A8638
MANUAL

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

A863836385

FACILITY: DETROIT DIESEL CORPORATION		**SRN / ID:** A8638
LOCATION: 13400 OUTER DRIVE, WEST, DETROIT		**DISTRICT:** Detroit
CITY: DETROIT		**COUNTY:** WAYNE
CONTACT: Karen Goryl , Senior Environmental Engineer		**ACTIVITY DATE:** 06/16/2016
STAFF: Stephen Weis	**COMPLIANCE STATUS:** Compliance	**SOURCE CLASS:** MAJOR
SUBJECT: Compliance inspection of the Detroit Diesel Corporation facility in Detroit. The Detroit Diesel facility is scheduled for inspection in FY 2016.		
RESOLVED COMPLAINTS:		

Location:
Detroit Diesel Corporation
(SRN A8638)
13400 West Outer Drive
Detroit 48239

Date of Activity:
Thursday, June 16, 2016, and Tuesday, June 21, 2016

Personnel Present:

Steve Weis, DEQ-AQD Detroit Office
Karen Goryl, Senior Environmental Engineering, Detroit Diesel
Christopher Long, Detroit Diesel
Greg Kernosek, Principal Engineer, EnviroSolutions, Inc. (facility consultant)

Purpose of Activity

A self-initiated inspection of the Detroit Diesel Corporation facility (hereinafter "Detroit Diesel") was conducted on Thursday, June 16, 2016. A follow-up visit was made to the facility on Tuesday, June 21, 2016 to take a sample of a coating used at the facility for analysis, and to walk through the facility. The Detroit Diesel facility was on my list of sources targeted for an inspection during FY 2016. The purpose of this inspection was to determine compliance of operations at the Detroit Diesel facility with applicable rules, regulations and standards as promulgated by Public Act 451 of 1994 (NREPA, Part 55 Air Pollution Control), and with applicable Federal standards. The facility is also subject to the terms and conditions of Renewable Operating Permit (ROP) No. MI-ROP-A8638-2012, as well as Permit to Install (PTI) No. 97-13A, which was issued in the time since the ROP became effective.

Facility Site Description

Detroit Diesel operates a roughly 3 million square foot diesel engine manufacturing, development and testing facility. Detroit Diesel produces medium-duty and heavy-duty on-highway diesel engines, axles and transmissions for the commercial truck market at this facility.

The property on which the Detroit Diesel facility is located stretches east to west between Telegraph Road and Outer Drive; it is bounded on the north by the Chesapeake and Ohio railroad right-of-way, and extends south to Wadsworth Street. The eastern portion of the building contains the administrative portion of the facility, while the manufacturing and testing operations are located in the western portion of the building complex. Most of the operations at the facility are located in Redford Township, while the main entrance and facility parking lot are in Detroit.

The area to the north and south of the Detroit Diesel facility is a densely populated residential area. The area to the west and southwest of the facility, along and west of Telegraph Road and adjacent to Plymouth Road, primarily contains businesses of a commercial and light industrial classification. Rouge Park is located to the east of the facility on the east side of Outer Drive. The closest residences are located on the other side of the railroad right of way to the north of the facility, and on the south side of Wadsworth to the south of the facility, no

more than 40 yards from the facility's property line.

Facility Operations

Detroit Diesel is a subsidiary of Daimler Trucks North America LLC. The company began in 1938 as the GM Diesel Division of General Motors.

The main building at the facility contains an office area, a manufacturing area, and an engine testing/research and development laboratory. The Detroit Diesel facility currently employees around 2,500 people.

The manufacturing area produces medium and heavy duty on-highway diesel engines; front, rear and tandem axles; and transmissions. The manufacturing process currently operates 6 days per week, with final assembly work being done over two shifts, Monday through Friday. The 7th day of the week is typically reserved for facility maintenance work. Machining work sometimes occurs on a 24 hour/7 day basis, as needed. The engines are coated with a water-reduced clearcoat.

