

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

N598563615

FACILITY: Whitefeather Landfill		SRN / ID: N5985
LOCATION: 2401 E. Whitefeather Road, PINCONNING		DISTRICT: Bay City
CITY: PINCONNING		COUNTY: BAY
CONTACT: Robb Moore , Environmental Manager (Sec 1)		ACTIVITY DATE: 07/13/2022
STAFF: Gina McCann	COMPLIANCE STATUS: Compliance	SOURCE CLASS: MAJOR
SUBJECT: Scheduled inspection of MI-ROP-N5985-2019 for both section 1 and section 2.		
RESOLVED COMPLAINTS:		

I (glm) conducted a scheduled site inspection at the Whitefeather Landfill. Whitefeather Landfill is an existing Type II solid waste disposal facility owned and operated by Republic Services of Michigan with a gas to energy plant owned and operated by Energy Developments Pinconning (EDL), formerly Granger Energy Services (PO437). At the time of the inspection the facility was found to be in compliance with the ROP MI-ROP-N5985-2019 and the applicable air quality regulations.

Previously, the two companies operated under separately issued ROPs, but were combined into one sectioned ROP. The companies have a contractual agreement in which Whitefeather Landfill sells landfill gas to EDL and EDL is dependent upon Whitefeather Landfill to provide landfill gas which is combusted in its two reciprocating internal combustion engines (RICE). The contractual and spatial relationship of the two facilities establishes Whitefeather Landfill and EDL as a single stationary source based on the definition in Michigan's Rule 336.1119(r).

I met with Republic Services of Michigan representative Mr. Robb Moore, Environmental Manager at Whitefeather. We toured the landfill and reviewed on site records required by MI-ROP-N5985-2019. I then met with Mr. Mike Schaper and Mr. Rob Stewart from EDL. I reviewed some records on-site, while others I viewed off-site. All required information was available, and no violations were found during the inspection.

The landfill gas is collected at the Whitefeather facility, which is a Type II, active municipal solid waste landfill (MSW). An active gas collection system removes landfill gas (LFG) by vacuum applied to the wells from a blower. The LFG is then routed to the gas to energy (GTE), EDL facility, for generation of electricity. Any excess LFG or when the EDL facility is down, the gas is routed to the open and enclosed flares owned and operated by Whitefeather Landfill. Whitefeather Landfill periodically modifies the gas well collection system and/or collection piping as needed when sections of the landfill begin to produce significant gas quantities.

The site was issued an ROP in February 2019. The ROP is sectioned, Whitefeather Landfill in section 1 and EDL in section 2. The ROP is required to be renewed between August 4, 2022 and August 4, 2023. Mr. Moore stated the consultants' plan to begin working on it this fall. The source is subject to the landfill federal plan, Part 62 Subpart OOO, for a municipal solid waste landfill that commenced construction, reconstruction, or modification on or before July 17, 2014. The MSW landfill has a design capacity greater than 2.5 million megagrams (Mg), but actual NMOC emissions based upon an established Tier 2 value in the landfill calculation are less than 34 Mg per year. Michigan does not currently have delegation of the federal plan, nor do we have an approved state plan. Therefore, current enforceability of this regulation is limited. The site still has requirements for the NSPS Part 60 Subpart WWW in the ROP. Even though obsolete, this

inspection was performed based on the requirements in the ROP. Although not ideal, there are duplicative requirements between the WWW and OOO regulations that Whitefeather is familiar with.

The following emissions were reported to the Michigan Air Emissions Reporting System in the 2021 submittal:

Pollutant	Emissions (tons)
CO	104.62
NMOC	3.38
NO _x	27.39
PM10, filterable	10.68
PM10, primary	0.048
PM2.5, primary	0.048
SO ₂	11.18
VOC	18.69

Section 1-EULANDFILL <50: Compliant

The landfill began operation in 1991 and currently accepts municipal solid waste, non-hazardous special waste, regulated asbestos containing materials, and construction and demolition debris. The facility has a gas collection and control system installed that is not required by regulation. As they build the waste cells they continue to expand and upgrade the site's GCCS. On October 7, 2008 Republic was granted a construction expansion permit. The site now has 21.00 acres in final closure and 19.5 acres for current and future waste acceptance.

