

B3350
MANILA

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

B335047068

FACILITY: FCA US LLC – Trenton Engine Complex		SRN / ID: B3350
LOCATION: 2300 VAN HORN RD, TRENTON		DISTRICT: Detroit
CITY: TRENTON		COUNTY: WAYNE
CONTACT: Amy Berendt , Environmental Specialist		ACTIVITY DATE: 11/14/2018
STAFF: Todd Zynda	COMPLIANCE STATUS: Compliance	SOURCE CLASS: MAJOR
SUBJECT: Schedule Inspection		
RESOLVED COMPLAINTS:		

REASON FOR INSPECTION: Targeted Inspection

INSPECTED BY: Todd Zynda, AQD

PERSONNEL PRESENT: Amy Berendt, Environmental Specialist; Duane Denher, Plant Engineer,

FACILITY PHONE NUMBER: (734) 783-2242

FACILITY WEBSITE: www.fcagroup.com

FACILITY BACKGROUND

FCA US LLC (FCA) owns and operates the Trenton Engine Complex (TEC) located at 2300 Van Horn Road, Trenton, Wayne County, Michigan. The facility consists of two contiguous engine manufacturing operations (Trenton Engine [North] Plant and Trenton South Plant) located on 136 acres. The Trenton South Plant encompasses 822,000 square feet, while the Trenton Engine Plant encompasses 2.1 million square feet. Manufacturing at TEC includes engine component machining, assembly, and testing of engines. At the time of this report the south plant produces the 3.6-liter V-6 Pentastar engine. The north plant has idled production of the four-cylinder Tigershark engine. The facility initiated the production of a Ferrari block line and production of the GMET4 Turbo Hurricane at the north plant. The boundaries of the facility are as follows: to the south is the Trenton Wastewater Treatment Plant; to the east is a storage yard and residential area; to the southwest is a commercial business (landscaping/nursery); to the west is a storage yard and residential areas; and to the immediate north is green space.

The facility currently has approximately 1,500 employees. TEC operates two 10 hour shifts, seven days a week.

TEC is subject to Title 40 of the Code of Federal Regulations (CFR), Part 70, because the potential to emit carbon monoxide (CO) exceeds 100 tons per year. No emissions units at the facility are currently subject to the Prevention of Significant Deterioration (PSD) regulations of Part 18, Prevention of Significant Deterioration of Air Quality of Act 451, because at the time of New Source Review permitting the potential to emit of CO was less than 250 tons per year. However, the facility is a major stationary source under PSD due to the facility wide potential emissions of CO greater than 250 tons per year.

PROCESS OVERVIEW

TEC operates five gasoline engine dynamometers, three natural gas fired engine hot test stands, two boilers, three emergency generators, miscellaneous combustion equipment (heating and ventilation units, heaters, hot water generators, steam generators), wet machining equipment (boring, grinding using various cutting oils and lubricants), and dry machining (boring, grinding) equipment under renewable operating permit (ROP) MI-ROP-B3350-2014b, which has an effective date of January 10, 2014 (revised April 14, 2015 and March 22, 2016).

The ROP renewal application was received on June 20, 2018.

COMPLAINT/COMPLIANCE HISTORY

Between April 7 and April 9, 2009, three complaints were received regarding “musty” odors from the facility. The facility was notified of the complaints. As a result of the complaints, the facility cleaned three washers, and determined that four exhaust stacks could be improved by cleaning. The odor issue was considered resolved.

During August 5, 2009, August 26, 2011, January 29, 2013, December 15, 2014, and October 20, 2016, the facility was inspected and was determined to be in compliance with permit conditions and applicable federal and state regulations.

OUTSTANDING CONSENT ORDERS

None

OUTSTANDING VIOLATION NOTICES

None

INSPECTION NARRATIVE

On November 14, 2018 the Michigan Department of Environmental Quality (MDEQ) Air Quality Division (AQD) inspector, Mr. Todd Zynda, conducted an inspection of FCA TEC at 2300 Van Horn Road, Trenton, Michigan. During the inspection, Ms. Amy Berendt, Environmental Specialist and Mr. Duane Denher, Plant Engineer, provided information and a tour of facility operations relating to air quality permits. The inspection was conducted to determine the facility's compliance with the Natural Resources and Environmental Protection Act (NREPA), Act 451, Part 55, and ROP No. MI-ROP-B3350-2014b.

