999 Fourier Dr., Ste. 101
Madison, WI 53717

T 608.826.3600
TRCcompanies.com

February 21, 2025

Mr. Bruce J. LeRoy
Hydrogeologist – Northeast Region Remediation and Redevelopment
Wisconsin Department of Natural Resources
1027 W. St. Paul Ave.
Milwaukee, WI 53233

Subject: Ripon City Landfill Passive Gas Venting Pilot Test – Quarter 3 and 4 2024 Status Update
FF/NN Landfill, WDNR License No. 00467
EPA ID WID980610190
BRRTS No. 02-20-000915

Dear Mr. LeRoy

This letter presents an operation and maintenance (O&M) summary for the passive venting pilot test currently being conducted for the Ripon City (FF/NN) Landfill federal National Priorities List (NPL) Site (Site) in Ripon, Wisconsin (**Figure 1**). This document provides a summary of monitoring conducted following the conversion of the active landfill gas extraction system (GES) to passive venting (August 2024) through December 31, 2024. Report submittals going forward will be completed on a quarterly basis as outlined in the Wisconsin Department of Natural Resources (WDNR)'s *Technical Assistance/Active Gas Extraction System Performance Evaluation* letter dated November 14, 2024. Performance monitoring results are discussed in the following sub-sections.

Passive Venting Pilot Test

The active GES was shut down in April 2024 following loss of vacuum to the well field due to continued water intrusion in the extraction lines. Following shutdown, TRC conducted a performance evaluation for the active GES, including review of gas and groundwater data collected from the gas probes and wells within and surrounding the landfill, to determine if passive venting was an option for gas mitigation. Based on the evaluation, TRC submitted a summary letter to the WDNR in May 2024 recommending a temporary shutdown of the active GES and conversion of the system back to passive venting for at least one year. The WDNR provided concurrence of the conversion to passive venting (as a pilot test) in an email dated July 25, 2024, and the system was converted to passive venting on August 29, 2024. In the *Technical Assistance/Active Gas Extraction System Performance Evaluation* letter dated November 14, 2024, the WDNR specified gas monitoring frequency of twice each month and quarterly data reporting.

Performance Monitoring

To monitor the passive venting performance, semi-monthly gas monitoring and quarterly groundwater monitoring are currently conducted at the Site at select gas probes, gas vents, and/or groundwater monitoring wells. Gas monitoring is conducted at the 10 gas probes (GP-1 through GP-7 and GP-10 through GP-12) surrounding the limits of fill, four monitoring wells (MW-101 though MW-104) within or near the limits of waste, and from five vents/wells (LC-1, LC-2, LC-3, GV-4, and GV-6) previously used for gas extraction (**Figure 2**). The probes/vents/wells are monitored for methane (percent lower explosive limit [%LEL] and percent by volume), oxygen, and carbon dioxide using a field instrument. The methane gas monitoring results are compared to 25% LEL (1.25% by volume for methane). Note the active GES was shutoff in April 2024 and the passive venting conversion was completed on

August 29,2024. Data collected from August 29, 2024 to December 31, 2024 are representative of conditions during passive venting.

In addition to gas monitoring, the frequency of groundwater monitoring for monitoring wells MW-103, MW-104, and MW-112 was increased to quarterly to primarily monitor vinyl chloride groundwater concentrations. These three wells are located near or within the limits of waste and samples collected from these wells historically contained vinyl chloride prior to operation of the active GES. These three wells are sampled using volume purge sampling methods and analyzed for volatile organic compounds (VOC) using United States Environmental Protection Agency (USEPA) Method 8260 C or D. Vinyl chloride results are being evaluated for trends and are compared to the historical maximum concentrations reported.

Monitoring Results

Gas monitoring is conducted by TRC and the City of Ripon, and **Table 1** summarizes data collected in 2024. The following observations are based on the gas monitoring completed in 2024:

- Between the shutdown of the active GES system in April 2024 and conversion to passive venting on August 29, 2024, methane above the 1.25% threshold was not observed in any of the gas probes or monitoring wells sampled.
- Methane was detected at GP-1 at a concentration of 3.3 to 3.4% by volume on September 24, 2024, but has been below the 1.25% threshold since then.
- Methane was observed in gas probe GP-2 (2.8 to 4.5 % volume) on the day the system was converted to passive venting; however, the concentration decreased to low or non-detect until November 2024. Since November 20, 2024, the concentration of methane at GP-2 has been above the 1.25% threshold.
- Methane concentrations at MW-104 exceeded the 1.25% methane threshold on September 24, 2024 and December 3, 2024. However, methane was not detected during four monitoring events after the September 24, 2024 event, indicating that elevated methane at MW-104 is temporary and sporadic. This well is located within the horizontal limits of waste.
- Methane was detected at low concentrations in GP-10 (0.1% by volume) in December of 2024 and MW-101 (0.2 to 0.7% by volume) in late November and December of 2024, but measured concentrations were below the 1.25% threshold.

Since the system was converted to passive, two quarterly groundwater monitoring events have been completed. Groundwater samples were collected from MW-103, MW-104, and MW-112 and analyzed for VOCs during each of these events, and a summary of the analytical results is included in **Tables 2 and 3**. Vinyl chloride was not detected at MW-103 or MW-112 during either of the quarterly sampling events. Vinyl chloride was detected at MW-104 at concentrations of 0.58 micrograms per liter (ug/L) and 0.74 µg/L, which exceed the NR140 Enforcement Standard (ES) of 0.2 ug/L, but are less than the historical high concentrations (20 µg/L) at this well.

Recommendations and Conclusions

The active GES was shut down in April 2024 and converted to passive venting on August 29, 2024. Since the August 2024 conversion, GP-1 and GP-2 are the only gas monitoring points outside the limits of waste where methane concentrations have exceeded the 1.25% by volume threshold. The threshold was exceeded at GP-1 in September 2024 and has not exceeded the threshold at GP-1 in any subsequent measurement event. Methane concentrations at GP-2 have exceeded the 1.25% threshold since November 20, 2024. There are no nearby receptors in the vicinity of GP-2 and monitoring further north at GP-10 did not detect methane above the 1.25% threshold. Based on the limited migration of methane to the northwest, no receptors in close proximity, and variability in gas concentrations, TRC recommends continued monitoring of the passive system to collect additional data. The PRP group will continue to explore alternative options to improve the passive venting (i.e., installation of gravity ventilator, wind driven turbine, or equivalent).

