

Proactive Landfill Management Through Real-Time Monitoring and Automated Alerts

May 2026



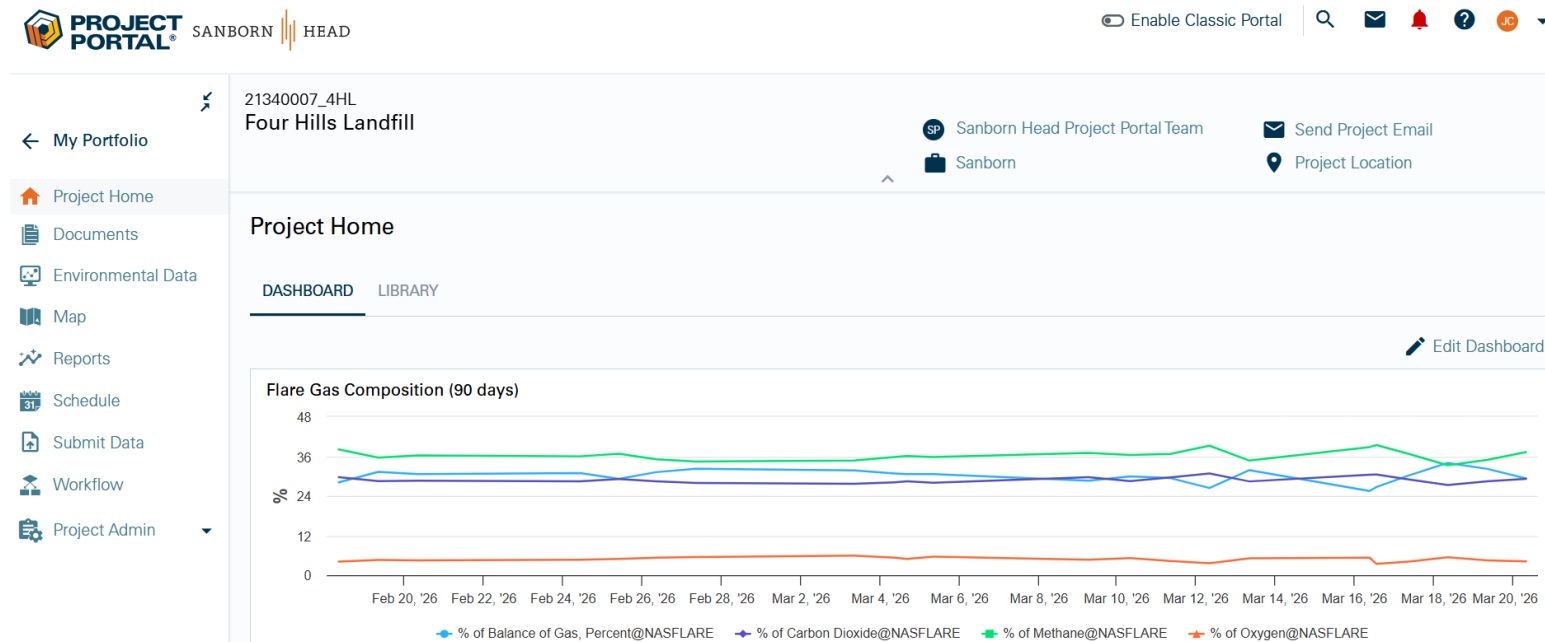
Agenda

- High Frequency Data
 - o Leachate Storage Management
- Field Data
 - o Landfill Gas Monitoring



ddms| Project Portal

- ddms Project Portal
- Web software interface for data management
- Data servers and ddms database schema



