



REGION 5

CHICAGO, IL 60604

MEMORANDUM

SUBJECT: CLEAN AIR ACT INSPECTION REPORT
Newton County Landfill, Brook, IN

FROM: Aileen Drum, Physical Scientist
AECAB (IL/IN)

THRU: Nathan Frank, Section Supervisor
AECAB (IL/IN)

TO: File

BASIC INFORMATION

Facility Name: Republic Services Newton County Landfill

Facility Location: 2266 E 500 S Brook, IN 47922

Date of Inspection: June 11, 2024

EPA Inspector(s):

1. Aileen Drum, Physical Scientist
2. Emma Leeds, Environmental Engineer
3. Linda Rosen, Environmental Engineer
4. Sasa Dunovic, Environmental Engineer
5. DeMarkus Hodge, Environmental Engineer
6. Giles Chickering, Physical Scientist

Other Attendees:

1. Natalie Murray, Environmental Manager, Republic Services
2. Dave Stefl, Environmental Manager, Republic Services
3. Craig Drinski, Operations Manager, Republic Services
4. Jessica Linscott, Air Compliance Inspector, Indiana Department of Environmental Management (IDEM)
5. Matthew Doffin, Field Technician, SCS Engineers
6. Jake Nelson, Field Technician, SCS Engineers

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Facility Location: 2266 E 500 S Brook, IN 47922
Date of Inspection: June 11, 2024

Contact Email Address: nmurray@republicservices.com , dstefl@republicservices.com

Purpose of Inspection: To determine compliance with the Clean Air Act (CAA) and to perform a comparative Surface Emissions Monitoring (SEM) survey

Facility Type: Municipal Solid Waste Landfill

Regulations Central to Inspection: 40 C.F.R Part 63 Subpart AAAA—National Emissions Standards for Hazardous Air Pollutants for Municipal Solid Waste Landfills Requirements and 40 C.F.R Part 60 Subpart XXX—Standards of Performance for Municipal Solid Waste Landfills That Commenced Construction, Reconstruction, or Modification After July 17, 2014

Arrival Time: 9:44 AM

Departure Time: 5:18 PM

Inspection Type:

- ☒ Unannounced Inspection
- ☐ Announced Inspection

OPENING CONFERENCE

- ☒ Presented Credentials
- ☒ Stated authority and purpose of inspection
- ☐ Provided Small Business Resource Information Sheet
- ☒ Small Business Resource Information Sheet not provided. Reason: Not a small business
- ☒ Provided CBI warning to facility

The following information was obtained verbally from Natalie Murray, Dave Stefl, and Craig Drinski of Republic Services unless otherwise noted.

Process Description:

Newton County Landfill (“Newton County” or “the landfill”) is a municipal solid waste landfill owned and operated by Republic Services located in Brook, IN. The landfill occupies 317 acres and expects to accept waste for 30-40 more years. The landfill accepts approximately 7-8 tons of municipal solid waste per day, which is about 75% of the total waste accepted. In addition to municipal solid waste, Newton County accepts construction and demolition (C&D) waste, contaminated soils, fly ash, asbestos, autoclaved medical waste, and other special wastes. Final cover comprises 70.9 acres, the active face encompasses 10 acres in cell 6, and everything else is under intermediate cover.

Approximately 50% of the landfill gas (LFG) generated is sent to Cascades, a nearby pulp packaging factory that is powered by gas from Newton County. Gas directed to Cascades is treated by removing moisture from the gas and compressing it. A maximum flow rate of 2,000 scfm of LFG is accepted, and the energy generated is used to power boilers and make cartons for beverage packaging. The

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remainder of the landfill gas generated by Newton County is routed to three flares on site. Enclosed flare #4 (FL100) and enclosed flare #3 (FL120) are located on the south side, enclosed flare #3 serves primarily as a backup. Enclosed flare #6 (Unit 6) is located on the north side.

