February 29, 2024

John Mahony
Site Landfill Engineer
GFL Environmental, Inc.
Zion Landfill
701 Green Bay Rd
Zion, IL 60099

Re: 2024 Q1 Surface Emissions Monitoring (SEM) Regulatory Report

Dear Mr. Mahony:

Sniffer Robotics performed the 2024 first quarter New Source Performance Standard (NSPS) surface emissions monitoring (SEM) at Zion Landfill on Jan 03, 2024. The SEM was conducted in accordance with the published landfill performance sections: 40 CFR 60.766 (f) and the applicable sections of 40 CFR 60, Appendix A, Method 21, "Method 21 – Determination of Volatile Organic Compound Leaks".

In accordance with the applicable requirements, SEM was conducted by Sniffer Robotics as follows:

- around the perimeter of the collection area;
- along a pattern that traverses the landfill at no more than 30-meter intervals;
- where visual observations indicated elevated concentrations of landfill gas; and
- all cover penetrations.

SEM was conducted using a portable methane monitor with the probe inlet placed within 5 to 10 centimeters of the ground in accordance with the requirements specified in section 60.764 "Test Methods and Procedures". Upwind and downwind measurements were taken prior to inspection and monitoring was performed during typical meteorological conditions. Dangerous areas were excluded in accordance with the applicable rules.

As provided in Table 1, eight locations were found, marked, and recorded to have exceeded the 500 PPM above background threshold during the initial SEM event. Subsequent monitoring events are summarized in Table 1. One location exceeded 500 ppm methane three times within the quarterly period.

Based on the results, GFL Environmental, Inc. Zion Landfill is required to take corrective action within 120 calendar days of the initial exceedance to remedy the one location that failed the inspection as required by 40 CFR 60.765(c)(4)(v).

Thank you for the opportunity to serve you. Please contact the Sniffer Robotics team for further information.

Regards,

Arthur W Mohr, Jr
Sniffer Robotics, Inc

Table 1 SEM Exceedances

Monitoring Event												
Ref	**Type**	**Exceedance Location (Long/Lat)**	**Initial Monitoring Date/Concentration (PPM)**		**Initial Re-monitoring Date/Concentration (PPM)[1]**		**Second Re-monitoring Date/Concentration (PPM)[2]**		**1-Month Re-monitoring Date/Concentration (PPM)[3]**		**Final Re-Monitoring Date/Concentration (PPM)[4]**	
1	Penetration	-87.872551, 42.483129	01/03/2024	820	01/12/2024	0	N/R	N/R	02/01/2024	0	N/R	N/R
2	Penetration	-87.873364, 42.484700	01/03/2024	2,000	01/12/2024	0	N/R	N/R	02/01/2024	0	N/R	N/R
3	Penetration	-87.865099, 42.484583	01/03/2024	16,000	01/12/2024	0	N/R	N/R	02/01/2024	2	N/R	N/R
4	Penetration	-87.873716, 42.483944	01/03/2024	5,000	01/12/2024	2	N/R	N/R	02/01/2024	350	N/R	N/R
5	Penetration	-87.866372, 42.483525	01/03/2024	710	01/12/2024	12	N/R	N/R	02/01/2024	4	N/R	N/R
6	Penetration	-87.868975, 42.483264	01/03/2024	4,000	01/12/2024	1,000	01/22/2024	46	02/01/2024	560,000	N/R	N/R
7	Penetration	-87.869053, 42.483247	01/03/2024	3,000	01/12/2024	0	N/R	N/R	02/01/2024	28,000	02/09/2024	0
8	Surface	-87.868132, 42.483961	01/03/2024	1,000	01/12/2024	15	N/R	N/R	02/01/2024	0	N/R	N/R

N/R = Not Required

[1]First re-monitoring event performed within 10 days of the initial exceedance.

[2]Second re-monitoring event performed within 10 days of the second exceedance. This re-monitoring is only required if the first 10-Day re-monitoring event was greater than 500 ppm above background.

[3]Third re-monitoring event performed within 1 month of the initial exceedance. This re-monitoring is performed on all locations reported from the initial event except for those where exceedances were measured during both the first and second re-monitoring event.

[4]Fourth re-monitoring event performed within 10 days of the third re-monitoring event. This re-monitoring is performed when no exceedances are measured during the second re-monitoring event and when an exceedance is measured during the third re-monitoring event.