At 8:50 AM, Mr. Todd Zynda (AQD) arrived onsite and performed outside observations. No visible emissions were observed at the facility. Odors were not detected. At 9:00 AM Mr. Zynda entered the facility, stated the purpose for the inspection, and was greeted by Ms. Berendt.

During the opening meeting the facility operations and MI-ROP-B3350-2014b conditions were discussed. During the opening meeting an inspection checklist outlining ROP requirements was discussed. Ms. Berendt and Mr. Dashner provided records maintained to demonstrate compliance with conditions within MI-ROP-B3350-2014b.

Additionally, during the opening meeting the fugitive dust plan for the facility was discussed. According to Mr. Dehner, the fugitive dust plan has not changed since the last inspection. According to Mr. Dehner, outside sweeping is conducted twice a month.

Following the opening meeting, a tour of the facility was provided. During the inspection both the north and south plant were observed.

The inspection began with observation of the north plant and powerhouse. The north plant machining equipment and particulate control equipment was observed. North plant machining lines and particulate control equipment were observed. Pressure drop is monitored on each particulate control unit. The normal operating range of inches of water is indicated on each pressure gauge. During the inspection, the inches of water on control unit pressure gauges indicated that the equipment was operating within "normal" ranges.

Within the north plant a facility washer was observed. The washers are used to wash chips, coolants, and oils. The AQD requested a PTI exemption demonstration for the washers at the plant. According to Ms. Berendt there are 3 washers in the north plant and 3 washers in the north plant. PTI exemption documentation was provided via email on November 26, 2018.

Following observation of the north plant, the boiler power house was observed. During the inspection, Boiler 1 was in operation (29,000 pph steam, 26,000 CFH gas). Both boilers (Boilers 1 and 5) operate exclusively on natural gas. According to Mr. Dehner the boilers do not operate during the warmer months.

The inspection continued with observation of the south plant. While in the south plant, machining lines and particulate control equipment were observed. During the inspection, the inches of water on control unit pressure gauges indicated that the equipment was operating within "normal" ranges.

The south plant contains the hot test stands and dynamometers. During the inspection the hot test stands were not in operation. Natural gas usage for the three hot test stands is metered through one gauge.

Following observation of the hot test stands, the dynamometers were observed. During the inspection three of the five dynamometer test cells were in operation. Observations of the operating cells were made from the exterior dynamometer test cell windows, as doors to operating cells cannot be opened. The stacks and gasoline storage tanks were observed from the outside. Each dynamometer exhausts individually through a dedicated

stack. The five dynamometers use gasoline from one 3,000 gallon above ground storage tank located adjacent to the dynamometers cells on the exterior wall.

Following observation of the dynamometers, the filter head gallery was observed. Chips produced by machining operations are handled at this location and are controlled by an oil mist collector. Similar to the other particulate control equipment at the facility, the pressure drop is monitored by a pressure gauge that is marked for normal operation conditions.

During the inspection the emergency engines were not observed. During the January 2013 pre-ROP inspection it was verified that emergency engines are equipped with a non-resettable hour meter.

APPLICABLE RULES/PERMIT CONDITIONS

ROP No. MI-ROP-B3350-2014b

MI-ROP-B3350-2014b special conditions (SC) are listed as appropriate. For brevity, permit conditions and the language of federal and state rules have been paraphrased.

EU-YARD

SC I. 1. **COMPLIANCE.** Visible emissions from all truck traffic shall not exceed 5 percent opacity. During the inspection truck traffic was viewed and visible emissions were not observed.

SC III. 1. **COMPLIANCE.** Shall operate EU-YARD in compliance with fugitive emissions control plan for all plant roadways, the plant yard, etc. The facility currently operates EU-YARD in accordance to the fugitive dust plan.

