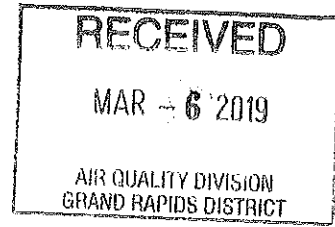




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March 6, 2019

David Morgan, Environmental Quality Specialist
DEQ – Air Quality Division
Grand Rapids District Office
State Office Building, 5th Floor
350 Ottawa Avenue NW, Unit 10
Grand Rapids, MI 49503-2341
Fed Ex Tracking Number 7746 2177 5404



RE: Response to February 14, 2019 Violation Notice
Renewable Operating Permit Number MI-ROP-N2804-2014
Central Sanitary Landfill - SRN N2804

Dear Mr. Morgan:

Central Sanitary Landfill, Inc., the owner and operator of the of Central Sanitary Landfill (Central), is in receipt of a Violation Notice (VN) issued by the Michigan Department of Environmental Quality (DEQ), Grand Rapids District Office, on February 14, 2019. The VN requires submittal of a written response detailing the following:

- The dates the violation occurred;
- An explanation of the causes and duration of the violation;
- Whether the violation is ongoing;
- A summary of the actions that have been taken and are proposed to be taken to correct the violation and the dates by which these actions will take place; and
- What steps are being taken to prevent a reoccurrence.

In the alternative, DEQ requests that if Central "believes the above observations or statements are inaccurate or do not constitute violations of the applicable legal requirements cited" that Central "provide appropriate factual information to explain your position"

The VN cites a violation of Rule 201 (R 336.1201 – Permits to Install). Specifically, the VN states:

The information provided with the revised MAERS calculations demonstrate that actual emissions of sulfur dioxide (SO₂) from the flare have increased from those evaluated during the original permit evaluation.

The VN further states:

At a minimum, this is a violation of Rule 201 of the Administrative rules....A modification is defined by Rule 113(e) as "making a physical change in, or change in the method of operation of, existing process or process equipment which increases the amount of any air contaminant emitted into the outer air." A change in the gas is considered a "modification in the process" and therefore subject to the requirements of Rule 201(1).

Central disagrees with DEQ that any violation has occurred. Since DEQ did not choose to impose an actual hourly or annual sulfur emission rate on the landfill gas flare at this facility, no permit limit has been exceeded. In addition, Central disagrees that any "modification" took place subjecting the facility to the requirements of Rule 201(1). No physical change was made to any process, process equipment or method of operation which resulted in an increase in SO₂ emissions. Rather, emission testing subsequent to original permitting demonstrated that actual emissions of SO₂ were higher than the AP-42 values used and accepted by DEQ during the original permit application process over a decade ago. When Central became aware of the difference, it voluntarily approached DEQ to amend the air permits to reflect the actual emission values.

Summary of Issue

Central received notification from the newly operational North American Natural Resources (NANR) gas recovery facility that measured concentrations of sulfur in the inlet gas in the fall of 2018 were higher than NANR's previous analysis conducted in 2016. Sulfur compounds in landfill gas are typically assumed to completely convert to sulfur dioxide during the combustion process.

Upon receiving the notification from NANR, Central requested a copy of NANR's 2016 analysis as well as their recently collected 2018 sulfur inlet data. Central next attempted to determine what inlet sulfur values were used in the initial air permit application for the flare, since neither the Renewable Operating Permit (ROP) nor the previously issued Permit to Install (PTI) for the open flare at Central contain any emissions limitations for sulfur dioxide. Central conducted a file review to locate the original PTI application from 2006 but did not find any air emissions calculations attached. However, the application for the 2007 ROP renewal did contain PTE calculations for the newly-permitted flare. These calculations

indicated that a value of 49.3 ppm total sulfur was used to determine SO₂ emissions rates, which is similar to the AP-42 value of 46.9 ppmv (AP-42 Chapter 2.4, 11/98). A review of past annual air emissions inventories (MAERS Reports) revealed that the AP-42 concentration for sulfur has been used at the facility in the absence of site-specific data.

Since there are no permitted emissions rates, the higher sulfur levels were not deemed to be a permit violation. However, as the 297.3 ppm sulfur concentration measured on November 10, 2016 was higher than the 49.9 ppm AP-42 sulfur concentration used in the 2016 and 2017 MAERS Reports, the facility contacted DEQ's MAERS division to determine how to correct the past inventories. DEQ advised Central to email DEQ the amended calculations, and stated that DEQ would take the step of correcting the two past MAERS reports on their end.