The testing lab operates one and a half shifts, but testing of engines takes place 24 hours per day, 7 days per week with the exception of one week when the cooling towers associated with the testing lab are cleaned. In the testing /research and development lab, diesel engines are tested in rooms, or "test cells", in which the engines are fueled and operated while various mechanical, performance, and emissions control parameters are measured. I was told during the site visit that there are currently 25 Performance Test Cells, 28 Durability Test Cells, and two test cells that are used for EPA emission certifications. The Durability Test Cells involve testing engines as they run in cycles, varying the engine speed and running them under more extreme loads. Performance Test Cells involve testing engine performance under more normal loads to test the engines operation at it experiences more normal use. A standard test lasts for 2,000 hours, and takes close to a month to complete. The engines that are tested are equipped with the air pollution control devices that they would be equipped with during on-road customer use; this is done not so much for emission control, but rather to check the engine's performance under actual operating conditions. The diesel engines that are manufactured at the facility also undergo a Production Test, which is a short duration run of each engine to ensure that they are operating properly prior to shipping the finished product to Detroit Diesel's customers.

There is a separate building located at the southwest corner of the facility's property that contains the operations of Mercedes-Benz Research and Development North America. This facility operates in the Powertrain & eDrive Division, which according to the company website, develops powertrain software for electric vehicles, researches high voltage battery technology, powertrain electronics, vehicle charging systems and e-mobility. This building used to operate test cells, but I was told that the test cells and their ambient exhaust ductwork have been removed, and that the engine testing now takes place at the Mercedes-Benz facility in Ann Arbor. The only testing that currently takes place in this building is testing of vehicle electronics.

From the perspective of air quality regulations, the following is a listing of the process equipment that is included in the Detroit Diesel facility's current DEQ-AQD permits:

- EU0086 – a paint spray booth that was used to apply water reducible enamel paints and urethane onto Series 149 engines. The Series 149 engines are no longer produced at the facility, and this paint booth has been permanently removed from operation. This Emission Unit will be removed during the next ROP renewal.

- EO078 – an offline paint booth that was used to provide a second finish on engine blocks. This paint booth has been permanently removed from operation, and this Emission Unit will be removed during the next ROP renewal.

- EUBOILER1, EUBOILER4 and EUBOILER5 – these three natural gas-fired boilers make up the FGBOILERS Flexible Group in the ROP. Boilers 1 and 5 are Babcock and Wilcox watertube boilers that are rated at 72 MMBTU/hour, and Boiler 4 I a Wicks water tube boiler that is rated at 48 MMBTU/hour.

- EU600, EU601, EU602 and EU603 – these are paint booths that are used to apply air-dried coatings to diesel engines. EU600-602 were installed in 2007, and these emission units are included in the ROP; they make up the FG600-2 Flexible Group. EU603 was installed in August of 2013, and it is subject to the terms and conditions of Permit to Install (PTI) No. 97-13A.

- EUHDCELLS, EUNONROADCELLS, EUNATGASCELLS – these emission units represent the test

cells in the testing/research and development laboratory portion of the facility.

- EU701 through EU707 – reciprocating internal combustion engine (RICE) units that are used for emergency backup power for lighting and computers, and to drive fire pumps used for fire suppression. These engines make up the FGRICEMACT Flexible Group.

- There are other, smaller regulated processes at the facility. There are some cold cleaners/parts washers that are included in the FGCOLDCLEANERS Flexible Group; a non-production, limited use paint spray booth that is used to coat maintenance items used at the facility, and is included in the FGRULE287(c) Flexible Group; and processes that are exempt from permitting per the provisions of Administrative Rule 290, an example being an engine parts cleaning tanks, that are included in the FGRULE290 Flexible Group.

Inspection Narrative

I arrived at the facility at 12:45pm on Thursday, June 16, 2016. I entered the main entrance, and was met by Chris Long of Detroit Diesel. After signing in at the security desk, Chris and I walked to the office area, where we met Karen Goryl and Greg Kernosek.

The purpose of the site visit on June 16 was to meet and discuss the ROP renewal application for the facility, and to complete the portion of the site inspection relating to discussing and checking the Detroit Diesel facility's compliance with applicable permits and regulations.

We began to discuss the ROP renewal application process. Greg, as the facility's air consultant, wanted to discuss the changes that will be made to the current ROP, and how DEQ-AQD would expect to see this information presented in the ROP renewal application, the marked-up ROP and the cover letter.

After discussing the ROP renewal, we reviewed the facility's compliance status; we discussed the applicable permit conditions, and how the facility staff demonstrates compliance with the permit conditions. We first discussed the Source-Wide Conditions. Greg told me that he gets diesel, natural gas and paint usage from the facility every month. Greg and Detroit Diesel staff perform emission calculations using these material throughputs to double-check the final result.

