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

B724864854

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| **FACILITY:** FCA US LLC Sterling Heights Assembly plant | | **SRN / ID:** B7248 |
| **LOCATION:** 38111 Van Dyke, STERLING HTS | | **DISTRICT:** Warren |
| **CITY:** STERLING HTS | | **COUNTY:** MACOMB |
| **CONTACT:** Adekunle Sanni , Environmental Specialist | | **ACTIVITY DATE:** 06/08/2022 |
| **STAFF:** Iranna Konanahalli | **COMPLIANCE STATUS:** Compliance | **SOURCE CLASS:** MAJOR |
| **SUBJECT:** FY 2022 ROP CMS Scheduled Inspection at FCA US LLC, Sterling Heights Assembly Plant (FCA SHAP) | | |
| **RESOLVED COMPLAINTS:** | | |

**FCA US LLC SHAP (B7248)**

**Sterling Heights Assembly Plant (SHAP)**

**Owned by FCA US LLC of Auburn Hills, Michigan**

**38111 Van Dyke Ave.**

**Sterling Heights, Michigan 48340-2920**

**North American Industry Classification System (NAICS) Code: 336111 Automobile Manufacturing.**

**ROP: MI-ROP-B7248-2020. Effective: December 4, 2020. Expiration: December 4, 2025. Application Due Between June 4, 2024, and June 4, 2025.**

**PTIs: PTI Nos. 227-10D for CAB (north, original car [Chrysler 200] plant converted to truck CAB) and 27-17B for BOX (South, new truck BOX plant)**

**Not Subject to (cold-cleaners): NESHAP/ MACT T, area source National Emission Standards for Hazardous Air Pollutants: Halogenated Solvent Cleaning (40 CFR, Part 63, Subpart T; NESHAP/ MACT T); Correction; 29484 Federal Register / Vol. 60, No. 107 / Monday, June 5, 1995 / Rules and Regulations; amended National Air Emission Standards for Hazardous Air Pollutants: Halogenated Solvent Cleaning (40 CFR, Part 63, Subpart T); Final Rule; Page 25138 Federal Register / Vol. 72, No. 85 / Thursday, May 3, 2007 / Rules and Regulations. FCA SHAP does NOT use the MACT T listed halogenated HAP solvents (>5%w: methylene chloride (CAS No. 75-09-2), perchloroethylene (CAS No. 127-18-4), trichloroethylene (CAS No. 79-01-6), 1,1,1-trichloroethane (CAS No. 71-55-6), carbon tetrachloride (CAS No. 56-23-5), and chloroform (CAS No. 67-66-3)) in the cold-cleaners.**

**FCA US LLC (Chrysler) owns and operates the Sterling Heights Assembly Plant (SHAP), located at 38111 Van Dyke Road, Sterling Heights, Michigan. In June of 2006, SHAP was issued a flexible permit PTI No. 82-06. That flexible permit was rolled into MI-ROP-B7248-2008a. As a part of the flexible permit, PTI No. 82-06, Chrysler was permitted to replace the existing paint shop with a new one. However, FCA never installed the new paint shop.**

**Flexible permit No. PTI 82-06 was the second flexible permit issued by AQD.**

**Under the PTI No. 227-10 application, Chrysler was seeking a permit for the installation of the new paint shop to replace their existing one. Chrysler requested that it maintain the same emission limit structure contained in flexible PTI No. 82-06 (a combined facility wide mass VOC limit, a mass VOC limit for purge and cleanup activities, and a pounds of VOCs per vehicle produced limit for all operations, except purge and cleanup) but not the operational flexibility contained in that permit (i.e. the ability to make changes under the flexible permit without first getting a new or modified permit). Chrysler also proposed to reduce the combined facility wide mass VOC limit and the mass VOC limit for purge and cleanup activities to levels that allow this PTI No. 227-10 application to avoid PSD under the actual to projected actual test. By not including the operational flexibility, the permit would not be a flexible one.**

**Under this PTI No. 227-10, SHAP would continue to remain subject to the federal New Source Performance Standard (NSPS) for Automobile and Light Duty Truck Manufacturers, 40 CFR 60 Subpart MM. The requirements of the NSPS are inherent in the 4.5 pounds of VOC per car (without purge and cleanup) and the 673.2 tons of VOC per year limits. Compliance with PTI No. 227-10 VOC limits constitutes compliance with the NSPS MM. SHAP would continue to remain subject to the federal National Emissions Standards for Hazardous Air Pollutants: Surface Coating of Automobiles and Light-Duty Trucks (Auto MACT 4I), 40 CFR 63 Subpart IIII and Organic Liquid Distribution (OLD) (non-gasoline), 40 CFR 63 Subpart EEEE (MACT 4E).**

**As a part of the PTI No. 227-10 application package, Chrysler provided a Rule 702 BACT analysis evaluating the proposed VOC emissions from the new paint shop and associated equipment. Traditionally BACT for automotive paint shops has been expressed in terms of both a tons per year mass VOC limit and a pounds of VOCs per gallon of applied coating solids (lbs VOCs/GACS) or pounds of VOCs per gallon of coating minus water as applied (lbs VOCs/gal) basis for each emission unit or flexible group being permitted. The tons per year mass limits are often arrived at based upon the add-on cost control element of the BACT analysis. The lbs VOCs/GACS and lbs VOCs/gal limits are thought of as a performance standard.**

**Rather than this traditional approach, Chrysler requested that BACT for this facility be expressed in terms of a single facility wide mass VOC emission limit; a pounds of VOCs minus purge and cleanup per vehicle produced basis; and a mass VOC emission limit for purge and cleanup operations. The purge and cleanup mass values were included in the overall single facility wide mass VOC limit. The pounds of VOCs per vehicle produced are carried through of as a performance standard.**

**A permit of this type is referred to by the AQD as a flexible permit. The only specific requirements included in a permit of this type is that the applicant operates the add-on VOC control equipment specified in the permit. Other than that, the applicant is**

