



DEPARTMENT OF ENVIRONMENTAL PROTECTION

Marc Elrich
County Executive

Willie Wainer
Acting Director

September 7, 2023

Andrew Grenzer, Section Head
Investigation and Remediation Section
Solid Waste Operations Division
Land and Materials Administration
1800 Washington Boulevard, Suite 605
Baltimore MD 21230-1719

Re: Gude Landfill – 3rd Quarter 2023 Landfill Gas Monitoring Probe Report

Dear Mr. Grenzer,

The Montgomery County Department of Environmental Protection (DEP), Recycling and Resource Management Division (RRMD) has enclosed the quarterly landfill gas monitoring probe report for the 3rd Quarter of 2023.

If you have any questions, please call me at 240-777-6574 or email me at Jamie.Foster@montgomerycountymd.gov.

Sincerely,

A handwritten signature in cursive script that reads "Jamie Foster".

Jamie C. Foster, Senior Engineer
Recycling and Resource Management Division
Department of Environmental Protection

Enclosures

Gude Landfill

Landfill Gas Monitoring Report

Third Quarter 2023
(July 2023 – September 2023)

Prepared By:

Carlson Environmental Consultants, PC
1127 Curtis Street, Ste. 100
Monroe, NC 28112

For:

Gude Landfill
600 East Gude Drive
Rockville, MD 20850

Presented To:

Maryland Department of the Environment
1800 Washington Blvd. Suite 605
Baltimore, MD 21230

September 7, 2023



CARLSON ENVIRONMENTAL CONSULTANTS, PC

LANDFILL GAS AND SOLID WASTE SPECIALISTS

August 28, 2023

Diana Reighart
Project Analyst/Planner
Northeast Maryland Waste Disposal Authority
100 S Charles St, Tower II – Suite 402
Baltimore, MD 21201

Subject: Third Quarter 2023 Methane Migration Monitoring Report
Gude Landfill – Montgomery, Maryland

Dear Diana:

Carlson Environmental Consultants, PC (CEC) conducted methane migration monitoring for the Third Quarter of 2023 at the Northeast Maryland Waste Disposal Authority for the Gude Landfill located in Rockville, Maryland on August 16 & 17, 2023. CEC monitored 40 gas probes located on-site, of which seventeen (17) probes were monitored to be above 5.0 percent by-volume (or greater) for methane; GMP-03I (66%), GMP-06D (63.2%), GMP-06S (62%), GMP-06I (61.6%), GMP-05S (59.6%), GMP-05I (59.4%), GMP-03S (55.4%), GMP-04I (51.7%), GMP-04S (50.3%), GMP-07S (37.3%), GMP-26S (30.1%), GMP-07I (21.9%), GMP-16 (16.7%), GMP-05D (14.4%), GMP-03D (11.3%), GMP-08I (8.9%) and GMP-04D (7.5%). Five (5) additional probes were monitored above 0.0 percent by-volume for methane; GMP-18 (4.2%), GMP-30S (2.1%), GMP-08S (0.2%), GMP-08D (0.1%) and GMP-17 (0.1%). Additionally, CEC monitored one (1) structure on-site and no methane was detected in the structure.

Please refer to Table 1 in Attachment 1 containing the monitoring results. Attachment 2 contains the Certificates of Analysis. Lastly, Attachment 3 includes a site plan showing all perimeter probe locations.

CEC appreciates this opportunity to provide landfill gas monitoring services for the Northeast Maryland Waste Disposal Authority at the Gude Landfill. Please feel free to call Nicholas S. Guarriello at (804) 441-0456 or Jason Marsh at (313) 820-4933 if you have any questions or require additional information.