Sincerely,

TRC

Andrew M. Stehn

Andrew Stehn, P.E.
Project Manager

Enclosures: Table 1 – Gas Probe Field Parameter Monitoring Results - 2024-2025
Table 2 – Detected Parameters in Groundwater - Third Quarter 2024
Table 3 – Detected Parameters in Groundwater - Fourth Quarter 2024
Figure 1 – Site Location Map
Figure 2 – Site Features Map

cc: Maria Cieniawski, USEPA (electronic)
Adam Roder, Geosyntec Consultants, Inc. (electronic)

Tables

Table 1: Gas Probe Field Parameter Monitoring Results
2024 - 2025
Ripon City (FF/NN) Landfill
Ripon, Wisconsin

Monitoring Point	Time	Date	CH_4 (%)	CO_2 (%)	O_2 (%)	N (%)	Comments
GP-1	16:38	1/11/2024	0.0	11.8	6.3	81.9	
	17:11	1/11/2024	0.0	10.2	6.9	82.9	
	10:39	1/24/2024	0.0	7.2	11.8	81.0	
	11:13	1/24/2024	0.0	7.4	11.6	81.0	
	11:49	1/31/2024	0.0	9.1	6.3	84.6	
	13:35	2/16/2024	0.0	4.8	13.3	81.9	
	14:22	2/16/2024	0.0	5.0	13.1	81.9	
	10:49	2/29/2024	0.0	4.9	13.4	81.7	
	13:19	3/12/2024	0.0	3.4	13.1	83.5	Meter pump error noted during monitoring event.
	14:11	3/12/2024	0.0	3.6	13.6	82.8	Meter pump error noted during monitoring event.
	10:09	3/25/2024	0.0	2.7	17.3	80.0	
	9:07	4/11/2024	0.6	1.8	16.6	81.0	Suspected meter error, concentration checked 4/15/2024
	10:27	4/11/2024	0.0	1.6	16.4	82.0	
	9:21	4/15/2024	0.0	2.4	14.9	82.7	
	8:55	5/8/2024	0.0	0.4	20.5	79.1	
	8:52	6/25/2024	0.0	0.9	19.7	79.4	
	10:12	7/25/2024	0.0	11.0	5.4	83.6	
	11:26	8/29/2024	0.0	12.2	5.1	82.7	System Converted to Passive Venting
	9:04	9/11/2024	0.0	12.2	6.0	81.8	
	9:07	9/24/2024	**3.4**	15.2	1.4	80.0	
	11:00	9/24/2024	**3.3**	14.6	1.9	80.2	Second reading collected based on methane concentration observed.
	14:02	10/9/2024	0.0	1.4	15.8	82.8	
	13:21	10/21/2024	0.0	13.1	5.6	81.3	
	10:07	11/6/2024	0.8	13.6	1.4	84.2	
	8:50	11/20/2024	0.4	13.9	2.0	83.7	
	9:26	12/3/2024	0.0	8.9	10.5	80.6	
	13:22	12/17/2024	0.0	5.2	13.8	81.0	
	10:24	12/30/2024	0.0	1.4	18.7	79.9	
	11:13	1/15/2025	0.0	3.1	16.2	80.7	
	11:01	1/29/2025	0.1	3.2	17.2	79.5	
GP-2	17:22	1/11/2024	0.0	0.0	20.9	79.1	
	11:20	1/24/2024	0.0	3.8	14.4	81.8	
	10:24	1/31/2024	0.0	2.0	17.6	80.4	
	14:34	2/16/2024	0.2	10.8	1.9	87.1	
	11:04	2/29/2024	0.0	2.4	17.6	80.0	
	14:21	3/12/2024	0.0	7.0	7.7	85.3	Meter pump error noted during monitoring event.
	9:45	3/25/2024	0.0	2.4	16.6	81.0	
	10:08	4/11/2024	**1.9**	13.1	0.1	84.9	Suspected meter error, concentration checked 4/15/2024
	8:46	4/15/2024	0.0	0.3	20.6	79.1	
	9:36	5/8/2024	0.0	1.1	19.5	79.4	
	8:32	6/25/2024	0.0	0.5	20.3	79.2	
	10:44	7/25/2024	0.0	0.3	20.3	79.4	
	12:25	8/29/2024	**2.8**	17.6	1.5	78.1	System Converted to Passive Venting
	13:11	8/29/2024	**4.5**	19.4	0	76.1	Second reading collected based on methane concentration observed.
	10:39	9/11/2024	0.0	0.2	20.5	79.3	
	9:58	9/24/2024	0.3	4.2	15.6	79.9	
	15:09	10/9/2024	0.0	0.2	20.6	79.2	
	14:14	10/21/2024	0.0	2.7	17.2	80.1	
	10:54	11/6/2024	0.0	0	20.9	79.1	
	9:26	11/20/2024	**2.5**	6.2	12.9	78.4	
	10:09	11/20/2024	**2.5**	6.4	12.8	78.3	Second reading collected based on methane concentration observed.
	10:44	12/3/2024	**14.6**	20.7	0.0	64.7	
	11:40	12/3/2024	**14.3**	20.6	0.0	65.1	Second reading collected based on methane concentration observed.
	14:16	12/17/2024	**5.5**	10.8	9.6	74.1	
	10:51	12/30/2024	**14.0**	1.1	21.4	63.5	
	12:09	1/15/2025	**12.9**	19.4	0.0	67.7	
	12:46	1/15/2025	**12.3**	19.5	0.0	68.2	Second reading collected based on methane concentration observed.
	12:26	1/29/2025	**3.1**	6.2	15.2	75.5	

Table 1: Gas Probe Field Parameter Monitoring Results
2024 - 2025
Ripon City (FF/NN) Landfill
Ripon, Wisconsin