**free to achieve compliance with the limits (both overall mass VOC limit and pounds of VOCs per vehicle produced limit) in any way they choose. The permit does not mandate that specific coatings and/or application equipment be used. Nor does it limit the amount or location of solvent usage (including purge and cleanup solvents). Finally, it does not limit the mass emissions from individual emission units and/or flexible groups. A permit of this type provides the applicant with much greater operational flexibility than a traditional type of permit and it should reduce the number of future modifications required to the permit.**

**A normal flexible permit also allows the company to replace or modify existing equipment as long as all of the emission limits are meet without getting a new permit. This permit would not include that flexibility.**

**Chrysler proposed flexible limits for VOCs of 4.5 pounds of VOCs minus purge and cleanup per vehicle produced, 673.2 tons per year total from the new paint shop (north) and associated activities, and 223.2 tons per year from purge and cleanup activities.**

**Mod PTI No. 227-10 (Engineer: Mark Mitchel) è PTI No. 227-10A (Engineer: Julie Brunner): This Mod was to replace the body shop (EU-NEWBODYSHOP). No other change.**

**Mod PTI No. 227-10A è 227-10B: The Mod was to modify special conditions dealing with the thermal oxidizers (installation of one RTO instead of originally proposed two RTOs for north paint shop) and change in stack parameters. Also, SHAP requested to revise some special condition languages, specially dealing with the testing requirement.**

**Mod PTI No. 227-10B è 227-10C: The Mod was for a minor change requested to delete the stack/vent restriction for the new body shop that says all emissions shall be to the in-plant environment. Emissions from approximately 14 MMBtu/hr of the natural gas fired processes of the combined 111 MMBtu/hr that were installed with the original project are exhausted to the ambient air. This does not change the underlying processes, process equipment or the amount of actual or potential emissions as was previously reviewed. No increase in emissions.**

**Mod PTI No. 227-10C è 227-10D: This Mod was for a new paint line (south, BOX) installed at the existing automotive manufacturing plant operated by FCA US LLC, (formerly Chrysler Group LLC) Sterling Heights Assembly Plant. The new line would be used to paint the truck box for light duty trucks (Dodge Ram). The existing paint line (north, cab) would paint the truck cab. The facility at that time manufactured Chrysler 200. The existing paint line was designed to handle various model vehicles in the FCA portfolio; however, it was not designed to manufacture the full trucks (truck CAB and BOX) in a manner that would meet consumer demand, which is why the new paint line was added at the facility. Since the project emissions for VOCs are major, this project was considered a major modification at an existing major PSD source (PSD for VOCs and PM2.5). No increase in emissions would occur from the changeover of manufacturing Chrysler 200 to manufacturing the truck cab. The existing line (north) was not modified as defined by PSD regulations.**

**For those units subject to PSD BACT for VOCs, Rule 702(a) BACT is met. FCA has proposed PSD BACT for each process for VOCs either through the use of add on control (RTO) or through work practice standards (good combustion practices for natural gas fired equipment). The control proposed to comply with PSD BACT for**

**VOCs deemed to comply with Rule 702.**

**The new paint line (box, south) is subject to the NSPS MM for Surface Coating of Automobiles and Light Duty Trucks, 40 CFR Part 60 Subpart MM. Specifically, the E-coat process is subject to a limit of 1.34 pounds of VOC per gallon applied coating solids (lbs VOC/GACS) and the topcoat process is subject to a limit of 12.27 lbs VOC/GACS. FCA proposed limits of 0.04 lbs VOC/GACS for the E-coat process and 2.0 lbs VOC/GACS for the topcoat process which are well below the respective NSPS limits.**

**The new paint shop (box, south) is subject to the NESHAP / MACT 4l Surface Coating of Automobiles and Light Duty Trucks for 40 CFR Part 63 Subpart IIII. The existing paint shop (north) at FCA is subject to the standard and complies without the use of add-on control devices. The new coating line for the truck bed (south) would also comply with the standards for new sources without the use of add-on control devices.**

**Top-down PSD BACT: FCA proposed a limit of 0.04 lbs VOC/GACS for the E-coat process and the use of an RTO to control VOC emissions from the E-coat tank and oven with emissions vented directly from the tank to the oven and then to the RTO. This meets the requirements of PSD BACT for VOCs because FCA selected the most effective control option and the limit proposed is the lowest limit that has been proposed in BACT determinations for similar processes. Additionally, FCA accepted a VOC limit of 2.32 tpy on a 12-month rolling time period basis, as determined at the end of each calendar month for the E-coat process. The ton per year limit is a combined limit of VOC, acetone, methyl acetate, and tertiary butyl acetate.**

**It should also be noted that AQD determined that a limit of 2.32 lbs/GACS for the topcoat process was deemed BACT for VOCs. This limit was based on the types of basecoat and clearcoats proposed to be used in the topcoat process by FCA and is clearly lower than any BACT limit found in the RBLC. PSD BACT for VOCs for the topcoat process is set at 2.32 lbs/GACs along with the use of the RTO to control the basecoat application zone, the heated flash-off zone, clearcoat application zone and topcoat bake oven. The RTO is the most efficient emission reduction technique available in terms of add-on controls.**

**PTI No. 27-17 was for Spray Bedliners (SOBL) and issuance of that permit resulted in voiding PTI No. 227-10D. PTI No. 27-17B incorporates south plant and seeks to streamline the ROP.**

**Spray-on bedliner (SOBL) facility would be located at 7566 Metropolitan Parkway, Sterling Heights, Michigan, directly across the street from the main plant. SOBL operation consists of the use of cleaning solvents, and natural gas-fired space heating equipment. It should be noted that the SOBL facility will be operated by a third-party company. However, it is a support facility operation that would not exist but for FCA SHAP's main assembly plant. Therefore, it is part of the same stationary source.**

**For particulate emissions from the SOBL facility, it was assumed that PM = PM10 = PM2.5. FCA calculated an emission rate of 0.43 tpy of PM (SOBL), which is based on the assumption that all solid portions of the polyurethane resin and bonding agent will be exhausted through the stack after the 2-stage filtration removes at least 99% of particulate.**