Sincerely,

Mr. Nicholas S. Guarriello, PE
Principal
Carlson Environmental Consultants, PC

Mr. Jason Marsh
Senior Field Manager
Carlson Environmental Consultants, PC

cc: Mr. Patrick Schwenkler

ATTACHMENT 1

METHANE MIGRATION MONITORING DATA

Table 1. Gude Landfill - Monitoring Probes Data - 3rd Quarter 2023

Point Name	Record Date	CH4 (% by vol)	CO2 (% by vol)	O2 (% by vol)	Bal Gas (% by vol)	Static Pressure ("H2O)	Comments
GMP-01S	8/16/2023 13:36	0.0	11.5	11.9	76.6	0.00	
GMP-02S	8/16/2023 14:09	0.0	9.6	9.7	80.7	0.00	
GMP-03S	8/16/2023 14:15	55.4	39.7	0.1	4.8	0.02	
GMP-03D	8/16/2023 14:18	11.3	8.4	17.3	63.0	0.02	
GMP-03I	8/16/2023 14:24	66.0	25.0	0.4	8.6	0.10	
GMP-04S	8/16/2023 14:28	50.3	35.6	1.6	12.5	0.00	
GMP-04D	8/16/2023 14:30	7.5	5.7	19.0	67.8	0.00	
GMP-04I	8/16/2023 14:33	51.7	16.2	7.3	24.8	0.01	
GMP-05S	8/16/2023 14:37	59.6	38.6	0.0	1.8	0.04	
GMP-05D	8/16/2023 14:40	14.4	17.0	11.0	57.6	0.00	
GMP-05I	8/16/2023 14:44	59.4	38.9	0.0	1.7	0.06	
GMP-06S	8/16/2023 14:48	62.0	34.4	0.2	3.4	0.04	
GMP-06D	8/16/2023 14:50	63.2	33.8	0.0	3.0	0.00	
GMP-06I	8/16/2023 14:53	61.6	35.6	0.0	2.8	0.01	
GMP-07S	8/16/2023 14:58	37.3	33.7	3.4	25.6	0.00	
GMP-07I	8/16/2023 15:01	21.9	24.0	8.4	45.7	0.01	
GMP-08S	8/16/2023 15:06	0.2	0.9	20.8	78.1	0.00	
GMP-08D	8/16/2023 15:08	0.1	0.3	20.7	78.9	0.01	
GMP-08I	8/16/2023 15:12	8.9	7.9	12.9	70.3	0.00	
GMP-09S	8/16/2023 15:14	0.0	0.4	20.7	78.9	0.01	
GMP-09D	8/16/2023 15:15	0.0	0.2	20.7	79.1	0.00	
GMP-09I	8/16/2023 15:18	0.0	0.1	20.9	79.0	0.00	
GMP-10S	8/16/2023 15:21	0.0	2.3	17.3	80.4	0.00	
GMP-10D	8/16/2023 15:22	0.0	0.4	20.8	78.8	0.01	
GMP-10I	8/16/2023 15:31	0.0	2.4	16.3	81.3	0.01	
GMP-11S	8/17/2023 13:46	0.0	0.0	20.9	79.1	0.00	
GMP-12	8/17/2023 13:50	0.0	1.8	18.9	79.3	0.00	
GMP-13	8/17/2023 13:59	0.0	2.9	18.2	78.9	0.00	
GMP-14	8/17/2023 14:10	0.0	1.4	19.7	78.9	0.01	
GMP-15	8/17/2023 14:16	0.0	0.2	20.6	79.2	0.00	
GMP-16	8/17/2023 14:26	16.7	15.4	8.2	59.7	0.00	
GMP-17	8/17/2023 14:36	0.1	1.8	20.1	78.0	0.00	
GMP-18	8/17/2023 14:44	4.2	17.1	0.8	77.9	0.00	
GMP-25S	8/17/2023 14:59	0.0	9.7	12.9	77.4	0.00	
GMP-25D	8/17/2023 15:02	0.0	7.8	17.9	74.3	0.01	
GMP-26S	8/17/2023 15:05	30.1	21.8	15.0	33.1	0.00	

Table 1. Gude Landfill - Monitoring Probes Data - 3rd Quarter 2023

Point Name	Record Date	CH4 (% by vol)	CO2 (% by vol)	O2 (% by vol)	Bal Gas (% by vol)	Static Pressure ("H2O)	Comments
GMP-27S	8/17/2023 15:11	0.0	2.2	20.2	77.6	0.00	
GMP-28S	8/17/2023 15:15	0.0	2.5	20.1	77.4	0.00	
GMP-29S	8/17/2023 15:20	0.0	0.3	20.7	79.0	0.07	
GMP-30S	8/17/2023 15:36	2.1	10.8	10.5	76.6	0.00	
MS-2S	8/17/2023 15:43	0.0	0.0	20.9	79.1	0.00	
Calibration							
Calibration	8/16/2023 8:21	50.0	35.0	0.0	15.0		
Calibration	8/16/2023 8:29	0.0	0.0	11.0	89.0		
Calibration	8/17/2023 8:31	50.0	35.0	0.0	15.0		
Calibration	8/17/2023 8:38	0.0	0.0	11.0	89.0		
Technician/Weather							
Field Technician	Record Date	Ambient Temp (F)	Barometric Pressure ("H2O)	Precipitation (in)	Wind Speed (mph)	Wind Direction	General Weather
AS (Alexander Self)	8/16/2023	77	29.94	0.0	9	NW	Cloudy
AS (Alexander Self)	8/17/2023	78	29.95	0.0	3	SE	Partly Cloudy