I was told that anytime that something new at the facility proposes to vent to the ambient air, a Permit to Install/exemption analysis is performed to ensure that the new process is properly permitting, if necessary.

We also discussed the Detroit Diesel facility's wastewater treatment building, which is located right next to Telegraph Road on the south side of the truck entrance, and to the west of the Mercedes-Benz building. I mentioned that I occasionally detect odors when I am downwind of this facility while performing visible emission observations of the engine test cell stack from the truck entrance. I was told that the building contains four settling tanks that receive process water from the manufacturing operations. The wastewater is allowed to settle, and alum is added to break the oil-water emulsion. Safety Kleen is currently contracted to take the oil portion for recycling, and they have only needed to take one load of oil thus far in 2016. I was told that facility staff monitors the wastewater treatment building for odors.

I was told during the discussion regarding the ROP renewal that EU0086 and EU078 have permanently ceased operation. We also discussed the engine type that used to be manufactured at the facility, the Series 60 engine. The last of these engines produced at the facility was tested and shipped in March 2015.

We went through each of the Emission Units and Flexible Group tables in the ROP, as well as PTI No. 97-13A. We discussed the FGCOLDCLEANERS Flexible Group. I was told that cleaner usage is tracked by a vendor, who provides the usage information to the facility. Any cleaning machine on site that is included in this Flexible Group has instructions on file, and safety/operating instructions are posted with the cleaner. A new spray cleaner/washer was installed at the facility; this equipment uses hot water and a solvent. The supplier of the cleaning material tracks the usage, VOC content and Reid vapor pressure (RVP), and provides that the material does not contain HAPs. Greg said that he spoke with staff in DEQ-AQD's Permit Unit about this equipment, and they helped to determine that it is exempt from permitting requirements per the provisions of Administrative Rule 290. Greg said that this new cleaner will be included in the FGRULE290 table in the ROP renewal application. I suggested that the application should include an A-001 form with the renewal application with the Rule 290 exemption analysis and determination for the new cleaner attached.

The facility also had a question regarding this Flexible Group. Special Conditions VI.1 in FGRULE290 requires that, for each new cold cleaner in which the solvent is heated, the solvent temperature shall be monitored and recorded at least once each calendar week during routine operating conditions. Detroit Diesel stated that they use a heated, aqueous solution that does not contain solvents, and they are wondering if the temperature monitoring is necessary. I requested and received copies of the Safety Data Sheets for each of the parts washers/cleaners.

After we completed our review of the permit conditions, we discussed my return visit to the facility to walk through the building and see some of the emission units, and to get a sample of the clearcoat this is applied to the engines. After some closing discussion, I left the facility at 3:25pm.

On Tuesday, June 21, I arrived at the facility at 1:15pm. I was met by Karen and Chris, and we proceeded to walk through the facility. We observed some of the engine, transmission and axle assembly lines. We then walked through the testing/research and development lab. I observed several test cells in operation, and looked at some of the control panels while tests were in progress. I was told that all of the test cells vent to a common manifold system, which exhausts to a stack that is designated as M11. We discussed the production test cells, which are used to check that each of the engines produced at the Detroit Diesel facility are able to start prior to shipping them offsite to customers. The production test run is of a short duration.

We then walked through the parts washing room, which is located below the control room for the Durability Test Cells. Internal parts are conveyed into this area, and are cleaned in a spray wash booth to remove packaging residue and rust inhibitor. The spray washer currently uses mineral spirits, and spent material is collected in a sump. The spray washer is being replaced with new equipment.

We then went to the paint booths, and observed EU600-602. We were met by Dionte Williams – Paint Shop Supervisor, and Mark Mason – Area Maintenance Engineer for the paint booths. I was told that incoming engine blocks arrive at the facility already pre-coated in a gray color. After the blocks are machined, a water-reducible clearcoat is applied to them. Currently, only one coating is being used at the facility. I obtained two samples of the clearcoat – Quaker Engine Coat 101 Clear. We observed EU603, which is not currently being used.

We made our way through the rest of the manufacturing area, and went back to the office area. After some closing discussion, I left the facility at 3pm, and placed the coating sample in the sampling refrigerator in the DEQ-AQD Detroit Office. The sample was dropped off at the Advanced Technologies of Michigan, Inc. laboratory in Livonia for analysis.