FG-WETMACHINE

SCs I. 1. and 2. **COMPLIANCE.** PM10 emission shall not exceed 0.0018 grains per dry standard cubic foot (dscf) or 1.21 pounds per hour (pph). Compliance with these emission limits is demonstrated through monitoring and record keeping requirements under SCs VI. 1 and 2. During the inspection the facility demonstrated that the oil mist collectors are maintained through the Total Maintenance System (TMS). Within the TMS, maintenance on each piece of equipment is recorded and scheduled. TMS records are maintained and were provided.

SC I.3. **NOT EVALUATED.** Visible emissions not to exceed a six-minute average of 5 percent opacity. During the inspection the stacks for the FG-WETMACHINE were not observed. Visible emissions were not evaluated. General observations of the facility roof line and stacks prior to the inspection resulted in zero opacity from observed stacks.

SC III. 1. **COMPLIANCE.** Preventative maintenance plan is implemented and maintained. The facility conducts preventative maintenance on the mist collectors per the PMP. Maintenance is tracked in the TMS.

SC VI. 1 and 2. **COMPLIANCE.** Shall keep record of control device name and filter change schedule. Shall keep records on control device (ID, inspection date, maintenance activities, etc.). The facility maintains the required records through the TMS software.

SC VIII. **NOT EVALUATED.** The stack requirements were not evaluated during the inspection.

FG-HOT TEST

The hot test stands at the facility are not subject to 40 CFR 63 Subpart P P P P P for Engine Test Cells/Stands because the facility is not a major source of HAPs.

SC I. 1. **COMPLIANCE.** The 12-month rolling NOx emissions shall not exceed 1.42 tons per year (tpy). The maximum 12-month rolling NOx emission from October 2016 to October 2018 occurred at the end of August 2018 at 0.46 tons.

SC II. 1. **COMPLIANCE.** Natural gas usage shall not exceed 1.0 million cubic feet (MMCF) per 12-month rolling time period. The maximum 12-month rolling natural gas usage from October 2016 to October 2018 occurred at the end of August 2018 at 324,512 cubic feet.

SC IV.1. **COMPLIANCE.** Shall install, calibrate, maintain, and operate device to monitor natural gas usage. The facility meets this requirement. Records are maintained on a monthly basis.

SC VI. 1. **COMPLIANCE.** Shall keep in a satisfactory manner, monthly and previous 12-month natural gas use records. The appropriate records are maintained.

SC VI. 2. **COMPLIANCE.** Shall keep in a satisfactory manner, monthly and 12-month NOx emission records. The appropriate records are maintained.

SC VIII. **NOT EVALUATED.** The stacks were not observed during the inspection.

FG-DYNOS

The dynamometers at the facility are not subject to 40 CFR 63 Subpart P for Engine Test Cells/Stands because the facility is not a major source of HAPs.

SC I. 1 and SC V. 1. **COMPLIANCE.** The CO emission rate shall not exceed 3.12 pound per gallon of fuel (lb/gal). Verification of CO emission rates shall be conducted no later than one year prior to permit renewal. Testing was conducted on May 24, 2017 on EU-DYNO2. Measured emissions were 2.87 lb CO per gallon fuel.

SC I. 2. **COMPLIANCE.** The 12-month rolling CO emissions shall not exceed 210.6 tons per year. The maximum 12-month rolling CO emission October 2016 through October 2018 occurred at the end of November 2016 at 140.0 tons.

SC I. 3 and SC V. 1. **COMPLIANCE.** The NOx emission rate shall not exceed 0.300 lb/gal. Verification of NOx emission rates shall be conducted no later than one year prior to permit renewal. Testing was conducted on May 24, 2017 on EU-DYNO2. Measured emissions were 0.240 lb NOx per gallon fuel.

SC I. 4. **COMPLIANCE.** The 12-month rolling NOx emissions shall not exceed 20.25 tons per year. The maximum 12-month rolling NOx emission from October 2016 through October 2018 occurred at the end of November 2016 at 13.46 tons.

SC II. 1. **COMPLIANCE.** Gasoline shall usage shall not exceed shall not exceed 48 gallons per hour. unless the prorated rate exceeds 90% of the limit, at which time hourly records are required. Compliance with this limit is demonstrated with monthly record keeping prorated to an hourly rate, unless the prorated rate exceeds 90% of the limit, at which time hourly records are required. The maximum gallons per hour rate between October 2016 through October 2018 was 6 gallons per hour; therefore, the facility may continue to record gasoline usage on a prorated rate.