Approximately 84 million gallons of leachate are generated per year. Most leachate is partially treated on-site and then trucked offsite. Headspace air from the leachate treatment building and tanks is pulled by a blower system and routed to the north flare to aid in combustion. About 5 million gallons of leachate per year are directed to the pug mill, which receives fly ash from steel mills and mixes it with untreated leachate to weigh it down. The leachate/fly-ash mixture is then introduced directly into the waste stream. The facility is permitted to operate two leachate injection wells, which Newton County plans to have up and running in the next several weeks.

Staff Interview: The facility operates with approximately 55 employees. Newton County was publicly owned by the county before it was purchased by Republic Services in 2008 or 2009. In 1995, while still publicly owned, all waste on the south hill was relocated and placed into a liner. Most of the waste on the north hill has been in place for less than five years. SEM is done by SCS Engineers (SCS) and typically takes two technicians one week to complete. First, they walk a serpentine path and then they come back around to monitor the wells. Natalie Murray stated SCS does not deviate from the serpentine path. Facility personnel were not sure of the exact number of gas extraction wells at the facility, but stated there are 438 "compliance points", which include vertical wells, horizontal wells, sumps, and cleanouts. Approximately 95% of all well are vertical wells. The last SEM survey was at the end of May and staff were unsure how many exceedances were found, but believed there were not many.

Newton County has over 200 wells with higher operating values (HOVs) approved by IDEM. Staff stated they used to take waste from Cleveland Cliffs, including aluminum dross sludge that generated a lot of heat, and as a result many of the wells on the south side have HOVs. Natalie Murray stated that there are no known issues associated with the wells operating at higher temperatures and that there are no known issues with the liner. Newton County has experienced issues with watered in wells. They have made efforts to dewater the wells and have conducted many redrills. Approximately 208 wells have dewatering pumps, and this is an everchanging target. Decisions regarding when a dewatering pump is installed have to do with gas quality and flow. There has been no leachate recirculation since 2015.

TOUR INFORMATION

EPA Toured the Facility: Yes

Data Collected and Observations:

Six EPA inspectors conducted SEM at Newton County for approximately four and a half total hours. Measurements were taken with two Inficon IRwins (IRwin) and two Thermo Fischer Toxic Vapor Analyzer 2020 devices (TVA). Inspectors split into two groups, each equipped with one IRwin to record exceedances of methane above 500 ppm and one TVA to provide confirmation readings. The SEM

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IRwin and TVA probe inlets were held 10 centimeters from the ground during SEM, with the probe inlet taped 10 cm from the bottom of the walking sticks on the IRwins, as shown in photos 1 and 2. Measurements were taken at the surface of the landfill, including areas of distressed vegetation and cracks in the cover, and at penetrations.

In the morning, Inspectors Leeds, Hodge, and Chickering (Team 1) traversed the southeastern portion of the landfill accompanied by Natalie Murray and Jake Nelson. Inspectors Drum, Dunovic, Rosen, and Linscott (Team 2) traversed the south-central portion of the landfill accompanied by Dave Stefl and Matthew Doffin. Matthew Doffin reiterated that a SEM survey is conducted in two steps; in one step they monitor the penetrations, or “compliance points,” and in the other they walk a serpentine path. SCS staff stated they do not deviate from the serpentine path and their probe is held 6 inches from the ground. They later said the probe is held 4 inches from the ground. The SCS technicians brought their own IRwins to independently confirm exceedances of 500 ppm. Most of the exceedances detected by Team 2 were confirmed verbally by Matthew Doffin. Exceedances detected by Team 1 were confirmed verbally and through the alarm initiated by Jake Nelson’s IRwin. Both teams observed areas with cracks, erosion, distressed vegetation, and exposed waste, documented in photos 4, 5, 6, 10, 11, 14, 15, 16, 36, 37, 46, and 47. Team 2 encountered several areas with shoulder-high vegetation in the south-central portion of the landfill that were difficult to traverse, documented in photos 8 and 9. Team 1 observed a leaking rubber gasket (“fernco”) on the top of well 211A with a visible LFG gas stream escaping, documented in video 2. EPA confirmed with a TVA that the visible gas stream was LFG. Natalie Murray explained that temperature fluctuations between night and day in the fall and spring causes the rubber ferncos to pop out due to building pressure in the wells, and that this is a common occurrence at the landfill. A visible LFG gas stream was also observed coming from a gasket on well 221, EPA took a video (video 3), but the gas stream is not visible in the video. Dave Stefl and Natalie Murray used cell phones to record EPA inspectors for much of the SEM event, including a conversation between Natalie Murray and Inspector Leeds in which Natalie Murray stated that it is Newton County’s policy for technicians to never deviate from their pre-determined serpentine path during SEM. Inspector Leeds inquired why inspectors were being recorded and Natalie Murray stated they were instructed to record EPA by upper management.