High Frequency Data



ddms| Leachate Storage Management



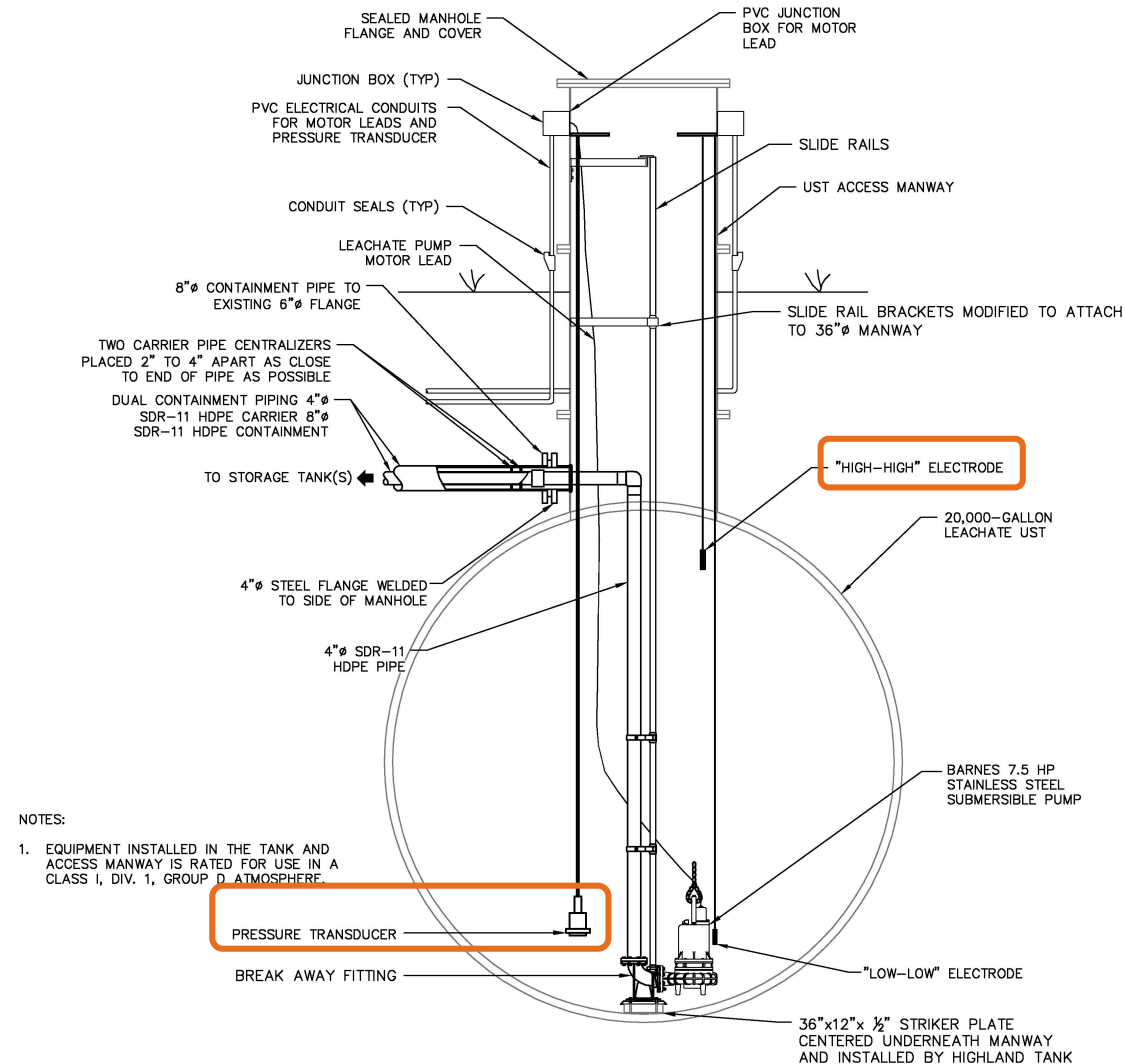
ddms | CFR Title 40 Requirements

§ 264.194 General operating requirements

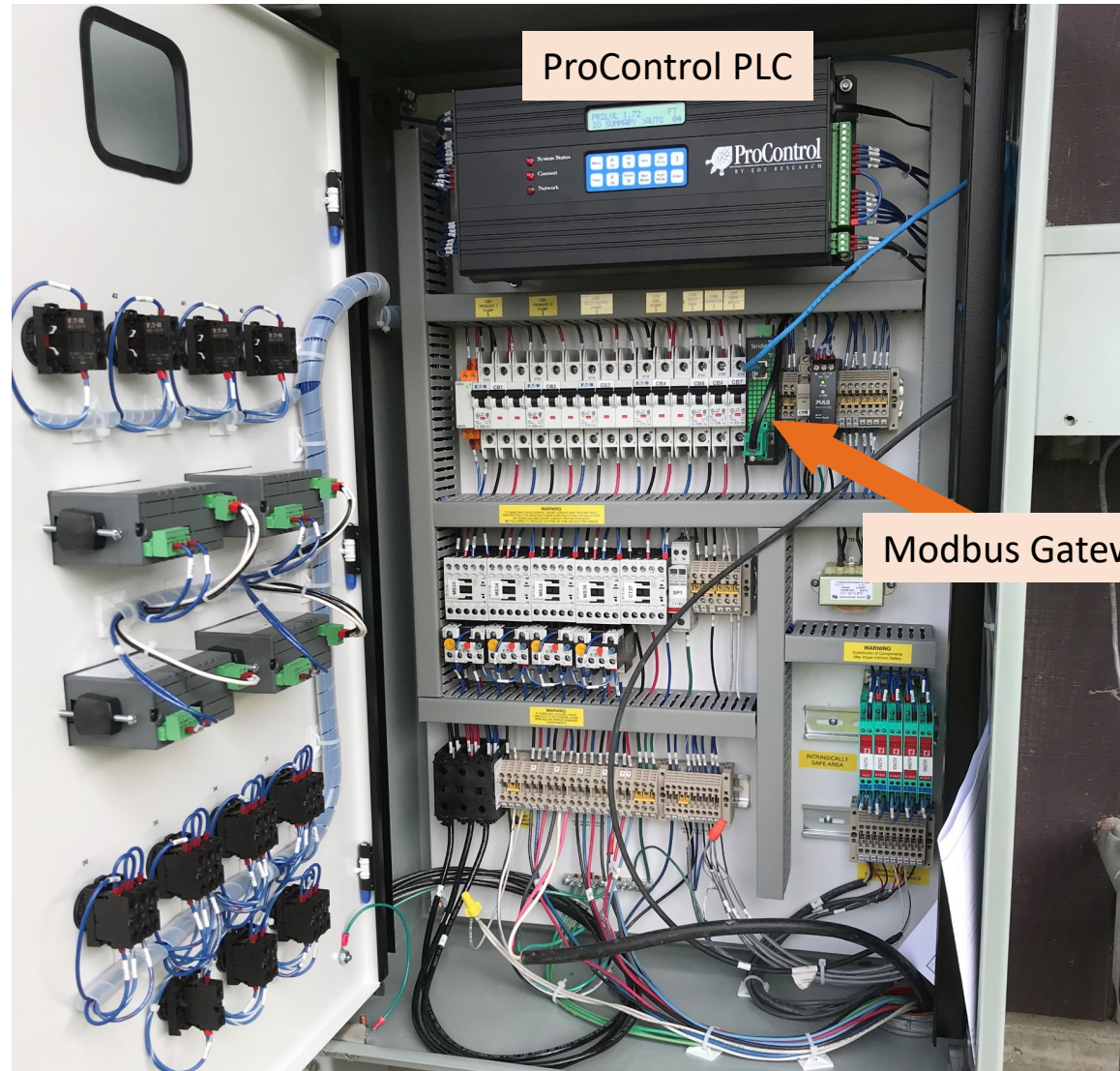
(b) The owner or operator must use appropriate controls and practices to prevent spills and overflows from tank or containment systems. These include at a minimum:

- (1) Spill prevention controls (e.g., check valves, dry disconnect couplings);
- (2) Overfill prevention controls (e.g., level sensing devices, high level alarms, automatic feed cutoff, or bypass to a standby tank); and
- (3) Maintenance of sufficient freeboard in uncovered tanks to prevent overtopping by wave or wind action or by precipitation.

