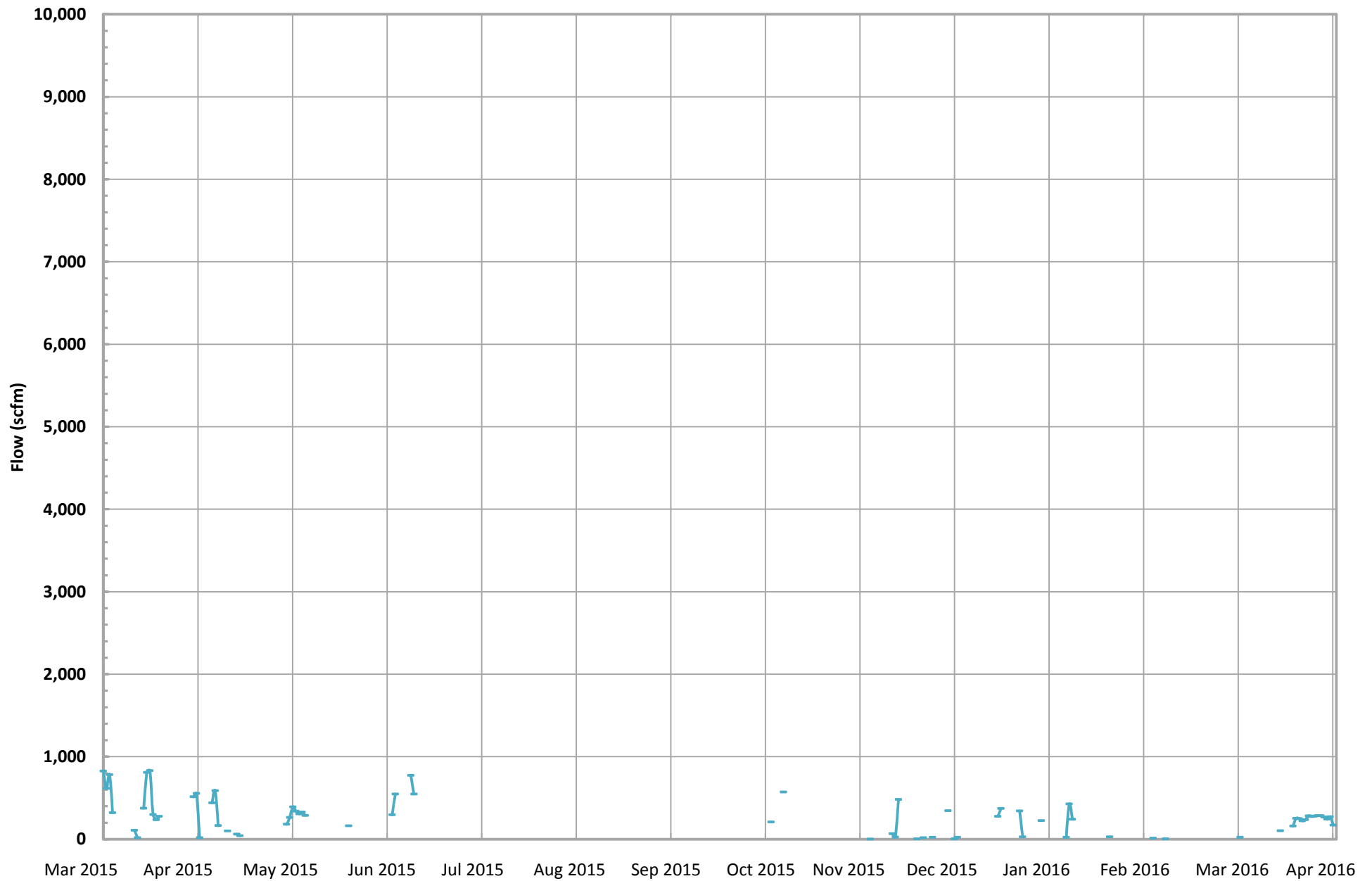


*Flow is based on tabulated flow data collected daily.

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

*BRIDGETON
LANDFILL*

Auxillary Candlestick Flare Flow (scfm)*

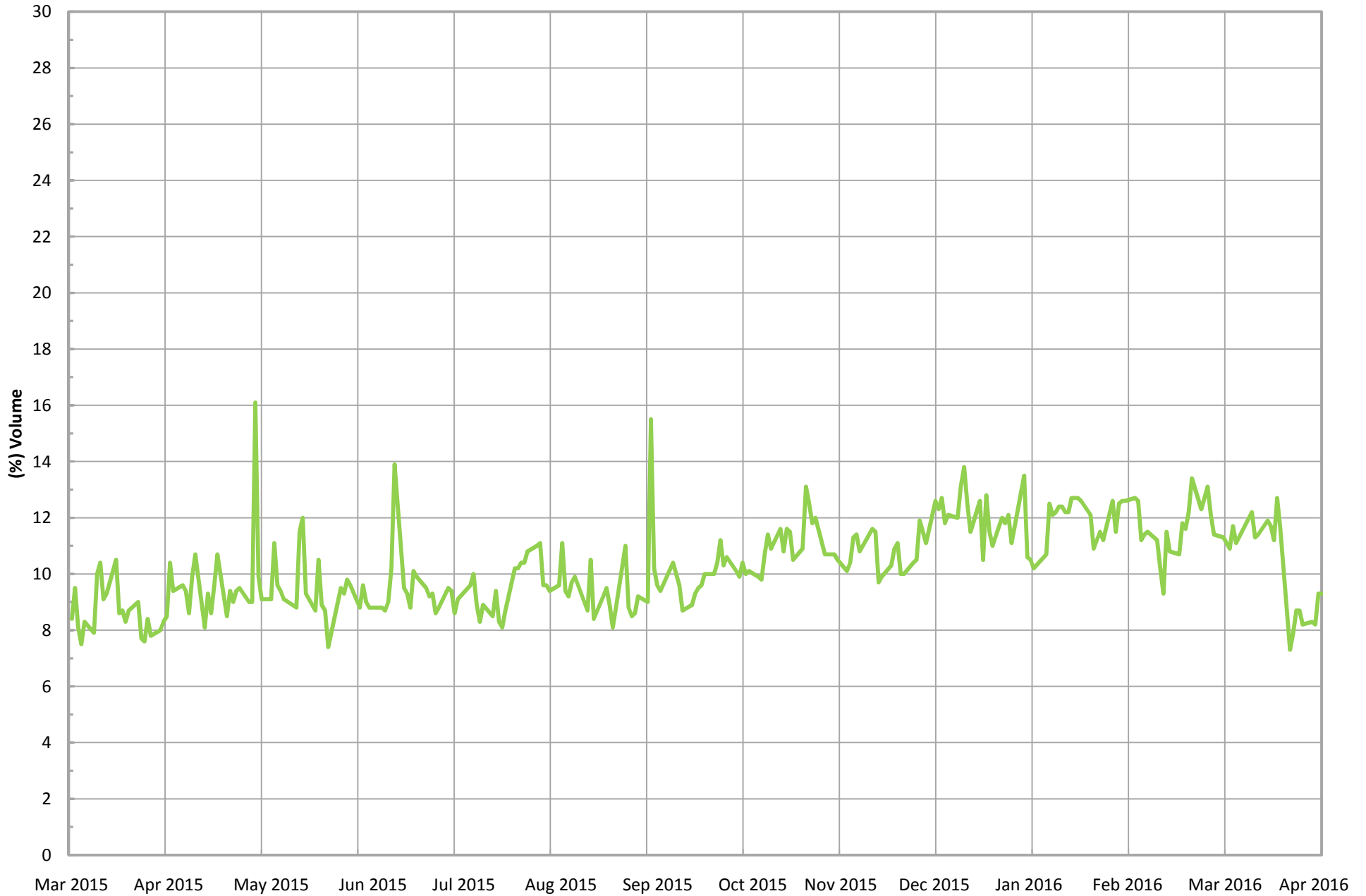


*Flow is based on tabulated flow data collected daily.

— Auxillary Candlestick Flare Flow (scfm)*

*BRIDGETON
LANDFILL*

Combined Inlet Methane (Field Data)*

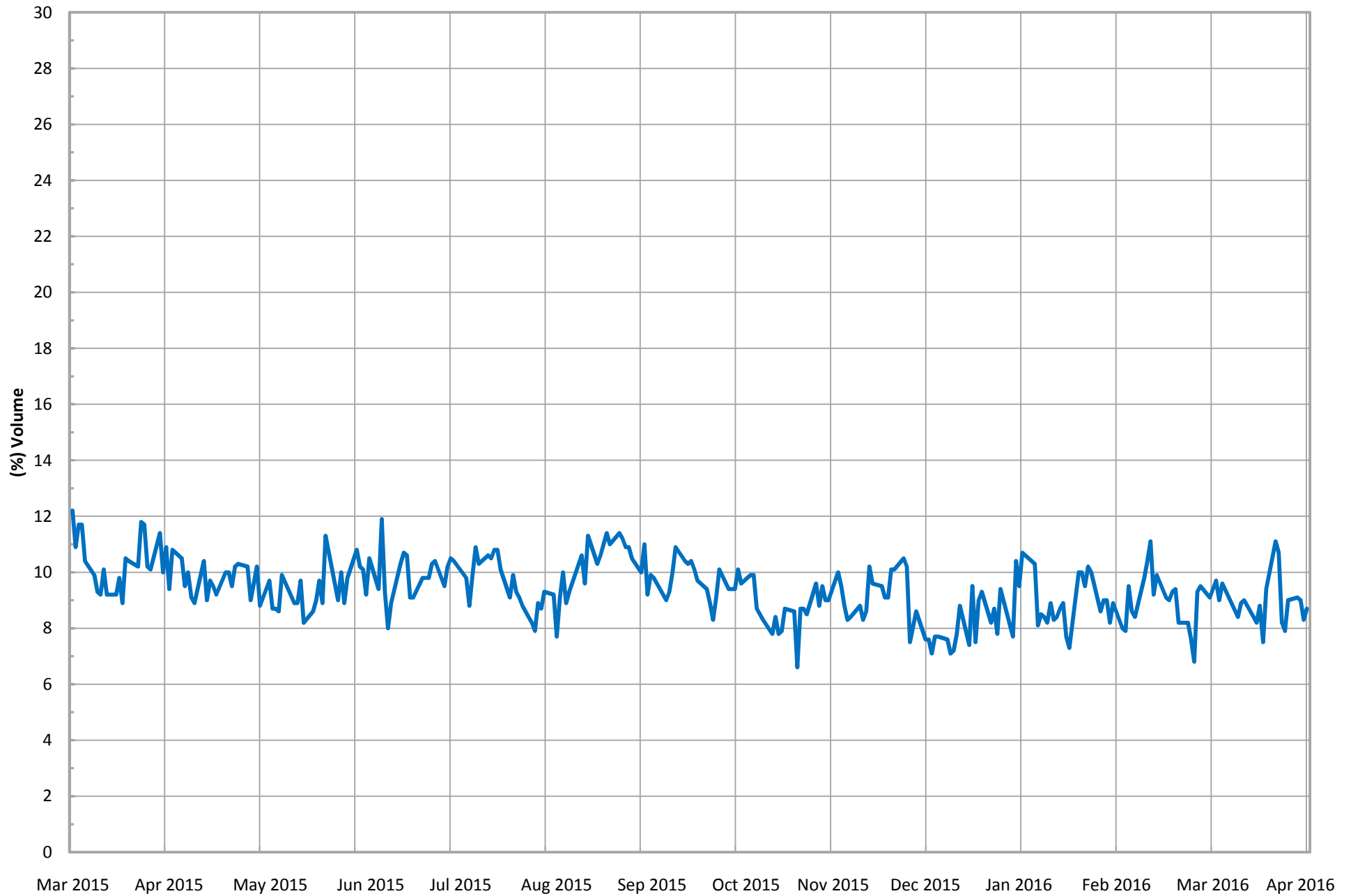


*Gas data collected from field monitoring data.

— Combined Inlet Methane (Field Data)*

*BRIDGETON
LANDFILL*

Combined Inlet Oxygen (Field Data)*



*Gas data collected from field monitoring data.

— Combined Inlet Oxygen (Field Data)*

*BRIDGETON
LANDFILL*

ATTACHMENT B-3

FLARE TRS / FLARE STATION FLOW

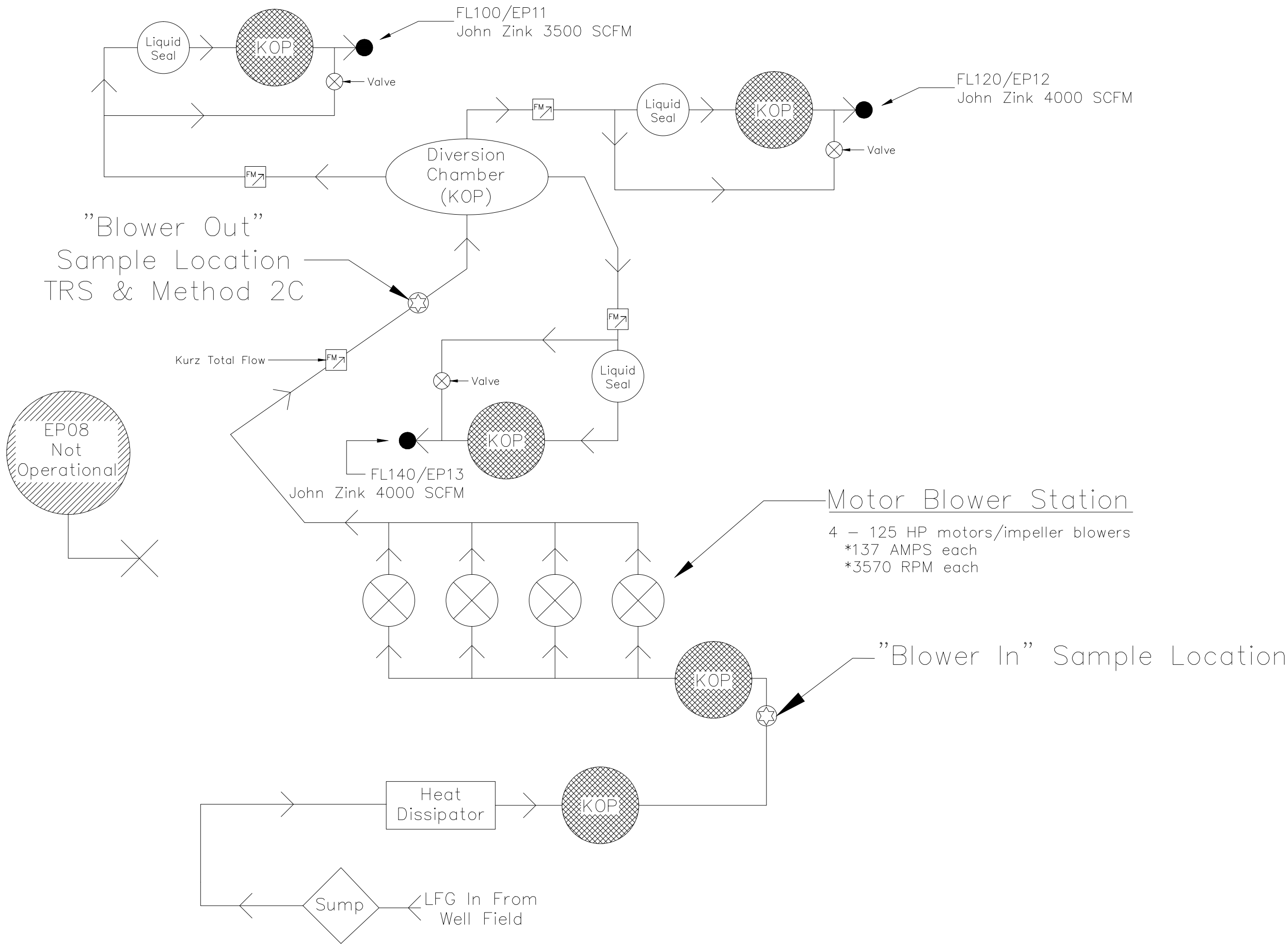


TABLE 1
Summary of Key LFG Tested Parameters
Flare Compound: *Blower Outlet*

Bridgeton Landfill, LLC.
March 2, 2016 to April 12, 2016

SAMPLE EVENT #	DATE	VELOCITY ft/sec	FLOW dscfm	TRS ppm _{vd}
58-15 ¹	4/12/2016	31.32	2394	1700
				1300
57-14	4/7/2016	31.20	2527	1000
				980
56-13	3/29/2016	32.63	2643	920
				970
55-12 ¹	3/23/2016	29.54	2380	1600
				1300
54-11	3/15/2016	36.80	2981	1200
				1400
53-10 ¹	3/8/2016	37.31	3017	1200
				1200
				1100
52-09	3/2/2016	37.79	3061	VOID ²
				1300

Notes:

¹ Indicates velocity/flow determined by EPA Method 2

² Void due to acetone cross contamination

PARAMETER		Blower Out
SOUTH QUARRY LFG ONLY (FL120 & FL140)		
Date	Test Date	4/12/16
Start	Run Start Time	14:20
	Run Finish Time	15:20
	Net Traversing Points	8 (2 x 4)
	Net Run Time, minutes	0:59:30
C_p	Pitot Tube Coefficient	0.99
P_{Br}	Barometric Pressure, inches of Mercury	29.80
% H_2O	Moisture Content of LFG, %	3.78
% RH	Relative Humidity, %	90.20
M_{fd}	Dry Mole Fraction	0.962
% CH_4	Methane, %	8.15
% CO_2	Carbon Dioxide, %	37.00
% O_2	Oxygen, %	8.10
% Balance	Assumed as Nitrogen, %	35.00
% H_2	Hydrogen, %	10.50
% CO	Carbon Monoxide, %	0.11
M_d	Dry Molecular Weight, lb/lb-Mole	30.23
M_s	Wet Molecular weight, lb/lb-Mole	29.77
P_g	Flue Gas Static Pressure, inches of H_2O	19.47
P_s	Absolute Flue Gas Pressure, inches of Mercury	31.22
t_s	Average Stack Gas Temperature, °F	103
ΔP_{avg}	Average Velocity Head, inches of H_2O	0.226
v_s	Average LFG Velocity, feet/second	31.32
A_s	Stack Crosssectional Area, square feet	1.35
Q_{sd}	Dry Volumetric Flow Rate, dry scfm	2,394
Q_s	Standard Volumetric Flow Rate, scfm	2,484
Q_{aw}	Actual Wet Volumetric Flue Gas Flow Rate, acfm	2,542
$Q_{lb/hr}$	Dry Air Flow Rate at Standard Conditions, lb/hr	11,269
NHV	Net Heating Value, Btu/scf	135
LFG _{CH4}	Methane, lb/hr	487.5
	Methane, grains/dscf	23.76
LFG _{CO2}	Carbon Dioxide, lb/hr	6,072.1
	Carbon Dioxide, grains/dscf	295.93
LFG _{O2}	Oxygen, lb/hr	966.5
	Oxygen, grains/dscf	47.10
LFG _{N2}	Balance gas as Nitrogen, lb/hr	3,656.1
	Balance gas as Nitrogen, grains/dscf	178.18
LFG _{H4}	Hydrogen, lb/hr	78.9
	Hydrogen, grains/dscf	3.85
LFG _{CO}	Carbon Monoxide, lb/hr	11.0
	Carbon Monoxide, grains/dscf	0.53

		Outlet A	Outlet B
H_2S	Hydrogen Sulfide Concentration, ppm	8.80	46.00
	Hydrogen Sulfide Rate, lb/hr	0.11	0.58
	Hydrogen Sulfide Rate, grains/dscf	0.005	0.028
COS	Carbonyl Sulfide Concentration, ppm	0.67	0.59
	Carbonyl Sulfide Rate, lb/hr	0.02	0.01
	Carbonyl Sulfide Rate, grains/dscf	0.001	0.001
CH_4S	Methyl Mercaptan Concentration, ppm	180.00	170.00
	Methyl Mercaptan Rate, lb/hr	3.23	3.05
	Methyl Mercaptan Rate, grains/dscf	0.157	0.149
C_2H_6S	Ethyl Mercaptan Concentration, ppm	2.30	2.40
	Ethyl Mercaptan Rate, lb/hr	0.05	0.06
	Ethyl Mercaptan Rate, grains/dscf	0.003	0.003
$(CH_3)_2S$	Dimethyl Sulfide Concentration, ppm	1,300.00	940.00
	Dimethyl Sulfide Rate, lb/hr	30.12	21.78
	Dimethyl Sulfide Rate, grains/dscf	1.468	1.061
CS_2	Carbon Disulfide Concentration, ppm	0.71	0.65
	Carbon Disulfide Rate, lb/hr	0.02	0.02
	Carbon Disulfide Rate, grains/dscf	0.001	0.001
$C_2H_6S_2$	Dimethyl Disulfide Concentration, ppm	100.00	94.00
	Dimethyl Disulfide Rate, lb/hr	3.51	2.67
	Dimethyl Disulfide Rate, grains/dscf	0.171	0.130
$\textcircled{1}E_{\text{TRS-SO2}}$	TRS-->SO2 Emission Concentration, ppm	1,700.00	1,300.00
	TRS-->SO2 Emission Rate, lb/hr	40.61	31.06
	TRS-->SO2 Emission Rate, grains/dscf	1.979	1.514

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

Tuesday, April 12, 2016

LOCATION	TIME	FLOW -SCFM			Method 2 vs. Fleetzoom	Method 2 vs Kurz
		Method 2	FleetZoom	Kurz FM		
BLOWER OUT	14:20	2,484	2,680	2,561	-7.9%	-3.1%

Monthly Method 2C was attempted at FXA1212 (NQ Gas) but high moisture and watered-in sumps skewed results. Determination below was made using flow data from Fleetzoom instead.

Fleetzoom Total = 217 scfm

PARAMETER		EP14 NQ	EP14 NQ-2
EP14 NORTH QUARRY LFG ONLY			
Date	Test Date		4/11/16
Time	Start - Finish	15:15	15:43
%CH ₄	Methane, %	47.00	47.00
%CO ₂	Carbon Dioxide, %	38.00	38.00
%O ₂	Oxygen, %	1.80	1.70
%Balance	Assumed as Nitrogen, %	12.00	11.00
%H ₂	Hydrogen, %	3.20	3.20
%CO	Carbon Monoxide, %	0.005	0.005
P _g	Flue Gas Static Pressure, inches of H ₂ O	0.32	0.32
t _s	Blower Outlet LFG Temperature, °F	80	80
Q _{sd}	Dry Volumetric Flow Rate, dry scfm (assumes 5%H ₂ O)	206	
Q _s	Fleetzoom Standard Volumetric Flow Rate, scfm	217	
NHV	Net Heating Value, Btu/scf	431.0	438.0
LFG _{CH4}	Methane, lb/hr	241.8	241.8
	Methane, grains/dscf	137.03	137.03
LFG _{CO2}	Carbon Dioxide, lb/hr	536.2	536.2
	Carbon Dioxide, grains/dscf	303.92	303.92
LFG _{O2}	Oxygen, lb/hr	18.5	17.4
	Oxygen, grains/dscf	10.47	9.89
LFG _{N2}	Balance gas as Nitrogen, lb/hr	107.8	98.8
	Balance gas as Nitrogen, grains/dscf	61.09	56.00
LFG _{H4}	Hydrogen, lb/hr	2.1	2.1
	Hydrogen, grains/dscf	1.17	1.17
LFG _{CO}	Carbon Monoxide, lb/hr	0.0	0.0
	Carbon Monoxide, grains/dscf	0.02	0.02
		EP14 NQ	EP14 NQ-2
H ₂ S	Hydrogen Sulfide Concentration, ppmvd	31.00	0.63
	Hydrogen Sulfide Rate, lb/hr	0.03	0.00
	Hydrogen Sulfide Rate, grains/dscf	0.019	0.000
COS	Carbonyl Sulfide Concentration, ppmvd	0.63	0.63
	Carbonyl Sulfide Rate, lb/hr	0.00	0.00
	Carbonyl Sulfide Rate, grains/dscf	0.001	0.001
CH ₄ S	Methyl Mercaptan Concentration, ppmvd	7.50	5.60
	Methyl Mercaptan Rate, lb/hr	0.01	0.01
	Methyl Mercaptan Rate, grains/dscf	0.007	0.005
C ₂ H ₆ S	Ethyl Mercaptan Concentration, ppmvd	0.63	0.63
	Ethyl Mercaptan Rate, lb/hr	0.00	0.00
	Ethyl Mercaptan Rate, grains/dscf	0.001	0.001
(CH ₃) ₂ S	Dimethyl Sulfide Concentration, ppmvd	110.00	110.00
	Dimethyl Sulfide Rate, lb/hr	0.22	0.22
	Dimethyl Sulfide Rate, grains/dscf	0.124	0.124
CS ₂	Carbon Disulfide Concentration, ppmvd	0.63	0.63
	Carbon Disulfide Rate, lb/hr	0.00	0.00
	Carbon Disulfide Rate, grains/dscf	0.001	0.001
C ₂ H ₆ S ₂	Dimethyl Disulfide Concentration, ppmvd	8.50	9.00
	Dimethyl Disulfide Rate, lb/hr	0.03	0.03
	Dimethyl Disulfide Rate, grains/dscf	0.015	0.015
①E _{TRS-SO2}	TRS-->SO2 Emission Concentration, ppmvd	170.00	130.00
	TRS-->SO2 Emission Rate, lb/hr	0.35	0.27
	TRS-->SO2 Emission Rate, grains/dscf	0.198	0.151
TPY =		1.53	1.17
① TRS assumed molecular mass = SO ₂ , 64.06 gram/mole, i.e. 1 TRS in LFG assumed to = 1 SO ₂ emitted from the stack			

April 15, 2016

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



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



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

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

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

LABORATORY TEST RESULTS

Project Reference: Bridgeton Landfill
Lab Number: H041302-01/04

Enclosed are results for sample(s) received 4/13/16 by Air Technology Laboratories. Samples were received intact. Analyses were performed according to specifications on the chain of custody provided with the sample(s).

Report Narrative:

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

Preliminary results were e-mailed to Nick Bauer, Mike Lambrich, Ryan Ayer, Jim Getting, David Randall and Dustin Thoenen, Weaver Consultants Group, on 4/14/16.

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

Sincerely,



Mark Johnson
Operations Manager
MJohnson@AirTechLabs.com

Enclosures

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



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

CHAIN OF CUSTODY RECORD

TURNAROUND TIME

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

DELIVERABLES

EDD ☐
EDF ☐
Level 3 ☐
Level 4 ☐

PAGE: 1 OF 1

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

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

BILLING

P.O. No.: PO462452 554460
Bill to: Republic Services
Attn: Nick Bauer
13570 St. Charles Rock Rd.
Bridgeton, MO 63044

ANALYSIS REQUEST

EPA 15/16 + TRS

ASTM 1946 + H2 + CO &
BTU/SCF

EPA Method 25C

LAB USE ONLY

Canister Pressures ("hg)

Canister ID Sample Start Sample End Lab Receive

SAMPLE IDENTIFICATION

SAMPLE
DATE

SAMPLE
TIME

CONTAINER
QTY/TYPE

MATRIX

PRESERVA-
TION

H041302-01	1290	-20.35	-4.92	-6	Blower Outlet 1	4/12/2016	1523	C	LFG	NA	X	X	X			
-02	5227	-18.97	-2.65	-4	Blower Outlet 2	4/12/2016	1548	C	LFG	NA	X	X	X			
-03	6009	-20.27	-3.2	-5	EP14 NQ	4/12/2016	1515	C	LFG	NA	X	X	X			
-04	1295	-20.21	-3.76	-5	EP14 NQ-2	4/12/2016	1543	C	LFG	NA	X	X	X			

AUTHORIZATION TO PERFORM WORK: Dave Penoyer

COMPANY: Republic Services

DATE/TIME:

SAMPLED BY: Ryan Ayers

COMPANY: Republic Services

DATE/TIME:

RELINQUISHED BY:

R. Ayers
FED EX

4-12-16 1700

DATE/RECEIVED BY

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

COMMENTS

*24 hr TAT please!

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

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

Client: Republic Services
Attn: Nick Bauer
Project Name: Bridgeton Landfill
Project No.: NA
Date Received: 04/13/16
Matrix: Air
Reporting Units: % v/v

Page 2 of 6
 H041302

ASTM D1946

Lab No.:	H041302-01	H041302-02	H041302-03	H041302-04					
Client Sample I.D.:	Blower Outlet 1	Blower Outlet 2	EP14 NQ	EP14 NQ-2					
Date/Time Sampled:	4/12/16 15:23	4/12/16 15:48	4/12/16 15:15	4/12/16 15:43					
Date/Time Analyzed:	4/13/16 13:11	4/13/16 14:40	4/13/16 17:14	4/13/16 17:29					
QC Batch No.:	160413GC8A1	160413GC8A1	160413GC8A1	160413GC8A1					
Analyst Initials:	AS	AS	AS	AS					
Dilution Factor:	3.4	3.0	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	11	3.4	10	3.0	ND	3.2	ND	3.2
	Carbon Dioxide	38	0.034	36	0.030	38	0.032	38	0.032
	Oxygen/Argon	7.7	1.7	8.5	1.5	1.8	1.6	1.7	1.6
	Nitrogen	34	3.4	36	3.0	12	3.2	11	3.2
	Methane	8.4	0.0034	7.9	0.0030	47	0.0032	47	0.0032
	Carbon Monoxide	0.11	0.0034	0.10	0.0030	0.0047	0.0032	0.0048	0.0032
	Net Heating Value (BTU/ft3)	139	3.4	130	3.0	431	3.2	438	3.2
	Gross Heating Value (BTU/ft3)	157	3.4	148	3.0	479	3.2	487	3.2

Results normalized including non-methane hydrocarbons

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

ND = Not Detected (below RL)

RL = Reporting Limit

Reviewed/Approved By: Mark Johnson
 Mark Johnson
 Operations Manager

Date 4/14/16

The cover letter is an integral part of this analytical report



QC Batch No.: 160413GC8A1

Matrix: Air


Units: % v/v

QC for ASTM D1946

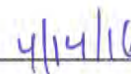
Lab No.:	Method Blank		LCS		LCSD			
Date/Time Analyzed:	4/13/16 9:58		4/13/16 9:29		4/13/16 9:43			
Analyst Initials:	AS		AS		AS			
Datafile:	13apr008		13apr006		13apr007			
Dilution Factor:	1.0		1.0		1.0			
ANALYTE	Results	RL	% Rec.	Criteria	% Rec.	Criteria	%RPD	Criteria
Hydrogen	ND	1.0	114	70-130%	113	70-130%	0.7	<30
Carbon Dioxide	ND	0.010	103	70-130%	102	70-130%	1.3	<30
Oxygen/Argon	ND	0.50	100	70-130%	99	70-130%	1.2	<30
Nitrogen	ND	1.0	100	70-130%	99	70-130%	1.3	<30
Methane	ND	0.0010	97	70-130%	97	70-130%	0.3	<30
Carbon Monoxide	ND	0.0010	115	70-130%	114	70-130%	0.5	<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

Client: Republic Services
Attn: Nick Bauer

Project Name: Bridgeton Landfill
Project Number: NA
Date Received: 4/13/2016
Matrix: Vapor

TNMOC by EPA METHOD 25C

Lab Number:		H041302-01		H041302-02		H041302-03		H041302-04			
Client Sample ID:		Blower Outlet 1		Blower Outlet 2		EP14 NQ		EP14 NQ-2			
Date/Time Collected:		4/12/16 15:23		4/12/16 15:48		4/12/16 15:15		4/12/16 15:43			
Date/Time Analyzed:		4/13/16 13:55		4/14/16 12:48		4/14/16 10:36		4/14/16 11:34			
Analyst Initials:		AS		AS		AS		AS			
QC Batch:		160413GC8A1		160414GC8A1		160414GC8A1		160414GC8A1			
Dilution Factor:		33.7		29.7		3.2		3.2			
ANALYTE	Units	Result	RL	Result	RL	Result	RL	Result	RL		
TNMOC	ppmv C	121,000	337	110,000	297	6,700	32	7,300	32		
TNMOC uncorr*	ppmv C	44,000	337	37,000	297	5,500	32	6,000	32		

ND = Not detected at or above reporting limit.

TNMOC = Total Non-Methane Organic Carbon.

TNMOC uncorr* = TNMOC concentration in sample without nitrogen/moisture correction.

NA = Nitrogen/moisture correction causes division by zero.

Reviewed/Approved By: _____

Mark Johnson
Operations Manager

Date: _____

4/14/16

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



AirTECHNOLOGY Laboratories, Inc.

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

Client: Republic Services
Attn: Nick Bauer
Project Name: Bridgeton Landfill
Project No.: NA
Date Received: 04/13/16
Matrix: Air
Reporting Units: ppmv

Page 5 of 6
 H041302

EPA 15/16

Lab No.:	H041302-01		H041302-02		H041302-03		H041302-04	
Client Sample I.D.:	Blower Outlet 1		Blower Outlet 2		EP14 NQ		EP14 NQ-2	
Date/Time Sampled:	4/12/16 15:23		4/12/16 15:48		4/12/16 15:15		4/12/16 15:43	
Date/Time Analyzed:	4/13/16 14:17		4/13/16 13:32		4/13/16 14:57		4/13/16 15:33	
QC Batch No.:	160413GC3A1		160413GC3A1		160413GC3A1		160413GC3A1	
Analyst Initials:	AS		AS		AS		AS	
Dilution Factor:	3.4		3.0		3.2		3.2	
ANALYTE	Result ppmv	RL ppmv	Result ppmv	RL ppmv	Result ppmv	RL ppmv	Result ppmv	RL ppmv
Hydrogen Sulfide	8.8	0.67	46 d	5.9	31 d	6.3	ND	0.63
Carbonyl Sulfide	ND	0.67	ND	0.59	ND	0.63	ND	0.63
Methyl Mercaptan	180 d	6.7	170 d	5.9	7.5	0.63	5.6	0.63
Ethyl Mercaptan	2.3	0.67	2.4	0.59	ND	0.63	ND	0.63
Dimethyl Sulfide	1,300 d	67.0	940 d	59.0	110 d	6.3	110 d	6.3
Carbon Disulfide	0.71	0.67	0.65	0.59	ND	0.63	ND	0.63
Dimethyl Disulfide	100 d	6.7	94 d	5.9	8.5	0.63	9.0	0.63
Total Reduced Sulfur	1,700	0.67	1,300	0.59	170	0.63	130	0.63

ND = Not Detected (below RL)

RL = Reporting Limit

d = Reported from a secondary dilution

Reviewed/Approved By: Mark Johnson
 Mark Johnson
 Operations Manager

Date 4/14/16

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.: 160413GC3A1
Matrix: Air
Units: ppmv

Page 6 of 6
H041302

QC for Sulfur Compounds by EPA 15/16

Lab No.:	Method Blank		LCS		LCSD			
Date/Time Analyzed:	4/13/16 13:20		4/13/16 12:55		4/13/16 13:08			
Analyst Initials:	AS		AS		AS			
Datafile:	13apr003		13apr001		13apr002			
Dilution Factor:	1.0		1.0		1.0			
ANALYTE	Results	RL	% Rec.	Criteria	% Rec.	Criteria	%RPD	Criteria
Hydrogen Sulfide	ND	0.20	88	70-130%	87	70-130%	0.8	<30
Carbonyl Sulfide	ND	0.20	96	70-130%	93	70-130%	2.6	<30
Methyl Mercaptan	ND	0.20	86	70-130%	89	70-130%	3.7	<30
Ethyl Mercaptan	ND	0.20	92	70-130%	92	70-130%	0.3	<30
Dimethyl Sulfide	ND	0.20	95	70-130%	95	70-130%	0.7	<30
Carbon Disulfide	ND	0.20	89	70-130%	91	70-130%	2.0	<30
Dimethyl Disulfide	ND	0.20	100	70-130%	96	70-130%	4.1	<30

ND = Not Detected (Below RL)

RL = Reporting Limit

Reviewed/Approved By: _____

Mark J. Johnson
Operations Manager

Date: _____

4/14/16

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Kurz FM = 2,660 scfm
Fleetzoom Total = 2,749 scfm $\Delta = 3.2\%$

PARAMETER		Outlet A	Outlet B
Date	Test Date		4/7/16
Time	Start - Finish	14:21	14:31
%CH ₄	Methane, %	6.70	7.50
%CO ₂	Carbon Dioxide, %	31.40	36.00
%O ₂	Oxygen, %	10.30	8.50
%Balance	Assumed as Nitrogen, %	41.60	35.90
%H ₂	Hydrogen, %	9.10	10.80
%CO	Carbon Monoxide, %	0.089	0.100
P _g	Flue Gas Static Pressure, inches of H ₂ O	21.31	21.31
t _s	Blower Outlet LFG Temperature, °F	90	90
Q _{sd}	Dry Volumetric Flow Rate, dry scfm (assumes 5%H ₂ O)	2,527	
Q _s	Kurz FM, Standard Volumetric Flow Rate, scfm	2,660	
NHV	Net Heating Value, Btu/scf	105.8	125.6
LFG _{CH₄}	Methane, lb/hr	423.1	473.7
	Methane, grains/dscf	19.53	21.87
LFG _{CO₂}	Carbon Dioxide, lb/hr	5,440.1	6,237.1
	Carbon Dioxide, grains/dscf	251.14	287.93
LFG _{O₂}	Oxygen, lb/hr	1,297.5	1,070.7
	Oxygen, grains/dscf	59.90	49.43
LFG _{N₂}	Balance gas as Nitrogen, lb/hr	4,587.7	3,959.1
	Balance gas as Nitrogen, grains/dscf	211.79	182.77
LFG _{H₄}	Hydrogen, lb/hr	72.2	85.7
	Hydrogen, grains/dscf	3.33	3.96
LFG _{CO}	Carbon Monoxide, lb/hr	9.8	11.0
	Carbon Monoxide, grains/dscf	0.43	0.48
		Outlet A	Outlet B
H ₂ S	Hydrogen Sulfide Concentration, ppm	22.00	0.59
	Hydrogen Sulfide Rate, lb/hr	0.30	0.01
	Hydrogen Sulfide Rate, grains/dscf	0.014	0.000
COS	Carbonyl Sulfide Concentration, ppm	0.59	0.59
	Carbonyl Sulfide Rate, lb/hr	0.01	0.01
	Carbonyl Sulfide Rate, grains/dscf	0.001	0.001
CH ₄ S	Methyl Mercaptan Concentration, ppm	150.00	120.00
	Methyl Mercaptan Rate, lb/hr	2.84	2.27
	Methyl Mercaptan Rate, grains/dscf	0.131	0.105
C ₂ H ₆ S	Ethyl Mercaptan Concentration, ppm	2.10	1.80
	Ethyl Mercaptan Rate, lb/hr	0.05	0.04
	Ethyl Mercaptan Rate, grains/dscf	0.002	0.002
(CH ₃) ₂ S	Dimethyl Sulfide Concentration, ppm	800.00	800.00
	Dimethyl Sulfide Rate, lb/hr	19.57	19.57
	Dimethyl Sulfide Rate, grains/dscf	0.903	0.903
CS ₂	Carbon Disulfide Concentration, ppm	0.59	0.59
	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, ppm	29.00	28.00
	Dimethyl Disulfide Rate, lb/hr	1.08	1.04
	Dimethyl Disulfide Rate, grains/dscf	0.050	0.048
①E _{TRS-SO₂}	TRS-->SO ₂ Emission Concentration, ppm	1,000.00	980.00
	TRS-->SO ₂ Emission Rate, lb/hr	25.22	24.72
	TRS-->SO ₂ Emission Rate, grains/dscf	1.164	1.141
TPY =		110.46	108.25
① TRS assumed molecular mass = SO ₂ , 64.06 gram/mole, i.e. 1 TRS in LFG assumed to = 1 SO ₂ emitted from the stack			



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

CHAIN OF CUSTODY RECORD

TURNAROUND TIME

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

DELIVERABLES

EDD ☐
EDF ☐
Level 3 ☐
Level 4 ☐

PAGE: 1 OF 1

Condition upon receipt:

Sealed Yes ☐ No ☐
Intact Yes ☐ No ☐
Chilled _____ deg C

BILLING

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

ANALYSIS REQUEST

EPA 15/16 + TRS

ASTM 1946 +H2 + CO &
BTU/SCF

ASTM 1946 +H2 + CO &
BTU/SCF (by CH4 ONLY)

LAB USE ONLY

Canister Pressures ("hg)

Canister ID	Sample Start	Sample End	Lab Receive	
H040805-01	J1721	-19.9	-3.5	-4
-02	1539	-19.7	-3.5	-4
-03	1616	-20.2	-3.5	-4
-04	J1717	-18.9	-3.5	-4

SAMPLE IDENTIFICATION

SAMPLE DATE	SAMPLE TIME	CONTAINER QTY/TYPE	MATRIX	PRESERVATION
4/7/2016	1421	C	LFG	NA
4/7/2016	1431	C	LFG	NA
4/7/2016	1333	C	LFG	NA
4/7/2016	1343	C	LFG	NA

Outlet A

Outlet B

NQ Outlet #1

NQ Outlet #2

X

X

X

X

X

X

X

X

AUTHORIZATION TO PERFORM WORK: Dave Penoyer

COMPANY: Republic Services

DATE/TIME:

COMMENTS

SAMPLED BY: Ryan Ayers

COMPANY: Republic Services

DATE/TIME

RELINQUISHED BY: Ryan Ayers

4-7-16 1500

DATE/RECEIVED BY

DATE/TIME

RELINQUISHED BY: JED

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

Client: Republic Services
Attn: Nick Bauer
Project Name: Bridgeton Landfill
Project No.: NA
Date Received: 04/08/16
Matrix: Air
Reporting Units: ppmv

EPA 15/16

Lab No.:	H040805-01		H040805-02		H040805-03		H040805-04	
Client Sample I.D.:	Outlet A		Outlet B		NQ Outlet #1		NQ Outlet #2	
Date/Time Sampled:	4/7/16 14:21		4/7/16 14:31		4/7/16 13:33		4/7/16 13:43	
Date/Time Analyzed:	4/8/16 14:31		4/8/16 13:55		4/8/16 15:08		4/8/16 15:33	
QC Batch No.:	160408GC3A1		160408GC3A1		160408GC3A1		160408GC3A1	
Analyst Initials:	AS		AS		AS		AS	
Dilution Factor:	3.0		3.0		3.0		3.0	
ANALYTE	Result ppmv	RL ppmv	Result ppmv	RL ppmv	Result ppmv	RL ppmv	Result ppmv	RL ppmv
Hydrogen Sulfide	22 d	5.9	ND	0.59	ND	0.59	ND	0.59
Carbonyl Sulfide	ND	0.59	ND	0.59	ND	0.59	ND	0.59
Methyl Mercaptan	150 d	5.9	120 d	5.9	ND	0.59	2.5	0.59
Ethyl Mercaptan	2.1	0.59	1.8	0.59	ND	0.59	ND	0.59
Dimethyl Sulfide	800 d	59.0	800 d	59.0	48 d	5.9	50 d	5.9
Carbon Disulfide	ND	0.59	ND	0.59	ND	0.59	ND	0.59
Dimethyl Disulfide	29	0.59	28	0.59	7.3	0.59	4.7	0.59
Total Reduced Sulfur	1,000	0.59	980	0.59	64	0.59	62	0.59

ND = Not Detected (below RL)

RL = Reporting Limit

d = Reported from a secondary dilution

Reviewed/Approved By:



Mark Johnson
 Operations Manager

Date 4-12-16

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.: 160408GC3A1
Matrix: Air
Units: ppmv


QC for Sulfur Compounds by EPA 15/16

Lab No.:	Method Blank		LCS		LCSD			
Date/Time Analyzed:	4/8/16 9:36		4/8/16 9:11		4/8/16 9:23			
Analyst Initials:	AS		AS		AS			
Datafile:	08apr003		08apr001		08apr002			
Dilution Factor:	1.0		1.0		1.0			
ANALYTE	Results	RL	% Rec.	Criteria	% Rec.	Criteria	%RPD	Criteria
Hydrogen Sulfide	ND	0.20	84	70-130%	84	70-130%	0.1	<30
Carbonyl Sulfide	ND	0.20	89	70-130%	89	70-130%	0.4	<30
Methyl Mercaptan	ND	0.20	85	70-130%	85	70-130%	1.0	<30
Ethyl Mercaptan	ND	0.20	87	70-130%	84	70-130%	2.6	<30
Dimethyl Sulfide	ND	0.20	87	70-130%	87	70-130%	0.1	<30
Carbon Disulfide	ND	0.20	88	70-130%	88	70-130%	0.3	<30
Dimethyl Disulfide	ND	0.20	90	70-130%	92	70-130%	2.1	<30

ND = Not Detected (Below RL)

RL = Reporting Limit

Reviewed/Approved By:


Mark J. Johnson
Operations Manager

Date: 4-12-16

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



AirTECHNOLOGY Laboratories, Inc.

