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December 23, 2019

Ms. Cindy Koepke
Hydrogeologist
Wisconsin Department of Natural Resources
3911 Fish Hatchery Road
Fitchburg, WI 53711

Subject: Refuse Hideaway Landfill
December 2019 Landfill Gas Monitoring Results

Dear Cindy:

TRC completed the monthly gas probe monitoring at the Refuse Hideaway Landfill in Middleton, WI on December 12, 2019. Attached are the monitoring results for December 2019. Pressure, methane, carbon dioxide, oxygen, and methane (% LEL) are measured during the monthly event.

Note that the monthly gas probe monitoring was not conducted in November 2019. The next monthly event will take place in January 2020.

If you have any questions, please contact me at kvater@trccompanies.com or 608-826-3663.

Sincerely,

TRC

A handwritten signature in black ink, appearing to read "Katherine Vater".

Katherine Vater, PE
Project Manager

Attachments

REFUSE HIDEAWAY LANDFILL GAS PROBE MONITORING FORM

TECHNICIAN(S) J. Roelke

DATE 12/12/19 Key: Old Tubing and Port
 START TIME 07:30 Shallow or 2'-15'
 END TIME 16:40 Medium or 25'-40'

GAS/INSTRUMENT TYPE GEM 2000
 SERIAL NO 11668

WEATHER CONDITIONS cloudy Deep or 50'-70'
 TEMPERATURE 39°F 85'-100'
 * = Shared Lock

DATE LAST CALIBRATED 12/12/19

METHOD Standard Calibration Gases

BAROMETRIC PRESSURE & TREND 30.21" Hg, falling

PRESS INSTRUMENT Manometer

GROUND CONDITIONS Frozen

GAS PROBE NAME	Time	PRESSURE (in. WC)	METHANE (% LEL)	METHANE (% by vol.)	CARBON DIOXIDE (% by vol.)	OXYGEN (% by vol.)	COMMENTS
GP-1D	08:25	0.0	0.0	0.0	0.3	21.5	Locked
GP-1S	08:27	0.0	0.0	0.0	0.5	21.6	Locked*
GP-2D	08:47	0.0	35	1.6	2.8	18.5	Locked
GP-2S	08:49	0.0	>5	9.0	12.1	3.5	Locked*
GP-3	09:23	0.0	0.7	0.3	11.4	3.8	Locked Sampled for 120 sec.
GP-4	09:06	0.0	11	0.5	9.6	17.1	Locked H ₂ O in probe
GP-5	09:16	0.0	0.0	0.0	1.5	20.4	Locked
GP-6	09:24	+0.04	0.0	0.0	0.1	20.6	Locked
GP-7	09:53	0.0	0.0	0.0	1.4	19.9	Locked H ₂ O in probe
GP-8	10:05	0.0	0.0	0.0	3.3	16.7	Probe Above Casing H ₂ O in probe
GP-9	10:15	0.0	0.0	0.0	1.8	20.0	Locked
GP-10	10:23	0.0	0.0	0.0	3.5	18.6	Locked
GP-11D	10:31	0.0	0.0	0.0	0.3	20.9	Probe Above Casing
GP-11S	10:33	0.0	0.0	0.0	1.1	20.5	Probe Above Casing
GP-12D	10:42	+0.06	40	1.9	2.8	19.3	Locked
GP-12S	10:44	0.0	0.0	0.0	5.6	16.1	Locked*
GP-13D	10:48	0.0	0.0	0.0	0.4	20.9	Probe Above Casing
GP-13S	10:50	0.0	0.0	0.0	0.6	20.8	Probe Above Casing
GP-16D	11:25	+0.06	0.0	0.0	2.9	19.4	Probe Above Casing
GP-16M	NM	NM	NM	NM	NM	NM	Cracked Probe, No Measurements Taken
GP-16S	11:27	0.0	0.0	0.0	4.3	17.5	Probe Above Casing
GP-17D	11:06	0.0	0.0	0.0	2.3	18.1	Locked
GP-17M	11:08	0.0	0.0	0.0	12.4	3.2	Locked*
GP-17S	11:10	0.0	0.0	0.0	3.5	17.8	Locked*
GP-18D	11:38	open to ATM	0.0	0.0	7.3	11.8	No Cap for Casing, Installed tubing & sample port then measured readings
GP-18M	11:40	open to ATM	48	2.4	8.4	4.9	No Cap for Casing, Installed tubing & sample port then measured readings
GP-18S	11:42	open to ATM	0.0	0.0	0.4	21.2	No Cap for Casing, Installed tubing & sample port then measured readings