After breaking for lunch, Team 1 took a route along the western quadrant of the landfill accompanied by Dave Stefl. Team 2 took a route along the northeastern portion of the landfill, in cells 9E, 8NE, and 8SE, and were accompanied by Natalie Murray. IDEM Inspector Linscott departed after lunch to attend to a previous commitment. SCS technicians did not return with their IRwins to independently verify exceedances. Natalie Murray expressed doubt that the TVA was an acceptable Method 21 instrument under the rule when exceedances were being verified by EPA after lunch. Inspector Drum asked why the Republic Services team made the decision to leave their team’s own IRwins behind but did not receive an answer. Both teams observed additional areas with cracks, erosion, distressed vegetation, and exposed waste, documented in photos 27, 29, 30, 33, and 51. Team 1 observed a large patch of distressed vegetation near well 144A with elevated emissions above 500 ppm. This elevated area was surrounded by shoulder-high vegetation and impossible to see from the outside of the vegetation, documented in photo 53. In total 36 exceedances of 500 ppm methane were found during the SEM survey.

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Photos and/or Videos: were taken during the inspection and are listed in Appendix A.

Field Measurements: were taken during this inspection and are listed in Appendix B.

RECORDS REVIEW

1. Map of existing conditions as of 03-07-24 intermediate cover and excavation areas
2. Map of wells for SEM

CLOSING CONFERENCE

- ☒ Provided U.S. EPA point of contact to the facility

Requested documents:

- Most recent Design Plan
- As-Built Map showing vertical and horizontal wells
- Map of cover (active, intermediate, final)
- Quarterly SEM reports: 2021–most recent
- Monthly wellhead readings (initial and adjusted pressure, temperature, gas composition, etc.): 2022–most recent
- 15-min interval flare flow readings to each flare, the gas treatment plant, and the total GCCS flow from 2022–most recent
- Monthly cover integrity reports from 2022–most recent
- Map of serpentine path following during SEM

Compliance Assistance: EPA explained that NESHAP Subpart AAAAA requires that during SEM, technicians must monitor “where visual observations indicate elevated concentrations of landfill gas, such as distressed vegetation and cracks or seeps in the cover”, per 40 CFR 63.1958(d)(1).

Concerns: EPA inspectors noted that 36 exceedances of 500 ppm methane were found during the SEM survey, and that the timeline to begin re-monitoring these locations could begin the following day when Newton County received an email from the EPA with the exceedance coordinates. EPA inspectors also informed staff of the leaking ferro on the top of well 211A and of the gas leak on well 221. Environmental managers stated the repairs to these wells were already made by the time of the closing conference.