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

Client: Republic Services
Attn: Nick Bauer
Project Name: Bridgeton Landfill
Project No.: NA
Date Received: 04/08/16
Matrix: Air
Reporting Units: % v/v

ASTM D1946

Lab No.:	H040805-01	H040805-02		
Client Sample I.D.:	Outlet A	Outlet B		
Date/Time Sampled:	4/7/16 14:21	4/7/16 14:31		
Date/Time Analyzed:	4/8/16 14:50	4/8/16 15:05		
QC Batch No.:	160408GC8A1	160408GC8A1		
Analyst Initials:	AS	AS		
Dilution Factor:	3.0	3.0		
ANALYTE	Result % v/v	RL % v/v	Result % v/v	RL % v/v
Hydrogen	9.1	3.0	10.8	3.0
Carbon Dioxide	31.4	0.030	36.0	0.030
Oxygen/Argon	10.3	1.5	8.5	1.5
Nitrogen	41.6	3.0	35.9	3.0
Methane	6.7	0.0030	7.5	0.0030
Carbon Monoxide	0.089	0.0030	0.10	0.0030
Net Heating Value (BTU/ft3)	105.8	3.0	125.6	3.0
Gross Heating Value (BTU/ft3)	120.4	3.0	142.9	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

4-12-16

The cover letter is an integral part of this analytical report



Client: Republic Services
Attn: Nick Bauer
Project Name: Bridgeton Landfill
Project No.: NA
Date Received: 04/08/16
Matrix: Air
Reporting Units: % v/v

ASTM D1946

Lab No.:	H040805-03	H040805-04		
Client Sample I.D.:	NQ Outlet #1	NQ Outlet #2		
Date/Time Sampled:	4/7/16 13:33	4/7/16 13:43		
Date/Time Analyzed:	4/8/16 15:20	4/8/16 15:35		
QC Batch No.:	160408GC8A1	160408GC8A1		
Analyst Initials:	AS	AS		
Dilution Factor:	3.0	3.0		
ANALYTE	Result % v/v	RL % v/v	Result % v/v	RL % v/v
Hydrogen	ND	3.0	ND	3.0
Carbon Dioxide	31.0	0.030	30.5	0.030
Oxygen/Argon	5.2	1.5	5.3	1.5
Nitrogen	23.9	3.0	25.6	3.0
Methane	39.0	0.0030	37.7	0.0030
Carbon Monoxide	0.0032	0.0030	ND	0.0030
Net Heating Value (BTU/ft3) methane only	354.7	3.0	343.1	3.0
Gross Heating Value (BTU/ft3) methane only	393.9	3.0	381.1	3.0

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

Reviewed/Approved By: _____

Mark Johnson
 Operations Manager

Date

4-12-16

The cover letter is an integral part of this analytical report



QC Batch No.: 160408GC8A1

Matrix: Air

Units: % v/v

QC for ASTM D1946

Lab No.:	Method Blank		LCS		LCSD			
Date/Time Analyzed:	4/8/16 13:15		4/8/16 10:16		4/8/16 10:30			
Analyst Initials:	AS		AS		AS			
Datafile:	08apr009		08apr006		08apr007			
Dilution Factor:	1.0		1.0		1.0			
ANALYTE	Results	RL	% Rec.	Criteria	% Rec.	Criteria	%RPD	Criteria
Hydrogen	ND	1.0	97	70-130%	95	70-130%	2.7	<30
Carbon Dioxide	ND	0.010	96	70-130%	92	70-130%	3.8	<30
Oxygen/Argon	ND	0.50	103	70-130%	99	70-130%	3.2	<30
Nitrogen	ND	1.0	102	70-130%	99	70-130%	3.0	<30
Methane	ND	0.0010	109	70-130%	108	70-130%	0.7	<30
Carbon Monoxide	ND	0.0010	116	70-130%	115	70-130%	0.6	<30

ND = Not Detected (Below RL)

Reviewed/Approved By:



Mark J. Johnson
Operations Manager

Date:

4-12-16

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

Kurz FM = **2,783** scfm
Fleetzoom Total = **2,932** scfm $\Delta = 5.1\%$

PARAMETER		Outlet A	Outlet B
Date	Test Date		3/29/16
Time	Start - Finish	15:32	15:41
%CH ₄	Methane, %	7.80	7.30
%CO ₂	Carbon Dioxide, %	33.80	32.90
%O ₂	Oxygen, %	9.60	9.80
%Balance	Assumed as Nitrogen, %	38.70	39.40
%H ₂	Hydrogen, %	9.00	9.50
%CO	Carbon Monoxide, %	0.092	0.089
P _g	Flue Gas Static Pressure, inches of H ₂ O	28.54	28.54
t _s	Blower Outlet LFG Temperature, °F	103	103
Q _{sd}	Dry Volumetric Flow Rate, dry scfm (assumes 5%H ₂ O)	2,643	
Q _s	Kurz FM, Standard Volumetric Flow Rate, scfm	2,783	
NHV	Net Heating Value, Btu/scf	117.7	116.6
LFG _{CH₄}	Methane, lb/hr	515.3	482.2
	Methane, grains/dscf	22.74	21.28
LFG _{CO₂}	Carbon Dioxide, lb/hr	6,125.2	5,962.1
	Carbon Dioxide, grains/dscf	270.33	263.13
LFG _{O₂}	Oxygen, lb/hr	1,264.9	1,291.3
	Oxygen, grains/dscf	55.83	56.99
LFG _{N₂}	Balance gas as Nitrogen, lb/hr	4,464.1	4,544.9
	Balance gas as Nitrogen, grains/dscf	197.02	200.58
LFG _{H₄}	Hydrogen, lb/hr	74.7	78.9
	Hydrogen, grains/dscf	3.30	3.48
LFG _{CO}	Carbon Monoxide, lb/hr	10.6	10.3
	Carbon Monoxide, grains/dscf	0.44	0.43
		Outlet A	Outlet B
H ₂ S	Hydrogen Sulfide Concentration, ppm	16.00	25.00
	Hydrogen Sulfide Rate, lb/hr	0.22	0.35
	Hydrogen Sulfide Rate, grains/dscf	0.010	0.015
COS	Carbonyl Sulfide Concentration, ppm	0.58	0.56
	Carbonyl Sulfide Rate, lb/hr	0.01	0.01
	Carbonyl Sulfide Rate, grains/dscf	0.001	0.001
CH ₄ S	Methyl Mercaptan Concentration, ppm	150.00	140.00
	Methyl Mercaptan Rate, lb/hr	2.97	2.77
	Methyl Mercaptan Rate, grains/dscf	0.131	0.122
C ₂ H ₆ S	Ethyl Mercaptan Concentration, ppm	1.90	2.00
	Ethyl Mercaptan Rate, lb/hr	0.05	0.05
	Ethyl Mercaptan Rate, grains/dscf	0.002	0.002
(CH ₃) ₂ S	Dimethyl Sulfide Concentration, ppm	700.00	740.00
	Dimethyl Sulfide Rate, lb/hr	17.91	12.03
	Dimethyl Sulfide Rate, grains/dscf	0.790	0.531
CS ₂	Carbon Disulfide Concentration, ppm	0.58	0.56
	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, ppm	28.00	28.00
	Dimethyl Disulfide Rate, lb/hr	1.09	1.09
	Dimethyl Disulfide Rate, grains/dscf	0.048	0.048
①E _{TRS-SO₂}	TRS-->SO ₂ Emission Concentration, ppm	920.00	970.00
	TRS-->SO ₂ Emission Rate, lb/hr	24.27	25.59
	TRS-->SO ₂ Emission Rate, grains/dscf	1.071	1.129
TPY =		106.30	112.08
① TRS assumed molecular mass = SO ₂ , 64.06 gram/mole, i.e. 1 TRS in LFG assumed to = 1 SO ₂ emitted from the stack			

April 5, 2016

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



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



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

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

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

LABORATORY TEST RESULTS

Project Reference: Bridgeton Landfill
Lab Number: H033002-01/04

Enclosed are results for sample(s) received 3/30/16 by Air Technology Laboratories. Samples were received intact. Analyses were performed according to specifications on the chain of custody provided with the sample(s).

Report Narrative:

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

Preliminary results were e-mailed to Nicholas Bauer, Mike Lambrich, Ryan Ayer, Jim Getting and David Randall, Weaver Consultants Group, on 4/01/16.

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

Sincerely,



Mark Johnson
Operations Manager
MJohnson@AirTechLabs.com

Enclosures

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



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

CHAIN OF CUSTODY RECORD

TURNAROUND TIME

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

DELIVERABLES

EDD ☐
EDF ☐
Level 3 ☐
Level 4 ☐

PAGE: 1 OF 1

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

Project No.:
Project Name: Bridgeton Landfill
Report To: Jim Getting Nicholas Bauer go 313016
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

BILLING

P.O. No.: PO4862452 5544160
Bill to: Republic Services go 313016
Attn: Jim Getting
13570 St. Charles Rock Rd.
Bridgeton, MO 63044

ANALYSIS REQUEST

EPA 15/16 + TRS & ASTM1946
+ H2, CO, BTU go 313016

LAB USE ONLY

Canister Pressures ("hg)

Canister ID Sample Start Sample End Lab Receive

SAMPLE IDENTIFICATION

SAMPLE
DATE

SAMPLE
TIME

CONTAINER
QTY/TYPE

MATRIX

PRESERVA-
TION

HD33002-01	1536	-20.2	-3.5	-3.5	Outlet A	3/29/2016	1532	C	LFG	NA	X						
02	1621	-19.6	-3.5	-3	Outlet B	3/29/2016	1541	C	LFG	NA	X						
03	1619	-19.8	-3.5	-3	NQ Outlet #1	3/29/2016	1458	C	LFG	NA	X						
04	J17189	-19.7	-3.5	-3.5	NQ Outlet #2	3/29/2016	1507	C	LFG	NA	X						

AUTHORIZATION TO PERFORM WORK: Dave Penoyer

COMPANY: Republic Services

DATE/TIME:

SAMPLED BY: Ryan Ayers

COMPANY: Republic Services

DATE/TIME

RELINQUISHED BY: Ryan Ayers

3-29-16 1600

DATE/RECEIVED BY

DATE/TIME

RELINQUISHED BY: Ted

3/30/16 0924

DATE/RECEIVED BY

DATE/TIME

RELINQUISHED BY:

DATE/RECEIVED BY

DATE/TIME

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

COMMENTS

OUTLET A/B BTU based on CH4, H2, CO and other C
NQ OUTLET BTU based on CH4 only, go for NIS
3/30/16 1423

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: Nicholas Bauer
Project Name: Bridgeton Landfill
Project No.: NA
Date Received: 03/30/16
Matrix: Air
Reporting Units: % v/v

ASTM D1946

Lab No.:	H033002-01	H033002-02						
Client Sample I.D.:	Outlet A	Outlet B						
Date/Time Sampled:	3/29/16 15:32	3/29/16 15:41						
Date/Time Analyzed:	3/30/16 15:11	3/30/16 15:26						
QC Batch No.:	160330GC8A1	160330GC8A1						
Analyst Initials:	AS	AS						
Dilution Factor:	2.9	2.8						
ANALYTE	Result % v/v	RL % v/v	Result % v/v	RL % v/v				
Hydrogen	9.0	2.9	9.5	2.8				
Carbon Dioxide	33.8	0.029	32.9	0.028				
Oxygen/Argon	9.6	1.4	9.8	1.4				
Nitrogen	38.7	2.9	39.4	2.8				
Methane	7.8	0.0029	7.3	0.0028				
Carbon Monoxide	0.092	0.0029	0.089	0.0028				
Net Heating Value (BTU/ft3)	117.7	2.9	116.6	2.8				
Gross Heating Value (BTU/ft3)	133.6	2.9	132.5	2.8				

Results normalized including non-methane hydrocarbons

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

ND = Not Detected (below RL)

RL = Reporting Limit

Reviewed/Approved By: Mark Johnson
Mark Johnson
Operations Manager

Date 4/1/16

The cover letter is an integral part of this analytical report



Client: Republic Services
Attn: Nicholas Bauer
Project Name: Bridgeton Landfill
Project No.: NA
Date Received: 03/30/16
Matrix: Air
Reporting Units: % v/v

Page 3 of 6
 H033002

ASTM D1946

Lab No.:	H033002-03	H033002-04		
Client Sample I.D.:	NQ Outlet #1	NQ Outlet #2		
Date/Time Sampled:	3/29/16 14:58	3/29/16 15:07		
Date/Time Analyzed:	3/30/16 15:40	3/30/16 15:55		
QC Batch No.:	160330GC8A1	160330GC8A1		
Analyst Initials:	AS	AS		
Dilution Factor:	2.8	2.9		
ANALYTE	Result % v/v	RL % v/v	Result % v/v	RL % v/v
Hydrogen	ND	2.8	ND	2.9
Carbon Dioxide	31.8	0.028	35.3	0.029
Oxygen/Argon	5.0	1.4	3.0	1.4
Nitrogen	21.6	2.8	15.5	2.9
Methane	40.5	0.0028	45.0	0.0029
Carbon Monoxide	0.0029	0.0028	ND	0.0029
Net Heating Value (BTU/ft3) methane only	368.4	2.8	409.5	2.9
Gross Heating Value (BTU/ft3) methane only	409.2	2.8	454.8	2.9

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

Reviewed/Approved By: Mark Johnson
 Mark Johnson
 Operations Manager

Date 4/1/16

The cover letter is an integral part of this analytical report



QC Batch No.: 160330GC8A1

Matrix: Air

Units: % v/v

QC for ASTM D1946

Lab No.:	Method Blank		LCS		LCSD			
Date/Time Analyzed:	3/30/16 9:28		3/30/16 8:44		3/30/16 8:58			
Analyst Initials:	AS		AS		AS			
Datafile:	30mar006		30mar003		30mar004			
Dilution Factor:	1.0		1.0		1.0			
ANALYTE	Results	RL	% Rec.	Criteria	% Rec.	Criteria	%RPD	Criteria
Hydrogen	ND	1.0	95	70-130%	96	70-130%	1.2	<30
Carbon Dioxide	ND	0.010	96	70-130%	97	70-130%	1.0	<30
Oxygen/Argon	ND	0.50	105	70-130%	105	70-130%	0.3	<30
Nitrogen	ND	1.0	103	70-130%	103	70-130%	0.1	<30
Methane	ND	0.0010	124	70-130%	123	70-130%	0.9	<30
Carbon Monoxide	ND	0.0010	112	70-130%	111	70-130%	0.4	<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

Client: Republic Services
Attn: Nicholas Bauer
Project Name: Bridgeton Landfill
Project No.: NA
Date Received: 03/30/16
Matrix: Air
Reporting Units: ppmv

Page 5 of 6
 H033002

EPA 15/16

Lab No.:	H033002-01		H033002-02		H033002-03		H033002-04	
Client Sample I.D.:	Outlet A		Outlet B		NQ Outlet #1		NQ Outlet #2	
Date/Time Sampled:	3/29/16 15:32		3/29/16 15:41		3/29/16 14:58		3/29/16 15:07	
Date/Time Analyzed:	3/31/16 9:09		3/31/16 9:56		3/31/16 10:34		3/31/16 11:00	
QC Batch No.:	160331GC3A1		160331GC3A1		160331GC3A1		160331GC3A1	
Analyst Initials:	AS		AS		AS		AS	
Dilution Factor:	2.9		2.8		2.8		2.9	
ANALYTE	Result ppmv	RL ppmv	Result ppmv	RL ppmv	Result ppmv	RL ppmv	Result ppmv	RL ppmv
Hydrogen Sulfide	16 d	5.8	25 d	5.6	32 d	5.6	50 d	5.8
Carbonyl Sulfide	ND	0.58	ND	0.56	ND	0.56	ND	0.58
Methyl Mercaptan	150 d	5.8	140 d	5.6	5.2	0.56	5.9	0.58
Ethyl Mercaptan	1.9	0.58	2.0	0.56	ND	0.56	ND	0.58
Dimethyl Sulfide	700 d	58.0	740 d	56.0	50 d	5.6	58 d	5.8
Carbon Disulfide	ND	0.58	ND	0.56	ND	0.56	ND	0.58
Dimethyl Disulfide	28	0.58	28	0.56	4.6	0.56	5.2	0.58
Total Reduced Sulfur	920	0.58	970	0.56	97	0.56	120	0.58

ND = Not Detected (below RL)

RL = Reporting Limit

d = Reported from a secondary dilution

Reviewed/Approved By: _____

Mark Johnson

Mark Johnson
Operations Manager

Date 4/1/16

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.: 160331GC3A1
Matrix: Air
Units: ppmv

Page 6 of 6
H033002

QC for Sulfur Compounds by EPA 15/16

Lab No.:	Method Blank		LCS		LCSD			
Date/Time Analyzed:	3/31/16 8:57		3/31/16 8:18		3/31/16 8:30			
Analyst Initials:	AS		AS		AS			
Datafile:	31mar004		31mar001		31mar002			
Dilution Factor:	1.0		1.0		1.0			
ANALYTE	Results	RL	% Rec.	Criteria	% Rec.	Criteria	%RPD	Criteria
Hydrogen Sulfide	ND	0.20	88	70-130%	87	70-130%	0.9	<30
Carbonyl Sulfide	ND	0.20	98	70-130%	95	70-130%	2.9	<30
Methyl Mercaptan	ND	0.20	82	70-130%	82	70-130%	0.4	<30
Ethyl Mercaptan	ND	0.20	107	70-130%	105	70-130%	2.2	<30
Dimethyl Sulfide	ND	0.20	82	70-130%	82	70-130%	0.7	<30
Carbon Disulfide	ND	0.20	85	70-130%	85	70-130%	0.6	<30
Dimethyl Disulfide	ND	0.20	91	70-130%	89	70-130%	2.1	<30

ND = Not Detected (Below RL)

RL = Reporting Limit

Reviewed/Approved By: _____

Mark J. Johnson
Operations Manager

Date: _____

4/1/16

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
SOUTH QUARRY LFG ONLY		
Date	Test Date	3/23/16
Start	Run Start Time	7:45
	Run Finish Time	8:44
	Net Traversing Points	8 (2 x 4)
⊖	Net Run Time, minutes	0:59:45
C _p	Pitot Tube Coefficient	0.99
P _{Br}	Barometric Pressure, inches of Mercury	29.36
% H ₂ O	Moisture Content of LFG, %	1.74
% RH	Relative Humidity, %	58.10
M _{fd}	Dry Mole Fraction	0.983
%CH ₄	Methane, %	7.90
%CO ₂	Carbon Dioxide, %	38.00
%O ₂	Oxygen, %	8.20
%Balance	Assumed as Nitrogen, %	33.20
%H ₂	Hydrogen, %	11.70
%CO	Carbon Monoxide, %	0.12
M _d	Dry Molecular Weight, lb/lb-Mole	30.18
M _s	Wet Molecular weight, lb/lb-Mole	29.97
P _g	Flue Gas Static Pressure, inches of H ₂ O	18.90
P _s	Absolute Flue Gas Pressure, inches of Mercury	30.71
t _s	Average Stack Gas Temperature, °F	77
ΔP _{avg}	Average Velocity Head, inches of H ₂ O	0.209
v _s	Average LFG Velocity, feet/second	29.54
A _s	Stack Crosssectional Area, square feet	1.35
Q _{sd}	Dry Volumetric Flow Rate, dry scfm	2,380
Q _s	Standard Volumetric Flow Rate, scfm	2,422
Q _{aw}	Actual Wet Volumetric Flue Gas Flow Rate, acfm	2,398
Q _{lb/hr}	Dry Air Flow Rate at Standard Conditions, lb/hr	11,186
NHV	Net Heating Value, Btu/scf	127
LFG_{CH4}		
	Methane, lb/hr	469.9
	Methane, grains/dscf	23.03
LFG_{CO2}		
	Carbon Dioxide, lb/hr	6,200.8
	Carbon Dioxide, grains/dscf	303.92
LFG_{O2}		
	Oxygen, lb/hr	972.9
	Oxygen, grains/dscf	47.69
LFG_{N2}		
	Balance gas as Nitrogen, lb/hr	3,448.4
	Balance gas as Nitrogen, grains/dscf	169.02
LFG_{H4}		
	Hydrogen, lb/hr	87.5
	Hydrogen, grains/dscf	4.29
LFG_{CO}		
	Carbon Monoxide, lb/hr	10.4
	Carbon Monoxide, grains/dscf	0.51

		Outlet A	Outlet B
H₂S	Hydrogen Sulfide Concentration, ppm	18.00	31.00
	Hydrogen Sulfide Rate, lb/hr	0.23	0.39
	Hydrogen Sulfide Rate, grains/dscf	0.011	0.019
COS	Carbonyl Sulfide Concentration, ppm	0.63	0.59
	Carbonyl Sulfide Rate, lb/hr	0.01	0.01
	Carbonyl Sulfide Rate, grains/dscf	0.001	0.001
CH₄S	Methyl Mercaptan Concentration, ppm	160.00	160.00
	Methyl Mercaptan Rate, lb/hr	2.85	2.85
	Methyl Mercaptan Rate, grains/dscf	0.140	0.140
C₂H₆S	Ethyl Mercaptan Concentration, ppm	2.20	2.60
	Ethyl Mercaptan Rate, lb/hr	0.05	0.06
	Ethyl Mercaptan Rate, grains/dscf	0.002	0.003
(CH₃)₂S	Dimethyl Sulfide Concentration, ppm	1,200.00	1,000.00
	Dimethyl Sulfide Rate, lb/hr	27.65	23.04
	Dimethyl Sulfide Rate, grains/dscf	1.355	1.129
CS₂	Carbon Disulfide Concentration, ppm	0.63	0.59
	Carbon Disulfide Rate, lb/hr	0.02	0.02
	Carbon Disulfide Rate, grains/dscf	0.001	0.001
C₂H₆S₂	Dimethyl Disulfide Concentration, ppm	82.00	63.00
	Dimethyl Disulfide Rate, lb/hr	2.86	1.78
	Dimethyl Disulfide Rate, grains/dscf	0.140	0.087
①E_{TRS-SO2}	TRS-->SO2 Emission Concentration, ppm	1,600.00	1,300.00
	TRS-->SO2 Emission Rate, lb/hr	38.01	30.88
	TRS-->SO2 Emission Rate, grains/dscf	1.863	1.514

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

Wednesday, March 23, 2016

LOCATION	TIME	FLOW -SCFM			Method 2 vs. Fleetzoom	Method 2 vs Kurz
		Method 2	FleetZoom	Kurz FM		
BLOWER OUT	7:45	2,422	2,413	2,388	0.4%	1.4%

PARAMETER		Blower Out
EP14 NORTH QUARRY LFG ONLY		
Date	Test Date	3/23/16
Start	Run Start Time	9:17
	Run Finish Time	10:37
	Net Traversing Points	8 (2 x 4)
Θ	Net Run Time, minutes	1:20:00
C_p	Pitot Tube Coefficient	0.99
P_{Br}	Barometric Pressure, inches of Mercury	29.36
% H_2O	Moisture Content of LFG, %	1.85
% RH	Relative Humidity, %	58.10
M_{fd}	Dry Mole Fraction	0.982
% CH_4	Methane, %	46.20
% CO_2	Carbon Dioxide, %	36.40
% O_2	Oxygen, %	2.70
% Balance	Assumed as Nitrogen, %	14.00
% H_2	Hydrogen, %	0.57
% CO	Carbon Monoxide, %	0.00
M_d	Dry Molecular Weight, lb/lb-Mole	28.23
M_s	Wet Molecular weight, lb/lb-Mole	28.04
P_g	Flue Gas Static Pressure, inches of H_2O	1.84
P_s	Absolute Flue Gas Pressure, inches of Mercury	29.49
t_s	Average Stack Gas Temperature, °F	77
ΔP_{avg}	Average Velocity Head, inches of H_2O	0.018
v_s	Average LFG Velocity, feet/second	9.12
A_s	Stack Crosssectional Area, square feet	0.55
Q_{sd}	Dry Volumetric Flow Rate, dry scfm	284
Q_s	Standard Volumetric Flow Rate, scfm	289
Q_{aw}	Actual Wet Volumetric Flue Gas Flow Rate, acfm	298
$Q_{lb/hr}$	Dry Air Flow Rate at Standard Conditions, lb/hr	1,249
NHV	Net Heating Value, Btu/scf	420
LFG_{CH_4}	Methane, lb/hr	328.1
	Methane, grains/dscf	134.69
LFG_{CO_2}	Carbon Dioxide, lb/hr	709.2
	Carbon Dioxide, grains/dscf	291.13
LFG_{O_2}	Oxygen, lb/hr	38.2
	Oxygen, grains/dscf	15.70
LFG_{N_2}	Balance gas as Nitrogen, lb/hr	173.6
	Balance gas as Nitrogen, grains/dscf	71.27
LFG_{H_4}	Hydrogen, lb/hr	0.5
	Hydrogen, grains/dscf	0.20
LFG_{CO}	Carbon Monoxide, lb/hr	0.1
	Carbon Monoxide, grains/dscf	0.02

		Outlet A	Outlet B
H_2S	Hydrogen Sulfide Concentration, ppmd	40.00	0.59
	Hydrogen Sulfide Rate, lb/hr	0.06	0.00
	Hydrogen Sulfide Rate, grains/dscf	0.025	0.000
COS	Carbonyl Sulfide Concentration, ppmd	0.59	0.59
	Carbonyl Sulfide Rate, lb/hr	0.00	0.00
	Carbonyl Sulfide Rate, grains/dscf	0.001	0.001
CH_4S	Methyl Mercaptan Concentration, ppmd	9.70	0.85
	Methyl Mercaptan Rate, lb/hr	0.02	0.00
	Methyl Mercaptan Rate, grains/dscf	0.008	0.001
C_2H_6S	Ethyl Mercaptan Concentration, ppmd	0.59	0.59
	Ethyl Mercaptan Rate, lb/hr	0.00	0.00
	Ethyl Mercaptan Rate, grains/dscf	0.001	0.001
$(CH_3)_2S$	Dimethyl Sulfide Concentration, ppmd	80.00	76.00
	Dimethyl Sulfide Rate, lb/hr	0.22	0.21
	Dimethyl Sulfide Rate, grains/dscf	0.090	0.086
CS_2	Carbon Disulfide Concentration, ppmd	0.59	0.59
	Carbon Disulfide Rate, lb/hr	0.00	0.00
	Carbon Disulfide Rate, grains/dscf	0.001	0.001
$C_2H_6S_2$	Dimethyl Disulfide Concentration, ppmd	8.30	12.00
	Dimethyl Disulfide Rate, lb/hr	0.03	0.04
	Dimethyl Disulfide Rate, grains/dscf	0.014	0.017
$\textcircled{1}E_{TRS-SO_2}$	TRS-->SO2 Emission Concentration, ppmd	150.00	100.00
	TRS-->SO2 Emission Rate, lb/hr	0.43	0.28
	TRS-->SO2 Emission Rate, grains/dscf	0.175	0.116

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

Wednesday, March 23, 2016

LOCATION	TIME	FLOW -SCFM		Method 2 vs. Fleetzoom
		Method 2	FleetZoom	
EP14 NQ GAS	9:17	289	294	-1.5%

March 31, 2016

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



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



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

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

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

LABORATORY TEST RESULTS

Project Reference: Bridgeton Landfill
Lab Number: H032401-01/04

Enclosed are results for sample(s) received 3/24/16 by Air Technology Laboratories. Samples were received intact. Analyses were performed according to specifications on the chain of custody provided with the sample(s).

Report Narrative:

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

Preliminary results were e-mailed to Jim Getting, Mike Lambrich, Ryan Ayer, Nicholas Bauer and David Randall, Weaver Consultants Group, on 3/25/16.

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

Sincerely,

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

Mark Johnson
Operations Manager
MJohnson@AirTechLabs.com

Enclosures

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



AIR TECHNOLOGY

Laboratories, Inc.

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

CHAIN OF CUSTODY RECORD

TURNAROUND TIME

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

DELIVERABLES

EDD ☐
EDF ☐
Level 3 ☐
Level 4 ☐

PAGE: 1 OF 1

Condition upon receipt:

Sealed Yes ☐ No ☐
Intact Yes ☐ No ☐
Chilled _____ deg C

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

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

ASTM 1946 +H2 + CO & BTU/SCF

ASTM 1946 +H2 + CO & BTU/SCF (by CH4 ONLY)*

LAB USE ONLY

Canister Pressures ("hg)

Canister ID Sample Start Sample End Lab Receive

SAMPLE IDENTIFICATION

SAMPLE DATE

SAMPLE TIME

CONTAINER QTY/TYPE

MATRIX

PRESERVATION

H032401-01	5988	-19.26	-3.87	-5	Blower Outlet 1	3/23/2016	755	C	LFG	NA	X	X				
-02	1615	-19.35	-3.61	-4	Blower Outlet 2	3/23/2016	829	C	LFG	NA	X	X				
-03	J1720	-19.25	-3.44	-4	EP14 NQ	3/23/2016	923	C	LFG	NA	X			X		
-04	1532	-19.97	-3.49	-4	EP14 NQ-2	3/23/2016	1021	C	LFG	NA	X			X		

AUTHORIZATION TO PERFORM WORK: Dave Penoyer

COMPANY: Republic Services

DATE/TIME:

SAMPLED BY: Ryan Ayers

COMPANY: Republic Services

DATE/TIME:

RELINQUISHED BY: *R. Ayers* 3-23-16 1400

DATE/RECEIVED BY: _____ DATE/TIME:

RELINQUISHED BY: *FED EX* DATE/RECEIVED BY: *[Signature]* 3/24/16 0909

DATE/RECEIVED BY: _____ DATE/TIME:

RELINQUISHED BY: _____ DATE/RECEIVED BY: _____ DATE/TIME:

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

COMMENTS: Blower Outlet NHV based on CH4, H2, CO, and other C. EP14 NQ NHV only CH4. * *

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: 03/24/16
Matrix: Air
Reporting Units: % v/v

Page 2 of 7
 H032401

ASTM D1946

Lab No.:	H032401-01	H032401-02		
Client Sample I.D.:	Blower Outlet 1	Blower Outlet 2		
Date/Time Sampled:	3/23/16 7:55	3/23/16 8:29		
Date/Time Analyzed:	3/24/16 10:57	3/24/16 11:12		
QC Batch No.:	160324GC8A1	160324GC8A1		
Analyst Initials:	AS	AS		
Dilution Factor:	3.2	3.0		
ANALYTE	Result % v/v	RL % v/v	Result % v/v	RL % v/v
Hydrogen	11.7	3.2	11.7	3.0
Carbon Dioxide	38.2	0.032	37.8	0.030
Oxygen/Argon	8.1	1.6	8.2	1.5
Nitrogen	32.9	3.2	33.4	3.0
Methane	8.0	0.0032	7.8	0.0030
Carbon Monoxide	0.12	0.0032	0.12	0.0030
Net Heating Value (BTU/ft3)	128	3.2	126	3.0
Gross Heating Value (BTU/ft3)	146	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

3-25-16

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: 03/24/16
Matrix: Air
Reporting Units: % v/v

Page 3 of 7
 H032401

ASTM D1946

Lab No.:	H032401-03	H032401-04		
Client Sample I.D.:	EP14 NQ	EP14 NQ-2		
Date/Time Sampled:	3/23/16 9:23	3/23/16 10:21		
Date/Time Analyzed:	3/24/16 12:17	3/24/16 12:31		
QC Batch No.:	160324GC8A1	160324GC8A1		
Analyst Initials:	AS	AS		
Dilution Factor:	3.0	3.0		
ANALYTE	Result % v/v	RL % v/v	Result % v/v	RL % v/v
Hydrogen	0.59 d	0.030	0.54 d	0.030
Carbon Dioxide	37.0	0.030	35.7	0.030
Oxygen/Argon	2.4	1.5	3.0	1.5
Nitrogen	13.0	3.0	15.0	3.0
Methane	46.8	0.0030	45.5	0.0030
Carbon Monoxide	0.0048	0.0030	0.0039	0.0030
Net Heating Value (BTU/ft3) methane only	425	3.0	413	3.0
Gross Heating Value (BTU/ft3) methane only	472	3.0	459	3.0

Results normalized including non-methane hydrocarbons
 BTU values based on D1946 analysis methane only
 ND = Not Detected (below RL)
 RL = Reporting Limit
 d = Reported from secondary analysis QC batch 160325GC8A1

Reviewed/Approved By: 
 Mark Johnson
 Operations Manager

Date 3-25-16

The cover letter is an integral part of this analytical report



QC Batch No.: 160324GC8A1

Matrix: Air

Units: % v/v

QC for ASTM D1946

Lab No.:	Method Blank		LCS		LCSD			
Date/Time Analyzed:	3/24/16 10:37		3/24/16 9:53		3/24/16 10:08			
Analyst Initials:	AS		AS		AS			
Datafile:	24mar010		24mar007		24mar008			
Dilution Factor:	1.0		1.0		1.0			
ANALYTE	Results	RL	% Rec.	Criteria	% Rec.	Criteria	%RPD	Criteria
Hydrogen	ND	1.0	109	70-130%	97	70-130%	11.6	<30
Carbon Dioxide	ND	0.010	99	70-130%	86	70-130%	13.3	<30
Oxygen/Argon	ND	0.50	98	70-130%	86	70-130%	13.0	<30
Nitrogen	ND	1.0	99	70-130%	87	70-130%	12.8	<30
Methane	ND	0.0010	96	70-130%	95	70-130%	1.4	<30
Carbon Monoxide	ND	0.0010	114	70-130%	113	70-130%	0.5	<30

ND = Not Detected (Below RL)

Reviewed/Approved By:



Mark J. Johnson
Operations Manager

Date:

3-25-16

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 # 160325GC8A1
Matrix: Air
Units: % v/v

Page 5 of 7
H032401

QC for Low Level Hydrogen Analysis

Lab No.:	Blank		LCS		LCSD			
Date Analyzed:	3/25/2016 10:14		3/25/2016 10:05		3/25/2016 10:09			
Analyst Initials:	MJ		MJ		MJ			
Dilution Factor:	1.0		1.0		1.0			
ANALYTE	Results	RL	%Rec	Criteria	%Rec	Criteria	RPD	Criteria
Hydrogen	ND	0.010	110	70-130	111	70-130	1.5	<20

ND = Not Detected (Below RL)

RL = PQL X Dilution Factor

Reviewed/Approved By:



Mark Johnson
Operations Manager

Date:

3-25-16

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: 03/24/16
Matrix: Air
Reporting Units: ppmv

Page 6 of 7
 H032401

EPA 15/16

Lab No.:	H032401-01		H032401-02		H032401-03		H032401-04	
Client Sample I.D.:	Blower Outlet 1		Blower Outlet 2		EP14 NQ		EP14 NQ-2	
Date/Time Sampled:	3/23/16 7:55		3/23/16 8:29		3/23/16 9:23		3/23/16 10:21	
Date/Time Analyzed:	3/25/16 10:11		3/25/16 10:23		3/25/16 10:35		3/25/16 10:58	
QC Batch No.:	160325GC3A1		160325GC3A1		160325GC3A1		160325GC3A1	
Analyst Initials:	MJ		MJ		MJ		MJ	
Dilution Factor:	3.2		3.0		3.0		3.0	
ANALYTE	Result ppmv	RL ppmv	Result ppmv	RL ppmv	Result ppmv	RL ppmv	Result ppmv	RL ppmv
Hydrogen Sulfide	18 d	6.3	31 d	5.9	40 d	5.9	ND	0.59
Carbonyl Sulfide	ND	0.63	ND	0.59	ND	0.59	ND	0.59
Methyl Mercaptan	160 d	6.3	160 d	5.9	9.7	0.59	0.85	0.59
Ethyl Mercaptan	2.2	0.63	2.6	0.59	ND	0.59	ND	0.59
Dimethyl Sulfide	1,200 d	63	1,000 d	59	80 d	5.9	76 d	5.9
Carbon Disulfide	ND	0.63	ND	0.59	ND	0.59	ND	0.59
Dimethyl Disulfide	82 d	6.3	63 d	5.9	8.3	0.59	12	0.59
Total Reduced Sulfur	1,600	0.63	1,300	0.59	150	0.59	100	0.59

ND = Not Detected (below RL)

RL = Reporting Limit

d = Reported from a secondary dilution

Reviewed/Approved By:



Mark Johnson
 Operations Manager

Date

3-25-16

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.: 160325GC3A1
Matrix: Air
Units: ppmv

Page 7 of 7
H032401


QC for Sulfur Compounds by EPA 15/16

Lab No.:	Method Blank		LCS		LCSD			
Date/Time Analyzed:	3/25/16 9:58		3/25/16 9:36		3/25/16 9:47			
Analyst Initials:	mj		mj		mj			
Datafile:	25mar003		25mar001		25mar002			
Dilution Factor:	1.0		1.0		1.0			
ANALYTE	Results	RL	% Rec.	Criteria	% Rec.	Criteria	%RPD	Criteria
Hydrogen Sulfide	ND	0.20	83	70-130%	81	70-130%	2.4	<30
Carbonyl Sulfide	ND	0.20	87	70-130%	87	70-130%	0.1	<30
Methyl Mercaptan	ND	0.20	83	70-130%	81	70-130%	1.6	<30
Ethyl Mercaptan	ND	0.20	85	70-130%	84	70-130%	0.6	<30
Dimethyl Sulfide	ND	0.20	85	70-130%	85	70-130%	0.0	<30
Carbon Disulfide	ND	0.20	86	70-130%	83	70-130%	4.2	<30
Dimethyl Disulfide	ND	0.20	89	70-130%	88	70-130%	0.3	<30

ND = Not Detected (Below RL)

RL = Reporting Limit

Reviewed/Approved By:


Mark J. Johnson
Operations Manager

Date:

3-25-16

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

Kurz FM = 3,138 scfm
Fleetzoom Total = 3,301 scfm $\Delta = 4.9\%$

PARAMETER		Outlet A	Outlet B
Date	Test Date		3/15/16
Time	Start - Finish	14:24	14:32
%CH ₄	Methane, %	11.00	11.50
%CO ₂	Carbon Dioxide, %	35.50	37.30
%O ₂	Oxygen, %	8.50	7.60
%Balance	Assumed as Nitrogen, %	34.80	32.00
%H ₂	Hydrogen, %	9.00	10.10
%CO	Carbon Monoxide, %	0.092	0.098
P _g	Flue Gas Static Pressure, inches of H ₂ O	44.08	44.08
t _s	Blower Outlet LFG Temperature, °F	122	122
Q _{sd}	Dry Volumetric Flow Rate, dry scfm (assumes 5%H ₂ O)	2,981	
Q _s	Kurz FM, Standard Volumetric Flow Rate, scfm	3,138	
NHV	Net Heating Value, Btu/scf	149.4	164.4
LFG _{CH4}	Methane, lb/hr	819.6	856.8
	Methane, grains/dscf	32.07	33.53
LFG _{CO2}	Carbon Dioxide, lb/hr	7,255.9	7,623.8
	Carbon Dioxide, grains/dscf	283.93	298.33
LFG _{O2}	Oxygen, lb/hr	1,263.2	1,129.4
	Oxygen, grains/dscf	49.43	44.20
LFG _{N2}	Balance gas as Nitrogen, lb/hr	4,527.5	4,163.2
	Balance gas as Nitrogen, grains/dscf	177.17	162.91
LFG _{H4}	Hydrogen, lb/hr	84.3	94.6
	Hydrogen, grains/dscf	3.30	3.70
LFG _{CO}	Carbon Monoxide, lb/hr	12.0	12.7
	Carbon Monoxide, grains/dscf	0.44	0.47

		Outlet A	Outlet B
H ₂ S	Hydrogen Sulfide Concentration, ppmv	0.61	0.61
	Hydrogen Sulfide Rate, lb/hr	0.01	0.01
	Hydrogen Sulfide Rate, grains/dscf	0.000	0.000
COS	Carbonyl Sulfide Concentration, ppmv	0.61	0.61
	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	110.00	140.00
	Methyl Mercaptan Rate, lb/hr	2.46	3.13
	Methyl Mercaptan Rate, grains/dscf	0.096	0.122
C ₂ H ₆ S	Ethyl Mercaptan Concentration, ppmv	0.84	1.20
	Ethyl Mercaptan Rate, lb/hr	0.02	0.03
	Ethyl Mercaptan Rate, grains/dscf	0.001	0.001
(CH ₃) ₂ S	Dimethyl Sulfide Concentration, ppmv	900.00	990.00
	Dimethyl Sulfide Rate, lb/hr	25.97	28.57
	Dimethyl Sulfide Rate, grains/dscf	1.016	1.118
CS ₂	Carbon Disulfide Concentration, ppmv	0.61	0.61
	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	120.00	120.00
	Dimethyl Disulfide Rate, lb/hr	5.25	5.25
	Dimethyl Disulfide Rate, grains/dscf	0.205	0.205

①E _{TRS-SO2}	TRS-->SO2 Emission Concentration, ppmv	1,200.00	1,400.00
	TRS-->SO2 Emission Rate, lb/hr	35.70	41.65
	TRS-->SO2 Emission Rate, grains/dscf	1.397	1.630
TPY =		156.38	182.44

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

March 21, 2016

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



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



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

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

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

LABORATORY TEST RESULTS

Project Reference: Bridgeton Landfill
Lab Number: H031602-01/02

Enclosed are results for sample(s) received 3/16/16 by Air Technology Laboratories. Samples were received intact. Analyses were performed according to specifications on the chain of custody provided with the sample(s).

Report Narrative:

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

Preliminary results were e-mailed to Jim Getting, Mike Lambrich, Ryan Ayer, Nicholas Bauer and David Randall, Weaver Consultants Group, on 3/18/16.