GAS PROBE NAME	Time	PRESSURE (in. WC)	METHANE (% LEL)	METHANE (% by vol.)	CARBON DIOXIDE (% by vol.)	OXYGEN (% by vol.)	COMMENTS
GP-19 ⁸⁵⁻¹⁰⁰	12:51	0.0	0.0	0.0	1.7	19.7	Locked
GP-19 ⁵⁰⁻⁷⁰	12:53	0.0	0.0	0.0	3.2	18.5	Locked*
GP-19 ²⁵⁻⁴⁰	12:55	0.0	0.0	0.0	2.8	18.9	Locked*
GP19 ²⁻¹⁵	12:57	0.0	0.0	0.0	4.7	15.6	Locked*
GP-20 ⁸⁵⁻¹⁰⁰	13:09	0.0	0.0	0.0	0.2	20.9	Probe Above Casing
GP-20 ⁵⁰⁻⁷⁰	13:11	0.0	0.0	0.0	1.4	19.3	Probe Above Casing
GP-20 ²⁵⁻⁴⁰	13:13	0.0	0.0	0.0	2.4	18.5	Probe Above Casing
GP-20 ²⁻¹⁵	13:15	0.0	0.0	0.0	3.3	18.1	Probe Above Casing
GP-21 ⁸⁵⁻¹⁰⁰	13:31	0.0	0.0	0.0	0.5	20.3	Probe Above Casing
GP-21 ⁵⁰⁻⁷⁰	13:33	0.0	0.0	0.0	0.4	20.3	Probe Above Casing
GP-21 ²⁵⁻⁴⁰	13:35	0.0	0.0	0.0	1.4	19.5	Probe Above Casing
GP-21 ²⁻¹⁵	13:37	0.0	0.0	0.0	2.1	18.7	Probe Above Casing
GP-22 ⁸⁵⁻¹⁰⁰	13:44	0.0	0.0	0.0	5.1	17.3	Probe Above Casing
GP-22 ⁵⁰⁻⁷⁰	13:46	0.0	0.0	0.0	1.4	19.3	Probe Above Casing
GP-22 ²⁵⁻⁴⁰	13:48	0.0	0.0	0.0	2.7	18.6	Probe Above Casing
GP-22 ²⁻¹⁵	13:50	0.0	0.0	0.0	7.2	15.1	Probe Above Casing
GP-23 ⁸⁵⁻¹⁰⁰	14:03	0.0	0.0	0.0	1.7	19.0	Probe Above Casing
GP-23 ⁵⁰⁻⁷⁰	14:05	0.0	0.0	0.0	10.5	5.7	Probe Above Casing
GP-23 ²⁵⁻⁴⁰	14:07	0.0	0.0	0.0	13.1	1.7	Probe Above Casing
GP-23 ²⁻¹⁵	14:09	0.0	0.0	0.0	4.5	16.7	Probe Above Casing
GP-24 ⁸⁵⁻¹⁰⁰	14:19	0.0	0.0	0.0	0.4	20.1	Probe Above Casing
GP-24 ⁵⁰⁻⁷⁰	14:21	0.0	0.0	0.0	0.4	20.0	Probe Above Casing
GP-24 ²⁵⁻⁴⁰	14:22	0.0	0.0	0.0	0.3	20.1	Probe Above Casing
GP-24 ²⁻¹⁵	14:24	0.0	0.0	0.0	3.7	18.4	Probe Above Casing
GPW-1D	15:35	+0.73	0.0	0.0	4.3	15.5	Locked
GPW-1M	15:37	+0.68	0.0	0.0	1.5	19.1	Locked*
GPW-1S	15:39	open to ATM	0.0	0.0	4.9	14.2	Locked*
G-1D	07:48	07:46 +0.04	0.0	0.0	9.8	11.1	Locked
G-1S	10:55	07:48 0.0	75	9.8	16.3	0.9	Locked*
G-2D	10:55	0.0	0.0	0.0	0.3	20.9	Locked
G-2S	10:57	+0.04	75	6.6	15.9	3.5	Locked*
G-5	10:10	0.0	0.0	0.0	2.4	18.5	Locked
G-6	08:16	0.0	0.0	0.0	0.1	21.6	Locked
G-8	13:03	0.0	0.0	0.0	1.1	19.3	Locked
G-9	13:25	0.0	0.0	0.0	0.7	19.9	Locked
G-10	14:42	+0.31	0.0	0.0	0.4	20.1	Locked
Speedway Office	08:44	open to ATM	0.0	0.0	0.1	21.5	Open To ATM

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12/21/19