

**DEPARTMENT OF ENVIRONMENTAL QUALITY
AIR QUALITY DIVISION
ACTIVITY REPORT: Scheduled Inspection**

P082950116

FACILITY: Sebewaing Light and Water Dept.		SRN / ID: P0829
LOCATION: 120 West Main Street, SEBEWAING		DISTRICT: Saginaw Bay
CITY: SEBEWAING		COUNTY: HURON
CONTACT: Charlene Hudson , Superintendent		ACTIVITY DATE: 08/14/2019
STAFF: Matthew Karl	COMPLIANCE STATUS: Compliance	SOURCE CLASS: SM OPT OUT
SUBJECT: Scheduled inspection to determine compliance with PTI No. 164-17.		
RESOLVED COMPLAINTS:		

On Wednesday (8/14/19) I (Matt Karl) conducted a compliance inspection at the Sebewaing Light & Water facility located at 120 West Main Street, Sebewaing, Michigan. The purpose of this 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 (EGLE-AQD) Administrative Rules; the Title V Opt-Out Permit to Install (PTI) No. 164-17. Mr. Pete Smith assisted me during my on-site inspection and Ms. Charlene Hudson provided requested records.

Facility Description

Sebewaing Light & Water owns and operates an electrical power generating facility. The operations at the Main Street facility include six (6) engines for electrical power generation. Engines 1-4 and 6 were installed prior to August 1967 and have not been modified or reconstructed and are considered "grandfathered" from Rule 201 permitting requirements. Engine 5 was installed in 1979 and is the reason for Opt-Out PTI No. 164-17. The conditions specifying Opt-Out limits for the Main Street facility are so that potential emissions from the facility do not exceed Title V Major Source thresholds in case Sebewaing Light & Water decides to reclassify the engines as non-emergency by running the engines for more than 500 hours/year.

Site Inspection

I arrived on site around 9:30 am. I met with Pete Smith, who provided access to the engine room and relevant maintenance record binders. I toured the engine room, which appeared clean and orderly. I recorded information from the boiler plates on each of the engines in the table below.

Unit No.	Make	Model	Serial No.	HP	KW	RPM	Fuel
1	Fairbanks-Morse	38 D 8 1/8	969660	1440	1000	720	Dual-Fuel
2	Fairbanks-Morse	38 D 8 1/8	882789	1280	900	720	Diesel
3	Fairbanks-Morse	38 DD 8 1/8	970435	1600	1250	600	Dual-Fuel
4	Fairbanks-Morse	38 DD 8 1/8	970915	1920	1360	720	Dual-Fuel
5	Fairbanks-Morse	38 DD 8 1/8	969092	1600	1136	720	Dual-Fuel
6	Fairbanks-Morse	38 DD 8 1/8	967697	960	675	720	Dual-Fuel

I reviewed maintenance record binders for the engines. It appeared that the latest record for all of the engines was a Mob II Wear Check Mobile Oil Analysis report from 2013 which indicated that the engine oil was sufficient for further use. In 2011 Unit 5 had two (2) fuel injectors replaced.

I reviewed test record binders for the engines. I've summarized the latest runs for each of the engines in the tables below.

Unit 1			
Date	Hours (Meter)	KWH meter	Gallons Lube Oil Added
1/24/18	2.3 (77.3-75.0)	1,841	9
8/3/17	4.6 (75.0-70.4)	3,783	6

Unit 2			
Date	Hours (Meter)	KWH meter	Gallons Lube Oil Added
2/24/19	3.6 (116.6-113)	-	6
11/7/18	1.1 (113-111.9)	146	-

Unit 3			
Date	Hours (Meter)	KWH meter	Gallons Lube Oil Added

Date	Hours (Meter)	KWH meter	Gallons Lube Oil Added
2/24/19	1.5 (434.1-432.6)	-	9
11/7/18	12.2 (432.6-420.4)	11,833	-
1/22/18	2.1 (420.4-418.3)	2,318	-
8/1/17	4 (418.3-414.3)	4,440	6

Unit 4			
Date	Hours (Meter)	KWH meter	Gallons Lube Oil Added
2/24/19	5.1 (397.5-392.4)	-	9
11/7/18	12.2 (392.4-380.2)	10,606	-
1/22/18	2 (380.2-378.2)	2,517	9
8/2/17	5.8 (378.2-372.4)	6,800	1.5

Unit 5			
Date	Hours (Meter)	KWH meter	Gallons Lube Oil Added
2/24/19	4.6 (182.2-177.6)	-	9
11/7/18	2.6 (177.6-175)	3,552	-
1/24/18	2.3 (175-172.7)	1,824	12
8/2/17	3.7 (172.7-169)	3,576	21

Unit 6			
Date	Hours (Meter)	KWH meter	Gallons Lube Oil Added
10/25/13	0.9 (63.5-62.6)	323	-
1/11/13	1 (62.6-61.6)	327	-

I departed the facility around noon.