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

Sincerely,

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

Mark Johnson
Operations Manager
MJohnson@AirTechLabs.com

Enclosures

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



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

CHAIN OF CUSTODY RECORD

TURNAROUND TIME

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

DELIVERABLES

EDD ☐
EDF ☐
Level 3 ☐
Level 4 ☐

PAGE: 1 OF 1

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

Project No.:
Project Name: Bridgeton Landfill
Report To: 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

BILLING

P.O. No.: PO5544106
Bill to: Republic Services
Attn: Jim Getting
13570 St. Charles Rock Rd.
Bridgeton, MO 63044

ANALYSIS REQUEST

LAB USE ONLY	Canister Pressures ("hg)				SAMPLE IDENTIFICATION	SAMPLE DATE	SAMPLE TIME	CONTAINER QTY/TYPE	MATRIX	PRESERVATION	EPA 15/16 + TRS & ASTM1946 + H2+ CO	ASTM 1946, BTU/SCF				
	Canister ID	Sample Start	Sample End	Lab Receive												
H031602-01	1612	-18.7	-3.5	-4.5	Outlet A	3/15/2016	1424	C	LFG	NA	X	X				
↓ -02	J1725	-18.8	-3.5	-4.5	Outlet B	3/15/2016	1432	C	LFG	NA	X	X				

AUTHORIZATION TO PERFORM WORK: Dave Penoyer

COMPANY: Republic Services

DATE/TIME:

COMMENTS

SAMPLED BY: Ryan Ayers

COMPANY: Republic Services

DATE/TIME

RELINQUISHED BY: 3-15-16 1530

DATE/RECEIVED BY

DATE/TIME

RELINQUISHED BY: FED EX

DATE/RECEIVED BY

DATE/TIME

RELINQUISHED BY: 3/16/16 0857

DATE/RECEIVED BY

DATE/TIME

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

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

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

Client: Republic Services
Attn: Jim Getting
Project Name: Bridgeton Landfill
Project No.: NA
Date Received: 03/16/16
Matrix: Air
Reporting Units: % v/v

ASTM D1946

Lab No.:	H031602-01	H031602-02		
Client Sample I.D.:	Outlet A	Outlet B		
Date/Time Sampled:	3/15/16 14:24	3/15/16 14:32		
Date/Time Analyzed:	3/16/16 11:31	3/16/16 11:46		
QC Batch No.:	160316GC8A1	160316GC8A1		
Analyst Initials:	AS	AS		
Dilution Factor:	3.1	3.1		
ANALYTE	Result % v/v	RL % v/v	Result % v/v	RL % v/v
Hydrogen	9.0	3.1	10.1	3.1
Carbon Dioxide	35.5	0.031	37.3	0.031
Oxygen/Argon	8.5	1.5	7.6	1.5
Nitrogen	34.8	3.1	32.0	3.1
Methane	11.0	0.0031	11.5	0.0031
Carbon Monoxide	0.092	0.0031	0.098	0.0031
Net Heating Value (BTU/ft3)	149.4	3.1	164.4	3.1
Gross Heating Value (BTU/ft3)	168.7	3.1	185.7	3.1

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

5-18-16

The cover letter is an integral part of this analytical report



QC Batch No.: 160316GC8A1

Matrix: Air

Units: % v/v

QC for ASTM D1946

Lab No.:	Method Blank		LCS		LCSD			
Date/Time Analyzed:	3/16/16 11:15		3/16/16 10:29		3/16/16 10:44			
Analyst Initials:	AS		AS		AS			
Datafile:	16mar003		16mar.ru		16mar001			
Dilution Factor:	1.0		1.0		1.0			
ANALYTE	Results	RL	% Rec.	Criteria	% Rec.	Criteria	%RPD	Criteria
Hydrogen	ND	1.0	98	70-130%	98	70-130%	0.1	<30
Carbon Dioxide	ND	0.010	98	70-130%	98	70-130%	0.1	<30
Oxygen/Argon	ND	0.50	102	70-130%	102	70-130%	0.1	<30
Nitrogen	ND	1.0	102	70-130%	102	70-130%	0.1	<30
Methane	ND	0.0010	122	70-130%	122	70-130%	0.0	<30
Carbon Monoxide	ND	0.0010	119	70-130%	119	70-130%	0.2	<30

ND = Not Detected (Below RL)

Reviewed/Approved By:



Mark J. Johnson
Operations Manager

Date:

3-18-16

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: 03/16/16
Matrix: Air
Reporting Units: ppmv

Page 4 of 5
 H031602

EPA 15/16

Lab No.:	H031602-01	H031602-02						
Client Sample I.D.:	Outlet A	Outlet B						
Date/Time Sampled:	3/15/16 14:24	3/15/16 14:32						
Date/Time Analyzed:	3/16/16 13:59	3/16/16 14:37						
QC Batch No.:	160316GC3A1	160316GC3A1						
Analyst Initials:	AS	AS						
Dilution Factor:	3.1	3.1						
ANALYTE	Result ppmv	RL ppmv	Result ppmv	RL ppmv				
Hydrogen Sulfide	ND	0.61	ND	0.61				
Carbonyl Sulfide	ND	0.61	ND	0.61				
Methyl Mercaptan	110 d	6.1	140 d	6.1				
Ethyl Mercaptan	0.84	0.61	1.2	0.61				
Dimethyl Sulfide	900 d	61.0	990 d	61.0				
Carbon Disulfide	ND	0.61	ND	0.61				
Dimethyl Disulfide	120 d	6.1	120 d	6.1				
Total Reduced Sulfur	1,200	0.61	1,400	0.61				

ND = Not Detected (below RL)

RL = Reporting Limit

d = Reported from a secondary dilution

Reviewed/Approved By: _____

Mark Johnson
 Operations Manager

Date 3-18-16

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.: 160316GC3A1
Matrix: Air
Units: ppmv

Page 5 of 5
H031602


QC for Sulfur Compounds by EPA 15/16

Lab No.:	Method Blank		LCS		LCSD			
Date/Time Analyzed:	3/16/16 13:30		3/16/16 13:05		3/16/16 13:18			
Analyst Initials:	AS		AS		AS			
Datafile:	16mar004		16mar002		16mar003			
Dilution Factor:	1.0		1.0		1.0			
ANALYTE	Results	RL	% Rec.	Criteria	% Rec.	Criteria	%RPD	Criteria
Hydrogen Sulfide	ND	0.20	89	70-130%	90	70-130%	1.1	<30
Carbonyl Sulfide	ND	0.20	109	70-130%	107	70-130%	1.4	<30
Methyl Mercaptan	ND	0.20	85	70-130%	86	70-130%	0.2	<30
Ethyl Mercaptan	ND	0.20	107	70-130%	111	70-130%	3.0	<30
Dimethyl Sulfide	ND	0.20	92	70-130%	91	70-130%	0.2	<30
Carbon Disulfide	ND	0.20	95	70-130%	94	70-130%	1.7	<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: 3-18-16

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	3/8/16
Start	Run Start Time	8:04
	Run Finish Time	10:08
	Net Traversing Points	8 (2 x 4)
Θ	Net Run Time, minutes	2:03:41
C _p	Pitot Tube Coefficient	0.99
P _{Br}	Barometric Pressure, inches of Mercury	29.45
% H ₂ O	Moisture Content of LFG, %	2.37
% RH	Relative Humidity, %	61.90
M _{fd}	Dry Mole Fraction	0.976
%CH ₄	Methane, %	11.00
%CO ₂	Carbon Dioxide, %	36.50
%O ₂	Oxygen, %	8.50
%Balance	Assumed as Nitrogen, %	34.00
%H ₂	Hydrogen, %	9.10
%CO	Carbon Monoxide, %	0.10
M _d	Dry Molecular Weight, lb/lb-Mole	30.28
M _s	Wet Molecular weight, lb/lb-Mole	29.99
P _g	Flue Gas Static Pressure, inches of H ₂ O	30.22
P _s	Absolute Flue Gas Pressure, inches of Mercury	31.86
t _s	Average Stack Gas Temperature, °F	91
ΔP _{avg}	Average Velocity Head, inches of H ₂ O	0.337
v _s	Average LFG Velocity, feet/second	37.31
A _s	Stack Crosssectional Area, square feet	1.35
Q _{sd}	Dry Volumetric Flow Rate, dry scfm	3,017
Q _s	Standard Volumetric Flow Rate, scfm	3,089
Q _{aw}	Actual Wet Volumetric Flue Gas Flow Rate, acfm	3,029
Q _{lb/hr}	Dry Air Flow Rate at Standard Conditions, lb/hr	14,228
NHV	Net Heating Value, Btu/scf	151
LFG _{CH4}	Methane, lb/hr	829.4
	Methane, grains/dscf	32.07
LFG _{CO2}	Carbon Dioxide, lb/hr	7,549.6
	Carbon Dioxide, grains/dscf	291.93
LFG _{O2}	Oxygen, lb/hr	1278.3
	Oxygen, grains/dscf	49.43
LFG _{N2}	Balance gas as Nitrogen, lb/hr	4,476.4
	Balance gas as Nitrogen, grains/dscf	173.09
LFG _{H4}	Hydrogen, lb/hr	86.2
	Hydrogen, grains/dscf	3.33
LFG _{CO}	Carbon Monoxide, lb/hr	12.5
	Carbon Monoxide, grains/dscf	0.48

		Outlet A	Outlet B	Outlet C
H ₂ S	Hydrogen Sulfide Concentration, ppm	26.00	11.00	0.63
	Hydrogen Sulfide Rate, lb/hr	0.42	0.18	0.01
	Hydrogen Sulfide Rate, grains/dscf	0.016	0.007	0.000
COS	Carbonyl Sulfide Concentration, ppm	0.51	0.53	0.63
	Carbonyl Sulfide Rate, lb/hr	0.01	0.01	0.02
	Carbonyl Sulfide Rate, grains/dscf	0.001	0.001	0.001
CH ₄ S	Methyl Mercaptan Concentration, ppm	190.00	190.00	150.00
	Methyl Mercaptan Rate, lb/hr	4.30	4.30	3.39
	Methyl Mercaptan Rate, grains/dscf	0.166	0.166	0.131
C ₂ H ₆ S	Ethyl Mercaptan Concentration, ppm	2.30	2.30	1.70
	Ethyl Mercaptan Rate, lb/hr	0.07	0.07	0.05
	Ethyl Mercaptan Rate, grains/dscf	0.003	0.003	0.002
(CH ₃) ₂ S	Dimethyl Sulfide Concentration, ppm	960.00	910.00	860.00
	Dimethyl Sulfide Rate, lb/hr	28.03	26.57	25.11
	Dimethyl Sulfide Rate, grains/dscf	1.084	1.028	0.971
CS ₂	Carbon Disulfide Concentration, ppm	0.51	0.53	0.63
	Carbon Disulfide Rate, lb/hr	0.02	0.02	0.02
	Carbon Disulfide Rate, grains/dscf	0.001	0.001	0.001
C ₂ H ₆ S ₂	Dimethyl Disulfide Concentration, ppm	25.00	26.00	31.00
	Dimethyl Disulfide Rate, lb/hr	1.11	0.93	1.11
	Dimethyl Disulfide Rate, grains/dscf	0.043	0.036	0.043
① E _{TRS-SO2}	TRS-->SO2 Emission Concentration, ppm	1,200.00	1,200.00	1,100.00
	TRS-->SO2 Emission Rate, lb/hr	36.13	36.13	33.12
	TRS-->SO2 Emission Rate, grains/dscf	1.397	1.397	1.281

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

Tuesday, March 08, 2016

LOCATION	TIME	FLOW -SCFM			Method 2 vs. Fleetzoom	Method 2 vs Kurz
		Method 2	FleetZoom	Kurz FM		
BLOWER OUT	8:04	3,089	3,142	2,934	-1.7%	5.0%

March 14, 2016

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



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



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

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

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

LABORATORY TEST RESULTS

Project Reference: Bridgeton Landfill
Lab Number: H030901-01/07

Enclosed are results for sample(s) received 3/09/16 by Air Technology Laboratories. Samples were received intact. Analyses were performed according to specifications on the chain of custody provided with the sample(s).

Report Narrative:

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

Preliminary results were e-mailed to Jim Getting, Mike Lambrich, Ryan Ayer, Nicholas Bauer and David Randall, Weaver Consultants Group, on 3/11/16.

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

Sincerely,

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

Mark Johnson
Operations Manager
MJohnson@AirTechLabs.com

Enclosures

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



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.:

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

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

DELIVERABLES

EDD ☐
EDF ☐
Level 3 ☐
Level 4 ☐

PAGE: 1 OF 1

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

BILLING

P.O. No.: PO4862452 554460
Bill to: Republic Services
Attn: Jim Getting
13570 St. Charles Rock Rd.
Bridgeton, MO 63044

ANALYSIS REQUEST

EPA 15/16 + TRS
ASTM 1946 + H2 + CO & BTU/SCF
EPA Method 25C

LAB USE ONLY

Canister Pressures ("hg)

Canister ID Sample Start Sample End Lab Receive

SAMPLE IDENTIFICATION

SAMPLE DATE

SAMPLE TIME

CONTAINER QTY/TYPE

MATRIX

PRESERVATION

H030901-01	5948	-19.69	-2.75	1" 4g	Blower Outlet 1	3/8/2016	859	C	LFG	NA	X	X	X			
-02	1613	-20.14	-3.75	2"	Blower Outlet 2	3/8/2016	930	C	LFG	NA	X	X	X			
-03	1620	-18.74	-3.5	5"	Blower Outlet 3	3/8/2016	1132	C	LFG	NA	X	X	X			
-04	5959	-23.09	-3.91	1"	Blower Outlet 4 903/4/16	3/8/2016	1345	C	LFG	NA	X	X	X			
-05	5962	-20.43	-3.69	4"	North Quarry	3/8/2016	856	C	LFG	NA	X	X	X			
-06	5976	-19.77	-3.9	4"	LFG CSU EP14	3/1/2016	743	C	LFG	NA		X				
-07	5936	-20.73	-3.67	2"	North Quarry #1	3/1/2016	845	C	LFG	NA	X	X	X			

AUTHORIZATION TO PERFORM WORK: Dave Penoyer

COMPANY: Republic Services

DATE/TIME:

SAMPLED BY: Ryan Ayers

COMPANY: Republic Services

DATE/TIME

RELINQUISHED BY: Ryan Ayers 3-8-16 1500

DATE/RECEIVED BY

DATE/TIME

RELINQUISHED BY: FedEx 3-9-16 10:32

DATE/RECEIVED BY

DATE/TIME

RELINQUISHED BY:

DATE/RECEIVED BY

DATE/TIME

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

COMMENTS

* CANCEL 15/16 on N Quarry & N Quarry #1 & IS CHANGE per email from D Randall 3/9/16 gpd

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: 03/09/16
Matrix: Air
Reporting Units: % v/v

ASTM D1946

Lab No.:	H030901-01	H030901-02	H030901-03	H030901-04				
Client Sample I.D.:	Blower Outlet 1	Blower Outlet 2	Blower Outlet 3	South Quarry GCCS				
Date/Time Sampled:	3/8/16 8:59	3/8/16 9:30	3/8/16 11:32	3/8/16 13:45				
Date/Time Analyzed:	3/9/16 14:12	3/9/16 15:00	3/9/16 15:30	3/9/16 15:45				
QC Batch No.:	160309GC8A1	160309GC8A1	160309GC8A1	160309GC8A1				
Analyst Initials:	AS	AS	AS	AS				
Dilution Factor:	2.5	2.7	3.2	2.5				
ANALYTE	Result	RL	Result	RL	Result	RL	Result	RL
	% v/v	% v/v	% v/v	% v/v	% v/v	% v/v	% v/v	% v/v
Hydrogen	8.5	2.5	9.3	2.7	9.4	3.2	11	2.5
Carbon Dioxide	37	0.025	36	0.027	36	0.032	37	0.025
Oxygen/Argon	8.7	1.3	8.5	1.3	8.4	1.6	8.7	1.3
Nitrogen	34	2.5	34	2.7	34	3.2	35	2.5
Methane	11	0.0025	11	0.0027	11	0.0032	7.2	0.0025
Carbon Monoxide	0.093	0.0025	0.095	0.0027	0.093	0.0032	0.11	0.0025
Net Heating Value (BTU/ft3)	146	2.5	152	2.7	154	3.2	127	2.5
Gross Heating Value (BTU/ft3)	165	2.5	172	2.7	174	3.2	144	2.5

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 3/11/16

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: 03/09/16
Matrix: Air
Reporting Units: % v/v

ASTM D1946

Lab No.:	H030901-05	H030901-06	H030901-07					
Client Sample I.D.:	North Quarry	LFG CSU EP14	North Quarry #1					
Date/Time Sampled:	3/8/16 8:56	3/1/16 7:43	3/1/16 8:45					
Date/Time Analyzed:	3/9/16 16:13	3/9/16 16:42	3/9/16 16:27					
QC Batch No.:	160309GC8A1	160309GC8A1	160309GC8A1					
Analyst Initials:	AS	AS	AS					
Dilution Factor:	3.0	3.0	2.7					
ANALYTE	Result	RL	Result	RL	Result	RL		
	% v/v	% v/v	% v/v	% v/v	% v/v	% v/v		
Hydrogen	ND	3.0	10	3.0	ND	2.7		
Carbon Dioxide	33	0.030	31	0.030	31	0.027		
Oxygen/Argon	4.1	1.5	10	1.5	4.6	1.3		
Nitrogen	19	3.0	41	3.0	21	2.7		
Methane	43	0.0030	6.3	0.0030	42	0.0027		
Carbon Monoxide	ND	0.0030	0.087	0.0030	ND	0.0027		
Net Heating Value (BTU/ft3)	402	3.0	107	3.0	385	2.7		
Gross Heating Value (BTU/ft3)	447	3.0	122	3.0	428	2.7		

Results normalized including non-methane hydrocarbons

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

ND = Not Detected (below RL)

RL = Reporting Limit

Reviewed/Approved By: Mark Johnson
Mark Johnson
Operations Manager

Date 3/11/16

The cover letter is an integral part of this analytical report



QC Batch No.: 160309GC8A1

Matrix: Air

Units: % v/v

QC for ASTM D1946

Lab No.:	Method Blank		LCS		LCSD			
Date/Time Analyzed:	3/9/16 13:54		3/9/16 13:10		3/9/16 13:25			
Analyst Initials:	AS		AS		AS			
Datafile:	09mar014		09mar011		09mar012			
Dilution Factor:	1.0		1.0		1.0			
ANALYTE	Results	RL	% Rec.	Criteria	% Rec.	Criteria	%RPD	Criteria
Hydrogen	ND	1.0	103	70-130%	103	70-130%	0.1	<30
Carbon Dioxide	ND	0.010	101	70-130%	100	70-130%	0.5	<30
Oxygen/Argon	ND	0.50	102	70-130%	102	70-130%	0.1	<30
Nitrogen	ND	1.0	101	70-130%	102	70-130%	0.5	<30
Methane	ND	0.0010	100	70-130%	100	70-130%	0.1	<30
Carbon Monoxide	ND	0.0010	111	70-130%	111	70-130%	0.0	<30

ND = Not Detected (Below RL)

Reviewed/Approved By:

Mark J. Johnson
Operations Manager

Date:

3/6/16

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 Gettling

Project Name: Bridgeton Landfill
Project Number: NA
Date Received: 3/9/2016
Matrix: Vapor

TNMOC by EPA METHOD 25C

Lab Number:		H030901-01		H030901-02		H030901-03		H030901-04		H030901-05	
Client Sample ID:		Blower Outlet 1		Blower Outlet 2		Blower Outlet 3		South Quarry GCCS		North Quarry	
Date/Time Collected:		3/8/16 8:59		3/8/16 9:30		3/8/16 11:32		3/8/16 13:45		3/8/16 8:56	
Date/Time Analyzed:		3/9/16 17:11		3/9/16 18:09		3/9/16 19:07		3/9/16 20:06		3/9/16 23:00	
Analyst Initials:		AS		AS		AS		AS		AS	
QC Batch:		160309GC8A1		160309GC8A1		160309GC8A1		160309GC8A1		160309GC8A1	
Dilution Factor:		13		13		16		13		3.0	
ANALYTE	Units	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL
TNMOC	ppmv C	72,000	130	68,000	130	65,000	160	68,000	130	12,000	30
TNMOC uncorr*	ppmv C	35,000	130	34,000	130	34,000	160	35,000	130	8,800	30

ND = Not detected at or above reporting limit.

TNMOC = Total Non-Methane Organic Carbon.

TNMOC uncorr* = TNMOC concentration in sample without nitrogen/moisture correction.

NA = Nitrogen/moisture correction causes division by zero.

Reviewed/Approved By:



Mark Johnson
Operations Manager

Date:

3-17-16

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 Number: NA
Date Received: 3/9/2016
Matrix: Vapor

TNMOC by EPA METHOD 25C

Lab Number:		H030901-07									
Client Sample ID:		North Quarry #1									
Date/Time Collected:		3/1/16 8:45									
Date/Time Analyzed:		3/10/16 23:59									
Analyst Initials:		AS									
QC Batch:		160309GC8A1									
Dilution Factor:		2.7									
ANALYTE	Units	Result	RL								
TNMOC	ppmv C	6,800	27								
TNMOC uncorr*	ppmv C	4,700	27								

ND = Not detected at or above reporting limit.

TNMOC = Total Non-Methane Organic Carbon.

TNMOC uncorr* = TNMOC concentration in sample without nitrogen/moisture correction.

NA = Nitrogen/moisture correction causes division by zero.

Reviewed/Approved By: _____

Mark 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: 03/09/16
 Matrix: Air
 Reporting Units: ppmv

Page 7 of 8
 H030901

EPA 15/16


Lab No.:	H030901-01		H030901-02		H030901-03		H030901-04	
Client Sample I.D.:	Blower Outlet 1		Blower Outlet 2		Blower Outlet 3		South Quarry GCCS	
Date/Time Sampled:	3/8/16 8:59		3/8/16 9:30		3/8/16 11:32		3/8/16 13:45	
Date/Time Analyzed:	3/10/16 9:10		3/10/16 9:47		3/10/16 10:24		3/10/16 11:00	
QC Batch No.:	160310GC3A1		160310GC3A1		160310GC3A1		160310GC3A1	
Analyst Initials:	AS		AS		AS		AS	
Dilution Factor:	2.5		2.7		3.2		2.5	
ANALYTE	Result ppmv	RL ppmv	Result ppmv	RL ppmv	Result ppmv	RL ppmv	Result ppmv	RL ppmv
Hydrogen Sulfide	26 d	5.1	11	0.53	ND	0.63	30 d	5.1
Carbonyl Sulfide	ND	0.51	ND	0.53	ND	0.63	ND	0.51
Methyl Mercaptan	190 d	5.1	190 d	5.3	150 d	6.3	210 d	5.1
Ethyl Mercaptan	2.3	0.51	2.3	0.53	1.7	0.63	2.4	0.51
Dimethyl Sulfide	960 d	51.0	910 d	53.0	860 d	63.0	980 d	51.0
Carbon Disulfide	ND	0.51	ND	0.53	ND	0.63	0.52	0.51
Dimethyl Disulfide	25	0.51	26	0.53	31	0.63	25	0.51
Total Reduced Sulfur	1,200	0.51	1,200	0.53	1,100	0.63	1,300	0.51

ND = Not Detected (below RL)

RL = Reporting Limit

d = Reported from a secondary dilution

Reviewed/Approved By: _____


 Mark Johnson
 Operations Manager

Date _____

3/11/16

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.: 160310GC3A1
Matrix: Air
Units: ppmv

Page 8 of 8
H030901

QC for Sulfur Compounds by EPA 15/16

Lab No.:	Method Blank		LCS		LCSD			
Date/Time Analyzed:	3/10/16 8:58		3/10/16 8:34		3/10/16 8:46			
Analyst Initials:	AS		AS		AS			
Datafile:	10mar003		10mar001		10mar002			
Dilution Factor:	1.0		1.0		1.0			
ANALYTE	Results	RL	% Rec.	Criteria	% Rec.	Criteria	%RPD	Criteria
Hydrogen Sulfide	ND	0.20	78	70-130%	78	70-130%	0.5	<30
Carbonyl Sulfide	ND	0.20	99	70-130%	98	70-130%	0.5	<30
Methyl Mercaptan	ND	0.20	74	70-130%	74	70-130%	0.7	<30
Ethyl Mercaptan	ND	0.20	97	70-130%	99	70-130%	1.4	<30
Dimethyl Sulfide	ND	0.20	84	70-130%	84	70-130%	0.1	<30
Carbon Disulfide	ND	0.20	81	70-130%	81	70-130%	0.1	<30
Dimethyl Disulfide	ND	0.20	95	70-130%	94	70-130%	0.5	<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

Sample results on 3/2/2016 for Blower Outlet A were void due to acetone in the sample train. Calculations were performed for the representative sample for Blower Outlet B. Lab data is attached below.

Additionally, EPA Test Method TO15 was performed to confirm the acetone contamination. Those lab results are also attached below.

Kurz FM = 3,061 scfm
Fleetzoom Total = 3,231 scfm $\Delta = 5.3\%$

Sample results void from sample No. H030302-01 for Outlet A due to apparent cross contamination with acetone in sample train.

PARAMETER		Outlet A	Outlet B
Date	Test Date		3/2/16
Time	Start - Finish		14:55
%CH ₄	Methane, %		10.70
%CO ₂	Carbon Dioxide, %		34.60
%O ₂	Oxygen, %		8.80
%Balance	Assumed as Nitrogen, %		35.30
%H ₂	Hydrogen, %		9.60
%CO	Carbon Monoxide, %		0.091
P _g	Flue Gas Static Pressure, inches of H ₂ O		30.80
t _s	Blower Outlet LFG Temperature, °F		57
Q _{sd}	Dry Volumetric Flow Rate, dry scfm (assumes 5%H ₂ O)	2,908	
Q _s	Kurz FM, Standard Volumetric Flow Rate, scfm	3,061	
NHV	Net Heating Value, Btu/scf		145.0
LFG _{CH₄}	Methane, lb/hr	0.0	777.5
	Methane, grains/dscf	0.00	31.20
LFG _{CO₂}	Carbon Dioxide, lb/hr	0.0	6,896.8
	Carbon Dioxide, grains/dscf	0.00	276.73
LFG _{O₂}	Oxygen, lb/hr	0.0	1,275.4
	Oxygen, grains/dscf	0.00	51.17
LFG _{N₂}	Balance gas as Nitrogen, lb/hr	0.0	4,478.9
	Balance gas as Nitrogen, grains/dscf	0.00	179.71
LFG _{H₂}	Hydrogen, lb/hr	0.0	87.7
	Hydrogen, grains/dscf	0.00	3.52
LFG _{CO}	Carbon Monoxide, lb/hr	0.0	11.5
	Carbon Monoxide, grains/dscf	0.00	0.44

		Outlet A	Outlet B
H ₂ S	Hydrogen Sulfide Concentration, ppmv		42.00
	Hydrogen Sulfide Rate, lb/hr	0.00	0.65
	Hydrogen Sulfide Rate, grains/dscf	0.000	0.026
COS	Carbonyl Sulfide Concentration, ppmv		0.56
	Carbonyl Sulfide Rate, lb/hr	0.00	0.02
	Carbonyl Sulfide Rate, grains/dscf	0.000	0.001
CH ₃ S	Methyl Mercaptan Concentration, ppmv		180.00
	Methyl Mercaptan Rate, lb/hr	0.00	3.92
	Methyl Mercaptan Rate, grains/dscf	0.000	0.157
C ₂ H ₅ S	Ethyl Mercaptan Concentration, ppmv		2.40
	Ethyl Mercaptan Rate, lb/hr	0.00	0.07
	Ethyl Mercaptan Rate, grains/dscf	0.000	0.003
(CH ₃) ₂ S	Dimethyl Sulfide Concentration, ppmv		910.00
	Dimethyl Sulfide Rate, lb/hr	0.00	25.61
	Dimethyl Sulfide Rate, grains/dscf	0.000	1.028
CS ₂	Carbon Disulfide Concentration, ppmv		0.56
	Carbon Disulfide Rate, lb/hr	0.00	0.02
	Carbon Disulfide Rate, grains/dscf	0.000	0.001
C ₂ H ₆ S ₂	Dimethyl Disulfide Concentration, ppmv		74.00
	Dimethyl Disulfide Rate, lb/hr	0.00	3.16
	Dimethyl Disulfide Rate, grains/dscf	0.000	0.127
E _{TRS-SO₂}	TRS-->SO ₂ Emission Concentration, ppmv		1,300.00
	TRS-->SO ₂ Emission Rate, lb/hr	0.00	37.72
	TRS-->SO ₂ Emission Rate, grains/dscf	0.000	1.514
TPY =		0.00	165.22

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

March 15, 2016

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



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



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

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

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

LABORATORY TEST RESULTS

Project Reference: Bridgeton Landfill
Lab Number: H030302-01/02

Enclosed are results for sample(s) received 3/03/16 by Air Technology Laboratories. Samples were received intact. Analyses were performed according to specifications on the chain of custody provided with the sample(s).

Report Narrative:

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

Preliminary results were e-mailed to Jim Getting, Mike Lambrich, Ryan Ayer, Nicholas Bauer and David Randall, Weaver Consultants Group, on 3/07/16 and 3/14/16 (EPA TO15).

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.

H030302-01/02



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: 1 OF 1	
Standard	<input type="checkbox"/> 48 hours	EDD	<input type="checkbox"/>	Condition upon receipt:	
Same Day	<input type="checkbox"/> 72 hours	EDF	<input type="checkbox"/>	Sealed	Yes <input type="checkbox"/> No <input type="checkbox"/>
24 hours	<input type="checkbox"/> 96 hours	Level 3	<input type="checkbox"/>	Intact	Yes <input type="checkbox"/> No <input type="checkbox"/>
Other:	<input type="checkbox"/> 5 day	Level 4	<input type="checkbox"/>	Chilled	_____ deg C

ANALYSIS REQUEST

P.O. No.:	PO5544106
Bill to:	Republic Services
	Attn: Jim Getting
	13570 St. Charles Rock Rd.
	Bridgeton, MO 63044

LAB USE ONLY	Canister Pressures ("hg)				SAMPLE IDENTIFICATION	SAMPLE DATE	SAMPLE TIME	CONTAINER QTY/TYPE	MATRIX	PRESERVA-TION	EPA 15/16 + H2+ CO	ASTM 1946	70-15			
	Canister ID	Sample Start	Sample End	Lab Receive												
H030302-01	1614	-20.3	-3.5	-3" Hg	Outlet A	3/2/2016	1445	C	LFG	NA	X	X	X			
↓ -02	1540	-20.1	-3.5	-3" Hg	Outlet B	3/2/2016	1455	C	LFG	NA	X	X	X			

Client: Republic Services
Attn: Jim Getting
Project Name: Bridgeton Landfill
Project No.: NA
Date Received: 03/03/16
Matrix: Air
Reporting Units: % v/v

ASTM D1946

Lab No.:	H030302-01	H030302-02						
Client Sample I.D.:	Outlet A	Outlet B						
Date/Time Sampled:	3/2/16 14:45	3/2/16 14:55						
Date/Time Analyzed:	3/4/16 11:47	3/4/16 12:07						
QC Batch No.:	160304GC8A1	160304GC8A1						
Analyst Initials:	AS	AS						
Dilution Factor:	2.8	2.8						
ANALYTE	Result % v/v	RL % v/v	Result % v/v	RL % v/v				
Hydrogen	8.8	2.8	9.6	2.8				
Carbon Dioxide	31.1	0.028	34.6	0.028				
Oxygen/Argon	9.0	1.4	8.8	1.4				
Nitrogen	35.5	2.8	35.3	2.8				
Methane	9.5	0.0028	10.7	0.0028				
Carbon Monoxide	0.081	0.0028	0.091	0.0028				
Net Heating Value (BTU/ft3)	255.4	2.8	145.0	2.8				
Gross Heating Value (BTU/ft3)	283.5	2.8	164.1	2.8				

Results normalized including non-methane hydrocarbons

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

ND = Not Detected (below RL)

RL = Reporting Limit

Reviewed/Approved By: 

Mark Johnson
Operations Manager

Date 3-7-16

The cover letter is an integral part of this analytical report



QC Batch No.: 160304GC8A1

Matrix: Air

Units: % v/v

QC for ASTM D1946

Lab No.:	Method Blank		LCS		LCSD			
Date/Time Analyzed:	3/4/16 10:17		3/4/16 9:33		3/4/16 9:48			
Analyst Initials:	AS		AS		AS			
Datafile:	04mar009		04mar006		04mar007			
Dilution Factor:	1.0		1.0		1.0			
ANALYTE	Results	RL	% Rec.	Criteria	% Rec.	Criteria	%RPD	Criteria
Hydrogen	ND	1.0	92	70-130%	92	70-130%	1.0	<30
Carbon Dioxide	ND	0.010	95	70-130%	96	70-130%	1.4	<30
Oxygen/Argon	ND	0.50	102	70-130%	103	70-130%	1.2	<30
Nitrogen	ND	1.0	101	70-130%	102	70-130%	1.0	<30
Methane	ND	0.0010	108	70-130%	108	70-130%	0.2	<30
Carbon Monoxide	ND	0.0010	110	70-130%	110	70-130%	0.7	<30

ND = Not Detected (Below RL)

Reviewed/Approved By:



Mark J. Johnson
Operations Manager

Date:

3-7-16

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: 03/03/16
Matrix: Air
Reporting Units: ppmv

Page 4 of 10
 H030302

EPA 15/16

Lab No.:	H030302-01	H030302-02		
Client Sample I.D.:	Outlet A	Outlet B		
Date/Time Sampled:	3/2/16 14:45	3/2/16 14:55		
Date/Time Analyzed:	3/3/16 11:21	3/3/16 11:58		
QC Batch No.:	160303GC3A1	160303GC3A1		
Analyst Initials:	AS	AS		
Dilution Factor:	2.8	2.8		
ANALYTE	Result ppmv	RL ppmv	Result ppmv	RL ppmv
Hydrogen Sulfide	34 d	5.6	42 d	5.6
Carbonyl Sulfide	ND	0.56	ND	0.56
Methyl Mercaptan	160 d	5.6	180 d	5.6
Ethyl Mercaptan	2.2	0.56	2.4	0.56
Dimethyl Sulfide	860 d	56.0	910 d	56.0
Carbon Disulfide	ND	0.56	ND	0.56
Dimethyl Disulfide	56 d	5.6	74 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 3-7-16

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.: 160303GC3A1
Matrix: Air
Units: ppmv

Page 5 of 10
H030302


QC for Sulfur Compounds by EPA 15/16

Lab No.:	Method Blank		LCS		LCSD			
Date/Time Analyzed:	3/3/16 10:58		3/3/16 10:33		3/3/16 10:45			
Analyst Initials:	AS		AS		AS			
Datafile:	03MAR004		03MAR002		03MAR003			
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%	0.3	<30
Carbonyl Sulfide	ND	0.20	115	70-130%	114	70-130%	1.2	<30
Methyl Mercaptan	ND	0.20	89	70-130%	89	70-130%	0	<30
Ethyl Mercaptan	ND	0.20	114	70-130%	113	70-130%	0.6	<30
Dimethyl Sulfide	ND	0.20	97	70-130%	97	70-130%	0.9	<30
Carbon Disulfide	ND	0.20	100	70-130%	100	70-130%	0.3	<30
Dimethyl Disulfide	ND	0.20	114	70-130%	108	70-130%	5.4	<30

ND = Not Detected (Below RL)

RL = Reporting Limit

Reviewed/Approved By:


Mark J. Johnson
Operations Manager

Date:

3-7-16

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: 03/03/16
 Matrix: Air
 Reporting Units: ppbv

Page 6 of 10
 H030302

EPA Method TO15							
Lab No.:	H030302-01		H030302-02				
Client Sample I.D.:	Outlet A		Outlet B				
Date/Time Sampled:	3/2/16 14:45		3/2/16 14:55				
Date/Time Analyzed:	3/11/16 15:09		3/11/16 14:29				
QC Batch No.:	160311MS2A1		160311MS2A1				
Analyst Initials:	DT		DT				
Dilution Factor:	200,000		2,800				
ANALYTE	Result ppbv	RL ppbv	Result ppbv	RL ppbv			
Dichlorodifluoromethane (12)	ND	200,000	ND	2,800			
Chloromethane	ND	390,000	ND	5,600			
1,2-Cl-1,1,2,2-F ethane (114)	ND	200,000	ND	2,800			
Vinyl Chloride	ND	200,000	ND	2,800			
Bromomethane	ND	200,000	ND	2,800			
Chloroethane	ND	200,000	ND	2,800			
Trichlorofluoromethane (11)	ND	200,000	ND	2,800			
1,1-Dichloroethene	ND	200,000	ND	2,800			
Carbon Disulfide	ND	980,000	ND	14,000			
1,1,2-Cl 1,2,2-F ethane (113)	ND	200,000	ND	2,800			
Acetone	32,000,000	980,000	450,000	14,000			
Methylene Chloride	ND	200,000	ND	2,800			
t-1,2-Dichloroethene	ND	200,000	ND	2,800			
1,1-Dichloroethane	ND	200,000	ND	2,800			
Vinyl Acetate	ND	980,000	ND	14,000			
c-1,2-Dichloroethene	ND	200,000	ND	2,800			
2-Butanone	250,000	200,000	350,000	2,800			
t-Butyl Methyl Ether (MTBE)	ND	200,000	ND	2,800			
Chloroform	ND	200,000	ND	2,800			
1,1,1-Trichloroethane	ND	200,000	ND	2,800			
Carbon Tetrachloride	ND	200,000	ND	2,800			
Benzene	230,000	200,000	190,000	2,800			
1,2-Dichloroethane	ND	200,000	ND	2,800			
Trichloroethene	ND	200,000	ND	2,800			
1,2-Dichloropropane	ND	200,000	ND	2,800			
Bromodichloromethane	ND	200,000	ND	2,800			
c-1,3-Dichloropropene	ND	200,000	ND	2,800			
4-Methyl-2-Pentanone	ND	200,000	9,600	2,800			
Toluene	ND	200,000	34,000	2,800			
t-1,3-Dichloropropene	ND	200,000	ND	2,800			



Client: Republic Services
 Attn: Jim Getting
 Project Name: Bridgeton Landfill
 Project No.: NA
 Date Received: 03/03/16
 Matrix: Air
 Reporting Units: ppbv

EPA Method TO15

Lab No.:	H030302-01	H030302-02		
Client Sample I.D.:	Outlet A	Outlet B		
Date/Time Sampled:	3/2/16 14:45	3/2/16 14:55		
Date/Time Analyzed:	3/11/16 15:09	3/11/16 14:29		
QC Batch No.:	160311MS2A1	160311MS2A1		
Analyst Initials:	DT	DT		
Dilution Factor:	200,000	2,800		
ANALYTE	Result ppbv	RL ppbv	Result ppbv	RL ppbv
1,1,2-Trichloroethane	ND	200,000	ND	2,800
Tetrachloroethene	ND	200,000	ND	2,800
2-Hexanone	ND	200,000	4,600	2,800
Dibromochloromethane	ND	200,000	ND	2,800
1,2-Dibromoethane	ND	200,000	ND	2,800
Chlorobenzene	ND	200,000	ND	2,800
Ethylbenzene	ND	200,000	14,000	2,800
p,&m-Xylene	ND	200,000	21,000	2,800
o-Xylene	ND	200,000	9,000	2,800
Styrene	ND	200,000	ND	2,800
Bromoform	ND	200,000	ND	2,800
1,1,2,2-Tetrachloroethane	ND	390,000	ND	5,600
Benzyl Chloride	ND	200,000	ND	2,800
4-Ethyl Toluene	ND	200,000	3,600	2,800
1,3,5-Trimethylbenzene	ND	390,000	ND	5,600
1,2,4-Trimethylbenzene	ND	390,000	ND	5,600
1,3-Dichlorobenzene	ND	200,000	ND	2,800
1,4-Dichlorobenzene	ND	200,000	ND	2,800
1,2-Dichlorobenzene	ND	200,000	ND	2,800
1,2,4-Trichlorobenzene	ND	390,000	ND	5,600
Hexachlorobutadiene	ND	200,000	ND	2,800

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

Reviewed/Approved By:



Mark Johnson
 Operations Manager

Date

3-14-16

The cover letter is an integral part of this analytical report



AirTECHNOLOGY Laboratories, Inc.

page 2 of 2

Client: Republic Services
 Attn: Jim Getting
 Project Name: Bridgeton Landfill
 Project No.: NA
 Date Received: 03/03/16
 Matrix: Air
 Reporting Units: ppbv

Page 8 of 10
 H030302

EPA Method TO15									
Lab No.:	METHOD BLANK								
Client Sample I.D.:	-								
Date/Time Sampled:	-								
Date/Time Analyzed:	3/11/16 13:47								
QC Batch No.:	160311MS2A1								
Analyst Initials:	DT								
Dilution Factor:	0.20								
ANALYTE	Result ppbv	RL ppbv							
Dichlorodifluoromethane (12)	ND	0.20							
Chloromethane	ND	0.40							
1,2-CI-1,1,2,2-F ethane (114)	ND	0.20							
Vinyl Chloride	ND	0.20							
Bromomethane	ND	0.20							
Chloroethane	ND	0.20							
Trichlorofluoromethane (11)	ND	0.20							
1,1-Dichloroethene	ND	0.20							
Carbon Disulfide	ND	1.0							
1,1,2-CI 1,2,2-F ethane (113)	ND	0.20							
Acetone	ND	1.0							
Methylene Chloride	ND	0.20							
t-1,2-Dichloroethene	ND	0.20							
1,1-Dichloroethane	ND	0.20							
Vinyl Acetate	ND	1.0							
c-1,2-Dichloroethene	ND	0.20							
2-Butanone	ND	0.20							
t-Butyl Methyl Ether (MTBE)	ND	0.20							
Chloroform	ND	0.20							
1,1,1-Trichloroethane	ND	0.20							
Carbon Tetrachloride	ND	0.20							
Benzene	ND	0.20							
1,2-Dichloroethane	ND	0.20							
Trichloroethene	ND	0.20							
1,2-Dichloropropane	ND	0.20							
Bromodichloromethane	ND	0.20							
c-1,3-Dichloropropene	ND	0.20							
4-Methyl-2-Pentanone	ND	0.20							
Toluene	ND	0.20							
t-1,3-Dichloropropene	ND	0.20							



Client: Republic Services
 Attn: Jim Getting
 Project Name: Bridgeton Landfill
 Project No.: NA
 Date Received: 03/03/16
 Matrix: Air
 Reporting Units: ppbv

Page 9 of 10
 H030302

EPA Method TO15									
Lab No.:	METHOD BLANK								
Client Sample I.D.:	-								
Date/Time Sampled:	-								
Date/Time Analyzed:	3/11/16 13:47								
QC Batch No.:	160311MS2A1								
Analyst Initials:	DT								
Dilution Factor:	0.20								
ANALYTE	Result ppbv	RL ppbv							
1,1,2-Trichloroethane	ND	0.20							
Tetrachloroethene	ND	0.20							
2-Hexanone	ND	0.20							
Dibromochloromethane	ND	0.20							
1,2-Dibromoethane	ND	0.20							
Chlorobenzene	ND	0.20							
Ethylbenzene	ND	0.20							
p,&m-Xylene	ND	0.20							
o-Xylene	ND	0.20							
Styrene	ND	0.20							
Bromoform	ND	0.20							
1,1,2,2-Tetrachloroethane	ND	0.40							
Benzyl Chloride	ND	0.20							
4-Ethyl Toluene	ND	0.20							
1,3,5-Trimethylbenzene	ND	0.40							
1,2,4-Trimethylbenzene	ND	0.40							
1,3-Dichlorobenzene	ND	0.20							
1,4-Dichlorobenzene	ND	0.20							
1,2-Dichlorobenzene	ND	0.20							
1,2,4-Trichlorobenzene	ND	0.40							
Hexachlorobutadiene	ND	0.20							

ND = Not Detected (below RL)

RL = Reporting Limit

Reviewed/Approved By:

Mark Johnson

Mark Johnson
 Operations Manager

Date

3-14-16

The cover letter is an integral part of this analytical report



AirTECHNOLOGY Laboratories, Inc.

page 2 of 2

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

QC Batch #: 160311MS2A1

Matrix: Air

EPA Method TO-14/TO-15

Lab No:	Method Blank		LCS		LCSD						
Date/Time Analyzed:	3/11/16 13:47		3/11/16 10:29		3/11/16 11:08						
Data File ID:	11MAR014.D		11MAR009.D		11MAR010.D						
Analyst Initials:	DT		DT		DT						
Dilution Factor:	0.2		1.0		1.0						
ANALYTE	Result ppbv	Spike Amount	Result ppbv	% Rec	Result ppbv	% Rec	RPD	Limits			Pass/ Fail
								Low %Rec	High %Rec	Max. RPD	
1,1-Dichloroethene	0.0	10.0	9.8	98	9.9	99	1.5	70	130	30	Pass
Methylene Chloride	0.0	10.0	9.7	97	9.8	98	1.5	70	130	30	Pass
Trichloroethene	0.0	10.0	10.0	100	10.2	102	1.5	70	130	30	Pass
Toluene	0.1	10.0	9.8	97	10.0	99	2.2	70	130	30	Pass
1,1,2,2-Tetrachloroethane	0.0	10.0	11.1	111	10.9	109	1.6	70	130	30	Pass

RPD = Relative Percent Difference

Reviewed/Approved By:

Mark Johnson
Operations Manager

Date:

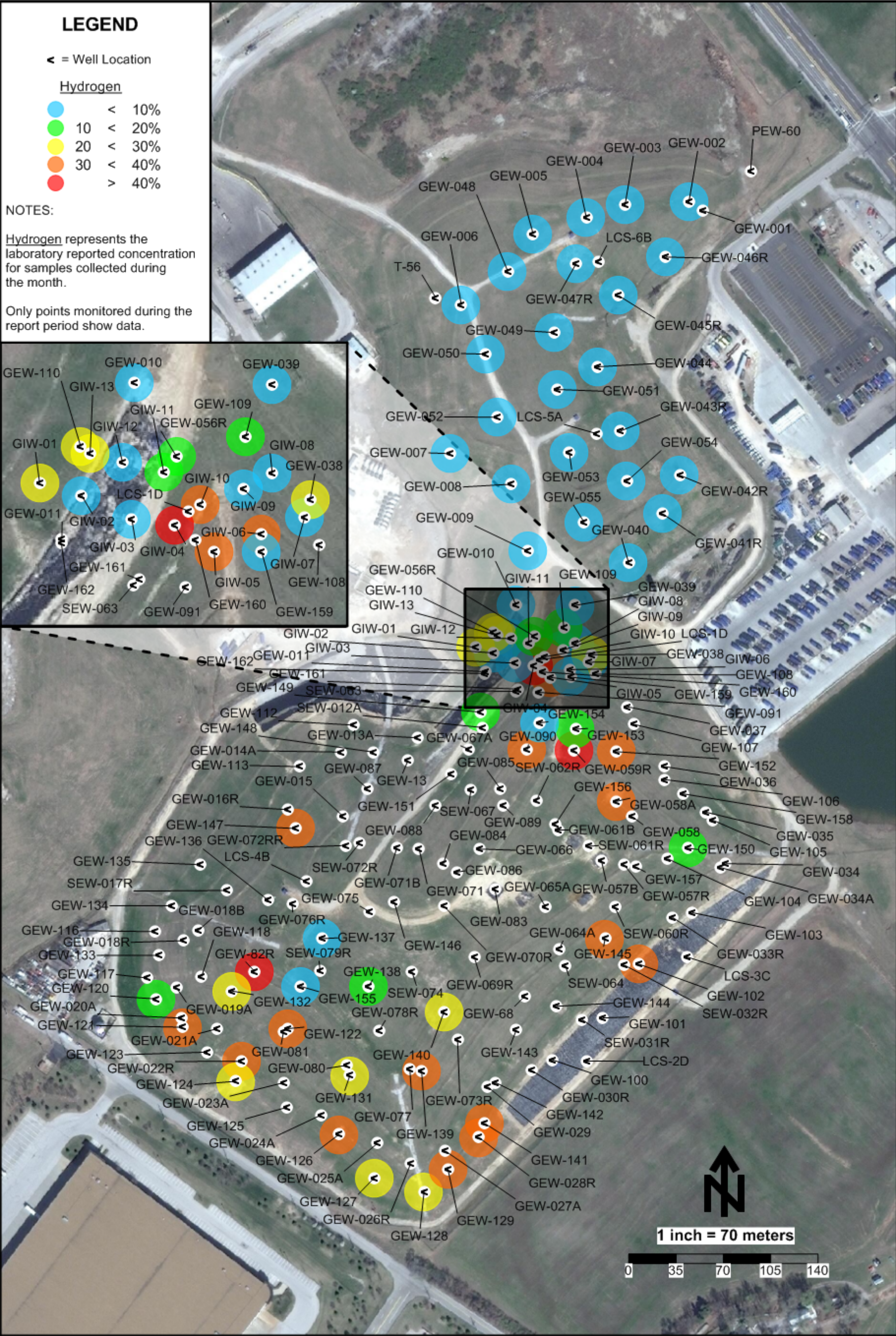
3-17-16

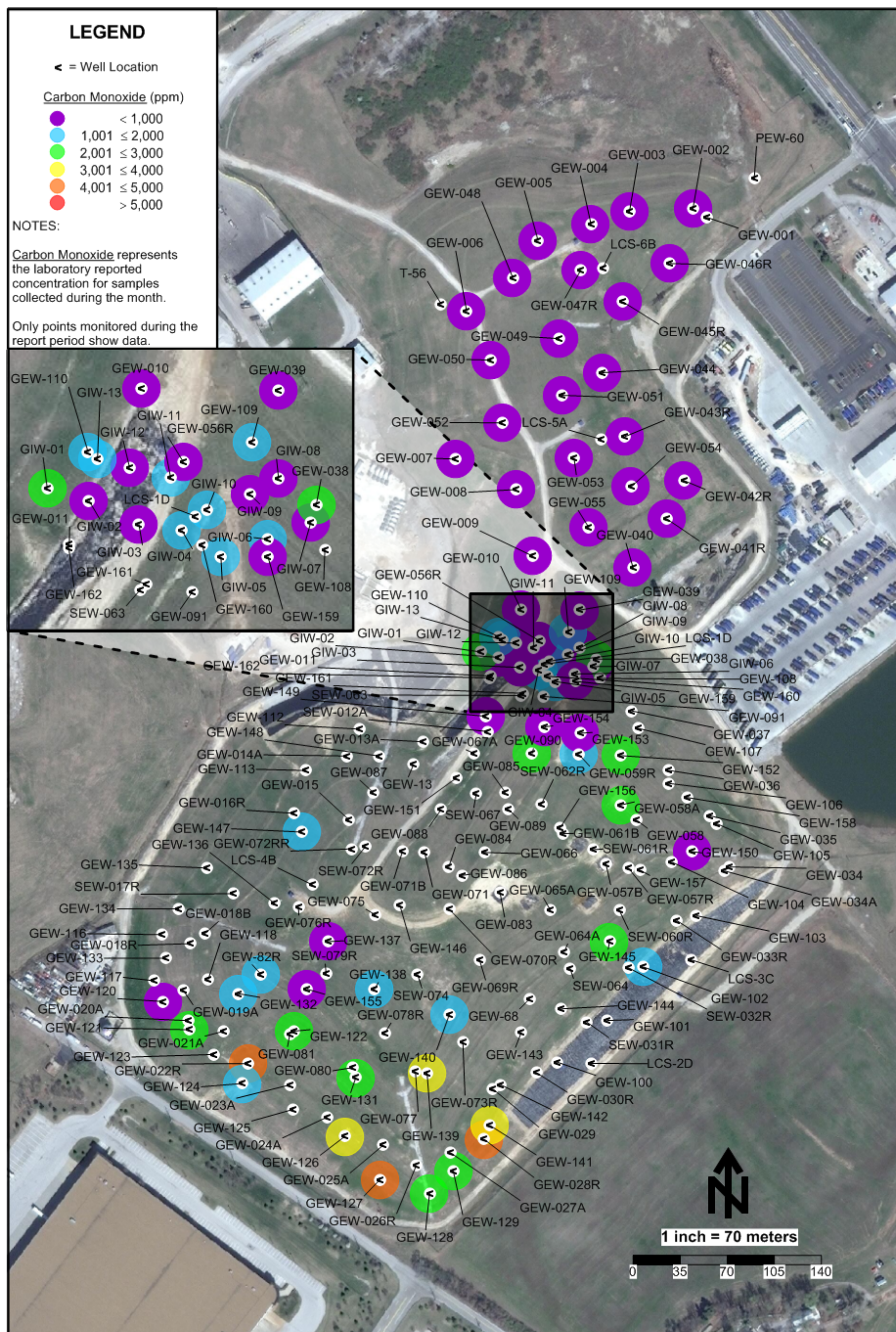
The cover letter is an integral part of this analytical report.