June 26, 2024

John Mahony
Site Lnadfill Engineer
GFL Environmental, Inc
Zion Landfill
701 Green Bay Rd
Zion, IL 60099

Re: 2024 Q2 Surface Emissions Monitoring (SEM) Regulatory Report

Dear Mr. Mahony:

Sniffer Robotics performed the 2024 second quarter New Source Performance Standard (NSPS) surface emissions monitoring (SEM) at Zion Landfill on April 30, 2024. The SEM was conducted in accordance with the published landfill performance sections: 40 CFR 60.766 (f) and the applicable sections of 40 CFR 60, Appendix A, Method 21, "Method 21 – Determination of Volatile Organic Compound Leaks".

In accordance with the applicable requirements, SEM was conducted by Sniffer Robotics as follows:

- around the perimeter of the collection area;
- along a pattern that traverses the landfill at no more than 30-meter intervals;
- where visual observations indicated elevated concentrations of landfill gas; and
- all cover penetrations.

SEM was conducted using a portable methane monitor with the probe inlet placed within 5 to 10 centimeters of the ground in accordance with the requirements specified in section 60.764 "Test Methods and Procedures". Upwind and downwind measurements were taken prior to inspection and monitoring was performed during typical meteorological conditions. Dangerous areas were excluded in accordance with the applicable rules.

As provided in Table 1, 16 locations were found, marked, and recorded to have exceeded the 500 PPM above background threshold during the initial SEM event. Subsequent monitoring events are summarized in Table 1. Zero locations exceeded 500 ppm methane three times within the quarterly period.

Thank you for the opportunity to serve you. Please contact the Sniffer Robotics team for further information.

Regards,

William G. Tennant
Chief Executive Officer
Sniffer Robotics

Table 1 SEM Exceedances

Monitoring Event												
Ref	Type	Exceedance Location (Long/Lat)	Initial Monitoring Date/Concentration (PPM)		Initial Re-monitoring Date/Concentration (PPM)[1]		Second Re-monitoring Date/Concentration (PPM)[2]		1-Month Re-monitoring Date/Concentration (PPM)[3]		Final Re-Monitoring Date/Concentration (PPM)[4]	
1	Penetration	-87.871037, 42.485702	04/30/2024	49,000	05/10/2024	5,000	05/20/2024	11	05/30/2024	0	N/R	N/R
2	Penetration	-87.870950, 42.485843	04/30/2024	9,000	05/10/2024	0	N/R	N/R	05/30/2024	0	N/R	N/R
3	Penetration	-87.866372, 42.483525	04/30/2024	98,000	05/10/2024	8	N/R	N/R	05/30/2024	180	N/R	N/R
4	Penetration	-87.868950, 42.484847	04/30/2024	970	05/10/2024	1,000	05/20/2024	68	05/30/2024	0	N/R	N/R
5	Penetration	-87.868261, 42.483261	04/30/2024	77,000	05/10/2024	45,000	05/20/2024	330	05/30/2024	0	N/R	N/R
6	Penetration	-87.868755, 42.483253	04/30/2024	160,000	05/10/2024	150,000	05/20/2024	3	05/30/2024	2	N/R	N/R
7	Penetration	-87.869053, 42.483247	04/30/2024	6,000	05/10/2024	47,000	05/20/2024	2	05/30/2024	15	N/R	N/R
8	Penetration	-87.871238, 42.483375	04/30/2024	3,000	05/10/2024	2,000	05/20/2024	0	05/30/2024	15	N/R	N/R
9	Penetration	-87.869967, 42.483310	04/30/2024	59,000	05/10/2024	4,000	05/20/2024	3	05/30/2024	13	N/R	N/R
10	Penetration	-87.870288, 42.483143	04/30/2024	1,000	05/10/2024	1,000	05/20/2024	16	05/30/2024	11	N/R	N/R
11	Penetration	-87.870243, 42.482063	04/30/2024	9,000	05/10/2024	0	N/R	N/R	05/30/2024	6	N/R	N/R
12	Surface	-87.870492, 42.483400	04/30/2024	3,000	05/10/2024	2,000	05/20/2024	2	05/30/2024	0	N/R	N/R
13	Penetration	-87.870557, 42.483592	04/30/2024	7,000	05/10/2024	58,000	05/20/2024	6	05/30/2024	0	N/R	N/R
14	Penetration	-87.867077, 42.484677	04/30/2024	4,000	05/10/2024	0	N/R	N/R	05/30/2024	0	N/R	N/R
15	Surface	-87.868887, 42.483955	04/30/2024	1,000	05/10/2024	23	N/R	N/R	05/30/2024	39	N/R	N/R
16	Penetration	-87.869492, 42.485233	04/30/2024	540	05/10/2024	5	N/R	N/R	05/30/2024	200	N/R	N/R

N/R = Not Required

[1]First re-monitoring event performed within 10 days of the initial exceedance.