Permits/Regulations/Orders/Other

Permits
The Detroit Diesel facility currently has a ROP and an active DEQ-AQD Permit to Install (PTI).

The facility includes an extensive collection of facility records with their semi-annual and annual Renewable Operating Permit Report Certifications. These records are referenced during the review of the facility's MAERS submittal to verify the reported throughputs and emission estimates. These records are also used to demonstrate compliance with the facility's permits, and will be referenced throughout the rest of this section of the report. The following is a summary of the Detroit Diesel's compliance with their permits.

- **ROP No. MI-ROP-A8638-2012**

This ROP was issued to the Detroit Diesel facility with an effective date of October 31, 2012. An administratively complete ROP renewal application needs to be submitted between April 30, 2016 and April 30, 2017.

The following paragraphs provide a description of the Detroit Diesel facility's compliance with the terms and conditions puts forth by the ROP, with the headings representing the sections of the ROP.

Source-Wide Conditions

The Source-Wide conditions in this ROP serve to limit the facility wide emissions of NOx and hazardous air pollutants (HAPs) to below major source thresholds. Compliance with these emission limits is demonstrated through the required keeping of fuel and coating usage records, which are factored into emission calculations. There are several DTE gas meters located around the facility, some of them associated with a specific natural gas-fired combustion unit, as well as a site-wide gas meter. On the first of each month, the gas meters are read and the information is logged. The natural gas usage is entered into a spreadsheet, and paired

with emission factors to estimate NOx emissions. Similarly, the diesel fuel usage is compiled by staff in the testing laboratory and emission estimates are calculated.

Coatings used at the facility are tracked via an internal bill of material. The amount of coating used is tracked, and factored with the VOC and HAP content of the coatings to estimate the HAP emissions.

These material usage records and emission estimates are **in compliance** with the conditions in section VI.

Based on the facility records, the Source-Wide emission totals are 0.83 tons of total HAPs. The records that are included with the annual ROP Report Certification that was submitted in March of this year, which included a summary of fuel usage and emissions in 2015, shows that 114 tons of NOx was emitted in 2015. **Compliance**.

EU0086

This Emission Unit, the Series 149/4000 paint booth, which was used for miscellaneous metal parts painting, has been permanently removed from operation. This Emission Unit will be removed during the upcoming ROP renewal process.

EU078

This Emission Unit represents an offline paint booth that was used for applying a second finish on engine blocks. This equipment has been permanently removed from operation; as such, this Emission Unit will be removed during the upcoming ROP renewal process.

FGBOILERS

This Flexible Group includes the Emission Units designated as EUBOILER1, EUBOILER4 and EUBOILER5, which are three natural gas-fired watertube boilers.

I. Emission Limits

The permit includes an emission limits for NOx that appears to simply be the accepted NOx emission factor for boilers with the heat input capacities that these three boilers have. The facility uses this emission factor in the emission calculations for these emission units. The facility should be considered **in compliance** with the emission limit.

III. Process/Operational Restrictions

The facility is **in compliance** with conditions 1; only natural gas is fired in the boilers.

V. Testing/Sampling

Condition V.1 states that "The Department may require the permittee to conduct acceptable performance tests...". Detroit Diesel has not been asked to perform a compliance test on these boilers, and the emission limit is an accepted emission factor for this type of equipment. **Compliance**.

VI. Monitoring/Recordkeeping

Detroit Diesel is **in compliance** with this section. Natural gas usage is monitored and recorded by facility staff, as well as Detroit Diesel's air consultant. I was told that a "daily efficiency report" is generated at the facility as part of their ISO 15001 efforts. This report tracks the amount of natural gas used by each boiler.

VII. Reporting

The facility submitted all required certification and deviation reports. **Compliance**.

FG600-2

This Flexible Group includes the Emission Units designated as EU600, EU601 and EU602, which are three paint booths used to apply coatings to diesel engines. The booths are equipped with dry filters for particulate control. As mentioned in the "Inspection Narrative" section of this report, there is only one coating this is being applied to the engines, a water-reducible clearcoat - Quaker Engine Coat 101 Clear.

I. Emission Limits

The permit includes a VOC emission limit of 36 tons per year. For 2015, the total calendar year VOC emissions were 5.5 tons from this Flexible Group. **Compliance.**

II. Material Limits

The coatings used at the facility are limited to a VOC content of 3.5 pounds per gallon, minus water, as applied.

