



COUNTY OF ST. CLAIR



Smiths Creek Landfill

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scclandfill@stclaircounty.org

November 15, 2023

Mr. Iranna Konanahalli
Environmental Quality Analyst
EGLE - Air Quality Division
Southeast Michigan District Office
27700 Donald Court
Warren, Michigan 48092

Subject: N6207, Smiths Creek Landfill, St. Clair County
Response to October 25, 2023 Violation Notice

Dear Mr. Konanahalli:

On October 10 and 18, 2023, staff of the Department of Environment, Great Lakes, and Energy (EGLE), Air Quality Division (AQD) conducted site visits at the Smiths Creek Landfill (SCL), Kimball Township, MI. Observations resulting from those visits were cited as the basis for the Violation Notice (VN) dated October 25, 2023. Subsequent to receipt of the VN, correspondence dated October 31, 2023 was received which details results of methane screening conducted by Mike Kovalchick, EGLE on October 18, 2023 and is referenced as background documentation in the VN.

BACKGROUND

Landfilling operations at SCL are subject to 40 CFR 62 Subpart OOO (Federal Plan) and 40 CFR 63 Subpart AAAA (Landfill NESHAP). An active gas collection and control system (GCCS) is in-place and operational in all portions of the active landfill that are subject to the Landfill NESHAP. Extracted landfill gas (LFG) is primarily managed as a renewable energy resource by Blue Water Renewables, LLC at its gas to energy plant where it is combusted in two engines. The system is designed such that excess collected gas can be controlled by combustion in an open flare which is supplied by both a 3" and 10" gas line.

In accordance with 40 CFR 63.1958, Cells 3A, 3B, 4, 5, 6, and 7 currently contain waste that has been in place for at least 5 years. As such, those areas are subject to 40 CFR 63.1957 of the Landfill NESHAP, including GCCS operational requirements and surface emissions monitoring. Waste acceptance in Cell 8 commenced on November 11, 2019 and Cell 8 will become subject to GCCS control requirements on November 10, 2024.





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Cell 8 was constructed and licensed as a bioreactor and is additionally regulated under 40 CFR 63.1947. The NESHAP requires that bioreactor units begin GCCS operations either 180 days after commencement of liquid injection or 180 days after the moisture content of the waste mass reaches 40%, whichever is later. Although the waste mass in Cell 8 is neither 5 years old, nor has a 40% moisture content been achieved, SCL has consistently operated the GCCS for the purposes of gas recovery since April 2021. SCL anticipates implementing the remaining operational and administrative requirements of the Landfill NESHAP no later than November 10, 2024 in accordance with the requirements.

SCL was notified on September 5, 2023 that EGLE had received a complaint regarding off-site odors in the vicinity of the landfill. Since that time, intermittent odors have been detected off-site by residents and/or SCL staff. A comprehensive investigation of the issues contributing to the presence of odors has been conducted and significant ongoing efforts are being made to isolate and correct areas of ambient gas migration. SCL has been working diligently to implement measures for restoring gas control and has been communicating on a weekly basis to inform EGLE staff of the strides being made towards resolution of the issues. In addition to communications with both EGLE AQD and Materials Management Division, SCL has reached out to residents through in-person contact, participation in public meetings attended by residents and publication of two update bulletins.

Response to the Violation Notice:

For clarity, the Department’s comments appear below along with the responses to the issues in the order that they appeared in the VN.

Process Description	Rule/Permit Condition Violated	Comments
Smiths Creek Landfill	Michigan Admin. Code Rule 336.1901	AQD staff verified landfill gas (including hydrogen sulfide H2S, organic sulfur bearing compounds R-SH) odors ^β
^β On October 10,2023, on Smiths Creek Road, AQD staff detected (distinct and definite) landfill gas sulfur odor continuously (uninterrupted) and, also, on October 18, 2023, AQD detected at various locations, downwind of SCL, distinct and definite objectionable same type of odor. The Rule 901 violation is further corroborated by high methane concentrations (up to 45,752 ppm at M-13 (42.9045235 and -82.595547), significantly higher than 500 ppm). AQD used two (2) SEM5000 methane detector devices equipped with tunable diode laser absorption spectroscopy and has GPS location accuracy of 2 to 4 meters. On both days ambient temperature was in 50s °F with 10-13 mph S. The background methane was about 3 ppm. Please refer to the surface emission monitoring (SEM) inspection letter from Mike Kovalchick of EGLE-AQD.		