DIGITAL SIGNATURES

Report Author: **AILEEN DRUM**
Digitally signed by AILEEN DRUM
Date: 2024.08.08 16:34:14 -05'00'

Section Supervisor: **NATHAN FRANK**
Digitally signed by NATHAN FRANK
Date: 2024.08.09 15:48:28 -05'00'

APPENDICES

1. Appendix A: Digital Image Log and Digital Video Log
2. Appendix B: Field Measurement Data

APPENDIX A: DIGITAL IMAGE LOG AND DIGITAL VIDEO LOG

Inspector Names: Linda Rosen and Emma Leeds **Archival Record Location:** AECAB Library > Enf_Newton County Landfill_IN_22 > Enf_Newton County Landfill_IN_24_InspRep > Digital Photos

Image Log

Image Number	File Name	Date and Time	Description of Image
1	P6110251.JPG	6/11/2024 10:24 AM	Inlet taped to IRwin 1 probe
2	P6110252.JPG	6/11/2024 10:25 AM	Inlet taped to IRwin 2 probe
3	P6110253.JPG	6/11/2024 11:08 AM	View looking up the south hill from the office parking lot
4	P6110254.JPG	6/11/2024 12:16 PM	Erosion rills and patchy grass
5	P6110255.JPG	6/11/2024 12:16 PM	Erosion rills and patchy grass
6	P6110256.JPG	6/11/2024 12:19 PM	Erosion rills and patchy grass
7	P6110257.JPG	6/11/2024 12:21 PM	Area with tall vegetation looking down the south hill
8	P6110258.JPG	6/11/2024 12:21 PM	Area with tall vegetation looking down the south hill
9	P6110259.JPG	6/11/2024 12:24 PM	Area with tall vegetation
10	P6110260.JPG	6/11/2024 12:24 PM	Deep cracks and erosion rills
11	P6110261.JPG	6/11/2024 12:25 PM	Exposed garbage and erosion

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12	P6110262.JPG	6/11/2024 12:27 PM	Location of exceedance A1
13	P6110263.JPG	6/11/2024 12:34 PM	Location of exceedance A2
14	P6110264.JPG	6/11/2024 12:43 PM	Deep crack
15	P6110265.JPG	6/11/2024 12:46 PM	Patchy vegetation
16	P6110266.JPG	6/11/2024 12:47 PM	Hole in the ground
17	P6110267.JPG	6/11/2024 12:59 PM	Location of exceedance A3
18	P6110268.JPG	6/11/2024 1:03 PM	Location of exceedance A3
19	P6110269.JPG	6/11/2024 1:13 PM	Location of exceedance A4
20	P6110270.JPG	6/11/2024 1:26 PM	Location of exceedance A5
21	P6110271.JPG	6/11/2024 3:25 PM	Location of exceedance A6
22	P6110272.JPG	6/11/2024 3:26 PM	Leachate cleanout penetration
23	P6110273.JPG	6/11/2024 3:28 PM	Location of exceedance A7
24	P6110274.JPG	6/11/2024 3:33 PM	Location of exceedance A8
25	P6110275.JPG	6/11/2024 3:43 PM	Location of exceedance A9
26	P6110276.JPG	6/11/2024 3:49 PM	Location of exceedance A10
27	P6110277.JPG	6/11/2024 3:50 PM	Exposed garbage
28	P6110278.JPG	6/11/2024 3:53 PM	Location of exceedance A11
29	P6110279.JPG	6/11/2024 3:56 PM	Atop the north hill, water accumulation and exposed trash
30	P6110280.JPG	6/11/2024 3:57 PM	Atop the north hill, water accumulation and exposed trash
31	P6110281.JPG	6/11/2024 4:08 PM	Location of exceedance A12
32	P6110282.JPG	6/11/2024 4:23 PM	Location of exceedance A13
33	P6110283.JPG	6/11/2024 4:42 PM	Erosion gullies
34	WIN_20240611_12_03_27_Pro.jpg	6/11/2024 12:03 PM	Location of exceedance E1
35	WIN_20240611_12_28_46_Pro.jpg	6/11/2024 12:28 PM	Location of exceedance E2
36	WIN_20240611_12_29_00_Pro.jpg	6/11/2024 12:29 PM	Location of exceedance E2
37	WIN_20240611_12_29_04_Pro.jpg	6/11/2024 12:29 PM	Hill with erosion
38	WIN_20240611_12_48_53_Scan.jpg	6/11/2024 12:48 PM	Location of exceedance E5
39	WIN_20240611_13_10_09_Pro.jpg	6/11/2024 1:10 PM	Location of exceedance E6
40	WIN_20240611_13_13_14_Pro.jpg	6/11/2024 1:13 PM	Location of exceedance E7
41	WIN_20240611_13_16_27_Pro.jpg	6/11/2024 1:16 PM	Location of exceedance E8
42	WIN_20240611_13_23_42_Pro.jpg	6/11/2024 1:23 PM	Location of exceedance E9
43	WIN_20240611_13_29_31_Pro.jpg	6/11/2024 1:29 PM	Location of exceedance E10
44	WIN_20240611_13_33_58_Pro.jpg	6/11/2024 1:33 PM	Location of exceedance E12
45	WIN_20240611_13_38_50_Pro.jpg	6/11/2024 1:38 PM	Location of exceedance E13
46	WIN_20240611_13_40_16_Pro.jpg	6/11/2024 1:40 PM	Location of exceedance E14
47	WIN_20240611_13_49_43_Pro.jpg	6/11/2024 1:49 PM	Location of exceedance E15
48	WIN_20240611_13_54_12_Pro.jpg	6/11/2024 1:54 PM	Location of exceedance E16
49	WIN_20240611_15_31_50_Pro.jpg	6/11/2024 3:31 PM	Location of exceedance E17
50	WIN_20240611_15_35_46_Pro.jpg	6/11/2024 3:35 PM	Location of exceedance E18