Monitoring Point	Time	Date	CH_4 (%)	CO_2 (%)	O_2 (%)	N (%)	Comments
GP-3	10:45	1/31/2024	0.0	4.4	16	79.6	
	12:20	2/29/2024	0.0	3.3	16.4	80.3	
	10:52	3/25/2024	0.0	4.3	15.8	79.9	
	10:02	4/15/2024	0.0	0.2	20.7	79.1	
	10:13	5/8/2024	0.0	0.1	20.7	79.2	
	10:11	6/25/2024	0.0	0.4	20.3	79.3	
	11:15	7/25/2024	0.0	0.1	20.8	79.1	
	12:37	8/29/2024	0.0	0.8	20.2	79.0	
	10:44	9/11/2024	0.0	0.3	20.5	79.2	
	10:13	9/24/2024	0.0	2.3	17.5	80.2	
	15:21	10/9/2024	0.0	0.4	20.8	78.8	
	14:20	10/21/2024	0.0	2.4	17.6	80.0	
	11:06	11/6/2024	0.0	0.0	20.9	79.1	
	9:35	11/20/2024	0.0	3.7	16.2	80.1	
	10:53	12/3/2024	0.0	5.2	13.2	81.6	
	14:32	12/17/2024	0.0	0.2	20.9	78.9	
	11:19	12/30/2024	0.0	1.0	19.2	79.8	
	12:16	1/15/2025	0.0	5.7	12.6	81.7	
	12:30	1/29/2025	0.0	0.4	21.5	78.1	
GP-4	0:00	1/31/2024	0.0	1	20	79.0	
	12:25	2/29/2024	0.0	0.6	18.9	80.5	
	10:56	3/25/2024	0.0	0.8	20.2	79.0	
	10:10	4/15/2024	0.0	0.9	20.2	78.9	
	10:17	5/8/2024	0.0	1.3	19.5	79.2	
	10:14	6/25/2024	0.0	1.8	18.4	79.8	
	11:20	7/25/2024	0.0	1.5	19.4	79.1	
	12:43	8/29/2024	0.0	1.3	19.8	78.9	System Converted to Passive Venting
	10:52	9/11/2024	0.0	1.7	18.8	79.5	
	10:24	9/24/2024	0.0	2.2	17.7	80.1	
	15:14	10/9/2024	0.0	0.6	20.9	78.5	
	14:24	10/21/2024	0.0	1.6	19.3	79.1	
	10:59	11/6/2024	0.0	0.6	20.7	78.7	
	9:39	11/20/2024	0.0	1.0	19.5	79.5	
	10:57	12/3/2024	0.0	3.4	15.9	80.7	
	14:24	12/17/2024	0.0	0.6	20.8	78.6	
	11:11	12/30/2024	0.0	1.8	19.2	79.0	
	12:19	1/15/2025	0.0	3.8	15.1	81.1	
	12:33	1/29/2025	0.0	0.4	21.4	78.2	
GP-5	11:53	1/31/2024	0.0	3.2	18.8	78.0	
	10:53	2/29/2024	0.0	3.2	18.7	78.1	
	10:12	3/25/2024	0.0	2.5	19.3	78.2	
	9:25	4/15/2024	0.0	3.3	17.2	79.5	
	8:59	5/8/2024	0.0	3.9	16.2	79.9	
	8:58	6/25/2024	0.0	7.5	11.3	81.2	
	10:16	7/25/2024	0.0	7.4	11.8	80.8	
	11:29	8/29/2024	0.0	9.1	13.2	77.7	
	9:07	9/11/2024	0.0	7.7	14.8	77.5	
	9:12	9/24/2024	0.0	8.3	14.1	77.6	
	14:24	10/9/2024	0.0	6.8	14.8	78.4	
	13:23	10/21/2024	0.0	5.6	16.3	78.1	
	10:14	11/6/2024	0.0	5.0	16.9	78.1	
	8:53	11/20/2024	0.0	6.0	15.5	78.5	
	9:34	12/3/2024	0.0	6.7	16.1	77.2	
	13:14	12/17/2024	0.0	4.4	17.9	77.7	
	10:18	12/30/2024	0.0	4.2	17.8	78.0	
	11:16	1/15/2025	0.0	4.4	18.2	77.4	
	11:04	1/29/2025	0.0	2.6	20.0	77.4	

Table 1: Gas Probe Field Parameter Monitoring Results
2024 - 2025
Ripon City (FF/NN) Landfill
Ripon, Wisconsin

Monitoring Point	Time	Date	CH_4 (%)	CO_2 (%)	O_2 (%)	N (%)	Comments
GP-6	10:39	1/31/2024	0.0	1.6	19.5	78.9	
	12:58	2/29/2024	0.0	1.4	19.8	78.8	
	11:17	3/25/2024	0.0	0.3	20.5	79.2	
	10:24	4/15/2024	0.0	1.4	19.4	79.2	
	10:32	5/8/2024	0.0	1.3	19.0	79.7	
	10:01	6/25/2024	0.0	1.2	19.4	79.4	
	11:43	7/25/2024	0.0	1.1	19.5	79.4	
	13:03	8/29/2024	0.0	0.5	20.6	78.9	System Converted to Passive Venting
	11:06	9/11/2024	0.0	1.5	19.3	79.2	
	10:48	9/24/2024	0.0	2.3	18.5	79.2	
	15:24	10/9/2024	0.0	1.2	20.4	78.4	
	14:55	10/21/2024	0.0	2.3	18.8	78.9	
	11:15	11/6/2024	0.0	0.4	20.9	78.7	
	10:01	11/20/2024	0.0	1.2	19.1	79.7	
	11:27	12/3/2024	0.0	3.5	16.7	79.8	
	14:44	12/17/2024	0.0	0.0	20.9	79.1	
	11:24	12/30/2024	0.0	2.6	18.0	79.4	
	12:36	1/15/2025	0.0	4.0	14.7	81.3	
	12:49	1/29/2025	0.0	1.4	19.9	78.7	
GP-7	10:33	1/31/2024	0.0	3.6	17.1	79.3	
	12:52	2/29/2024	0.0	3.7	17	79.3	
	11:12	3/25/2024	0.0	0.2	20.6	79.2	
	10:20	4/15/2024	0.0	0.2	20.7	79.1	
	10:28	5/8/2024	0.0	0.1	20.7	79.2	
	9:57	6/25/2024	0.0	0.2	20.7	79.1	
	11:39	7/25/2024	0.0	0.2	20.6	79.2	
	12:59	8/29/2024	0.0	0.9	20.2	78.9	System Converted to Passive Venting
	11:03	9/11/2024	0.0	0.4	20.4	79.2	
	10:43	9/24/2024	0.0	2.8	17.3	79.9	
	11:37	10/10/2024	0.0	0.2	20.9	78.9	
	14:51	10/21/2024	0.0	3.3	16.9	79.8	
	11:11	11/6/2024	0.0	0.6	20.9	78.5	
	9:58	11/20/2024	0.0	3.2	16.4	80.4	
	11:24	12/3/2024	0.0	4.4	14.5	81.1	
	14:40	12/17/2024	0.0	0.2	20.9	78.9	
	11:28	12/30/2024	0.0	1.4	18.6	80.0	
	12:32	1/15/2025	0.0	5.1	13.7	81.2	
	12:46	1/29/2025	0.0	2.0	21.7	76.3	
GP-10	10:18	1/31/2024	0.0	4.4	14.5	81.1	
	11:12	2/29/2024	0.0	4.1	14.9	81.0	
	10:45	3/25/2024	0.0	2.7	16.2	81.1	
	9:38	4/15/2024	0.0	3.6	17	79.4	
	9:31	5/8/2024	0.0	4.1	12.1	83.8	
	9:29	6/25/2024	0.0	3.9	13.4	82.7	
	10:34	7/25/2024	0.0	6.4	9.1	84.5	
	11:55	8/29/2024	0.0	7.5	9.1	83.4	System Converted to Passive Venting
	9:34	9/11/2024	0.0	7.7	9.7	82.6	
	9:52	9/24/2024	0.0	7.4	11.2	81.4	
	15:06	10/9/2024	0.0	6.0	14.1	79.9	
	13:44	10/21/2024	0.0	6.2	12.7	81.1	
	10:48	11/6/2024	0.0	5.8	12.1	82.1	
	9:04	11/20/2024	0.0	6.4	12.4	81.2	
	10:27	12/3/2024	0.0	5.3	13.9	80.8	
	14:11	12/17/2024	0.1	4.6	14.9	80.5	
	10:35	12/30/2024	0.0	5.0	11.7	83.3	
	11:55	1/15/2025	-	-	-	-	No Measurement, frozen valve.
	12:11	1/29/2025	-	-	-	-	No Measurement, frozen valve.