The Maximum Design Capacity is 4,561,753 megagrams per their March 2009 modified design capacity report. There were no LFG odors during the tour of the landfill except at the immediate working face. Mr. Moore said that it is Republic's internal policy to operate all GCCS as if they were subject to the NSPS WWWW. The facility does perform monthly GCCS monitoring and tuning to optimize gas collection to the GTE.

Each truck is weighed, material type recorded, and the information is entered in the facility's "TRUCK" database. The database provides the value for the annual volume of waste accepted

which is used to calculate annual emissions that are reported to the AQD. The total in-place waste was 5.5 million yd³ with a maximum design capacity of 4,561,753 megagrams.

The facility is permitted to recirculate leachate though it rarely does and last recirculated in 2018. I did request a copy of the liquids addition report required by the federal plan so that we can have a complete file. That report can be found in the ROP reporting folder.

Section 1-TIER 2 Testing: Compliant

The facility is required to conduct an NMOC emission test a minimum of once every five years. The last NMOC test was conducted on August 17, 2020. The NMOC concentration was found to be 25.05 Mg/yr, which is below the 50 Mg/yr required in the MACT AAAA and below the 34 Mg/yr required in the federal plan, which requires the facility to install and maintain a GCCS. Mr. Moore said they report all waste accepted to MAERS and use only MSW accepted to calculate gas generation for the Tier II report. I reviewed the Tier 2 test results from 2020 and 2015. I compared actual waste acceptance rates submitted to the Waste Data System (WDS) with those estimated in the Tier 2 tests. Whitefeather uses an estimated 180,000 tons of waste accepted as an estimate for the five-year period. Reviewing WDS, the waste accepted minus C&D waste reported does not exceed 180,000 tons for the past five years. Input parameters in LandGem were consistent with regulatory requirements. Blower vacuum and flow during the Tier 2 test appeared representative of day to day operations as observed during the inspection. Therefore, the estimated Tier 2, NMOC emissions, should be accurate.

Section 1-MAP/Odor Abatement: Compliant

On site Republic staff conducts routine weekly surveys. No off-site odors were verified during their investigations for the current month of October. If an odor is detected staff works to determine the source to alleviate the odor. The last odor complaint was received in December of 2020. The site had accepted some oil well spoils that were extremely stinky. Prior to that the most recent odor complaint was in November 2019. The facility had received the same type of waste prior to that complaint as well.

Section 1-EUOPENFLARE: Compliant

The facility has one open flare rated at approximately 700 scfm. They have an enclosed flare rated at approximately 400 scfm onsite, however it is disconnected from the GCCS and cannot be operated. The current open flare is undersized and the site has been working to obtain a larger replacement. On November 19, 2021, Whitefeather Landfill submitted an exemption demonstration to install a replacement utility flare under R336.1285(aa). Potential emissions will be below significance levels. Due to supply chain issues, a ripple effect from the covid-19 pandemic, the replacement flare has not yet been received.

The site maintains the open flare in a ready state. The flare is only used when engine maintenance is performed or during an unexpected shutdown. The GCCS has alarms if the engines are not available and auto start for the flares. The alarm is sent to a EDL employee who would investigate any alarm and then the landfill manager so that they may verify flare operation.

EUOPENFLARE is not in the ROP, because control is not required on a landfill with NMOC concentration less than or equal to 34 NMOC Mg/yr. Whitefeather Landfill performs Tier 2 testing every 5 years to verify that their emissions are less than 34 NMOC Mg/yr.

Section 1- EUASBESTOS: Compliant

I reviewed asbestos records and asbestos placement tracking. The facility maintains an asbestos placement log with generator and delivery information for asbestos containing waste accepted. The site uses a database program "TRUCKS" to record information as each load enters the landfill. A form is completed by on hill staff with the latitude, longitude, and depth of asbestos containing waste recorded. The asbestos placement form is kept with the manifest for the load. Copies of two completed "RACM Load Inspection Form" are attached. Asbestos notifications for possible disturbance are sent appropriately to the district office.

Section 1- EUCOLDCLEANER: Compliant

The facility has required instructions posted. Safety Kleen owns and manages the solvents and waste stream. Based on site records and annual certification report the cold cleaner is in compliance.

