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September 13, 2022

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

Subject: Refuse Hideaway Landfill
August 2022 Operation Monitoring and Maintenance Activities

Dear Cindy:

TRC completed the following operation, monitoring, and maintenance activities at the Refuse Hideaway Landfill in Middleton, WI in August 2022.

- August 1, 2022 – Gas Probe Monitoring
- August 22, 2022 – Monthly Site Inspection

Gas Extraction System

The gas extraction system (GES) remained shutdown during the month of August due to an issue with the electrical service. Van Ert Electrical (Van Ert) confirmed that a new transformer(s) is needed to repair the electrical service. Following coordination with the WDNR, Van Ert is working to order the appropriate equipment to replace the transformer(s) and associated equipment. TRC will continue to provide updates to the WDNR.

Perimeter gas probe monitoring was conducted at the site on August 1, 2022, and the monitoring data is included in the attachments.

Leachate Extraction System

The leachate extraction system remained off during the month of August. A new pump head was installed on the air compressor system in June 2022, however due to the site electrical issue, the system could not be restarted. The leachate tank level was gauged during the Monthly Site Inspection and contained 61 inches of leachate.

Cap Inspection

TRC conducted a monthly inspection of the landfill cap and stormwater conveyance features on August 22, 2022. TRC personnel observed areas of bare soil throughout the landfill cap that were previously seeded in 2021. To address this, TRC recommends reseeding these areas in the Fall of 2022. An inspection form and photo log are attached with further details.

Monitoring results collected during the site visits completed in August 2022 are attached.

If you have any questions, please contact me at astehn@trccompanies.com or 608-807-8112.

Sincerely,

TRC

Andrew Stehn, PE
Project Manager

Thomas Perkins
Staff Engineer

Attachments: Gas Probe Monitoring Form
Cap Inspection
Photographic Log

August 2022 Monitoring Results

REFUSE HIDEAWAY LANDFILL
GAS PROBE MONITORING FORM

TECHNICIAN(S): J. Roelke

DATE: 8/1/2022

START TIME: 7:00AM

END TIME: 12:30 PM

GAS/INSTRUMENT TYPE: **GEM 2000**

SERIAL NO.: 11668

DATE LAST CALIBRATED: 8/1/2022

METHOD: Standard Calibration Gases

PRESS INSTRUMENT : Manometer

WEATHER CONDITIONS: cloudy

TEMPERATURE: 71

BAROMETRIC PRESSURE & TREND: 29.78, falling

GROUND CONDITIONS: moist

GAS PROBE NAME	Time	PRESSURE (in. WC)	METHANE (% LEL)	METHANE (%, by vol.)	CARBON DIOXIDE (%, by vol.)	OXYGEN (%, by vol.)	COMMENTS
GP-1D	7:37	0.04	4	2	13.5	3.1	(2)
GP-1S	7:39	0.03	48	2.4	14.1	0.0	(2)
GP-2D	7:45	0.10	0	0	8.3	10.7	(1)
GP-2S	7:47	0.0	6	0.3	12.4	5.4	(1)
GP-3	7:49	-0.04	>5	8.4	7.9	9.1	(1)
GP-4	7:55	-0.03	0.0	0.0	6.3	14.2	(1)
GP-5	7:58	0.0	0.0	0.0	5.7	15.4	(2)
GP-6	8:04	0.0	0.0	0.0	3.8	16.5	(1)
GP-7	8:11	0.0	0.0	0.0	3.2	17.1	(2)
GP-8	8:19	0.0	0.0	0.0	5.4	16.3	(2)
GP-9	8:25	0.0	0.0	0.0	4.3	17.1	(1)
GP-10	8:31	0.0	>5	8.9	19.7	1.1	(1) Stable readings at 2 minutes.
GP-11D	8:37	0.06	82	4.1	16.1	0.3	(2)
GP-11S	8:39	0.0	48	2.4	16.3	0.0	(2)
GP-12D	8:45	0.0	>5	9.2	18.4	1.8	(1) Stable readings at 2 minutes.
GP-12S	8:48	0.0	0.0	0	4.8	15.9	(1)
GP-13D	8:55	0.0	6	0.3	6.8	11.2	(2)
GP-13S	8:57	0.0	0.0	0.0	7.6	12.1	(2)