**For SOBL facility, FCA SHAP quantified the maximum hourly (lb/hour) emissions from the use of the two-part polyurethane resin material, the bonding agent and the solvents materials used for cleaning and prepping. This was based on a maximum production rate of 42 vehicles/hour for the entire SOBL facility.**

**The south paint line (BOX) and SOBL together are subject to the NSPS for Surface Coating of Automobiles and Light Duty Trucks, 40 CFR Part 60 Subpart MM. Specifically:**

1. E-coat process of south paint line (BOX): 1.34 pounds of VOC per gallon applied coating solids (lbs VOC/GACS) >> limits of 0.04 lbs VOC/GACS for the E-coat process
2. Topcoat process of south paint line (BOX): 12.27 lbs VOC/GACS >> limit of 2.0 lbs VOC/GACS for the topcoat process.
3. The SOBL material is a topcoat. Since it is a two-part reactive polyurethane resin, the only VOC is from trace amounts of methylene diphenyl diisocyanate (MDI). The MDI emission rate from the SOBL process is $4.67 \times 10^{-8}$ lb/GACS, which is well below the NSPS limit of 12.27 lb/GACS for topcoats.

**There were three Emission Units which have been dismantled/removed from the facility and since then have been removed from the ROP. They include:**

1. **EU-DINACLEAN** - this EU was dismantled on December 17, 2013, and physically removed from the facility in December 2016.
2. **EU-BLACKOUT** - the Black-out booth was never constructed and therefore removed from the ROP
3. **EU-DEADNER:** Removed from ROP as it does not exist anymore

**FG-CAM: Two (2) Regenerative Thermal Oxidizers:**

1. RTO-NORTH (CAB) or north RTO &
2. RTO-SOUTH (BOX) or south RTO.

**Auto Protocol: "Protocol for Determining the Daily Volatile Organic Compound Emission Rate of Automobile and Light Duty Truck Topcoat Operations", EPA-450/3-88-018 or as amended. FCA US (Chrysler) follows the protocol procedures for both NSPS MM (NSPS 2M: prime coat, guide coat [aka primer surfacer] and topcoat operations installed / modified after October 5, 1979; the PSD permits were issued to FCA SHAP TE (Transfer Efficiency) values have impact on PSD & NSPS emissions rates because the emissions rates are expressed in pounds (kilograms) per gallon (liter) of coatings solids applied or deposited; in other words, solids overspray is accounted for in this type of emissions rate unit.**

**Subject to (opt-out of control device requirements via use of HAP compliant coatings): Auto MACT, NESHAP / MACT 4I, 40 CFR, Part 63, Subpart IIII—National Emission Standards for Hazardous Air Pollutants: Surface Coating of Automobiles and Light-Duty Trucks (Federal Register / Vol. 69, No. 80 / Monday, April 26, 2004 / Rules and Regulations/ Final Rule). Because FCA US (Chrysler) opted out of the post –11/15/90 NSPS (Auto NSPS MM was promulgated before 1990) or NESHAP / MACT federal regulations for control devices (e.g., RTO,) via compliance with Auto MACT by coatings formulations, the control devices are only subject to CAM regulations (VOC).**

**Subject to: Compliance Assurance Monitoring (CAM) (40 CFR Part 64) for VOC control devices (e.g., RTO: north RTO & south RTO). CAM is a part of enhanced monitoring and compliance certification for ROP / Title V sources under the Clean Air Act. Obviously, if the control devices (e.g., RTO) were subject the auto MACT monitoring, the devices would be not be subject to CAM monitoring and the MACT's monitoring would be the presumptive CAM. FCA US (Chrysler), like other Auto-manufacturers, chose to comply with the Auto MACT via coatings formulations without use of thermal oxidizers. Coating processes are subject to the federal Compliance Assurance Monitoring (CAM) rule under 40 CFR, Part 64. These emission units have a control device and potential pre-control emissions of VOCs greater than the major source threshold level (100 tpy VOC). The monitoring for the control device(s) is continuous temperature monitoring, bypass monitoring, and inspections and maintenance of the control devices at a minimum of every 18 months. In brief, VOC CAM plan for one south RTO and one north RTO consists of continuous temperature monitoring and recording (accuracy: ± 2.5 ºC; minimum temperature readings: every 15 minutes), annual replacement or calibration of thermocouples, inspection and maintenance (I&M), repair activities, bypass monitoring, etc. The minimum operating temperatures are established by VOC destruction efficiency testing.**

**Subject to Major Source Boiler MACT 5D (reconsidered [2011] MACT 5D: Annual Tune-up or Pentennial / Quinquennial (1/5Yr) Tune-up if boiler is equipped with oxygen trim system, one time Energy Assessment (EA) or ISO 50001): Major Source Boiler NESHAP / MACT 5D, 40 CFR Part 63, Subpart DDDDD, National Emission Standards for Hazardous Air Pollutants for Major Sources: Industrial, Commercial, and Institutional Boilers and Process Heaters, All FCA SHAP's natural gas boilers (six small and three large boilers), are equipped with Oxygen Trim Systems. An Oxygen Trim System is a system of monitors that is used to maintain excess air (EA) at the desired level in a combustion device. A typical system consists of a flue gas analyzer for oxygen (O2) and / or carbon monoxide (CO) and a feedback signal to the combustion controller. In other words, an Oxygen Trim System is designed to continuously measure and maintain optimum air-to-fuel ratio in the combustion zone. If such system exists, annual tune-up is not required; however, pentennial / quinquennial (1/5Yr) tune-up is required. FCA does follow ISO 50001, Energy Management System for continuous improvement of energy performance, energy efficiency, energy consumption and for reduction of energy use, energy costs, greenhouse gas emissions (GHG), etc. If ISO 50001 is followed properly, one-time energy assessment (EA) is not required.**

**Subject to (EU-AST13): OLD NESHAP / MACT EEEE/ MACT 4E, 40 CFR Part 63, Subpart EEEE, National Emission Standards for Hazardous Air Pollutants: Organic Liquids Distribution (OLD)(Non-Gasoline).**