Once I completed the tour with Mr. Moore I then drove back to the GTE plant. Mr. Mike Schaper, Michigan Operations Supervisor, Mr. Rob Stewart, Operations Supervisor, and Mr. Kevin Ackerman, Plant Operator. I reviewed maintenance records and viewed the engines and process data in real time. A more in-depth records review was performed off-site. At the time of my inspection all required information was available and no violations were found.

Section 2-FGICENGINES

The GTE plant operates two CAT G3520C internal combustion engines. The original engines were installed on May 8, 2009. In 2016 both engines were swapped out for like replacements under PTI exemption R285(2)(a)(vi). The plate IDs for Engine 1 and Engine 2 are GZJ00277 and GZJ0340 respectively. As of July 13, 2022 engines hours were 113,135 and 51,799 for EUICEENGINE 1 and EUICEENGINE 2, respectively.

NSPS JJJJ stack testing was performed on February 23, 2022 and at that time the facility was in compliance with the applicable emission standards in their ROP. Results of that test are in the table 2.1 and 2.2, screenshots, below.

EDL is also required to test formaldehyde emissions once every five years from the date of the last test. Formaldehyde emissions were last tested March 1, 2018 and are required before March 1, 2023. Formaldehyde was 1.63 lbs/hr per engine with an emission limit of 2.10 lb/hr per engine.

At the time of my inspection the engines were operating such that it meets the emission limits. Total gas flow to the plant was 706 scfm with a methane concentration of 50.3%.

Landfill gas usage during the inspection was 1612 lb/hr for EUICEENGINE1 and 1565 lb/hr for EUICEENGINE 2. KW output for each of the engines was 1015 KW and 1012 KW for EUICEENGINE 1 and EUICEENGINE 2.

Table 2.1 Average engine operating conditions during the test periods

Engine Parameter	EUICEENGINE1 CAT® G3520C	EUICEENGINE2 CAT® G3520C
Generator output (kW)	1,606	1,609
Engine output (bhp)	2,241	2,245
Engine LFG fuel use (lb/hr)	2,267	2,363
LFG methane content (%)	53.0	51.0
Exhaust temperature (°F)	775	776
Inlet pressure (psi)	6.0	6.0

Table 2.2 Average measured emission rates for each engine (three-test average)

Emission Unit	CO		NO _x		VOC
	(lb/hr)	(g/bhp-hr)	(lb/hr)	(g/bhp-hr)	(g/bhp-hr)
EUICEENGINE1	11.1	2.25	2.79	0.56	0.13
EUICEENGINE2	12.0	2.42	2.85	0.58	0.14
<i>Permit Limit</i>	<i>16.23</i>	<i>3.3</i>	<i>4.92</i>	<i>1.0</i>	<i>1.0</i>

Material limits are compared to a 12-month rolling time period as determined at the end of each calendar month. Special condition (SC) II.1 limits the use of landfill gas to 565.88 MMscf per year based on a 12-month rolling time period as determined at the end of each calendar month. Landfill gas usage for the engines is recorded on a monthly and 12-month rolling time period basis as determined at the end of each calendar month. Attached is a copy of the spreadsheet with 12-month rolling data for June 2022. July 2021 had the highest 12-month rolling usage at 458.71 MMscf.

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An example of the asbestos loads, logging and mapping are attached to this report.

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SC III.2 requires the facility to implement and maintain a malfunction abatement plan (MAP). The most recent MAP on file for the facility was from 2010. It appeared malfunctions are still addressed according to the MAP.

SC VI. 1-8 requires monitoring and recordkeeping of landfill gas usage (monthly and 12-month rolling), kilowatt output (daily unless weekend or holiday), hours of operation (monthly and 12-month rolling), all maintenance activities per the MAP, and 40 CFR Part 60 Subpart JJJJ

notifications and documentation supporting documentation. At the time of the inspection the facility was in compliance with these conditions.

Section 2- FGRICEMACT

The facility submitted an annual report per 40 CFR 63.6500 (g) containing the following information. Fuel flow rate and heating values, operating limits provided in ROP and any deviations from these limits, as well as any problems or errors suspected from the fuel flow rate meters. The annual report stated records were not maintained on three separate instances due to digital equipment failure, which seems to have resolved itself.

At the time of my inspection the facility was in compliance with MI-ROP-N5985-2019.

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NAME



DATE 8/3/2022

SUPERVISOR