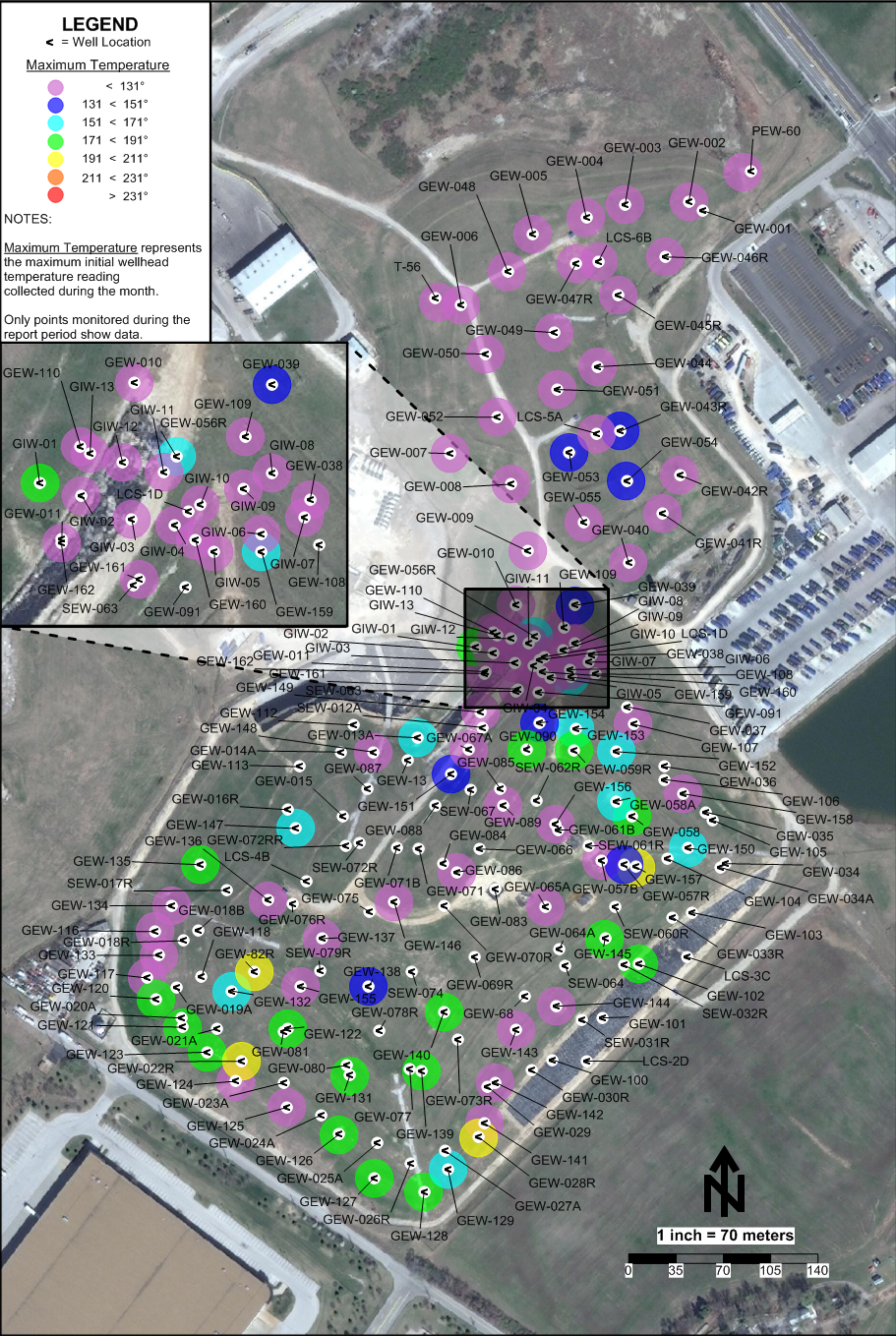
ATTACHMENT C

GAS WELL ANALYSIS MAPS





Carbon Monoxide Data Map - March 2016 - Bridgeton Landfill



ATTACHMENT D

LABORATORY DATA

ATTACHMENT D-1

LAB ANALYSIS SUMMARY

Laboratory Analysis - Bridgeton Landfill

Well Name	Date Sampled	Methane	CO ₂	O ₂ /Argon	Nitrogen	Hydrogen	Carbon Monoxide	Comments
		North Quarry					(ppm)	
GEW-002	11/13/2015	54	43	ND	ND	ND	ND	
GEW-002	12/14/2015	41	32	3.2	23	ND	35	See Note 3
GEW-002	12/31/2015	53	40	ND	5.7	0.1	ND	Resample
GEW-002	1/14/2016	55	43	ND	ND	ND	ND	
GEW-002	2/15/2016	52	41	1.7	5.8	ND	ND	See Note 3
GEW-002	3/7/2016	56	42	ND	ND	0.04	ND	
GEW-003	11/10/2015	50	40	ND	8.7	0.1	ND	
GEW-003	12/14/2015	42	37	ND	20	ND	ND	
GEW-003	1/14/2016	52	39	ND	6.7	0.1	ND	
GEW-003	2/15/2016	56	42	ND	ND	0.1	ND	
GEW-003	3/7/2016	54	40	ND	5	0.1	ND	
GEW-004	11/10/2015	49	40	ND	10	0.1	ND	
GEW-004	12/14/2015	45	37	ND	16	ND	ND	
GEW-004	1/14/2016	52	40	ND	6.7	0.1	ND	
GEW-004	2/15/2016	52	41	1.7	5.8	ND	ND	
GEW-004	3/7/2016	56	41	ND	ND	0.1	ND	
GEW-005	11/10/2015	44	36	ND	19	0.03	ND	
GEW-005	12/15/2015	41	34	ND	23	ND	ND	
GEW-005	1/14/2016	42	34	ND	24	ND	ND	
GEW-005	2/15/2016	54	38	ND	7.6	0.07	ND	
GEW-005	3/7/2016	53	38	ND	8	0.1	ND	
GEW-006	11/10/2015	51	40	ND	8.1	ND	ND	
GEW-006	1/14/2016	52	37	ND	10	ND	ND	
GEW-006	3/7/2016	56	38	ND	5.4	ND	ND	
GEW-007	11/11/2015	56	41	ND	ND	ND	ND	
GEW-007	1/14/2016	57	41	ND	ND	ND	ND	
GEW-007	1/27/2016	56	39	ND	4	ND	ND	
GEW-007	3/7/2016	57	41	ND	ND	ND	ND	
GEW-008	11/11/2015	49	47	ND	ND	2.1	ND	
GEW-008	12/15/2015	42	42	1.8	8.6	1.4	ND	See Note 3
GEW-008	1/27/2016	50	47	ND	ND	1.6	ND	
GEW-008	2/15/2016	50	47	ND	ND	0.7	ND	
GEW-008	3/7/2016	49	47	ND	ND	1.6	ND	
GEW-009	11/11/2015	46	39	2	12	0.4	ND	See Note 1 and 3
GEW-009	12/15/2015	39	40	ND	19	0.3	ND	
GEW-009	1/27/2016	51	41	ND	6.7	0.5	ND	
GEW-009	2/17/2016	54	43	ND	ND	0.7	ND	
GEW-009	3/7/2016	54	43	ND	ND	0.9	ND	
GEW-040	11/10/2015	52	37	2.4	8.5	ND	ND	See Note 1 and 3
GEW-040	12/14/2015	54	38	1.9	6.6	ND	ND	See Note 3
GEW-040	1/14/2016	57	41	ND	ND	ND	ND	
GEW-040	2/15/2016	55	38	1.4	5.2	ND	ND	See Note 3
GEW-040	3/7/2016	55	38	ND	5	ND	ND	
GEW-041R	11/10/2015	47	37	1.6	15	ND	ND	See Note 3
GEW-041R	1/14/2016	56	42	ND	ND	ND	ND	
GEW-041R	3/7/2016	57	41	ND	ND	ND	ND	

Laboratory Analysis - Bridgeton Landfill

Well Name	Date Sampled	Methane	CO ₂	O ₂ /Argon	Nitrogen	Hydrogen	Carbon Monoxide	Comments
		(%)					(ppm)	
GEW-042R	11/10/2015	42	35	5	18	ND	ND	See Note 1 and 3
GEW-042R	12/14/2015	49	40	2.3	8.3	ND	ND	See Note 3
GEW-042R	1/14/2016	55	42	ND	ND	ND	ND	
GEW-042R	2/15/2016	56	41	ND	ND	0.04	ND	
GEW-042R	3/7/2016	56	42	ND	ND	ND	ND	
GEW-043R	11/11/2015	53	44	ND	ND	ND	ND	
GEW-043R	1/14/2016	55	43	ND	ND	0.2	ND	
GEW-043R	3/7/2016	55	43	ND	ND	0.05	ND	
GEW-044	11/10/2015	47	37	ND	15	ND	ND	
GEW-044	1/14/2016	56	40	ND	ND	ND	ND	
GEW-044	3/7/2016	58	40	ND	ND	ND	ND	
GEW-045R	11/10/2015	58	39	ND	ND	ND	ND	
GEW-045R	12/14/2015	57	38	ND	3.9	ND	ND	
GEW-045R	1/14/2016	56	43	ND	ND	ND	ND	
GEW-045R	2/15/2016	57	39	ND	ND	ND	ND	
GEW-045R	3/7/2016	58	40	ND	ND	ND	ND	
GEW-046R	11/10/2015	53	41	ND	4.7	0.1	ND	
GEW-046R	12/14/2015	47	39	ND	13	ND	ND	
GEW-046R	1/14/2016	54	41	ND	4.7	0.1	ND	
GEW-046R	2/15/2016	55	40	ND	4.3	0.1	ND	
GEW-046R	3/7/2016	55	40	ND	4.4	0.1	ND	
GEW-047R	11/10/2015	41	37	ND	21	0.1	ND	
GEW-047R	12/14/2015	37	33	ND	29	ND	ND	
GEW-047R	1/14/2016	40	35	ND	24	0.05	ND	
GEW-047R	2/15/2016	50	38	ND	11	0.2	ND	
GEW-047R	3/7/2016	52	39	ND	8.1	0.1	ND	
GEW-048	11/10/2015	53	40	ND	5.7	ND	ND	
GEW-048	12/15/2015	49	38	ND	12	ND	ND	
GEW-048	1/14/2016	52	39	ND	8.4	ND	ND	
GEW-048	2/15/2016	56	40	ND	3.8	0.03	ND	
GEW-048	3/7/2016	57	40	ND	ND	ND	ND	
GEW-049	11/10/2015	46	37	ND	15	0.1	ND	
GEW-049	12/15/2015	46	37	ND	16	ND	ND	
GEW-049	1/27/2016	45	34	ND	20	0.1	ND	
GEW-049	2/15/2016	55	37	ND	6.3	0.1	ND	
GEW-049	3/7/2016	57	40	ND	ND	0.1	ND	
GEW-050	11/10/2015	48	37	ND	13	ND	ND	
GEW-050	1/14/2016	53	39	ND	7.9	0.1	ND	
GEW-050	3/7/2016	56	39	ND	4.6	0.1	ND	
GEW-051	11/10/2015	53	42	ND	3.3	1	ND	
GEW-051	1/27/2016	55	41	ND	ND	1	ND	
GEW-051	3/7/2016	55	42	ND	ND	1.2	ND	
GEW-052	11/11/2015	43	37	1.7	18	0.04	ND	See Note 1 and 3
GEW-052	1/14/2016	45	36	ND	19	0.04	ND	
GEW-052	3/7/2016	53	38	ND	8.9	0.1	ND	
GEW-053	11/11/2015	49	42	ND	3.3	4.8	55	
GEW-053	12/15/2015	49	41	ND	4.8	4.5	51	
GEW-053	1/27/2016	50	41	ND	3.9	4.7	49	
GEW-053	2/15/2016	50	41	ND	ND	5.8	57	
GEW-053	3/7/2016	49	41	ND	ND	5.7	65	

Laboratory Analysis - Bridgeton Landfill

Well Name	Date Sampled	Methane	CO ₂	O ₂ /Argon	Nitrogen	Hydrogen	Carbon Monoxide	Comments
		(%)					(ppm)	
GEW-054	11/11/2015	52	43	ND	ND	2.6	ND	
GEW-054	12/15/2015	50	42	ND	ND	5.1	39	
GEW-054	1/27/2016	53	42	ND	ND	4.0	ND	
GEW-054	2/15/2016	51	41	ND	3.4	4.3	ND	
GEW-054	3/7/2016	53	43	ND	ND	3.1	34	
GEW-055	11/11/2015	52	43	ND	3.2	1.2	ND	
GEW-055	12/15/2015	51	41	ND	5.8	1.8	ND	
GEW-055	1/27/2016	54	42	ND	ND	1.0	ND	
GEW-055	2/15/2016	54	43	ND	ND	1.4	ND	
GEW-055	3/7/2016	54	43	ND	ND	1.1	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. (3) Based on the oxygen verification readings taken with an Enviro meter, it was determined there is a sample train leak. (4) Based on the oxygen verification readings taken with an Enviro meter, it was determined that the readings are accurate. (5) Flare station gas concentration data is an average of FL-100, FL-120, and FL-140. (6) Flare station gas concentration data is an average of Outlets 1 & 2. (7) Flare station gas concentration based on data from Outlet B.

Laboratory Analysis - Bridgeton Landfill

Well Name	Date Sampled	Methane	CO ₂	O ₂ /Argon	Nitrogen	Hydrogen	Carbon Monoxide	Comments
		(%)					(ppm)	
South Quarry								
GEW-010	11/11/2015	53	42	ND	3.9	0.6	50	
GEW-010	12/16/2015	54	40	ND	4.4	ND	35	
GEW-010	1/26/2016	53	43	ND	3.0	0.2	ND	
GEW-010	2/16/2016	50	41	1.6	6.5	0.2	31	See Note 4
GEW-010	3/3/2016	38	50	ND	9.2	1.7	130	
GEW-022R	11/12/2015	0.8	65	ND	ND	30	4,800	
GEW-022R	3/9/2016	0.7	65	ND	ND	30	4,300	
GEW-028R	11/13/2015	0.1	59	ND	4.9	34	3,600	
GEW-028R	1/26/2016	0.1	60	1.5	5.1	33	3,600	
GEW-028R	3/9/2016	0.1	61	ND	ND	34	4,300	
GEW-038	11/11/2015	0.2	33	9.8	35	21	2,100	
GEW-038	12/16/2015	0.2	33	10	36	20	2,100	See Note 4
GEW-038	1/26/2016	0.3	56	2.2	8	33	3,200	
GEW-038	2/16/2016	0.3	44	6.6	24	25	2,600	See Note 4
GEW-038	3/3/2016	0.3	44	7.4	27	21	2,500	
GEW-039	11/11/2015	39	55	ND	ND	2.7	170	
GEW-039	12/16/2015	37	54	ND	4.5	3.3	150	
GEW-039	1/26/2016	42	56	ND	ND	0.7	52	
GEW-039	2/16/2016	42	55	ND	ND	0.9	75	
GEW-039	3/3/2016	39	56	ND	ND	2	160	
GEW-056R	11/11/2015	14	42	ND	24	18	1,100	
GEW-056R	12/16/2015	1.8	54	ND	5.8	37	2,000	
GEW-056R	1/26/2016	16	39	ND	31	13	700	
GEW-056R	2/16/2016	20	38	ND	30	10	620	
GEW-056R	3/3/2016	17	39	ND	32	11	610	
GEW-057R	11/11/2015	0.5	53	ND	3.8	40	2,800	
GEW-057R	1/14/2016	0.4	54	ND	ND	40	2,200	
GEW-058	11/11/2015	3.5	48	3.6	14	30	2,100	See Note 3
GEW-058	1/14/2016	3.8	54	ND	5.5	35	2,100	
GEW-058A	11/11/2015	0.4	49	3.3	12	35	2,500	
GEW-058A	1/14/2016	0.3	51	2	7.1	39	2,500	
GEW-058A	3/9/2016	0.5	43	4.9	18	33	2,100	
GEW-059R	11/11/2015	0.8	51	ND	4.4	41	1,800	
GEW-059R	1/14/2016	0.9	48	1.9	6.9	41	1,900	See Note 3
GEW-059R	3/9/2016	1.3	50	ND	4.4	42	2,000	
GEW-065A	11/12/2015	0.4	58	ND	ND	37	3,200	
GEW-065A	1/14/2016	0.4	58	ND	ND	36	2,900	
GEW-082R	11/12/2015	0.9	55	ND	ND	40	2,300	
GEW-082R	1/14/2016	0.8	56	ND	ND	40	2,000	
GEW-082R	3/9/2016	0.8	54	ND	ND	40	2,000	
GEW-086	11/12/2015	10	34	8.7	44	2.7	430	
GEW-090	11/12/2015	5.5	49	ND	3.6	40	2,200	
GEW-090	1/26/2016	5	50	ND	ND	42	1,900	
GEW-090	3/9/2016	7.3	49	ND	ND	39	2,100	
GEW-102	11/13/2015	2.1	59	ND	3.3	34	2,100	
GEW-102	1/14/2016	2.3	60	ND	ND	34	1,700	
GEW-102	3/9/2016	1.3	56	ND	3.4	36	1,400	
GEW-104	11/13/2015	0.4	43	5.7	21	29	1,500	
GEW-109	11/11/2015	5.6	60	ND	ND	31	2,400	
GEW-109	12/16/2015	3.6	42	5	24	25	1,500	See Note 3
GEW-109	1/26/2016	2.3	36	7.9	34	19	1,300	See Note 4
GEW-109	2/16/2016	3.4	63	ND	ND	32	2,300	
GEW-109	3/3/2016	11	46	2.9	21	19	1,100	
GEW-110	11/11/2015	7.8	43	4.1	23	22	1,400	
GEW-110	12/16/2015	6	33	8.7	39	13	990	See Note 4

Laboratory Analysis - Bridgeton Landfill

Well Name	Date Sampled	Methane	CO ₂	O ₂ /Argon	Nitrogen	Hydrogen	Carbon Monoxide	Comments
		(%)					(ppm)	
GEW-110	1/26/2016	4.2	23	11	51	11	630	See Note 4
GEW-110	2/16/2016	7	34	9	36	14	810	See Note 4
GEW-110	3/3/2016	2	36	8	32	21	1,200	
GEW-116	11/12/2015	2.8	50	6.2	22	17	1,800	
GEW-117	11/12/2015	3.7	66	ND	4.8	22	2,600	
GEW-120	11/12/2015	7.6	68	ND	ND	21	2,100	
GEW-120	1/14/2016	15	69	ND	ND	11	880	
GEW-120	3/2/2016	13	60	1.6	14	11	950	
GEW-121	11/12/2015	2.3	46	5	18	28	2,200	See Note 3
GEW-121	1/14/2016	3.8	60	ND	ND	33	2,600	
GEW-121	3/2/2016	4.5	61	ND	ND	31	2,600	
GEW-122	11/12/2015	5.3	55	ND	ND	35	2,800	
GEW-122	1/14/2016	3.5	57	ND	ND	37	3,000	
GEW-122	3/2/2016	5.2	56	ND	3.1	34	2,900	
GEW-123	11/12/2015	1.6	51	4.9	17	24	3,200	See Note 3
GEW-124	11/13/2015	7	61	ND	ND	28	2,100	
GEW-124	1/15/2016		62	ND	ND	27	1,900	
GEW-124	3/2/2016	7.2	63	ND	2.9	26	1,800	
GEW-125	11/12/2015	0.5	59	ND	ND	36	3,600	
GEW-126	11/12/2015	8.2	54	ND	ND	33	3,300	
GEW-126	1/14/2016	6.2	54	ND	ND	36	3,500	
GEW-126	3/2/2016	10	56	ND	ND	30	3,200	
GEW-127	11/13/2015	0.4	62	ND	ND	33	4,100	
GEW-127	1/14/2016	0.3	65	ND	ND	32	4,400	
GEW-127	3/2/2016	1.3	61	1.6	5.6	29	4,100	
GEW-128	11/13/2015	0.7	61	ND	ND	34	3,800	
GEW-128	1/14/2016	0.9	64	ND	ND	32	3,600	
GEW-128	3/2/2016	6.5	66	ND	ND	25	2,800	
GEW-129	11/13/2015	0.7	58	ND	3.3	36	3,400	
GEW-129	1/14/2016	1.0	62	ND	ND	34	3,300	
GEW-129	3/2/2016	5.4	59	ND	ND	32	3,000	
GEW-131	11/12/2015	20	47	ND	4.6	26	1,700	
GEW-131	1/26/2016	15	51	ND	ND	31	2,100	
GEW-131	3/2/2016	10	47	3.4	12	27	2,200	
GEW-132	11/12/2015	6.9	43	5.9	26	17	1,200	See Note 4
GEW-132	1/14/2016	8.7	50	2.9	15	23	1,700	
GEW-132	3/2/2016	7.4	49	3.4	19	20	1,700	
GEW-133	11/12/2015	0.4	53	3	11	32	3,800	
GEW-134	11/12/2015	11	43	5.8	28	11	770	See Note 1 and 3
GEW-134	1/14/2016	17	58	ND	13	11	750	
GEW-135	11/13/2015	4.8	47	4.2	15	28	1,500	See Note 3
GEW-137	11/12/2015	11	29	6.6	52	0.6	71	See Note 3
GEW-137	1/14/2016	13	36	ND	49	0.3	36	
GEW-137	3/4/2016	14	44	ND	39	1	ND	
GEW-138	11/12/2015	2.8	23	10	56	8	670	
GEW-138	1/15/2016	13	50	2.2	25	9.2	730	See Note 4
GEW-138	3/4/2016	14	65	ND	7.8	12	1,300	
GEW-139	11/13/2015	0.9	47	4	19	29	3,300	
GEW-139	1/14/2016	1.4	54	1.8	6.6	35	3,600	
GEW-139	3/4/2016	1	60	ND	ND	35	4,000	
GEW-140	1/15/2016	1.7	60	ND	ND	35	3,300	
GEW-140	3/4/2016	9.4	58	ND	3.7	28	2,000	
GEW-141	11/13/2015	1.7	60	1.6	5.5	30	3,500	See Note 1 and 3
GEW-141	1/14/2016	1.1	60	ND	ND	33	3,300	
GEW-141	3/4/2016	1.3	62	ND	ND	32	3,900	

Laboratory Analysis - Bridgeton Landfill

Well Name	Date Sampled	Methane	CO ₂	O ₂ /Argon	Nitrogen	Hydrogen	Carbon Monoxide	Comments
		(%)					(ppm)	
GEW-142	11/13/2015	0.2	51	4.1	15	29	3,500	
GEW-143	11/13/2015	0.2	49	3.3	12	35	3,200	
GEW-144	11/13/2015	0.8	56	1.9	6.6	33	3,500	
GEW-145	11/13/2015	1.7	52	2.9	10	32	2,700	See Note 3
GEW-145	3/4/2016	4	56	ND	3.5	35	2,400	
GEW-146	11/12/2015	3.1	18	13	64	2	220	
GEW-147	11/13/2015	5.1	51	ND	3.6	38	2,300	
GEW-147	1/15/2016	4.9	54	ND	3.5	36	2,000	
GEW-147	3/9/2016	10	49	ND	6.8	32	1,900	
GEW-149	11/12/2015	9.6	55	2.4	14	18	1,600	See Note 1
GEW-149	3/9/2016	6.8	35	8.5	38	11	970	See Note 4
GEW-150	11/13/2015	9	60	2	7.9	20	1,600	
GEW-150	1/14/2016	4	63	1.9	6.6	23	1,700	See Note 3
GEW-150	3/9/2016	4	27	12	45	11	830	
GEW-151	11/12/2015	11	56	ND	ND	28	2,200	
GEW-152	11/13/2015	4.1	49	2.3	8.2	35	2,900	See Note 1 and 3
GEW-152	3/9/2016	6.2	47	2.2	7.9	35	2,800	
GEW-153	11/13/2015	20	45	ND	19	15	580	
GEW-153	3/9/2016	23	45	ND	12	18	810	
GEW-154	1/15/2016	21	33	ND	20	24	850	
GEW-154	3/9/2016	14	24	11	45	5.7	270	
GEW-155	3/9/2016	7.9	37	8.9	41	4.8	430	
GEW-156	11/12/2015	4.6	37	9.1	40	9.4	1,100	
GEW-159	3/9/2016	13	43	ND	35	7.8	660	
GIW-01	11/13/2015	2.6	66	ND	4.4	25	2,700	
GIW-01	12/9/2015	2.5	68	ND	ND	26	2,500	
GIW-01	1/26/2016	0.5	16	17	60	6.6	580	See Note 4
GIW-01	2/16/2016	1.7	61	2.7	9.8	24	2,500	See Note 4
GIW-01	3/3/2016	2.3	70	ND	ND	23	2,500	
GIW-02	11/13/2015	4.7	22	12	55	5.8	370	See Note 1
GIW-02	12/10/2015	5.7	33	9	44	8.5	610	See Note 4
GIW-02	1/26/2016	6.4	28	9.7	47	8.3	510	See Note 4
GIW-02	2/17/2016	8	40	7.8	33	10	620	See Note 4
GIW-02	3/3/2016	6.3	30	11	48	3.9	290	
GIW-03	11/13/2015	0.2	38	8.3	30	23	2,200	
GIW-03	12/10/2015	0.1	24	13	47	14	1,300	See Note 4
GIW-03	1/26/2016	0.4	48	4.7	17	29	2,500	See Note 4
GIW-03	2/17/2016	0.3	36	9.3	33	21	2,100	See Note 4
GIW-03	3/3/2016	0.1	8.2	19	69	2.9	460	
GIW-04	11/13/2015	0.5	41	5	18	35	2,200	
GIW-04	12/10/2015	0.5	35	6.9	25	32	1,900	See Note 4
GIW-04	1/26/2016	0.5	50	1.8	6.3	41	2,300	See Note 4
GIW-04	2/17/2016	0.6	43	4.2	15	36	2,300	See Note 3
GIW-04	3/3/2016	0.4	42	3.5	12	41	1,700	
GIW-05	11/13/2015	2.6	58	ND	ND	37	1,900	
GIW-05	12/9/2015	2.3	51	2.3	8.2	35	1,700	See Note 3
GIW-05	1/26/2016	1.7	56	1.7	5.9	34	1,400	See Note 4
GIW-05	2/16/2016	2.2	57	ND	4.7	34	1,700	
GIW-05	3/3/2016	2.8	56	1.5	5.4	33	1,500	
GIW-06	11/13/2015	0.9	56	1.8	6.2	34	1,700	
GIW-06	12/10/2015	1	56	1.8	6.3	34	1,600	See Note 4
GIW-06	1/27/2016	1	59	ND	ND	36	1,500	
GIW-06	2/17/2016	1.1	59	ND	ND	36	1,500	
GIW-06	3/2/2016	1.1	61	ND	4.1	31	1,500	
GIW-07	11/13/2015	30	53	2.2	7.9	6.9	660	

Laboratory Analysis - Bridgeton Landfill

Well Name	Date Sampled	Methane	CO ₂	O ₂ /Argon	Nitrogen	Hydrogen	Carbon Monoxide	Comments
		(%)					(ppm)	
GIW-07	12/10/2015	26	58	ND	4.5	9.6	870	
GIW-07	1/27/2016	29	59	ND	3	8.6	660	
GIW-07	2/17/2016	15	68	ND	ND	15	1,500	
GIW-07	3/2/2016	19	42	6.9	25	7.2	710	
GIW-08	11/13/2015	19	56	4	15	5.4	740	
GIW-08	12/9/2015	24	59	2	10	4.7	570	
GIW-08	12/10/2015	24	63	ND	4.9	6.7	860	See Note 2
GIW-08	1/27/2016	26	59	ND	13	2.2	320	
GIW-08	2/17/2016	25	62	ND	10	2.2	360	
GIW-08	3/2/2016	19	66	ND	12	1.7	290	
GIW-09	11/13/2015	3.9	13	16	64	2.4	220	
GIW-09	12/10/2015	5	21	14	55	5.4	340	See Note 4
GIW-09	1/27/2016	11	31	9.3	40	8.9	590	See Note 4
GIW-09	2/17/2016	6.2	17	14	57	4.9	320	See Note 4
GIW-09	3/2/2016	2.4	17	15	60	5.4	400	
GIW-10	11/13/2015	1.3	50	ND	4.5	42	3,200	
GIW-10	12/10/2015	0.4	42	5.1	18	34	2,500	See Note 1
GIW-10	1/26/2016	0.3	31	7.7	28	32	2,100	See Note 4
GIW-10	2/17/2016	0.4	53	ND	ND	44	3,200	
GIW-10	3/3/2016	5.6	47	ND	15	31	1,700	
GIW-11	11/13/2015	3.2	48	4.2	17	27	2,500	
GIW-11	12/9/2015	2.4	53	2.7	12	29	2,500	See Note 4
GIW-11	1/26/2016	4	46	4.1	19	27	1,900	See Note 4
GIW-11	2/16/2016	4.4	39	6	29	21	1,700	See Note 4
GIW-11	3/3/2016	5.7	40	5.2	34	15	1,600	
GIW-12	11/13/2015	4.3	21	12	56	6.5	530	
GIW-12	12/9/2015	4.2	24	10	55	6.5	470	See Note 4
GIW-12	1/26/2016	4.2	20	11	61	4.9	320	See Note 4
GIW-12	2/16/2016	5.3	20	12	60	2.6	240	See Note 4
GIW-12	3/3/2016	8	25	8.5	54	4.3	340	
GIW-13	11/13/2015	4.3	63	ND	3.2	28	2,500	
GIW-13	12/9/2015	10	58	ND	5.7	25	1,700	
GIW-13	1/26/2016	11	58	ND	6.8	22	1,500	
GIW-13	2/16/2016	13	58	ND	7.6	21	1,500	
GIW-13	3/3/2016	8.7	62	ND	7.6	21	1,700	
Flare Station ²	11/3/2015	10.7	37.3	8	32.0	10.7	1,100	See Note 5
Flare Station ²	12/1/2015	10.6	36.2	8.1	33.6	10.5	1000	See Note 6
Flare Station ²	1/5/2016	11.2	37.6	7.7	32.1	10.7	1,000	See Note 6
Flare Station ²	2/2/2016	11.8	37.7	7.8	31.0	10.9	1,050	See Note 6
Flare Station ²	3/2/2016							

Notes: (1) Based on the comparison of field to laboratory readings, oxygen to balance gas ratios, and historical concentrations, the sample was determined to be suspect due to oxygen introduction which likely occurred during sample collection or laboratory analytical methods. (2) MDNR also collected duplicate LFG samples at these locations during this sampling period. (3) Based on the oxygen verification readings taken with an Envirovision meter, it was determined there is a sample train leak. (4) Based on the oxygen verification readings taken with an Envirovision meter, it was determined that the readings are accurate. (5) Flare station gas concentration data is an average of FL-100, FL-120, and FL-140. (6) Flare station gas concentration data is an average of Outlets 1 & 2. (7) Flare station gas concentration based on data from Outlet B.

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

March 23, 2016

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



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



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

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

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

LABORATORY TEST RESULTS

Project Reference: Bridgeton Landfill
Lab Number: H031105-01/74

Enclosed are results for sample(s) received 3/11/16 by Air Technology Laboratories. Samples were received intact. Analyses were performed according to specifications on the chain of custody provided with the sample(s).

Report Narrative:

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

Preliminary results were e-mailed to Jim Getting, Mike Lambrich, Ryan Ayer, Nicholas Bauer and David Randall, Weaver Consultants Group, on 3/22/16.

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

Sincerely,

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

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

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 9
Standard <input type="checkbox"/> 48 hours <input type="checkbox"/>	EDD <input type="checkbox"/>	Condition upon receipt:
Same Day <input type="checkbox"/> 72 hours <input type="checkbox"/>	EDF <input type="checkbox"/>	Sealed Yes <input type="checkbox"/> No <input type="checkbox"/>
24 hours <input type="checkbox"/> 96 hours <input type="checkbox"/>	Level 3 <input type="checkbox"/>	Intact Yes <input type="checkbox"/> No <input type="checkbox"/>
Other: <input type="checkbox"/> 5 day <input type="checkbox"/>	Level 4 <input type="checkbox"/>	Chilled <input type="checkbox"/> deg C <input type="checkbox"/>

ANALYSIS REQUEST

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

SAMPLE IDENTIFICATION

LAB USE ONLY	Canister Pressures ("hg)				SAMPLE ID	SAMPLE DATE	SAMPLE TIME	CONTAINER QTY/TYPE	MATRIX	PRESERVATION	D1946 + CO ₂ H ₂
	Canister ID	Sample Start	Sample End	Lab Receive							
H031105-01	A7805	-20.7	-5	-3.5	GEW-121	3/2/2016	837	C	LFG	NA	X
-02	4655 A655-84	-20.8	-5	-2.9	GEW-127	3/2/2016	1025	C	LFG	NA	X
-03	3156	-20.5	-5	-3.5	GEW-129	3/2/2016	1049	C	LFG	NA	X
-04	A7648	-20.6	-5	-4	GIW-6	3/2/2016	1552	C	LFG	NA	X
-05	A8057	-20.4	-5	-4	GIW-7	3/2/2016	1606	C	LFG	NA	X
-06	A7814	-20.4	-5	-4	GIW-8	3/2/2016	1619	C	LFG	NA	X
-07	A8078	-20.4	-5	-4	GIW-9	3/2/2016	1630	C	LFG	NA	X
-08	5816	-20.8	-5	-4	GEW-120	3/2/2016	832	C	LFG	NA	X
-09	A7819	-20.7	-5	-3.5	GEW-122	3/2/2016	850	C	LFG	NA	X

COMMENTS

AUTHORIZATION TO PERFORM WORK: Dave Penoyer	COMPANY: Republic Services	DATE/TIME:
SAMPLED BY: Ryan Ayers	COMPANY: Republic Services	DATE/TIME:
RELINQUISHED BY: <i>[Signature]</i>	DATE/RECEIVED BY: 3-10-16 800	DATE/TIME: 3/10/16 0952
RELINQUISHED BY: <i>[Signature]</i>	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



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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

CHAIN OF CUSTODY RECORD			
TURNAROUND TIME		DELIVERABLES	
Standard	<input type="checkbox"/> 48 hours	EDD	<input type="checkbox"/>
Same Day	<input type="checkbox"/> 72 hours	EDF	<input type="checkbox"/>
24 hours	<input type="checkbox"/> 96 hours	Level 3	<input type="checkbox"/>
Other:	<input type="checkbox"/> 5 day	Level 4	<input type="checkbox"/>

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

LAB USE ONLY		Canister Pressures ("hg)				SAMPLE IDENTIFICATION				PRESERVATION	ANALYSIS REQUEST			
Canister ID	Sample Start	Sample End	Lab Receive	Canister ID	Sample Start	Sample End	Lab Receive	DATE	SAMPLE TIME	CONTAINER QTY/TYP	MATRIX	DATE	SAMPLE TIME	CONTAINER QTY/TYP
H031105-10	-20.9	-5	-3	A7764	-20.9	-5	-3	3/2/2016	1005	C	LFG	3/2/2016	1005	C
-11	-20.7	-5	-4	A7809	-20.7	-5	-4	3/2/2016	1014	C	LFG	3/2/2016	1014	C
-12	-20.5	-5	-4	5833	-20.5	-5	-4	3/2/2016	1026	C	LFG	3/2/2016	1026	C
-13	-20.4	-5	-3.5	A7770	-20.4	-5	-3.5	3/2/2016	1048	C	LFG	3/2/2016	1048	C
-14	-20.9	-5	-4	A7761	-20.9	-5	-4	3/2/2016	1116	C	LFG	3/2/2016	1116	C
-15	-20.2	-5	-5	5320	-20.2	-5	-5	3/3/2016	935	C	LFG	3/3/2016	935	C
-16	-19.3	-5	-4	3129	-19.3	-5	-4	3/3/2016	944	C	LFG	3/3/2016	944	C
-17	-20.7	-5	-4	A7815	-20.7	-5	-4	3/3/2016	744	C	LFG	3/3/2016	744	C
-18	-20.5	-5	-4	5305	-20.5	-5	-4	3/3/2016	756	C	LFG	3/3/2016	756	C

AUTHORIZATION TO PERFORM WORK:		DATE/TIME:	
Dave Penoyer			
COMPANY: Republic Services			
DATE/TIME:			
SAMPLER: Ryan Ayers			
DATE/TIME:			
RELINQUISHED BY: <i>12-1-16 Ryan Ayers</i>		DATE/TIME: 3-10-16 800	
RELINQUISHED BY: <i>FGL</i>		DATE/TIME: 3/1/16 0952	
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



18501 E. Gale Ave., Suite 130
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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: 3 OF 9
Standard <input type="checkbox"/> 48 hours Same Day <input type="checkbox"/> 72 hours 24 hours <input type="checkbox"/> 96 hours Other: <input type="checkbox"/> 5 day	EDD <input type="checkbox"/> EDF <input type="checkbox"/> Level 3 <input type="checkbox"/> Level 4 <input type="checkbox"/>	Condition upon receipt: Sealed Yes <input type="checkbox"/> No <input type="checkbox"/> Intact Yes <input type="checkbox"/> No <input type="checkbox"/> Chilled _____ deg C

BILLING		ANALYSIS REQUEST	
P.O. No.:	PO4862452		
Bill to:	Republic Services		
	Attn: Jim Getting		
	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					
H031105 -19	5907	-20.4	-5	-5	GIW-11				
-20	6131	-20.5	-5	-4.5	GIW-12				
-21	A7776	-20.3	-5	-4	GIW-13				
-22	A7792	-20.3	-5	-5	GIW-1				
-23	5832	-20.7	-5	-4	GEW-38				
-24	A7807	-20.3	-5	-4	GEW-56R				
-25	6152	-20.1	-5	-5	GEW-10				
-26	5929	-20.1	-5	-5	GEW-110				
-27	6146	-20.1	-5	-5	GIW-4				

AUTHORIZATION TO PERFORM WORK: Dave Penoyer		DATE/TIME:	
SAMPLED BY: Ryan Ayers		DATE/TIME:	
RELINQUISHED BY: <i>[Signature]</i>	DATE/RECEIVED BY: 3-10-16	DATE/TIME: 800	
RELINQUISHED BY: <i>[Signature]</i>	DATE/RECEIVED BY: <i>[Signature]</i>	DATE/TIME: 3/14/16	0952
RELINQUISHED BY: <i>[Signature]</i>	DATE/RECEIVED BY: <i>[Signature]</i>	DATE/TIME: <i>[Signature]</i>	
METHOD OF TRANSPORT (circle one): Walk-In FedEx UPS Courier ATLI Other _____			



18501 E. Gale Ave., Suite 130
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Project No.:

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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

BILLING

P.O. No.: PO4862452

Bill to: Republic Services

Attn: Jim Getting

13570 St. Charles Rock Rd.

Bridgeton, MO 63044

ANALYSIS REQUEST

D1946 + CO, H2

CHAIN OF CUSTODY RECORD

TURNAROUND TIME	DELIVERABLES	PAGE: 4 OF 9
Standard <input type="checkbox"/> 48 hours	EDD <input type="checkbox"/>	Condition upon receipt: Sealed Yes <input type="checkbox"/> No <input type="checkbox"/> Intact Yes <input type="checkbox"/> No <input type="checkbox"/> Chilled _____ deg C
Same Day <input type="checkbox"/> 72 hours	EDF <input type="checkbox"/>	
24 hours <input type="checkbox"/> 96 hours	Level 3 <input type="checkbox"/>	
Other: 5 day <input checked="" type="checkbox"/>	Level 4 <input type="checkbox"/>	

SAMPLE IDENTIFICATION

Canister Pressures ("hg)

LAB USE ONLY	Canister ID	Sample Start	Sample End	Lab Receive
H031105 -28	5268	-20	-5	-5
-29	A8090	-20.2	-5	-4
-30	58402V 5640	-20.7	-5	-3.5
-31	A7651	-20.7	-5	-4
-32	A7802	-20.6	-5	-4
-33	6160	-21	-5	-4
-34	A8059	-20.6	-5	-4.5
-35	A7793	-20.7	-5	-4
-36	A8098	-19.5	-5	-6

SAMPLE DATE	SAMPLE TIME	CONTAINER QTY/TYPE	MATRIX	PRESERVATION
3/3/2016	1517	C	LFG	NA
3/3/2016	1529	C	LFG	NA
3/4/2016	922	C	LFG	NA
3/4/2016	1016	C	LFG	NA
3/4/2016	839	C	LFG	NA
3/4/2016	911	C	LFG	NA
3/4/2016	920	C	LFG	NA
3/4/2016	935	C	LFG	NA
3/7/2016	1355	C	LFG	NA

AUTHORIZATION TO PERFORM WORK: Dave Penoyer

COMPANY: Republic Services

DATE/TIME:

SAMPLED BY: Ryan Ayers

COMPANY: Republic Services

DATE/TIME:

RELINQUISHED BY: [Signature]

DATE RECEIVED BY: 3-10-16

DATE RECEIVED BY: 8:00

DATE/TIME:

RELINQUISHED BY: [Signature]

DATE RECEIVED BY: 3-10-16

DATE RECEIVED BY: 8:00

DATE/TIME:

RELINQUISHED BY: [Signature]

DATE RECEIVED BY: 3-10-16

DATE RECEIVED BY: 8:00

DATE/TIME:

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

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

COMMENTS



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Phone& Fax:

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Bridgeton Landfill

Jim Getting

Republic Services

13570 St. Charles Rock Rd.

Bridgeton, MO 63044

314-683-3921

JGetting@republicservices.com

BILLING

P.O. No.: PO4862452

Bill to: Republic Services

Attn: Jim Getting

13570 St. Charles Rock Rd.

Bridgeton, MO 63044

CHAIN OF CUSTODY RECORD

TURNAROUND TIME	DELIVERABLES	PAGE: 5 OF 9
Standard <input type="checkbox"/> 48 hours <input type="checkbox"/>	EDD <input type="checkbox"/>	Condition upon receipt:
Same Day <input type="checkbox"/> 72 hours <input type="checkbox"/>	EDF <input type="checkbox"/>	Sealed Yes <input type="checkbox"/> No <input type="checkbox"/>
24 hours <input type="checkbox"/> 96 hours <input type="checkbox"/>	Level 3 <input type="checkbox"/>	Intact Yes <input type="checkbox"/> No <input type="checkbox"/>
Other: 5 day <input checked="" type="checkbox"/>	Level 4 <input type="checkbox"/>	Chilled _____ deg C

ANALYSIS REQUEST

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

SAMPLE IDENTIFICATION

Canister Pressures ("hg)

LAB USE ONLY	Canister ID	Sample Start	Sample End	Lab Receive
H031105 -37	5906	-19.5	-5	-6
-38	5936	-19.8	-5	-6.5
-39	6143	-19.6	-5	-6
-40	A8065	-19.5	-5	-6
-41	6137	-19.3	-5	-6
-42	3834	-19.3	-5	-5.5
-43	A8097	-19.55	-5	-6
-44	5304	-19.4	-5	-5
-45	5269	-19.5	-5	-5

PRESERVATION

SAMPLE DATE	SAMPLE TIME	CONTAINER QTY/TYPE	MATRIX	PRESERVATION
3/7/2016	1409	C	LFG	NA
3/7/2016	1420	C	LFG	NA
3/7/2016	1433	C	LFG	NA
3/7/2016	1449	C	LFG	NA
3/7/2016	1512	C	LFG	NA
3/7/2016	1525	C	LFG	NA
3/7/2016	1535	C	LFG	NA
3/7/2016	1600	C	LFG	NA
3/7/2016	902	C	LFG	NA

COMMENTS

AUTHORIZATION TO PERFORM WORK: Dave Penoyer		COMPANY: Republic Services	DATE/TIME:
SAMPLED BY: Ryan Ayers		COMPANY: Republic Services	DATE/TIME:
RELINQUISHED BY: Ryan Ayers	DATE/RECEIVED BY: 3-10-16 800	DATE/TIME:	DATE/TIME:
RELINQUISHED BY: Ryan Ayers	DATE/RECEIVED BY: 3-10-16 1752	DATE/TIME:	DATE/TIME:
RELINQUISHED BY: Ryan Ayers	DATE/RECEIVED BY: 3-10-16 1752	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



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CHAIN OF CUSTODY RECORD

TURNAROUND TIME	DELIVERABLES	PAGE: 6 OF 9
Standard <input type="checkbox"/> 48 hours <input type="checkbox"/>	EDD <input type="checkbox"/>	Condition upon receipt:
Same Day <input type="checkbox"/> 72 hours <input type="checkbox"/>	EDF <input type="checkbox"/>	Sealed Yes <input type="checkbox"/> No <input type="checkbox"/>
24 hours <input type="checkbox"/> 96 hours <input type="checkbox"/>	Level 3 <input type="checkbox"/>	Intact Yes <input type="checkbox"/> No <input type="checkbox"/>
Other: 5 day <input checked="" type="checkbox"/>	Level 4 <input type="checkbox"/>	Chilled _____ deg C

BILLING	ANALYSIS REQUEST
P.O. No.: PO4862452	
Bill to: Republic Services	
Attn: Jim Getting	
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/TYPE	MATRIX	
H031105 -46	6158	-19.8	-5	-5	3/7/2016	925	C	LFG	X
-47	A7791	-19.7	-5	-5	3/7/2016	935	C	LFG	X
-48	3126	-19.7	-5	-5	3/7/2016	947	C	LFG	X
-49	5813	-19.6	-5	-5	3/7/2016	1000	C	LFG	X
-50	6144	-19.6	-5	-5	3/7/2016	1018	C	LFG	X
-51	A8064	-19.8	-5	-5	3/7/2016	1027	C	LFG	X
-52	A8086	-19.5	-5	-5	3/7/2016	1339	C	LFG	X
-53	5916	-19	-5	-5	3/7/2016	1349	C	LFG	X
-54	4658	-19.2	-5	-5	3/7/2016	1404	C	LFG	X

AUTHORIZATION TO PERFORM WORK: Dave Penoyer		DATE/TIME:
COMPANY: Republic Services		
SAMPLED BY: Ryan Ayers		DATE/TIME:
RELINQUISHED BY: [Signature]	DATE/RECEIVED BY: 3-10-16	800
RELINQUISHED BY: PEN	DATE/RECEIVED BY: 3/14/16	0932
RELINQUISHED BY:	DATE/RECEIVED BY:	
METHOD OF TRANSPORT (circle one): Walk-In FedEx UPS Courier ATU Other		



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: 7 OF 9
Standard <input type="checkbox"/> 48 hours	EDD <input type="checkbox"/>	Condition upon receipt: Sealed Yes <input type="checkbox"/> No <input type="checkbox"/> Intact Yes <input type="checkbox"/> No <input type="checkbox"/> Chilled _____ deg C
Same Day <input type="checkbox"/> 72 hours	EDF <input type="checkbox"/>	
24 hours <input type="checkbox"/> 96 hours	Level 3 <input type="checkbox"/>	
Other: 5 day <input checked="" type="checkbox"/>	Level 4 <input type="checkbox"/>	

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
4657	-19.6	-5	-6
3128	-19.3	-5	-6
A7813	-19.5	-5	-5.5
A7646	-19.2	-5	-5
5309	-19.3	-5	-6
3826	-19.5	-5	-5
A7665	-19.7	-5	-5
A7643	-19.3	-5	-5
A7767	-19.7	-5	-6

SAMPLE IDENTIFICATION

SAMPLE DATE	SAMPLE TIME	CONTAINER QTY/TYP	MATRIX	PRESERVATION
3/7/2016	1418	C	LFG	NA
3/7/2016	1431	C	LFG	NA
3/7/2016	1504	C	LFG	NA
3/7/2016	1513	C	LFG	NA
3/7/2016	1524	C	LFG	NA
3/9/2016	1004	C	LFG	NA
3/9/2016	1112	C	LFG	NA
3/9/2016	1130	C	LFG	NA
3/9/2016	1146	C	LFG	NA

DATE/TIME:

COMPANY: Republic Services

DAVE PENOYER

DATE/TIME:

COMPANY: Republic Services

SAMPLED BY: Ryan Ayers

DATE/TIME:

DATE RECEIVED BY

DATE

3-10-16

800

DATE

RELINQUISHED BY: Ryan Ayers

DATE/TIME:

DATE RECEIVED BY

DATE

3-10-16

800

DATE

RELINQUISHED BY: Ryan Ayers

DATE/TIME:

DATE RECEIVED BY

DATE

3-10-16

800

DATE

RELINQUISHED BY: Ryan Ayers

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

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

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



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: 8 OF 9
Standard <input type="checkbox"/> 48 hours <input type="checkbox"/>	EDD <input type="checkbox"/>	Condition upon receipt:
Same Day <input type="checkbox"/> 72 hours <input type="checkbox"/>	EDF <input type="checkbox"/>	Sealed Yes <input type="checkbox"/> No <input type="checkbox"/>
24 hours <input type="checkbox"/> 96 hours <input type="checkbox"/>	Level 3 <input type="checkbox"/>	Intact Yes <input type="checkbox"/> No <input type="checkbox"/>
Other: 5 day <input checked="" type="checkbox"/>	Level 4 <input type="checkbox"/>	Chilled _____ deg C

ANALYSIS REQUEST

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

LAB USE ONLY	Canister Pressures ("hg)				SAMPLE IDENTIFICATION			
	Canister ID	Sample Start	Sample End	Lab Receive	SAMPLE DATE	SAMPLE TIME	CONTAINER QTY/TYPE	MATRIX
H031105 -64	5835	-19.4	-5	-5	3/9/2016	1214	C	LFG
-65	5821	-19.5	-5	-5	3/9/2016	1229	C	LFG
-66	A7810	-19	-5	-45	3/9/2016	1351	C	LFG
-67	A7771	-19.8	-5	-5	3/9/2016	935	C	LFG
-68	A7816	-19.9	-5	-5	3/9/2016	956	C	LFG
-69	A7762	-19.4	-5	-5	3/9/2016	1018	C	LFG
-70	3827	-19.7	-5	-5	3/9/2016	1027	C	LFG
-71	A7778	-20	-5	-5	3/9/2016	1046	C	LFG
-72	A8075	-19.6	-5	-5	3/9/2016	1150	C	LFG

COMPANY: Republic Services

COMMENTS

SAMPLED BY: Ryan Ayers	DATE/TIME: _____
RELINQUISHED BY: _____	DATE/TIME: _____
RELINQUISHED BY: _____	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



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

[illegible]

AUTHORIZATION TO PERFORM WORK:		COMMENTS	
Dave Penoyer			
SAMPLER BY: Ryan Ayers			
RELINQUISHED BY: <i>12- Agents</i>	DATE RECEIVED BY: <i>3-10-16 800</i>	DATE/TIME	
RELINQUISHED BY: <i>PAI EX</i>	DATE RECEIVED BY: <i>DPT 3/4/16 0952</i>	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

Client: Republic Services
Attn: Jim Getting
Project Name: Bridgeton Landfill
Project No.: NA
Date Received: 03/11/16
Matrix: Air
Reporting Units: % v/v

Page 2 of 29
 H031105

ASTM D1946									
Lab No.:		H031105-01		H031105-02		H031105-03		H031105-04	
Client Sample I.D.:		GEW-121		GEW-127		GEW-129		GIW-6	
Date/Time Sampled:		3/2/16 8:37		3/2/16 10:25		3/2/16 10:49		3/2/16 15:52	
Date/Time Analyzed:		3/16/16 12:59		3/16/16 13:13		3/16/16 13:28		3/16/16 13:43	
QC Batch No.:		160316GC8A1		160316GC8A1		160316GC8A1		160316GC8A1	
Analyst Initials:		AS		AS		AS		AS	
Dilution Factor:		2.9		2.7		2.9		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		31	2.9	29	2.7	32	2.9	31	3.0
Carbon Dioxide		61	0.029	61	0.027	59	0.029	61	0.030
Oxygen/Argon		ND	1.4	1.6	1.4	ND	1.4	ND	1.5
Nitrogen		ND	2.9	5.6	2.7	ND	2.9	4.1	3.0
Methane		4.5	0.0029	1.3	0.0027	5.4	0.0029	1.1	0.0030
Carbon Monoxide		0.26	0.0029	0.41	0.0027	0.30	0.0029	0.15	0.0030

Results normalized including non-methane hydrocarbons

ND = Not Detected (below RL)

RL = Reporting Limit

Reviewed/Approved By:



Mark Johnson
 Operations Manager

Date

3-22-16

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: 03/11/16
Matrix: Air
Reporting Units: % v/v

Page 3 of 29
 H031105

ASTM D1946								
Lab No.:	H031105-05		H031105-06		H031105-07		H031105-08	
Client Sample I.D.:	GIW-7		GIW-8		GIW-9		GEW-120	
Date/Time Sampled:	3/2/16 16:06		3/2/16 16:19		3/2/16 16:30		3/2/16 8:32	
Date/Time Analyzed:	3/16/16 13:57		3/16/16 14:12		3/16/16 14:26		3/16/16 14:41	
QC Batch No.:	160316GC8A1		160316GC8A1		160316GC8A1		160316GC8A1	
Analyst Initials:	AS		AS		AS		AS	
Dilution Factor:	3.0		3.0		3.0		3.0	
ANALYTE	Result	RL	Result	RL	Result	RL	Result	RL
	% v/v	% v/v	% v/v	% v/v	% v/v	% v/v	% v/v	% v/v
Hydrogen	7.2	3.0	1.7	d 0.030	5.4	3.0	11	3.0
Carbon Dioxide	42	0.030	66	0.030	17	0.030	60	0.030
Oxygen/Argon	6.9	1.5	ND	1.5	15	1.5	1.6	1.5
Nitrogen	25	3.0	12	3.0	60	3.0	14	3.0
Methane	19	0.0030	19	0.0030	2.4	0.0030	13	0.0030
Carbon Monoxide	0.071	0.0030	0.029	0.0030	0.040	0.0030	0.095	0.0030

Results normalized including non-methane hydrocarbons

ND = Not Detected (below RL)

RL = Reporting Limit

d = Reported from a secondary analysis. QC Batch 160318GC8A2

Reviewed/Approved By: _____

Mark Johnson
 Operations Manager

Date: _____

3-22-16

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: 03/11/16
Matrix: Air
Reporting Units: % v/v

ASTM D1946

Lab No.:	H031105-09	H031105-10	H031105-11	H031105-12				
Client Sample I.D.:	GEW-122	GEW-124	GEW-126	GEW-128				
Date/Time Sampled:	3/2/16 8:50	3/2/16 10:05	3/2/16 10:14	3/2/16 10:26				
Date/Time Analyzed:	3/21/16 18:10	3/21/16 18:24	3/21/16 18:39	3/21/16 15:43				
QC Batch No.:	160321GC8A1	160321GC8A1	160321GC8A1	160321GC8A1				
Analyst Initials:	AS	AS	AS	AS				
Dilution Factor:	2.9	2.8	3.0	3.0				
ANALYTE	Result	RL	Result	RL	Result	RL	Result	RL
	% v/v	% v/v	% v/v	% v/v	% v/v	% v/v	% v/v	% v/v
Hydrogen	34	2.9	26	2.8	30	3.0	25	3.0
Carbon Dioxide	56	0.029	63	0.028	56	0.030	66	0.030
Oxygen/Argon	ND	1.4	ND	1.4	ND	1.5	ND	1.5
Nitrogen	3.1	2.9	2.9	2.8	ND	3.0	ND	3.0
Methane	5.2	0.0029	7.2	0.0028	10	0.0030	6.5	0.0030
Carbon Monoxide	0.29	0.0029	0.18	0.0028	0.32	0.0030	0.28	0.0030

Results normalized including non-methane hydrocarbons

ND = Not Detected (below RL)

RL = Reporting Limit

Reviewed/Approved By:



Mark Johnson
Operations Manager

Date

3-22-16

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: 03/11/16
Matrix: Air
Reporting Units: % v/v

ASTM D1946

Lab No.:	H031105-13	H031105-14	H031105-15	H031105-16				
Client Sample I.D.:	GEW-131	GEW-132	GEW-39	GEW-109				
Date/Time Sampled:	3/2/16 10:48	3/2/16 11:16	3/3/16 9:35	3/3/16 9:44				
Date/Time Analyzed:	3/21/16 18:53	3/21/16 19:08	3/21/16 12:44	3/21/16 19:22				
QC Batch No.:	160321GC8A1	160321GC8A1	160321GC8A1	160321GC8A1				
Analyst Initials:	AS	AS	AS	AS				
Dilution Factor:	2.9	3.0	3.2	3.0				
ANALYTE	Result	RL	Result	RL	Result	RL	Result	RL
	% v/v	% v/v	% v/v	% v/v	% v/v	% v/v	% v/v	% v/v
Hydrogen	27	2.9	20	3.0	2.0 d	0.032	19	3.0
Carbon Dioxide	47	0.029	49	0.030	56	0.032	46	0.030
Oxygen/Argon	3.4	1.4	3.4	1.5	ND	1.6	2.9	1.5
Nitrogen	12	2.9	19	3.0	ND	3.2	21	3.0
Methane	10.0	0.0029	7.4	0.0030	39	0.0032	11	0.0030
Carbon Monoxide	0.22	0.0029	0.17	0.0030	0.016	0.0032	0.11	0.0030

Results normalized including non-methane hydrocarbons

ND = Not Detected (below RL)

RL = Reporting Limit

d = Reported from a secondary analysis. QC Batch 160322GC8A1

Reviewed/Approved By: 

Mark Johnson
Operations Manager

Date 3-22-16

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: 03/11/16
Matrix: Air
Reporting Units: % v/v

ASTM D1946

Lab No.:	H031105-17	H031105-18	H031105-19	H031105-20				
Client Sample I.D.:	GIW-10	GIW-5	GIW-11	GIW-12				
Date/Time Sampled:	3/3/16 7:44	3/3/16 7:56	3/3/16 8:33	3/3/16 8:43				
Date/Time Analyzed:	3/21/16 19:37	3/21/16 19:51	3/21/16 20:06	3/21/16 20:20				
QC Batch No.:	160321GC8A1	160321GC8A1	160321GC8A1	160321GC8A1				
Analyst Initials:	AS	AS	AS	AS				
Dilution Factor:	3.0	3.0	3.2	3.1				
ANALYTE	Result	RL	Result	RL	Result	RL	Result	RL
	% v/v	% v/v	% v/v	% v/v	% v/v	% v/v	% v/v	% v/v
Hydrogen	31	3.0	33	3.0	15	3.2	4.3	3.1
Carbon Dioxide	47	0.030	56	0.030	40	0.032	25	0.031
Oxygen/Argon	ND	1.5	1.5	1.5	5.2	1.6	8.5	1.5
Nitrogen	15	3.0	5.4	3.0	34	3.2	54	3.1
Methane	5.6	0.0030	2.8	0.0030	5.7	0.0032	8.0	0.0031
Carbon Monoxide	0.17	0.0030	0.15	0.0030	0.16	0.0032	0.034	0.0031

Results normalized including non-methane hydrocarbons

ND = Not Detected (below RL)

RL = Reporting Limit

Reviewed/Approved By:



Mark Johnson
Operations Manager

Date

3-22-16

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: 03/11/16
Matrix: Air
Reporting Units: % v/v

ASTM D1946

Lab No.:	H031105-21	H031105-22	H031105-23	H031105-24					
Client Sample I.D.:	GIW-13	GIW-1	GEW-38	GEW-56R					
Date/Time Sampled:	3/3/16 8:51	3/3/16 9:07	3/3/16 9:24	3/3/16 14:03					
Date/Time Analyzed:	3/21/16 20:35	3/21/16 12:29	3/21/16 11:55	3/21/16 12:09					
QC Batch No.:	160321GC8A1	160321GC8A1	160321GC8A1	160321GC8A1					
Analyst Initials:	AS	AS	AS	AS					
Dilution Factor:	3.0	3.2	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	21	3.0	23	3.2	21	3.0	11	3.0
	Carbon Dioxide	62	0.030	70	0.032	44	0.030	39	0.030
	Oxygen/Argon	ND	1.5	ND	1.6	7.4	1.5	ND	1.5
	Nitrogen	7.6	3.0	ND	3.2	27	3.0	32	3.0
	Methane	8.7	0.0030	2.3	0.0032	0.27	0.0030	17	0.0030
	Carbon Monoxide	0.17	0.0030	0.25	0.0032	0.25	0.0030	0.061	0.0030

Results normalized including non-methane hydrocarbons

ND = Not Detected (below RL)

RL = Reporting Limit

Reviewed/Approved By:



Mark Johnson
Operations Manager

Date

3-22-16

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: 03/11/16
 Matrix: Air
 Reporting Units: % v/v

ASTM D1946

Lab No.:	H031105-25		H031105-26		H031105-27		H031105-28	
Client Sample I.D.:	GEW-10		GEW-110		GIW-4		GIW-3	
Date/Time Sampled:	3/3/16 14:27		3/3/16 14:39		3/3/16 15:06		3/3/16 15:17	
Date/Time Analyzed:	3/17/16 8:16		3/17/16 8:31		3/17/16 8:45		3/17/16 9:00	
QC Batch No.:	160316GC8A2		160316GC8A2		160316GC8A2		160316GC8A2	
Analyst Initials:	AS		AS		AS		AS	
Dilution Factor:	3.2		3.2		3.2		3.2	
ANALYTE	Result	RL	Result	RL	Result	RL	Result	RL
	% v/v	% v/v	% v/v	% v/v	% v/v	% v/v	% v/v	% v/v
	Hydrogen	1.7 d 0.032	21 3.2	41 3.2	2.9 d 0.032			
	Carbon Dioxide	50 0.032	36 0.032	42 0.032	8.2 0.032			
	Oxygen/Argon	ND 1.6	8.0 1.6	3.5 1.6	19 1.6			
	Nitrogen	9.2 3.2	32 3.2	12 3.2	69 3.2			
	Methane	38 0.0032	2.0 0.0032	0.43 0.0032	0.081 0.0032			
	Carbon Monoxide	0.013 0.0032	0.12 0.0032	0.17 0.0032	0.046 0.0032			

Results normalized including non-methane hydrocarbons

ND = Not Detected (below RL)

RL = Reporting Limit

d = Reported from a secondary analysis. QC Batch 160318GC8A2

Reviewed/Approved By:



Mark Johnson
Operations Manager

Date

3-22-16

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: 03/11/16
Matrix: Air
Reporting Units: % v/v

ASTM D1946

Lab No.:	H031105-29	H031105-30	H031105-31	H031105-32				
Client Sample I.D.:	GIW-2	GEW-140	GEW-145	GEW-137				
Date/Time Sampled:	3/3/16 15:29	3/4/16 9:22	3/4/16 10:16	3/4/16 8:39				
Date/Time Analyzed:	3/17/16 11:00	3/17/16 11:15	3/17/16 11:29	3/17/16 11:44				
QC Batch No.:	160317GC8A1	160317GC8A1	160317GC8A1	160317GC8A1				
Analyst Initials:	AS	AS	AS	AS				
Dilution Factor:	3.0	2.9	3.0	3.0				
ANALYTE	Result	RL	Result	RL	Result	RL	Result	RL
	% v/v	% v/v	% v/v	% v/v	% v/v	% v/v	% v/v	% v/v
Hydrogen	3.9	3.0	28	2.9	35	3.0	0.98	d 0.030
Carbon Dioxide	30	0.030	58	0.029	56	0.030	44	0.030
Oxygen/Argon	11	1.5	ND	1.4	ND	1.5	ND	1.5
Nitrogen	48	3.0	3.7	2.9	3.5	3.0	39	3.0
Methane	6.3	0.0030	9.4	0.0029	4.0	0.0030	14	0.0030
Carbon Monoxide	0.029	0.0030	0.20	0.0029	0.24	0.0030	ND	0.0030

Results normalized including non-methane hydrocarbons

ND = Not Detected (below RL)

RL = Reporting Limit

d = Reported from a secondary analysis. QC Batch 160318GC8A2

Reviewed/Approved By: 

Mark Johnson
Operations Manager

Date 3-22-16

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: 03/11/16
Matrix: Air
Reporting Units: % v/v

ASTM D1946

Lab No.:	H031105-33	H031105-34	H031105-35	H031105-36				
Client Sample I.D.:	GEW-138	GEW-139	GEW-141	GEW-7				
Date/Time Sampled:	3/4/16 9:11	3/4/16 9:20	3/4/16 9:35	3/7/16 13:55				
Date/Time Analyzed:	3/17/16 11:59	3/17/16 12:13	3/17/16 12:28	3/17/16 12:42				
QC Batch No.:	160317GC8A1	160317GC8A1	160317GC8A1	160317GC8A1				
Analyst Initials:	AS	AS	AS	AS				
Dilution Factor:	3.0	3.1	3.0	3.4				
ANALYTE	Result	RL	Result	RL	Result	RL	Result	RL
	% v/v	% v/v	% v/v	% v/v	% v/v	% v/v	% v/v	% v/v
Hydrogen	12	3.0	35	3.1	32	3.0	ND	0.034
Carbon Dioxide	65	0.030	60	0.031	62	0.030	41	0.034
Oxygen/Argon	ND	1.5	ND	1.5	ND	1.5	ND	1.7
Nitrogen	7.8	3.0	ND	3.1	ND	3.0	ND	3.4
Methane	14	0.0030	0.98	0.0031	1.3	0.0030	57	0.0034
Carbon Monoxide	0.13	0.0030	0.40	0.0031	0.39	0.0030	ND	0.0034

Results normalized including non-methane hydrocarbons

ND = Not Detected (below RL)

RL = Reporting Limit

d = Reported from a secondary analysis. QC Batch 160318GC8A2

Reviewed/Approved By: _____

Mark Johnson
Operations Manager

Date 3-22-16

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: 03/11/16
 Matrix: Air
 Reporting Units: % v/v

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 H031105

ASTM D1946

Lab No.:	H031105-37		H031105-38		H031105-39		H031105-40	
Client Sample I.D.:	GEW-8		GEW-9		GEW-55		GEW-54	
Date/Time Sampled:	3/7/16 14:09		3/7/16 14:20		3/7/16 14:33		3/7/16 14:49	
Date/Time Analyzed:	3/17/16 12:57		3/17/16 13:12		3/17/16 13:26		3/17/16 13:41	
QC Batch No.:	160317GC8A1		160317GC8A1		160317GC8A1		160317GC8A1	
Analyst Initials:	AS		AS		AS		AS	
Dilution Factor:	3.4		3.5		3.4		3.4	
ANALYTE	Result	RL	Result	RL	Result	RL	Result	RL
	% v/v	% v/v	% v/v	% v/v	% v/v	% v/v	% v/v	% v/v
Hydrogen	1.6 d	0.034	0.88 d	0.035	1.1 d	0.034	3.1 d	0.034
Carbon Dioxide	47	0.034	43	0.035	43	0.034	43	0.034
Oxygen/Argon	ND	1.7	ND	1.7	ND	1.7	ND	1.7
Nitrogen	ND	3.4	ND	3.5	ND	3.4	ND	3.4
Methane	49	0.0034	54	0.0035	54	0.0034	53	0.0034
Carbon Monoxide	ND	0.0034	ND	0.0035	ND	0.0034	0.0034	0.0034

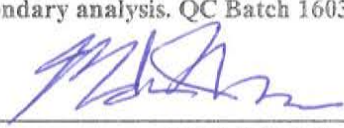
Results normalized including non-methane hydrocarbons

ND = Not Detected (below RL)

RL = Reporting Limit

d = Reported from a secondary analysis. QC Batch 160318GC8A2

Reviewed/Approved By:


 Mark Johnson
 Operations Manager

Date

3-22-16

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: 03/11/16
Matrix: Air
Reporting Units: % v/v

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 H031105

ASTM D1946

Lab No.:	H031105-41	H031105-42	H031105-43	H031105-44				
Client Sample I.D.:	GEW-53	GEW-51	GEW-49	GEW-52				
Date/Time Sampled:	3/7/16 15:12	3/7/16 15:25	3/7/16 15:35	3/7/16 16:00				
Date/Time Analyzed:	3/17/16 13:55	3/17/16 14:10	3/17/16 16:36	3/17/16 16:50				
QC Batch No.:	160317GC8A1	160317GC8A1	160317GC8A2	160317GC8A2				
Analyst Initials:	AS	AS	AS	AS				
Dilution Factor:	3.4	3.3	3.4	3.2				
ANALYTE	Result	RL	Result	RL	Result	RL	Result	RL
	% v/v	% v/v	% v/v	% v/v	% v/v	% v/v	% v/v	% v/v
Hydrogen	5.7	3.4	1.2 d	0.033	0.12 d	0.034	0.077 d	0.032
Carbon Dioxide	41	0.034	42	0.033	40	0.034	38	0.032
Oxygen/Argon	ND	1.7	ND	1.6	ND	1.7	ND	1.6
Nitrogen	ND	3.4	ND	3.3	ND	3.4	8.9	3.2
Methane	49	0.0034	55	0.0033	57	0.0034	53	0.0032
Carbon Monoxide	0.0065	0.0034	ND	0.0033	ND	0.0034	ND	0.0032

Results normalized including non-methane hydrocarbons

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d = Reported from a secondary analysis. QC Batch 160318GC8A2

Reviewed/Approved By: _____

Mark Johnson
 Operations Manager

Date

3-22-16

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Client: Republic Services
 Attn: Jim Getting
 Project Name: Bridgeton Landfill
 Project No.: NA
 Date Received: 03/11/16
 Matrix: Air
 Reporting Units: % v/v

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 H031105

ASTM D1946

Lab No.:	H031105-45	H031105-46	H031105-47	H031105-48				
Client Sample I.D.:	GEW-40	GEW-41R	GEW-42R	GEW-43R				
Date/Time Sampled:	3/7/16 9:02	3/7/16 9:25	3/7/16 9:35	3/7/16 9:47				
Date/Time Analyzed:	3/17/16 17:05	3/17/16 17:19	3/17/16 17:34	3/17/16 17:49				
QC Batch No.:	160317GC8A2	160317GC8A2	160317GC8A2	160317GC8A2				
Analyst Initials:	AS	AS	AS	AS				
Dilution Factor:	3.2	3.2	3.2	3.2				
ANALYTE	Result	RL	Result	RL	Result	RL	Result	RL
	% v/v	% v/v	% v/v	% v/v	% v/v	% v/v	% v/v	% v/v
Hydrogen	ND d	0.032	ND d	0.032	ND d	0.032	0.048 d	0.032
Carbon Dioxide	38	0.032	41	0.032	42	0.032	43	0.032
Oxygen/Argon	ND	1.6	ND	1.6	ND	1.6	ND	1.6
Nitrogen	5.0	3.2	ND	3.2	ND	3.2	ND	3.2
Methane	55	0.0032	57	0.0032	56	0.0032	55	0.0032
Carbon Monoxide	ND	0.0032	ND	0.0032	ND	0.0032	ND	0.0032

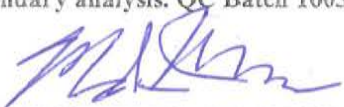
Results normalized including non-methane hydrocarbons

ND = Not Detected (below RL)

RL = Reporting Limit

d = Reported from a secondary analysis. QC Batch 160318GC8A2

Reviewed/Approved By:



Mark Johnson
 Operations Manager

Date

3-22-16

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: 03/11/16
 Matrix: Air
 Reporting Units: % v/v

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 H031105

ASTM D1946

Lab No.:	H031105-49		H031105-50		H031105-51		H031105-52	
Client Sample I.D.:	GEW-44		GEW-45R		GEW-46R		GEW-2	
Date/Time Sampled:	3/7/16 10:00		3/7/16 10:18		3/7/16 10:27		3/7/16 13:39	
Date/Time Analyzed:	3/17/16 18:03		3/17/16 18:18		3/17/16 18:32		3/17/16 18:47	
QC Batch No.:	160317GC8A2		160317GC8A2		160317GC8A2		160317GC8A2	
Analyst Initials:	AS		AS		AS		AS	
Dilution Factor:	3.2		3.2		3.2		3.3	
ANALYTE	Result	RL	Result	RL	Result	RL	Result	RL
	% v/v	% v/v	% v/v	% v/v	% v/v	% v/v	% v/v	% v/v
Hydrogen	ND d	0.032	ND d	0.032	0.096 d	0.032	0.041 d	0.033
Carbon Dioxide	40	0.032	40	0.032	40	0.032	42	0.033
Oxygen/Argon	ND	1.6	ND	1.6	ND	1.6	ND	1.6
Nitrogen	ND	3.2	ND	3.2	4.4	3.2	ND	3.3
Methane	58	0.0032	58	0.0032	55	0.0032	56	0.0033
Carbon Monoxide	ND	0.0032	ND	0.0032	ND	0.0032	ND	0.0033

Results normalized including non-methane hydrocarbons

ND = Not Detected (below RL)

RL = Reporting Limit

d = Reported from a secondary analysis. QC Batch 160318GC8A2, 160319GC8A1

Reviewed/Approved By:



Mark Johnson
 Operations Manager

Date

3-22-16

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: 03/11/16
Matrix: Air
Reporting Units: % v/v

ASTM D1946

Lab No.:	H031105-53		H031105-54		H031105-55		H031105-56	
Client Sample I.D.:	GEW-3		GEW-4		GEW-47R		GEW-5	
Date/Time Sampled:	3/7/16 13:49		3/7/16 14:04		3/7/16 14:18		3/7/16 14:31	
Date/Time Analyzed:	3/17/16 19:01		3/17/16 19:16		3/17/16 19:31		3/17/16 19:45	
QC Batch No.:	160317GC8A2		160317GC8A2		160317GC8A2		160317GC8A2	
Analyst Initials:	AS		AS		AS		AS	
Dilution Factor:	3.3		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	0.13 d	0.033	0.091 d	0.033	0.082 d	0.034	0.052 d	0.034
Carbon Dioxide	40	0.033	41	0.033	39	0.034	38	0.034
Oxygen/Argon	ND	1.6	ND	1.6	ND	1.7	ND	1.7
Nitrogen	5.0	3.3	ND	3.3	8.1	3.4	8.0	3.4
Methane	54	0.0033	56	0.0033	52	0.0034	53	0.0034
Carbon Monoxide	ND	0.0033	ND	0.0033	ND	0.0034	ND	0.0034

Results normalized including non-methane hydrocarbons

ND = Not Detected (below RL)

RL = Reporting Limit

d = Reported from a secondary analysis. QC Batch 160319GC8A1

Reviewed/Approved By:



Mark Johnson
Operations Manager

Date

3-22-16

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: 03/11/16
 Matrix: Air
 Reporting Units: % v/v

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 H031105

ASTM D1946

Lab No.:	H031105-57		H031105-58		H031105-59		H031105-60	
Client Sample I.D.:	GEW-48		GEW-6		GEW-50		GEW-147	
Date/Time Sampled:	3/7/16 15:04		3/7/16 15:13		3/7/16 15:24		3/9/16 10:04	
Date/Time Analyzed:	3/17/16 20:00		3/17/16 20:14		3/17/16 20:29		3/17/16 20:44	
QC Batch No.:	160317GC8A2		160317GC8A2		160317GC8A2		160317GC8A2	
Analyst Initials:	AS		AS		AS		AS	
Dilution Factor:	3.3		3.2		3.4		3.2	
ANALYTE	Result	RL	Result	RL	Result	RL	Result	RL
	% v/v	% v/v	% v/v	% v/v	% v/v	% v/v	% v/v	% v/v
Hydrogen	ND d	0.033	ND d	0.032	0.087 d	0.034	32	3.2
Carbon Dioxide	40	0.033	38	0.032	39	0.034	49	0.032
Oxygen/Argon	ND	1.6	ND	1.6	ND	1.7	ND	1.6
Nitrogen	ND	3.3	5.4	3.2	4.6	3.4	6.8	3.2
Methane	57	0.0033	56	0.0032	56	0.0034	10	0.0032
Carbon Monoxide	ND	0.0033	ND	0.0032	ND	0.0034	0.19	0.0032

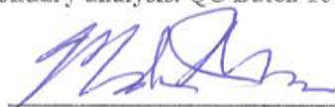
Results normalized including non-methane hydrocarbons

ND = Not Detected (below RL)

RL = Reporting Limit

d = Reported from a secondary analysis. QC Batch 160319GC8A1

Reviewed/Approved By:



Mark Johnson
 Operations Manager

Date

3-22-16

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: 03/11/16
 Matrix: Air
 Reporting Units: % v/v

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 H031105

ASTM D1946

Lab No.:	H031105-61	H031105-62	H031105-63	H031105-64				
Client Sample I.D.:	GEW-149	GEW-150	GEW-155	GEW-154				
Date/Time Sampled:	3/9/16 11:12	3/9/16 11:30	3/9/16 11:46	3/9/16 12:14				
Date/Time Analyzed:	3/17/16 20:58	3/17/16 21:13	3/18/16 9:21	3/18/16 9:35				
QC Batch No.:	160317GC8A2	160317GC8A2	160318GC8A1	160318GC8A1				
Analyst Initials:	AS	AS	AS	AS				
Dilution Factor:	3.2	3.2	3.2	3.2				
ANALYTE	Result	RL	Result	RL	Result	RL	Result	RL
	% v/v	% v/v	% v/v	% v/v	% v/v	% v/v	% v/v	% v/v
Hydrogen	11	3.2	11	3.2	4.8	3.2	5.7	3.2
Carbon Dioxide	35	0.032	27	0.032	37	0.032	24	0.032
Oxygen/Argon	8.5	1.6	12	1.6	8.9	1.6	11	1.6
Nitrogen	38	3.2	45	3.2	41	3.2	45	3.2
Methane	6.8	0.0032	4.0	0.0032	7.9	0.0032	14	0.0032
Carbon Monoxide	0.097	0.0032	0.083	0.0032	0.043	0.0032	0.027	0.0032

Results normalized including non-methane hydrocarbons

ND = Not Detected (below RL)

RL = Reporting Limit

Reviewed/Approved By: _____



Mark Johnson
 Operations Manager

Date _____

3-22-16

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Client: Republic Services
Attn: Jim Getting
Project Name: Bridgeton Landfill
Project No.: NA
Date Received: 03/11/16
Matrix: Air
Reporting Units: % v/v

ASTM D1946

Lab No.:	H031105-65	H031105-66	H031105-67	H031105-68				
Client Sample I.D.:	GEW-153	GEW-152	GEW-22R	GEW-28R				
Date/Time Sampled:	3/9/16 12:29	3/9/16 13:51	3/9/16 9:35	3/9/16 9:56				
Date/Time Analyzed:	3/18/16 9:50	3/18/16 10:05	3/18/16 10:19	3/18/16 10:34				
QC Batch No.:	160318GC8A1	160318GC8A1	160318GC8A1	160318GC8A1				
Analyst Initials:	AS	AS	AS	AS				
Dilution Factor:	3.2	3.1	3.2	3.2				
ANALYTE	Result	RL	Result	RL	Result	RL	Result	RL
	% v/v	% v/v	% v/v	% v/v	% v/v	% v/v	% v/v	% v/v
Hydrogen	18	3.2	35	3.1	30	3.2	34	3.2
Carbon Dioxide	45	0.032	47	0.031	65	0.032	61	0.032
Oxygen/Argon	ND	1.6	2.2	1.5	ND	1.6	ND	1.6
Nitrogen	12	3.2	7.9	3.1	ND	3.2	ND	3.2
Methane	23	0.0032	6.2	0.0031	0.67	0.0032	0.13	0.0032
Carbon Monoxide	0.081	0.0032	0.28	0.0031	0.43	0.0032	0.43	0.0032

Results normalized including non-methane hydrocarbons

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RL = Reporting Limit

Reviewed/Approved By: 

Mark Johnson
Operations Manager

Date

3-22-16

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Client: Republic Services
Attn: Jim Getting
Project Name: Bridgeton Landfill
Project No.: NA
Date Received: 03/11/16
Matrix: Air
Reporting Units: % v/v

ASTM D1946

Lab No.:	H031105-69	H031105-70	H031105-71	H031105-72				
Client Sample I.D.:	GEW-58A	GEW-59R	GEW-82R	GEW-90				
Date/Time Sampled:	3/9/16 10:18	3/9/16 10:27	3/9/16 10:46	3/9/16 11:50				
Date/Time Analyzed:	3/18/16 10:49	3/18/16 11:03	3/18/16 11:18	3/18/16 11:32				
QC Batch No.:	160318GC8A1	160318GC8A1	160318GC8A1	160318GC8A1				
Analyst Initials:	AS	AS	AS	AS				
Dilution Factor:	3.2	3.2	3.2	3.2				
ANALYTE	Result	RL	Result	RL	Result	RL	Result	RL
	% v/v	% v/v	% v/v	% v/v	% v/v	% v/v	% v/v	% v/v
Hydrogen	33	3.2	42	3.2	40	3.2	39	3.2
Carbon Dioxide	43	0.032	50	0.032	54	0.032	49	0.032
Oxygen/Argon	4.9	1.6	ND	1.6	ND	1.6	ND	1.6
Nitrogen	18	3.2	4.4	3.2	ND	3.2	ND	3.2
Methane	0.46	0.0032	1.3	0.0032	0.82	0.0032	7.3	0.0032
Carbon Monoxide	0.21	0.0032	0.20	0.0032	0.20	0.0032	0.21	0.0032

Results normalized including non-methane hydrocarbons

ND = Not Detected (below RL)

RL = Reporting Limit

Reviewed/Approved By:



Mark Johnson
Operations Manager

Date

3-22-16

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Client: Republic Services
 Attn: Jim Getting
 Project Name: Bridgeton Landfill
 Project No.: NA
 Date Received: 03/11/16
 Matrix: Air
 Reporting Units: % v/v

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 H031105

ASTM D1946

Lab No.:	H031105-73	H031105-74		
Client Sample I.D.:	GEW-102	GEW-159		
Date/Time Sampled:	3/9/16 12:07	3/9/16 13:59		
Date/Time Analyzed:	3/18/16 11:47	3/18/16 12:01		
QC Batch No.:	160318GC8A1	160318GC8A1		
Analyst Initials:	AS	AS		
Dilution Factor:	3.2	3.2		
ANALYTE	Result % v/v	RL % v/v	Result % v/v	RL % v/v
Hydrogen	36	3.2	7.8	3.2
Carbon Dioxide	56	0.032	43	0.032
Oxygen/Argon	ND	1.6	ND	1.6
Nitrogen	3.4	3.2	35	3.2
Methane	1.3	0.0032	13	0.0032
Carbon Monoxide	0.14	0.0032	0.066	0.0032

Results normalized including non-methane hydrocarbons

ND = Not Detected (below RL)

RL = Reporting Limit

Reviewed/Approved By: 

Mark Johnson
 Operations Manager

Date

3-22-16

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QC Batch No.: 160316GC8A1

Matrix: Air

Units: % v/v

QC for ASTM D1946

Lab No.:	Method Blank		LCS		LCSD			
Date/Time Analyzed:	3/16/16 11:15		3/16/16 10:29		3/16/16 10:44			
Analyst Initials:	AS		AS		AS			
Datafile:	16mar003		16mar.ru		16mar001			
Dilution Factor:	1.0		1.0		1.0			
ANALYTE	Results	RL	% Rec.	Criteria	% Rec.	Criteria	%RPD	Criteria
Hydrogen	ND	1.0	98	70-130%	98	70-130%	0.1	<30
Carbon Dioxide	ND	0.010	98	70-130%	98	70-130%	0.1	<30
Oxygen/Argon	ND	0.50	102	70-130%	102	70-130%	0.1	<30
Nitrogen	ND	1.0	102	70-130%	102	70-130%	0.1	<30
Methane	ND	0.0010	122	70-130%	122	70-130%	0.0	<30
Carbon Monoxide	ND	0.0010	119	70-130%	119	70-130%	0.2	<30

ND = Not Detected (Below RL)

Reviewed/Approved By:



Mark J. Johnson
Operations Manager

Date:

3-22-16

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.: 160316GC8A2

Matrix: Air

Units: % v/v

QC for ASTM D1946

Lab No.:	Method Blank		LCS		LCSD			
Date/Time Analyzed:	3/16/16 16:23		3/16/16 15:39		3/16/16 15:54			
Analyst Initials:	AS		AS		AS			
Datafile:	16mar024		16mar021		16mar022			
Dilution Factor:	1.0		1.0		1.0			
ANALYTE	Results	RL	% Rec.	Criteria	% Rec.	Criteria	%RPD	Criteria
Hydrogen	ND	1.0	97	70-130%	97	70-130%	0.5	<30
Carbon Dioxide	ND	0.010	99	70-130%	98	70-130%	0.5	<30
Oxygen/Argon	ND	0.50	103	70-130%	103	70-130%	0.3	<30
Nitrogen	ND	1.0	102	70-130%	102	70-130%	0.0	<30
Methane	ND	0.0010	124	70-130%	123	70-130%	0.7	<30
Carbon Monoxide	ND	0.0010	123	70-130%	122	70-130%	0.8	<30

ND = Not Detected (Below RL)

Reviewed/Approved By:



Mark J. Johnson
Operations Manager

Date:

3-22-16

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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.: 160317GC8A1

Matrix: Air

Units: % v/v

QC for ASTM D1946

Lab No.:	Method Blank		LCS		LCSD			
Date/Time Analyzed:	3/17/16 10:43		3/17/16 9:59		3/17/16 10:14			
Analyst Initials:	AS		AS		AS			
Datafile:	17mar006		17mar003		17mar004			
Dilution Factor:	1.0		1.0		1.0			
ANALYTE	Results	RL	% Rec.	Criteria	% Rec.	Criteria	%RPD	Criteria
Hydrogen	ND	1.0	92	70-130%	93	70-130%	0.3	<30
Carbon Dioxide	ND	0.010	96	70-130%	99	70-130%	2.5	<30
Oxygen/Argon	ND	0.50	104	70-130%	105	70-130%	1.1	<30
Nitrogen	ND	1.0	102	70-130%	103	70-130%	0.8	<30
Methane	ND	0.0010	126	70-130%	125	70-130%	1.3	<30
Carbon Monoxide	ND	0.0010	123	70-130%	122	70-130%	0.6	<30

ND = Not Detected (Below RL)

Reviewed/Approved By:



Mark J. Johnson
Operations Manager

Date:

3-22-16

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.: 160317GC8A2

Matrix: Air

Units: % v/v

QC for ASTM D1946

Lab No.:	Method Blank		LCS		LCSD			
Date/Time Analyzed:	3/17/16 16:20		3/18/16 7:08		3/18/16 7:23			
Analyst Initials:	AS		AS		AS			
Datafile:	17mar027		17mar050		17mar051			
Dilution Factor:	1.0		1.0		1.0			
ANALYTE	Results	RL	% Rec.	Criteria	% Rec.	Criteria	%RPD	Criteria
Hydrogen	ND	1.0	113	70-130%	112	70-130%	1.1	<30
Carbon Dioxide	ND	0.010	100	70-130%	98	70-130%	1.3	<30
Oxygen/Argon	ND	0.50	98	70-130%	97	70-130%	1.0	<30
Nitrogen	ND	1.0	99	70-130%	99	70-130%	0.7	<30
Methane	ND	0.0010	98	70-130%	97	70-130%	0.7	<30
Carbon Monoxide	ND	0.0010	118	70-130%	117	70-130%	1.6	<30