Records Review

I emailed a records request to Charlene Hudson on 8/14/19.

I reviewed the Michigan Air Emissions Reporting System (MAERS) report from 2018 to look at previous emissions from the facility. PTI No. 164-17 has conditions that limit NOx and formaldehyde emissions as well as limiting the fuel usage in the engines so that the facility can avoid Title V Major Source thresholds.

From the 2018 MAERS report, the facility uses MAERS emission factors (EF) for Source Classification Code (SCC) 2-01-001-02 for reciprocating internal combustion engines fired on oil (diesel), used for electric utility generation. For NOx the emission factor is 6.04×10^{-2} pounds/1000 gallons of diesel fuel; for formaldehyde the emission factor is 6.63×10^{-2} pounds/1000 gallons of diesel fuel.

In 2018, EUENGINE5 used 72 gallons of diesel fuel (No. 2 Fuel Oil), which corresponds to 9.9 MMBtu, which is well below the material limit of 12,500 MMBtu per 12-month rolling time period. Using the emission factors above, this results in emissions of 43.49 lbs NOx and 0.005 lbs formaldehyde which are well below the permit limits of 25.5 TPY NOx and 660.0 lb/yr formaldehyde.

The other units (FGFACILITY) combined used 1,700 gallons of diesel fuel. This results in 1026.8 lbs NOx and 0.113 lbs formaldehyde. These emissions are all well below the FGFACILITY permit emission limit of 89.8 TPY NOx.

I received an email from Charlene Hudson on 8/26/19. The email contained the following records:

- PTI 164-17 Compliance.xlsx
- Diesel Fuel Oil MSDS.pdf
- Miratech Catalyst.pdf
- Engine 5 Operation and Maintenance.pdf

I reviewed the "PTI 164-17 Compliance.xlsx" workbook. This workbook contained records from February 2018 through July 2019.

For 2019, as of July 2019, EUENGINE5 used 350 gallons of No. 2 Fuel Oil (diesel), which corresponds to 48 MMBtu, which is well below the material limit of 12,500 MMBtu per 12-month rolling time period. The facility uses emission factors of 3.20 lbs NOx/MMBtu No. 2 Fuel Oil and 7.89×10^{-5} lbs formaldehyde/MMBtu No. 2 Fuel Oil. Using these emission factors results in emissions of 154 lbs NOx and 0.0038 lbs formaldehyde which are well below the permit limits of 25.5 TPY NOx and 660.0 lb/yr formaldehyde.

For 2019, as of July 2019, FGFACILITY used 861 gallons of No. 2 Fuel Oil and 561.4 MSCF of natural gas. The combined total fuel MMBtu of these fuels are well below the material limit of 44,000 MMBtu per 12-month rolling time period. The facility uses emission factors of 4.08 lbs NOx/MMBtu Natural Gas and 3.20 lbs NOx/MMBtu No. 2 Fuel Oil. Using these emission factors results in approximately 1.4 tons of NOx for 2019 to date, with 12-month rolling totals of approximately 2 TPY, which are well below the FGFACILITY permit emission limit of 89.8 TPY NOx.

I reviewed the "Diesel Fuel Oil MSDS.pdf" record. This record is the Safety Data Sheet for Marathon Petroleum No. 2 Ultra Low Sulfur Diesel. This record is determined to fulfill the monitoring/recordkeeping requirement for EUENGINE5 SC VI.4.

I reviewed the "Miratech Catalyst.pdf" record. This record contained information provided by the manufacturer. Based on this information, the VOC reduction efficiency of the catalyst should be 70% or greater. This record is determined to fulfill the monitoring/recordkeeping requirement for EUENGINE5 SC VI.5.

I reviewed the "Engine 5 Operation and Maintenance.pdf" record. I had reviewed this record during my site inspection as well, see the Unit 5 table above. The only maintenance performed on EUENGINE5 since my last inspection on 8/1/18 was to add lube oil on 2/24/19. This record is determined to fulfill the monitoring/recordkeeping requirement for EUENGINE5 SC VI.6.

Summary

At the time of my inspection Sebewaing Light & Water appeared to be in compliance with the conditions of PTI No. 164-17.

NAME Matthew R. Karl

DATE 8/29/19

SUPERVISOR C. Hice