During this site visit, I was told that all coatings used at the facility are required to be put through an analysis that includes performing a Method 24 test to determine the VOC content of the coatings (both with and minus water), and determining the HAP content of each coating. The information is tracked via internal Environmental Data Sheets (EDS). A copy of the EDS for the Quaker Engine Coat 101 Clear is attached to this report for reference. The ESD shows a VOC content of 1.3 pounds per gallon, minus water.

During my second site visit, I obtained two samples of the clearcoat. The samples were analyzed by Advanced Technologies of Michigan (AToM) in Livonia, MI for VOC content. The test results showed that both samples had a VOC content of 0.9 pounds per gallon, minus water. The facility appears to be **in** compliance with the VOC content limit in this condition. A copy of the summary of the coating analysis, as provided by ATOM, is attached to the report for reference.

III. Process/Operational Restrictions

The facility is **in compliance** with conditions 1 and 2. The process by which the waste coatings and solvents is collected was described to me. The facility has a landfill free designation, and these coatings are stored in closed containers and picked up for recycling. The spent filters from the paint booths are stored and recycled by a company called Waste Free.

IV. Design/Equipment Parameters

The facility is **in compliance** with conditions 1 and 2. Facility staff confirmed that exhaust filters are properly maintained in the paint booths (IV.1), and the applicators in the paint booths meet the requirements of IV.2.

V. Testing/Sampling

As described in the Material Limits section, a sample of the clearcoat (Quaker Engine Coat 101 Clear) that is applied to the engines at this Detroit Diesel facility was obtained and analyzed. In addition, Detroit Diesel requires that their coating suppliers perform Method 24 tests on all coatings that are used at the facility. **Compliance**.

VI. Monitoring/Recordkeeping

Compliance with the special conditions in this section was demonstrated during the site visit, and via the information that Detroit Diesel submits as part of their semi-annual ROP Report Certification.

All required calculations are kept for each month (VI.1). The facility maintains all of the manufacturer's information for the coatings, cleaners and solvents that are used at the facility (VI.2). All materials go through a screening process, and information about the materials is summarized on Environmental Data Sheets (EDS) that the company keeps on file. I have attached a blank copy of an EDS form to this report for reference.

In accordance with VI.3, the facility tracks all of the required coating usage, VOC content and VOC emissions calculations on a monthly basis. Each engine that is coated at the facility is tracked. The facility records that are included with the semi-annual ROP Report Certifications demonstrate that all of the required information is being monitored and recorded by Detroit Diesel.

Regarding condition VI.4, solvent usage is also tracked by the facility, but the usage of solvent in the FG600-2 coating lines has been greatly reduced with only one coating being used to coat engines; the paint lines do not need to be cleaned as they would if there were other coatings/colors being run through the coating supply/circulation system. Mineral spirits are run through the line when they do need to be cleaned. The waste solvents are contained and shipped offsite for recycling. I was told that the lines were not purged/cleaned in 2015-16. The last cleaning occurred almost 2 years ago, when 1.5 gallons of purge solvent was sent offsite for recycling. The application guns (and their tips) that are used for paints and inks are cleaned using an aqueous,

alkaline cleaner.

VII. Reporting

The facility submitted all required certification and deviation reports. **Compliance.**

VIII. Stack/Vent Restrictions

The stack parameters were not verified during this site visit. There has been no indication that these parameters have changed since the emission units were permitted.

FGHDCELLS

This Flexible Group includes the test cells that are used to test and analyze heavy duty (on highway) diesel engines.

I. Emission Limits

The permit includes a NOx emission limit of 92.5 pounds per 1,000 gallons of diesel fuel. There is no specific testing requirement included with this condition. The facility uses the 92.5 number as an emission factor the estimate NOx emissions from the use of these test cells. The facility is considered compliant with this requirement at this time.

II. Material Limits

The sulfur content of the fuel used in the test cells is limited. Detroit Diesel obtains the sulfur content of the diesel fuel that is used at the facility from their supplier, Exxon. The facility's testing lab is also able to obtain this data. The facility uses low sulfur on-road fuel. The sulfur content is **compliant** with the limit.

