

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

P062536016

FACILITY: MDOC-Muskegon Complex		SRN / ID: P0625
LOCATION: 2400 S. Sheridan Drive, MUSKEGON		DISTRICT: Grand Rapids
CITY: MUSKEGON		COUNTY: MUSKEGON
CONTACT: Derron Kippen ,		ACTIVITY DATE: 08/17/2016
STAFF: Steve Lachance	COMPLIANCE STATUS: Non Compliance	SOURCE CLASS: SM OPT OUT
SUBJECT: Scheduled Inspection for FY '016; see CA_P062536016. Non-Compliance status based on %Sulfur-in-fuel. (SLachance, 9/30/16)		
RESOLVED COMPLAINTS:		

SLachance (SL) and Adam Shaffer (AS) of MDEQ-AQD conducted a scheduled inspection of the Michigan Department of Corrections - Muskegon Complex located at 2400 South Sheridan Drive in Muskegon, Michigan. Prior to facility entry at about 1 PM, Wednesday August 17, 2016, AQD staff surveyed the area for odors and visible emissions; none were noted from the Complex, which is comprised of three separate facilities ("Brooks, Lakeshore and Muskegon" facilities, all on the same campus.)

The AQD facility contact is Mr. Deron Kippen, Physical Plant Manager. He is located at the Physical Plant associated with the "Muskegon" Facility.

SL and AS presented themselves, announced the intention to complete the inspection, and shared DEQ's "Environmental Inspections: Rights and Responsibilities" brochure. The stated purpose of the inspection was to determine compliance with respect to Opt-out Permit to Install (PTI) No. 133-15; and with the associated Consent Order No. AQD-13-2016 (as well as any other applicable air use rules or regulations.)

Opt-out PTI No. 133-15 establishes legally enforceable limits on facility emissions. These limits are below the thresholds established by Title V of the Clean Air Act, as amended in 1990. The PTI was acquired to comply with the provisions of Consent Order No. AQD-13-2016. "Opt Out" status relative to Title V permitting provisions is based on demonstrated adherence to the PTI's facility fuel restrictions, associated emissions levels, and properly documented records.

SL shared a copy of PTI No. 133-15 with Mr. Kippen for clarity through the inspection process.

The following fuel-burning emission units are included in the PTI:

EU ID	Description
EU-EMGRICE-1	Emergency use, diesel-fired Reciprocating Internal Combustion Engine (RICE); 340 kW
EU-EMGRICE-2	Emergency use, diesel-fired Reciprocating Internal Combustion Engine (RICE); 340 kW
EU-EMGRICE-3	Emergency use, diesel-fired Reciprocating Internal Combustion Engine (RICE); 500 kW; physically located at Brooks facility
EU-EMGRICE-4	Emergency use, diesel-fired Reciprocating Internal Combustion Engine (RICE); 563 kW; physically located at Brooks facility

EU-BOILER-1	24 mmBtu/hr natural gas and oil-fired boiler
EU-BOILER-2	24 mmBtu/hr natural gas and oil-fired boiler

FG-EMGGENS (four emergency RICE)

These are restricted to the use of fuel oil with 500 ppm (0.05%) or less sulfur. All oil on-site is contained in a single above-ground tank at the Muskegon facility Physical Plant. Mr. Kippen was initially unable to provide documentation of the fuel in the tank (purchase specification, bill of lading referencing Ultra Low Sulfur Diesel fuel, etc.), and so on Friday, September 9, 2016 SL and AS returned to the site to acquire a sample of the diesel fuel.

The facility provided a sample of the fuel from the "Day Tank" in the engine room. The sample was split with MDOC personnel and was submitted to Merit Laboratories, Inc. under chain-of-custody (attached) protocol for analysis of heating value and sulfur content. Results were received on September 29, 2016 (attached), and these indicate 0.14% Sulfur-in-fuel compared to the 0.05% allowed by Special Condition No. II.1 of FG-EMGGENS in PTI No. 133-15. This is a point of non-compliance and was conveyed to Mr. Kippen via email on September 30, 2016.