ND = Not Detected (Below RL)

Reviewed/Approved By:



Mark J. Johnson
Operations Manager

Date:

3-22-16

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.: 160318GC8A1

Matrix: Air

Units: % v/v

QC for ASTM D1946

Lab No.:	Method Blank		LCS		LCSD			
Date/Time Analyzed:	3/18/16 9:05		3/18/16 8:21		3/18/16 8:35			
Analyst Initials:	AS		AS		AS			
Datafile:	18mar006		18mar003		18mar004			
Dilution Factor:	1.0		1.0		1.0			
ANALYTE	Results	RL	% Rec.	Criteria	% Rec.	Criteria	%RPD	Criteria
Hydrogen	ND	1.0	112	70-130%	111	70-130%	0.5	<30
Carbon Dioxide	ND	0.010	99	70-130%	98	70-130%	0.2	<30
Oxygen/Argon	ND	0.50	97	70-130%	97	70-130%	0.0	<30
Nitrogen	ND	1.0	98	70-130%	98	70-130%	0.0	<30
Methane	ND	0.0010	98	70-130%	97	70-130%	0.8	<30
Carbon Monoxide	ND	0.0010	118	70-130%	118	70-130%	0.1	<30

ND = Not Detected (Below RL)

Reviewed/Approved By:



Mark J. Johnson
Operations Manager

Date:

3-22-16

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.: 160321GC8A1

Matrix: Air

Units: % v/v

QC for ASTM D1946

Lab No.:	Method Blank		LCS		LCSD			
Date/Time Analyzed:	3/21/16 11:04		3/21/16 10:21		3/21/16 10:35			
Analyst Initials:	AS		AS		AS			
Datafile:	21mar012		21mar009		21mar010			
Dilution Factor:	1.0		1.0		1.0			
ANALYTE	Results	RL	% Rec.	Criteria	% Rec.	Criteria	%RPD	Criteria
Hydrogen	ND	1.0	109	70-130%	109	70-130%	0.1	<30
Carbon Dioxide	ND	0.010	103	70-130%	102	70-130%	0.4	<30
Oxygen/Argon	ND	0.50	102	70-130%	101	70-130%	0.4	<30
Nitrogen	ND	1.0	102	70-130%	102	70-130%	0.2	<30
Methane	ND	0.0010	97	70-130%	94	70-130%	2.9	<30
Carbon Monoxide	ND	0.0010	115	70-130%	112	70-130%	2.5	<30

ND = Not Detected (Below RL)

Reviewed/Approved By:



Mark J. Johnson
Operations Manager

Date:

3-22-16

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 # 160318GC8A2
Matrix: Air
Units: % v/v

QC for Low Level Hydrogen Analysis

Lab No.:	Blank		LCS		LCSD			
Date Analyzed:	3/18/2016 15:14		3/18/2016 14:58		3/18/2016 15:03			
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	95	70-130	95	70-130	0.1	<20

ND = Not Detected (Below RL)

RL = PQL X Dilution Factor

Reviewed/Approved By:



Mark Johnson
Operations Manager

Date:

3-22-16

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



QC Batch # 160319GC8A1
Matrix: Air
Units: % v/v

QC for Low Level Hydrogen Analysis

Lab No.:	Blank		LCS		LCSD			
Date Analyzed:	3/19/2016 13:55		3/19/2016 13:46		3/19/2016 13:50			
Analyst Initials:	MJ		MJ		MJ			
Dilution Factor:	1.0		1.0		1.0			
ANALYTE	Results	RL	%Rec	Criteria	%Rec	Criteria	RPD	Criteria
Hydrogen	ND	0.01	94	70-130	94	70-130	0.3	<20

ND = Not Detected (Below RL)

RL = PQL X Dilution Factor

Reviewed/Approved By:



Mark Johnson
Operations Manager

Date:

3-22-16

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



QC Batch # 160322GC8A1
Matrix: Air
Units: % v/v

QC for Low Level Hydrogen Analysis

Lab No.:	Blank	LCS	LCS D	
Date Analyzed:	3/22/2016 8:40	3/22/2016 8:31	3/22/2016 8:36	
Analyst Initials:	AS	AS	AS	
Dilution Factor:	1.0	1.0	1.0	
ANALYTE	Results	RL	%Rec	Criteria
Hydrogen	ND	0.01	97	70-130

ND = Not Detected (Below RL)

RL = PQL X Dilution Factor

Reviewed/Approved By:



Mark Johnson
Operations Manager

Date:

3-22-16

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



ATTACHMENT E

GAS WELLFIELD DATA

ATTACHMENT E-1

WELLFIELD DATA TABLE

March 2016 Wellfield Monitoring Data - Bridgeton Landfill

Well Name	Date Sampled	Methane	CO ₂	O ₂	Balance Gas	Init Temp	Adj Temp	Init Flow	Adj Flow	Init Static Press	Adj Static Press	System Pressure
		(% vol)				°F		scfm		H ₂ O		
GEW-002	3/3/2016 10:12	58.7	39.5	0.1	1.7	119.9		29	29	-0.8	-0.8	-10.9
GEW-002	3/7/2016 13:38	56.5	41.6	0.0	1.9	119.4		41	41	-0.6	-0.6	-11.5
GEW-002	3/7/2016 13:42	56.9	41.0	0.0	2.1	120.2		16	16	-0.2	-0.2	-12.0
GEW-002	3/18/2016 10:36	42.9	34.9	0.8	21.4	122.1		38	40	-3.8	-3.8	-6.9
GEW-002	3/18/2016 10:37	38.9	35.7	1.4	24.0	121.0		0	0	-2.6	-2.6	-10.5
GEW-002	3/22/2016 14:05	56.0	39.5	0.0	4.5	123.4		0	0	1.2	1.2	-8.0
GEW-002	3/22/2016 14:06	53.8	43.1	0.0	3.1	123.9		0	0	1.2	1.1	-8.3
GEW-002	3/28/2016 10:34	56.7	39.1	0.0	4.2	124.2		17	14	-0.3	-0.3	-10.1
GEW-002	3/28/2016 10:36	53.1	41.6	0.0	5.3	121.8		21	20	-0.5	-0.5	-10.3
GEW-003	3/3/2016 10:16	56.3	39.1	0.1	4.5	109.5		11	13	-0.5	-0.5	-10.6
GEW-003	3/7/2016 13:47	54.3	40.8	0.0	4.9	112.5		13	13	0.2	0.2	-12.0
GEW-003	3/7/2016 13:51	55.3	39.7	0.0	5.0	115.2		0	0	0.0	0.0	-11.1
GEW-003	3/18/2016 10:40	49.3	35.6	0.0	15.1	112.8		48	48	-4.6	-4.6	-8.8
GEW-003	3/18/2016 10:41	45.3	36.9	0.6	17.2	108.1		0	0	-3.2	-3.2	-10.1
GEW-003	3/22/2016 14:09	52.6	42.2	0.0	5.2	77.1		6	6	1.4	1.4	-8.1
GEW-003	3/22/2016 14:10	54.7	42.1	0.0	3.2	77.5		8	8	1.5	1.4	-7.9
GEW-003	3/28/2016 10:39	55.5	41.1	0.0	3.4	83.3		0	0	-0.1	-0.1	-9.7
GEW-003	3/28/2016 10:40	55.6	41.9	0.0	2.5	97.4		34	33	-0.2	-0.2	-10.1
GEW-004	3/3/2016 10:18	56.3	39.9	0.1	3.7	105.9		11	8	-0.5	-0.5	-10.6
GEW-004	3/7/2016 14:03	55.7	41.5	0.0	2.8	110.6		0	0	0.2	0.2	-11.8
GEW-004	3/7/2016 14:08	55.7	41.5	0.0	2.8	110.9		15	15	0.1	0.1	-11.8
GEW-004	3/18/2016 10:49	50.0	35.1	0.0	14.9	116.5		9	9	-2.0	-2.0	-10.8
GEW-004	3/22/2016 14:12	52.5	41.2	0.0	6.3	106.5		21	22	1.3	1.3	-7.7
GEW-004	3/22/2016 14:13	52.3	41.2	0.0	6.5	106.5		30	30	1.3	1.3	-7.5
GEW-004	3/28/2016 10:44	51.7	40.7	0.0	7.6	110.2		34	35	-0.3	-0.3	-9.7
GEW-005	3/3/2016 10:33	43.3	36.0	0.1	20.6	94.0		0	0	-0.5	-0.5	-11.2
GEW-005	3/7/2016 14:30	53.1	38.4	0.0	8.5	89.9		27	26	0.2	0.2	-11.3
GEW-005	3/7/2016 14:34	53.6	36.2	0.0	10.2	89.9		0	0	0.2	0.2	-11.3
GEW-005	3/18/2016 10:55	38.5	34.4	0.0	27.1	87.2		10	14	-1.2	-1.2	-12.8
GEW-005	3/18/2016 10:55	40.9	34.4	0.0	24.7	86.0		0	0	-1.1	-1.1	-13.3
GEW-005	3/22/2016 15:15	52.1	40.9	0.0	7.0	87.0		4	4	0.9	0.8	-10.5
GEW-005	3/22/2016 15:15	53.8	40.5	0.0	5.7	92.4		37	38	0.8	0.7	-10.4
GEW-005	3/28/2016 10:58	48.0	37.8	0.0	14.2	91.0		28	27	-0.2	-0.2	-9.3
GEW-006	3/3/2016 10:42	49.5	37.8	0.1	12.6	89.0		0	0	-0.5	-0.5	-11.5
GEW-006	3/7/2016 15:11	55.5	38.6	0.0	5.9	89.9		8	11	0.2	0.2	-10.3
GEW-006	3/7/2016 15:15	56.1	37.9	0.0	6.0	91.1		20	22	0.0	0.1	-10.2
GEW-006	3/18/2016 11:00	44.9	35.6	0.1	19.4	86.7		0	0	-0.8	-0.8	-12.1
GEW-006	3/22/2016 15:22	55.5	39.9	0.0	4.6	84.2		0	0	0.9	0.9	-9.8
GEW-006	3/22/2016 15:23	55.8	39.4	0.0	4.8	88.3		19	17	0.7	0.7	-10.3
GEW-006	3/28/2016 11:04	50.7	37.5	0.0	11.8	83.2		12	9	-0.3	-0.3	-10.1
GEW-007	3/3/2016 13:25	58.5	39.6	0.1	1.8	87.4		31	30	-0.3	-0.2	-12.2
GEW-007	3/7/2016 13:48	58.3	39.4	0.0	2.3	91.3		0	0	0.2	0.2	-11.9

March 2016 Wellfield Monitoring Data - Bridgeton Landfill

Well Name	Date Sampled	Methane	CO ₂	O ₂	Balance Gas	Init Temp	Adj Temp	Init Flow	Adj Flow	Init Static Press	Adj Static Press	System Pressure
		(% vol)				°F		scfm		H ₂ O		
GEW-007	3/7/2016 13:59	58.1	39.2	0.1	2.6	92.1		31	31	-0.2	-0.2	-11.7
GEW-007	3/18/2016 11:39	52.2	44.4	0.0	3.4	89.9		0	0	-1.2	-1.2	-12.8
GEW-007	3/24/2016 9:18	53.7	42.8	0.0	3.5	88.4		28	28	-0.7	-0.7	-11.6
GEW-007	3/29/2016 9:44	57.0	40.5	0.0	2.5	87.0		5	10	-0.9	-0.9	-9.7
GEW-008	3/3/2016 13:49	51.4	45.0	0.2	3.4	112.2		18	15	-0.5	-0.5	-11.9
GEW-008	3/7/2016 14:05	51.1	43.7	0.0	5.2	113.0		14	18	-0.4	-0.4	-11.6
GEW-008	3/7/2016 14:12	50.6	43.7	0.1	5.6	113.0		20	18	-0.4	-0.4	-11.3
GEW-008	3/18/2016 11:36	51.1	42.4	0.0	6.5	112.1		14	16	-0.7	-0.6	-12.2
GEW-008	3/24/2016 9:13	50.2	45.3	0.0	4.5	113.2		18	17	-0.6	-0.6	-11.2
GEW-008	3/29/2016 9:40	52.1	43.4	0.0	4.5	113.0		16	16	-0.5	-0.5	-9.7
GEW-009	3/3/2016 13:52	51.9	44.1	0.2	3.8	125.1		29	30	0.0	0.0	-22.6
GEW-009	3/7/2016 14:16	53.8	41.9	0.0	4.3	126.4		38	36	0.0	0.0	-22.5
GEW-009	3/7/2016 14:22	53.9	40.8	0.1	5.2	126.0		9	10	0.1	0.1	-22.1
GEW-009	3/18/2016 11:33	48.6	48.1	0.0	3.3	124.3		29	29	0.0	0.0	-22.8
GEW-009	3/24/2016 9:09	53.4	39.2	0.0	7.4	126.4		12	13	-0.1	-0.1	-17.5
GEW-009	3/29/2016 9:37	54.9	42.0	0.0	3.1	124.8		14	14	0.0	0.0	-17.1
GEW-010	3/3/2016 14:23	39.0	45.8	0.5	14.7	79.9		3	2	-17.7	-17.7	-17.9
GEW-010	3/3/2016 14:29	40.6	47.7	0.4	11.3	85.5		5	3	-22.5	-22.2	-23.2
GEW-010	3/7/2016 16:42	40.0	49.1	0.6	10.3	94.6		2	3	-22.1	-22.1	-22.4
GEW-010	3/18/2016 11:31	38.4	46.8	0.6	14.2	81.9		5	4	-22.0	-22.0	-22.8
GEW-010	3/23/2016 15:54	40.2	48.3	0.6	10.9	88.8		5	3	-17.1	-17.0	-17.2
GEW-010	3/29/2016 11:14	38.2	48.1	0.4	13.3	82.6		4	0	-17.2	-17.3	-17.5
GEW-013A	3/25/2016 11:20	6.3	46.5	6.2	41.0	152.2				-6.1	-6.1	-8.2
GEW-013A	3/25/2016 11:21	6.2	47.3	6.3	40.2	152.1				-6.1	-5.4	-8.4
GEW-022R	3/9/2016 9:33	0.7	66.9	0.0	32.4	193.1				-21.2	-20.8	-21.0
GEW-022R	3/9/2016 9:37	0.6	65.1	0.0	34.3	193.1				-21.2	-20.8	-20.6
GEW-028R	3/9/2016 9:55	0.1	63.5	0.1	36.3	191.9				-18.8	-18.4	-18.6
GEW-028R	3/9/2016 9:58	0.1	60.9	0.1	38.9	192.1				-18.7	-17.9	-18.2
GEW-038	3/3/2016 9:19	0.5	54.1	6.1	39.3	44.1		18	11	-7.9	-7.9	-7.9
GEW-038	3/3/2016 9:26	0.9	35.1	9.9	54.1	44.3		10	14	-6.4	-6.4	-7.6
GEW-038	3/7/2016 17:07	0.6	56.9	2.5	40.0	76.1		10	10	-0.9	-0.9	-21.8
GEW-038	3/18/2016 11:24	9.5	41.2	6.2	43.1	61.4		13	14	-0.7	-0.8	-21.7
GEW-038	3/18/2016 11:24	3.2	45.8	5.9	45.1	61.3		9	9	-0.5	-0.5	-21.0
GEW-038	3/23/2016 15:39	1.5	47.9	4.5	46.1	79.5		4	4	-5.9	-5.9	-16.1
GEW-038	3/29/2016 11:23	4.5	41.5	11.5	42.5	63.9		13	12	-3.9	-4.0	-17.8
GEW-038	3/29/2016 11:23	1.4	36.2	11.5	50.9	64.1		12	12	-4.1	-4.1	-17.1
GEW-039	3/3/2016 9:31	39.5	51.8	0.1	8.6	130.9				-0.2	-0.2	-18.8
GEW-039	3/3/2016 9:36	41.5	51.2	0.0	7.3	130.8				-0.2	-0.2	-16.4
GEW-039	3/7/2016 17:10	29.7	56.0	0.1	14.2	133.4				-0.2	-0.2	-19.5
GEW-039	3/7/2016 17:10	39.8	51.7	0.1	8.4	133.4				-0.2	-0.3	-20.3
GEW-039	3/18/2016 11:20	41.4	53.1	0.0	5.5	128.7				-0.2	-0.2	-18.3
GEW-039	3/23/2016 15:42	38.6	56.2	0.2	5.0	132.1				0.1	0.1	-13.8

March 2016 Wellfield Monitoring Data - Bridgeton Landfill

Well Name	Date Sampled	Methane	CO ₂	O ₂	Balance Gas	Init Temp	Adj Temp	Init Flow	Adj Flow	Init Static Press	Adj Static Press	System Pressure
		(% vol)				°F		scfm		H ₂ O		
GEW-039	3/23/2016 15:44	39.0	54.9	0.2	5.9	132.7				0.0	-0.1	-13.4
GEW-039	3/29/2016 11:18	39.9	52.6	0.0	7.5	125.0				-0.1	-0.1	-13.9
GEW-040	3/3/2016 7:57	60.6	38.4	0.0	1.0	84.5		37	37	-0.4	-0.4	-10.8
GEW-040	3/7/2016 8:59	58.0	41.7	0.0	0.3	87.1		10	10	-0.5	-0.4	-12.7
GEW-040	3/7/2016 9:04	58.2	39.7	0.0	2.1	87.3		45	45	-0.5	-0.5	-12.2
GEW-040	3/18/2016 10:06	57.9	36.5	0.0	5.6	84.5		36	36	-0.2	-0.2	-9.7
GEW-040	3/22/2016 9:26	62.2	35.5	0.0	2.3	84.5		15	15	-0.1	-0.1	-8.7
GEW-040	3/28/2016 9:23	58.0	40.1	0.0	1.9	84.7		31	32	-0.2	-0.2	-9.7
GEW-040	3/28/2016 9:24	57.4	40.6	0.0	2.0	87.0		33	34	-0.7	-0.6	-9.9
GEW-041R	3/3/2016 8:11	60.7	38.6	0.0	0.7	103.0		32	36	0.0	0.0	-9.8
GEW-041R	3/7/2016 9:24	57.3	40.6	0.1	2.0	104.7		10	17	-0.2	-0.2	-11.9
GEW-041R	3/7/2016 9:27	57.6	39.9	0.1	2.4	104.5		16	16	-0.3	-0.3	-12.2
GEW-041R	3/18/2016 10:12	56.8	36.5	0.0	6.7	103.9		15	15	-0.1	-0.1	-10.0
GEW-041R	3/22/2016 9:31	49.0	37.8	0.2	13.0	109.0		30	42	-1.9	-1.9	-7.5
GEW-041R	3/22/2016 9:32	48.0	37.9	0.3	13.8	108.7		0	0	-1.2	-1.2	-8.2
GEW-041R	3/28/2016 9:35	46.9	37.8	0.2	15.1	107.5		21	16	-1.1	-1.1	-6.4
GEW-041R	3/28/2016 9:36	46.5	38.1	0.3	15.1	106.7		0	24	-0.9	-0.9	-7.9
GEW-042R	3/3/2016 8:16	58.0	40.3	0.0	1.7	104.3		11	17	-0.2	-0.2	-1.1
GEW-042R	3/7/2016 9:33	55.3	42.7	0.0	2.0	107.0		12	12	-1.3	-1.3	-4.7
GEW-042R	3/7/2016 9:37	57.0	41.0	0.0	2.0	107.0		15	15	-1.3	-1.3	-4.5
GEW-042R	3/18/2016 10:15	55.9	38.7	0.0	5.4	101.4		14	12	-1.2	-1.2	-3.4
GEW-042R	3/22/2016 9:36	55.5	38.2	0.0	6.3	81.0		31	32	-0.2	-0.2	-0.2
GEW-042R	3/28/2016 10:06	52.6	39.6	0.0	7.8	110.0		0	14	-1.4	-1.4	-2.0
GEW-043R	3/3/2016 8:23	57.0	41.5	0.0	1.5	133.3		41	46	-0.1	-0.2	-10.2
GEW-043R	3/3/2016 8:24	55.9	42.8	0.0	1.3	134.0		21	21	0.0	0.0	-9.9
GEW-043R	3/7/2016 9:46	54.9	43.0	0.0	2.1	134.3		41	41	-0.1	-0.1	-12.8
GEW-043R	3/7/2016 9:50	55.7	41.0	0.0	3.3	134.0		27	28	-0.1	-0.1	-12.2
GEW-043R	3/18/2016 10:18	54.7	40.1	0.0	5.2	124.0		18	18	-0.6	-0.6	-8.0
GEW-043R	3/22/2016 9:42	55.3	40.2	0.1	4.4	124.5		35	34	-1.8	-1.7	-9.1
GEW-043R	3/28/2016 10:10	54.6	40.8	0.0	4.6	130.6		51	48	-2.2	-2.2	-10.4
GEW-044	3/3/2016 8:31	58.1	40.8	0.0	1.1	72.9		9	7	-0.1	-0.1	-3.4
GEW-044	3/7/2016 9:58	57.7	40.5	0.0	1.8	85.3		0	11	-0.6	-0.6	-6.4
GEW-044	3/7/2016 10:03	57.9	40.7	0.0	1.4	85.1		29	28	-0.6	-0.6	-5.9
GEW-044	3/18/2016 10:21	51.2	39.9	0.0	8.9	79.9		14	11	-1.0	-1.0	-4.5
GEW-044	3/22/2016 9:47	54.1	39.8	0.0	6.1	76.2		15	16	0.0	0.0	-2.3
GEW-044	3/22/2016 9:48	53.4	40.0	0.0	6.6	76.4		0	0	0.0	0.0	-2.3
GEW-044	3/28/2016 10:14	43.1	37.9	0.0	19.0	79.5		26	26	-0.9	-0.9	-4.0
GEW-044	3/28/2016 10:15	42.8	37.9	0.0	19.3	80.0		37	38	-0.9	-0.9	-3.6
GEW-045R	3/3/2016 8:38	57.1	41.1	0.0	1.8	82.3		10	10	-0.2	-0.2	-10.1
GEW-045R	3/7/2016 10:17	57.8	40.5	0.0	1.7	83.8		9	9	-2.6	-2.6	-12.4
GEW-045R	3/7/2016 10:20	58.2	38.0	0.0	3.8	84.3		13	13	-2.6	-2.6	-11.7
GEW-045R	3/22/2016 10:02	55.1	39.0	0.6	5.3	84.7		9	9	-9.4	-9.1	-8.9

March 2016 Wellfield Monitoring Data - Bridgeton Landfill

Well Name	Date Sampled	Methane	CO ₂	O ₂	Balance Gas	Init Temp	Adj Temp	Init Flow	Adj Flow	Init Static Press	Adj Static Press	System Pressure
		(% vol)				°F		scfm		H ₂ O		
GEW-045R	3/22/2016 10:03	57.1	38.3	0.3	4.3	82.5		12	12	-2.1	-2.1	-8.9
GEW-045R	3/28/2016 10:18	54.1	41.2	0.0	4.7	69.2		10	10	1.6	1.6	-9.9
GEW-045R	3/28/2016 10:19	53.8	42.1	0.0	4.1	72.9		11	11	0.2	0.2	-10.1
GEW-046R	3/3/2016 8:51	55.3	40.7	0.0	4.0	93.8		0	0	-0.4	-0.4	-10.6
GEW-046R	3/7/2016 10:26	54.6	40.2	0.0	5.2	95.2		32	32	-0.4	-0.4	-11.9
GEW-046R	3/7/2016 10:29	55.2	39.8	0.0	5.0	95.2		40	41	-0.5	-0.5	-12.4
GEW-046R	3/18/2016 10:23	50.4	39.5	0.0	10.1	85.7		11	8	-1.2	-1.3	-10.3
GEW-046R	3/22/2016 13:46	54.4	39.7	0.0	5.9	98.4		0	0	0.5	0.5	-8.1
GEW-046R	3/22/2016 13:47	53.9	40.0	0.0	6.1	99.6		13	12	0.4	0.4	-8.2
GEW-046R	3/28/2016 10:23	51.3	40.1	0.0	8.6	97.4		0	0	-0.8	-0.8	-10.1
GEW-047R	3/3/2016 10:26	47.0	37.0	0.3	15.7	111.1		0	0	-0.7	-0.7	-10.9
GEW-047R	3/7/2016 14:15	51.6	40.0	0.0	8.4	110.0		3	3	0.2	0.2	-11.6
GEW-047R	3/7/2016 14:22	50.8	37.1	0.0	12.1	115.2		37	38	0.0	0.0	-11.3
GEW-047R	3/18/2016 10:52	38.5	34.7	0.0	26.8	111.1		72	79	-4.7	-4.7	-10.5
GEW-047R	3/18/2016 10:52	38.4	34.7	0.0	26.9	108.8		0	7	-1.9	-1.9	-12.7
GEW-047R	3/22/2016 15:11	53.8	40.4	0.0	5.8	110.8		0	0	0.8	0.7	-10.6
GEW-047R	3/22/2016 15:12	53.2	41.4	0.0	5.4	112.5		0	0	0.7	0.7	-10.7
GEW-047R	3/28/2016 10:52	44.3	37.5	0.3	17.9	107.3		10	11	-0.2	-0.3	-9.6
GEW-048	3/3/2016 10:38	55.2	38.8	0.1	5.9	102.3		30	30	-0.5	-0.5	-7.3
GEW-048	3/7/2016 15:03	57.3	40.0	0.0	2.7	102.1		0	0	0.1	0.1	-9.6
GEW-048	3/7/2016 15:07	57.3	39.8	0.0	2.9	103.5		0	0	0.1	0.1	-5.6
GEW-048	3/18/2016 10:57	53.9	37.0	0.0	9.1	103.4		32	30	-1.3	-1.3	-12.0
GEW-048	3/22/2016 15:18	56.0	39.8	0.0	4.2	104.3		0	0	0.7	0.7	-8.8
GEW-048	3/22/2016 15:19	56.4	40.7	0.0	2.9	106.0		0	0	0.6	0.6	-8.9
GEW-048	3/28/2016 11:01	53.3	38.3	0.0	8.4	103.1		17	18	-0.5	-0.5	-7.8
GEW-049	3/3/2016 10:53	52.8	35.8	0.1	11.3	107.9		0	0	-0.3	-0.3	-4.5
GEW-049	3/7/2016 15:30	56.7	38.8	0.1	4.4	109.9		35	35	0.1	0.1	-4.4
GEW-049	3/7/2016 15:39	56.4	37.7	0.1	5.8	109.7		13	13	0.0	0.0	-3.8
GEW-049	3/18/2016 11:08	44.2	34.6	0.5	20.7	106.9		0	0	-1.0	-1.0	-10.8
GEW-049	3/22/2016 15:39	55.5	40.8	0.0	3.7	109.8		0	0	0.6	0.6	-3.7
GEW-049	3/22/2016 15:40	56.0	41.2	0.0	2.8	116.4		0	0	0.2	0.2	-3.6
GEW-049	3/28/2016 11:17	46.0	36.2	0.1	17.7	107.0		14	13	-0.5	-0.5	-4.5
GEW-050	3/3/2016 13:19	57.4	39.2	0.2	3.2	105.6		29	31	-0.1	-0.1	-4.7
GEW-050	3/7/2016 15:22	57.3	38.0	0.0	4.7	106.3		30	32	0.1	0.1	-3.9
GEW-050	3/7/2016 15:26	56.9	39.0	0.0	4.1	106.5		16	14	0.0	0.0	-5.3
GEW-050	3/18/2016 11:03	51.8	37.7	0.0	10.5	106.5		19	20	-1.2	-1.2	-11.5
GEW-050	3/22/2016 15:26	55.9	39.0	0.0	5.1	107.5		18	18	0.8	0.7	-3.1
GEW-050	3/22/2016 15:27	55.6	39.9	0.0	4.5	108.5		16	19	0.7	0.6	-5.2
GEW-050	3/28/2016 11:07	54.1	38.2	0.0	7.7	106.0		14	15	-0.4	-0.4	-4.9
GEW-050	3/28/2016 11:08	54.0	38.7	0.0	7.3	107.5		38	38	-0.6	-0.5	-4.2
GEW-051	3/3/2016 10:55	54.5	36.1	0.1	9.3	122.6		17	17	-0.1	-0.1	-12.0
GEW-051	3/7/2016 15:20	55.3	40.0	0.1	4.6	123.5		0	0	0.4	0.5	-10.2

March 2016 Wellfield Monitoring Data - Bridgeton Landfill

Well Name	Date Sampled	Methane	CO ₂	O ₂	Balance Gas	Init Temp	Adj Temp	Init Flow	Adj Flow	Init Static Press	Adj Static Press	System Pressure
		(% vol)				°F		scfm		H ₂ O		
GEW-051	3/7/2016 15:26	55.3	40.8	0.1	3.8	124.0		19	19	0.0	0.0	-9.9
GEW-051	3/18/2016 11:10	54.6	37.9	0.0	7.5	124.9		13	13	-0.8	-0.8	-13.5
GEW-051	3/22/2016 15:35	54.1	39.8	0.0	6.1	127.8		14	13	0.8	0.8	-9.8
GEW-051	3/22/2016 15:36	54.4	41.5	0.0	4.1	128.9		13	17	0.8	0.8	-10.2
GEW-051	3/29/2016 9:17	56.9	40.0	0.0	3.1	125.0		16	17	-0.6	-0.6	-9.7
GEW-051	3/29/2016 9:19	55.7	41.2	0.0	3.1	127.2		29	24	-1.0	-1.0	-9.3
GEW-052	3/3/2016 13:22	52.1	36.8	0.1	11.0	114.0		35	34	-0.2	-0.1	-11.8
GEW-052	3/7/2016 15:57	53.2	37.6	0.1	9.1	114.7		39	38	-0.1	-0.1	-10.0
GEW-052	3/7/2016 16:02	52.8	37.3	0.1	9.8	114.9		14	11	0.0	0.0	-10.3
GEW-052	3/18/2016 11:05	49.8	37.3	0.0	12.9	111.1		9	9	-0.4	-0.4	-12.8
GEW-052	3/22/2016 15:30	54.9	39.8	0.0	5.3	117.3		0	0	0.3	0.3	-10.1
GEW-052	3/22/2016 15:30	54.7	40.4	0.0	4.9	117.4		0	0	0.3	0.3	-10.6
GEW-052	3/28/2016 11:12	50.3	37.0	0.0	12.7	112.5		30	31	-0.2	-0.2	-9.0
GEW-053	3/3/2016 11:22	52.2	41.7	0.1	6.0	136.6		12	13	-0.1	-0.1	-12.4
GEW-053	3/3/2016 11:22	51.1	42.7	0.1	6.1	136.9		12	13	-0.1	-0.1	-12.4
GEW-053	3/7/2016 15:08	50.6	41.7	0.1	7.6	137.0		0	0	0.4	0.4	-10.6
GEW-053	3/7/2016 15:14	51.1	41.0	0.1	7.8	140.0		0	0	0.0	-0.1	-10.5
GEW-053	3/18/2016 11:12	51.5	40.0	0.2	8.3	56.4		10	10	-0.1	-0.1	-14.6
GEW-053	3/24/2016 10:13	51.7	38.1	0.0	10.2	128.0		10	6	-0.4	-0.4	-11.7
GEW-054	3/3/2016 11:27	55.6	38.4	0.1	5.9	146.6		20	19	0.1	0.1	-11.7
GEW-054	3/3/2016 11:28	54.0	41.3	0.1	4.6	147.0		20	20	-0.1	-0.1	-11.5
GEW-054	3/7/2016 14:45	52.5	41.3	0.1	6.1	144.7		18	18	-0.1	-0.1	-11.0
GEW-054	3/7/2016 14:52	52.8	41.4	0.1	5.7	144.3		16	19	-0.1	-0.1	-10.6
GEW-054	3/18/2016 11:14	50.8	41.9	0.0	7.3	147.7		51	48	-4.1	-4.2	-12.1
GEW-054	3/18/2016 11:15	51.6	42.8	0.0	5.6	146.6		18	18	-1.9	-1.9	-14.3
GEW-054	3/29/2016 9:30	54.4	40.1	0.0	5.5	147.2		40	39	-2.9	-2.9	-8.4
GEW-054	3/29/2016 9:31	52.2	42.2	0.0	5.6	147.0		33	35	-2.2	-2.1	-9.0
GEW-055	3/3/2016 11:35	54.8	41.4	0.1	3.7	121.8		0	0	-0.3	-0.3	-11.6
GEW-055	3/7/2016 14:29	54.1	41.5	0.1	4.3	123.7		0	0	-0.2	-0.2	-11.2
GEW-055	3/7/2016 14:34	54.2	41.2	0.1	4.5	123.7		0	0	-0.1	-0.1	-11.2
GEW-055	3/18/2016 11:17	51.7	42.8	0.0	5.5	123.7		9	9	-0.7	-0.7	-14.6
GEW-055	3/24/2016 9:06	57.0	36.3	0.1	6.6	125.8		22	23	-0.6	-0.6	-11.0
GEW-055	3/29/2016 9:34	53.6	42.0	0.0	4.4	124.7		35	35	-0.5	-0.5	-9.7
GEW-056R	3/3/2016 13:59	18.6	35.8	0.0	45.6	158.8				-5.4	-5.4	-18.2
GEW-056R	3/3/2016 14:05	17.8	36.7	0.0	45.5	130.5				0.5	0.5	0.9
GEW-056R	3/7/2016 16:36	18.5	39.1	0.2	42.2	157.0				-6.0	-5.9	-21.8
GEW-056R	3/7/2016 16:37	20.2	38.7	0.1	41.0	157.0				-5.9	-5.9	-15.6
GEW-056R	3/18/2016 11:26	11.4	46.9	0.2	41.5	156.6				-5.5	-5.5	-19.8
GEW-056R	3/18/2016 11:27	13.9	43.6	0.2	42.3	156.6				-5.5	-5.5	-17.4
GEW-056R	3/23/2016 15:50	14.6	46.0	0.3	39.1	156.6				-4.0	-4.0	-12.2
GEW-056R	3/23/2016 15:51	17.2	42.5	0.2	40.1	156.6				-4.0	-4.0	-12.3
GEW-056R	3/29/2016 11:08	15.4	39.7	0.1	44.8	154.8				-3.9	-4.0	-12.4

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Well Name	Date Sampled	Methane	CO ₂	O ₂	Balance Gas	Init Temp	Adj Temp	Init Flow	Adj Flow	Init Static Press	Adj Static Press	System Pressure
		(% vol)				°F		scfm		H ₂ O		
GEW-056R	3/29/2016 11:09	14.4	43.1	0.1	42.4	155.2				-3.9	-3.8	-10.9
GEW-057B	3/25/2016 11:07	0.5	58.1	0.3	41.1	113.0				-15.7	-15.9	-15.1
GEW-057R	3/9/2016 10:08	0.4	15.7	17.4	66.5	148.9				-14.4	-12.0	-13.8
GEW-057R	3/9/2016 10:09	0.4	14.6	17.1	67.9	148.9				-14.5	-14.9	-14.7
GEW-058	3/9/2016 10:13	4.2	38.4	8.2	49.2	177.2				-21.7	-21.7	-22.3
GEW-058	3/9/2016 10:14	4.8	37.1	7.8	50.3	176.2				-21.2	-20.8	-22.1
GEW-058A	3/9/2016 10:16	0.8	48.7	3.9	46.6	151.4				-13.5	-14.4	-13.8
GEW-058A	3/9/2016 10:20	0.6	46.5	4.2	48.7	154.5				-13.9	-14.0	-14.8
GEW-059R	3/9/2016 10:26	1.4	53.4	0.2	45.0	189.1				-7.1	-7.1	0.1
GEW-059R	3/9/2016 10:30	1.4	56.7	0.2	41.7	189.1				-8.1	-8.1	0.2
GEW-065A	3/9/2016 10:35	0.3	28.4	15.9	55.4	96.1				-20.3	-19.7	-21.0
GEW-065A	3/9/2016 10:35	0.2	21.4	16.4	62.0	95.8				-19.8	-19.8	-20.6
GEW-067A	3/25/2016 11:12	3.2	36.8	11.1	48.9	122.9				-2.8	-2.7	-10.4
GEW-067A	3/25/2016 11:14	3.4	34.3	11.0	51.3	125.0		19	18	-1.1	-1.3	-14.6
GEW-082R	3/9/2016 10:45	0.9	58.8	0.2	40.1	196.3				-17.4	-18.3	-17.2
GEW-082R	3/9/2016 10:48	0.8	56.1	0.2	42.9	196.5				-16.9	-16.9	-17.1
GEW-086	3/9/2016 11:04	6.7	28.3	11.2	53.8	84.1				-0.2	-0.2	-16.6
GEW-086	3/9/2016 11:04	7.1	26.4	11.3	55.2	80.4				-0.2	-0.2	-17.3
GEW-089	3/9/2016 11:22	2.9	17.4	17.6	62.1	74.8				-4.4	-4.3	-13.5
GEW-089	3/9/2016 11:23	2.5	13.1	18.2	66.2	74.3		6	0	-4.2	-4.4	-17.1
GEW-090	3/9/2016 11:48	8.7	54.6	0.3	36.4	183.5				-14.5	-14.5	-21.0
GEW-090	3/9/2016 11:52	8.1	49.0	0.2	42.7	183.5		41	42	-15.5	-15.5	-20.6
GEW-102	3/9/2016 12:05	1.9	59.4	0.2	38.5	184.1				-20.8	-20.8	-20.6
GEW-102	3/9/2016 12:09	1.6	57.7	0.2	40.5	184.1				-20.8	-20.8	-21.0
GEW-107	3/9/2016 12:27	0.8	28.4	15.2	55.6	69.2				-20.8	-20.8	-21.5
GEW-107	3/9/2016 12:28	1.2	29.7	7.2	61.9	69.5		4	4	-22.2	-22.3	-22.0
GEW-109	3/3/2016 9:39	15.2	51.2	0.0	33.6	81.3		3	4	-16.8	-17.0	-18.1
GEW-109	3/3/2016 9:45	14.0	49.8	0.1	36.1	83.7		3	3	-17.7	-17.7	-18.3
GEW-109	3/7/2016 17:14	13.3	49.9	0.1	36.7	117.0		4	1	-17.9	-17.8	-20.2
GEW-109	3/18/2016 11:22	15.3	41.2	1.3	42.2	90.7		2	2	-17.6	-17.6	-18.2
GEW-109	3/23/2016 15:47	13.8	48.8	0.2	37.2	93.4		4	5	-12.3	-12.3	-14.2
GEW-109	3/29/2016 11:21	13.8	51.9	0.0	34.3	82.6		2	2	-13.1	-13.1	-14.8
GEW-110	3/3/2016 14:35	2.9	37.9	8.7	50.5	91.8		6	3	0.0	0.0	-22.2
GEW-110	3/3/2016 14:44	2.6	34.6	10.1	52.7	92.1		3	5	0.0	0.0	-24.5
GEW-110	3/7/2016 16:45	4.2	36.1	8.8	50.9	97.3		7	6	-0.1	-0.1	-22.0
GEW-110	3/7/2016 16:46	3.1	36.8	8.7	51.4	97.5		4	4	-0.1	-0.1	-22.1
GEW-110	3/18/2016 11:29	10.2	35.5	11.7	42.6	64.1		6	6	-0.1	-0.1	-22.6
GEW-110	3/18/2016 11:29	8.9	31.3	11.8	48.0	64.1		6	5	0.0	-0.1	-22.9
GEW-110	3/23/2016 15:57	4.0	51.8	2.7	41.5	101.1		3	2	0.0	0.0	-17.6
GEW-110	3/29/2016 11:11	8.1	38.5	8.5	44.9	71.4		6	4	0.0	0.0	-15.6
GEW-110	3/29/2016 11:12	6.2	35.2	8.9	49.7	71.4		4	3	-0.1	-0.1	-14.9
GEW-116	3/9/2016 12:22	2.7	44.3	12.9	40.1	71.0		7	7	-7.1	-7.1	-19.6

March 2016 Wellfield Monitoring Data - Bridgeton Landfill

Well Name	Date Sampled	Methane	CO ₂	O ₂	Balance Gas	Init Temp	Adj Temp	Init Flow	Adj Flow	Init Static Press	Adj Static Press	System Pressure
		(% vol)				°F		scfm		H ₂ O		
GEW-116	3/9/2016 12:22	1.7	32.9	12.1	53.3	70.5		4	3	-9.5	-9.5	-19.6
GEW-117	3/9/2016 12:20	6.0	53.6	2.0	38.4	105.0				-19.8	-19.8	-19.6
GEW-120	3/2/2016 8:30	13.9	57.5	0.9	27.7	175.2				-8.8	-8.8	-8.8
GEW-120	3/2/2016 8:35	14.2	58.5	0.9	26.4	175.2				-12.7	-12.8	-12.6
GEW-121	3/2/2016 8:33	4.2	59.6	0.0	36.2	189.6		33	35	-8.6	-8.4	-10.4
GEW-121	3/2/2016 8:40	5.2	61.2	0.1	33.5	189.3		42	40	-14.2	-13.8	-18.4
GEW-122	3/2/2016 8:49	6.3	52.7	0.1	40.9	181.9				-16.6	-16.6	-16.5
GEW-122	3/2/2016 8:53	5.9	55.8	0.1	38.2	181.9				-16.2	-16.5	-16.1
GEW-123	3/2/2016 8:49	3.7	62.1	0.0	34.2	190.8				-16.7	-16.4	-17.1
GEW-123	3/2/2016 10:04	4.6	59.7	0.0	35.7	190.6				-16.2	-16.2	-16.9
GEW-124	3/2/2016 10:04	7.6	59.5	1.0	31.9	129.3				-13.7	-14.1	-13.6
GEW-124	3/2/2016 10:08	7.2	58.8	1.0	33.0	128.1				-13.8	-14.1	-13.6
GEW-125	3/2/2016 10:13	0.7	48.3	5.5	45.5	51.8				-16.2	-16.2	-16.4
GEW-125	3/2/2016 10:14	0.7	47.9	5.0	46.4	52.3				-16.2	-16.2	-16.1
GEW-126	3/2/2016 10:12	10.5	57.9	0.2	31.4	190.8				-16.1	-16.5	-16.1
GEW-126	3/2/2016 10:16	9.8	54.0	0.2	36.0	190.8				-8.8	-8.7	-8.3
GEW-127	3/2/2016 10:19	1.8	58.8	0.0	39.4	189.6				-5.4	-5.3	-5.8
GEW-127	3/2/2016 10:37	1.8	62.0	0.0	36.2	189.8				-4.7	-4.9	-4.8
GEW-128	3/2/2016 10:24	7.3	63.4	0.2	29.1	179.9				-5.5	-5.5	-5.4
GEW-128	3/2/2016 10:28	6.6	61.1	0.2	32.1	179.8				-5.6	-5.4	-5.3
GEW-129	3/2/2016 10:45	6.3	58.7	0.0	35.0	167.9				-5.4	-5.7	-5.9
GEW-129	3/2/2016 10:52	6.4	56.2	0.0	37.4	167.8				-14.2	-14.3	-14.7
GEW-131	3/2/2016 10:46	9.5	48.3	3.7	38.5	171.7				-6.0	-5.9	-5.9
GEW-131	3/2/2016 10:50	10.1	44.6	4.2	41.1	173.1				-6.2	-6.4	-6.3
GEW-132	3/2/2016 11:14	8.5	49.2	3.2	39.1	169.2				-12.3	-12.4	-15.2
GEW-132	3/2/2016 11:17	6.8	43.6	3.6	46.0	169.2				-12.2	-12.2	-15.2
GEW-133	3/2/2016 11:18	0.7	32.0	12.9	54.4	50.3		6	5	-16.2	-16.2	-15.8
GEW-133	3/2/2016 11:19	0.6	38.7	9.3	51.4	51.8		5	8	-16.2	-16.2	-16.4
GEW-134	3/2/2016 11:23	4.6	38.8	9.4	47.2	116.4				-15.7	-15.7	-16.2
GEW-134	3/2/2016 11:25	4.9	38.6	9.4	47.1	118.6				-17.2	-17.6	-17.8
GEW-135	3/2/2016 11:30	4.7	42.1	6.8	46.4	172.7				-7.8	-6.8	-17.4
GEW-135	3/9/2016 15:37	4.4	34.8	9.1	51.7	152.5				-19.2	-19.1	-18.6
GEW-135	3/9/2016 15:39	4.4	33.6	9.2	52.8	153.3				-17.9	-15.7	-17.9
GEW-136	3/4/2016 9:05	1.6	7.6	19.6	71.2	107.2				-6.5	-6.9	-17.6
GEW-136	3/4/2016 9:09	1.8	11.3	18.9	68.0	109.9				-13.8	-12.2	-14.5
GEW-137	3/4/2016 8:38	15.6	43.8	0.2	40.4	104.7				-17.0	-16.1	-16.9
GEW-137	3/4/2016 8:42	16.0	42.4	0.2	41.4	102.3				-15.6	-14.7	-13.8
GEW-138	3/4/2016 9:10	15.5	61.0	0.3	23.2	144.8				-1.6	-1.8	-8.1
GEW-138	3/4/2016 9:13	16.1	58.0	0.3	25.6	145.1				-2.0	-2.0	-12.2
GEW-139	3/4/2016 9:19	1.2	59.8	0.3	38.7	187.9				-1.7	-1.7	-19.5
GEW-139	3/4/2016 9:22	1.4	57.0	0.3	41.3	187.9				-1.7	-1.7	-19.2
GEW-140	3/4/2016 9:18	11.7	55.7	0.2	32.4	174.1				-18.7	-18.2	-18.7