[2]Second re-monitoring event performed within 10 days of the second exceedance. This re-monitoring is only required if the first 10-Day re-monitoring event was greater than 500 ppm above background.

[3]Third re-monitoring event performed within 1 month of the initial exceedance. This re-monitoring is performed on all locations reported from the initial event except for those where exceedances were measured during both the first and second re-monitoring event.

[4]Fourth re-monitoring event performed within 10 days of the third re-monitoring event. This re-monitoring is performed when no exceedances are measured during the second re-monitoring event and when an exceedance is measured during the third re-monitoring event.

October 16, 2024

John Mahony
Site Landfill Engineer
GFL Environmental, Inc
Zion Landfill
701 Green Bay Rd
Zion, IL 60099

Re: 2024 Q3 Surface Emissions Monitoring (SEM) Regulatory Report

Dear Mr. Mahony:

Sniffer Robotics performed the 2024 third quarter New Source Performance Standard (NSPS) surface emissions monitoring (SEM) at Zion Landfill on July 31, 2024. The SEM was conducted in accordance with the published landfill performance sections: 40 CFR 60.766 (f) and the applicable sections of 40 CFR 60, Appendix A, Method 21, "Method 21 – Determination of Volatile Organic Compound Leaks".

In accordance with the applicable requirements, SEM was conducted by Sniffer Robotics as follows:

- around the perimeter of the collection area;
- along a pattern that traverses the landfill at no more than 30-meter intervals;
- where visual observations indicated elevated concentrations of landfill gas; and
- all cover penetrations.

SEM was conducted using a portable methane monitor with the probe inlet placed within 5 to 10 centimeters of the ground in accordance with the requirements specified in section 60.764 "Test Methods and Procedures". Upwind and downwind measurements were taken prior to inspection and monitoring was performed during typical meteorological conditions. Dangerous areas were excluded in accordance with the applicable rules.

As provided in Table 1, six locations were found, marked, and recorded to have exceeded the 500 PPM above background threshold during the initial SEM event. Subsequent monitoring events are summarized in Table 1. Zero locations exceeded 500 ppm methane three times within the quarterly period.

Table 1 SEM Exceedances

Monitoring Event												
Ref	Type	Exceedance Location (Long/Lat)	Initial Monitoring Date/Concentration (PPM)		10-Day Re-monitoring Date/Concentration (PPM)[1]		20-Day Re-monitoring Date/Concentration (PPM)[2]		1-Month Re-monitoring Date/Concentration (PPM)[3]		1-Month +10 Day Re-Monitoring Date/Concentration (PPM)[4]	
1	Surface	-87.871211, 42.483803	07/31/2024	7,000	08/09/2024	15	N/R	N/R	08/29/2024	32	N/R	N/R
2	Penetration	-87.867106, 42.483686	07/31/2024	4,000	08/09/2024	160	N/R	N/R	08/29/2024	0	N/R	N/R
3	Surface	-87.870684, 42.483080	07/31/2024	880	08/09/2024	230	N/R	N/R	08/29/2024	210	N/R	N/R
4	Penetration	-87.870368, 42.484163	07/31/2024	4,000	08/09/2024	11	N/R	N/R	08/29/2024	420	N/R	N/R
5	Penetration	-87.869492, 42.485233	07/31/2024	640	08/09/2024	18	N/R	N/R	08/29/2024	100	N/R	N/R
6	Penetration	-87.867937, 42.484893	07/31/2024	4,000	08/09/2024	0	N/R	N/R	08/29/2024	8	N/R	N/R

N/R = Not Required
[1]10-day re-monitoring event performed within 10 days of the initial exceedance.
[2]20-day re-monitoring event performed within 10 days of the 10-day exceedance. This re-monitoring is only required if the first 10-day re-monitoring event was greater than 500 ppm above background.
[3]1-month re-monitoring event performed within 1 month of the initial exceedance. This re-monitoring is performed on all locations reported from the initial event except for those where exceedances were measured during both the 10-day and 20-day re-monitoring event.
[4]1 month + 10 day re-monitoring event performed within 10 days of the 1-month re-monitoring event. This re-monitoring is performed when no exceedances are measured during the 10-day re-monitoring event and when an exceedance is measured during the 1-month re-monitoring event.