SC II. 2. **COMPLIANCE.** Gasoline shall usage shall not exceed shall not exceed 135,000 gallons per 12-month rolling time period. The maximum 12-month rolling gasoline usage from emission from October 2016 through October 2018 occurred at the end of November 2016 at 89,762 gallons.

SC III. 1. **COMPLIANCE.** Shall not operate more than five dynamometer engine test cell at one time. The facility only has five test cells installed.

SC III. 2. **COMPLIANCE.** Shall burn only unleaded gasoline in FG-DYNOS. Correspondence from the fuel provider on August 7, 2013 and the Material Safety Data Sheet (MSDS) demonstrate that the gasoline is unleaded (see attached copy of ROP Rule 216 application).

SC V. 1. **COMPLIANCE.** One year prior to permit renewal, permittee shall verify CO and NOx emission rates. Testing was completed on May 24, 2017.

SC VI. 1, 2, and 3. **COMPLIANCE.** Shall complete required calculations in an acceptable format. Shall maintain the following records: days of operation, gallons of unleaded gasoline used per month, and monthly/12-month rolling CO and NOx emissions. The facility maintains the required records.

SC VIII. **COMPLIANCE.** Exhaust stacks for DYNO1 through DYNO5 shall not exceed 33 inches in diameter and shall be at least 35.4 feet above ground surface. During the inspection, the exact measurements were not

obtained, but the stacks appeared to be in compliance with design restrictions. Each dynamometer test cell is exhausted through an individual stack.

FG-COMBUSTION

SC I. 1. **COMPLIANCE.** The 12-month rolling NO_x emissions shall not exceed 72.14 tons per year. The maximum 12-month rolling NO_x emission from October 2016 through October 2018 occurred at the end of March 2017 at 18.00 tons.

SC I. 2. **COMPLIANCE.** The 12-month rolling CO emissions shall not exceed 60.60 tons per year. The maximum 12-month rolling CO emissions from October 2016 through October 2018 occurred at the end of October 2018 at 10.08 tons.

SC II.1 and SC III.1. **COMPLIANCE.** Natural gas usage shall not exceed 1,374 million cubic feet (MMCF) per 12-month rolling time period. Shall burn only natural gas. The maximum 12-month rolling natural gas usage from October 2016 through October 2018 occurred at the end of October 2018 at 235,398,600 cubic feet.

SC VI. 1, 2, and 3. **COMPLIANCE.** Shall keep complete calculations in acceptable format. Shall monitor and record the monthly natural gas usage in an acceptable format. The facility meets these monitoring and record keeping requirements.

FG-BLR1&BLR5

Boilers 1 and 5 are not subject to any New Source Performance Standard (NSPS). Boiler 1 (60 MMBtu/hr) was installed in 1953 and Boiler 5 (180 MMBtu/hr) was installed in 1969. Boiler 1 is not considered subject to 40 CFR Part 60, Subpart Dc as the change from a coal burning boiler to a natural gas/no.2 fuel oil boiler does not constitute as a modification as defined in §60.2. Similarly, Boiler 5 is not considered subject to 40 CFR Part 60, Subpart Db, as the change from coal to natural gas/no.2 fuel oil does not constitute as a modification as defined in §60.2.

“Modification means any physical change in, or change in the method of operation of, an existing facility which increases the amount of any air pollutant (to which a standard applies) emitted into the atmosphere by that facility or which results in the emission of any air pollutant (to which a standard applies) into the atmosphere not previously emitted.”

At the time of permitting (PTI No. 179-99) Boilers 1 and 5 were considered not subject to any NSPS. The change in fuel type does not qualify as a modification as defined under Part 60, and Boilers 1 and 5 are not subject to Subpart Dc or Db, respectively.

EU-BOILER1 and EU-BOILER5 are subject to the Maximum Achievable Control Technology (MACT) standards under the National Emission Standards for Hazardous Air Pollutants for Area Sources for Industrial, Commercial, and Institutional Boilers and Process Heaters, 40 CFR Part 63 Subpart JJJJJJ, promulgated on March 21, 2011. The facility demonstrates compliance with the Subpart JJJJJJ by recording hours that liquid fuel is combusted.

