

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

K212070192

FACILITY: MDOC IONIA FACILITIES		SRN / ID: K2120
LOCATION: 1342 WEST MAIN STREET, IONIA		DISTRICT: Grand Rapids
CITY: IONIA		COUNTY: IONIA
CONTACT: Travis Scarborough , Maintenance Technician		ACTIVITY DATE: 12/19/2023
STAFF: Eric Grinstern	COMPLIANCE STATUS: Compliance	SOURCE CLASS: SM OPT OUT
SUBJECT: Unannounced compliance inspection		
RESOLVED COMPLAINTS:		

Inspection of Michigan Department of Corrections, Ionia Correctional Facilities.

FACILITY DESCRIPTION

The stationary source is comprised of several correctional facilities that are contiguous to each other. The facilities include Bellamy Creek Correctional Facility, Michigan Reformatory, Richard A. Handlon Correctional Facility and Ionia Correctional.

REGULATORY ANALYSIS

The stationary source has one opt-out permit (PTI#148-15) that covers all processes regulated at the stationary source. The permit covers three existing natural gas-fired steam boilers and two new natural gas-fired boilers at the Michigan Reformatory. Since permit issuance, the facility has removed the three existing boilers (EU-BOILER1, EU-BOILER2 and EU-BOILER3). The facility has installed the new boilers, identified as EU-BOILER4 and EU-BOILER5. In addition to the new permitted boilers, the facility installed a 10.2 MMBTU boiler two years ago. The boilers at the Michigan Reformatory no longer provide steam for the other facilities. The individual facilities have their own boilers. The facility has installed a new generator at the Michigan Reformatory. The permit also covers six existing diesel-fired emergency generators located at the individual facilities. The emergency generators are used in case there is a loss of power from the public utility grid system. The Michigan Reformatory has been decommissioned as a prison and is proposed to be utilized as an employee gym. In addition to the permit requirements, the two new boilers (EU-BOILER4 & EU-BOILER5) are subject to NSPS Dc. The six emergency generators are subject to the NESHAP requirements under Subpart ZZZZ.

COMPLIANCE EVALUATION

AQD staff, consisting of Eric Grinstern (EG) conducted an unannounced compliance inspection at the Michigan Reformatory. Prior to entering the facility an evaluation showed no opacity. At the facility, staff met with Travis Scarborough, Maintenance Mechanic. Mr. Scarborough answered questions and provided a tour of the facility. Required records were requested and provided subsequent to the inspection. Facility compliance with the permit/NSPS requirements is based on fuel type, fuel usage, hours of operation, and emission records, for which compliance is based on facility records. No control equipment or addition compliance monitoring is required.

All processes at the stationary source are covered under Opt-Out Permit No. 148-15. The special conditions evaluation, and compliance status are summarized below.

FG-BOILERS

Flex group includes the three existing natural gas-fired steam boilers and two new natural gas-fired boilers located at the Michigan Reformatory. Only the two new natural gas-fired boilers (EU-BOILER4 and EU-BOILER5) remain onsite.

Emission/Material Limits

Each boiler has a NO_x limit of 100 lb/MMscf. The emission limit is the emission factor for NO_x for a non-low NO_x burner using natural gas. Compliance is based on using natural gas.

The boilers are only fired with natural gas.

Design/Equipment Parameters

Requires the installation and operation of a device to monitor and record natural gas usage in FG-BOILERS on a monthly and 12-month rolling time period.

The facility monitors and records natural gas usage for FG-BOILERS. In addition to the natural gas used in EU-BOILER4 and EU-BOILER5, the facility also includes the natural gas combusted in the PTI exempt 10.2 MMBtu boiler at Michigan Reformatory. The facility provided records of usage as requested for the most recent 12-month time period. The records document monthly and 12-month rolling time period usage. For the 12-month time period ending in November 2023, the natural gas usage was 133 MMCF.