**Subject to: Prevention of Significant Deterioration (PSD) (40 CFR 52.21) or Rule 336.1220 (during LAER review) / Rule 336.2902 (now) Major Offset Source depending upon attainment status.**

**Subject to: 40 CFR, Part 60, Subpart MM (NSPS MM or 2M)—Standards of Performance for Automobile and Light Duty Truck Surface Coating Operations (NSPS MM) (45 FR 85415, December 24, 1980). NSPS MM applies to an automobile/ light duty truck assembly plant constructed or modified after October 05,1979. The permits were issued in 1984.**

**Subject to: Rule 336.1610. The Rule 610 compliance calculations must be done**

**pursuant to "Protocol for Determining the Daily Volatile Organic Compound Emission Rate of Automobile and Light Duty Truck Topcoat Operations", EPA-450/3-88-018 or as amended. FCA US does not perform NSPS MM calculations separately. Instead, the Auto Protocol calculations are used to satisfy NSPS MM emission limits. It is allowed because the tested lower TE values (60s) are used instead of NSPS 2M Table values (90s). However, the PSD permits (north and south) issued to FCA SHAP subsume NSPS MM and Rule 610 requirements.**

**Not subject to: NSPS Dc, New Source Performance Standards (NSPS) for Small Industrial-Commercial-Institutional Steam Generating Units (40 CFR, Part 60, Subpart Dc). Fuel oil is never used in the boilers. Only boilers installed after June 9, 1989 (e.g., EU-BOILER1, EU-HWG1, EU-HWG2, EU-HWG3, EU-HWG4, EU-HWG5 & EU-HWG6), are subject to NSPS Dc.**

**The NSPS Dc revisions simplified the natural gas usage recordkeeping. ROP and MAERS natural gas recordkeeping satisfies NSPS Dc.**

**On June 08-09, 2022, I, accompanied by Noshin Khan of AQD-SEMI-DO-Warren, conducted a level-2 ROP CMS scheduled FY 2022 inspection of FCA US LLC, Sterling Heights Assembly Plant (SHAP) ("FCA SAHP" or "SHAP") located at 38111 Van Dyke Ave., Sterling Heights, Michigan 48340-2920. The inspection was conducted to determine compliance with the Federal Clean Air Act; Article II, Part 55, Air Pollution Control, of the Natural Resources and Environmental Protection Act, 1994, PA 451; Michigan Department of Environment, Great Lakes and Energy, Air Quality Division (EGLE-AQD) administrative rules; and ROP.**

**During the inspection, SAKIRU SANNI (Phone: NA; Fax: NA; Cell: 248-808-0121; E-mail: <adekunle.sanni@stellantis.com>; Mail Code: NA), Environmental Engineer, assisted me.**

**During the Bedliner inspection, Allen Kinsler (Phone: 313-462-2290-ext. 2107; E-mail: aKinsler@gfxLTD.com) and Gary Mansolf (Phone: 248-320-8645; E-mail: Mansolf@gfxLTD.com ), assisted me.**

**FCA US LLC - Sterling Heights Assembly Plant (FCA SHAP or SHAP; fka Chrysler) currently operates automobile painting and assembly operations for truck products at Sterling Heights in Macomb County, Michigan. The painting operations of the truck products take place at north paint shop for truck cabin and south paint shop for truck box. These operations consist of various emission units (EUs).**

**FCA SHAP manufactures, or assembles, light-duty trucks. As stated previously, truck cabs are painted at north paint shop, where VOC emissions are controlled by north regenerative thermal oxidizer (RTO-NORTH), and truck boxes are painted at south paint shop, where VOC emissions are controlled by south regenerative thermal oxidizer (RTO-SOUTH). Body paint overspray particulate emissions are controlled by two separate downdraft water-wash systems (north water-wash system for north coating operations and south water-wash system for south coating operations) and effluent is routed to the onsite wastewater treatment facility. Upon separation of suspended overspray paint solids, water is recycled or reused in the booths. Particulate emissions from processes such as repair and sanding operations are controlled by dry filter systems. Prior to coating, the truck bodies are cleaned and pretreated to prepare vehicle bodies for painting. The principal emissions from coating operations are volatile organic compounds (VOC), including hazardous air pollutants (HAPs), from the coating operations:**

1. Prime painting consists of two (2) electro-deposition (e-coat) coating lines (EU-E-COAT-NORTH (CAB) and EU-E-COAT-SOUTH (BOX)) followed by powder coating. Cathodic electrostatic application, with charged powder particles and grounded vehicle body, is performed to increase transfer efficiency (TE). Overspray powder coating particles are collected and recycled/reused resulting in nearly 100 percent transfer efficiency (≈ 100% TE).

2. Five (three identical lines at north paint shop and two identical lines at south paint shop) topcoat coating lines (EU-TOPCOAT1-NORTH (CAB), EU-TOPCOAT2-NORTH (CAB), EU-TOPCOAT3-NORTH (CAB), EU-TOPCOAT1-SOUTH (BOX) and EU-TOPCOAT2-SOUTH (BOX)) are present. Each coating operation consists of a water-borne basecoat (BC) application followed by a solvent borne clearcoat (CC). A heated flash zone separates the basecoat and clearcoat sections. Electrostatic application, with charged paint particles and grounded vehicle body, is performed to increase transfer efficiency (TE). Higher TE reduces paint waste and associated emissions by minimizing paint overspray. All overspray paint particles are controlled by downdraft water-wash system, which is integral to paint spray process such that high quality paint finish can be obtained. Hence, the downdraft water-wash system may be deemed to be part of the paint process.

3. Sealers are applied to prevent corrosion due to water infiltration that supports galvanic corrosion especially in presence of electrolytes such as road salt (EU-SEALER-SOUTH (BOX) and EU-SEALERS and ADHESIVES-FBP-NORTH (FRAME, BODY and PAINT; CAB)). Sealers contribute a negligible amount (measured against overall emissions) of uncontrolled VOC.