SC I.1 and 5, V.1. **COMPLIANCE.** CO emissions not to exceed 0.084 lb/MMBtu/hr. NO_x emissions not to exceed 0.28 lb/MMBtu/hr. Shall verify the CO and NO_x emission rates from FG-BLR1&BLR5 when burning natural gas. Testing was completed on November 28, 2017 (Boiler 1) and January 12, 2018 (Boiler 5). Average emissions were reported as follows: Boiler 1 - CO: 0.003 lb/MMBtu, NO_x: 0.10 lb/MMBtu; Boiler 5 - CO: 0.006 lb/MMBtu, NO_x: 0.11 lb/MMBtu.

SC IX. 1. **COMPLIANCE.** If any boiler combusts liquid fuel during periodic testing of boiler operation on liquid fuel or discretionary boiler operation using liquid fuel (i.e., not associated with periods of natural gas curtailment, gas supply interruption, or startups) for greater than a combined total of 48 hours during any calendar year, the boiler will no longer be considered a “gas-fired boiler” under the definition in 40 CFR Part 63.11237. The permittee will subsequently comply with all applicable requirements under 40 CFR Part 63 Subpart JJJJJJ (the “Boiler MACT for Area Sources”) for the boiler.” At the time of this report the facility has not combusted liquid fuel for the last two years (Attachment E).

The remaining conditions under FG-BLR1&BLR5 when burning fuel oil are not applicable. The facility did not combust fuel oil in the last two years.

FG-GAS-DISP

Storage tanks under FG-GAS-DISP are not subject to the NSPS 40 CFR 60 Subpart Kb as the tanks are less than 75 cubic meter (m3) or 19,812.9 gallons in size. The largest gasoline storage tank at the facility is 3,000 gallons.

The special conditions for FG-GAS-DISP were obtained from MACT standards under the National Emissions Standards for Hazardous Air Pollutants for Source Category: Gasoline Dispensing Facilities promulgated in 40 CFR, Part 63, Subparts A and CCCCC.

The facility maintains gasoline throughput for EU-GAS_TANK1 and EU-GAS_TANK2. According to the records the maximum throughput from October 2016 through October 2018 occurred at the end of November 2016 in EU-GAS_TANK2 at 8,341 gallons, which is less than the 10,000 gallon threshold. Therefore, the requirements for a gasoline dispensing facility (GDF) with a throughput less than 10,000 gallons, are applicable. The AQD is not the delegated authority for this area source MACT. Therefore, conditions were not evaluated for compliance.

FG-EMERG-RICE

Equipment under FG-EMERG-RICE is not subject to the NSPS 40 CFR 60 Subpart IIII- Standards of Performance for Stationary Compression Ignition Internal Combustion Engines or Subpart JJJJ - Standards of Performance for Stationary Spark Ignition Internal Combustion Engines because the date of the installation is prior to the affected date. The special conditions for FG-EMERG-RICE were obtained from MACT standards under the National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines promulgated in 40 CFR, Part 63, Subparts A and ZZZZ. The AQD is not the delegated authority for this area source MACT. Therefore, conditions were not evaluated for compliance.

FG-OTHERMACHINGLINES

SC I. 1. **COMPLIANCE.** PM emission rate shall not exceed 0.1 pounds per 1,000 pounds of exhaust gases calculated on a dry basis. The company has demonstrated during the ROP application correspondence that the machines are designed to meet the above limit (see ROP correspondence on May 2, 2013 for calculations). The facility demonstrates compliance with the above limit by implementing proper maintenance and operation of the equipment. During the previous inspection the facility demonstrated that equipment is maintained through the TMS. Within the TMS, maintenance on each piece of equipment is recorded and scheduled. During the previous inspection, Mr. Denher provided a demonstration on how the software works, and the records that are maintained. The facility also operates the equipment through a Preventative Maintenance Plan (PMP). TMS records were provided.