Table 1: Gas Probe Field Parameter Monitoring Results
2024 - 2025
Ripon City (FF/NN) Landfill
Ripon, Wisconsin

Monitoring Point	Time	Date	CH_4 (%)	CO_2 (%)	O_2 (%)	N (%)	Comments
GP-11	10:59	1/31/2024	0.0	2.5	18.1	79.4	
	12:32	2/29/2024	0.0	2.0	18.4	79.6	
	10:35	3/25/2024	0.0	3.6	16.6	79.8	
	9:42	4/15/2024	0.0	2.6	18.6	78.8	
	10:02	5/8/2024	0.0	3.6	16.4	80.0	
	9:15	6/25/2024	0.0	2.5	18.1	79.4	
	10:56	7/25/2024	0.0	3.1	13.4	83.5	
	11:42	8/29/2024	0.0	3	18.5	78.5	System Converted to Passive Venting
	9:46	9/11/2024	0.0	3.2	18.2	78.6	
	9:26	9/24/2024	0.0	3.5	18.3	78.2	
	14:54	10/9/2024	0.0	2.4	18.9	78.7	
	13:49	10/21/2024	0.0	2.5	19.0	78.5	
	10:33	11/6/2024	0.0	2.6	18.6	78.8	
	9:08	11/20/2024	0.0	3.5	18.1	78.4	
	10:32	12/3/2024	0.0	4.7	16.6	78.7	
	13:58	12/17/2024	0.0	3.0	18.1	78.9	
	10:42	12/30/2024	0.0	3.8	16.5	79.7	
	11:59	1/15/2025	0.0	5.2	14.0	80.8	
	12:16	1/29/2025	0.0	2.6	19.0	78.4	
GP-12	11:41	1/31/2024	0.0	3.9	16.3	79.8	
	12:52	2/29/2024	0.0	3.7	17.1	79.2	
	10:20	3/25/2024	0.0	0.0	20.9	79.1	
	9:32	4/15/2024	0.0	2.3	18.2	79.5	
	9:06	5/8/2024	0.0	1.9	18.8	79.3	
	8:48	6/25/2024	0.0	1.8	18.6	79.6	
	11:08	7/25/2024	0.0	1.6	18.0	80.4	
	11:34	8/29/2024	0.0	2	19.1	78.9	System Converted to Passive Venting
	9:18	9/11/2024	0.0	2.3	19.1	78.6	
	9:21	9/24/2024	0.0	3.1	18.7	78.2	
	14:34	10/9/2024	0.0	2.8	18.4	78.8	
	13:38	10/21/2024	0.0	2.8	18.4	78.8	
	10:26	11/6/2024	0.0	2.2	18.6	79.2	
	9:00	11/20/2024	0.0	4.4	16.2	79.4	
	10:20	12/3/2024	0.0	6.5	13.2	80.3	
	13:54	12/17/2024	0.0	3.8	16.0	80.2	
	10:30	12/30/2024	0.0	4.0	16.1	79.9	
	11:46	1/15/2025	0.0	4.1	17.9	78.0	
	12:01	1/29/2025	0.0	1.8	19.9	78.3	
MW-101	11:05	1/31/2024	0.0	1.7	18.9	79.4	
	12:36	2/29/2024	0.0	0.8	20.0	79.2	
	10:39	3/25/2024	0.0	2.1	18.8	79.1	
	9:46	4/15/2024	0.0	0.2	20.6	79.2	
	10:06	5/8/2024	0.0	0.2	20.6	79.2	
	9:19	6/25/2024	0.0	0.2	20.8	79.0	
	10:00	7/25/2024	0.0	1.7	17.4	80.9	
	11:47	8/29/2024	0.0	0.1	20.7	79.2	System Converted to Passive Venting
	10:08	9/11/2024	0.0	0.4	20.2	79.4	
	9:30	9/24/2024	0.0	0.6	20.3	79.1	
	15:01	10/9/2024	0.0	0.6	20.2	79.2	
	13:52	10/21/2024	0.0	1.4	19.1	79.5	
	10:37	11/6/2024	0.0	0.2	20.9	78.9	
	9:13	11/20/2024	0.2	2.0	18.8	79.0	
	10:36	12/3/2024	0.7	4.5	15.6	79.2	
	14:05	12/17/2024	0.3	1.8	18.9	79.1	
	10:45	12/30/2024	0.3	3.0	17.2	79.6	
	12:03	1/15/2025	0.5	5.4	14.6	79.5	
	12:19	1/29/2025	0.0	0.6	21.1	78.3	