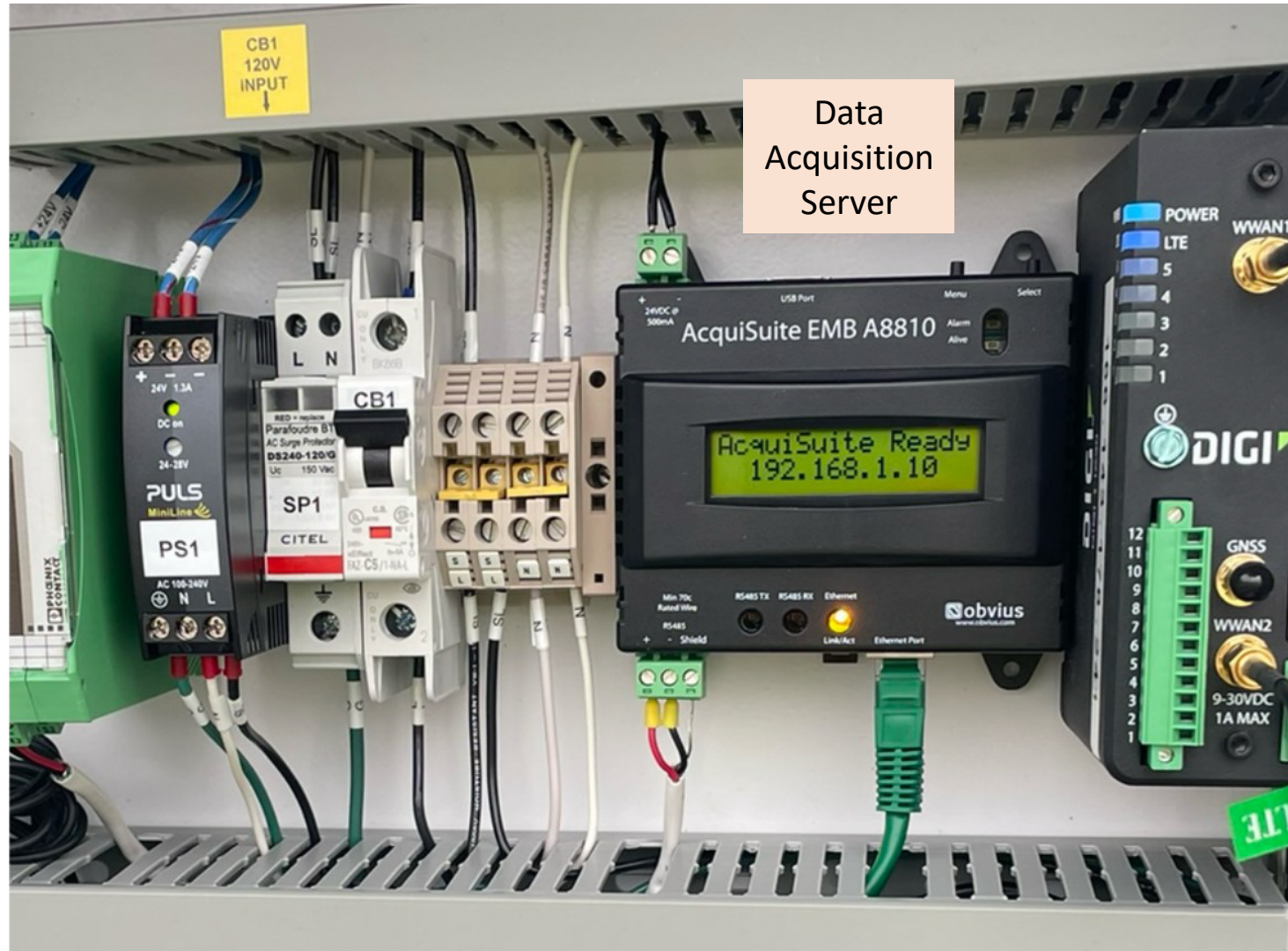
ddms| Leachate Tank Configuration



ddms | Landfill Data Collection



ddms| Remote Monitoring Hardware



Existing
Data
Source

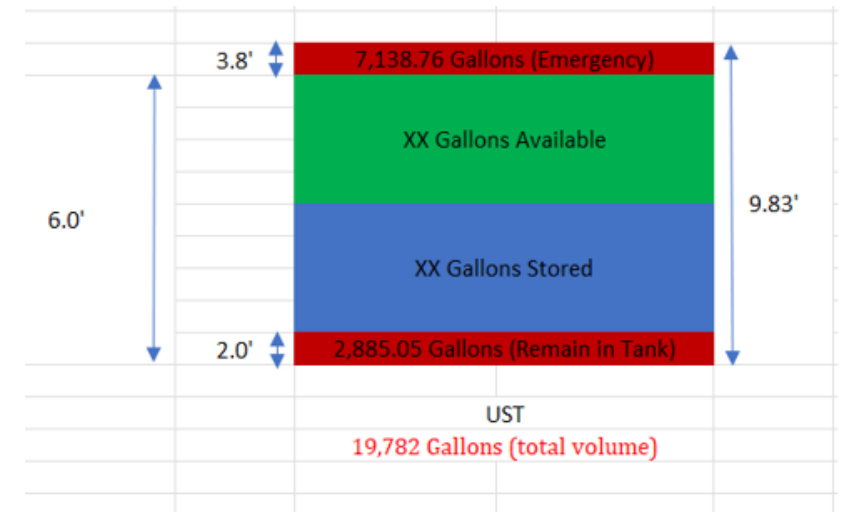
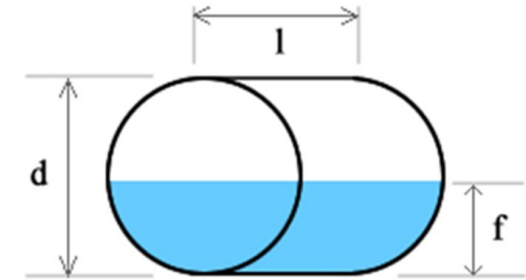
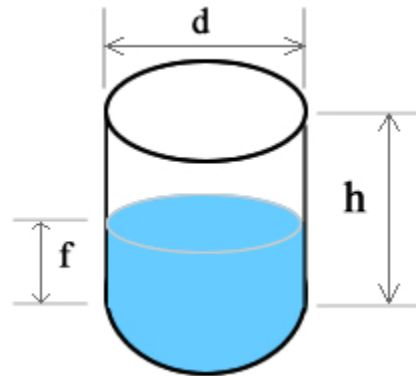
Data
Acquisition
Server

Cell
Modem

Cloud
Database

ddms| Configuration

- High Frequency Data (5-minute stream from sites)
- Complex Calculations
 - Depth of Leachate (ft) converted to Leachate Volume in Tank
- Horizontal and Vertical Tanks
- Aggregates for each Site
- Tank-specific color-coded operating thresholds
- A reproducible solution



ddms| The Solution

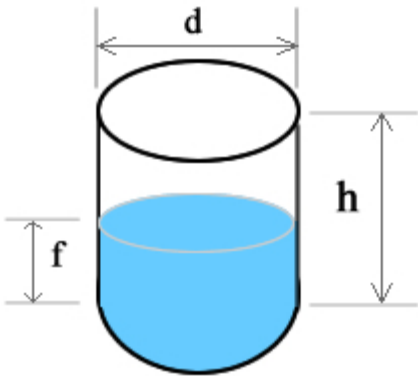
- Calculate most recent volume
- SQL View to perform calculations for each widget
- Leveraged Parameters
- Built to be published once, and managed by via parameters



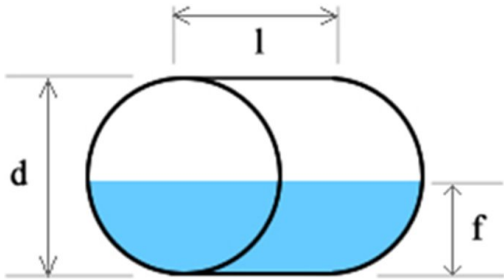
ddms| Configuration

- Cylindrical calculations

Calculations	
	$\text{Volume(fill)} = \pi \cdot (15.385 \text{ ft})^2 \cdot (D) = \text{XX ft}^3 \cdot 7.48051948 = \text{XX gallons}$
	$\text{Volume(available)} = \text{Volume(total)} - \text{Volume(emergency)} - \text{Volume(fill)} - \text{Volume(remain in tank)}$
	$\text{Volume(stored)} = \text{Volume(fill)} - \text{Volume(remain in tank)}$

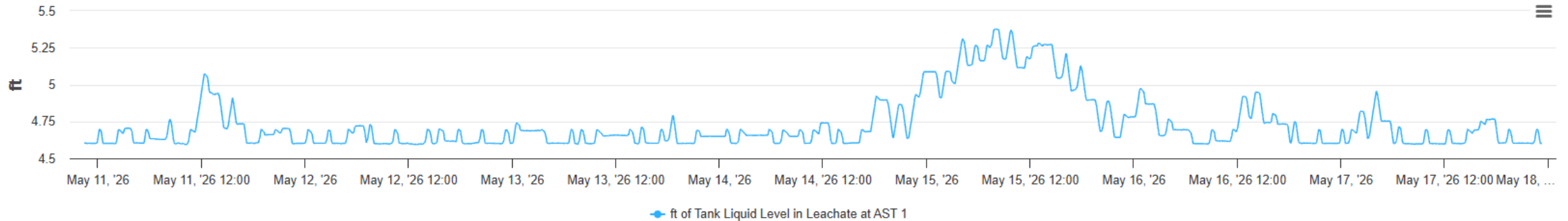


Calculations	
	$\text{Volume(fill)} = (r^2 \cdot \cos^{-1}((r-D)/r)) - (r-D) \cdot \text{square root}(2rD - D^2) = \text{XX ft}^2 = \text{XX ft}^2 \cdot 46.5 \text{ ft} = \text{XX ft}^3 \cdot 7.48051948 = \text{XX gallons}$
	$\text{Volume(available)} = \text{Volume(total)} - \text{Volume(emergency)} - \text{Volume(fill)} - \text{Volume(remain in tank)}$
	$\text{Volume(stored)} = \text{Volume(fill)} - \text{Volume(remain in tank)}$