March 2016 Wellfield Monitoring Data - Bridgeton Landfill

Well Name	Date Sampled	Methane	CO ₂	O ₂	Balance Gas	Init Temp	Adj Temp	Init Flow	Adj Flow	Init Static Press	Adj Static Press	System Pressure
		(% vol)				°F		scfm		H ₂ O		
GEW-140	3/4/2016 9:24	11.5	55.0	0.2	33.3	174.1				-16.4	-18.2	-15.2
GEW-141	3/4/2016 9:33	1.8	61.1	0.6	36.5	115.7				-20.3	-20.3	-20.1
GEW-141	3/4/2016 9:37	1.7	57.7	0.4	40.2	116.0				-20.0	-20.5	-20.1
GEW-142	3/4/2016 9:38	0.0	1.0	23.2	75.8	38.7				-20.2	-19.5	-19.8
GEW-142	3/4/2016 9:40	0.0	1.0	23.0	76.0	38.8				-20.2	-19.8	-20.3
GEW-143	3/4/2016 10:02	0.3	37.3	9.0	53.4	53.7				-19.6	-20.0	-19.6
GEW-143	3/4/2016 10:03	0.2	36.0	8.8	55.0	54.9				-19.5	-20.0	-19.1
GEW-144	3/4/2016 10:03	2.9	58.1	1.4	37.6	91.1				-9.8	-10.3	-10.5
GEW-144	3/4/2016 10:04	2.4	52.9	1.1	43.6	92.7				-8.4	-8.4	-8.8
GEW-145	3/4/2016 10:11	4.7	57.1	0.0	38.2	178.2				-20.7	-20.6	-20.8
GEW-145	3/4/2016 10:18	4.9	56.9	0.0	38.2	179.8				-20.7	-20.7	-20.8
GEW-146	3/9/2016 9:39	4.3	21.2	14.7	59.8	76.6				-4.3	-4.3	-20.7
GEW-146	3/9/2016 9:47	5.3	22.4	13.0	59.3	78.0				-13.3	-13.7	-15.4
GEW-147	3/9/2016 9:59	11.3	49.4	0.1	39.2	165.0				-20.6	-20.6	-20.7
GEW-147	3/9/2016 10:09	12.6	54.0	0.4	33.0	169.7				-20.7	-20.6	-20.7
GEW-148	3/9/2016 10:21	0.3	15.4	20.1	64.2	66.2		9	16	-21.1	-20.7	-21.3
GEW-148	3/9/2016 10:25	0.0	4.5	21.6	73.9	66.4		5	2	-10.9	-10.8	-21.1
GEW-149	3/9/2016 11:02	8.0	36.2	9.2	46.6	121.5		36	37	-1.8	-1.9	-24.3
GEW-149	3/9/2016 11:14	7.6	38.9	8.2	45.3	116.3		19	16	-0.6	-0.6	-23.3
GEW-150	3/9/2016 11:24	4.9	32.6	12.0	50.5	152.5				-14.7	-14.7	-20.8
GEW-150	3/9/2016 11:32	5.0	32.3	11.9	50.8	150.9				-14.7	-14.8	-21.0
GEW-151	3/9/2016 14:25	9.4	40.1	5.7	44.8	135.7				-6.9	-7.8	-12.4
GEW-151	3/9/2016 14:26	9.0	41.7	5.7	43.6	133.9		22	18	-5.9	-5.9	-17.6
GEW-152	3/9/2016 13:47	8.7	52.6	0.2	38.5	167.3				-22.1	-21.6	-22.6
GEW-152	3/9/2016 13:54	8.3	51.6	0.2	39.9	168.1				-21.1	-21.4	-21.7
GEW-153	3/9/2016 12:25	23.7	47.6	0.1	28.6	158.8		20	9	-10.5	-10.3	-23.2
GEW-153	3/9/2016 12:31	25.4	47.1	0.1	27.4	160.1		31	30	-15.7	-15.8	-22.7
GEW-154	3/9/2016 12:08	12.5	26.4	11.7	49.4	141.1		11	11	-5.3	-5.4	-23.0
GEW-154	3/9/2016 12:17	15.2	26.4	11.1	47.3	147.5		34	36	-18.2	-17.7	-22.5
GEW-155	3/9/2016 11:38	9.2	40.5	8.2	42.1	111.6				-1.3	-1.3	-13.0
GEW-155	3/9/2016 11:49	8.9	37.8	8.6	44.7	117.0				-5.5	-5.5	-6.6
GEW-156	3/9/2016 11:59	4.2	14.0	16.5	65.3	94.4				-13.5	-13.3	-21.7
GEW-156	3/9/2016 12:03	2.5	11.5	17.2	68.8	95.4				-0.3	-0.3	-22.3
GEW-157	3/9/2016 14:28	6.5	53.1	0.1	40.3	191.3		29	15	1.1	-4.6	2.0
GEW-157	3/9/2016 14:29	5.7	58.4	0.2	35.7	191.3		13	35	0.1	-3.2	-1.9
GEW-158	3/9/2016 14:22	1.4	28.5	10.1	60.0	71.2		12	8	-19.0	-18.6	-18.8
GEW-158	3/9/2016 14:24	1.5	26.9	9.4	62.2	70.9		3	1	-22.6	-22.6	-22.4
GEW-159	3/9/2016 13:57	13.5	43.4	0.0	43.1	160.5		22	22	-20.9	-20.9	-21.4
GEW-159	3/9/2016 14:01	14.0	38.7	0.0	47.3	161.4		23	20	-21.0	-21.0	-21.5
GEW-160	3/9/2016 13:53	0.8	39.4	2.4	57.4	72.4		2	8	-20.0	-19.6	-20.0
GEW-161	3/9/2016 13:51	2.2	33.2	8.3	56.3	72.9		9	3	-21.1	-20.5	-20.9
GEW-161	3/9/2016 13:51	1.5	33.0	8.6	56.9	73.2		7		-21.9		-22.0

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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-162	3/9/2016 13:47	17.9	50.1	1.1	30.9	78.0		17	10	-21.9	-21.6	-22.1
GIW-01	3/3/2016 9:03	3.4	61.9	0.4	34.3	186.8		35	38	-7.9	-7.7	-7.9
GIW-01	3/3/2016 9:10	2.9	66.9	0.1	30.1	186.3		20	0	-7.5	-7.4	-7.9
GIW-01	3/16/2016 15:31	3.2	59.6	0.5	36.7	182.4		0	30	-22.1	-22.1	-22.0
GIW-01	3/16/2016 15:33	2.8	62.7	0.2	34.3	183.5		13	23	-21.6	-22.5	-21.9
GIW-01	3/21/2016 14:21	6.9	53.1	1.4	38.6	177.7		0	0	-22.5	-22.5	-22.3
GIW-01	3/21/2016 14:22	2.6	59.5	1.0	36.9	177.2		0	27	-22.5	-22.5	-22.3
GIW-02	3/3/2016 15:25	7.3	28.9	11.2	52.6	72.0		0	10	-8.4	-7.8	-23.3
GIW-02	3/3/2016 15:32	7.0	30.9	11.2	50.9	71.7		0	36	-6.8	-6.9	-23.4
GIW-02	3/11/2016 16:24	5.3	32.0	10.9	51.8	71.8		82	0	-8.8	-8.3	-22.3
GIW-02	3/11/2016 16:26	5.7	29.8	11.0	53.5	71.2		53	0	-5.8	-5.3	-22.5
GIW-02	3/16/2016 15:37	2.7	24.9	13.8	58.6	73.2		0	0	-0.7	-0.7	-22.5
GIW-02	3/16/2016 15:38	3.0	23.8	14.0	59.2	73.7		2	4	-0.7	-0.7	-22.1
GIW-02	3/21/2016 14:28	4.9	25.5	12.3	57.3	70.2		4	5	-0.7	-0.7	-22.4
GIW-02	3/21/2016 14:29	5.0	25.6	12.3	57.1	70.0		5	6	-0.7	-0.7	-21.9
GIW-03	3/3/2016 15:14	0.1	19.8	18.0	62.1	55.3		0	0	-11.8	-11.8	-22.7
GIW-03	3/3/2016 15:20	0.1	10.0	19.2	70.7	56.1		4	3	-11.3	-11.2	-21.8
GIW-03	3/11/2016 16:11	0.9	19.1	17.4	62.6	69.0		8	4	-21.6	-21.5	-22.1
GIW-03	3/11/2016 16:14	0.2	12.0	19.3	68.5	68.5		7	4	-6.8	-6.8	-22.1
GIW-03	3/16/2016 15:40	0.2	15.3	18.2	66.3	75.3		1	6	-6.9	-6.9	-22.2
GIW-03	3/16/2016 15:42	0.1	10.7	19.2	70.0	75.5		3	2	-2.1	-2.0	-21.5
GIW-03	3/21/2016 14:32	0.3	22.1	15.6	62.0	74.8		4	6	-1.7	-1.7	-21.7
GIW-03	3/21/2016 14:34	0.2	21.2	15.6	63.0	75.5		4	2	-1.5	-1.4	-22.3
GIW-04	3/3/2016 15:01	0.8	35.5	5.2	58.5	54.7		8	8	-11.2	-11.2	-22.7
GIW-04	3/3/2016 15:09	0.3	31.8	6.1	61.8	54.4		8	8	-19.2	-19.2	-22.4
GIW-04	3/11/2016 16:20	0.8	39.8	4.3	55.1	66.9		9	8	-14.6	-14.6	-21.6
GIW-04	3/16/2016 15:45	0.1	8.7	19.4	71.8	76.6		3	1	-20.6	-20.6	-22.4
GIW-04	3/16/2016 15:46	0.1	6.0	20.0	73.9	77.5		3	3	-20.5	-20.5	-22.5
GIW-04	3/21/2016 14:39	0.1	7.0	19.7	73.2	72.9		5	1	-20.9	-20.9	-22.5
GIW-04	3/21/2016 14:40	0.1	6.0	19.7	74.2	73.4		3	3	-20.8	-20.7	-22.3
GIW-05	3/3/2016 7:53	3.5	55.0	1.6	39.9	42.0		0	0	-20.2	-20.6	-21.8
GIW-05	3/3/2016 7:58	3.5	47.8	0.8	47.9	42.0		36	0	-16.7	-16.8	-17.8
GIW-05	3/7/2016 16:12	8.8	53.7	0.5	37.0	83.0		44	68	-19.2	-19.2	-22.4
GIW-05	3/16/2016 15:50	9.2	53.9	1.4	35.5	72.4		71	29	-19.2	-19.2	-20.6
GIW-05	3/21/2016 14:44	10.5	53.5	1.4	34.6	65.2		74	62	-13.8	-13.7	-22.3
GIW-06	3/2/2016 15:48	1.5	56.1	0.7	41.7	48.6				-21.6	-22.1	-21.7
GIW-06	3/2/2016 15:58	1.7	57.8	0.4	40.1	47.6				-13.2	-13.2	-22.4
GIW-06	3/7/2016 16:15	2.3	57.2	0.1	40.4	81.0				-21.1	-21.2	-21.8
GIW-06	3/16/2016 15:52	2.7	54.4	1.2	41.7	75.7				-21.1	-21.1	-22.5
GIW-06	3/21/2016 14:46	2.3	52.8	1.1	43.8	70.5				-6.0	-5.9	-22.3
GIW-07	3/2/2016 16:02	20.0	44.7	6.7	28.6	45.2		5	5	-7.4	-7.3	-22.4
GIW-07	3/2/2016 16:11	20.5	44.2	6.7	28.6	45.9		3	3	-7.3	-7.3	-20.4

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Well Name	Date Sampled	Methane	CO ₂	O ₂	Balance Gas	Init Temp	Adj Temp	Init Flow	Adj Flow	Init Static Press	Adj Static Press	System Pressure
		(% vol)				°F		scfm		H ₂ O		
GIW-07	3/7/2016 16:18	15.0	53.4	4.7	26.9	78.0		1	1	-3.4	-3.3	-21.7
GIW-07	3/16/2016 15:55	15.4	42.4	8.3	33.9	77.3		3	1	-7.4	-7.5	-22.6
GIW-07	3/16/2016 15:56	15.4	40.3	8.6	35.7	77.9		1	1	-7.4	-7.4	-22.0
GIW-07	3/21/2016 14:57	12.8	39.9	8.6	38.7	68.7		1	1	-6.5	-6.6	-22.6
GIW-07	3/21/2016 14:58	14.3	40.5	8.3	36.9	70.1		2	1	-6.3	-6.3	-22.2
GIW-08	3/2/2016 16:15	20.4	61.0	0.0	18.6	49.3				-13.8	-13.8	-20.8
GIW-08	3/2/2016 16:22	19.7	56.7	0.0	23.6	49.3				-14.2	-14.3	-22.1
GIW-08	3/7/2016 17:04	21.6	45.9	0.3	32.2	77.9				-12.8	-12.8	-19.0
GIW-08	3/16/2016 15:59	20.2	49.1	0.1	30.6	73.6				-13.8	-13.7	-15.5
GIW-08	3/21/2016 15:01	19.1	48.6	0.2	32.1	68.4				-13.7	-13.7	-21.9
GIW-09	3/2/2016 16:26	2.6	24.3	15.3	57.8	62.2				-6.3	-6.0	-23.4
GIW-09	3/2/2016 16:32	2.6	18.7	15.9	62.8	61.7				-6.3	-6.3	-22.0
GIW-09	3/7/2016 17:01	3.2	28.0	15.8	53.0	79.0				-1.3	-1.3	-22.7
GIW-09	3/7/2016 17:01	0.4	14.6	17.4	67.6	79.0				-1.4	-1.3	-21.8
GIW-09	3/16/2016 16:17	1.1	21.6	16.0	61.3	69.3				-1.7	-1.7	-22.2
GIW-09	3/16/2016 16:18	0.7	14.4	16.9	68.0	69.0				-1.7	-1.7	-22.0
GIW-09	3/21/2016 15:06	1.1	15.6	16.7	66.6	71.6				-4.3	-4.3	-23.0
GIW-09	3/21/2016 15:07	1.2	15.1	16.5	67.2	69.6				-2.5	-2.5	-22.3
GIW-10	3/3/2016 7:41	6.7	49.3	0.0	44.0	43.8		0	0	-21.3	-21.6	-21.7
GIW-10	3/3/2016 7:47	6.2	48.9	0.0	44.9	44.4		10	12	-21.6	-21.6	-22.2
GIW-10	3/7/2016 16:09	7.8	46.0	0.1	46.1	81.9		3	6	-20.7	-21.1	-21.4
GIW-10	3/16/2016 16:21	5.6	48.1	0.1	46.2	70.0		12	5	-22.1	-22.1	-22.0
GIW-10	3/21/2016 15:09	7.1	41.4	0.2	51.3	69.6		15	10	-22.5	-22.1	-22.8
GIW-11	3/3/2016 8:29	6.2	43.3	5.0	45.5	54.9				-2.9	-2.9	-8.2
GIW-11	3/3/2016 8:35	6.4	43.1	5.0	45.5	55.0				-2.8	-2.8	-8.6
GIW-11	3/7/2016 16:56	6.4	33.3	6.4	53.9	86.9				-6.5	-6.5	-21.9
GIW-11	3/7/2016 16:58	5.8	36.7	6.4	51.1	85.3				-4.2	-4.2	-22.0
GIW-11	3/16/2016 16:23	5.7	41.7	5.8	46.8	70.5				-3.6	-3.6	-22.2
GIW-11	3/16/2016 16:25	5.9	39.8	5.9	48.4	70.2				-2.8	-2.8	-22.3
GIW-11	3/21/2016 15:21	5.1	45.8	4.8	44.3	69.5				-2.5	-2.5	-22.3
GIW-12	3/3/2016 8:39	8.3	30.0	8.6	53.1	60.6				-1.6	-1.6	-8.5
GIW-12	3/3/2016 8:44	8.6	28.4	8.6	54.4	60.1				-1.6	-1.6	-7.8
GIW-12	3/7/2016 16:52	6.3	29.9	9.7	54.1	87.0				-3.7	-3.7	-22.7
GIW-12	3/7/2016 16:53	6.3	25.1	9.9	58.7	87.1				-3.6	-3.7	-22.1
GIW-12	3/16/2016 16:27	4.3	25.5	10.8	59.4	75.2				-3.5	-3.6	-22.5
GIW-12	3/16/2016 16:29	4.6	23.0	10.9	61.5	74.5				-2.5	-2.6	-21.7
GIW-12	3/21/2016 15:12	5.1	28.4	9.0	57.5	72.7				-2.4	-2.4	-22.6
GIW-12	3/21/2016 15:13	5.3	25.1	9.2	60.4	71.7				-1.4	-1.4	-22.6
GIW-13	3/3/2016 8:47	11.6	54.6	0.0	33.8	45.5				-4.4	-4.5	-4.4
GIW-13	3/3/2016 8:54	9.7	60.1	0.0	30.2	45.6				-4.8	-5.0	-5.2
GIW-13	3/7/2016 16:50	11.6	53.4	0.3	34.7	78.4				-16.5	-16.3	-16.4
GIW-13	3/16/2016 16:32	11.0	57.5	0.1	31.4	69.5				-9.5	-9.3	-9.4


March 2016 Wellfield Monitoring Data - Bridgeton Landfill

Well Name	Date Sampled	Methane	CO ₂	O ₂	Balance Gas	Init Temp	Adj Temp	Init Flow	Adj Flow	Init Static Press	Adj Static Press	System Pressure
		(% vol)				°F		scfm		H ₂ O		
GIW-13	3/21/2016 15:18	10.1	59.9	0.0	30.0	69.2				-10.7	-10.7	-10.7
LCS-5A	3/3/2016 11:25	57.1	42.8	0.1	0.0	91.7				-12.7	-12.2	-12.2
LCS-5A	3/7/2016 15:03	58.5	38.6	0.1	2.8	93.6				-10.0	-9.9	-10.5
LCS-5A	3/29/2016 9:27	59.1	39.6	0.0	1.3	91.8				-9.5	-9.5	-9.2
LCS-6B	3/3/2016 10:22	51.2	39.6	1.2	8.0	93.9		7	7	-1.7	-1.7	-10.6
LCS-6B	3/28/2016 10:55	52.5	40.7	0.5	6.3	75.0		9	9	-1.1	-1.1	-9.7
PGW-60	3/3/2016 9:02	59.8	39.3	0.2	0.7	73.9		33	36	42.0	42.0	-10.3
PGW-60	3/3/2016 9:03	58.2	41.2	0.1	0.5	76.4		42	17	-0.7	-0.9	-10.2
PGW-60	3/7/2016 10:41	62.5	27.6	0.3	9.6	73.1		27	24	-5.0	-5.3	-10.8
PGW-60	3/18/2016 10:31	60.5	27.2	0.5	11.8	75.0		32	24	-9.9	-9.4	-10.1
SEW-002	3/30/2016 10:35	0.3	10.1	18.3	71.3	69.8		9	9	-10.5	-10.5	-12.4
SEW-002	3/30/2016 10:36	0.3	11.3	17.8	70.6	69.8		5	5	-10.8	-10.8	-12.7
T-56	3/3/2016 10:44	46.2	34.7	1.4	17.7	47.1		18	22	-0.1	-0.1	-12.3

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
	December 2015	January 2016	February 2016	March 2016		
GEW-001	--	--	--	--		
GEW-002	122.0	124.9	120.2	124.2		
GEW-003	111.9	113.3	110.9	115.2		
GEW-004	115.0	117.8	112.5	116.5		
GEW-005	93.4	95.6	96.2	94.0		
GEW-006	84.0	89.9	90.1	91.1		
GEW-007	90.5	96.4	94.0	92.1		
GEW-008	111.8	112.5	112.9	113.2		
GEW-009	124.5	122.3	121.5	126.4		
GEW-010	59.9	63.3	69.2	94.6		
GEW-011	--	--	--	--		
GEW-013A	--	--	186.8	152.2		
GEW-014A	--	--	--	--		
GEW-015	--	--	--	--		
GEW-016R	--	--	--	--		
GEW-018B	--	--	--	--		
GEW-018R	--	--	--	--		
GEW-019A	--	--	--	--		
GEW-020A	90.0	--	--	--		
GEW-021A	--	--	--	--		
GEW-022R	170.0	192.8	194.8	193.1		
GEW-023A	--	--	--	--		
GEW-024A	--	--	--	--		
GEW-025A	--	--	--	--		
GEW-026R	--	--	--	--		
GEW-027A	90.0	--	--	--		
GEW-028R	150.0	178.2	193.7	192.1		
GEW-029	--	--	--	--		
GEW-030R	--	--	--	--		
GEW-033R	--	--	--	--		
GEW-034	--	--	--	--		
GEW-034A	--	--	--	--		
GEW-035	--	--	--	--		
GEW-036	--	--	--	--		
GEW-037	--	--	--	--		
GEW-038	59.9	50.9	56.1	79.5		
GEW-039	136.0	134.1	132.7	133.4		
GEW-040	87.4	86.9	85.5	87.3		
GEW-041R	95.2	103.2	103.2	109.0		
GEW-042R	99.9	111.6	112.7	110.0		
GEW-043R	127.0	130.8	133.3	134.3		
GEW-044	80.0	73.1	81.3	85.3		
GEW-045R	75.0	83.2	82.9	84.7		
GEW-046R	81.2	93.2	95.0	99.6		

Wellfield Temperature - Bridgeton Landfill

Well Name	Maximum Initial Temperature From All Monthly Wellhead Readings (in °F)				Temp Trend ><30°F	Comments
	December 2015	January 2016	February 2016	March 2016		
GEW-047R	103.5	110.4	124.3	115.2		
GEW-048	101.3	103.6	102.2	106.0		
GEW-049	100.7	109.9	109.9	116.4		
GEW-050	101.5	106.3	106.4	108.5		
GEW-051	122.1	125.1	124.1	128.9		
GEW-052	109.0	112.6	115.0	117.4		
GEW-053	144.0	138.0	138.7	140.0		
GEW-054	147.7	154.9	147.1	147.7		
GEW-055	116.8	122.8	121.8	125.8		
GEW-056R	165.9	165.5	175.2	158.8		
GEW-057B	167.0	100.8	98.7	113.0		
GEW-057R	185.0	162.3	143.2	148.9		
GEW-058	172.0	184.6	177.7	177.2		
GEW-058A	188.0	167.8	170.7	154.5		
GEW-059R	142.0	186.3	187.4	189.1		
GEW-061B	44.0	--	--	--		
GEW-064A	--	--	--	--		
GEW-065A	192.0	180.8	99.4	96.1		
GEW-066	--	70.2	--	--		
GEW-067A	189.1	165.0	122.3	125.0		
GEW-068A	--	--	--	--		
GEW-069R	--	--	--	--		
GEW-070R	--	--	--	--		
GEW-071	--	--	--	--		
GEW-071B	--	--	--	--		
GEW-072RR	--	--	--	--		
GEW-073R	--	--	--	--		
GEW-075	--	--	--	--		
GEW-076R	--	--	--	--		
GEW-077	111.0	65.9	--	--		
GEW-078R	--	--	--	--		
GEW-080	50.0	51.5	--	--		
GEW-081	--	--	--	--		
GEW-082R	180.0	196.6	197.9	196.5		
GEW-083	--	--	--	--		
GEW-084	--	--	--	--		
GEW-085	--	--	--	--		
GEW-086	110.0	87.0	84.7	84.1		
GEW-087	--	--	--	--		
GEW-088	--	--	--	--		
GEW-089	55.0	86.1	94.6	74.8		
GEW-090	173.0	185.2	185.2	183.5		
GEW-091	--	--	--	--		
GEW-100	--	--	--	--		

Wellfield Temperature - Bridgeton Landfill

Well Name	Maximum Initial Temperature From All Monthly Wellhead Readings (in °F)				Temp Trend ><30°F	Comments
	December 2015	Janaury 2016	February 2016	March 2016		
GEW-101	--	--	--	--		
GEW-102	188.0	144.0	189.1	184.1		
GEW-103	--	--	--	--		
GEW-104	55.0	--	--	--		
GEW-105	45.0	--	--	--		
GEW-106	--	--	--	--		
GEW-107	--	--	55.6	69.5		
GEW-108	--	--	--	--		
GEW-109	102.6	61.1	113.1	117.0		
GEW-110	95.6	98.0	71.3	101.1		
GEW-112	--	--	--	--		
GEW-113	--	--	--	--		
GEW-116	77.0	35.5	51.2	71.0		
GEW-117	70.0	57.4	83.3	105.0		
GEW-118	--	--	--	--		
GEW-120	171.2	173.1	184.1	175.2		
GEW-121	187.4	186.3	187.9	189.6		
GEW-122	193.7	190.8	190.8	181.9		
GEW-123	192.6	170.8	193.1	190.8		
GEW-124	111.6	157.6	119.0	129.3		
GEW-125	192.6	190.2	193.1	52.3		
GEW-126	184.6	189.1	191.3	190.8		
GEW-127	186.3	184.6	186.8	189.8		
GEW-128	182.2	181.9	182.4	179.9		
GEW-129	166.4	165.4	159.6	167.9		
GEW-130	--	--	--	--		
GEW-131	125.1	177.2	179.8	173.1		
GEW-132	181.4	171.7	173.6	169.2		
GEW-133	71.4	64.7	56.5	51.8		
GEW-134	168.3	163.2	155.6	118.6		
GEW-135	178.7	155.4	147.0	172.7		
GEW-136	136.6	112.8	110.9	109.9		
GEW-137	120.1	121.5	91.9	104.7		
GEW-138	157.0	152.9	147.4	145.1		
GEW-139	184.6	183.0	180.3	187.9		
GEW-140	183.0	160.5	191.3	174.1		
GEW-141	148.5	157.9	155.0	116.0		
GEW-142	104.2	88.2	92.9	38.8		
GEW-143	103.0	94.2	113.7	54.9		
GEW-144	71.9	70.7	64.9	92.7		
GEW-145	137.6	86.0	150.9	179.8		
GEW-146	77.3	70.0	69.5	78.0		
GEW-147	184.1	191.9	178.2	169.7		
GEW-148	136.3	45.2	64.9	66.4		

Wellfield Temperature - Bridgeton Landfill

Well Name	Maximum Initial Temperature From All Monthly Wellhead Readings (in °F)				Temp Trend ><30°F	Comments
	December 2015	January 2016	February 2016	March 2016		
GEW-149	171.7	123.7	171.2	116.3		
GEW-150	136.3	184.6	188.5	152.5		
GEW-151	171.2	47.3	57.9	135.7		
GEW-152	--	--	71.9	168.1		
GEW-153	46.2	--	52.4	160.1		
GEW-154	144.7	51.5	113.8	147.5		
GEW-155	108.6	111.6	113.3	117.0		
GEW-156	124.0	102.0	93.6	95.4		
GEW-157	41.9	62.1	37.9	191.3		
GEW-158	44.1	55.8	54.1	71.2		
GEW-159	43.6	64.2	27.5	161.4		
GEW-160	42.0	66.7	162.8	72.4		
GEW-161	42.0	--	37.9	73.2		
GEW-162	42.7	63.3	56.1	78.0		
GIW-01	189.6	183.0	186.3	186.8		
GIW-02	63.8	75.5	73.8	73.7		
GIW-03	63.5	75.2	64.1	75.5		
GIW-04	61.9	72.3	62.0	77.5		
GIW-05	59.3	55.8	62.4	83.0		
GIW-06	60.5	73.6	57.3	81.0		
GIW-07	59.6	73.4	55.5	78.0		
GIW-08	59.2	81.0	57.9	77.9		
GIW-09	66.8	81.3	65.4	79.0		
GIW-10	60.2	72.5	60.5	81.9		
GIW-11	62.2	61.0	76.5	86.9		
GIW-12	74.7	65.6	79.4	87.1		
GIW-13	60.0	57.0	66.1	78.4		
LCS-1D	--	--	--	--		
LCS-2D	--	--	--	--		
LCS-3C	--	--	--	--		
LCS-4B	--	--	--	--		
LCS-5A	90.0	91.2	93.3	93.6		
LCS-6B	73.0	60.1	125.1	93.9		
PGW-60	60.0	49.6	65.7	76.4		
SEW-002	38.0	36.4	64.6	69.8		
SEW-012A	--	--	--	--		
SEW-017R	--	--	--	--		
SEW-031R	--	--	--	--		
SEW-032R	--	--	--	--		
SEW-060R	--	--	--	--		
SEW-061R	--	--	--	--		
SEW-062R	--	--	--	--		
SEW-063	--	--	--	--		
SEW-064	--	--	--	--		

Wellfield Temperature - Bridgeton Landfill

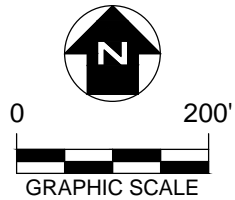
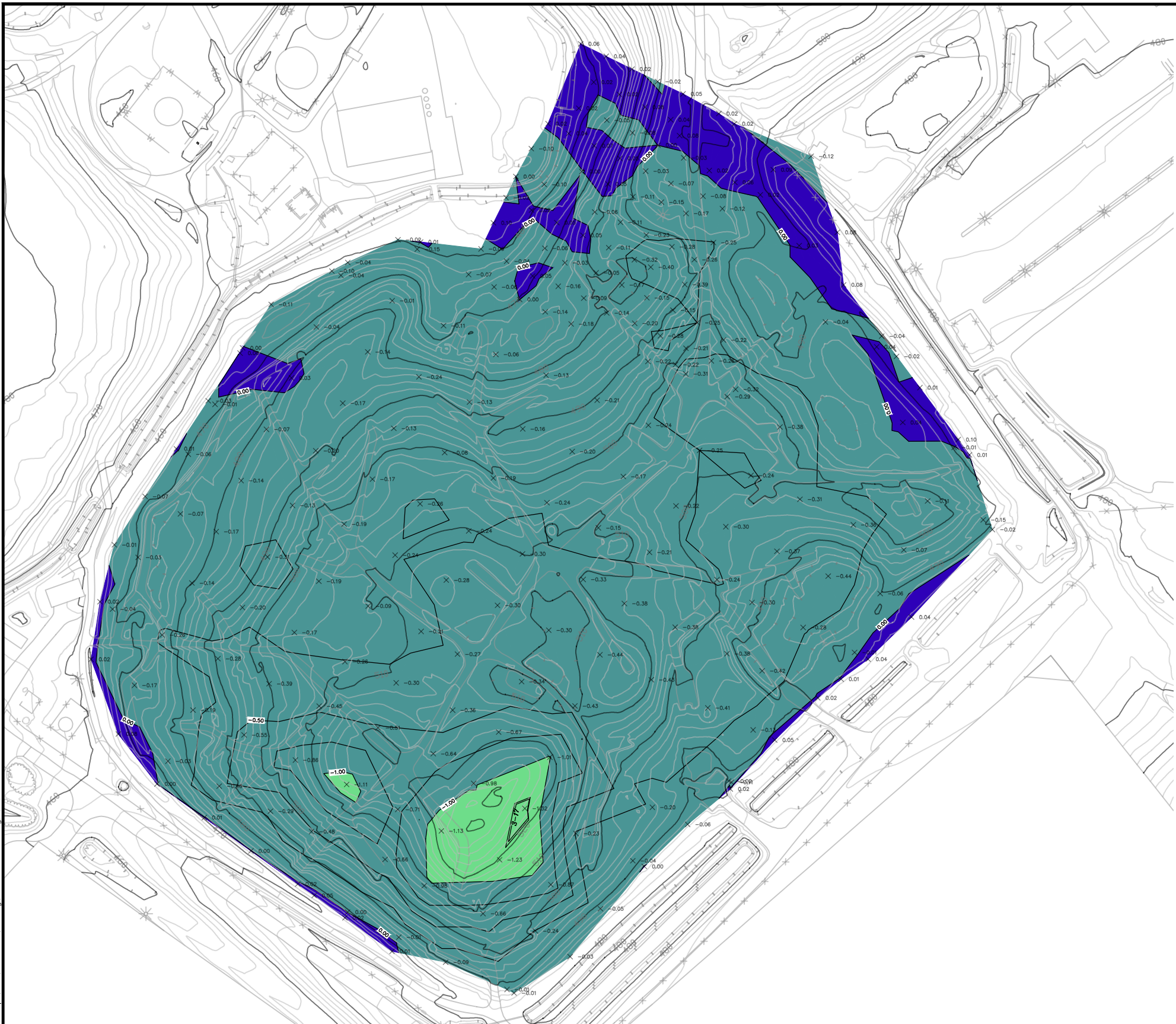
Well Name	Maximum Initial Temperature From All Monthly Wellhead Readings (in °F)				Temp Trend ><30°F	Comments
	December 2015	January 2016	February 2016	March 2016		
SEW-067	--	--	--	--		
SEW-072R	--	--	--	--		
SEW-074	--	--	--	--		
SEW-079R	--	--	--	--		
T-56	40.0	47.7	47.3	47.1		

-- = Indicates no data available.

ATTACHMENT F

SETTLEMENT FRONT MAP

T:\AutoCAD\Projects\Bridgeton LP\Settlement Maps\March Settlement.dwg, 3/28/2016 11:30:41 AM



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 2-18-16 FROM SPOT ELEVATIONS SURVEYED ON 3-17-16.
- 4. SURVEY POINTS WERE PERFORMED USING GPS METHODS.
- 5. SETTLEMENT RANGE SURFACE WAS GENERATED FROM THE SPOT ELEVATION DIFFERENCES.
- 6. ELEVATION DIFFERENCES THAT ARE SHOWN AS NEGATIVE INDICATE SPOTS OF SETTLEMENT.
- 7. ANY POINTS THAT ARE NOT A GROUND-TO-GROUND COMPARISON TO THE PREVIOUS MONTH'S POINTS, OR THAT WERE NOT SURVEYED IN THE SAME LOCATION AS THE PREVIOUS MONTH ARE NOT INCLUDED AND WERE NOT USED IN ANY SURFACE GENERATION.

LEGEND

- X -0.42 SPOT ELEVATION DIFFERENCE (3-17-16 TO 2-18-16)
- MINOR ELEVATION CHANGE CONTOUR (0.25 FEET)
- 0.50 MAJOR ELEVATION CHANGE CONTOUR (0.50 FEET)
- 3-17 SETTLEMENT FRONT CONTOUR FOR AREA WITH 1.35' PER 30 DAYS FOR CURRENT PERIOD OF DAYS (AREA REPRESENTS 1.260' OVER 28 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	35856.84	
5	-1.00	0.00	1384326.12	
6	0.00	1.00	119770.08	

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
FEBRUARY 18, 2016 THROUGH MARCH 17, 2016

DRAWN BY: ORC APPROVED BY: JPV PROJ. NO.: 155162 DATE: APRIL 2016

ATTACHMENT G

SUMMARY OF ODOR COMPLAINTS

March 1, 2015 – March 31, 2015 / MDNR ODOR COMPLAINTS

Name: NA

Message: Odor logged March 1, 2016, at 7:52 am strength of 7

Follow-up: The following concern has been investigated by Bridgeton Landfill staff. On the date and time of this concern winds were of a clear southwestern origin as local conditions transitioned from a low velocity southern wind vector to a moderate to high velocity western origin. Such a wind regime places this location well outside the downwind pathway of the Bridgeton Landfill and directly downwind of another known odor source with frequent uncontrolled off-site odor emissions. Bridgeton Landfill staff performed an odor patrol in close time proximity to this concern and did not observe Bridgeton Landfill related odor at any location between this concern location and the Bridgeton Landfill. This was not a Bridgeton Landfill odor.

Name: NA

Message: Odor logged March 1, 2016, at 7:30 am strength of 10

Follow-up: The following concern has been investigated by Bridgeton Landfill staff. An odor patrol was performed immediately following the time cited in this concern. No odor associated with the Bridgeton Landfill was observed at points between this location and the Bridgeton Landfill. This concern location is directly adjacent to another known odor source with frequent uncontrolled off-site odor emissions. This was not a Bridgeton Landfill odor.

Name: NA

Message: Odor logged March 1, 2016, at 7:30 am strength of 10

Follow-up: The following concern has been investigated by Bridgeton Landfill staff. An odor patrol was performed immediately following the time cited in this concern. No odor associated with the Bridgeton Landfill was observed at points between this location and the Bridgeton Landfill. This concern location is directly adjacent to another known odor source with frequent uncontrolled off-site odor emissions. This was not a Bridgeton Landfill odor.

Name: NA

Message: Odor logged March 1, 2016, at 7:31 am strength of 10

Follow-up: The following concern has been investigated by Bridgeton Landfill staff. An odor patrol was performed immediately following the time cited in this concern. No odor associated with the Bridgeton Landfill was observed at points between this location and the Bridgeton

Landfill. This concern location is directly adjacent to another known odor source with frequent uncontrolled off-site odor emissions. This was not a Bridgeton Landfill odor.

Name: NA

Message: Odor logged March 1, 2016, at 7:31 am strength of 10

Follow-up: The following concern has been investigated by Bridgeton Landfill staff. An odor patrol was performed immediately following the time cited in this concern. No odor associated with the Bridgeton Landfill was observed at points between this location and the Bridgeton Landfill. This concern location is directly adjacent to another known odor source with frequent uncontrolled off-site odor emissions. This was not a Bridgeton Landfill odor.

Name: NA

Message: Odor logged March 1, 2016, at 7:32 am strength of 10

Follow-up: The following concern has been investigated by Bridgeton Landfill staff. An odor patrol was performed immediately following the time cited in this concern. No odor associated with the Bridgeton Landfill was observed at points between this location and the Bridgeton Landfill. This concern location is directly adjacent to another known odor source with frequent uncontrolled off-site odor emissions. This was not a Bridgeton Landfill odor.

Name: NA

Message: Odor logged March 1, 2016, at 7:32 am strength of 10

Follow-up: The following concern has been investigated by Bridgeton Landfill staff. An odor patrol was performed immediately following the time cited in this concern. No odor associated with the Bridgeton Landfill was observed at points between this location and the Bridgeton Landfill. This concern location is directly adjacent to another known odor source with frequent uncontrolled off-site odor emissions. This was not a Bridgeton Landfill odor.

Name: NA

Message: Odor logged March 1, 2016, at 7:35 am strength of 10

Follow-up: The following concern has been investigated by Bridgeton Landfill staff. An odor patrol was performed immediately following the time cited in this concern. No odor associated with the Bridgeton Landfill was observed at points between this location and the Bridgeton Landfill. This concern location is directly adjacent to another known odor source with frequent uncontrolled off-site odor emissions. This was not a Bridgeton Landfill odor.

Name: NA

Message: Odor logged March 2, 2016, at 7:30 am strength of 10

Follow-up: The following concern has been investigated by Bridgeton Landfill staff. An odor patrol was performed immediately following the time cited in this concern. No odor associated with the Bridgeton Landfill was observed at points between this location and the Bridgeton Landfill. This concern location is directly adjacent to another known odor source with frequent uncontrolled off-site odor emissions. This was not a Bridgeton Landfill odor.

Name: NA

Message: Odor logged March 2, 2016, at 7:30 am strength of 10

Follow-up: The following concern has been investigated by Bridgeton Landfill staff. An odor patrol was performed immediately following the time cited in this concern. No odor associated with the Bridgeton Landfill was observed at points between this location and the Bridgeton Landfill. This concern location is directly adjacent to another known odor source with frequent uncontrolled off-site odor emissions. This was not a Bridgeton Landfill odor.

Name: NA

Message: Odor logged March 2, 2016, at 7:30 am strength of 10

Follow-up: The following concern has been investigated by Bridgeton Landfill staff. An odor patrol was performed immediately following the time cited in this concern. No odor associated with the Bridgeton Landfill was observed at points between this location and the Bridgeton Landfill. This concern location is directly adjacent to another known odor source with frequent uncontrolled off-site odor emissions. This was not a Bridgeton Landfill odor.

Name: NA

Message: Odor logged March 2, 2016, at 7:31 am strength of 10

Follow-up: The following concern has been investigated by Bridgeton Landfill staff. An odor patrol was performed immediately following the time cited in this concern. No odor associated with the Bridgeton Landfill was observed at points between this location and the Bridgeton Landfill. This concern location is directly adjacent to another known odor source with frequent uncontrolled off-site odor emissions. This was not a Bridgeton Landfill odor.

Name: NA

Message: Odor logged March 2, 2016, at 7:31 am strength of 10

Follow-up: The following concern has been investigated by Bridgeton Landfill staff. An odor patrol was performed immediately following the time cited in this concern. No odor associated with the Bridgeton Landfill was observed at points between this location and the Bridgeton Landfill. This concern location is directly adjacent to another known odor source with frequent uncontrolled off-site odor emissions. This was not a Bridgeton Landfill odor.

Name: NA

Message: Odor logged March 2, 2016, at 7:32 am strength of 10

Follow-up: The following concern has been investigated by Bridgeton Landfill staff. An odor patrol was performed immediately following the time cited in this concern. No odor associated with the Bridgeton Landfill was observed at points between this location and the Bridgeton Landfill. This concern location is directly adjacent to another known odor source with frequent uncontrolled off-site odor emissions. This was not a Bridgeton Landfill odor.

Name: NA

Message: Odor logged March 2, 2016, at 7:33 am strength of 10

Follow-up: The following concern has been investigated by Bridgeton Landfill staff. An odor patrol was performed immediately following the time cited in this concern. No odor associated with the Bridgeton Landfill was observed at points between this location and the Bridgeton Landfill. This concern location is directly adjacent to another known odor source with frequent uncontrolled off-site odor emissions. This was not a Bridgeton Landfill odor.

Name: NA

Message: Odor logged March 2, 2016, at 2:00 pm strength of 10

Follow-up: The following concern has been investigated by Bridgeton Landfill staff. This concern location is directly adjacent to another known odor source with frequent uncontrolled off-site odor emissions. This is not believed to have been a Bridgeton Landfill odor.

Name: NA

Message: Odor logged March 2, 2016, at 1:15 pm strength of 10

Follow-up: The following concern has been investigated by Bridgeton Landfill staff. This concern location is directly adjacent to another known odor source with frequent uncontrolled off-site odor emissions. This is not believed to have been a Bridgeton Landfill odor.

Name: Proctor Jeff

Message: Odor logged March 3, 2016, at 1:37 am strength of 9

Follow-up: The following concern has been investigated by Bridgeton Landfill staff. This concern location is directly adjacent to another known odor source with frequent uncontrolled off-site odor emissions. This is not believed to have been a Bridgeton Landfill odor.

Name: NA

Message: Odor logged March 2, 2016, at 8:47 am strength of 7

Follow-up: The following concern has been investigated by Bridgeton Landfill staff. An odor patrol was performed less than one hour prior to the time cited in this concern. No odor related to the Bridgeton Landfill was observed at multiple points between this location and the Bridgeton Landfill. This concern location is also of a substantial distance from the Bridgeton Landfill. There is no evidence to suggest that this was a Bridgeton Landfill odor.

Name: NA

Message: Odor logged March 3, 2016, at 8:30 am strength of 10

Follow-up: The following concern has been investigated by Bridgeton Landfill staff. This concern location is directly adjacent to another known odor source with frequent uncontrolled off-site odor emissions. This is not believed to have been a Bridgeton Landfill odor.

Name: NA

Message: Odor logged March 3, 2016, at 7:00 pm strength of 8

Follow-up: The following concern has been investigated by Bridgeton Landfill staff. Odor patrols performed before and after the time cited in this concern did not observe any odor associated with the Bridgeton Landfill. There is no evidence to suggest that this was a Bridgeton Landfill odor.

Name: NA

Message: Odor logged March 4, 2016, at 7:40 am strength of 10

Follow-up: The following concern has been investigated by Bridgeton Landfill staff. An odor patrol was performed immediately following the time cited in this concern. No odor associated with the Bridgeton Landfill was observed at points between this location and the Bridgeton Landfill. This concern location is directly adjacent to another known odor source with frequent uncontrolled off-site odor emissions. This was not a Bridgeton Landfill odor.

Name: NA

Message: Odor logged March 4, 2016, at 7:40 am strength of 10

Follow-up: The following concern has been investigated by Bridgeton Landfill staff. An odor patrol was performed immediately following the time cited in this concern. No odor associated with the Bridgeton Landfill was observed at points between this location and the Bridgeton Landfill. This concern location is directly adjacent to another known odor source with frequent uncontrolled off-site odor emissions. This was not a Bridgeton Landfill odor.

Name: NA

Message: Odor logged March 4, 2016, at 7:35 am strength of 10

Follow-up: The following concern has been investigated by Bridgeton Landfill staff. An odor patrol was performed immediately following the time cited in this concern. No odor associated with the Bridgeton Landfill was observed at points between this location and the Bridgeton Landfill. This concern location is directly adjacent to another known odor source with frequent uncontrolled off-site odor emissions. This was not a Bridgeton Landfill odor.