Table 1: Gas Probe Field Parameter Monitoring Results
2024 - 2025
Ripon City (FF/NN) Landfill
Ripon, Wisconsin

Monitoring Point	Time	Date	CH_4 (%)	CO_2 (%)	O_2 (%)	N (%)	Comments
MW-102	11:56	1/31/2024	0.0	1.9	19.5	78.6	
	10:56	2/29/2024	0.0	1.6	19.4	79.0	
	10:15	3/25/2024	0.0	1.1	20.1	78.8	
	9:28	4/15/2024	0.0	0.7	19.6	79.7	
	9:02	5/8/2024	0.0	0.7	19.9	79.4	
	9:02	6/25/2024	0.0	1.3	18.0	80.7	
	10:19	7/25/2024	0.0	2.1	14.2	83.7	
	11:31	8/29/2024	0.0	4.2	12.3	83.5	System Converted to Passive Venting
	9:10	9/11/2024	0.0	4.6	13.6	81.8	
	9:15	9/24/2024	0.0	4.9	13.1	82.0	
	14:30	10/9/2024	0.0	4.2	13.9	81.9	
	13:26	10/21/2024	0.0	3.9	15.7	80.4	
	10:11	11/6/2024	0.0	3.2	17.9	78.9	
	8:56	11/20/2024	0.0	3.4	17.4	79.2	
	9:37	12/3/2024	0.0	3.1	19.1	77.8	
	13:19	12/17/2024	0.0	2.4	19.2	78.4	
	10:13	12/30/2024	0.0	2.2	18.9	78.9	
	11:19	1/15/2025	0.0	2.8	18.9	78.3	
	11:10	1/29/2025	0.0	0.2	20.9	78.9	
MW-103	10:55	1/31/2024	0.0	2.5	17.7	79.8	
	12:28	2/29/2024	0.0	1.2	18.1	80.7	
	11:00	3/25/2024	0.0	0.0	20.9	79.1	
	10:14	4/15/2024	0.0	0.4	20.5	79.1	
	10:21	5/8/2024	0.0	0.1	20.7	79.2	
	10:20	6/25/2024	0.0	0.6	19.6	79.8	
	11:24	7/25/2024	0.0	0.8	19.4	79.8	
	12:51	8/29/2024	0.0	2.3	16.2	81.5	System Converted to Passive Venting
	10:56	9/11/2024	0.0	0.1	20.8	79.1	
	10:27	9/24/2024	0.0	0.7	19.4	79.9	
	11:16	10/10/2024	0.0	1.8	16.4	81.8	
	14:40	10/21/2024	0.0	3.3	13.9	82.8	
	11:02	11/6/2024	0.0	0.0	20.9	79.1	
	9:43	11/20/2024	0.0	2.6	15.2	82.2	
	11:00	12/3/2024	0.0	4.1	12.2	83.7	
	14:26	12/17/2024	0.0	0.0	20.9	79.1	
	11:15	12/30/2024	0.0	2.8	14.2	83.0	
	12:24	1/15/2025	0.0	4.1	13.0	82.9	
	12:37	1/29/2025	0.0	0.2	21.7	78.1	
MW-104	11:22	1/31/2024	0.9	13.8	1.8	83.5	
	12:42	2/29/2024	0.0	5.9	12.4	81.7	
	10:26	3/25/2024	**3.9**	11.5	6.6	78.0	
	12:05	3/25/2024	0.2	1.6	19.6	78.6	Second reading collected based on methane concentration observed.
	9:52	4/15/2024	0.0	0.4	20.3	79.3	
	9:14	5/8/2024	0.0	0.1	20.8	79.1	
	9:25	6/25/2024	0.0	0.1	20.8	79.1	
	12:01	7/25/2024	0.0	2.0	16.9	81.1	
	12:03	8/29/2024	0.0	0.1	20.6	79.3	System Converted to Passive Venting
	10:18	9/11/2024	0.0	1.5	0.0	98.5	
	9:39	9/24/2024	**10.4**	16.2	0.0	73.4	
	10:12	9/24/2024	0.0	0.2	20.6	79.2	Second reading collected based on methane concentration observed.
	14:40	10/9/2024	0.0	0.0	20.9	79.1	
	14:01	10/21/2024	0.3	7.1	10.4	82.2	
	10:22	11/6/2024	0.0	0.0	20.9	79.1	
	9:17	11/20/2024	0.0	7.3	8.4	84.3	
	9:55	12/3/2024	**11.4**	17.7	0.0	70.9	
	13:43	12/17/2024	0.1	2.4	15.7	81.9	
	10:00	12/30/2024	0.0	0.0	20.9	79.1	
	11:34	1/15/2025	**8.8**	16.3	0.3	74.6	
	11:39	1/29/2025	0.0	0.2	21.1	78.7	

Table 1: Gas Probe Field Parameter Monitoring Results
2024 - 2025
Ripon City (FF/NN) Landfill
Ripon, Wisconsin