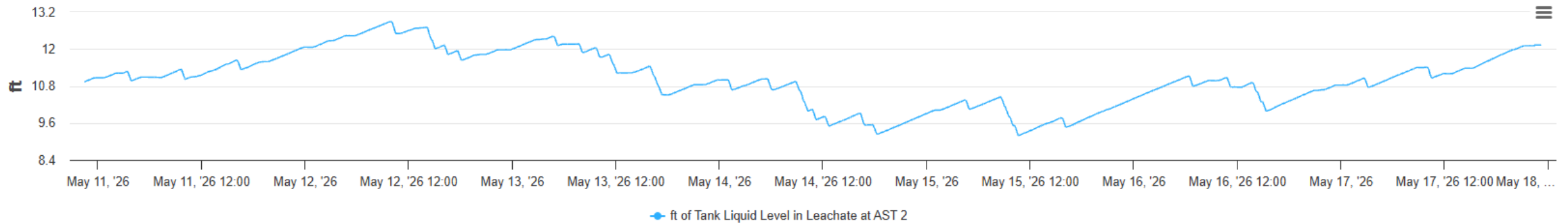


ddms| The Before

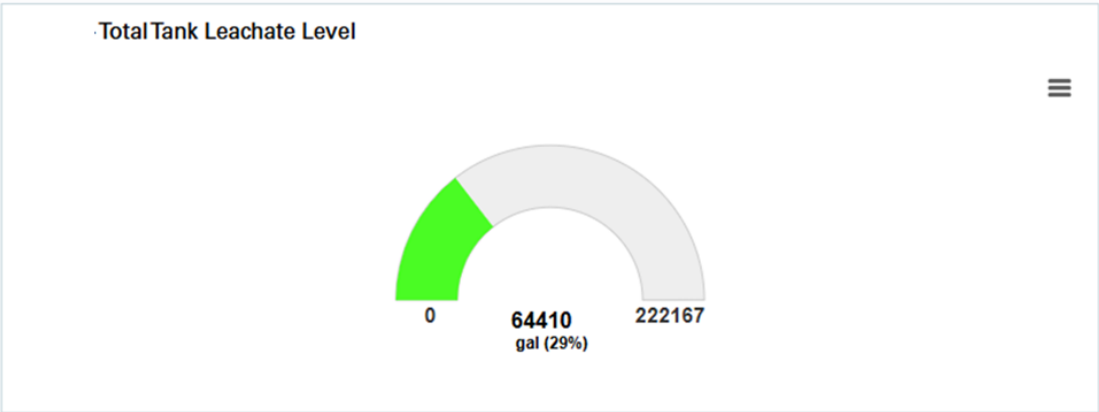
AST-1 Tank Levels



AST-2 Tank Levels

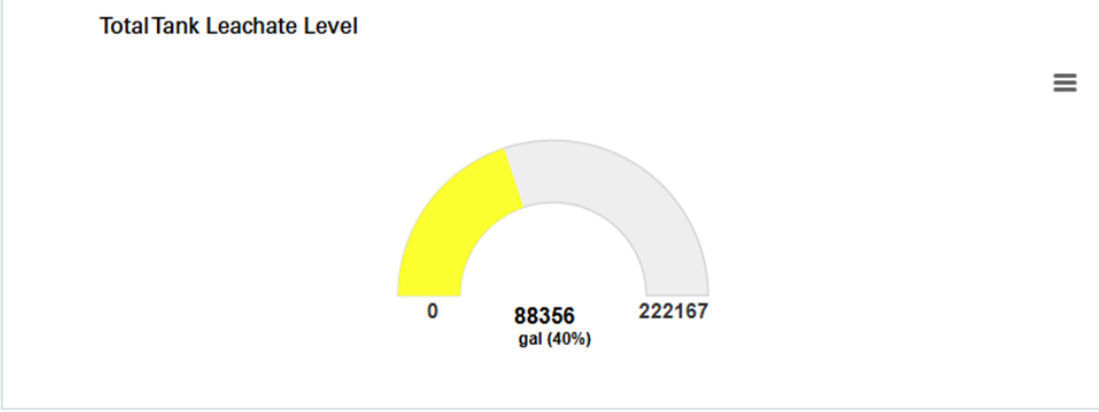


ddms | Dashboard Widgets



Total Tank Leachate Level Table

Minimum Data Timestamp:	Feb 18 2025 2:20PM
Percent Filled (%):	29 ●
Volume of Leachate Stored (Gallons):	64,410 ●
Volume Available (Gallons):	157,756
Target Operating Capacity (Gallons)*:	77,758 (35%) ●
High Operating Capacity (Gallons)*:	166,625 (75%) ●
*Static Value:	



Total Tank Leachate Level Table

Minimum Data Timestamp:	May 13 2025 9:20AM
Percent Filled (%):	40 ●
Volume of Leachate Stored (Gallons):	88,356 ●
Volume Available (Gallons):	133,811
Target Operating Capacity (Gallons)*:	77,758 (35%) ●
High Operating Capacity (Gallons)*:	166,625 (75%) ●
*Static Value:	

ddms | Alarm Notifications



Rules Notification Email

Dear Laura Williams,

The following rule exception occurred.

Project Name	Rule Number	Rule Name	Rule Type	Tag Name
----- Landfill	40	AST Level - Target (35%)	HF - Continuous: Condition	mb005_AST Level (Ft)

Rule Summary

Check if the Tank Liquid Level in Leachate at AST is greater than 10.19 ft then send email to Recipients

Exception

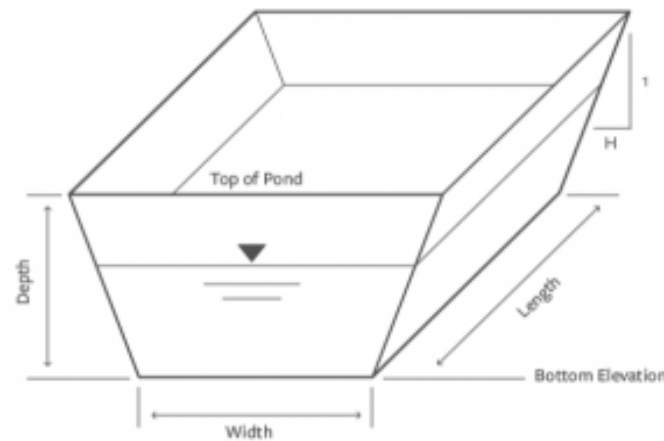
Location	Date/Time	Param	Value	Unit	Medium
AST	4/23/2026 3:40:00 AM	Tank Liquid Level	10.207	ft	Leachate

Thank you,

Project Portal Team

ddms| Future Development

- Further site expansions
- Leachate storage pond option
- Further SMS development for notifications

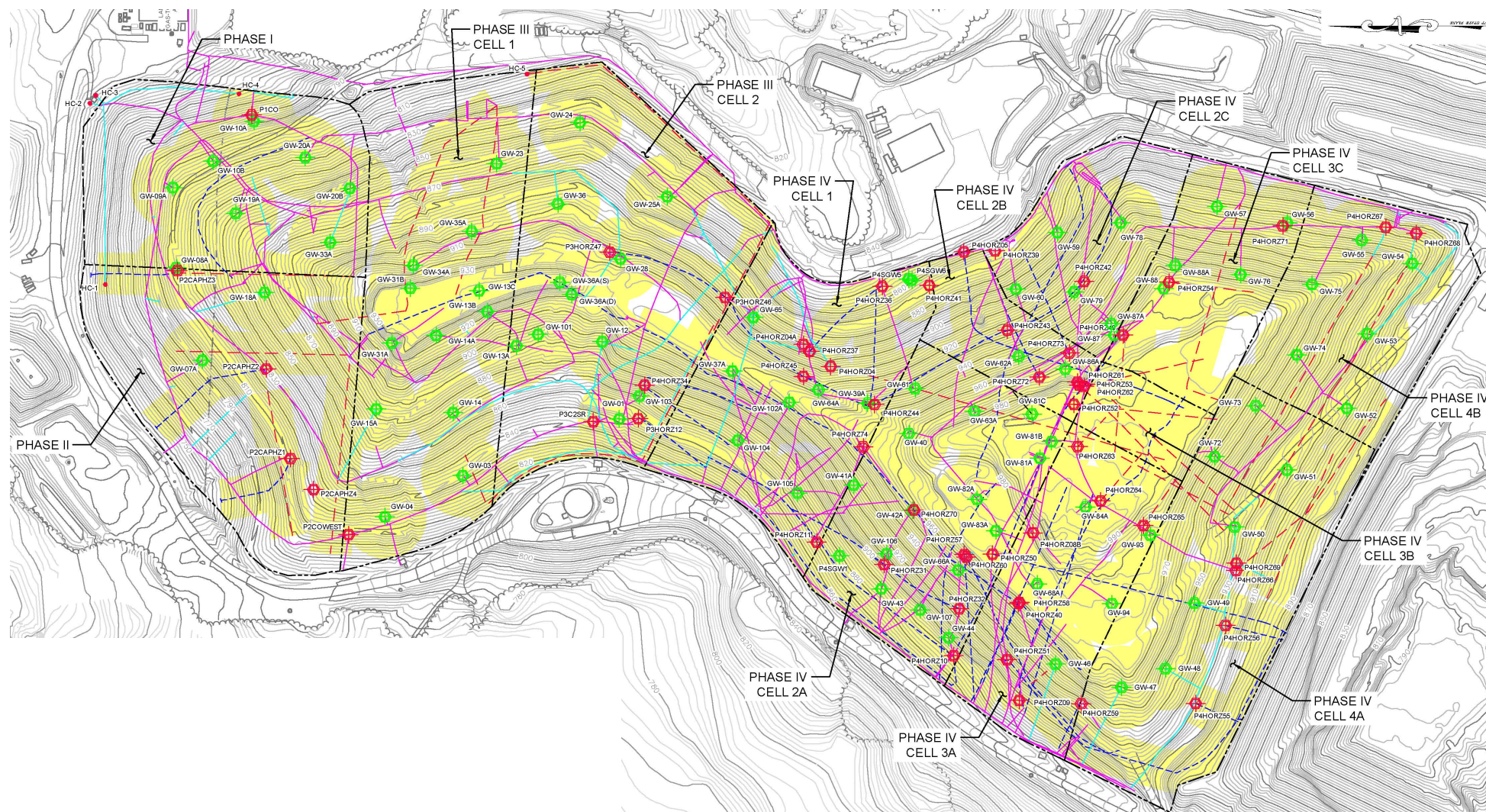


Landfill Gas Field Data



ddms| Landfill Gas Monitoring





ddms| NSPS Subpart XXX Requirements

§ 60.763 Operational standards for collection and control systems

(c) Operate each interior wellhead in the collection system with a landfill gas temperature less than 55°C (131°F).

