

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

B286961864

FACILITY: FORD MOTOR COMPANY - ROMEO ENGINE PLANT		SRN / ID: B2869
LOCATION: 701 E. 32 MILE RD., ROMEO		DISTRICT: Warren
CITY: ROMEO		COUNTY: MACOMB
CONTACT: Lori Brinkman , Plant Environmental Compliance Engineer		ACTIVITY DATE: 12/17/2021
STAFF: Rem Pinga	COMPLIANCE STATUS: Compliance	SOURCE CLASS: SM OPT OUT
SUBJECT: On-Site Inspection		
RESOLVED COMPLAINTS:		

On December 17, 2021, I conducted an on-site inspection at Ford Motor Company - Romeo Engine Plant located at 701 East 32 Mile Road, Romeo, Michigan 48065. The purpose of the inspection was to determine the facility's compliance with the requirements of the Federal Clean Air Act; Part 55, Air Pollution Control, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended (Act 451), the administrative rules, and the facility's Permit to Install No. 5-18. During the inspection, I was accompanied by Ms. Lori Brinkman, Environmental Compliance Engineer and facility contact person.

To comply with the COVID-19 Emergency AQD Field Inspection Guidance Update (June 2020), the inspection was announced and scheduled. I adhered to the facility's COVID-19 safety protocols such as temperature check at main building entrance reception area, filling out the facility Covid-19 Safety Questionnaire, and wearing of face mask while conducting the inspection. Following AQD guidance, recordkeeping information were obtained through email except for data that needed to be verified during the walk-through inspection. I filled the EGLE Covid-19 Safety Questionnaire online prior to leaving home office. I entered the facility wearing face mask, safety glasses, hard hat, and safety shoes. My facility contact was also wearing face mask during the inspection process.

PTI No. 5-18 was issued as a synthetic minor permit to install. It contained applicable requirements to opt the facility out of the Clean Air Act of 1990, Title V, Renewable Operating Permit (ROP) requirements. This stationary source is not considered a major source of Hazardous Air Pollutant (HAP) emissions because the company has agreed to accept facility-wide single HAP and combined/aggregate HAPs emission restrictions, supported by monthly 12-month rolling total/s recordkeeping requirements, to demonstrate continued compliance as a HAP synthetic minor facility. Under PTI No. 5-18, FGFACILITY, the facility is restricted to a potential to emit of any single HAP regulated by the federal Clean Air Act, Section 112 to less than 9.00 tons per year and a potential to emit of all HAPs combined (aggregate HAPs) to less than 22.5 tons per year. The facility also accepted a synthetic minor emission limit for Nitrogen Oxides (NOx) at 88.6 tons per year (TPY).

The Ford Motor Company - Romeo Engine Plant facility manufactures automotive engines for Ford vehicles such as the Maverick, F250 and F350. The facility conducts machining operations on engine components such as engine blocks, cylinder heads and blocks, main bearing caps, crankshafts, and camshafts. The machined components are assembled into the designated engines and tested for quality assurance.

Permit to Install No. 5-18 includes one emission unit (EU) with applicable requirements (ARs): EU-RICEPH1; and 5 flexible groups: FG-205-87A, FG-DRYCRANK, FG-DRYBLOCK5-9, FG-EMERGENCYRICE<500HP, and FGFACILITY.

EU-RICEPH1 – refers to a natural gas fired generator, Penthouse 1, with less than 500 HP. Per PTI No. 5-18, SPECIAL CONDITIONS EU-RICEPH1 (III.2), the facility conducts oil and filter change, and inspections of spark plugs, hoses, and belts annually. Records showed that the previous inspection was conducted last August 18, 2021. Per PTI No. 5-18, SPECIAL CONDITIONS EU-RICEPH1 (VI.1 & 2), the facility keeps records of monthly inspections, maintenance conducted, and non-resettable hour meter readings. The last recorded hour meter for November 3, 2021 showed 1072.9 hours and the monthly 12-month rolling total operating hours were reported at 32.6 hours and less than 100 hours.