Monitoring Point	Time	Date	CH_4 (%)	CO_2 (%)	O_2 (%)	N (%)	Comments
LC-1	16:56	1/11/2024	**64.0**	45.4	0.0	-9.4	
	10:56	1/24/2024	**59.0**	48.2	0.0	-7.2	
	11:14	1/31/2024	**50.6**	28.5	0.9	20.0	L1 currently closed to well field.
	14:02	2/16/2024	**58.0**	35.4	0.1	6.5	
	10:37	2/29/2024	**45.8**	26.1	1.9	26.2	
	13:47	3/12/2024	**54.5**	29.0	2.5	14.0	
	11:53	3/25/2024	**44.2**	26.4	2.9	26.5	
	9:40	4/11/2024	**46.7**	27.0	1.0	25.3	
	12:06	7/25/2024	**55.6**	29.1	0.4	14.9	
	11:16	9/11/2024	0.0	0.0	20.9	79.1	
	10:05	12/3/2024	0.7	0.7	20.2	78.4	
	13:29	12/17/2024	0.1	0.0	20.9	79.1	
	9:46	12/30/2024	0.0	0.0	20.9	79.1	
	11:37	1/15/2025	1.5	0.9	20.0	77.6	
	11:46	1/29/2025	0.0	0.1	21.9	78.0	
LC-2	17:08	1/11/2024	0.35	32.2	2.0	65.5	
	11:10	1/24/2024	**51.0**	47.6	1.4	0.0	
	13:41	1/31/2024	**56.3**	32.1	1.0	10.6	
	14:18	2/16/2024	**50.0**	35.8	2.9	11.3	
	10:09	2/29/2024	**24.4**	16.8	10.7	48.1	
	13:43	3/12/2024	**60.5**	33.2	2.5	3.8	
	11:48	3/25/2024	**30.8**	19.9	8.9	40.4	
	9:30	4/11/2024	**61.7**	34.2	0.4	3.7	
	12:10	7/25/2024	**28.1**	21.6	6.4	43.9	
	9:41	12/3/2024	**10.0**	6.6	17.8	65.6	
	13:47	12/17/2024	0.4	0.4	20.9	78.4	
	10:06	12/30/2024	**2.0**	0.6	20.6	76.8	
	11:23	1/15/2025	**25.4**	14.9	10.6	49.1	
	11:19	1/29/2025	0.0	0.2	20.8	79.0	
LC-3	17:03	1/11/2024	**10**	8.4	15.1	66.5	
	10:21	1/24/2024	**31.5**	31.6	5.2	31.7	Closed 1/4 turn on valve before reading
	11:05	1/24/2024	**34.5**	36.0	3.9	25.6	
	11:28	1/31/2024	**34.9**	26.4	2.4	36.3	
	14:08	2/16/2024	**35.5**	31.0	2.6	30.9	
	10:19	2/29/2024	**37.0**	27.3	1.3	34.4	
	14:02	3/12/2024	1.0	0.0	20.9	78.1	
	9:50	3/25/2024	**32.7**	25.4	2.9	39.0	
	9:35	4/11/2024	**42.1**	23.5	0.2	34.2	
	9:51	12/3/2024	**41.7**	31.0	4.2	23.1	
	13:39	12/17/2024	**9.0**	8.0	16.2	66.8	
	10:03	12/30/2024	**2.6**	1.4	20.1	75.9	
	11:30	1/15/2025	**54.9**	37.9	0.0	7.2	
	11:35	1/29/2025	0.3	0.7	20.4	78.6	
GV-4	14:58	1/11/2024	**34.5**	28.2	0.1	37.2	
	10:58	1/24/2024	**25.0**	26.8	1.3	46.9	
	11:11	1/31/2024	**27.7**	20.6	0.6	51.1	
	14:05	2/16/2024	**32.0**	27.6	0.0	40.4	
	10:29	2/29/2024	**2.8**	3.8	17.6	75.8	
	13:56	3/12/2024	**27.5**	14.9	7.5	50.1	
	11:56	3/25/2024	**15.6**	9.9	12.7	61.8	
	9:46	4/11/2024	**21.8**	12.2	6.1	59.9	
	13:39	8/29/2024	**29.7**	22.9	5.3	42.1	
	10:15	11/20/2024	**2.3**	11.0	9.5	77.2	
	10:09	12/3/2024	0.0	0.1	20.7	79.2	
	13:26	12/17/2024	0.0	0.0	20.9	79.1	
	9:55	12/30/2024	0.3	2.6	17.6	79.6	
	11:40	1/15/2025	**2.8**	12.9	13.4	70.9	
	11:49	1/29/2025	0.0	0.6	21.4	78.0	

Table 1: Gas Probe Field Parameter Monitoring Results
2024 - 2025
Ripon City (FF/NN) Landfill
Ripon, Wisconsin

Monitoring Point	Time	Date	CH_4 (%)	CO_2 (%)	O_2 (%)	N (%)	Comments
GV-6	16:53	1/11/2024	0.15	1.0	20.9	78.0	
	10:52	1/24/2024	**27.0**	29.6	0.0	43.4	
	13:33	1/31/2024	**35.1**	22.3	0.0	42.6	
	13:53	2/16/2024	**28.0**	25.2	0.0	46.8	
	11:04	2/29/2024	**8.3**	13.1	6.7	71.9	
	13:47	3/12/2024	**40.5**	22.2	1.6	35.7	
	11:50	3/25/2024	**13.9**	8.8	13.1	64.2	
	9:50	4/11/2024	**50.3**	32.2	0.0	17.5	
	9:45	12/3/2024	0.5	0.6	20.1	78.8	
	13:33	12/17/2024	0.0	0.0	20.9	79.1	
	9:44	12/30/2024	0.0	0.0	20.9	79.1	
	11:26	1/15/2025	**1.5**	2.4	19.3	76.8	
	11:31	1/29/2025	0.0	0.2	20.9	78.9	

Notes:
CH_4 = Methane
CO_2 = Carbon Dioxide
O_2 = Oxygen
N = Nitrogen
% = Percent
- = no measurement recorded, see comments.
BOLD = Methane concentration greater than 1.25% by volume (25% Lower Explosive Limit threshold).

Updated By: M. Wagler 1/30/2025
Checked By: A. Olson 1/31/2025

Table 2: Detected Parameters in Groundwater
Ripon City (FF/NN) Landfill
Ripon, Wisconsin
Third Quarter 2024