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Response:

SCL is acutely aware of and is actively working to correct the conditions that have resulted in the uncustomary odors detected near the site over the past several months. Initial responses to the issue involved identification and thorough evaluation of a drop in applied vacuum at the south side of the site when compared with historic operational conditions. The reduced vacuum resulted in less efficient collection of landfill gas and response activities were implemented to address the causes of the diminished vacuum. Corrective measures implemented include the following:

- Injection of septage was temporarily suspended pending resolution of the current gas management challenges;
- Excavation and leveling of approximately 2,100 feet of the primary header collection pipe across the center of the landfill to reduce obstructions with the intent of restoring design gas flow;
- Vacuum at the engine plant was increased from 50 inches w.c. to 59 inches w.c.;
- Removal of orifice plates and installation of new, larger wellheads to increase gas flow and reduce pressure drops across the wellheads to maximize flow in lateral gas extraction lines in Cell 8;
- Installation of a temporary supplemental flare and blower system to apply additional vacuum and gas control directly to the southwest side of the site (i.e., Cell 8);
- A supplemental perimeter gas collection trench system has been designed for Cell 8 and construction is scheduled to begin on November 20, 2023; and
- A comprehensive engineering assessment of the current GCCS system is underway and potential upgrades and operational changes are being evaluated.

The VN states that odors believed to be attributable to SCL's landfill operations were detected during EGLE's inspections on October 10 and October 18, 2023. During the October 10, 2023 site visit, the EGLE inspector was accompanied by the site's director, Matt Williams, and SCL's solid waste and air consultants (Erin Berish, CTI and Laura Niemann, EIL). The prevailing wind direction during the time of EGLE's visit was from the south, and EGLE and SCL representatives reviewed both on-site and off-site locations. The roads traveled included Yager Road south of the facility, Burns Road west of the facility, and Smiths Creek Road north of the facility.

Although the group detected odors on-site at the gatehouse and at the southeast corner of the site, there is no record of off-site odors identified during the site visit. As no inspection report was provided, and no verbal indication was made by the EGLE inspector noting off-site odors, we respectfully disagree with the





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conclusion that off-site odors were detected on that date. We do, however, concur that off-site odors were detected on 10/18/23 at the time of the second AQD site visit.

The VN indicates that odors detected on October 18, 2023 were corroborated by measurement of elevated methane concentrations by EGLE using modified SEM5000 methane detectors in conjunction with screening of discretionary locations at the landfill and ancillary operations on the landfill property. As stated in the VN, EGLE reported that an abbreviated surface emissions monitoring (SEM) event was conducted on October 18, 2023, at which time 40 locations with methane concentrations exceeding 500 ppmv were identified.

A formal SEM monitoring event entails screening at a height of 5-10 cm above the landfill surface along the established serpentine pathway at 30-meter intervals including all cover penetrations within the NESHAP regulated landfill area. As indicated in the VN, the screening conducted by EGLE staff on October 18, 2023 was an abbreviated version of the SEM which we understand was conducted for the purposes of identifying specific areas of interest rather than a complete SEM monitoring event.

Several areas included in the EGLE screening were located outside of the area subject to NESHAP standards. Although EGLE detected several measurements of methane exceeding 500 ppm above background in Cell 8, this area is not yet subject to NESHAP requirements since waste age is less than 5 years and the moisture content of waste in the bioreactor has not yet achieved 40%.

EGLE also conducted a methane survey of the exterior of the gas plant which is located outside of the landfill footprint and is therefore not subject to NESHAP monitoring requirements. Additionally, several measurements were collected by EGLE at concrete manhole hatches located well outside of the NESHAP criteria of 5 – 10 cm above the landfill cover.

EGLE's SEM instruments were modified from the specifications used for SEM monitoring in that a funnel cone was placed over the tip of the monitoring devices. In EGLE's verbal comments to SCL's SEM consultant and in the October 31, 2023 letter from Mike Kovalchick referenced in the VN, EGLE stated that the SEM consultant's monitoring instrument "appeared to have difficulty in confirming or verifying AQD SEM hits, possibly due to the lack of a cone to shield from the wind." In the aforementioned letter, Mr. Kovalchick further stated, "the landfills Quarterly SEM surveys are likely not being conducted appropriately" and recommended that SCL "investigate methods being used to conduct quarterly SEM surveys and address as needed."





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The equipment and methodology used by the SEM consultant is consistent with requirements for routine surface emission monitoring specified in §62.16720(c) and §63.1960(c), which are similar to the requirements under 40 CFR 60 Subpart WWW. Use of a wind barrier is neither required in the standard, nor is its use an accepted industry practice.

The method used by EGLE at the time of the screening appears to be based on the EPA procedure specific to Tier 4 sampling as described in §62.16718(a)(6) rather than procedures required for routine monitoring described above. The Tier 4 surface emissions method is used specifically to determine when a facility needs to install a landfill gas collection system in compliance with 40 CFR 62 Subpart OOO requirements. As SCL has a pre-existing GCCS, the procedures and methodology used in Tier 4 sampling are not applicable to SCL.