GAS PROBE NAME	Time	PRESSURE (in. WC)	METHANE (% LEL)	METHANE (%, by vol.)	CARBON DIOXIDE (%, by vol.)	OXYGEN (%, by vol.)	COMMENTS
GP-16D	9:16	0.0	0.0	0.0	1.8	19.3	(2)
GP-16S	9:18	0.0	0.0	0.0	3.1	18.6	(2)
GP-17D	9:09	0.0	0.0	0.0	4.7	15.9	(1)
GP-17M	9:11	0.0	0.0	0.0	4.1	17.3	(1)
GP-17S	9:13	0.0	0.0	0.0	4.2	17.2	(1)
GP-18D	9:22	0.0	0.0	0.0	4.9	14.6	(2)
GP-18M	9:24	0.0	0.0	0.0	4.3	16.8	(2)
GP-18S	9:26	0.0	0.0	0.0	6.6	13.3	(2)
GP-19$^{85-100}$	10:12	0.0	0.0	0.0	0.0	20.8	(1)
GP-19$^{50-70}$	10:14	0.0	0.0	0.0	0.9	19.9	(1)
GP-19$^{25-40}$	10:16	0.0	0.0	0.0	0.3	20.4	(1)
GP19$^{2-15}$	10:18	0.0	0.0	0.0	0.0	20.8	(1)
GP-20$^{85-100}$	10:03	0.0	0.0	0.0	0.2	20.7	(2)
GP-20$^{50-70}$	10:05	0.0	0.0	0.0	0.0	20.8	(2)
GP-20$^{25-40}$	10:07	0.0	0.0	0.0	0.4	20.5	(2)
GP-20$^{2-15}$	10:09	0.0	0.0	0.0	0.0	20.8	(2)
GP-21$^{85-100}$	9:53	-0.14	0.0	0.0	0.3	20.6	(2)
GP-21$^{50-70}$	9:55	-0.02	0.0	0.0	0.0	20.8	(2)
GP-21$^{25-40}$	9:57	-0.03	0.0	0.0	0.1	20.7	(2)
GP-21$^{2-15}$	9:59	0.0	0.0	0.0	0.7	20.2	(2)
GP-22$^{85-100}$	10:23	0.0	0.0	0.0	2.6	18.4	(2)
GP-22$^{50-70}$	10:25	0.0	0.0	0.0	1.1	19.4	(2)
GP-22$^{25-40}$	10:27	0.0	0.0	0.0	1.8	19.0	(2)
GP-22$^{2-15}$	10:29	0.0	0.0	0.0	2.6	18.4	(2)

GAS PROBE NAME	Time	PRESSURE (in. WC)	METHANE (% LEL)	METHANE (%, by vol.)	CARBON DIOXIDE (%, by vol.)	OXYGEN (%, by vol.)	COMMENTS
GP-23$^{85-100}$	10:33	0.0	0.0	0.0	0.0	20.8	(2)
GP-23$^{50-70}$	10:35	0.0	0.0	0.0	0.4	20.3	(2)
GP-23$^{25-40}$	10:37	0.0	0.0	0.0	0.3	20.4	(2)
GP-23$^{2-15}$	10:39	0.0	0.0	0.0	3.1	18.2	(2)
GP-24$^{85-100}$	10:45	0.0	0.0	0.0	0.0	20.8	(2)
GP-24$^{50-70}$	10:47	0.0	0.0	0.0	1.7	18.2	(2)
GP-24$^{25-40}$	10:49	0.0	0.0	0.0	3.9	16.1	(2)
GP-24$^{2-15}$	10:51	0.0	0.0	0.0	3.5	17.2	(2)
GPW-1D	12:07	-0.03	0.0	0.0	2.1	18.0	(1)
GPW-1M	12:09	-0.04	0.0	0.0	0.0	20.8	(1)
GPW-1S	12:11	0.0	0.0	0.0	1.4	18.7	(1)
G-1D	7:29	0.0	70	3.5	18.1	0.0	(1)
G-1S	7:31	0.0	68	3.4	16.2	0.0	(1)
G-2D	9:01	0.0	0.0	0.0	1.4	18.7	(1)
G-2S	9:03	0.0	5.4	2.6	15.9	2.4	(1) Stable readings at 2 minutes.
G-5	8:15	0.0	0.0	0.0	7.4	15.4	(1)
G-6	7:10	0.0	0.0	0.0	0.6	19.9	(1)
G-8	9:46	0.0	0.0	0.0	0.0	20.8	(1)
G-9	9:35	0.0	0.0	0.0	0.0	20.8	(1)
G-10	10:57	0.0	0.0	0.0	0.0	20.8	(1)
Speedway Office	7:34	0.0	0.0	0.0	0.0	20.8	Open to ATM

NOTES:

(1); Locked probe casing.
(2): Probe is above casing and cannot be locked.
(3): No cap for probe casing and cannot be locked.

Entered by: J. Roelke 8/1/2022
Checked by: A. Ruetten 8/2/22

Key:

Shallow or 2'-15'
Medium or 25'-40'
Deep or 50'-70'
85'-100'

Cap Inspection

Inspection Details		Site Conditions	
Inspector :	John Roelke	**Weather Conditions:**	Sunny
Date:	8/22/2022	**Ground Condition:**	Moist
Time:	9:43AM	**Temperature:**	71 F

Note: Photograph all issues encountered during inspection

Note: Keep vehicle traffic to gravel roadways, avoid driving on the landfill surface

Is the landfill surface covered in snow (Y/N)? No

Inspect the landfill surface when not covered in snow. Describe the condition and any issues observed for each category below:

Cap integrity: Cap integrity is acceptable, with no changes from previous condition.

