

DEPARTMENT OF ENVIRONMENTAL QUALITY
AIR QUALITY DIVISION
ACTIVITY REPORT: On-site Inspection

N601063570

FACILITY: Northern Oaks Recycling and Disposal Facility		SRN / ID: N6010
LOCATION: 513 N. County Farm Road, HARRISON		DISTRICT: Bay City
CITY: HARRISON		COUNTY: CLARE
CONTACT: Debora Johnston , Environmental Engineer		ACTIVITY DATE: 07/11/2022
STAFF: Nathanael Gentle	COMPLIANCE STATUS: Compliance	SOURCE CLASS: MAJOR
SUBJECT: FY2022 Scheduled Onsite Inspection.		
RESOLVED COMPLAINTS: C-22-01168		

On July 11, 2022, AQD staff conducted a scheduled onsite inspection at Northern Oaks Recycling and Disposal Facility, SRN N6010. Staff arrived onsite at 10:15 AM and departed at 12:40 PM. The purpose of the inspection was to determine compliance with the Federal Clean Air Act; Article II, Part 55, Air Pollution Control of Natural Resources and Environmental Protection Act, 1994 Public Act 451; Michigan Department of Environment Great Lakes and Energy, Air Quality Division (AQD) Administrative Rules; and to evaluate compliance with the facilities Renewable Operating Permit, MI-ROP-N6010-2018. EGLE staff were assisted onsite by Debbie Johnston and Keith Hayes. At the time of inspection, the facility was found to be in compliance.

Facility Background and History

Northern Oaks is a Type II municipal solid waste landfill which is owned and operated by Waste Management of Michigan, Inc. The landfill accepts municipal and solid waste, construction debris, foundry sand, ash, and contaminated soils. The landfill began accepting waste in December of 1992. The Maximum Design Capacity is 8.9 million cubic meters. Northern Oaks was reissued Renewable Operating Permit (ROP) number MI-ROP-N6010-2018 on August 6, 2018. The facilities current ROP expires August 6, 2023. Therefore, an administratively complete ROP renewal application is due between February 6, 2022, and February 6, 2023.

Northern Oaks RDF was last inspected by AQD staff on 8/12/2020. At the time of the 2020 inspection, the facility was found to be in compliance. There are no outstanding violations associated with the facility.

An anonymous complaint was submitted to the Michigan EGLE Pollution Emergency Alert System (PEAS) on 7/10/2022 at 5:52 AM regarding Northern Oaks RDF. The complainant stated that the methane was excessively strong. So strong you can see the color of blue. The complainant said they had to leave their house because of it. A complaint investigation was completed as part of the onsite inspection.

PEAS Complaint Investigation

Prior to entering the facility, an offsite odor investigation was completed. The odor investigation was conducted on 7/11/2022 beginning at 9:50 AM. At the time of the odor investigation, wind was out of the southwest at 10mph. AQD staff conducted the odor survey around the perimeter of the landfill on public roads including E. Lilly Lake Rd and Hawthorn St. Lilly Lake Rd is located directly northeast of the facility. No offsite odors were detected.

Minimal odors were observed onsite at the facility. A mild trash odor was detected near the base of the leachate evaporator. Odors were not detected near the main office and scale.

Sky conditions were overcast during the onsite inspection. Humidity was around 70%. At the time of inspection, the leachate evaporator was operating. The landfill gas flow rate to the unit was observed to 470 scfm. Steam from the leachate evaporator could be observed and was hanging low to the ground as the wind carried it out over the landfill. Onsite staff explained high humidity can cause the steam to stay lower to the ground. Steam near the ground was only observed onsite. With the overcast conditions, the steam could at times appear to be slightly blue in color if viewed from certain angles against the overcast sky backdrop. It is believed the steam from the leachate evaporator is the blue the complainant observed.

