

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

P067747141

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|--|--------------------------------------|----------------------------------|
| FACILITY: Kawasaki Motors Corp USA | | SRN / ID: P0677 |
| LOCATION: 5080 36th Street SE, GRAND RAPIDS | | DISTRICT: Grand Rapids |
| CITY: GRAND RAPIDS | | COUNTY: KENT |
| CONTACT: Kevin Kline , Senior Supervisor | | ACTIVITY DATE: 12/04/2018 |
| STAFF: David Morgan | COMPLIANCE STATUS: Compliance | SOURCE CLASS: MAJOR |
| SUBJECT: | | |
| RESOLVED COMPLAINTS: | | |

At 2:30 P.M. on December 4, 2018, Air Quality Division staff Dave Morgan conducted a scheduled inspection of Kawasaki Motors Corp USA (Kawasaki) located at 5080 36th Street in Cascade Township. The purpose of the inspection was to determine the facility's compliance with Renewable Operating Permit (ROP) No. MI-ROP-P0677-2018 and state and federal air pollution regulations. Accompanying AQD staff on the inspection was Kevin Kline, Senior Supervisor for R&D Testing.

FACILITY DESCRIPTION

This Kawasaki facility conducts performance, durability and other testing on small engines up to 50 horsepower. The engines primarily burn gasoline but can also burn ethanol and gasoline/ethanol blends. The facility contains twenty engine test cells, fuel storage tanks and ancillary equipment. The facility is a major source of carbon monoxide (CO) emissions and is a minor source of hazardous air pollutants (HAPS); 40 CFR Part 63, Subpart P for Engine Test Cells does not apply.

COMPLIANCE EVALUATION

FGTESTCELLS:

The following is an inventory of permitted engine test cell emission units and permitted exhaust stacks. Each engine test cell is essentially a room which contains an engine dynamometer and other test equipment. The company only burns gasoline or ethanol blended fuels as limited by ROP No. MI-ROP-P0677-2018.

| Stack Vent ID | Emission Units | Description |
|---------------|--|--|
| SV-EF5A | EUTEST1, EUTEST2, EUTEST3, EUTEST4, EUTEST5 | Durability/endurance testing of engines up to 50 horsepower. |
| SV-EF5B | EUTEST6, EUTEST7, EUTEST8, EUTEST9 | Durability/endurance testing of engines up to 50 horsepower. |
| SV-EF5C | EUTEST10, EUTEST11, EUTEST13, EUTEST14 | Performance testing of engines up to 50 horsepower. |
| SV-EF5E | EUTEST12 | Performance testing of engines up to 50 horsepower. |
| SV-EF5D | EUTEST15, EUTEST16, EUTEST17, EUTEST18, EUTEST19, EUTEST20 | Rain, climactic, chassis and anechoic testing of engines up to 50 horsepower |

It is noted that each test cell has a conical vent hood which surrounds the engine exhaust and is ducted to the corresponding permitted stack. The company voluntarily installed a catalytic oxidizer on the endurance test cells, or referred to as "E-cells", (EUTEST1, EUTEST2, EUTEST3, EUTEST4, EUTEST5, EUTEST6, EUTEST7, EUTEST8, EUTEST9) that reduces CO emissions by 99% according to the manufacturer. No stack changes were needed as a result of this equipment installation. This action was exempt from permitting under Michigan Air Pollution Control Rule 285(2)(f). It is also noted that the company does not need the catalytic oxidizer to comply with CO emission limits.

In addition, there is a separate general ventilation exhaust (or scavenge) for each test cell which is ducted to a corresponding stack. The scavenge exhaust is used as a safety measure to prevent the accumulation of flammable vapor in the room. Pollutants from the engine testing process are primarily exhausted through the conical vent hood on the engine exhaust. There are five permitted stacks on the outside of the building that appear to meet the 48 feet above ground requirement.

In addition, for safety, the company is monitoring CO levels in each test cell; if CO levels get too high then the system is shutdown.

-Testing-

The company will be required to test CO emissions within five years of the last test which was conducted on September 20, 2017.

-Recordkeeping-

The company is maintaining daily and monthly fuel usage records in accordance with the permit. The company uses a programmable logic controller (PLC) to monitor and record all fuel usage. According to company records (attached), the company had the following fuel usage:

| Month | Total Fuel Usage (gallons) | Highest Daily Fuel Usage (Gallons) | Fuel Limit (gallons) | Compliance? |
|-----------|----------------------------|------------------------------------|-------------------------|-------------|
| Dec 2017 | 2,989 | 32 | 864 daily | Y |
| Jan 2018 | 2,548 | 159 | | Y |
| Feb 2018 | 4,170 | 284 | | Y |
| Mar 2018 | 4,191 | 210 | | Y |
| Apr 2018 | 4,737 | 302 | | Y |
| May 2018 | 3,853 | 210 | | Y |
| Jun 2018 | 2,153 | 164 | | Y |
| Jul 2018 | 4,726 | 260 | | Y |
| Aug 2018 | 7,950 | 388 | | Y |
| Sept 2018 | 5,087 | 282 | | Y |
| Oct 2018 | 5,343 | 269 | | Y |
| Nov 2018 | 3,737 | 359 | | Y |
| Total | 51,523 | | 73,000 12-month rolling | Y |

The company is also maintaining records of monthly emissions for CO, benzene, 1,3-butadiene, formaldehyde, and acetaldehyde using emission factors found in Appendix A of the permit. Emissions for December 2017 through November 2018 were as follows:

| Pollutant | Factor (lbs/gal) | Actual (tons) | Limit (tons per 12-month rolling) | Compliance | Comments |
|--------------|------------------|---------------|-----------------------------------|------------|--|
| CO | 6.8 | 166.7 | 239.8 | Y | For all E-cell fuel usage, a CO control efficiency factor of 95% is applied. |
| Benzene | 0.614 | 0.0 | 0.22 | Y | |
| 1,3butadiene | 0.00207 | 0.0 | 0.08 | Y | |
| formaldehyde | 0.00339 | 0.0 | 0.12 | Y | |
| acetaldehyde | 0.0241 | 0.0 | 0.88 | Y | |

FGCIRICEMACT:

There is one emergency generator that is exempt from permitting under Rule 285(2)(g). Because the facility is not a major source of HAP emissions, the major source requirements of 40 CFR 63, Subpart ZZZZ do not apply to the generator. However, the area source requirements do apply and have been incorporated into ROP No. MI-ROP-P0677-2018. This unit has only operated for a total of 84 hours since installation and has only operated 6 hours since 2016. Maintenance on the unit is conducted by Caterpillar Inc.

FGCOLDCLEANERS:

There is one aqueous cold cleaner used to wash parts. No non-compliance issues were identified.

EUTANKS:

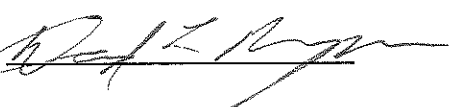
There is one 2,000 gallon gasoline storage tank. This tank was evaluated under the original Permit to Install No. 230-15A as part of the permit project, however there are no applicable requirements specific to the tank.

EUNATGASHEAT:

There are several natural gas heaters and water heaters. This emission unit was evaluated under the original PTI No. 230-15A as part of the permit project, however there are no applicable requirements specific to these sources.

SUMMARY

Kawasaki Motors Corp USA is evaluated to be in compliance. Records obtained during the inspection are attached to this report.

NAME  DATE 12/14/18 SUPERVISOR 