Condition of drainage ways:

West Drainage Ditch - TRC has previously documented a lack of vegetation growth at the north portion of the west drainage ditch as evidence of ponding or slow drainage. The north portion shows signs of some increased vegetation regrowth compared to previous months, see **Photo 1**. No standing water was observed in this area during the inspection. See May - July 2022 inspection notes.

East Drainage Ditch - TRC has continued to monitor the rip rap along west embankment of the northern culvert and riprap appears to be stable and has remained in place. As previously noted, some vegetation die-off and light erosion was observed along a north portion of the drainage ditch, see **Photo 2**.

Beyond the above noted issues, drainage ways are acceptable, with minimal to no changes from previous conditions.

Extent of vegetation cover: Vegetation cover is acceptable over the majority of the Site, with vegetation growth between 14"- 18". Some tree regrowth has started to the northeast (Photo 7). Some areas that were seeded post-construction in 2021 are not showing signs of growth as shown in **Photo 1** and **Photos 3-6**. No erosion is evident, though reseeding may be required at various locations throughout the Site, TRC will continue to monitor and further discuss reseeding with the WDNR.

Significant erosion: No evidence of significant erosion at the Site observed.

Repeated erosion: No evidence repeated erosion at the Site observed.

Vegetation die-off:

West Drainage Ditch - The north portion shows signs of increased vegetation regrowth compared to previous months, see **Photo 1**. No standing water was observed in this area during the inspection but vegetation regrowth was less than surrounding areas, indicating water may be ponding at times.

East Drainage Ditch - Some vegetation die-off and light erosion was observed along a north portion of the drainage ditch, see **Photo 2**. TRC will continue to monitor.

Maintain surface water conveyances and the sedimentation basin by completing the following:

Inspect drainage ditches for erosion, blockages, and vegetation, describe and note any issues:

East Drainage Ditch - Some light erosion to the north end of the north-to-south portion observed, see **Photo 2**.

Inspect sedimentation basin banks and outfalls for erosion, describe and note any issues: No erosion or other issues at sedimentation basin banks and outfalls.

Measure the distance between the invert of the sedimentation basin outlet and the top of the sediments accumulated in the basin (June Only): NM

Data Entered By: J. Roelke 8/22/2022

Checked By: Tom Perkins 9/1/2022

Photographic Log

Client Name:	Site Location:	Project No.:
Wisconsin Department of Natural Resources (WDNR)	Refuse Hideaway Landfill Middleton, WI	TRC # 457573

Photo No.	Date
1	8/22/2022

Description

Western Drainage Ditch:
North portion shows signs of increased vegetation regrowth compared to previous months. No standing water was observed at the time of the inspection.

Photo No.	Date
2	8/22/2022

Description

Eastern Drainage Ditch:
Some vegetation die-off and light erosion observed along the drainage pathway at the north portion of the drainage ditch.

Photographic Log

Client Name:	Site Location:	Project No.:
Wisconsin Department of Natural Resources (WDNR)	Refuse Hideaway Landfill Middleton, WI	TRC # 457573

Photo No.	Date
3	8/22/2022

Description

Northwestern Landfill Extents

Select areas that were seeded following the 2021 construction event contained bare soil. Additional seeding may be needed in Fall 2022.

Photo No.	Date
4	8/22/2022

Description

Northern Landfill Extents

Select areas that were seeded following the 2021 construction event contained bare soil. Additional seeding may be needed in Fall 2022.

Photographic Log

Client Name:	Site Location:	Project No.:
Wisconsin Department of Natural Resources (WDNR)	Refuse Hideaway Landfill Middleton, WI	TRC # 457573

Photo No.	Date
5	8/22/2022

Description

Northeastern Landfill Extents

Select areas that were seeded following the 2021 construction event contained bare soil. Additional seeding may be needed in Fall 2022.

Photo No.	Date
6	8/22/2022

Description

Central Landfill Extents

Select areas that were seeded following the 2021 construction event contained bare soil. Additional seeding may be needed in Fall 2022

Photographic Log

Client Name:	Site Location:	Project No.:
Wisconsin Department of Natural Resources (WDNR)	Refuse Hideaway Landfill Middleton, WI	TRC # 457573

Photo No.	Date
7	8/22/2022

Description

Northwestern Landfill Extents:

Signs of emerging shrub growth were observed at the northwest portion of the landfill surface.

Photo No.	Date
8	8/22/2022

Description

Southern Landfill Extents

Areas of bare soil (potential turkey bedding) were observed at the southern portion of the landfill surface. Additional seeding may be needed in Fall 2022.