FG-205-87A - refers to machining operations with associated oil mist collection units originally covered under PTI 205-87A. This flexible group includes EUCONNROD and EUCYLHEADBLOCK. Per PTI No. 5-18, SPECIAL CONDITIONS FG-205-87A (I.1), the facility utilizes 0.007 grains/dscf as emission factor from a previous stack test contained in Ford Memo 51-A. Per facility contact, Ms. Brinkman, a worse case calculation utilizing the above factor would result in 0.00135 lb./1000 lb. exhaust gases of PM emission rate and less than the 0.007 lb./1000 lb. exhaust gases emission limit. Per PTI No. 5-18, SPECIAL CONDITIONS FG-205-87A (I.2), the facility calculated a maximum PM emission rate of 0.48 lb./hr. for wet machining operations and less than the 13.5 lb./hr. permit limit. Per PTI No. 5-18, SPECIAL CONDITIONS FG-205-87A (I.3), the facility calculated the maximum yearly PM emission rate at 2.1 tons and less than the 59.1 tpy emission limit. Submitted records showed that the monthly 12-month rolling total PM emission rate for November 2021 was 1.142 tpy. Per PTI No. 5-18, SPECIAL CONDITIONS FG-205-87A (IV.1), the facility operates a 2-stage oil mist filter control system for particulate control. Stage 1 is Munter pre-filter control system to knock out heavy particles/oil. Stage 2 is HEPA filter particulate control system. The oil mist collector/particulate control system appeared to be operating properly as I did not observe any visible emissions inside the facility during the walk-through inspection. Per PTI No. 5-18, SPECIAL CONDITIONS FG-205-87A (IV.2), I missed conducting a random observation of pressure drops for this flexible group during the

walk-through inspection. Per PTI No. 5-18, SPECIAL CONDITIONS FG-205-87A (VI.1 & 2), the facility records weekly pressure drops and issues work orders for filter changes when the readings approach 7" wg and the maximum manufacturer recommended pressure drop is 10" wg. I obtained a random sample copy of a Weekly MOM Inspection Filter Log dated 12/14/2021. Per PTI No. 5-18, SPECIAL CONDITIONS FG-205-87A (VI.3), the log contained the oil mist identification, date of inspection, and the pressure drop for each stage. Per PTI No. 5-18, SPECIAL CONDITIONS FG-205-87A (VI.4), the facility calculates and records the total PM emission rate monthly for EUCONNROD and EUCYLHEADBLOCK individually, the monthly total for both blocks, and the monthly 12-month rolling total emission rates.

FG-DRYCRANK – refers to dry machining of crankshafts and handling of chips produced by the machining operations that include associated exhaust systems and common baghouse dust collector, DDC1. This flexible group includes EU-DRYCRANK1-3. Per PTI No. 5-18, SPECIAL CONDITIONS FG-DRYCRANK (I.1), the facility utilizes 0.002 grains/dscf as emission factor from a previous stack test contained in Ford Memo 51-A. Per Ms. Brinkman, a worse case calculation utilizing the above factor would result in 0.0038 lb./1000 lb. exhaust gases of PM emission rate and less than the 0.004 lb./1000 lb. exhaust gases emission limit. Per PTI No. 5-18, SPECIAL CONDITIONS FG-DRYCRANK (I.2), the facility calculated a maximum PM10 emission rate of 0.26 lb./hr. for dry machining operations and less than the 0.27 lb./hr. permit limit. The facility submitted records showing an actual average of 0.19 lb./hr. PM10 emission rate. Per PTI No. 5-18, SPECIAL CONDITIONS FG-DRYCRANK (VI.1), the facility records weekly pressure drops across the bag filter system and issues work orders for filter changes when the readings approach 7" wg. Per PTI No. 5-18, SPECIAL CONDITIONS FG-DRYCRANK (III.1) & (IV.1 & 2), the filters appeared to be operating properly as I did not observe visible emissions during walk-through inspection. I obtained a random sample copy of a Weekly DDC Inspection Filter Log dated 12/13/2021. Per PTI No. 5-18, SPECIAL CONDITIONS FG-DRYCRANK (VI.1), the log contained the baghouse identification, date of inspection, the pressure drop across the baghouse, and any maintenance conducted.