Compliance Evaluation

EULANDFILL<50

The calculated Nonmethane Organic Compound (NMOC) emission rate for Northern Oaks has been determined to currently be less than 50 megagrams per year. The NMOC emission rate was determined by Tier 2 testing completed on 8/30/2021, S.C. V. 1. Results of the test showed the site specific NMOC emission rate was 150.13 ppmv as hexane. A NMOC emission rate of 12.5 Mg/yr was calculated for the year 2021. As part of the NMOC emission rate report, a 5-year estimate of the NMOC emission rates was included showing NMOC emissions are expected to remain below 50 Mg/yr during the 5-year period, S.C. VII. 4. The projected NMOC emission rate for the year 2026 is 18.96 Mg/yr. The five-year estimate was submitted in lieu of the annual report. The facility utilized an estimated waste acceptance rate of 250,000 short tons/year for the NMOC estimates. This appears to be a conservative estimate. In reviewing historical waste acceptance rates for the facility, between 1992 to 2019, the year with the highest waste acceptance rate was 2003 with 210,581 short tons of waste accepted. If the amount of annual waste received exceeds the projected waste acceptance rate of 250,000 short ton/year used in the emission calculations, a revised 5-year estimate shall be provided, S.C. VII. 4. The site-specific NMOC concentration shall be retested every five years using the methods specified in 40 CFR 60.754, S.C. V. 4. A new Tier 2 test will be required in the year 2026.

Records were requested for the total amount of waste currently in place at the facility. Records provided indicate 5,200,000 bcy of waste is currently in place at the facility. Records of annual waste acceptance rates for calendar years 2020 and 2021 were requested. During calendar year 2020 a total of 131,573 tons of waste was accepted. During calendar year 2021, a total of 253,071 tons of waste was accepted. These values encompass total waste accepted for each calendar year. As described in § 60.754(a), when calculating NMOC emissions, the mass of nondegradable solid waste may be subtracted from the total mass of solid waste in a particular section of the landfill when calculating the value for M_i if documentation of the nature and amount of such wastes is maintained. Material breakdown records were provided. Waste is categorized into three different categories, material solid waste (MSW), construction and demolition waste (C&D), and inert waste. MSW is considered the degradable fraction of waste. For the year 2020 the breakdown of waste was as follows, 63,385 tons MSW, 20,242 tons C&D, and 47,947 tons inert. For the year 2021 the breakdown of waste was, 73,435 tons MSW, 21,857 tons C&D, and 157,779 tons inert. Based on the material breakdowns, the facility remained below the 250,000 ton/year estimate.

Onsite staff report the increase in tons of waste accepted during calendar year 2021 was the result of the facility accepting more soil than previous years. Staff report current waste acceptance projections for calendar year 2022 are 160,000 to 170,000 tons.

NMOC emissions are currently determined to be less than 50 megagrams per year, however, the facility has a gas collection system installed, S.C. IV. 1. The facility maintains the gas collection system, including conducting well head monitoring. Gas produced in the landfill is collected and used as fuel for the leachate evaporator, routed to an onsite engine for energy production, or sent to an onsite flare for destruction. Should the facilities calculated NMOC emission rate be determined to be equal to or greater than 50 megagrams per year, additional conditions will become applicable, as described within the facilities ROP. At the time of inspection, the leachate evaporator and engine were operating. The flare was not operating.

Under the Federal Plan (Subpart OOO), the gas collection control system trigger NMOC threshold is now 34 Mg/yr. At this time, the AQD does not have delegation for 40 CFR 62 Subpart OOO. Current 5-year NMOC emission projections for Northern Oaks RDF remain below 34 Mg/yr.

The NMOC emissions for 2021 were calculated using the USEPA Landgem. NMOC emissions reported to MAERS for 2021 were 5425 lbs (2.461 megagrams). Total VOC emissions reported for 2021 were 11897.62 lbs.

EUICENGINE1

EUICENGINE1 is a CAT 3520 reciprocating internal combustion engine (RICE). The unit combusts landfill gas to produce energy. Onsite staff verbally confirmed only landfill gas is burned in EUICENGINE1, S.C. III. 1. Emission limits for CO, NO_x, and VOC are in place for the unit. Verification of compliance with the emission limits is demonstrated with emission analysis via stack testing. Testing is required every 8760 hours of operation, or every three years, whichever comes first. Testing was last completed on 10/6/2020 at 28,436 hours. Results verified the unit was operated in compliance with emission limits. Results showed the CO emissions to be 2.70 g/bhp-hr (limit 4.15 g/bhp-hr, S.C. I. 1.). NO_x emissions were 0.79 g/bhp-hr (limit 1.5 g/bhp-hr, S.C. I. 2.). VOC emissions were 0.10 g/bhp-hr (limit 1.0 g/bhp-hr, S.C. I.3.). Testing will be required again by 10/6/2023 or 37,196 hours. Staff report testing is anticipated to be completed again in October 2022.