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51	WIN_20240611_15_50_03_Pro.jpg	6/11/2024 3:50 PM	Location of exceedance E19
52	WIN_20240611_15_58_52_Pro.jpg	6/11/2024 3:58 PM	Closer view of photo 53
53	WIN_20240611_15_58_56_Pro.jpg	6/11/2024 3:58 PM	Distressed vegetation near well 144A with elevated emissions above 500 ppm surrounded by shoulder-high vegetation
54	WIN_20240611_16_07_55_Pro.jpg	6/11/2024 4:07 PM	Location of exceedance E22
55	WIN_20240611_16_57_11_Pro.jpg	6/11/2024 4:57 PM	Location of exceedance E23

Video Log

Video Number	File Name	Date and Time	Description of Video
1	WIN_20240611_12_38_45_Pro.mp4	6/11/2024 12:38 PM	Location of exceedance E4
2	WIN_20240611_12_40_17_Pro.mp4	6/11/2024 12:40 PM	Exceedance E4 visible gas stream
3	WIN_20240611_12_47_50_Pro.mp4	6/11/2024 12:47 PM	Exceedance E5
4	WIN_20240611_12_48_16_Pro.mp4	6/11/2024 12:48 PM	Exceedance E5

APPENDIX B: FIELD MEASUREMENT DATA

Calibration Data and Instrument Information

Instruments were calibrated by Sasa Dunovic and Giles Chickering.

Instrument Information

Instrument	EPA Inspector
Inficon IRwin #1 (S/N:92004352)	Aileen Drum
Inficon IRwin #2 (S/N:92004350)	Emma Leeds
Thermo Fischer TVA 2020 #B39303	Sasa Dunovic
Thermo Fischer TVA 2020 #B39302	DeMarkus Hodge

Calibration Gas Information

Calibration Gas Composition	Lot Number	Expiration Date
Air zero grade	1486172	05/2026
Methane in air 503.1 ppm	304-402518883-1	08/15/2026
Methane in air 1960 ppm	304-402110299-1	05/11/2025
Methane in air 10000 ppm	304-402110298-1	05/11/2025

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TVA Bump Check Post Calibration at 9:45 AM

TVA	Reading for 503.1 ppm gas	Reading for 1960 ppm gas	Reading for 10000 ppm gas
TVA # B39303	496	1963	9412
TVA # B39302	494	1948	9720