SC IV. 1. **COMPLIANCE.** Shall not operate FG-OTHERMACHINGLINES unless the particulate control equipment is installed and operating properly. During the inspection, particulate control equipment was observed. Equipment appeared to be operating properly. Pressure drop is monitored on each unit. The normal operating range of inches of water is indicated on each pressure gauge. During the inspection, the inches of water on pressure gauges indicated that the equipment was operating within "normal" ranges.

SC IV. 2. **COMPLIANCE.** Shall not operate equipment unless the approved PMP is implemented and maintained. The facility operates under the PMP that was provided in the ROP application. The demonstration of the TMS during the inspection confirmed that the equipment is maintained according the PMP.

SC VI. 1. and 2. **COMPLIANCE.** Shall implement and maintain a routine check to ensure proper operation of the control equipment for each emission per the PMP. Shall keep an updated record of all emission units subject to Rule 331. The facility maintains compliance with SC VI. 1. and 2. through the TMS.

SC VI. 3. **COMPLIANCE.** Shall maintain calculations on file that demonstrate compliance with particulate emission limit. The facility provided calculations on May 2, 2013 as part of the initial ROP correspondence.

FG-RULE 290

The facility provided Rule 290 tracking sheets that demonstrate compliance with Rule 290 VOC emission limits. The facility tracks VOC emissions for adhesives, production inks, methanol, and isopropyl alcohol used on

a monthly basis. VOC emissions for subject emission limits are less than the applicable Rule 290 monthly threshold.

FG-FACILITY

S I. 1. **COMPLIANCE.** The 12-month rolling CO emissions shall not exceed 271.4 tons per year. The maximum 12-month rolling CO emission from October 2016 through October 2018 occurred at the end of November 2016 at 147.8 tons.

SC I. 2. **COMPLIANCE.** The 12-month rolling NOx emissions shall not exceed 93.8 tons per year. The maximum 12-month rolling NOx emission from October 2016 through October 2018 occurred at the end of December 2016 at 18.6 tons.

Permit to Install Exempt Equipment

Engine Manufacturing Equipment

Engine manufacturing equipment appears to be exempt from PTI requirements per R336.1285(2)(l)(vi)(B) or (C). Emissions are either released to the general in-plant environment, or if released to outside ambient air are controlled by two stage filters within both the DCUs and MCUs. The AQD accepts the two stage filters as a demonstration of the permit exemption (mechanical precleaer and appropriately designed fabric filter).

Cold Cleaners

According to correspondence dated November 29, 2018, the facility operates six aqueous parts washers. The SDS provided indicates that the solution used in the parts washers does not contain VOCs. The parts washers appear to be exempt from PTI requirements under R336.1281(2)(k).

Fire Pumps and Emergency Engine

The facility operates two fire pumps and one emergency generator. The largest unit operates at 276 break horse power. Based on calculations, 276 BHP power output rating is equivalent to 0.70 million British thermal units (MMBTU) rated input. At a 25% efficiency conversion, the maximum converted rating is approximately 2.8 MMBTU/hr. Based on the calculated rating, the fire pumps and emergency generator are exempt from PTI requirements under the following Rule.

R336.1285(2)(g): "Permit to install does not apply to...Internal combustion engines that have less than 10,000,000 Btu/hour maximum heat input."

Washers

The facility washers appear to be exempt from PTI requirement under R336.1281(2)(e). While the SDSs provided indicates that solution used in the washer contains VOCs, the facility has provided documentation that vapor pressure of the VOC constituent (ethanolamine) is less than 0.1 mmHg.

APPLICABLE FUGITIVE DUST CONTROL PLAN CONDITIONS:

The facility currently operates under a fugitive dust plan as described above in EU-YARD. The fugitive dust plan outlines monthly sweeping activities and dust suppressant application as necessary. Currently, all roadways and parking lots are swept monthly. The unpaved trailer area is swept as needed. During the inspection fugitive dust was not observed. At the time of the inspection the facility was determined to be in compliance with conditions of EU-YARD and the fugitive dust control plan.

MAERS REPORT REVIEW:

The 2017 MAERS report was submitted on time. The MAERS audit conducted in April 2018 was passed.

FINAL COMPLIANCE DETERMINATION:

At this time, this facility appears to be in compliance with MI-ROP-B3350-2014b and federal and state regulations.

NAME 

DATE 12/5/18 SUPERVISOR JK