Although some areas identified in the EGLE screening are not subject to the Landfill NESHAP, and irrespective of differences between methodologies described above, SCL is vigorously implementing corrective actions to comprehensively address EGLE's findings. SCL has conducted 10-day rechecks and will complete one-month re-checks in areas subject to NESHAP. The gas plant operator is also addressing the methane detected outside their plant during EGLE's survey.

The actions taken to date are consistent with the Landfill NESHAP and the detections do not constitute a deviation provided that corrective measures and follow-up monitoring are completed in accordance with 40 CFR 63.1958(g) as follows:

(g) If monitoring demonstrates that the operational requirements in [paragraph \(b\)](#), [\(c\)](#), or [\(d\)](#) of this section are not met, corrective action must be taken as specified in [§ 63.1960\(a\)\(3\)](#) and [\(5\)](#) or [\(c\)](#). If corrective actions are taken as specified in [§ 63.1960](#), the monitored exceedance is not a deviation of the operational requirements in this section.

The 10-day rescans of areas subject to NESHAP requirements were conducted by EIL on October 27, 2023, and November 3, 2023, using methodology specified in §63.1958(d), §63.1960(c), §63.1961(f) and EPA Method 21. All measurements within areas subject to NESHAP were less than 500 ppm above background by completion of the second 10-day recheck on November 3, 2023. The one-month confirmation scan will be conducted no later than November 18, 2023 in accordance with the standard. The elevated methane detections identified in the October 31, 2023 letter referenced in the VN do not constitute a violation of federal air standards.

As stated previously, EGLE also conducted screening and identified elevated methane concentrations at numerous locations not specifically regulated under §63.1960(c)(1) including the following:





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- Two (2) measurements of methane at the landfill gas to energy plant, located significantly outside of the landfill footprint on the north side of the property;
- Three (3) measurements of methane were taken by EGLE at the hatch of concrete manholes several feet above the landfill surface which are in excess of the specified height of 5 – 10 cm above the landfill surface required by NESHAP; and
- Twelve (12) measurements of methane were recorded in Cell 8, including the M-13 location cited in the VN. The cell first received waste on November 11, 2019. While SCL operates the installed GCCS in the cell, that portion of the system is not subject to regulation under NESHAP since the waste mass is less than 5 years old and the moisture content is monitored and documented to be less than 40%.

As indicated previously, the screening points described above and noted in the October 31, 2023 letter are not regulated points under NESHAP. However, SCL recognizes that Cell 8 is a likely potential source of methane, and it is an area of intense focus for corrective measures, including the recent installation of a supplemental flare to address localized methane issues. As such, SCL intends to conduct a scan of the Cell 8 locations identified by Mr. Kovalchick by November 18, 2023 to verify that the implemented corrective actions have been effective in reducing emissions.

Regarding the supplemental flare designed to target emissions from Cell 8, EGLE provided the following observation in the NV:

“SCL has proposed to install a portable landfill gas flare. Be advised that Rule 201 requires that a permit be obtained prior to installation, construction, operation, reconstruction, relocation, or alteration of any process or process equipment which may be a source of an air contaminant. It is an SCL’s responsibility to determine if the proposed portable landfill gas flare is subject to Rule 336.1201 due to significant sulfur dioxide (SO₂) emissions.”

Response:

Landfill flares are exempt from permitting pursuant to Rule 336.1285(2)(aa) when the emissions potential is less than the significance threshold of Rule 336.1119. A Notification of Permit to Install (PTI) Exemption was submitted to EGLE on October 5, 2023 which included calculations demonstrating that operation of the 500cfm open flare for up to six months would result in emissions well below the significance thresholds of Rule 336.1119.





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The calculations were re-submitted to EGLE electronically on October 30, 2023, at which time, updated average sulfur concentration obtained from the gas plant were incorporated and adjustments made to reflect emissions for a 12-month operating period. The PTE resulting from 12 months of supplemental flare operation was demonstrated to meet the exemption criteria with projected SO₂ emissions of less than 10 tons/year as compared with the significance threshold of 40 tons/year.

SCL would like to reiterate our commitment to minimizing off-site odor impacts and re-establishing sustainable compliance as is evidenced in the ongoing efforts, investments and implemented improvements described in this response letter and in our weekly updates. We will continue to report on our progress towards achieving those goals.

If you have any questions regarding this submittal, please contact me at (810) 989-6979.

Sincerely,

Smiths Creek Landfill

Matt Williams
Director, Smiths Creek Landfill

Cc/via e-mail:

- | | |
|----------------------------|---------------------|
| Annette Switzer, EGLE | Mary Carnagie, EGLE |
| Christopher Ethridge, EGLE | Kerry Kelly, EGLE |
| Brad Myott, EGLE | Matthew Karl, EGLE |
| Jenine Camilleri, EGLE | Karry Hepting, SCC |
| Joyce Zhu, EGLE | Erin Berish, CTI |
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