IRwin 1 (S/N: 92004352) Calibration at 10:00 AM

Measurement	Reading for 503.1 ppm gas	Response Time (s)
#1	497	4
#2	497	4
#3	498	4

IRwin 2 (S/N: 92004350) Calibration at 10:00 AM

Measurement	Reading for 503.1 ppm gas	Response Time (s)
#1	488	3
#2	486	2
#3	485	2

Bump Check after Mid-Day Recalibration

Instrument	Reading for 503.1 ppm gas
TVA # B39303	501
TVA # B39302	502
Inficon IRwin #1 (S/N:92004352)	500
Inficon IRwin #2 (S/N:92004350)	500

Background Concentrations

Instrument	Upwind	Downwind
TVA 2020 #B39303	x	5ppm average
IRwin #2	0ppm	x

Surface Emissions Monitoring Data

Exceedance measurements from US EPA SEM Survey

Exceedance ID	Reading	Confirmation Reading	Location Field Notes	latitude	longitude
A1	709	1374	Well 166A Phase 8B	40.930813	-87.345125
A2	724	4060	Distressed vegetation- staff says maybe phase 6A but unsure	40.930748	-87.344954

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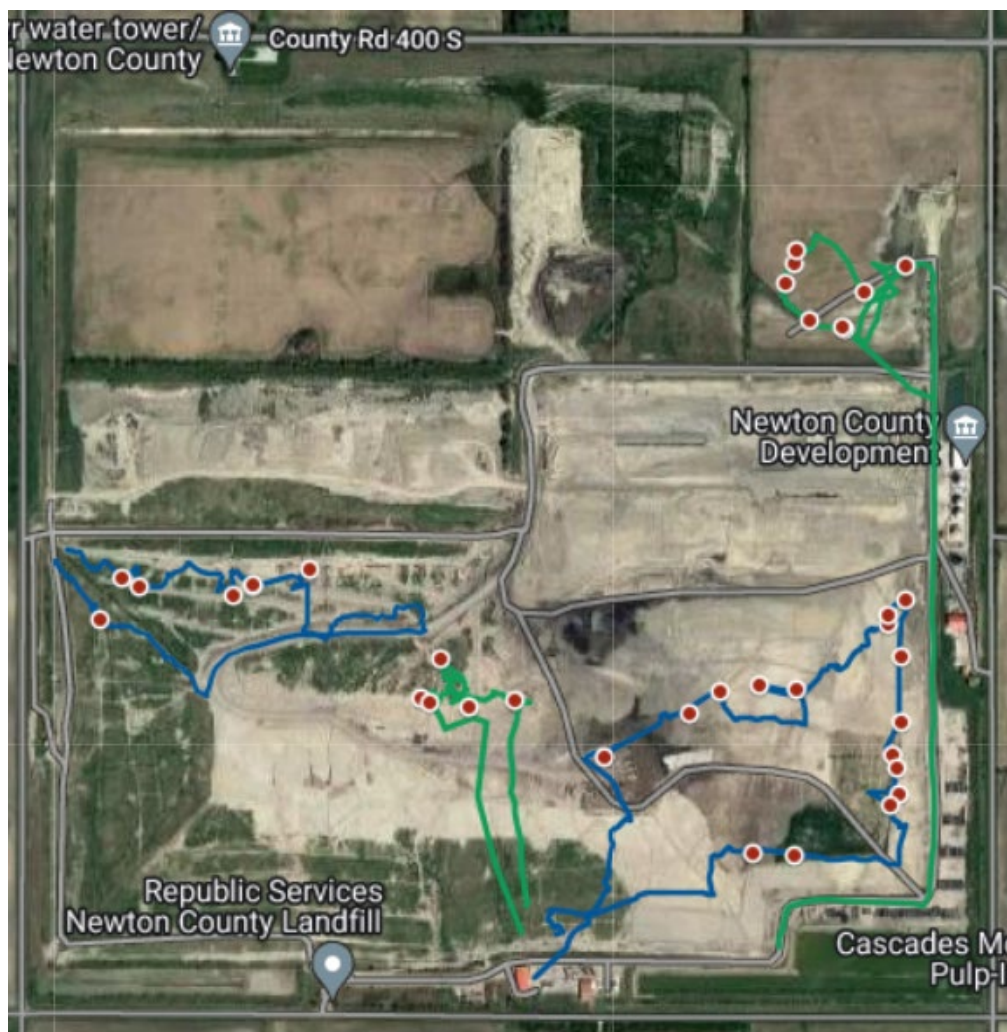
A3	536	2300	Gully on north slope	40.931488	-87.344825
A4	574	1056	Gully on slope by well 126	40.930684	-87.344193
A5	706	1050	At cleanout penetration, north slope east of well 24 by approx. 50 ft	40.930796	-87.343304
A6	796	674	Well 306	40.936299	-87.336783
A7	1756	1352	By crack	40.936318	-87.336835
A8	1056	1756	Well 299	40.936431	-87.337494
A9	540	1071	North of well 293 by about 20 ft	40.936968	-87.33797
A10	1559	1712		40.93726	-87.337808
A11	2967	6028	Well 286	40.937444	-87.337739
A12	1043	2012	30 feet from well 291	40.936838	-87.336426
A13	2545	2737	Entrance to north hill	40.937235	-87.33562
E1	5027	1.60%	Well 129 C	40.929923	-87.341539
E2	618	1200	Exposed area 40-50 ft NE corner downhill	40.930589	-87.339859
E3	758	800	EW-226A	40.930925	-87.339257
E4	798	802	Fernco on well top leaning, visible gas stream on well 211A	40.930944	-87.337756