Parameter	Units	NR140 ES	NR 140 PAL	MW-103 9/24/2024 1507374	MW-104 9/24/2024 1507371	MW-112 9/24/2024 1507376	TRIP BLANK 9/24/2024 1507387
Field Parameters							
Depth to water	Feet			51.25	52.19	54.12	
Water elevation	Feet			821.05	823.01	820.58	
pH, field	SU			7.63	6.66	7.49	
Conductance, specific	µmhos/cm			836.6	1245.5	806.5	
ORP	mV			83.2	7.0	-7.2	
Oxygen, dissolved	mg/L			6.51	4.18	4.32	
Turbidity, field				MOD	VERY	MOD	
Turbidity, field	NTU			20.1	82.6	46.1	
Temperature	Deg C			13.63	11.65	13.57	
Color, field				LT GREY	GREY	LT GREY	
Odor, field				NONE	HUMIC	NONE	
Inorganic Analytes							
Nitrogen, nitrate + nitrite	mg/L	10	2	*7.0 J+*		0.68 J+	
Sulfate, total	mg/L	250	125	66		53	
Manganese, dissolved	µg/L	50	25	< 2.4		**279**	
Organic Analytes							
1,2,4-Trimethylbenzene	µg/L	480	96	< 0.011	< 0.011	< 0.011	< 0.011
1,2-Dichlorobenzene	µg/L	600	60	< 0.016	0.043 J	< 0.016	< 0.016
1,4-Dichlorobenzene	µg/L	75	15	< 0.017	1.3	< 0.017	< 0.017
Acetone	µg/L	9000	1800	< 0.84 J-	1.5 J	1.1 J	< 0.84 J-
Benzene	µg/L	5	0.5	< 0.022	0.18	< 0.022	< 0.022
Chlorobenzene	µg/L	100	20	< 0.013	3.2	0.079 J	< 0.013
Chloroethane	µg/L	400	80	< 0.4	< 0.4	< 0.4	< 0.4
cis-1,2-Dichloroethene	µg/L	70	7	0.066 J	0.29	0.048 J	< 0.023
di-Isopropyl ether	µg/L	--	--	< 0.02	0.041 J	< 0.02	< 0.02
Isopropylbenzene	µg/L	--	--	< 0.02	0.073 J	< 0.02	< 0.02
Methylene chloride	µg/L	5	0.5	< 0.09	< 0.09	< 0.09	0.30 J
Methyl-tert-butyl-ether	µg/L	60	12	< 0.014	0.065 J	< 0.014	< 0.014
sec-Butylbenzene	µg/L	--	--	< 0.021	0.051 J	< 0.021	< 0.021
Tetrachloroethene	µg/L	5	0.5	0.18 J	< 0.028	0.065 J	< 0.028
Tetrahydrofuran	µg/L	50	10	< 0.38	< 0.38	< 0.38	< 0.38
Toluene	µg/L	800	160	< 0.02	0.069 J	< 0.02	< 0.02
Trichloroethene	µg/L	5	0.5	*0.56*	0.044 J	0.15	< 0.022
Vinyl chloride	µg/L	0.2	0.02	< 0.019	**0.58**	< 0.019	< 0.019

Notes:

Created by: J. Esser, 10/24/2024
Checked by: M. Wagler 10/24/2024

1. µg/l = micrograms per liter (ppb).
2. SU = Standard Units
3. µmhos/cm = microSiemens per centimeter
4. Deg C = Degrees Celsius
5. mV = millivolts
6. mg/L = milligrams per liter (ppm).
7. NR 140 ES = Wisconsin Administrative Code Chapter NR 140 Enforcement Standard.
8. NR 140 PAL = Wisconsin Administrative Code Chapter NR 140 Preventive Action Limit.
9. **BOLD** = Exceedence (or potential exceedence if J-flagged) of the NR 140, WAC ES.
10. *Italics* = Exceedence (or potential exceedence if J-flagged) of the NR 140, WAC PAL.
11. All water level measurements taken on 9/24/2024
12. ORP - Oxidation Reduction Potential
13. Metals analyzed using EPA Method 6010.
14. J = Reported concentration is estimated.
15. J+ = Reported concentration is estimated with a potential high bias.
16. J- = Reported concentration is estimated with a potential low bias.
17. -- = No established standard.

Table 3: Detected Parameters in Groundwater
Ripon City (FF/NN) Landfill
Ripon, Wisconsin
Fourth Quarter 2024

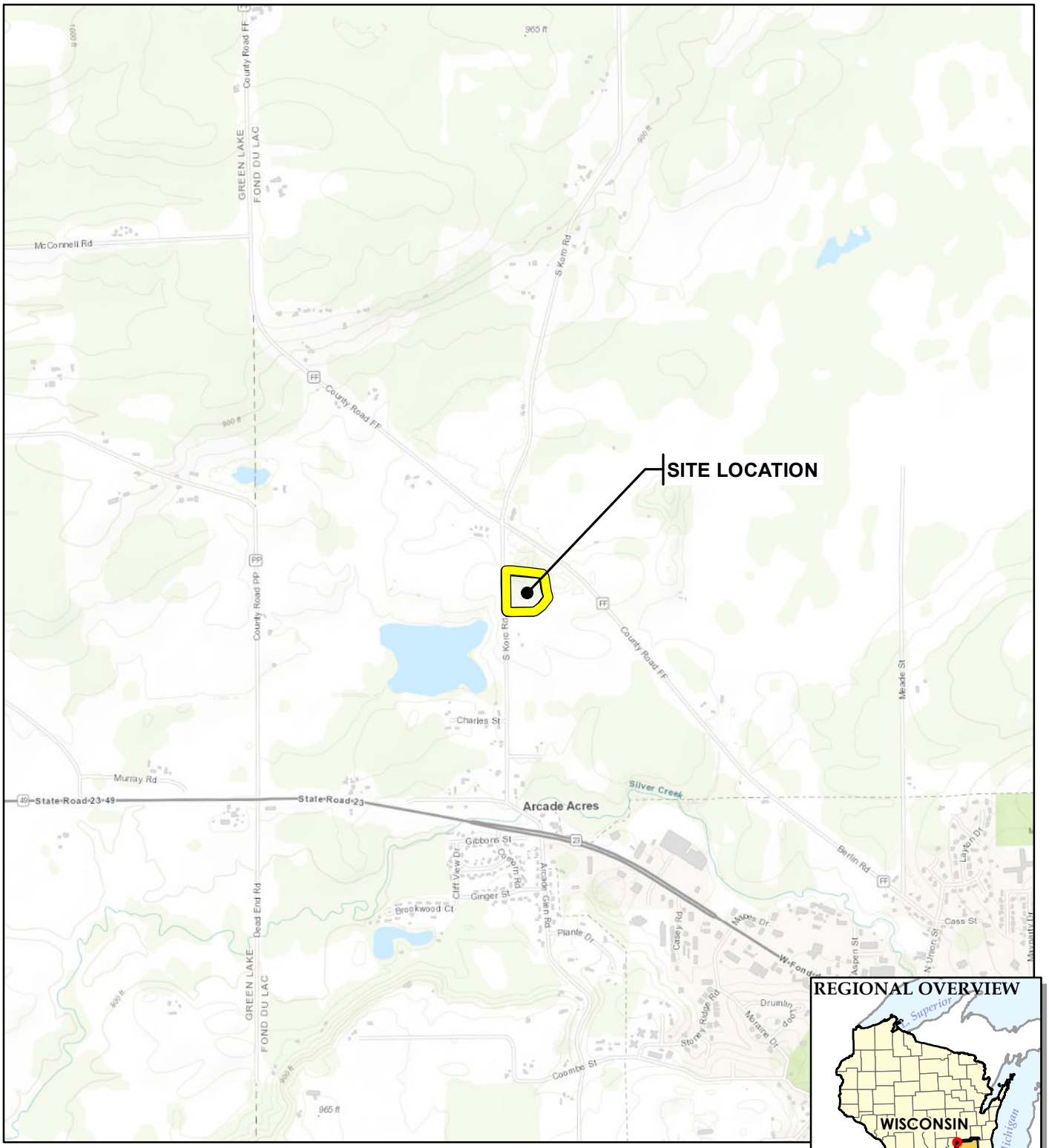
Parameter	Units	NR140 ES	NR 140 PAL	MW-103 1/9/2025 1544829	MW-104 1/9/2025 1544828	MW-112 1/9/2025 1544830	TRIP BLANK 1/9/2025 1544831
Field Parameters							
Depth to water	Feet			51.91	52.65	55.13	
Water elevation	Feet			820.39	822.55	819.57	
pH, field	SU			6.75	6.40	7.00	
Conductance, specific	µmhos/cm			907.1	958.8	712.4	
ORP	mV			250.7	266.8	244.8	
Oxygen, dissolved	mg/L			10.80	10.31	11.10	
Turbidity, field				SLIGHT	VERY	SLIGHT	
Turbidity, field	NTU			23.2	151	24	
Temperature	Deg C			6.10	7.27	5.06	
Color, field				LT GREY	LT BRWN	LT GREY	
Odor, field				NONE	NONE	NONE	
Organic Analytes							
1,4-Dichlorobenzene	µg/L	75	15	< 0.017	1.6	< 0.017	< 0.017
Benzene	µg/L	5	0.5	< 0.022	0.14	< 0.022	< 0.022
Chlorobenzene	µg/L	100	20	< 0.013	3.8	0.11	< 0.013
Chloroethane	µg/L	400	80	< 0.40	< 0.40	< 0.40	< 0.40
cis-1,2-Dichloroethene	µg/L	70	7	0.043 J	0.79	0.048 J	< 0.023
Dichlorodifluoromethane	µg/L	1000	200	< 0.091	0.16 J	< 0.091	< 0.091
di-Isopropyl ether	µg/L	--	--	< 0.02	0.040 J	< 0.02	< 0.02
Isopropylbenzene	µg/L	--	--	< 0.020	0.10	< 0.020	< 0.020
Methylene chloride	µg/L	5	0.5	< 0.20	< 0.20	< 0.20	*< 0.20*
sec-Butylbenzene	µg/L	--	--	< 0.021	0.054 J	< 0.021	*< 0.021*
Tetrachloroethene	µg/L	--	--	0.19 J	< 0.028	0.041 J	*< 0.028*
Tetrahydrofuran	µg/L	50	10	< 0.50	< 0.50	< 0.50	< 0.50
Toluene	µg/L	800	160	< 0.020	0.043 J	< 0.020	< 0.020
Trichloroethene	µg/L	5	0.5	*0.70*	0.061 J	0.10	< 0.022
Vinyl chloride	µg/L	0.2	0.02	*< 0.019*	***0.74***	*< 0.019*	< 0.019