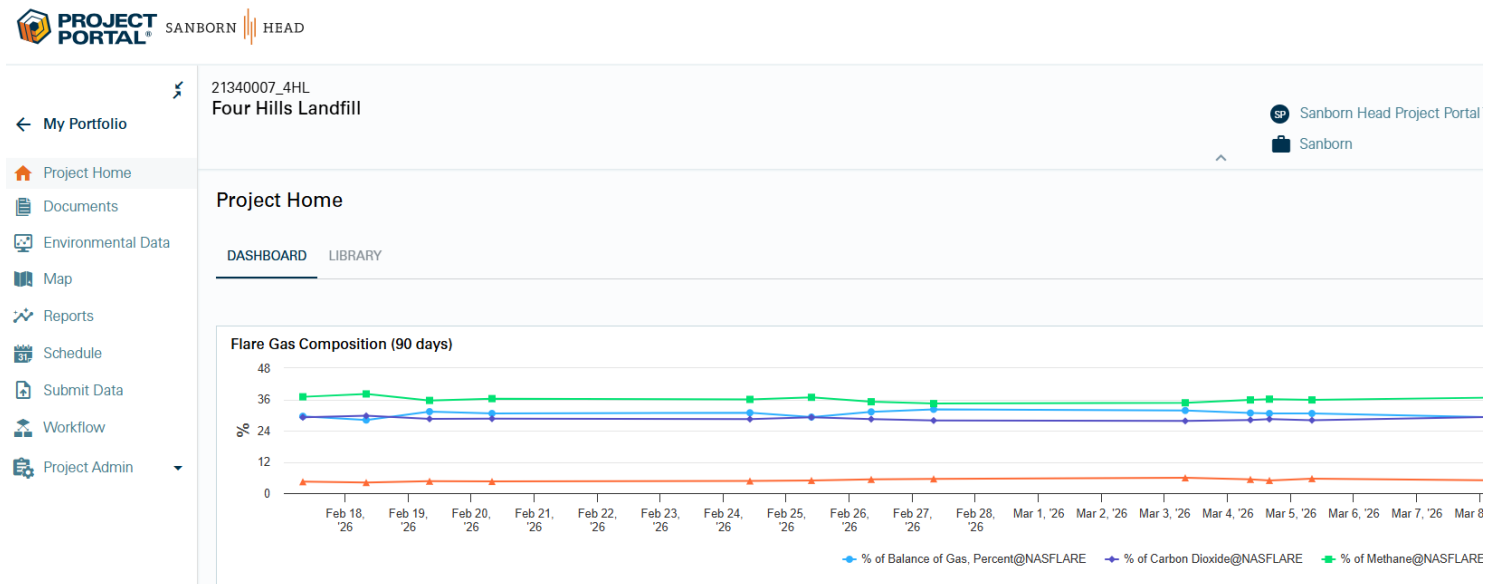
(d) Operate the collection system so that the methane concentration is less than 500 parts per million above background at the surface of the landfill.

ddms | Why Monitor Landfill Gas?



ddms| Field Data Needs

- Ingest the data accurately and quickly
- Categorize records based the complete dataset
- Notify site staff when there are exceedances
- Produce reports



ddms| Field Data Export

- Standard parameters
- Collected via instrument
- Produces a CSV (comma separated values) file

ID	DATE	CH4	CO2	O2	BALANCE	BARO	H2S	SYS-P	ADJ-SP	ADJ-DP	ADJ-TEMP	ADJ-FLOW	ADJ-POWER	INI-SP	INI-DP	INI-TEMP	INI-FLOW	INI-POWER	CHOSEN 1
		%	%	%	%	inches Hg	ppm	inches H2O	inches H2O	inches H2O	DegF	Scfm	BTU	inches H2O	inches H2O	DegF	Scfm	BTU	
NASHV038	2/19/2026 13:43	58	39.7	0.7	1.6	29.74	476	-20.15	-20.09	0.337	63.5	36.9	1300.2	-19.47	0.449	68.6	42.6	1498	40% OPEN
NASHV039	2/19/2026 13:49	58.5	40.6	0.4	0.5	29.75	181	-21	-20.93	0.095	74.6	19.1	677.9	-20.23	0.083	73.9	17.8	630.9	FULL OPEN
NASHV040	2/19/2026 14:00	51.2	37.4	2	9.4	29.75	90	-21.61	-7.8	0.218	85.2	29.1	906.3	-7.74	0.218	85.2	29.2	907	15% OPEN
NASHV041	2/19/2026 14:50	58.5	40.5	0.4	0.6	29.75	1015	-20.71	-12.49	0.06	79.4	15.2	541.1	-9.27	0.034	77.1	11.4	405.6	25% OPEN
NASHV042	2/19/2026 15:02	52.9	38.6	0.6	7.9	29.75	995	-18.11	-16.41	0.025	65.3	9.8	313.5	-14.8	0.01	64.8	6	191.2	25% OPEN
NASHV044	2/19/2026 15:05	58.4	40.9	0.1	0.6	29.74	343	-17.88	-17.89	0.175	60.2	26.6	942.5	-16.53	0.257	52.7	32.6	1156.8	50% OPEN
NASHV043	2/19/2026 15:23	58.4	41.4	0.1	0.1	29.75	534	1.38	1.41	0.038	75.8	12.2	434	3.37	-0.308	73	N/A	N/A	FULL OPEN
NASHV045	2/19/2026 15:29	48.5	36.7	1.2	13.6	29.75	183	-19.35	-19.35	0.034	66.3	11.3	333.1	-19.34	0.026	65.3	9.8	289	25% OPEN
NASFLARE	2/20/2026 8:09	36.3	28.6	4.5	30.6	29.8	138	100.37	100.37	<<<<	32.2	0	0	100.37	<<<<	32.3	0	0	CLOSED
NASHV040	2/20/2026 8:30	56	40.9	0.3	2.8	29.67	74	-22.35	-9.18	0.258	79	32	1086	-7.76	0.083	63.5	18.2	618.3	30% OPEN
NASHV041	2/20/2026 8:35	58.5	41.3	0.2	0	29.67	920	-20.48	-20.38	0.08	73.1	17.4	619.9	-17.46	0.044	72	12.9	457.4	40% OPEN
NASHH149	2/20/2026 10:29	26.9	24.6	6.2	42.3	29.6	45	-21.82	-0.01	0.016	45.9	7.8	128.1	-0.01	0.008	45.6	5.4	87.6	5% OPEN
NASHH148	2/20/2026 10:33	37	30.2	4.3	28.5	29.6	69	-21.61	-0.08	0.06	43.4	15.6	350.3	-0.08	0.062	43.1	15.9	357.4	5% OPEN
NASHH147	2/20/2026 10:36	36.2	43.2	1	19.6	29.61	169	-20.32	-0.14	0.053	42.7	14.3	314.1	-0.15	0.056	42.6	14.7	323	5% OPEN

ddms| Field Data Export

ID	DATE	CH4	CO2	O2	BALANCE	BARO	H2S	SYS-P	ADJ-SP	ADJ-DP
		%	%	%	%	inches Hg	ppm	inches H2O	inches H2O	inches H2O
NASHV038	2/19/2026 13:43	58	39.7	0.7	1.6	29.74	476	-20.15	-20.09	0.337
NASHV039	2/19/2026 13:49	58.5	40.6	0.4	0.5	29.75	181	-21	-20.93	0.095
NASHV040	2/19/2026 14:00	51.2	37.4	2	9.4	29.75	90	-21.61	-7.8	0.218
NASHV041	2/19/2026 14:50	58.5	40.5	0.4	0.6	29.75	1015	-20.71	-12.49	0.06
NASHV042	2/19/2026 15:02	52.9	38.6	0.6	7.9	29.75	995	-18.11	-16.41	0.025
NASHV044	2/19/2026 15:05	58.4	40.9	0.1	0.6	29.74	343	-17.88	-17.89	0.175
NASHV043	2/19/2026 15:23	58.4	41.4	0.1	0.1	29.75	534	1.38	1.41	0.038
NASHV045	2/19/2026 15:29	48.5	36.7	1.2	13.6	29.75	183	-19.35	-19.35	0.034
NASFLARE	2/20/2026 8:09	36.3	28.6	4.5	30.6	29.8	138	100.37	100.37	<<<<
NASHV040	2/20/2026 8:30	56	40.9	0.3	2.8	29.67	74	-22.35	-9.18	0.258

ddms| Field Data Export

ID	DATE	CH4	CO2	O2	BALANCE	BARO	H2S	SYS-P	ADJ-SP	ADJ-DP
		%	%	%	%	inches Hg	ppm	inches H2O	inches H2O	inches H2O
NASHV038	2/19/2026 13:43	58	39.7	0.7	1.6	29.74	476	-20.15	-20.09	0.337
NASHV039	2/19/2026 13:49	58.5	40.6	0.4	0.5	29.75	181	-21	-20.93	0.095
NASHV040	2/19/2026 14:00	51.2	37.4	2	9.4	29.75	90	-21.61	-7.8	0.218
NASHV041	2/19/2026 14:50	58.5	40.5	0.4	0.6	29.75	1015	-20.71	-12.49	0.06
NASHV042	2/19/2026 15:02	52.9	38.6	0.6	7.9	29.75	995	-18.11	-16.41	0.025
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NASHV045	2/19/2026 15:29	48.5	36.7	1.2	13.6	29.75	183	-19.35	-19.35	0.034
NASFLARE	2/20/2026 8:09	36.3	28.6	4.5	30.6	29.8	138	100.37	100.37	<<<<
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ddms| Field Data Export