V. Testing/Sampling

Condition 1 contains language stating the "The Department may require the permittee to conduct acceptable performance tests...". DEQ-AQD has not requesting any testing of these test cells. The facility should have emissions information from the emission certification tests that are performed. **Compliance.**

VI. Monitoring/Recordkeeping

The facility keeps written logs of the sulfur content of the fuel used in these test cells. When this equipment is operating, NOx emissions are calculated and included as part of the source-wide emission total. **Compliance.**

VII. Reporting

The facility submitted all required certification and deviation reports. **Compliance.**

FGNONROADCELLS

This Flexible Group includes the test cells that are used to test and analyze non-road diesel engines.

I. Emission Limits

The permit includes a NOx emission limit of 196 pounds per 1,000 gallons of diesel fuel. There is no specific testing requirement included with this condition. The facility uses the 196 number as an emission factor the estimate NOx emissions from the use of these test cells. The facility is considered compliant with this requirement at this time.

II. Material Limits

The sulfur content of the fuel used in the test cells is limited. Detroit Diesel obtains the sulfur content of the diesel fuel that is used at the facility from their supplier, Exxon. The facility's testing lab is also able to obtain this data. The facility uses low sulfur on-road fuel. The sulfur content is **compliant** with the limit.

V. Testing/Sampling

Condition 1 contains language stating the "The Department may require the permittee to conduct acceptable performance tests...". DEQ-AQD has not requesting any testing of these test cells. The facility should have emissions information from the emission certification tests that are performed. **Compliance**.

VI. Monitoring/Recordkeeping

The facility keeps written logs of the sulfur content of the fuel used in these test cells. When this equipment is operating, NOx emissions are calculated and included as part of the source-wide emission total. **Compliance.**

VII. Reporting

The facility submitted all required certification and deviation reports. **Compliance**.

FGNATGASCELLS

This Flexible Group includes the test cells that are used to test and analyze engines when combusting natural gas or compressed natural gas. These test cells did not operate in 2015-16.

I. Emission Limits

The permit includes a NOx emission limit of 2,840 pounds per million cubic feet of natural gas. There is no specific testing requirement included with this condition. The facility uses the 2840 number as an emission factor the estimate NOx emissions from the use of these test cells. The facility is considered compliant with this requirement at this time.

V. Testing/Sampling

Condition 1 contains language stating the "The Department may require the permittee to conduct acceptable performance tests...". DEQ-AQD has not requesting any testing of these test cells. This equipment has not operated in 2015-16. **Compliance**.

VI. Monitoring/Recordkeeping

When this equipment is operating, NOx emissions are calculated and included as part of the source-wide emission total. **Compliance.**

VII. Reporting

The facility submitted all required certification and deviation reports. **Compliance**.

FGCOLDCLEANERS

This Flexible Group covers any cold cleaner that is grandfathered or exempt from DEQ-AQD permitting requirements pursuant to Rule 278 and either Rule 281(h or Rule 285(r)(iv).

Based on the discussions during the site visit, the facility is **complying** with the requirements of the FGCOLDCLEANER table. As discussed during the site visit, Detroit Diesel keeps an inventory of all of the solvents and cleaners used at the facility, and their vendors also track the facility's usage. The facility keeps the operating and safety/regulatory instructions posted with the equipment. I have attached a list of the list of cold cleaners at the facility that Detroit Diesel included as part of their annual ROP Report Certification for 2015.

FGRULE287(c)

This Flexible Group covers any emission units that are exempt from DEQ-AQD permitting requirements pursuant to Rules 278 and 287(c).

Detroit Diesel is **complying** with the requirements of the FGRULE287(c) table. Once again, Detroit Diesel included detailed records of the usage of coatings associated with the equipment that is included as part of this Flexible Group in their ROP Report Certification for 2015. The submittal includes a section titled "Maintenance Paint Booth EU019 FGRULE287(c)" that contains weekly records of the amount of coating used in the equipment that is subject to these requirements, which demonstrates that the facility is complying with the 200 gallons per month, as applied, minus water, per emission unit limit.

FGRULE290

This Flexible Group covers any emission unit that emits air contaminants, and is exempt from DEQ-AQD permitting requirements pursuant to Rules 278 and 290.

Detroit Diesel is **complying** with the requirements of the FGRULE290 table. The ROP Report Certification for 2015 includes a section titled "Rust Removed/Inhibitor EU019 FGRULE290". This section of the report includes a monthly summary of the amount of the material used, and the resulting emission estimate of HAPs for each month using DEQ-AQD's Rule 290 template, as well as a summary table that was created by Detroit Diesel. This information serves to demonstrate that the facility is complying with the exemption requirements of Rule 290.

