

TECHNICAL MEMORANDUM

DATE: January 27, 2025

TO: Emily Brickman, P.G., *Senior Project Manager – Geologist, EnSafe*

FROM: Thomas Huetter, PG, *Harbor Senior Project Manager*

RE: Explosive Gas Monitoring
NABORS Landfill
Mountain Home, AR
Harbor Project No: ENSF-23299

Harbor conducted explosive gas (methane) monitoring of the existing site perimeter gas probes at the NABORS Landfill on November 5, 2024. A RAE Systems QRAE II Multi-gas Diffusion Detector (multi-gas monitor) was utilized to measure methane (CH₄) in percent lower explosive limit (% LEL) from 0 – 100%, oxygen (O₂) in percent volume, carbon monoxide (CO) in parts per million (ppm), and hydrogen sulfide (H₂S) in ppm. Results of the explosive gas monitoring are summarized in the table below.

NABORS Landfill	
Semi-Annual Explosive Gas Monitoring – November 2024	
Weather Conditions:	Overcast, mid 70s °F, light breeze

Sample Point	Date	Time	CH ₄ (% LEL)	% O ₂	CO	H ₂ S
GP-1	11/5/24	1222	0	11.1	0	0.0
GP-2	11/5/24	1239	0	19.6	0	0.0
GP-3	11/5/24	1244	0	14.1	0	0.0
GP-4	11/5/24	1301	0	19.1	0	0.0
GP-5	11/5/24	1256	0	11.6	0	0.0
GP-6	11/5/24	1312	0	18.9	0	0.0
GP-7	11/5/24	1319	0	18.1	0	0.0
GP-8	11/5/24	1346	0	12.6	0	0.0
GP-9	11/5/24	1408	0	18.1	0	0.0
GP-10	11/5/24	1420	0	13.8	0	0.0
GP-11	11/5/24	1457	0	13.4	0	0.0
GP-12	11/5/24	1501	0	8.7	0	0.0
GP-13	11/5/24	1506	0	14.5	0	0.0
GP-14	11/5/24	1514	0	16.4	0	0.0
GP-14R	11/5/24	1510	0	17.1	0	0.0
GP-15	11/5/24	1521	0	16.1	0	0.0
GP-16	11/5/24	1133	>100	0.5	0	0.0

Sample Point	Date	Time	CH ₄ (% LEL)	% O ₂	CO	H ₂ S
GP-16R	11/5/24	1525	0	20.5	0	0.0
GP-17	11/5/24	1141	0	14.0	0	0.0
GP-18	11/5/24	1159	>100	5.3	0	0.0
GP-18R	11/5/24	1157	0	17.2	0	0.0
Main Office Area	11/5/24	1449	0	20.9	0	0.0
Second Office	11/5/24	1450	0	20.9	0	0.0
Restroom/Storage	11/5/24	1450	0	20.9	0	0.0
Scale House	11/5/24	1529	0	20.9	0	0.0

Methane exceeded 100% LEL in GP-16 and GP-18. No CO or H₂S was detected in any of the gas probes. Other than normal levels of O₂, no gas detections were measured in the scale house or office building. It should be noted that, historically, no gas detections have occurred in the office building.

Attachments:

Attachment A – Sample Point Location Map

Attachment B – Instrument Calibration Record

Attachment A

Sample Point Location Map



Attachment B

Instrument Calibration Record

Gas Detector Calibration and Maintenance Log

Instrument Name: RAE SYSTEMS QRAE II Model Number: PGM-2400P Serial Number: 181-151291

Date	Name	Calibration Gas Concentration				Gas Detector Reading on Calibration Gas				Maintenance Notes
		O ₂	LEL	H ₂ S	CO	O ₂	LEL	H ₂ S	CO	
9/29	MATT MARBURY	18%	50%	10ppm	50ppm	18%	49%	10ppm	50ppm	Good
10/16	MATT MARBURY	18%	50%	10ppm	50ppm	18%	50%	10ppm	50ppm	Good
11/5	MATT MARBURY	18%	50%	10ppm	50ppm	18%	49%	10ppm	49ppm	Good



Lot # 23-1473
Exp: 4/24/2026