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		%	%	%	%	inches Hg	ppm	inches H2O	inches H2O	inches H2O
NASHV038	2/19/2026 13:43	58	39.7	0.7	1.6	29.74	476	-20.15	-20.09	0.337
NASHV039	2/19/2026 13:49	58.5	40.6	0.4	0.5	29.75	181	-21	-20.93	0.095
NASHV040	2/19/2026 14:00	51.2	37.4	2	9.4	29.75	90	-21.61	-7.8	0.218
NASHV041	2/19/2026 14:50	58.5	40.5	0.4	0.6	29.75	1015	-20.71	-12.49	0.06
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NASHV044	2/19/2026 15:05	58.4	40.9	0.1	0.6	29.74	343	-17.88	-17.89	0.175
NASHV043	2/19/2026 15:23	58.4	41.4	0.1	0.1	29.75	534	1.38	1.41	0.038
NASHV045	2/19/2026 15:29	48.5	36.7	1.2	13.6	29.75	183	-19.35	-19.35	0.034
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NASHV040	2/20/2026 8:30	56	40.9	0.3	2.8	29.67	74	-22.35	-9.18	0.258

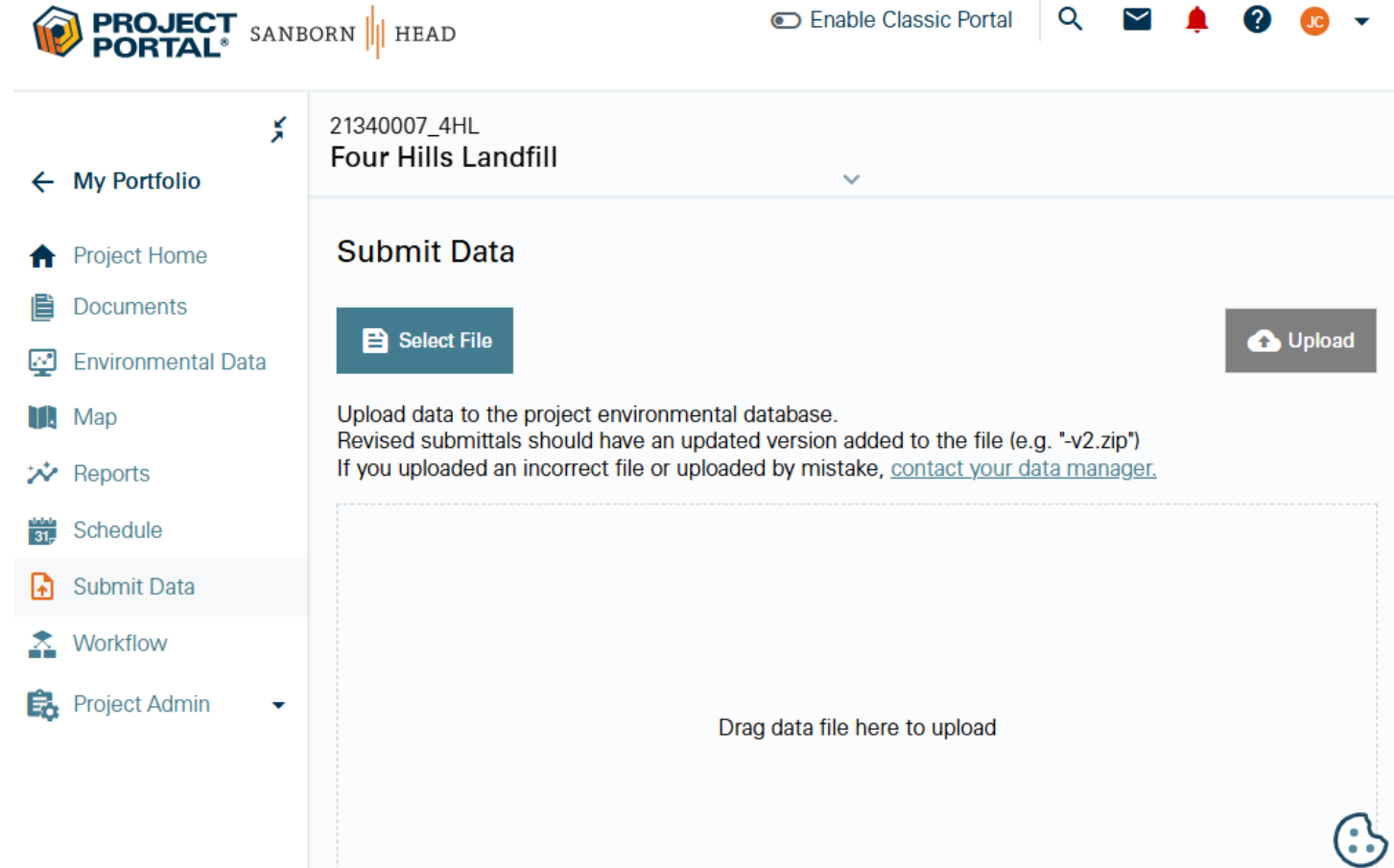
ddms| Field Data Export

ID	DATE	CH4	CO2	O2	BALANCE	BARO	H2S	SYS-P	ADJ-SP	ADJ-DP
		%	%	%	%	inches Hg	ppm	inches H2O	inches H2O	inches H2O
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NASHV039	2/19/2026 13:49	58.5	40.6	0.4	0.5	29.75	181	-21	-20.93	0.095
NASHV040	2/19/2026 14:00	51.2	37.4	2	9.4	29.75	90	-21.61	-7.8	0.218
NASHV041	2/19/2026 14:50	58.5	40.5	0.4	0.6	29.75	1015	-20.71	-12.49	0.06
NASHV042	2/19/2026 15:02	52.9	38.6	0.6	7.9	29.75	995	-18.11	-16.41	0.025
NASHV044	2/19/2026 15:05	58.4	40.9	0.1	0.6	29.74	343	-17.88	-17.89	0.175
NASHV043	2/19/2026 15:23	58.4	41.4	0.1	0.1	29.75	534	1.38	1.41	0.038
NASHV045	2/19/2026 15:29	48.5	36.7	1.2	13.6	29.75	183	-19.35	-19.35	0.034
NASFLARE	2/20/2026 8:09	36.3	28.6	4.5	30.6	29.8	138	100.37	100.37	<<<<
NASHV040	2/20/2026 8:30	56	40.9	0.3	2.8	29.67	74	-22.35	-9.18	0.258

ddms| Field Data Upload

- File is a CSV
- Project identifier
- Ready to upload!

 21340007_4HL-XD7-FEB2026NCV2.CSV



The screenshot displays the Project Portal interface. At the top, the header includes the 'PROJECT PORTAL' logo, 'SANBORN' and 'HEAD' branding, and a toggle for 'Enable Classic Portal'. The left sidebar contains navigation links: 'My Portfolio', 'Project Home', 'Documents', 'Environmental Data', 'Map', 'Reports', 'Schedule', 'Submit Data' (highlighted), 'Workflow', and 'Project Admin'. The main content area is titled '21340007_4HL Four Hills Landfill' and features a 'Submit Data' section. This section includes a 'Select File' button, an 'Upload' button, and instructions: 'Upload data to the project environmental database. Revised submittals should have an updated version added to the file (e.g. "-v2.zip"). If you uploaded an incorrect file or uploaded by mistake, [contact your data manager](#).' Below the text is a large dashed box with the prompt 'Drag data file here to upload' and a cookie icon in the bottom right corner.

ddms| Field Data Upload - DPS

- File Format?
- User permissions?
- Problematic characters?
- Expected columns?

ddms| Field Data Upload - DPS

- File Format?
- User permissions?
- Problematic characters?
- Expected columns?