4. Miscellaneous solvents are used to wipe the bodies. Purge solvents are used in the topcoat booths, and VOC emissions from purge operations are controlled by the corresponding RTOs (RTO-NORTH & RTO-SOUTH), (EU-WIPE-NORTH (CAB), EU-MISC-SOLVENTS-SOUTH (BOX) and EU-PURGE-CLEAN-NORTH (CAB)).

5. Repair operations (EU-PAINT-SPOT-REPAIR-NORTH (CAB) and FG-REPAIR-SOUTH (BOX) (EU-SPOT-REPAIR1-SOUTH (BOX), EU-SPOT-REPAIR2-SOUTH (BOX) and EU-HEAVY-REPAIR-SOUTH (BOX)) are conducted. Repair VOC emissions are **not** controlled. Customarily, particulates due to paint overspray are controlled by dry filter system.

**Almost all VOC emissions (except miscellaneous solvents, sealers, repairs, etc.) are controlled by two regenerative thermal oxidizers (2 RTOs): RTO-NORTH and RTO-SOUTH.**

**Natural gas is used for hot water, process steam, space heating, emergency electric power generators, etc. Ultra-Low Sulfur Diesel (15 ppm sulfur ULSD) is used for emergency power generators and emergency fire pumps.**

**MI-ROP-B7248-2020, Emissions Units (EUs)**

| Emission Unit ID | Emission Unit Description (Including Process Equipment & Control Device(s)) | Installation Date/ Modification Date | Flexible Group ID |
|---|---|---|---|
| EU-FINAL-REPAIR | Topcoat low-bake repair process consisting of spray stalls equipped with dry filter systems. Rule 336.1287 exempt repair booth. | 11/08/1988 | FG-AUTOMACT<br>FG-FACILITY-NORTH<br>FG-RULE287(2)(c) |
| EU-WWASH&GASFIL | Windshield washer fill and Gasoline fill stations. Each vehicle is equipped with an Onboard Re-fueling Vapor Recovery (ORVR) system. | 11/08/1998 | FG-FACILITY-NORTH |
| EU-BOILER1 | Natural Gas burning boiler with a maximum heat input of 85 million BTU per hour. | 11/09/1990 | FG-BOILERS<br>FG-FACILITY-NORTH<br>FG-BOILER-MACT-5D |
| EU-BOILER2 | One natural gas fired steam generating boiler rated at 118 million BTU per hour. | 11/15/1995 | FG-BOILERS<br>FG-FACILITY-NORTH<br>FG-BOILER-MACT-5D |
| EU-BOILER3 | One natural gas fired steam generating boiler rated at 118 million BTU per hour. | 11/15/1995 | FG-BOILERS<br>FG-FACILITY-NORTH<br>FG-BOILER-MACT-5D |
| EU-SANDING-NORTH | Color prep and reprocess spot repair operations. Color prep is for powder paint repair and re-process spot repair is for repairs made after topcoat. | 08/01/2013 | FG-FACILITY-NORTH |
| EU-SEALERS&ADHESIVES-FBP-NORTH<br><br>(FRAME, BODY & PAINT; CAB) | Sealers and adhesives used in frame/body and paint are applied to the vehicles (truck cab). These sealers are ones that can generally be subject to the high heat that the vehicle is exposed to in the paint shop | 08/01/2013 | FG-AUTOMACT<br>FG-FACILITY-NORTH |

| Emission Unit ID | Emission Unit Description (Including Process Equipment & Control Device(s)) | Installation Date/ Modification Date | Flexible Group ID |
|---|---|---|---|
| | ovens. Emissions are released uncontrolled. | | |
| EU-ECOAT-NORTH | Auto bodies (truck cab) are primed in an enclosed electrocoat dip tank system followed by a curing oven. The emissions are controlled by one regenerative thermal oxidizer (one north RTO or RTO -NORTH). | 08/01/2013 | FG-FACILITY-NORTH<br>FG-CONTROLS-NORTH<br>FG-AUTOMACT<br>FG-CAM |
| EU-FLASH-PRIMER-NORTH | North paint shop flash primer booth prior to anti-chip powder coating and prior to topcoat. | 08/01/2013 | FG-FACILITY-NORTH<br>FG-AUTOMACT |
| EU-TOPCOAT1-NORTH | Topcoat is applied to vehicles (truck cab) automatically and manually in the booths. Vehicles pass through associated curing oven(s). The emissions are controlled by one regenerative thermal oxidizer (one north RTO or RTO -NORTH). | 08/01/2013 | FG-FACILITY-NORTH<br>FG-CONTROLS-NORTH<br>FG-AUTOMACT<br>FG-CAM |
| EU-TOPCOAT2-NORTH | Topcoat is applied to vehicles (truck cab) automatically and manually in the booths. Vehicles pass through associated curing oven(s). The emissions are controlled by one regenerative thermal oxidizer (one north RTO or RTO -NORTH). | 08/01/2013 | FG-FACILITY-NORTH<br>FG-CONTROLS-NORTH<br>FG-AUTOMACT<br>FG-CAM |
| EU-TOPCOAT3-NORTH | Topcoat is applied to vehicles (truck cab) automatically and manually in the booths. Vehicles pass through associated curing oven(s). The emissions are controlled by one regenerative thermal oxidizer (one north RTO or RTO -NORTH). | 08/01/2013 | FG-FACILITY-NORTH<br>FG-CONTROLS-NORTH<br>FG-AUTOMACT<br>FG-CAM |