The engine is equipped with a device to monitor fuel usage and hours of operation, S.C. IV. 2. A computerized system is in place to record and track hours operation and fuel usage. In addition, staff utilize a daily checklist to track and monitor operating hours and fuel usage. At the time of inspection, the hour meter was observed to be 33,207 hours. The engine was operating with a landfill gas flow rate of 354 SCFM to the unit. No visible emissions were observed from the engine stack.

Records of monthly landfill gas usage in EUICENGINE1 for the last 12 months were requested and provided, S.C. VI. 3. Records of monthly total landfill gas usage in EUICENGINE1 were provided for the period of January 2021 to present. During the period of records reviewed, the lowest monthly gas usage was 0 MSCF during the months of May 2021, November 2021, and May 2022. The largest monthly gas usage during the period of records reviewed occurred during February 2022 with

15,768.86 MSCF of landfill gas used. Variations in gas usage in EUCENGINE1 are the result of variations in gas produced within the landfill.

The facility has an approved malfunction abatement plan (MAP) in place for EUCENGINE1, S.C. III. 2. The MAP was approved on September 8, 2010. Staff report routine maintenance is conducted on the unit. Records of maintenance activities conducted on EUCENGINE1 for the last 12 months were requested and provided, S.C. VI. 2. The records demonstrate routine maintenance is being conducted and appropriate records are being maintained. Examples of maintenance completed includes repairs and oil changes.

EUCENGINE1 is equipped with a device to adjust the engines air/fuel ratio, S.C. IV. 1. The Btu value of gas going to the engine is continually measured. Based on the Btu value of the gas, the air/fuel ratio is automatically adjusted. Adjusting the air/fuel ratio ensures the engine operates at its maximum design output based on the fuel available to burn, S.C. III. 3.

EUASBESTOS

Northern Oaks RDF historically and actively accepts asbestos waste. Waste shipment records for the last 3 asbestos-containing waste material shipments were requested and provided. Waste shipment records are maintained at the facility for all asbestos containing waste received. The waste shipment records provided were reviewed and verified to include the names, addresses and telephone numbers of the waste generator, the abatement contractor, and the waste transporters. In addition, the waste shipment records include the date the material was received and the quantity of asbestos containing waste in cubic yards, S.C. VI. 1.

Asbestos waste received is logged and disposed within the landfill. Site personnel report asbestos containing waste is covered with at least 1 ft of cover. Cover used is typically a sand and trash mixture, S.C. III. 1. The location of the waste is recorded in northing, easting, and elevation. Records are maintained at the facility documenting the date, disposal location, quantity of waste, and cover type and quantity used, S.C. VI. 5. In addition, a map is maintained displaying the location of each asbestos deposit, S.C. VI. 2.

The facility does not have segregated areas of the landfill excluded from gas collection, S.C. IV. 1. Asbestos containing waste is deposited where the active portion of the landfill is at the time the waste is received. Asbestos waste location records are referenced when placing vertical wells. If an excavation or horizontal well installation is completed in which asbestos waste is disturbed, procedures are followed to minimize dust generation. In addition, facility staff will notify the AQD 45 days prior to excavating or otherwise disturbing any asbestos containing waste material. If the excavation needs to begin on a date other than what was provided in the original notice, notice of the new start will be provided at least 10 days before excavation begins, S.C. VII. 5.

FGNEWCOLDCLEANERS

The facility no longer owns and operates a cold cleaner. The cold cleaner was removed on August 6, 2020 and returned to Safety Kleen.

Summary

Northern Oaks is a Type II municipal solid waste landfill located in Harrison, MI. The landfill accepts municipal and solid waste, construction debris, foundry sand, ash, and contaminated soils. The landfill began accepting waste in December of 1992 and has a Maximum Design Capacity is 8.9 million cubic meters. An onsite compliance inspection was completed on July 11, 2022. The purpose of the inspection was to determine compliance with the Federal Clean Air Act; Article II, Part 55, Air Pollution Control of Natural Resources and Environmental Protection Act, 1994 Public Act 451; Michigan Department of Environment Great Lakes and Energy, Air Quality Division (AQD) Administrative Rules; and to evaluate compliance with the facilities Renewable Operating Permit, MI-ROP-N6010-2018. At the time of inspection, the facility was found to be in compliance.

NAME *Nathanael Shortt*DATE 7/22/2022

SUPERVISOR

Chris Stone