Additionally, in conjunction with another facility experiencing a similar issue (Citizens Disposal Landfill), the environmental manager for Citizen's Disposal Landfill reached out to DEQ's permit division in Lansing in order to set up a joint meeting with the two landfills and the DEQ permit writers. The purpose of the meeting was to discuss the sulfur issue and determine the best permitting strategy to amend each landfill's flare PTI for the increased SO₂ emissions rates. However, due to various federal holidays and staff vacation schedules, the meeting time was not established until February 7, 2019.

The meeting included facility representatives from Central and Citizens Disposal Landfill, the air consultants for each facility, and DEQ permitting, modeling and inspection staff. Once the meeting date was established, Central submitted the amended MAERS reports to DEQ's MAERS staff on February 4, 2019.

The meeting took place as scheduled, and several topics were discussed including the control devices present at each landfill (third party gas to energy plants and site-operated flares), the air permitting history, and the current information on sulfur concentrations in the gas at each landfill. The proposed permitting strategy was discussed, including the requirement for ambient air modeling. The DEQ did not mention during the meeting that they planned to issue each site a Violation Notice.

In the absence of site-specific data for a facility, DEQ and other state agencies allow the use of AP-42 factors. For landfills, the value of 46.9 ppm for inlet sulfur concentration has historically been used for landfill gas flare construction and operating permits. Neither federal nor state regulations require landfills to obtain a site-specific value for inlet sulfur.

Sulfur compounds are generated within the landfill environment when sulfur reducing bacteria decompose material that contains sulfate. The primary compound produced is hydrogen sulfide, with lesser amounts of other organic sulfur compounds such as mercaptans also produced. The potential for a landfill to generate hydrogen sulfide depends on a number of factors, including moisture content, pH, and the availability of substrate materials containing sulfur. It is a biological process that is not under the control of the landfill's employees, and not the result of a change in operations or method of operations.

The facility is unaware of any site-specific data available with respect to sulfur concentrations before NANR collected their gas sample on November 10, 2016. The measured value was 297.3 ppm of H₂S. NANR's PTI required them to collect field readings of sulfur once the engine plant began operations. The initial field readings collected in September, 2018 indicated that sulfur concentrations above the AP-42 value of 46.9 ppm were still present in the landfill gas. NANR began preparation of a permit application revision for their engines to address the higher sulfur concentrations, and contacted Central to alert them. Central also initiated efforts to meet with the DEQ, jointly with the Citizens Disposal Landfill, to discuss revising their respective PTI's for the landfill gas flares.

The NANR plant continues to collect sulfur data on a weekly basis, and concentrations above the AP-42 value of 46.9 ppm are still present in the landfill gas. Now that routine monitoring of the landfill gas is being conducted by NANR, the facility will have actual sulfur data available on a real-time basis. A value of 1,000 ppm inlet sulfur will be used in the revised permit application and modeling at a flare flow rate of 4,000 cfm. This is well below current collected gas flow rates at the landfill.

The facility will be able to compare their current flare flow rates and measured concentration to the requested concentration in the revised PTI. A sliding scale has been developed for facility use to determine if the measured concentrations result in an overall hourly emissions rate that would exceed the newly-established permit levels. The sliding scale is provided as Attachment 1. Should either landfill gas flow to the flare and/or inlet sulfur levels increase, the facility will be able to react more quickly to avoid emitting SO₂ in excess of any new permitted levels.

Summary of Actions To be Taken

At the meeting held on February 7, 2019, it was agreed that Central would take the following actions:

- Submit a modeling protocol for review to DEQ's air modeling staff. The modeling protocol was submitted to Jim Haywood on February 22, 2019.
- Conduct the modeling after receiving approval of the protocol. This has not occurred to date since Jim has not yet reviewed and approved the test protocol.
- Prepare and submit the amendment to the flare PTI. This has not occurred yet pending the results of the air modeling.

Conclusion

No violation of Rule 201(1) has occurred. A "modification" is defined by Rule 113(e) as "making a physical change in, or change in the method of operation of, existing process or process equipment which increases the amount of any air contaminant emitted into the outer air." No such physical change was made by facility employees, nor was any change made in the operation or method of operation of the landfill or the landfill gas flare. No change was made to the gas by Central. Any increase in SO₂ was the direct result of a biological process inside the landfilled waste, which is outside of the control of Central and was not a modification requiring a permit to install.

Since no modification to the method of operation or the process equipment (landfill gas collection system) was made, nor was any emission limit exceeded, there is no violation of the permit or rules, and Central requests that DEQ acknowledge that no violation has occurred and this VN be rescinded. If DEQ disagrees with Central's conclusion that no violation has occurred, we would request a meeting with DEQ, with legal counsel attending.

If you have any questions, please contact me at (616) 431-6173.

Sincerely,
Central Sanitary Landfill, Inc.



Justin Obermeyer, P.E.
Environmental Manager – Great Lakes Area

Attachment: SO₂ Sliding Scale PTE Calculations

Cc: Roger Rockburn, Central Sanitary Landfill