



DEPARTMENT OF ENVIRONMENTAL PROTECTION

Marc Elrich  
*County Executive*

Willie Wainer  
*Acting Director*

May 30, 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 – 1<sup>st</sup> 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 1<sup>st</sup> Quarter of 2023.

If you have any questions, please call me at 240-777-6574 or email me at [Jamie.Foster@montgomerycountymd.gov](mailto: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**

**First Quarter 2023**  
(January 2023 – March 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**

May 30, 2023



## CARLSON ENVIRONMENTAL CONSULTANTS, PC

LANDFILL GAS AND SOLID WASTE SPECIALISTS

April 21, 2023

Ms. Kitty McIlroy  
Project Manager  
Northeast Maryland Waste Disposal Authority  
100 S Charles St, Tower II – Suite 402  
Baltimore, MD 21201

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

Dear Ms. McIlroy:

Carlson Environmental Consultants, PC (CEC) conducted methane migration monitoring for the First Quarter of 2023 at the Northeast Maryland Waste Disposal Authority for the Gude Landfill located in Rockville, Maryland on March 14, 15, 16, 17 & 30, 2023. CEC monitored 40 gas probes located on-site, of which eight (8) probes were monitored to be above 5.0 percent by-volume (or greater) for methane; GMP-05I (62.7%), GMP-03S (59.6%), GMP-05S (47.5%), GMP-07S (44.9%), GMP-04S (43.9%), GMP-25S (23.4%), GMP-07I (18.1%), and GMP-16S (6.1%). Four (4) additional probes were monitored above 0.0 percent by-volume for methane; GMP-28S (1.3%), GMP-03D (0.6%), GMP-04I (0.3%), and GMP-25D (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 Eddie Wyatt at (804) 389-1181 if you have any questions or require additional information.

Sincerely,

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

Mr. Eddie Wyatt  
Senior O&M Director  
Carlson Environmental Consultants, PC

cc: Mr. Patrick Schwenkler

**ATTACHMENT 1**

**METHANE MIGRATION MONITORING DATA**

Table 1. Gude Landfill - Monitoring Probes Data - 1st 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	3/14/2023 14:00	0.0	2.9	17.8	79.3	0.01	
GMP-02S	3/14/2023 14:07	0.0	2.2	17.9	79.9	0.05	
GMP-03D	3/14/2023 14:25	0.6	0.7	20.6	78.1	0.05	
GMP-03I	3/14/2023 14:33	0.0	0.0	20.8	79.2	0.00	
GMP-03S	3/14/2023 14:20	59.6	38.1	0.0	2.3	0.03	
GMP-04D	3/14/2023 14:50	0.0	0.0	20.8	79.2	0.02	
GMP-04I	3/14/2023 14:54	0.3	0.6	18.3	80.8	0.09	
GMP-04S	3/14/2023 14:42	43.9	13.1	0.2	42.8	0.03	
GMP-05D	3/14/2023 15:11	0.0	1.0	20.8	78.2	0.02	
GMP-05I	3/14/2023 15:16	62.7	36.9	0.0	0.4	0.06	
GMP-05S	3/14/2023 15:03	47.5	31.0	0.3	21.2	0.03	
GMP-06D	3/15/2023 14:16	0.0	0.0	20.1	79.9	0.01	
GMP-06I	3/15/2023 14:18	0.0	0.0	18.2	81.8	0.00	
GMP-06S	3/15/2023 14:14	0.0	0.0	20.0	80.0	0.03	
GMP-07I	3/15/2023 14:28	18.1	20.3	6.8	54.8	0.02	
GMP-07S	3/15/2023 14:25	44.9	29.5	0.0	25.6	0.06	
GMP-08D	3/15/2023 14:37	0.0	0.5	20.1	79.4	0.05	
GMP-08I	3/15/2023 14:46	0.0	0.1	20.2	79.7	0.03	
GMP-08S	3/15/2023 14:34	0.0	1.7	19.8	78.5	0.02	
GMP-09D	3/15/2023 14:54	0.0	0.8	19.7	79.5	0.00	
GMP-09I	3/15/2023 14:56	0.0	0.5	18.3	81.2	0.00	
GMP-09S	3/15/2023 14:52	0.0	1.2	18.8	80.0	0.01	
GMP-10D	3/15/2023 15:04	0.0	0.4	20.1	79.5	0.00	
GMP-10I	3/15/2023 15:08	0.0	4.8	13.8	81.4	0.06	
GMP-10S	3/15/2023 15:01	0.0	3.1	14.7	82.2	0.02	
GMP-11S	3/16/2023 13:57	0.0	0.0	20.5	79.5	0.01	
GMP-12S	3/16/2023 14:16	0.0	0.0	20.8	79.2	0.00	
GMP-13S	3/16/2023 14:42	0.0	0.2	20.2	79.6	0.00	
GMP-14S	3/16/2023 14:55	0.0	1.2	18.9	79.9	0.00	
GMP-15S	3/16/2023 15:01	0.0	1.1	20.4	78.5	0.00	
GMP-16S	3/16/2023 15:08	6.1	11.7	9.6	72.6	0.00	
GMP-17S	3/16/2023 15:14	0.0	2.2	18.1	79.7	0.01	
GMP-18S	3/16/2023 15:24	0.0	0.2	20.6	79.2	0.00	
GMP-25D	3/17/2023 14:48	0.1	2.0	20.8	77.1	0.01	
GMP-25S	3/17/2023 14:45	23.4	18.9	3.5	54.2	0.03	