| Emission Unit ID | Emission Unit Description (Including Process Equipment & Control Device(s)) | Installation Date/ Modification Date | Flexible Group ID |
|---|---|---|---|
| EU-TOUCH-UP-NORTH | Blemished areas on vehicles (truck cab) are identified and repaired. This process is performed manually in the north paint shop area (Finesse Deck) and emissions are vented into the in-plant environment. | 08/01/2013 | FG-FACILITY-NORTH<br>FG-AUTOMACT |
| EU-FINAL-SEALER | Sealers and adhesives are applied to auto bodies manually and robotically. These sealers are ones that are not exposed to high heat. Also included in this emission unit is windshield and rear window glass installation. The sealer and adhesives are air cured, and the exhaust is vented in the plant. | 04/19/1985 | FG-FACILITY-NORTH<br>FG-AUTOMACT |
| EU-PAINT-SPOT-REPAIR-NORTH | The north paint shop spot repair operations consist of stalls (not booths) for either re-routing damaged vehicles back to the topcoat spray booth or for repair of small paint defects or parts may be routed to a spot repair stall. Minor paint repair does not include full application of paint coating on the vehicles, only the impacted panels. Stacks are used for exhaust. | 04/19/1985 | FG-FACILITY-NORTH<br>FG-AUTOMACT |
| EU-WIPE-NORTH | Auto bodies (truck cab, north) are manually wiped with solvents wipes during different phases of painting and assembly. The emissions are vented into the in-plant environment or through a stack. | 08/01/2013 | FG-FACILITY-NORTH<br>FG-AUTOMACT |
| EU-PURGE-CLEAN-NORTH | Purge, cleanup solvents, and non-production solvents used throughout the north facility (CAB). | 08/01/2013 | FG-FACILITY-NORTH<br>FG-AUTOMACT |

| Emission Unit ID | Emission Unit Description (Including Process Equipment & Control Device(s)) | Installation Date/ Modification Date | Flexible Group ID |
|---|---|---|---|
| EU-AST1 | 6,000-gallon above ground gasoline storage tank. | 04/30/1997 | FG-FACILITY-NORTH |
| EU-AST2 | 6,000-gallon above ground diesel storage tank | 04/30/1997 | FG-FACILITY-NORTH |
| EU-AST3 | 8,000-gallon above ground automatic transmission fluid storage tank. | 04/30/1997 | FG-FACILITY-NORTH |
| EU-AST4 | 8,000-gallon above ground diesel fuel storage tank. | 04/30/1997 | FG-FACILITY-NORTH |
| EU-AST5 | 8,000-gallon above ground motor oil storage tank. | 04/30/1997 | FG-FACILITY-NORTH |
| EU-AST6 | 8000-gallon above ground brake fluid storage tank. | 04/30/1997 | FG-FACILITY-NORTH |
| EU-AST7 | 15,000-gallon above ground automatic transmission fluid storage tank. | 04/30/1997 | FG-FACILITY-NORTH |
| EU-AST8 | 15,000-gallon above ground antifreeze/coolant storage tank. | 04/30/1997 | FG-FACILITY-NORTH |
| EU-AST9 | 10,000-gallon above ground gasoline storage tank. | 04/30/1997 | FG-FACILITY-NORTH |
| EU-AST10 | 10,000-gallon above ground gasoline storage tank. | 04/30/1997 | FG-FACILITY-NORTH |
| EU-AST11 | 10,000-gallon above ground gasoline storage tank. | 04/30/1997 | FG-FACILITY-NORTH |

| Emission Unit ID | Emission Unit Description (Including Process Equipment & Control Device(s)) | Installation Date/ Modification Date | Flexible Group ID |
|---|---|---|---|
| EU-AST12 | 10,000-gallon above ground diesel fuel storage tank. | 04/30/1997 | FG-FACILITY-NORTH |
| EU-AST13 | 8,000-gallon above ground methanol storage tank. | 04/30/1997 | FG-FACILITY-NORTH<br>FG-OLD-MACT |
| EU-AST14 | 5,000-gallon above ground backup storage tank. | 04/30/1997 | FG-FACILITY-NORTH |
| EU-DC1 | 5000-gallon underground diesel fuel storage tank. | 10/30/1996 | FG-FACILITY-NORTH |
| EU-NPS3 | 6,000-gallon above ground virgin phosphate storage tank. | 08/01/2013 | FG-FACILITY-NORTH<br>FG-AUTOMACT |
| EU-NPS4 | 7,000-gallon above ground virgin E-coat pigment storage tank. | 08/01/2013 | FG-FACILITY-NORTH<br>FG-AUTOMACT |
| EU-NPS5 | 15,000-gallon above ground virgin E-coat resin storage tank. | 08/01/2013 | FG-FACILITY-NORTH<br>FG-AUTOMACT |
| EU-NPS7 | 7,000-gallon above ground waste solvent storage tank. | 08/01/2013 | FG-FACILITY-NORTH<br>FG-AUTOMACT |
| EU-BODY-SHOP-NORTH | North body shop including natural gas-combustion (i.e. air make-up units, heaters, etc.) for space or process heating, tooling and equipment to assemble and hem vehicle panels including resistance spot welding, adhesive/sealer application, grinding and other related operations. | 08/01/2013 | FG-FACILITY-NORTH<br>FG-AUTOMACT |

| Emission Unit ID | Emission Unit Description (Including Process Equipment & Control Device(s)) | Installation Date/ Modification Date | Flexible Group ID |
|---|---|---|---|
| EU-HWG1 | A natural gas fired *hot water* generator with a maximum heat input of 31.5 million BTU per hour. | 05/13/2013 | FG-FACILITY-NORTH<br>FG-BOILERS<br>FG-BOILER-MACT-5D |
| EU-HWG2 | A natural gas fired *hot water* generator with a maximum heat input of 31.5 million BTU per hour. | 05/13/2013 | FG-FACILITY-NORTH<br>FG-BOILERS<br>FG-BOILER-MACT-5D |
| EU-HWG3 | A natural gas fired *hot water* generator with a maximum heat input of 31.5 million BTU per hour. | 05/13/2013 | FG-FACILITY-NORTH<br>FG-BOILERS<br>FG-BOILER-MACT-5D |
| EU-HWG4 | A natural gas fired *hot water* generator with a maximum heat input of 18 million BTU per hour. | 10/23/2017 | FG-NG-SOUTH<br>FG-BOILER-MACT-5D<br>FG-FACILITY-SOUTH |
| EU-HWG5 | A natural gas fired *hot water* generator with a maximum heat input of 18 million BTU per hour. | 10/23/2017 | FG-NG-SOUTH<br>FG-BOILER-MACT-5D<br>FG-FACILITY-SOUTH |
| EU-HWG6 | A natural gas fired *hot water* generator with a maximum heat input of 18 million BTU per hour. | 10/23/2017 | FG-NG-SOUTH<br>FG-BOILER-MACT-5D<br>FG-FACILITY-SOUTH |
| EU-ENG-PH1 | FG-ENG-FIREPUMP: 40 CFR Part 60, Subpart IIII – New Source Performance Standards, for, new emergency, compression ignition (CI) reciprocating internal combustion engines | 04/24/2002 | FG-ENG-FIREPUMP |