- Do the locations exist in the database?
- Do the parameters exist in the database?
- Does the EDD have unique records?
- Are the records unique to the database?

ddms| Field Data – Reporting

- Four Hills: WWW
- Oxygen Limit: 5
- Pressure Limit: 0
- Temperature Limit: 131
- Variances



Four Hills Landfill

NSPS Wellfield Exceedances Report

Location ID	Start of Exceedances	Oxygen limit	Pressure Limit	Temp Limit	Collection Date	Oxygen	Initial Static Pressure	Adjusted Static Pressure	Initial Temperature	Adjusted Temperature	Special Message
NSPS Subpart WWW Requirements											
NASH0019	12/9/2025 11:33:00 AM	5	0	131	12/9/2025 11:33 AM	0.2	0.01	-0.01	22	23	
Exceedance Duration: 0 Days							Press. Duration: 0 Days				
NASH0039	11/20/2025 10:29:00 AM	5	0	131	11/20/2025 10:29 AM	6.9	-0.88	-0.87	46.3	46.1	
					12/10/2025 11:11 AM	3.3	-0.19	-0.19	40.2	40.4	
Exceedance Duration: 20 Days						O2 Duration: 20 Days					
NASH018R	12/10/2025 3:14:00 PM	5	0	131	12/10/2025 3:14 PM	1.6	0	-0.08	41.5	41.5	
Exceedance Duration: 0 Days							Press. Duration: 0 Days				
NASHH042	10/22/2025 1:52:00 PM	5	0	131	10/22/2025 1:52 PM	5.5	-18.5	-18.2	71.6	71.7	
					12/4/2025 10:19 AM	0.8	30.79	31.26	38.2	38.3	
					1/28/2026 1:31 PM	8	-27.74	-27.74	30	30.2	
					3/9/2026 11:17 AM	7.4	-12.86	-12.77	67.6	67.7	
Exceedance Duration: 203 Days (Not Closed)						O2 Duration: 203 Days		Press. Duration: 160 Days			
NASHH051	9/23/2025 10:19:00 AM	5	0	131	9/23/2025 10:19 AM	0.1	12.12	12.13	76.2	76.2	
					10/23/2025 2:04 PM	7.3	-21.15	-21.11	69.4	69.4	
					11/26/2025 3:40 PM	1.7	-9.66	-9.65	61.1	61.2	
Exceedance Duration: 64 Days						O2 Duration: 34 Days		Press. Duration: 64 Days			
NASHH062	9/23/2025 10:21:00 AM	22	0	131	9/23/2025 10:21 AM	2.6	12.03	12.04	75.9	76	
					10/23/2025 2:06 PM	1.6	-21.12	-21.14	59.2	59.1	
Exceedance Duration: 30 Days							Press. Duration: 30 Days				
NASHH069	10/16/2025 10:35:00 AM	5	0	131	10/16/2025 10:35 AM	11.1	-22.87	-22.9	52.3	52.4	
					11/24/2025 1:31 PM	4	-22.89	-22.89	51.1	51.4	
Exceedance Duration: 39 Days						O2 Duration: 39 Days					

ddms| Field Data – Reporting

- Oxygen Limit: 5
- Pressure Limit: 0
- Temperature Limit: 131
- Variances

NASHH062	9/23/2025 10:21:00 AM	22	0	131
Exceedance Duration: 30 Days				

PROJECT PORTAL [®]											
Four Hills Landfill											
NSPS Wellfield Exceedances Report											
Location ID	Start of Exceedances	Oxygen limit	Pressure Limit	Temp Limit	Collection Date	Oxygen	Initial Static Pressure	Adjusted Static Pressure	Initial Temperature	Adjusted Temperature	Special Message
NSPS Subpart WWW Requirements											
NASH0019	12/9/2025 11:33:00 AM	5	0	131	12/9/2025 11:33 AM	0.2	0.01	-0.01	22	23	
Exceedance Duration: 0 Days						Press. Duration: 0 Days					
NASH0039	11/20/2025 10:29:00 AM	5	0	131	11/20/2025 10:29 AM	6.9	-0.88	-0.87	46.3	46.1	
					12/10/2025 11:11 AM	3.3	-0.19	-0.19	40.2	40.4	
Exceedance Duration: 20 Days						O2 Duration: 20 Days					
NASH018R	12/10/2025 3:14:00 PM	5	0	131	12/10/2025 3:14 PM	1.6	0	-0.08	41.5	41.5	
Exceedance Duration: 0 Days						Press. Duration: 0 Days					
NASHH042	10/22/2025 1:52:00 PM	5	0	131	10/22/2025 1:52 PM	5.5	-18.5	-18.2	71.6	71.7	
					12/4/2025 10:19 AM	0.8	30.79	31.26	38.2	38.3	
					1/28/2026 1:31 PM	8	-27.74	-27.74	30	30.2	
					3/9/2026 11:17 AM	7.4	-12.86	-12.77	67.6	67.7	
										O2 Duration: 203 Days	
131	9/23/2025 10:19 AM					0.1	12.12	12.13	76.2	76.2	
	10/23/2025 2:04 PM					7.3	-21.15	-21.11	69.4	69.4	
	11/26/2025 3:40 PM					1.7	-9.66	-9.65	61.1	61.2	
					O2 Duration: 34 Days			Press. Duration: 64 Days			
131	9/23/2025 10:21 AM					2.6	12.03	12.04	75.9	76	
	10/23/2025 2:06 PM					1.6	-21.12	-21.14	59.2	59.1	
					Press. Duration: 30 Days						
NASHH069	10/16/2025 10:35:00 AM	5	0	131	10/16/2025 10:35 AM	11.1	-22.87	-22.9	52.3	52.4	
					11/24/2025 1:31 PM	4	-22.89	-22.89	51.1	51.4	
Exceedance Duration: 39 Days						O2 Duration: 39 Days					

ddms| Field Data – Reporting

- Exceedance Tracking

Location ID	Start of Exceedances	Oxygen limit	Pressure Limit	Temp Limit	Collection Date	Oxygen	Initial Static Pressure	Adjusted StaticPressure	Initial Temperature	Adjusted Temperature
NASHH051	9/23/2025 10:19:00 AM	5	0	131	9/23/2025 10:19 AM	0.1	12.12	12.13	76.2	76.2
					10/23/2025 2:04 PM	7.3	-21.15	-21.11	69.4	69.4
					11/26/2025 3:40 PM	1.7	-9.66	-9.65	61.1	61.2
Exceedance Duration: 64 Days						O2 Duration: 34 Days	Press. Duration: 64 Days			

ddms| Field Data – Reporting

- Exceedance Tracking

Location ID	Start of Exceedances	Oxygen limit	Pressure Limit	Temp Limit	Collection Date	Oxygen	Initial Static Pressure	Adjusted StaticPressure	Initial Temperature	Adjusted Temperature
NASHH051	9/23/2025 10:19:00 AM	5	0	131	9/23/2025 10:19 AM	0.1	12.12	12.13	76.2	76.2
					10/23/2025 2:04 PM	7.3	-21.15	-21.11	69.4	69.4
					11/26/2025 3:40 PM	1.7	-9.66	-9.65	61.1	61.2
Exceedance Duration: 64 Days						O2 Duration: 34 Days	Press. Duration: 64 Days			

ddms| Field Data – Reporting

- Exceedance Tracking

Location ID	Start of Exceedances	Oxygen limit	Pressure Limit	Temp Limit	Collection Date	Oxygen	Initial Static Pressure	Adjusted StaticPressure	Initial Temperature	Adjusted Temperature
NASHH051	9/23/2025 10:19:00 AM	5	0	131	9/23/2025 10:19 AM	0.1	12.12	12.13	76.2	76.2
					10/23/2025 2:04 PM	7.3	-21.15	-21.11	69.4	69.4
					11/26/2025 3:40 PM	1.7	-9.66	-9.65	61.1	61.2
Exceedance Duration: 64 Days						O2 Duration: 34 Days	Press. Duration: 64 Days			

ddms| Field Data – Reporting

- Exceedance Tracking

Location ID	Start of Exceedances	Oxygen limit	Pressure Limit	Temp Limit	Collection Date	Oxygen	Initial Static Pressure	Adjusted StaticPressure	Initial Temperature	Adjusted Temperature
NASHH051	9/23/2025 10:19:00 AM	5	0	131	9/23/2025 10:19 AM	0.1	12.12	12.13	76.2	76.2
					10/23/2025 2:04 PM	7.3	-21.15	-21.11	69.4	69.4
					11/26/2025 3:40 PM	1.7	-9.66	-9.65	61.1	61.2
Exceedance Duration: 64 Days						O2 Duration: 34 Days	Press. Duration: 64 Days			

ddms| Field Data – Calculation Performance

- Performance is key in production
- Calculations run every few hours
- Reports and maps pull from table
- Ideal for not impacting other database processes