Name: NA

Message: Odor logged March 4, 2016, at 7:36 am strength of 10

Follow-up: The following concern has been investigated by Bridgeton Landfill staff. An odor patrol was performed immediately following the time cited in this concern. No odor associated with the Bridgeton Landfill was observed at points between this location and the Bridgeton Landfill. This concern location is directly adjacent to another known odor source with frequent uncontrolled off-site odor emissions. This was not a Bridgeton Landfill odor.

Name: NA

Message: Odor logged March 5, 2016, at 6:00 am strength of 10

Follow-up: The following concern has been investigated by Bridgeton Landfill staff. An odor patrol performed on the morning of this concern did not observe any odor related to the Bridgeton Landfill at multiple points between this concern location and the Bridgeton Landfill. Winds were of low velocity and of variable origin. There is no evidence to suggest that this was a Bridgeton Landfill odor.

Name: NA

Message: Odor logged March 5, 2016, at 7:41 am strength of 10

Follow-up: The following concern has been investigated by Bridgeton Landfill staff. An odor patrol performed within the hour of receipt of this concern. No odor related to the Bridgeton Landfill was observed at multiple points between this concern location and the Bridgeton Landfill. Winds were of low velocity and of variable origin. There is no evidence to suggest that this was a Bridgeton Landfill odor.

Name: NA

Message: Odor logged March 5, 2016, at 7:46 am strength of 10

Follow-up: The following concern lacks essential location data.

Name: Dixie Boussum

Message: Odor logged March 7, 2016, at 9:23 am strength of 10

Follow-up: The following concern has been investigated by Bridgeton Landfill staff. This concern location is directly adjacent to another known odor source with frequent uncontrolled off-site odor emissions. This is not believed to have been a Bridgeton Landfill odor.

Name: David Blackwell

Message: Odor logged March 5, 2016, at 8:45 am strength of 6

Follow-up: The following concern has been investigated by Bridgeton Landfill staff. An odor patrol was performed by Bridgeton Landfill staff at the time cited in this concern. No odor was observed on this patrol including a location of extremely close proximity to the location provided in this concern. This was not a Bridgeton Landfill odor.

Name: Kathy Bell

Message: Odor logged March 7, 2016, at 12:04 pm strength of 7

Follow-up: The following concern cites a time approximately seven minutes after the submittal time and is therefore invalid.

Name: Emily jacobi

Message: Odor logged March 9, 2016, at 1:01 pm strength of 3

Follow-up: The following concern has been investigated by Bridgeton Landfill staff. On the date and time of this concern winds were of a clear southwestern origin. Such a wind regime places this location well outside the downwind pathway of the Bridgeton Landfill and directly

downwind of another known odor source with frequent uncontrolled off-site odor emissions. This was not a Bridgeton Landfill odor.

Name: Emily jacobi

Message: Odor logged March 9, 2016, at 1:01 pm strength of 3

Follow-up: The following concern has been investigated by Bridgeton Landfill staff. On the date and time of this concern winds were of a clear southwestern origin. Such a wind regime places this location well outside the downwind pathway of the Bridgeton Landfill and directly downwind of another known odor source with frequent uncontrolled off-site odor emissions. This was not a Bridgeton Landfill odor.

Name: Emily jacobi

Message: Odor logged March 9, 2016, at 1:01 pm strength of 3

Follow-up: The following concern is a duplication of another concern.

Name: Emily jacobi

Message: Odor logged March 9, 2016, at 1:01 pm strength of 3

Follow-up: The following concern is a duplication of another concern.

Name: Emily jacobi

Message: Odor logged March 9, 2016, at 1:01 pm strength of 3

Follow-up: The following concern is a duplication of another concern.

Name: Charlotte

Message: Odor logged March 9, 2016, at 12:52 pm strength of 9

Follow-up: The following concern has been investigated by Bridgeton Landfill staff. On the date and time of this concern winds were of a clear southwestern origin. Such a wind regime places this location well outside the downwind pathway of the Bridgeton Landfill and directly downwind of another known odor source with frequent uncontrolled off-site odor emissions. This was not a Bridgeton Landfill odor.

Name: Bob Labeaume

Message: Odor logged March 9, 2016, at 6:00 pm strength of 10

Follow-up: The following concern has been investigated by Bridgeton Landfill staff. Odor patrols before and after the time referenced in this concern observed no odor related to the Bridgeton Landfill. There is no evidence suggesting this was a Bridgeton Landfill related odor.

Name: NA

Message: Odor logged March 10, 2016, at 11:17 pm strength of 10

Follow-up: The following concern has been investigated by Bridgeton Landfill staff. The location cited in this concern is of significant distance from the Bridgeton Landfill and far closer to another known odor source with frequent off-site odor emissions. An odor patrol performed less than an hour prior to the time cited in this concern observed no odor related to the Bridgeton Landfill. This was not a Bridgeton Landfill odor.

Name: NA

Message: Odor logged March 9, 2016, at 11:15 pm strength of 10

Follow-up: The following concern has been investigated by Bridgeton Landfill staff. The location cited in this concern is of significant distance from the Bridgeton Landfill and far closer to another known odor source with frequent off-site odor emissions. An odor patrol performed approximately one hour prior to the time cited in this concern observed no odor related to the Bridgeton Landfill. This was not a Bridgeton Landfill odor.

Name: NA

Message: Odor logged March 9, 2016, at 11:20 pm strength of 10

Follow-up: The following concern has been investigated by Bridgeton Landfill staff. The location cited in this concern is of significant distance from the Bridgeton Landfill and far closer to another known odor source with frequent off-site odor emissions. An odor patrol performed approximately one hour prior to the time cited in this concern observed no odor related to the Bridgeton Landfill. This was not a Bridgeton Landfill odor.

Name: NA

Message: Odor logged March 10, 2016, at 12:21 am strength of 10

Follow-up: The following concern has been investigated by Bridgeton Landfill staff. The location cited in this concern is of significant distance from the Bridgeton Landfill and far closer to another known odor source with frequent off-site odor emissions. An odor patrol performed approximately one hour prior to the time cited in this concern observed no odor related to the Bridgeton Landfill. This was not a Bridgeton Landfill odor.

Name: NA

Message: Odor logged March 10, 2016, at 5:50 am strength of 10

Follow-up: The following concern has been investigated by Bridgeton Landfill staff. The location cited in this concern is of significant distance from the Bridgeton Landfill and far closer to another known odor source with frequent off-site odor emissions. There is no evidence to suggest that this was a Bridgeton Landfill odor.

Name: NA

Message: Odor logged March 10, 2016, at 6:00 am strength of 10

Follow-up: The following concern has been investigated by Bridgeton Landfill staff. The location cited in this concern is of significant distance from the Bridgeton Landfill and far closer to another known odor source with frequent off-site odor emissions. There is no evidence to suggest that this was a Bridgeton Landfill odor.

Name: NA

Message: Odor logged March 10, 2016, at 6:30 am strength of 10

Follow-up: The following concern has been investigated by Bridgeton Landfill staff. The location cited in this concern is of significant distance from the Bridgeton Landfill and far closer to another known odor source with frequent off-site odor emissions. There is no evidence to suggest that this was a Bridgeton Landfill odor.

Name: NA

Message: Odor logged March 10, 2016, at 6:30 am strength of 10

Follow-up: The following concern has been investigated by Bridgeton Landfill staff. The location cited in this concern is of significant distance from the Bridgeton Landfill and far closer to another known odor source with frequent off-site odor emissions. There is no evidence to suggest that this was a Bridgeton Landfill odor.

Name: NA

Message: Odor logged March 10, 2016, at 7:15 am strength of 10

Follow-up: The following concern has been investigated by Bridgeton Landfill staff. The location cited in this concern is of significant distance from the Bridgeton Landfill and far closer

to another known odor source with frequent off-site odor emissions. There is no evidence to suggest that this was a Bridgeton Landfill odor.

Name: NA

Message: Odor logged March 10, 2016, at 7:30 am strength of 10

Follow-up: The following concern has been investigated by Bridgeton Landfill staff. The location cited in this concern is of significant distance from the Bridgeton Landfill and far closer to another known odor source with frequent off-site odor emissions. There is no evidence to suggest that this was a Bridgeton Landfill odor.

Name: NA

Message: Odor logged March 10, 2016, at 7:30 am strength of 10

Follow-up: The following concern has been investigated by Bridgeton Landfill staff. The location cited in this concern is of significant distance from the Bridgeton Landfill and far closer to another known odor source with frequent off-site odor emissions. There is no evidence to suggest that this was a Bridgeton Landfill odor.

Name: NA

Message: Odor logged March 10, 2016, at 6:00 am strength of 10

Follow-up: The following concern has been investigated by Bridgeton Landfill staff. The location cited in this concern is of significant distance from the Bridgeton Landfill and far closer to another known odor source with frequent off-site odor emissions. There is no evidence to suggest that this was a Bridgeton Landfill odor.

Name: NA

Message: Odor logged March 10, 2016, at 7:25 am strength of 10

Follow-up: The following concern has been investigated by Bridgeton Landfill staff. The location cited in this concern is of significant distance from the Bridgeton Landfill and far closer to another known odor source with frequent off-site odor emissions. There is no evidence to suggest that this was a Bridgeton Landfill odor.

Name: David Hinnars

Message: Odor logged March 10, 2016, at 5:38 pm strength of 8

Follow-up: The following concern has been investigated by Bridgeton Landfill staff. The location cited in this concern is of significant distance from the Bridgeton Landfill and far closer to another known odor source with frequent off-site odor emissions. There is no evidence to suggest that this was a Bridgeton Landfill odor.

Name: Ellen Wortham

Message: Odor logged March 10, 2016, at 5:35 pm strength of 8

Follow-up: The following concern has been investigated by Bridgeton Landfill staff. An odor patrol was performed approximately one hour prior to the time referenced in this concern. No odor related to the Bridgeton Landfill was observed at multiple points between this concern location and the Bridgeton Landfill, including a monitoring point in close proximity to this concern location. No technical disruptions with the potential to cause odor occurred between that patrol and this concern. There is no evidence to suggest this was a Bridgeton Landfill odor.

Name: David Hanners

Message: Odor logged March 10, 2016, at 8:01 pm strength of 10

Follow-up: The following concern has been investigated by Bridgeton Landfill staff. The location cited in this concern is of significant distance from the Bridgeton Landfill and far closer to another known odor source with frequent off-site odor emissions. There is no evidence to suggest that this was a Bridgeton Landfill odor.

Name: Steve Commuso

Message: Odor logged March 10, 2016, at 9:20 pm strength of 5

Follow-up: The following concern has been investigated by Bridgeton Landfill staff. The location cited in this concern is of significant distance from the Bridgeton Landfill and far closer to another known odor source with frequent off-site odor emissions. There is no evidence to suggest that this was a Bridgeton Landfill odor.

Name: NA

Message: Odor logged March 10, 2016, at 5:30pm strength of 10

Follow-up: The following concern has been investigated by Bridgeton Landfill staff. The location cited in this concern is of significant distance from the Bridgeton Landfill and far closer to another known odor source with frequent off-site odor emissions. There is no evidence to suggest that this was a Bridgeton Landfill odor.

Name: NA

Message: Odor logged March 11, 2016, at 5:50 am strength of 6

Follow-up: The following concern has been investigated by Bridgeton Landfill staff. The location cited in this concern is of significant distance from the Bridgeton Landfill and far closer to another known odor source with frequent off-site odor emissions. There is no evidence to suggest that this was a Bridgeton Landfill odor.

Name: NA

Message: Odor logged March 10, 2016, at 5:30 pm strength of 10

Follow-up: The following concern has been investigated by Bridgeton Landfill staff. The location cited in this concern is of significant distance from the Bridgeton Landfill and far closer to another known odor source with frequent off-site odor emissions. There is no evidence to suggest that this was a Bridgeton Landfill odor.

Name: NA

Message: Odor logged March 11, 2016, at 7:35 am strength of 10

Follow-up: The following concern has been investigated by Bridgeton Landfill staff. The location cited in this concern is of significant distance from the Bridgeton Landfill and far closer to another known odor source with frequent off-site odor emissions. There is no evidence to suggest that this was a Bridgeton Landfill odor.

Name: Tracy Bouslog

Message: Odor logged March 10, 2016, at 7:30 pm strength of 7

Follow-up: The following concern has been investigated by Bridgeton Landfill staff. The location cited in this concern is of significant distance from the Bridgeton Landfill and far closer to another known odor source with frequent off-site odor emissions. There is no evidence to suggest that this was a Bridgeton Landfill odor.

Name: Tracy Bouslog

Message: Odor logged March 11, 2016, at 6:30 am strength of 5

Follow-up: The following concern has been investigated by Bridgeton Landfill staff. The location cited in this concern is of significant distance from the Bridgeton Landfill and far closer to another known odor source with frequent off-site odor emissions. There is no evidence to suggest that this was a Bridgeton Landfill odor.

Name: Shawn Nevins

Message: Odor logged March 12, 2016, at 8:07 am strength of 6

Follow-up: The following concern lacks essential location data.

Name: Shawn Nevins

Message: Odor logged March 11, 2016, at 6:09 pm strength of 6

Follow-up: The following concern has been investigated by Bridgeton Landfill staff. The location cited in this concern is of significant distance from the Bridgeton Landfill and far closer to another known odor source with frequent off-site odor emissions. There is no evidence to suggest that this was a Bridgeton Landfill odor.

Name: Gloria Thrift

Message: Odor logged March 12, 2016, at 11:27 am strength of 6

Follow-up: The following concern has been investigated by Bridgeton Landfill staff. The location cited in this concern is of extremely close proximity to another known odor source with frequent off-site odor emissions. There is no evidence to suggest that this was a Bridgeton Landfill odor.

Name: Debbie Gibson

Message: Odor logged March 12, 2016, at 8:59 pm strength of 5

Follow-up: The following concern lacks essential location data.

Name: Greg Greenwald

Message: Odor logged March 13, 2016, at 11:15 pm strength of 5

Follow-up: The following concern has been investigated by Bridgeton Landfill staff. The location cited in this concern is of extremely close proximity to another known odor source with frequent off-site odor emissions. There is no evidence to suggest that this was a Bridgeton Landfill odor.

Name: Rhonda Steelman

Message: Odor logged March 13, 2016, at 10:30 am strength of 10

Follow-up: The following concern has been investigated by Bridgeton Landfill staff. The location cited in this concern is of extremely close proximity to another known odor source with frequent off-site odor emissions. There is no evidence to suggest that this was a Bridgeton Landfill odor.

Name: Mary Jo Grimm

Message: Odor logged March 27, 2016, at 8:30 am strength of 10

Follow-up: The following concern cites a date 14 days in the future.

Name: NA

Message: Odor logged March 14, 2016, at 4:03 am strength of 10

Follow-up: The following concern has been investigated by Bridgeton Landfill staff. The location cited in this concern is of significant distance from the Bridgeton Landfill and far closer to another known odor source with frequent off-site odor emissions. There is no evidence to suggest that this was a Bridgeton Landfill odor.

Name: NA

Message: Odor logged March 14, 2016, at 4:35 am strength of 10

Follow-up: The following concern has been investigated by Bridgeton Landfill staff. The location cited in this concern is of significant distance from the Bridgeton Landfill and far closer to another known odor source with frequent off-site odor emissions. There is no evidence to suggest that this was a Bridgeton Landfill odor.

Name: NA

Message: Odor logged March 14, 2016, at 4:40 am strength of 10

Follow-up: The following concern has been investigated by Bridgeton Landfill staff. The location cited in this concern is of significant distance from the Bridgeton Landfill and far closer to another known odor source with frequent off-site odor emissions. There is no evidence to suggest that this was a Bridgeton Landfill odor.

Name: NA

Message: Odor logged March 14, 2016, at 5:30 am strength of 10

Follow-up: The following concern has been investigated by Bridgeton Landfill staff. The location cited in this concern is of significant distance from the Bridgeton Landfill and far closer

to another known odor source with frequent off-site odor emissions. There is no evidence to suggest that this was a Bridgeton Landfill odor.

Name: NA

Message: Odor logged March 14, 2016, at 5:30 am strength of 10

Follow-up: The following concern is a duplicate of a previous concern.

Name: NA

Message: Odor logged March 14, 2016, at 6:30 am strength of 10

Follow-up: The following concern has been investigated by Bridgeton Landfill staff. The location cited in this concern is of significant distance from the Bridgeton Landfill and far closer to another known odor source with frequent off-site odor emissions. There is no evidence to suggest that this was a Bridgeton Landfill odor.

Name: NA

Message: Odor logged March 14, 2016, at 7:30 am strength of 10

Follow-up: The following concern has been investigated by Bridgeton Landfill staff. The location cited in this concern is of significant distance from the Bridgeton Landfill and far closer to another known odor source with frequent off-site odor emissions. There is no evidence to suggest that this was a Bridgeton Landfill odor.

Name: NA

Message: Odor logged March 14, 2016, at 7:00 am strength of 10

Follow-up: The following concern has been investigated by Bridgeton Landfill staff. The location cited in this concern is of significant distance from the Bridgeton Landfill and far closer to another known odor source with frequent off-site odor emissions. There is no evidence to suggest that this was a Bridgeton Landfill odor.

Name: NA

Message: Odor logged March 14, 2016, at 5:47 am strength of 10

Follow-up: The following concern has been investigated by Bridgeton Landfill staff. The location cited in this concern is of significant distance from the Bridgeton Landfill and far closer to another known odor source with frequent off-site odor emissions. There is no evidence to suggest that this was a Bridgeton Landfill odor.

Name: NA

Message: Odor logged March 14, 2016, at 7:39 am strength of 10

Follow-up: The following concern has been investigated by Bridgeton Landfill staff. The location cited in this concern is of significant distance from the Bridgeton Landfill and far closer to another known odor source with frequent off-site odor emissions. There is no evidence to suggest that this was a Bridgeton Landfill odor.

Name: William Siegler

Message: Odor logged March 13, 2016, at 3:54 pm strength of 7

Follow-up: The following concern has been investigated by Bridgeton Landfill staff. As this concern was submitted approximately 26 hours after the stated observation time real-time investigation was not possible. On this date no odor related to the Bridgeton Landfill was observed during odor patrols, no projects with the potential to cause odor were occurring, and no technical disruptions with the potential to cause odor occurred. There is no evidence to suggest that this was a Bridgeton Landfill odor.

Name: Ellen Wortham

Message: Odor logged March 14, 2016, at 6:20 pm strength of 10

Follow-up: The following concern has been investigated by Bridgeton Landfill staff. On this date and several hours before, during, and after the time cited in this concern winds were of persistent southern origins (southeastern to southwestern). Placing this concern location directly upwind of the Bridgeton Landfill. Odor unrelated to the Bridgeton Landfill was observed during odor monitoring patrols. All evidence indicates that this odor originated from another source, and was not a Bridgeton landfill odor.

Name: Clark Allen

Message: Odor logged March 14, 2016, at 6:55 pm strength of 10

Follow-up: The following concern cites a location of such substantial distance from the Bridgeton Landfill as to be clearly in error. This was not a Bridgeton Landfill odor.

Name: NA

Message: Odor logged March 15, 2016, at 7:32 am strength of 10

Follow-up: The following concern cites a location of such substantial distance from the Bridgeton The following concern has been investigated by Bridgeton Landfill staff. The location cited in this concern is of significant distance from the Bridgeton Landfill and far closer to another known odor source with frequent off-site odor emissions. There is no evidence to suggest that his was a Bridgeton Landfill odor.

Name: NA

Message: Odor logged March 15, 2016, at 7:33 am strength of 10

Follow-up: The following concern has been investigated by Bridgeton Landfill staff. The location cited in this concern is of significant distance from the Bridgeton Landfill and far closer to another known odor source with frequent off-site odor emissions. There is no evidence to suggest that his was a Bridgeton Landfill odor.

Name: NA

Message: Odor logged March 15, 2016, at 7:33 am strength of 10

Follow-up: The following concern has been investigated by Bridgeton Landfill staff. The location cited in this concern is of significant distance from the Bridgeton Landfill and far closer to another known odor source with frequent off-site odor emissions. There is no evidence to suggest that his was a Bridgeton Landfill odor.

Name: NA

Message: Odor logged March 15, 2016, at 7:34 am strength of 10

Follow-up: The following concern has been investigated by Bridgeton Landfill staff. The location cited in this concern is of significant distance from the Bridgeton Landfill and far closer to another known odor source with frequent off-site odor emissions. There is no evidence to suggest that his was a Bridgeton Landfill odor.

Name: NA

Message: NA

Follow-up: The following concern lacks all data and is therefore invalid.

Name: Bob Labeaume

Message: Odor logged March 15, 2016, at 9:08 am strength of 10

Follow-up: The following concern has been investigated by Bridgeton Landfill staff. The location cited in this concern is of significant distance from the Bridgeton Landfill and far closer to another known odor source with frequent off-site odor emissions. There is no evidence to suggest that this was a Bridgeton Landfill odor.

Name: NA

Message: Odor logged March 16, 2016, at 7:30 am strength of 10

Follow-up: The following concern has been investigated by Bridgeton Landfill staff. The location cited in this concern is of significant distance from the Bridgeton Landfill and far closer to another known odor source with frequent off-site odor emissions. There is no evidence to suggest that this was a Bridgeton Landfill odor.

Name: NA

Message: Odor logged March 16, 2016, at 7:30 am strength of 10

Follow-up: The following concern has been investigated by Bridgeton Landfill staff. The location cited in this concern is of significant distance from the Bridgeton Landfill and far closer to another known odor source with frequent off-site odor emissions. There is no evidence to suggest that this was a Bridgeton Landfill odor.

Name: NA

Message: Odor logged March 16, 2016, at 7:31 am strength of 10

Follow-up: The following concern has been investigated by Bridgeton Landfill staff. The location cited in this concern is of significant distance from the Bridgeton Landfill and far closer to another known odor source with frequent off-site odor emissions. There is no evidence to suggest that this was a Bridgeton Landfill odor.

Name: NA

Message: Odor logged March 16, 2016, at 10:26 pm strength of 10

Follow-up: The following concern has been investigated by Bridgeton Landfill staff. The location cited in this concern is directly adjacent to another known odor source with frequent off-site odor and even more frequent odor concerns filed in response to said odor. This is not a Bridgeton Landfill odor despite continued use of the Bridgeton Landfill concern system for these obviously erroneous concerns.

Name: Tracy Dedert

Message: Odor logged March 16, 2016, at 5:22 pm strength of 6

Follow-up: The following concern has been investigated by Bridgeton Landfill staff. The location cited in this concern is directly adjacent to another known odor source with frequent off-site odor and even more frequent odor concerns filed in response to said odor. This was not a Bridgeton Landfill odor despite continued use of the Bridgeton Landfill concern system for these obviously erroneous concerns.

Name: David McComber AT&T

Message: Odor logged March 16, 2016, at 8:00 am strength of 10

Follow-up: The following concern has been investigated by Bridgeton Landfill staff. The location cited in this concern is directly adjacent to another known odor source with frequent off-site odor and even more frequent odor concerns filed in response to said odor. This was not a Bridgeton Landfill odor.

Name: Emily Jacobi

Message: Odor logged March 16, 2016, at 2:04 pm strength of 8

Follow-up: The following concern has been investigated by Bridgeton Landfill staff. The location cited in this concern is directly adjacent to another known odor source with frequent off-site odor and even more frequent odor concerns filed in response to said odor. This was not a Bridgeton Landfill odor.

Name: mary milligan

Message: Odor logged March 16, 2016, at 2:23 pm strength of 10

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

Name: NA

Message: Odor logged March 16, 2016, at 8:52 am strength of 10

Follow-up: The following concern has been investigated by Bridgeton Landfill staff. The location cited in this concern is of greater distance than any previously documented Bridgeton Landfill odor and directly adjacent to various other industrial facilities with potential for odor. An odor patrol performed shortly before the time cited in this concern did not observe any odor related to the Bridgeton Landfill. There is no evidence to suggest that this was a Bridgeton Landfill odor.

Name: Richard

Message: Odor logged March 16, 2016, at 9:48 pm strength of 10

Follow-up: The following concern lacks essential location data and therefore cannot be investigated.

Name: Jennifer shakhnovich

Message: Odor logged March 16, 2016, at 7:54 pm strength of 9

Follow-up: The following concern has been investigated by Bridgeton Landfill staff. On this evening winds were of a southwestern origin, placing this location outside the downwind pathway of the Bridgeton Landfill and directly downwind of another known odor source with observed off-site odor emissions on this date and in close proximity to this concern location. This was not a Bridgeton Landfill odor.

Name: NA

Message: Odor logged March 17, 2016, at 7:45 am strength of 10

Follow-up: The following concern has been investigated by Bridgeton Landfill staff. The location provided is immediately adjacent to another known odor source with frequent off-site emissions. A strong odor associated with this odor source was observed on this date shortly after the time cited in this concern by Bridgeton Landfill staff. This was not a Bridgeton Landfill odor.

Name: NA

Message: Odor logged March 16, 2016, at 5:30 pm strength of 10

Follow-up: The following concern has been investigated by Bridgeton Landfill staff. On this evening winds were of a southwestern origin, placing this location outside the downwind pathway of the Bridgeton Landfill and directly downwind of another known odor source with observed off-site odor emissions on this date and in close proximity to this concern location. This was not a Bridgeton Landfill odor.

Name: NA

Message: Odor logged March 17, 2016, at 7:45 am strength of 10

Follow-up: The following concern has been investigated by Bridgeton Landfill staff. The location provided is immediately adjacent to another known odor source with frequent off-site

emissions. A strong odor associated with this odor source was observed on this date shortly after the time cited in this concern by Bridgeton Landfill staff. This was not a Bridgeton Landfill odor.

Name: NA

Message: Odor logged March 17, 2016, at 7:50 am strength of 10

Follow-up: The following concern has been investigated by Bridgeton Landfill staff. The location provided is immediately adjacent to another known odor source with frequent off-site emissions. A strong odor associated with this odor source was observed on this date shortly after the time cited in this concern by Bridgeton Landfill staff. This was not a Bridgeton Landfill odor.

Name: NA

Message: Odor logged March 17, 2016, at 7:45 am strength of 10

Follow-up: The following concern has been investigated by Bridgeton Landfill staff. The location provided is immediately adjacent to another known odor source with frequent off-site emissions. A strong odor associated with this odor source was observed on this date shortly after the time cited in this concern by Bridgeton Landfill staff. This was not a Bridgeton Landfill odor.

Name: NA

Message: Odor logged March 17, 2016, at 8:08 am strength of 10

Follow-up: The following concern has been investigated by Bridgeton Landfill staff. The location provided is immediately adjacent to another known odor source with frequent off-site emissions. A strong odor associated with this odor source was observed on this date shortly before the time cited in this concern by Bridgeton Landfill staff. This was not a Bridgeton Landfill odor.

Name: NA

Message: Odor logged March 17, 2016, at 7:50 am strength of 10

Follow-up: The following concern has been investigated by Bridgeton Landfill staff. The location provided is immediately adjacent to another known odor source with frequent off-site emissions. A strong odor associated with this odor source was observed on this date shortly after the time cited in this concern by Bridgeton Landfill staff. This was not a Bridgeton Landfill odor.

Name: Mary Jo Adams

Message: Odor logged March 17, 2016, at 6:45 am strength of 7

Follow-up: The following concern has been investigated by Bridgeton Landfill staff. On this evening winds were of a southwestern origin, placing this location outside the downwind pathway of the Bridgeton Landfill and directly downwind of another known odor source with observed off-site odor emissions on this date and in close proximity to this concern location. This was not a Bridgeton Landfill odor.

Name: Mary Jo Adams

Message: Odor logged March 17, 2016, at 6:45 am strength of 7

Follow-up: The following concern has been investigated by Bridgeton Landfill staff. On this evening winds were of a southwestern origin, placing this location outside the downwind pathway of the Bridgeton Landfill and directly downwind of another known odor source with observed off-site odor emissions on this date and in close proximity to this concern location. This was not a Bridgeton Landfill odor.

Name: Taylor Meyer

Message: Odor logged March 17, 2016, at 3:03 pm strength of 8

Follow-up: The following concern has been investigated by Bridgeton Landfill staff. An odor patrol was performed within the hour in which this concern was received. No odor related to the Bridgeton Landfill was observed. There is no evidence to suggest that this was a Bridgeton Landfill odor.

Name: NA

Message: Odor logged March 17, 2016, at 4:06 pm strength of 8

Follow-up: The following concern lacks essential location data and therefore cannot be investigated.

Name: NA

Message: Odor logged March 17, 2016, at 4:19 pm strength of 8

Follow-up: The following concern lacks essential location data and therefore cannot be investigated.

Name: Kathy Baumann

Message: Odor logged March 17, 2016, at 7:30 pm strength of 8

Follow-up: The following concern has been investigated by Bridgeton Landfill staff. The concern location provided is of significant distance from the Bridgeton Landfill and of far closer proximity to another known odor source. Winds were of variable origin throughout this date. Bridgeton Landfill odor patrols performed before and after the time cited in this concern did not observe any odor related to the Bridgeton Landfill. There is no evidence to suggest that this was a Bridgeton Landfill odor.

Name: Meghan Cousino

Message: Odor logged March 17, 2016, at 7:00 pm strength of 8

Follow-up: The following concern has been investigated by Bridgeton Landfill staff. The concern location provided is of significant distance from the Bridgeton Landfill and of far closer proximity to another known odor source. Winds were of variable origin throughout this date. Bridgeton Landfill odor patrols performed before and after the time cited in this concern did not observe any odor related to the Bridgeton Landfill. There is no evidence to suggest that this was a Bridgeton Landfill odor.

Name: NA

Message: Odor logged March 18, 2016, at 7:24 am strength of 10

Follow-up: The following concern has been investigated by Bridgeton Landfill staff. The concern location provided is of significant distance from the Bridgeton Landfill and of far closer proximity to another known odor source. Winds were of a northern origin throughout this date. Bridgeton Landfill odor patrols performed later in the morning from this concern did not observe any odor related to the Bridgeton Landfill. There is no evidence to suggest that this was a Bridgeton Landfill odor.

Name: steve commuso

Message: Odor logged March 18, 2016, at 7:30 am strength of 10

Follow-up: The following concern has been investigated by Bridgeton Landfill staff. The concern location provided is of significant distance from the Bridgeton Landfill and of far closer proximity to another known odor source. Winds were of a northern origin throughout this date. Bridgeton Landfill odor patrols performed later in the morning from this concern did not observe any odor related to the Bridgeton Landfill. There is no evidence to suggest that this was a Bridgeton Landfill odor.

Name: Amy Stowers

Message: Odor logged March 18, 2016, at 4:31 pm strength of 10

Follow-up: The following concern has been investigated by Bridgeton Landfill staff. The concern location provided is of significant distance from the Bridgeton Landfill and of far closer proximity to another known odor source. Winds were of a northern origin throughout this date. Bridgeton Landfill odor patrols performed later in the morning from this concern did not observe any odor related to the Bridgeton Landfill. There is no evidence to suggest that this was a Bridgeton Landfill odor.

Name: NA

Message: Odor logged March 18, 2016, at 7:15 am strength of 10

Follow-up: The following concern has been investigated by Bridgeton Landfill staff. The concern location provided is of significant distance from the Bridgeton Landfill and of far closer proximity to another known odor source. Winds were of a northern origin throughout this date. Bridgeton Landfill odor patrols performed later in the morning from this concern did not observe any odor related to the Bridgeton Landfill. There is no evidence to suggest that this was a Bridgeton Landfill odor.

Name: Gail Schafluetzel

Message: Odor logged March 19, 2016, at 7:26 am strength of 2

Follow-up: The following concern is of significant distance away from the Bridgeton Landfill and is not valid.

Name: Meghan Cousino

Message: Odor logged March 18, 2016, at 10:50 pm strength of 8

Follow-up: The following concern has been investigated by Bridgeton Landfill staff. The concern location provided is of significant distance from the Bridgeton Landfill and of far closer proximity to another known odor source. There is no evidence to suggest that this was a Bridgeton Landfill odor.

Name: NA

Message: Odor logged March 19, 2016, at 8:22 pm strength of 7

Follow-up: The following concern has been investigated by Bridgeton Landfill staff. The concern location provided is of significant distance from the Bridgeton Landfill and of far closer

proximity to another known odor source. There is no evidence to suggest that this was a Bridgeton Landfill odor.

Name: Margie menke

Message: Odor logged March 21, 2016, at 5:15 am strength of 10

Follow-up: The following concern has been investigated by Bridgeton Landfill staff. At the time cited in this concern the location provided was directly upwind of the Bridgeton Landfill and downwind of another known odor source. This was not a Bridgeton Landfill odor.

Name: Bob LaBeaume

Message: Odor logged March 21, 2016, at 6:00 am strength of 10

Follow-up: The following concern has been investigated by Bridgeton Landfill staff. At the time cited in this concern the location provided was outside of the downwind pathway of the Bridgeton Landfill and directly downwind of another known odor source. This was not a Bridgeton Landfill odor.

Name: Connie Nolan

Message: Odor logged March 21, 2016, at 7:20 am strength of 10

Follow-up: The following concern lacks essential location data.

Name: NA

Message: Odor logged March 21, 2016, at 7:44 am strength of 10

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

Name: NA

Message: Odor logged March 21, 2016, at 7:45 am strength of 10

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

Name: NA

Message: Odor logged March 21, 2016, at 10:15 am strength of 10

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

Name: celena

Message: Odor logged March 21, 2016, at 7:26 am strength of 8

Follow-up: The following concern is of significant distance away from the Bridgeton Landfill and is not valid.

Name: Sarah Abernathy

Message: Odor logged March 21, 2016, at 9:00 am strength of 7

Follow-up: The following concern references a time in concurrence with a Bridgeton Landfill odor patrol. This patrol did not observe any odor related to the Bridgeton Landfill at multiple points between the landfill and this location. This was not a Bridgeton Landfill odor.

Name: Mary Jo Adams

Message: Odor logged March 21, 2016, at 6:30 am strength of 7

Follow-up: The following concern has been investigated by Bridgeton Landfill staff. An odor unrelated to the Bridgeton Landfill was observed in close proximity to this concern shortly after the time cited. This was not a Bridgeton Landfill odor.

Name: Mary Jo Adams

Message: Odor logged March 17, 2016, at 7:15 am strength of 10

Follow-up: The following concern has been investigated by Bridgeton Landfill staff. The concern cites a location of significant distance from the Bridgeton Landfill and was submitted over four days after the claimed observation date and time. There is no evidence to suggest that this was a Bridgeton Landfill odor.

Name: Janelle Evelt

Message: Odor logged March 22, 2016, at 10:06 am strength of 8

Follow-up: The following concern is of significant distance away from the Bridgeton Landfill and is not valid.

Name: NA

Message: Odor logged March 21, 2016, at 5:15 pm strength of 10

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

Name: NA

Message: Odor logged March 22, 2016, at 7:45 am strength of 10

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

Name: NA

Message: Odor logged March 22, 2016, at 1:45 pm strength of 10

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

Name: Bob LaBeaume

Message: Odor logged March 22, 2016, at 9:00 pm strength of 9

Follow-up: The following concern has been investigated by Bridgeton Landfill staff. At the time cited in this concern the location provided was outside of the downwind pathway of the Bridgeton Landfill and directly downwind of another known odor source. This was not a Bridgeton Landfill odor.

Name: NA

Message: Odor logged March 22, 2016, at 5:13 pm strength of 10

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

Name: NA

Message: Odor logged March 23, 2016, at 7:35 am strength of 10

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

Name: Kathy Bell

Message: Odor logged March 23, 2016, at 3:55 pm strength of 8

Follow-up: The following concern has been investigated by Bridgeton Landfill staff. An odor patrol performed concurrent with the time cited in this concern did not observe any odor related to the Bridgeton Landfill off-site. This was not a Bridgeton Landfill odor. This concern is one of eleven identical concerns submitted on this date and time.

Name: NA

Message: Odor logged March 24, 2016, at 5:09 pm strength of 6

Follow-up: The following concern has been investigated by Bridgeton Landfill staff. The concern location provided is of significant distance from the Bridgeton Landfill and of far closer proximity to another known odor source. There is no evidence to suggest that this was a Bridgeton Landfill odor.

Name: Rhonda Steelman

Message: Odor logged March 27, 2016, at 11:06 am strength of 8

Follow-up: The following concern has been investigated by Bridgeton Landfill staff. The concern location provided is of significant distance from the Bridgeton Landfill and of far closer proximity to another known odor source. There is no evidence to suggest that this was a Bridgeton Landfill odor.

Name: NA

Message: Odor logged March 27, 2016, at 5:19 pm strength of 5

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

Name: Richard Chatfield

Message: Odor logged March 21, 2016, at 6:08 am strength of 10

Follow-up: The following concern lacks essential location data.

Name: Andrew

Message: Odor logged March 28, 2016, at 6:38 am strength of 7

Follow-up: The following concern has been investigated by Bridgeton Landfill staff. On this date winds were of a persistent western origin placing this concern outside the downwind pathway of the Bridgeton Landfill. No odor related to the Bridgeton Landfill was observed at multiple points between this location and the Bridgeton Landfill during daily odor patrols. There is no evidence to indicate that this was a Bridgeton Landfill related odor.

Name: NA

Message: Odor logged March 28, 2016, at 8:23 am strength of 4

Follow-up: The following concern has been investigated by Bridgeton Landfill staff. On this date winds were of a persistent western origin. An odor unassociated with the Bridgeton Landfill was observed at multiple times and locations throughout the day in close proximity to this concern. This was not a Bridgeton Landfill odor.

Name: NA

Message: Odor logged March 28, 2016, at 7:45 am strength of 10

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

Name: NA

Message: Odor logged March 28, 2016, at 7:46 am strength of 10

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

Name: Bob LaBeaume

Message: Odor logged March 28, 2016, at 5:50 am strength of 10

Follow-up: The following concern has been investigated by Bridgeton Landfill staff. On this date winds were of a persistent western origin. An odor unassociated with the Bridgeton

Landfill was observed at multiple times and locations throughout the day in close proximity to this concern. This was not a Bridgeton Landfill odor.

Name: David Blackwell

Message: Odor logged March 28, 2016, at 7:45 am strength of 4

Follow-up: The following concern has been investigated by Bridgeton Landfill staff. On this date winds were of a persistent western origin. The location cited in this concern is to the northwest of another known odor source with frequent off-site odor emissions, including observed emissions on this date. This was not a Bridgeton Landfill odor.

Name: NA

Message: Odor logged March 31, 2016, at 7:45 am strength of 10

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

Name: NA

Message: Odor logged March 31, 2016, at 7:46 am strength of 10

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

Name: NA

Message: Odor logged March 31, 2016, at 7:47 am strength of 10

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

Name: NA

Message: Odor logged March 31, 2016, at 7:30 pm strength of 10

Follow-up: The following concern lacks essential location data.

ATTACHMENT H

LIQUID CHARACTERIZATION DATA AND DISCHARGE LOG

Bridgeton Landfill - Leachate PreTreatment Plant

March 2016

Liquid Characterization Data

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

Hauled Disposal to MSD – Bissell Point

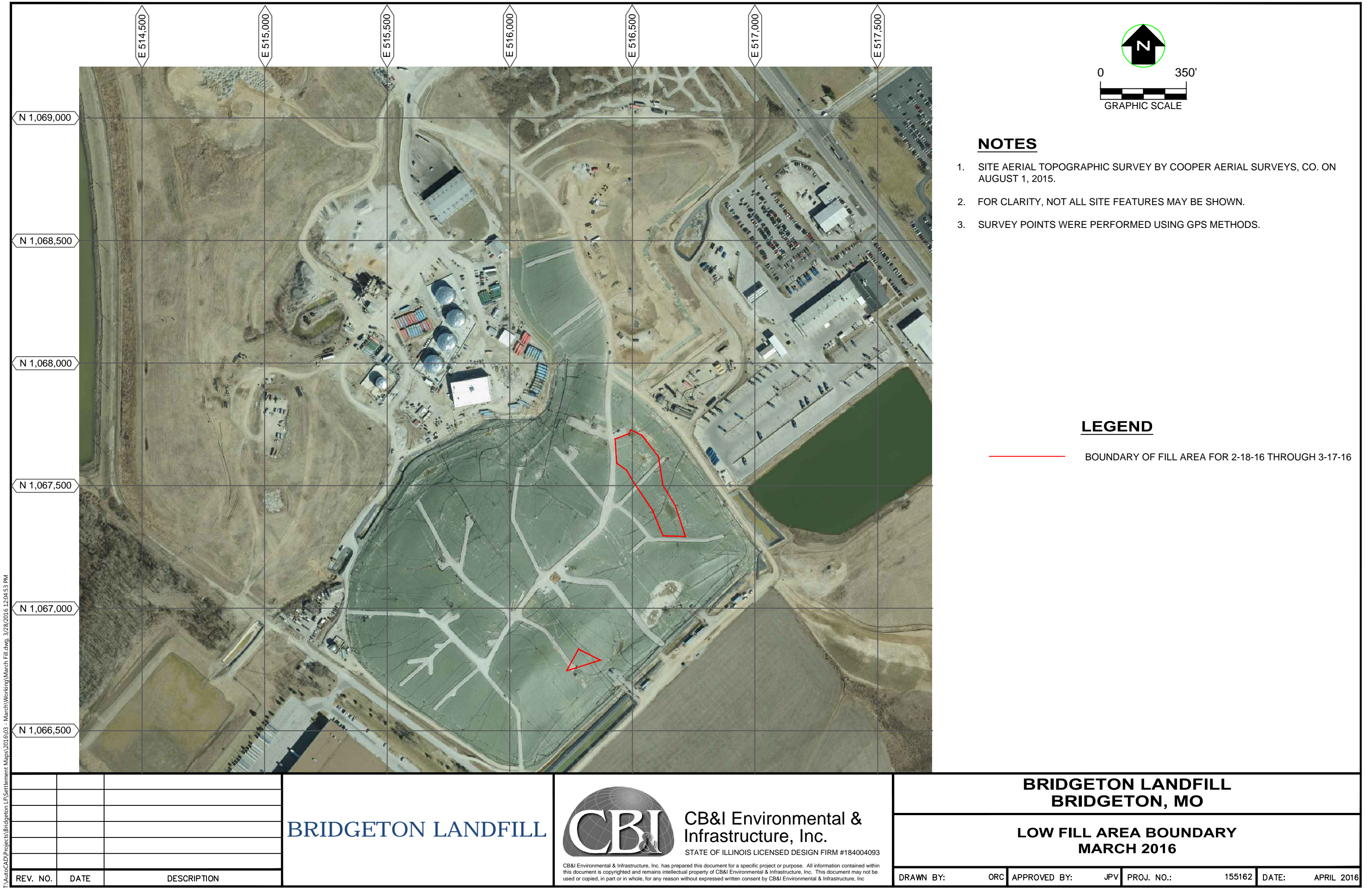
Date	Waste	Source	Transporter	Quantity
3/1/2016	LPTP Activated Sludge/ Permeate	Tank 1 (T1)	MBI	33
3/2/2016				33
3/3/2016				31
3/4/2016				31
3/5/2016				32
3/6/2016				33
3/7/2016				0
3/8/2016				0
3/9/2016				0
3/10/2016				0
3/11/2016				0
3/12/2016				39
3/13/2016				35
3/14/2016				29
3/15/2016				28
3/16/2016				29
3/17/2016				15
3/18/2016				0
3/19/2016				0
3/20/2016				0
3/21/2016				15
3/22/2016				0
3/23/2016				0
3/24/2016				0
3/25/2016				0
3/26/2016				0
3/27/2016				0
3/28/2016				0
3/29/2016				0
3/30/2016				0
3/31/2016				0
Total=				383

Direct Discharge to MSD

Date	Waste	Source	Quantity (gal)
3/1/2016	LPTP Permeate	Through Tank AST 97k (MSD Sampling Point 013)	0
3/2/2016			0
3/3/2016			0
3/4/2016			111,161
3/5/2016			173,682
3/6/2016			161,697
3/7/2016			162,329
3/8/2016			207,616
3/9/2016			240,488
3/10/2016			234,967
3/11/2016			110,890
3/12/2016			0
3/13/2016			0
3/14/2016			0
3/15/2016			0
3/16/2016			236,584
3/17/2016			159,264
3/18/2016			161,064
3/19/2016			215,321
3/20/2016			205,490
3/21/2016			239,370
3/22/2016			236,600
3/23/2016			227,760
3/24/2016			195,603
3/25/2016			219,060
3/26/2016			227,564
3/27/2016			252,198
3/28/2016			249,303
3/29/2016			249,571
3/30/2016			254,439
3/31/2016			277,010
Total =			5,009,031

ATTACHMENT I

LOW FILL PROJECT AREA



0 350'
GRAPHIC SCALE

NOTES

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

LEGEND

— BOUNDARY OF FILL AREA FOR 2-18-16 THROUGH 3-17-16

T:\AutoCAD\Projects\Bridgeton LF\Settlement Maps\201603 - March\Working\March Fill.dwg, 3/28/2016 12:04:53 PM

REV. NO.	DATE	DESCRIPTION

BRIDGETON LANDFILL



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

BRIDGETON LANDFILL
BRIDGETON, MO

LOW FILL AREA BOUNDARY
MARCH 2016

DRAWN BY: ORC

APPROVED BY: JPV

PROJ. NO.: 155162

DATE: APRIL 2016