FGRICEMACT

This Flexible Group covers the emission units designated as EU701-707 - diesel-fired reciprocating internal combustion engines (RICE) that are subject to 40 CFR Part 63, Subpart ZZZZ. The subject equipment is rated at less than 300 hp, over 20 years old, and located at an area source of HAPs.

The ROP Report Certifications sent in semi-annually by Detroit Diesel. Include a section that addresses the equipment that is included in FGRICEMACT. This information includes a monthly summary for each engines that provides the hour meter readings of the engine, the hours that the engine operated for emergency vs. non-emergency purposes, and a checklist the indicates if and when during a given month that an oil filter change, air cleaner inspection or hose and belt inspection occurred. As discussed earlier in this report, the facility tracks and records the sulfur content of the diesel fuel used in diesel-fired combustion equipment. The individual permit conditions in this Flexible Group were not reviewed during this site visit and related follow-up discussions. The requirements of this Flexible Group table will be discussed during the upcoming ROP renewal application review process. For the purposes of this inspection activity and report, the facility is in compliance with the requirements for which compliance can be demonstrated via the information presented in the ROP Certification Reports, while compliance with the other permit conditions in this Flexible Group was not determined.

- **Permit to Install No. 97-13A**

This permit addresses the installation and operation of an offline engine spray booth equipped with manual HVLP applicators that is designated by the permit as EU603. The permit was issued on August 16, 2013.

During the site visit, I was shown that this equipment is not currently being used. I was told during the site visit that no water-reducible paint was used in 2015, only water-reducible primer and clearcoat. The information that is included by Detroit Diesel to supplement their ROP Report Certifications includes a section titled "New Offline Paint Spray Booth EU603". This information, which provides monthly summaries of the coating usage and VOC emissions, indicates that EU603 had minimal usage in 2015 applying water-reducible clearcoat and primer. Beginning in June 2015, the monthly records indicate that EU603 was not used.

The permit conditions in PTI No. 97-13A are almost identical to the conditions in the FG600-2 Flexible Group in Detroit Diesel's ROP. The VOC content limit for the coatings used in EU603; the requirement to properly handle waste coatings, solvents, and filters; the requirement to operate the emission unit with properly installed and operating exhaust filters and paint applicators; the requirement to determine the VOC content of the coating used; the requirement to track and record coating usage, VOC content and VOC emissions are the same or similar to the requirements for FG600-2. The facility tracks usage and emissions in the same way for all of the paint booths. The water-reducible clearcoat that was used in EU603 is the same one that was used in FG600-2 - Quaker Engine Coat 101 Clear. The sample that I had analyzed of this coating indicated that it is compliant with the applicable VOC pounds per gallon, minus water, as applied limit in the permit. While EU603 is not currently operating, records show that the emission unit was **complying** with applicable permit conditions when it was in operation.

Regulations

The Detroit Diesel facility is a synthetic minor facility in regards to the Prevention of Significant Deterioration (PSD) regulations of Title 40 of the Code of Federal Regulations, Part 52.21. This is accomplished through the NOx emission limit put forth in the Source-Wide Conditions section of the facility's ROP. This section of the ROP also limits the facility-wide HAP emissions to below major source thresholds; the facility is classified as an

area source of HAPs.

The reciprocating internal combustion engines (RICE) identified as EU701-EU707 make up the FGRICEMACT Flexible Group, which contains regulatory requirements associated with 40 CFR Part 63, Subpart ZZZZ (National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines). The engines are subject to the area source requirements of Subpart ZZZZ.

Compliance Determination

Based upon the results of the site visits made to the facility on June 16 and June 21, 2016 site visit, and a review of the facility's compliance records, the Detroit Diesel Corporation facility, located in Detroit and Redford Township appears to be **in compliance** with applicable rules and regulations, including with the terms and conditions of ROP No. MI-ROP-A8638-2012, and Permit to Install No. 97-13A.

Attachments to this report: a facility map; a summary sheet of source wide NOx and HAP emissions for 2015; information relating to the coating sample that was analyzed for compliance, including the internal Environmental Data Sheet for the coating, the sampling chain of custody form, and sample results; a sample copy of the Material Compliance Data Sheet used by Detroit Diesel to track new coatings and materials that are used at the facility; a list of the cold cleaners at the facility.

NAME Steve Weis DATE 9/26/16 SUPERVISOR JK