FG-DRYBLOCKS5-9 – refers to dry machining of engine blocks and handling of chips produced by the machining operations that include associated exhaust systems and common baghouse dust collector, DDC5-DDC9. This flexible group includes EU-DRYBLOCK5-9. Per PTI No. 5-18, SPECIAL CONDITIONS FG-DRYBLOCK5-9 (I.1), the facility utilizes 0.002 grains/dscf as emission factor from a previous stack test contained in Ford Memo 51-A just like in FG-DRYCRANK. Similarly, a worse case calculation utilizing the above factor would result in 0.0038 lb./1000 lb. exhaust gases of PM emission rate and less than the 0.004 lb./1000 lb. exhaust gases

emission limit. Per PTI No. 5-18, SPECIAL CONDITIONS FG-DRYBLOCK5-9 (I.2, 3..6), the facility calculated the PM10 emission rates for EU-DRYBLOCK5, 6..9 as follows: 0.26, 0.19, 0.29, 0.26, and 0.085 lb./hr. respectively and less than the 0.27, 0.2, 0.3, 0.27, and 0.10 lb./hr. respective permit limits. Per PTI No. 5-18, SPECIAL CONDITIONS FG-DRYBLOCK5-9 (III.1), I did not observe visible emissions during walk-through inspection and in compliance with the 5% opacity limit. Per PTI No. 5-18, SPECIAL CONDITIONS FG-DRYBLOCK5-9 (IV.1), the filters appeared to be operating properly as I did not observe visible emissions during walk-through inspection and the weekly inspection ensures proper maintenance of the baghouse filter system. Per PTI No. 5-18, SPECIAL CONDITIONS FG-DRYBLOCK5-9 (VI.1), the facility records weekly pressure drops across the bag filter system and issues work orders for filter changes when the readings approach 7" wg. I obtained a random sample copy of a Weekly DDC Inspection Filter Log dated 12/13/2021. The log contained the baghouse identification, date of inspection, the pressure drop across the baghouse, and any maintenance conducted. During walk-through inspection, I observed pressure drops for DDC6 and DDC8 at 4.7 wg and 1.1 wg respectively.

FG-EMERGENCYRICE<500HP – refers to emergency reciprocating internal combustion engines (RICE) < 500 brake horsepower (e.g., generators, fire pumps, etc.) subject to 40 CFR 63 Subpart ZZZZ when applicable. This flexible group includes EU-EMERGRICEFP1, EU-EMERGRICEFP2, EU-EMERGRICEFP3, EU-EMERGRICEFP4, EU-EMERGRICEPH2, EU-EMERGRICEPH3, EU-EMERGRICEPH4, EU-EMERGRICEPH5, EU-EMERGRICEPH6, and EU-EMERGRICEPH7. The above engines comprise of 4 diesel fired Fire Pumps and 6 natural gas fired emergency generators. Per PTI No. 5-18, SPECIAL CONDITIONS FG-EMERGENCYRICE<500HP (III.1-4), the facility conducts annual inspections for hoses, belts, air cleaner, spark plugs, and oil and filter changes, as applicable (for either CI or SI engines). As mentioned earlier, the facility conducted the most recent annual inspections and maintenance for the engines on August 18, 2021. Per PTI No. 5-18, SPECIAL CONDITIONS FG-EMERGENCYRICE<500HP (III.5-6), submitted records showed all engines ran less than 50 hours based on monthly 12-month rolling totals. Per PTI No. 5-18, SPECIAL CONDITIONS FG-EMERGENCYRICE<500HP (IV.1), the random units I inspected showed non-resettable hour meters installed and readings were taken and included in the RICE engine spreadsheet submitted by the facility. EU-EMERGRICEPH5 (Generator No.5) and EU-EMERGRICEFP4 (Fire Pump No.4) showed readings of 1121.9 hours and 71.6 hours respectively during the walk-through inspection.