Wellfield_NSPS_ID	LocationID	SortOrder	Regulation	OverallExceedStart	CleanDate	O2_StartValue	O2_I
1	NASH0009	NULL	NSPS Subpart WWW Requirements	2025-02-11 15:51:00.000	2025-03-28 13:45:00.000	0.7	0
2	NASH0014	NULL	NSPS Subpart WWW Requirements	2024-02-02 11:04:00.000	2024-03-01 13:42:00.000	22	1
3	NASH0014	NULL	NSPS Subpart WWW Requirements	2024-12-04 14:19:00.000	2025-01-07 15:25:00.000	22.4	1
4	NASH0019	NULL	NSPS Subpart WWW Requirements	2025-01-03 14:08:00.000	2025-03-27 15:34:00.000	19	1
5	NASH0019	NULL	NSPS Subpart WWW Requirements	2025-12-09 11:33:00.000	2025-12-09 11:33:00.000	0.2	0
6	NASH0019	NULL	NSPS Subpart WWW Requirements	2026-01-05 15:16:00.000	NULL	2.7	0
7	NASH0023	NULL	NSPS Subpart WWW Requirements	2024-03-01 10:49:00.000	2024-04-02 13:59:00.000	5.9	1
8	NASH0023	NULL	NSPS Subpart WWW Requirements	2025-04-01 10:58:00.000	2025-05-02 13:52:00.000	6.8	1

ddms| Field Data – Reporting

- Open Exceedances



Four Hills Landfill

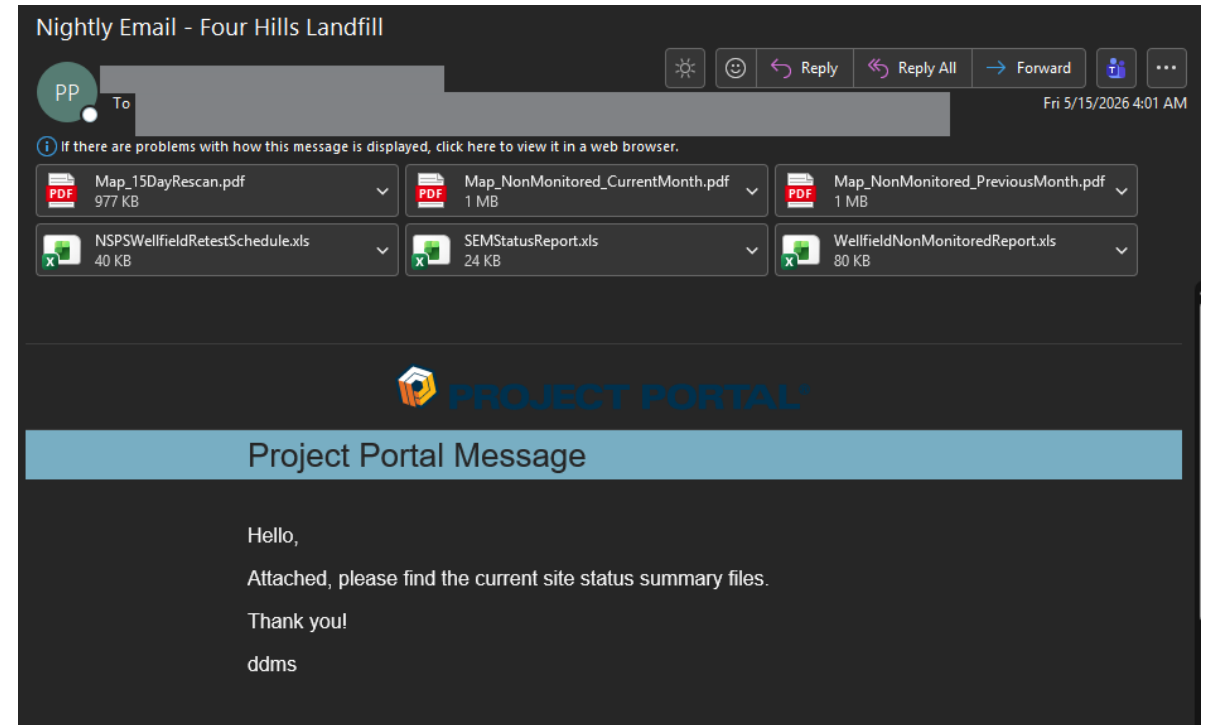
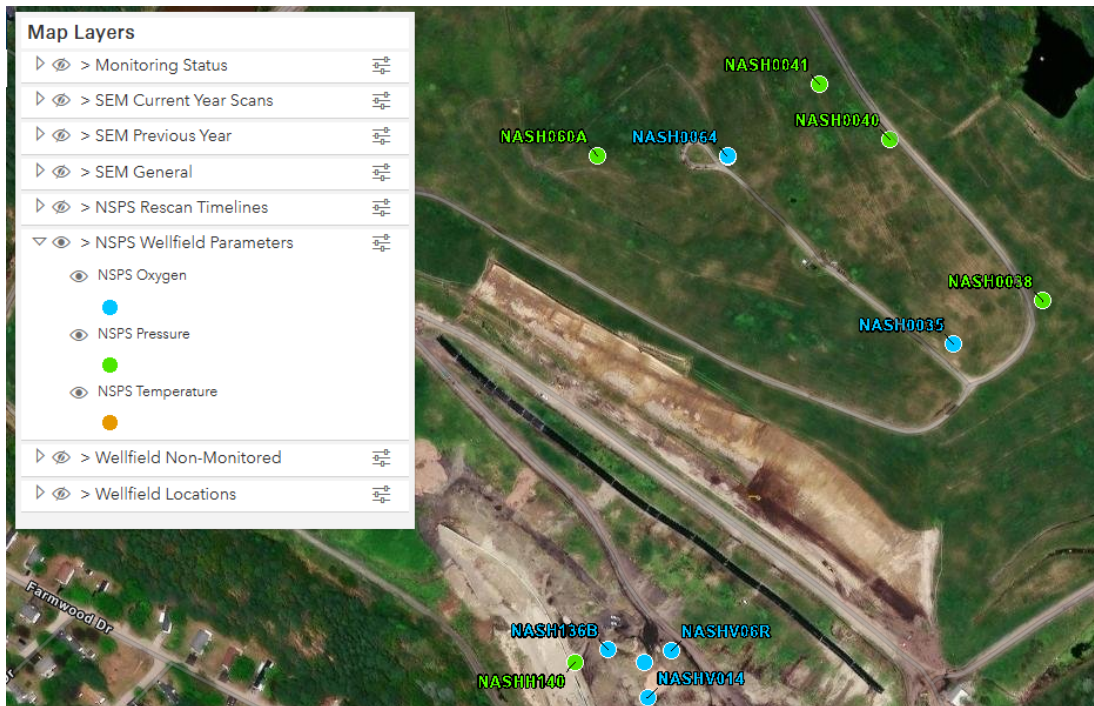
NSPS Wellfield Retest Schedule for Unclosed Exceedances

05/18/2026

Location ID	Overall Event Start Date	Parameter	Values at Event Start	1st Exceed Date for Parameter	1st Exceed Value for Parameter	Standard Deadlines			Special Message
						5 Days	15 Days	120 Days	
NSPS Subpart WWW Requirements									
NASH0019	01/05/2026 15:16	Temperature	25(Init) 25(Adj)						
		Pressure	0.14(Init) 0.14(Adj)	01/05/2026 15:16	0.14	1/10/2026	1/20/2026	5/5/2026	
		Oxygen	2.7						
NASH0034	03/20/2026 08:18	Temperature	40.4(Init) 40.3(Adj)						
		Pressure	0.01(Init) 0.01(Adj)	03/20/2026 08:18	0.01	3/25/2026	4/4/2026	7/18/2026	
		Oxygen	10.7						
NASH0035	03/18/2026 14:37	Temperature	35.2(Init) 35.2(Adj)						
		Pressure	-3.48(Init) -3.43(Adj)						
		Oxygen	22.1	03/18/2026 14:37	22.1	3/23/2026	4/2/2026	7/16/2026	

ddms| Field Data – Maps and Nightly Email

- Nightly/weekly email
- Maps and reports



ddms| Field Data – Client Use

- Prevent landfill fires and improve site safety
- Maintain effective landfill gas collection and control
- Optimize renewable energy production
- Support environmental compliance

Discussion & Next Steps



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