E5	1205	1205	Well 221, visible stream of gas coming out of gasket	40.931002	-87.338496
E6	556	1000	50 ft south of TLS 16	40.931903	-87.335948
E7	748	1500	Well TLS 16 & surrounding 3 ft radius	40.932036	-87.335958
E8	933	2000	Well TLS 17 and TLS 18	40.932267	-87.335587
E9	2232	3000	Well 205 all around base	40.93143	-87.335694
E10	1681	2000	TLS 28, leaking air line	40.930461	-87.335685
E11	844	1500	140A well	40.929954	-87.335837
E12	891	1700	40 ft SE of well 140A	40.929776	-87.33579
E13	600	800	GW-139, dent around base	40.92938	-87.335725
E14	979	1200	Erosion, 40 ft SW of GW 139	40.929234	-87.335908
E15	643	864	EW-134, tires at base	40.928487	-87.337792
E16	551	1500	5 ft W of well HTC 08 & HTC12/ Well 200	40.92851	-87.338626
E17	511	1700	Leachate cleanout line, dead grass on NW corner	40.932592	-87.350987
E18	571	1700	Between 2 leachate cleanouts, 60 ft east of E-17	40.932475	-87.350649
E19	518	1500	Dead vegetation/ erosion, 60 ft east of GW 33A	40.932352	-87.348805
E20	880	810	Well 144 A	40.932476	-87.34843
E21	3132	2000	HT-01, 15 ft north of 144A	40.932499	-87.348429

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E22	659	1100	L5-11 at edge of bentonite repair	40.932717	-87.347319
E23	525	1500	SW of well 29A	40.931974	-87.351447

*Exceedances A1-A13 were measured with IRwin #1 and confirmed with TVA #B39303. Exceedances E1-E23 were measured with IRwin #2 and confirmed with TVA #B39302.

Map of GPS Path and Exceedances



The blue path was taken by Emma Leeds, DeMarkus Hodge, and Giles Chickering with IRwin #2 and TVA #B39302. The green path was taken by Aileen Drum, Sasa Dunovic, and Linda Rosen with IRwin #1 and TVA #B39303. Red points indicate locations where methane measurements exceeded 500 ppm.