| Emission Unit ID | Emission Unit Description (Including Process Equipment & Control Device(s)) | Installation Date/ Modification Date | Flexible Group ID |
|---|---|---|---|
| | (RICE), that have a maximum site rating of less than 500 brake hp. The emergency engines are for the fire pumps located in the pump house. The two engines are certified.<br><br>294 < 500 HP, diesel fueled, emergency reciprocating internal combustion engine (CI RICE, Em). | | |
| EU-ENG-PH2 | FG-ENG-FIREPUMP: 40 CFR Part 60, Subpart IIII – New Source Performance Standards, for, new emergency, compression ignition (CI) reciprocating internal combustion engines (RICE), that have a maximum site rating of less than 500 brake hp. The emergency engines are for the fire pumps located in the pump house. The two engines are certified.<br><br>335 < 500 HP, diesel fueled, emergency reciprocating internal combustion engine (CI RICE, Em). | 04/24/2002 | FG-ENG-FIREPUMP |
| EU-ENG-DATACTR | 4,091 > 500 HP, diesel fueled, emergency reciprocating internal combustion engine (CI RICE, Em). (Built date: 12/05/2006) | 09/02/2007 | FG-RULE 290<br><br>FG-NSPS IIII EMERGENCY PRE-2007 < 10 l/CYL<br><br>FG-ENG-DATACTR |
| EU-ENG-GENASSY | 2,345 > 500 HP, diesel fueled, emergency reciprocating internal combustion engine (CI RICE, Em). | 01/01/1996 | FG-RULE 290<br><br>FG-MACT-ZZZZ–EXISTING-EMERGENCY CI > 500 HP |

| Emission Unit ID | Emission Unit Description (Including Process Equipment & Control Device(s)) | Installation Date/ Modification Date | Flexible Group ID |
|---|---|---|---|
| EU-ENG-NORTH- | PSHOP1 | | 383 HP, natural gas fueled, emergency |

| | | | |
|---|---|---|---|
| | reciprocating internal combustion engine. | 05/01/2013 | FG-NSPS JJJJ EMERGENCY > 100 BUT < 500 HP |
| (383 HP, certified, NG SI RICE NSPS 4J, EM). | | | |
| EU-ENG-NORTH-BSHOP | 335 HP, natural gas fueled, emergency reciprocating internal combustion engine.<br><br>(335 HP, certified, NG SI RICE NSPS 4J, EM). | 05/01/2013 | FG-NSPS JJJJ EMERGENCY > 100 BUT < 500 HP |
| EU-ENG-PSHOP-NC-701HP | 701 HP, natural gas fueled, emergency reciprocating internal combustion engine.<br><br>(701 > 500 HP, 5/1/13, SI RICE NSPS 4J, non-certified, every 8,760 or triennial (1/3 years), whichever occurs first, operating hours emissions testing). | 05/01/2013 | FG-NSPS JJJJ EMERGENCY > 500 HP |
| EU-ENG-GEN1-SOUTH | Emergency engine subject to 40 CFR Part 60, Subpart JJJJ, Standards of Performance for Stationary Spark Ignition Internal Combustion Engines. A new/reconstructed emergency engine greater than 500 HP constructed on or after January 1, 2009.<br><br>(SI RICE NSPS 4J, > 500 HP, EM). | 01/19/2018 | FG-NSPS JJJJ EMERGENCY > 500 HP<br><br>FG-FACILITY-SOUTH |
| EU-ENG-GEN2-SOUTH | Emergency engine subject to 40 CFR Part 60, Subpart JJJJ, Standards of Performance for Stationary Spark Ignition Internal Combustion Engines. A new/reconstructed emergency engine greater than 500 HP | 01/19/2018 | FG-NSPS JJJJ EMERGENCY > 500 HP<br><br>FG-FACILITY-SOUTH |

| Emission Unit ID | Emission Unit Description (Including Process Equipment & Control Device(s)) | Installation Date/ Modification Date | Flexible Group ID |
|---|---|---|---|
| | constructed on or after January 1, 2009.<br><br>(SI RICE NSPS 4J, > 500 HP, EM). | | |
| EU-PHOSPHATE-SOUTH | A series of dip tanks and rinse tanks for the surface treatment of light duty truck boxes at the south paint shop. None of the materials used in EU-PHOSPHATE-SOUTH (BOX) contains VOC or HAP that are emitted from the process. | 12/27/2017 | FG-FACILITY-SOUTH |
| EU-E-COAT-SOUTH | An electrodeposition coating process (E-coat) consisting of a series of dip tanks, rinse tanks, followed by a curing oven and a sanding booth. Small amounts of flash (spot) prime may be used to repair defects in the E-coat in the sand booth. Emissions from the E-coat process are directed to the oven. VOC emissions from the oven are controlled by a south Regenerative Thermal Oxidizer (RTO-SOUTH or south RTO). | 12/17/2017 | FG-CONTROL-SOUTH<br><br>FG-CAM<br><br>FG-AUTOMACT<br><br>FG-FACILITY-SOUTH<br><br>FG-RTO-SOUTH&POWDER-OVEN-PM |
| EU-SEALER-SOUTH | Manual and robotic applicators are used to apply seam sealer, deadener and underbody sealer to light duty truck boxes. A portion of the sealers will be cured during baking in the sealer oven. | 12/12/2017 | FG-AUTOMACT<br><br>FG-FACILITY-SOUTH |
| EU-POWDERCOAT-SOUTH | A powder anti-chip coating which is electrostatically applied. The spray booth also includes the application of a | 12/12/2017 | FG-AUTOMACT<br><br>FG-FACILITY-SOUTH |