FG-NSPSBOILERS

FG-NSPSBOILERS includes the two permitted 40.8 MMBtu/hour gas-fired boilers, EUBOILER4 and EUBOILER5, which are subject to NSPS Subpart Dc. Additionally, two years ago the facility install a 10.2 MMBtu boiler that is also subject to NSPS Subpart Dc.

Monitoring/Recordkeeping

The facility is required to monitor and record the natural gas usage on a monthly basis.

The facility provided monthly natural gas usage for FG-NSPSBOILERS as well as the 10.2 MMBtu boiler for the most recent 12-month time period. Since the old boilers have been removed, only the three new boilers are onsite, all of which are NSPS subject. For the 12-month time period ending in November 2023, the natural gas usage was 133 MMCF.

FG-EMGGENS

Flex group includes six diesel fuel fired emergency generators.

EU-EMGRICE1, EU-EMGRICE2, EU-EMGRICE3, EU-EMGRICE4, EU-EMGRICE5,
EU-EMGRICE6

Facility records show the removal dates for the following generators:

EU-EMGRICE2 - 2019

EU-EMGRICE3 - 2017

EU-EMGRICE5 - 2018

EU-EMGRICE6 - 2019

Therefore, of the permitted generators, only EU-EMGRICE1 (Bellamy Creek/IBC) and EU-EMGRICE4 (Handlon) are still in operation.

Material Limits

Restricts the sulfur content of the fuel oil used to 500 ppm by weight.

Under contract, the fuel supplied is an ultra-low sulfur diesel (ULSD) that contains a maximum sulfur level of 15 ppm.

A copy of the SDS for the fuel supplied under contract by Crystal Flash was provided. The facility also provided a record of delivery of ULSD to each of the generators for 2022 and 2023.

Process/Operational Restrictions

Restricts the operation of each engine to no more than 500 hours per year on a 12-month rolling time period.

Records were provided showing hours of operation for each generator. The maximum monthly usage did not exceed 100 hours for any single generator in FG-EMGGENS.

FG-FACILITY

Flex group that establishes facility-wide opt out limits for NOx and CO and restricts natural gas usage.

Emission/Material Limits

Facility-wide NOx and CO emission limits: 89 tpy for each, on a 12-month rolling time period.

Review of records for the most recent 12-month time period ending in December 2023, showed that CO emissions did not exceed 9 tons on a 12-month rolling time period and NOx emissions did not exceed 11 tons on a 12-month rolling time period basis.

Restricts facility-wide natural gas usage to 1,215 million cubic feet per year, based on a 12-month rolling time period.

Records were provided documenting fuel usage for the most recent 12-month time period ending in December 2023. The highest usage on a 12-month rolling time period was 206 million cubic feet.

MISCELLANEOUS

In addition to the permitted generators, the facility provided usage records for three additional generators.

The generators are identified by the facility as EU-EMGICF, EU-EMGDORM and EU-EMGRMI. EU-EMGICF is listed as a 330 kW (3.54 MMbtu/hr) generator that is exempt from permitting, EU-EMGDORM is listed as a 175 kW (1.88 MMbtu/hr) generator that is exempt from permitting and EU-EMGRMI is listed as a 650 kW (6.97 Mmbtu/hr) generator that is exempt from permitting and subject to NSPS III. Each of the generators appear to be exempt from permitting under Rule 282(2)(b)(ii), based on the heat input rating. Emissions from the generators were included with the facility records and are accounted for in demonstrating compliance with the emission limits for FG-FACILITY. The generators have non-resettable hour meters, and the facility maintains records of generator use in emergency and non-

emergency service. Maintenance checks and readiness testing for each of the generators was recorded as well below the 100 hour per year limit under NSPS III.

CONCLUSION

Based on this inspection, the facility is in compliance with applicable air quality rules and regulations at this time.

NAME Eric Gunstam
DATE 01/17/2024
SUPERVISOR HH