FGFACILITY – as mentioned above, the facility took Nitrogen Oxides (NOx), individual Hazardous Air Pollutant (HAP) and combined/aggregate HAPs emission rate restrictions to make the facility synthetic minor for NOx and

HAPs, and opt the facility out of the Clean Air Act of 1990, Title V, Renewable Operating Permit program. Per PTI No. 5-18, SPECIAL CONDITIONS FGFACILITY (I.1), the facility reported the highest FY 2021 individual HAP monthly 12-month rolling total emission rate in January 2021, at 0.57 tpy, and for Methanol. This emission rate is less than the 9 tpy permit limit. Per PTI No. 5-18, SPECIAL CONDITIONS FGFACILITY (I.2), the facility reported the highest FY 2021 aggregate HAPs monthly 12-month rolling total emission rate in January 2021, at 1.0 tpy, and less than the 22.5 tpy permit limit. Per PTI No. 5-18, SPECIAL CONDITIONS FGFACILITY (I.3), the facility reported the highest FY 2021 NOx monthly 12-month rolling total emission rate in February 2021, at 6.2 tpy, and less than the 88.6 tpy permit limit. Per PTI No. 5-18, SPECIAL CONDITIONS FGFACILITY (II.1), the facility reported the highest FY 2021 Natural gas monthly 12-month rolling total usage rate in February 2021, at 26.3 MMCF, and less than the 1,540 MMCF permit limit.

The facility operates an inking station exempt from AQD Rule 201 permit to install requirements pursuant to AQD Rule 278 and AQD Rule 287(2)(c). Submitted records showed about 2.0 gallons usage from January through November 2021 which is less than the 200 gallons per month exemption limit.

The facility operates additional PTI exempt equipment/processes pursuant to AQD Rule 278 and AQD Rule 290. The processes are: RTV Process and Alcohol Application Process. RTV Process refers to adhesives used in the engine assembly area. As discussed in the last inspection report, one adhesive is located in the PV8 Assembly area and utilizes a robotic applicator. Two adhesives are applied by hand in the Niche line. Emissions are exhausted indoors. I was not able to check these processes during the most recent walk-through inspection. I checked the ITSL/IRSL for the compounds in each adhesive based on the submitted HAPs records. The monthly adhesive usages are entered into a Rule 290 spreadsheet and into an Excel monthly spreadsheet. Cumene, Acetaldehyde, Benzene, Ethyl Benzene, Hexane, Toluene, and Xylene are components of the adhesives. Cumene, Acetaldehyde, Benzene, and Ethyl Benzene compounds have IRSL values between 0.04 ug/m³ and 2.0 ug/m³ and have 20 lb./month limit uncontrolled for PTI exemption per AQD Rule 290. For FY2021, submitted records showed that the monthly emission rates for each compound, were less than 20.0 lb. and meets the < 20 lb./month limit to be exempt from permit to install requirements per AQD Rule 290. The other compounds have 1000 lb./month limit. The Alcohol Application Process refers to denatured alcohol used to clean gages throughout the plant and applied by hand. There are no ITSL/IRSLs associated with denatured alcohol and the AQD Rule 290 limit is 1000 lb./month. The facility submitted records showing the monthly emission

rate for alcohol was below 100 lb./month and less than the monthly 1000 lb. limit.

The facility also has Safety Kleen parts washers exempt from AQD Rule 201 PTI requirements pursuant to AQD Rule 278, AQD Rule 278a and AQD Rule 281(2)(h) or AQD Rule 285(2)(r)(iv). During walk-through inspection, I observed a Safety Kleen parts washer unit in the Crankshaft Machining area. The unit has less than 10 square feet surface area, the lids were closed, and safety instructions were posted.

At the time of the inspection, I did not observe any noncompliance issues.

NAME

DATE February 17, 2022

SUPERVISOR