Thank you for the opportunity to serve you. Please contact the Sniffer Robotics team for further information.

Regards,

William G. Tennant
Chief Executive Officer
Sniffer Robotics

January 02, 2025

John Mahony
Site Landfill Engineer
GFL Environmental, Inc
Zion Landfill
701 Green Bay Rd
Zion, IL 60099

Re: 2024 Q4 Surface Emissions Monitoring (SEM) Regulatory Report

Dear Mr. Mahony:

Sniffer Robotics performed the 2024 fourth quarter New Source Performance Standard (NSPS) surface emissions monitoring (SEM) at Zion Landfill on November 13, 2024. The SEM was conducted in accordance with the published landfill performance sections: 40 CFR 60.766 (f) and the applicable sections of 40 CFR 60, Appendix A, Method 21, "Method 21 – Determination of Volatile Organic Compound Leaks".

In accordance with the applicable requirements, SEM was conducted by Sniffer Robotics as follows:

- around the perimeter of the collection area;
- along a pattern that traverses the landfill at no more than 30-meter intervals;
- where visual observations indicated elevated concentrations of landfill gas; and
- all cover penetrations.

SEM was conducted using a portable methane monitor with the probe inlet placed within 5 to 10 centimeters of the ground in accordance with the requirements specified in section 60.764 "Test Methods and Procedures". Upwind and downwind measurements were taken prior to inspection and monitoring was performed during typical meteorological conditions. Dangerous areas were excluded in accordance with the applicable rules.

As provided in Table 1, six locations were found, marked, and recorded to have exceeded the 500 PPM above background threshold during the initial SEM event. Subsequent monitoring events are summarized in Table 1. Zero locations exceeded 500 ppm methane three times within the quarterly period.

Table 1 SEM Exceedances

Monitoring Event												
Ref	Type	Exceedance Location (Long/Lat)	Initial Monitoring Date/Concentration (PPM)		10-Day Re-monitoring Date/Concentration (PPM)[1]		20-Day Re-monitoring Date/Concentration (PPM)[2]		1-Month Re-monitoring Date/Concentration (PPM)[3]		1-Month +10 Day Re-Monitoring Date/Concentration (PPM)[4]	
1	Penetration	-87.871874, 42.484682	11/13/2024	2,000	11/22/2024	0	N/R	N/R	12/13/2024	0	N/R	N/R
2	Penetration	-87.870272, 42.485784	11/13/2024	5,000	11/22/2024	17	N/R	N/R	12/13/2024	200	N/R	N/R
3	Penetration	-87.868750, 42.483563	11/13/2024	6,000	11/22/2024	15	N/R	N/R	12/13/2024	360	N/R	N/R
4	Penetration	-87.868438, 42.483620	11/13/2024	5,000	11/22/2024	0	N/R	N/R	12/13/2024	0	N/R	N/R
5	Penetration	-87.868449, 42.483659	11/13/2024	5,000	11/22/2024	0	N/R	N/R	12/13/2024	6	N/R	N/R
6	Penetration	-87.870243, 42.482063	11/13/2024	3,000	11/22/2024	0	N/R	N/R	12/13/2024	0	N/R	N/R

N/R = Not Required
[1]10-day re-monitoring event performed within 10 days of the initial exceedance.
[2]20-day re-monitoring event performed within 10 days of the 10-day exceedance. This re-monitoring is only required if the first 10-day re-monitoring event was greater than 500 ppm above background.
[3]1-month re-monitoring event performed within 1 month of the initial exceedance. This re-monitoring is performed on all locations reported from the initial event except for those where exceedances were measured during both the 10-day and 20-day re-monitoring event.
[4]1 month + 10 day re-monitoring event performed within 10 days of the 1-month re-monitoring event. This re-monitoring is performed when no exceedances are measured during the 10-day re-monitoring event and when an exceedance is measured during the 1-month re-monitoring event.

Thank you for the opportunity to serve you. Please contact the Sniffer Robotics team for further information.

Regards,

William G. Tennant
Chief Executive Officer
Sniffer Robotics