ATTACHMENT 2
CERTIFICATE OF ANALYSIS



22 Albiston Way
Auburn, ME 04210
800-292-6218
207-777-6218
Fax 207-777-6215
www.specair.com

Date: 08/31/2022

Certificate of Analysis

Customer:
QED ENVIRONMENTAL SYSTEMS

Order #: 2284284
Purchase Order #: 146040

Cylinder Size: 34L **CGA Connection:** 600 **Fill Pressure:** 500 PSI

Analysis: Certified Batch Analysis

Lot #: 4234772

Component(s):	Requested Concentration(s):	Actual Concentration(s):
Methane	50%	49.9%
Carbon Dioxide	35%	35.0%
Nitrogen	BALANCE	BALANCE

Expiration Date: 12/2025

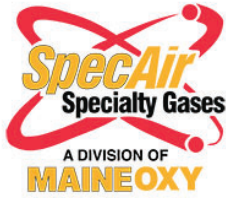
Comments: MIX MADE USING DIGITAL BALANCES CALIBRATED TO NIST TRACEABLE WEIGHTS / ACCURACY: +/- 2%
METHOD OF PREPARATION: GRAVIMETRIC / PRESSURE TRANSFILLING
ANALYTICAL PRINCIPLE: GC (TCD)

Approved By:

Nathan Lachance



- Results are reported in mole percent, unless otherwise indicated. Mixes are prepared via partial pressure methods, or gravimetrically, using high load high sensitivity electronic scales. Prior to use, scales are verified for accuracy using applicable NIST traceable weights; analyses are calibrated against reference materials traceable to NIST weights and/or NIST gas reference materials.
- The information contained herein has been prepared at your request by qualified experts. While we believe that the information is accurate within the limits of the analytical methods employed, and is complete to the extent of the specific analyses performed, we make no warranty or representation as to the suitability of the use of the information for any particular purpose. The information is offered with the understanding that any use of the information is at the sole discretion and risk of the user. In no event shall the liability arising out of the use of the information contained herein exceed the fee established for providing such information.
- This certifies that the instruments used for this analysis have been calibrated in compliance with the specifications in the order using SI/NIST traceable standards. When a statement of conformity is made, accept/reject decisions consider the measurement uncertainty and the specification tolerance. When the measurand and uncertainty are reported, measurement uncertainties are declared in the analytical results and the analytical results are not adjusted to consider measurement uncertainties.



22 Albiston Way
Auburn, ME 04210
800-292-6218
207-777-6218
Fax 207-777-6215
www.specair.com

Date: 01/16/2023

Certificate of Analysis

Customer:
QED ENVIRONMENTAL SYSTEMS

Order #: 2302337
Purchase Order #: 146246

Cylinder Size: 34L **CGA Connection:** 600 **Fill Pressure:** 500 PSI

Analysis: Certified Batch Analysis **Lot #:** 4301601

Component(s):	Requested Concentration(s):	Actual Concentration(s):
Oxygen	11%	11.0%
Nitrogen	BALANCE	BALANCE

Expiration Date: 01/2026

Comments: MIX MADE USING DIGITAL BALANCES CALIBRATED TO NIST TRACEABLE WEIGHTS / ACCURACY: +/- 2%
METHOD OF PREPARATION: GRAVIMETRIC / PRESSURE TRANSFILLING
ANALYTICAL PRINCIPLE: GC (TCD)

Approved By:

Ron Abbott



- Results are reported in mole percent, unless otherwise indicated. Mixes are prepared via partial pressure methods, or gravimetrically, using high load high sensitivity electronic scales. Prior to use, scales are verified for accuracy using applicable NIST traceable weights; analyses are calibrated against reference materials traceable to NIST weights and/or NIST gas reference materials.
- The information contained herein has been prepared at your request by qualified experts. While we believe that the information is accurate within the limits of the analytical methods employed, and is complete to the extent of the specific analyses performed, we make no warranty or representation as to the suitability of the use of the information for any particular purpose. The information is offered with the understanding that any use of the information is at the sole discretion and risk of the user. In no event shall the liability arising out of the use of the information contained herein exceed the fee established for providing such information.
- This certifies that the instruments used for this analysis have been calibrated in compliance with the specifications in the order using SI/NIST traceable standards. When a statement of conformity is made, accept/reject decisions consider the measurement uncertainty and the specification tolerance. When the measurand and uncertainty are reported, measurement uncertainties are declared in the analytical results and the analytical results are not adjusted to consider measurement uncertainties.

ATTACHMENT 3

PROBE SITE PLAN

Figure 1. Gude Landfill - Methane Monitoring Probe Locations

