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

K208742352

FACILITY: LAKELAND CORRECTIONAL FACILITY		SRN / ID: K2087
LOCATION: 38 FOURTH ST, COLDWATER		DISTRICT: Kalamazoo
CITY: COLDWATER		COUNTY: BRANCH
CONTACT: Ryan Krenzalek , Plant Operator		ACTIVITY DATE: 11/14/2017
STAFF: Dennis Dunlap	COMPLIANCE STATUS: Compliance	SOURCE CLASS: SM OPT OUT
SUBJECT: Scheduled inspection.		
RESOLVED COMPLAINTS:		

This was not a scheduled inspection. Ryan Krenzalek was the contact person at the power plant. Dennis Dunlap and Cody Yazzie were the inspectors for AQD. The Lakeland Correctional Facility has a power plant that has three 48 MMBtu/hour Keeler boilers installed in 1972. There are also six emergency generators. Four of these are located near the power plant building, one is located at the well, and one is located near the administration building. The boilers and generators are covered by permit 11-12. This is an opt-out permit for sulfur dioxide. There is an old permit 37-72 for the three boilers. Mr. Krenzalek gave permission to have this permit voided.

The boilers are capable of operating on natural gas or oil. The boilers did not operate on oil in 2016. In 2017 new controls were installed (oil valve, drum level control, etc.) and each boiler was operated for 24 hours on oil. Fuel oil is stored in a 10,000-gallon tank located on the north side of the power plant building. This tank was installed in 2015. This tank is exempt by rule 284(2)(d). Oil from the old oil tank was transferred to the new tank. This oil was tested at the time to make sure that it met the 0.5% sulfur by weight permit limit. An oil sample was taken during this current inspection and sent to Merit labs to check for % sulfur by weight. An SDS for the fuel was provided. The fuel is listed as ultra-low sulfur diesel which contains 15 ppm sulfur (0.0015%). The permit limit is 0.5%.

Usually boilers 2 and 3 are operated in the winter and boiler 1 is operated in the summer. There is a gas meter that records natural gas usage for all three boilers. The amount used is recorded daily. There are separate oil meters for each boiler. Based on MAERS for 2016 the boilers emitted 64 pounds of sulfur dioxide. The boilers are not subject to 40 CFR Part 60 Subpart Dc because of the installation date (before 1989). By operating on ultra-low sulfur diesel (when operating on oil), sulfur emissions will be within permit limits.

The 175 kW Cummins emergency generator is located inside the power plant building. Fuel oil for this generator is stored in an above ground fuel oil tank located outside the building on the south side. A fuel oil sample was taken from this generator. This generator is run for 0.5 hours each week and tested on low load for one hour once per month. This equals about 38 hours per year for maintenance checks and readiness testing. This meets the 100-hour permit limit for this type of operation. Emergency operation does not have a limit. In October the generator was run for 24 hours due to a power outage. Because the generator meets the 100-hour limit for maintenance checks and readiness testing, it is not subject to 40 CFR Part 63 Subpart ZZZZ. It also is not subject to 40 CFR Part 60 Subpart IIII. Each week hours of operation are recorded for this generator. Annual maintenance is performed and includes an oil and oil filter change, a hose and belt check, etc. This generator has an hours meter.

The Caterpillar 750 kW emergency generator is in a separate building just south of the power plant building. This generator has a below ground tank for fuel oil. The hours of operation and maintenance are like the Cummins generator. At the time of this inspection the annual maintenance was being performed. The weekly hours of operation are recorded. This generator has an hours meter.

The Onan 230 kW generator is located near the administration building. This is run for 0.5 hours per week with no load testing. The hours of operation are recorded by other staff rather than power plant staff. This generator was not seen. The Onan 100 kW generator is located at the well. It is run for 0.5 hours once per month and load tested for one hour 2-3 times per year. This generator was not seen.

The two Kohler generators are not set up at the current time to provide electric power. They are run once per month. These were not seen.

In October all generators except for the two Kohlers were run for 24 hours because of a power outage. In the 2016 MAERS report the total fuel usage for the generators was 500 gallons. This amount is an estimate based on an annual delivery of 500 gallons. It is not directly measured. Sulfur dioxide emissions were less than 20 pounds. This is based on an emission factor of 39.7 lbs of sulfur dioxide per 1,000 gallons of fuel burned and a fuel sulfur content of 0.05%. The generators use the same fuel oil as used by the boilers. The estimated hours of operation for all generators in 2017 is 219 hours. This includes the power outage. The AP-42 sulfur dioxide emission factor for these diesel engines is 0.00205 pounds per horsepower hour for the engines less than 600 horsepower (AP-42 Table 3.3-1), and 000012135 lb per horsepower hour (AP-42 Table 3.4-1) for the Caterpillar engine. The estimated horsepower hours for 2017 is 97,760. The estimated 2017 sulfur dioxide emission is 74 pounds. It is proposed that

the facility calculate sulfur dioxide emissions from the generators based on hours of operation rather than by estimating fuel usage.

Consent Order AQD No. 7-2010 was also discussed. It appears that this can be voided. Information was provided to Mr. Krenzalec about steps needed to have the consent order voided.

The facility gets one delivery of 500 gallons of fuel oil each year for the generators. This is the estimated fuel usage. Because fuel usage cannot be directly measured, it is proposed that sulfur dioxide emissions be calculated based on hours of operation (see above). An email will be sent to the facility with the proposed method and recommendations that the sulfur dioxide facility emissions be calculated monthly and tabulated on a 12-month rolling time period basis.

Based on the 2016 MAERS report the total sulfur dioxide emissions for the facility was less than 100 pounds. The facility permit limit is 89 tpy.

NAME Denni Dunlap

DATE 11/17/17

SUPERVISOR MR 11/17/2017