Each engine is equipped with a non-resettable hour meter as part of their original installation. The following hours were observed (or reported, for the Brooks engines, based on time restrictions for the inspection):

Engine	Hours as of 8-17-16
EU-EMGRICE-1	661.2
EU-EMGRICE-2	799.9
EU-EMGRICE-3	1259
EU-EMGRICE-4	2308

Each engine was originally installed in about 1974. Each is considered exempt from new source permitting per Rule 285(g). (SL shared a Permit to Install Exemption Handbook with Mr. Kippen.)

Each engine is limited to 500 hours of operation on a 12-month rolling time period (in practice they are exercised for a short period weekly for readiness amounting to a couple of hours a month run time.) Mr. Kippen tracks engine hours based on a standing Work Order to verify operations and read the hour meters.

FG-BOILERS (two natural gas boilers with fuel oil backup capabilities)

The PTI requires use of natural gas only, with the exception of gas curtailment, gas supply interruption, startups or periodic testing. Testing cannot exceed 48 hours per calendar year so as to avoid regulation by the Area Source Boiler MACT, 40 CFR 63 JJJJJJ (as discussed with Mr. Kippen.)

Mr. Kippen stated that no fuel oil burning has taken place in the boilers since the permit was

issued.

Natural gas to the Physical Plant is metered and records obtained weekly through Work Order management. Mr. Kippen maintains these records in a readily available format.

Sulfur content of fuel oil is restricted to 500 ppm (0.05% by weight) by SC No. II.2 of FG-BOILERS of PTI No. 133-15. Since all oil onsite is contained in the same tank, the same (*non-*) compliance demonstration information discussed above applies.

While Mr. Kippen had the necessary records in place, there was some confusion as to the units that values were recorded in. SL provided an initial excel spreadsheet (later amended by AS) that would enable clear access to the required "12-month rolling" and emissions aspects of the permit that rely on these fuel usage records. See attached.

Note; also present here in the physical plant is a smaller, approximately 12.55 mmBtu/hr natural gas-fired boiler. This boiler is considered exempt per Rule 282(b)(i), but is included in the metered gas usage (and therefore facility-wide emissions estimation.) This boiler was in use during the inspection.

Note also; neither of the permitted boilers was in use at the time of the inspection, and in fact, each is scheduled for replacement with approximately 16 mmBtu/hr boilers over the next 6-9 months. These replacement boilers are considered exempt per Rule 282(b)(ii), but fuel use in the replacement boilers should continue to be recorded and accommodated per PTI 133-15 through FG-FACILITY, which includes existing, grandfathered and exempt equipment.

FG-FACILITY

Fuel usages are recorded; and total emissions are limited to 76.7 tons NOx and 12.1 tons SO2 per 12-month rolling time period. These limits are based on use of MAERS/AP-42 emission factors (as incorporated into the attached spreadsheet) and as used in MAERS for Emission Inventory 2015 reporting. Actual equipment utilization and subsequent emissions are well below these thresholds. Total Emissions Reported in MAERS for the affected equipment for 2015 are attached.

Consent Order No. AQD-13-2016

The Compliance Program and Implementation Schedule established by Paragraph 9 of this Order REQUIRE the use of compliant fuels (9A. and 9B.) and maintaining NOx and SOx below the limits established for FG-FACILITY (9C.) in PTI No. 133-15. Since the issuance of this permit, the boilers (paragraph 9A.) have reportedly not fired fuel oil, however, the engines (paragraph 9B.) have operated on oil.

SUMMARY

SL recommends issuance of a Violation Notice for use on non-compliant liquid fuels per the Special Conditions cited above; and also for Paragraph 9B. of Consent Order No. AQD-13-2016.

Attachments:

- 1. Sample Chain of Custody Record for Merit Laboratories, Inc.
- 2. Sample Results from Merit Laboratories, Inc.
- 3. Spreadsheet Template
- 4. EI2015 MAERS Summary

NAME *[Signature]* DATE 9/30/16 ORIGINAL SUPERVISOR *[Signature]*
10/3/16
(Reprint to address typo.)
[Signature]