Table 1. Gude Landfill - Monitoring Probes Data - 1st Quarter 2023

Point Name	Record Date	CH4 (% by vol)	CO2 (% by vol)	O2 (% by vol)	Bal Gas (% by vol)	Static Pressure ("H2O)	Comments
GMP-26S	3/17/2023 14:58	0.0	0.1	20.8	79.1	0.00	
GMP-27S	3/17/2023 15:04	0.0	1.5	17.2	81.3	0.02	
GMP-28S	3/17/2023 15:09	1.3	1.3	14.5	82.9	0.00	
GMP-29S	3/17/2023 15:14	0.0	0.5	20.6	78.9	0.09	
GMP-30S	3/17/2023 15:27	0.0	8.3	15.0	76.7	0.02	
MS-2S	3/30/2023 13:54	0.0	0.0	20.8	79.2	0.00	
<b>Calibration</b>							
Calibration	3/14/2023 8:43	50.0	35.0	0.0	15.0		
Calibration	3/14/2023 8:49	0.0	0.0	11.0	89.0		
Calibration	3/15/2023 8:16	50.0	35.0	0.0	15.0		
Calibration	3/15/2023 8:22	0.0	0.0	11.0	89.0		
Calibration	3/16/2023 8:34	50.0	35.0	0.0	15.0		
Calibration	3/16/2023 8:46	0.0	0.0	11.0	89.0		
Calibration	3/17/2023 8:21	50.0	35.0	0.0	15.0		
Calibration	3/17/2023 8:30	0.0	0.0	11.0	89.0		
Calibration	3/30/2023 8:47	50.0	35.0	0.0	15.0		
Calibration	3/30/2023 9:12	0.0	0.0	11.0	89.0		
<b>Technician/Weather</b>							
Field Technician	Record Date	Ambient Temp (F)	Barometric Pressure ("H2O)	Precipitation (in)	Wind Speed (mph)	Wind Direction	General Weather
AS (Alexander Self)	3/14/2023	38	29.88	0.0	21	NW	Mostly Cloudy
AS (Alexander Self)	3/15/2023	34	30.07	0.0	16	NW	Partly Cloudy
AS (Alexander Self)	3/16/2023	43	30.17	0.0	9	SW	Mostly Cloudy
AS (Alexander Self)	3/17/2023	49	29.75	0.0	10	S	Cloudy
AS (Alexander Self)	3/30/2023	40	30.39	0.0	8	N	Fair

**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: 07/26/2022

## Certificate of Analysis

**Customer:**  
QED ENVIRONMENTAL SYSTEMS

**Order #:** 2201312  
**Purchase Order #:** 144701

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

**Analysis:** Certified Batch Analysis      **Lot #:** 4220616

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

**Expiration Date:** 07/2025

**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:**

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.





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.

**ATTACHMENT 3**

**PROBE SITE PLAN**

Figure 1. Gude Landfill - Methane Monitoring Probe Locations