Notes:

1. µg/l = micrograms per liter (ppb).
2. SU = Standard Units
3. µmhos/cm = microSiemens per centimeter
4. Deg C = Degrees Celsius
5. mV = millivolts
6. mg/L = milligrams per liter (ppm).
7. NR 140 ES = Wisconsin Administrative Code Chapter NR 140 Enforcement Standard.
8. NR 140 PAL = Wisconsin Administrative Code Chapter NR 140 Preventive Action Limit.
9. **BOLD** = Exceedence (or potential exceedence if J-flagged) of the NR 140, WAC ES.
10. *Italics* = Exceedence (or potential exceedence if J-flagged) of the NR 140, WAC PAL.
11. ORP - Oxidation Reduction Potential
12. J = Reported concentration is estimated.
13. -- = No established standard.

Created by: J. Esser, 12/26/2024
Checked by: M. Wagler, 12/27/2024
Updated by: J. Esser, 1/29/2025
Checked by: M. Wagler, 1/29/2025

Figures



BASE MAP FROM USGS 7.5 MINUTE TOPOGRAPHIC QUADRANGLE SERIES.

N

1 " = 2,000 '
1:24,000

0 2,000 4,000 FEET

TRC

999 Fourier Drive, Suite 101
Madison, WI 53717
Phone: 608.826.3663
www.trcsolutions.com

TRC - GIS

PROJECT:

RIPON CITY (FF/NN) LANDFILL NPL SITE
RIPON, WI

TITLE:

SITE LOCATION MAP

DRAWN BY:	A. FOJTIK
CHECKED BY:	S. SELLWOOD
APPROVED BY:	A. STEHN
DATE:	FEBRUARY 2025
PROJ. NO.:	582692
FILE:	582692_001_SLM.mxd

FIGURE 1

T:\1-PROJECTS\Ripon\2025_582692\MXD\582692_001_SLM.mxd -- Saved By: AFOJTIK on 1/31/2025, 15:03:04 PM

LEGEND

- GAS PROBE
- GAS PROBE (LOST)
- GAS VENT
- LEACHATE HEAD WELL
- MONTIORING WELL, PIEZOMETER LOCATION
- PRIVATE WELL USED FOR POTABLE PURPOSES
- PRIVATE WELL NOT USED FOR POTABLE PURPOSES
- RIPON FF/NN LANDFILL SITE

NOTES

1. BASE MAP IMAGERY FROM GOOGLE EARTH PRO., (6/19/2023).

N

0 200 400 Feet

1 " = 400 '

1:4,800

PROJECT:

RIPON CITY (FF/NN) LANDFILL NPL SITE
RIPON, WI

TITLE:

SITE FEATURES MAP

DRAWN BY:	A. FOJTIK	PROJ. NO.:	582692
CHECKED BY:	S. SELLWOOD		
APPROVED BY:	A. STEHN		
DATE:	FEBRUARY 2025		

FIGURE 2

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FILE NO.: 582692_002_VI_SLP.mxd

Plot Date: 1/31/2025, 15:02:39 PM by AFOJTIK -- LAYOUT: ANSI B(11"x17")
Path: T:\1-PROJECTS\Ripon\2025_582692\MXD\582692_002_VI_SLP.mxd
Coordinate System: NAD 1983 StatePlane Wisconsin South FIPS 4803 Feet (Foot US)
Map Rotation: 0

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