| Emission Unit ID | Emission Unit Description (Including Process Equipment & Control Device(s)) | Installation Date/ Modification Date | Flexible Group ID |
|---|---|---|---|
| | ***powder basecoat for tu-tone truck boxes*. The powder spray application is controlled by a particulate filtration system which is vented inside the plant.** | | **FG-RTO-SOUTH&POWDER-OVEN-PM** |
| **EU-TOPCOAT1-SOUTH** | **At south paint shop, a color preparation sanding booth (topcoat sand), followed by two (2) identical and parallel topcoat lines (TOPCOAT1 and TOPCOAT2), each consisting of: A water-borne basecoat application followed by a solvent borne clearcoat. The paint applications will be performed by robotics with bell applicators (except in emergency back-up situations). A heated flash zone separates the basecoat and clearcoat sections. Once clearcoat application is complete, the light duty truck box proceeds to the main bake oven. VOC emissions from the water-borne basecoat booths, the heated flash zone, the clearcoat spray booths and the topcoat cure oven are controlled by a south Regenerative Thermal Oxidizer (RTO-SOUTH).** | **12/12/2017** | **FG-TOPCOAT-SOUTH**<br>**FG-AUTOMACT**<br>**FG-FACILITY-SOUTH**<br>**FG-CONTROL-SOUTH**<br>**FG-CAM**<br>**FG-RTO-SOUTH&POWDER-OVEN-PM** |
| **EU-TOPCOAT2-SOUTH** | **At south paint shop, a color preparation sanding booth (topcoat sand), followed by two (2) identical and parallel topcoat lines (TOPCOAT1 and TOPCOAT2), each consisting of: A water-borne basecoat application followed by a solvent borne clearcoat. The paint applications will be performed by robotics with bell applicators (except in emergency back-up situations). A heated flash** | **12/12/2017** | **FG-TOPCOAT-SOUTH**<br>**FG-AUTOMACT**<br>**FG-FACILITY-SOUTH**<br>**FG-CONTROL-SOUTH**<br>**FG-CAM**<br>**FG-RTO-SOUTH&POWDER-OVEN-PM** |

| Emission Unit ID | Emission Unit Description (Including Process Equipment & Control Device(s)) | Installation Date/ Modification Date | Flexible Group ID |
|---|---|---|---|
| | zone separates the basecoat and clearcoat sections. Once clearcoat application is complete, the light duty truck box proceeds to the main bake oven. VOC emissions from the water-borne basecoat booths, the heated flash zone, the clearcoat spray booths and the topcoat cure oven are controlled by a south Regenerative Thermal Oxidizer (RTO-SOUTH). | | |
| EU-MISC-SOLVENTS-SOUTH | Various solvent body wipes, cleaning solvents and purge solvents used in the manufacturing of light duty truck boxes. VOC emissions from the purge solvents used within topcoat booths are controlled by the RTO. | 12/12/2017 | FG-CONTROL-SOUTH<br>FG-CAM<br>FG-AUTOMACT<br>FG-FACILITY-SOUTH<br>FG-RTO-SOUTH&POWDER-OVEN-PM |
| EU-SPOT-REPAIR1-SOUTH | A dry filter spot repair booth. The booths are equipped with air atomized applicators or equivalent technology with comparable or better transfer efficiency. | 08/01/2018 | FG-REPAIR-SOUTH<br>FG-AUTOMACT<br>FG-CONTROL-SOUTH<br>FG-FACILITY-SOUTH |
| EU-SPOT-REPAIR2-SOUTH | A dry filter spot repair booth. The booths are equipped with air atomized applicators or equivalent technology with comparable or better transfer efficiency. | 08/01/2018 | FG-REPAIR-SOUTH<br>FG-AUTOMACT<br>FG-CONTROL-SOUTH<br>FG-FACILITY-SOUTH |
| HEAVY-REPAIR-SOUTH | A dry filter repair booth used for sanding, wiping and prep | 02/19/2018 | FG-REPAIR-SOUTH<br>FG-AUTOMACT |

| Emission Unit ID | Emission Unit Description (Including Process Equipment & Control Device(s)) | Installation Date/ Modification Date | Flexible Group ID |
|---|---|---|---|
| | work prior to painting. No painting occurs in this area. | | FG-CONTROL-SOUTH<br>FG-FACILITY-SOUTH |
| EU-AST-PURGE SOUTH | An above ground 10,000-gallon-or-less waste purge solvent storage tank. | 12/12/2017 | FG-AUTOMACT<br>FG-FACILITY-SOUTH |
| EU-SOBL-APPLICATION | Multiple bays in which bedliner materials will be robotically sprayed onto fully assembled and painted trucks from the main assembly plant Spray-on Bedliner (SOBL)). Raw materials include cleaning solvents, a bonding agent, and a two (2) part polyurethane resin. This equipment is located at 7566 Metropolitan Parkway, directly across the street from the South Paint Shop (BOX) at the main assembly plant. | 02/12/2018 | FG-AUTOMACT<br>FG-SOBL |
| EU-SOBL-NAT-GAS | Natural gas-fired space heating equipment to provide comfort and process heating for the spray-on bedliner (SOBL) facility. The equipment has a total combined maximum heat input capacity of 23.3 MMBtu/hr. This equipment is located at 7566 Metropolitan Parkway, directly across the street from the South Paint Shop at the main assembly plant. | 02/12/2018 | FG-SOBL |
| EU-WAREHOUSE-NAT-GAS | Natural gas-fired space heating equipment to provide comfort heating at a storage warehouse, which is located across 17 Mile Road, approximately one-half mile north of the northern boundary of the main assembly plant. | 02/01/2018 | NA |

| Emission Unit ID | Emission Unit Description (Including Process Equipment & Control Device(s)) | Installation Date/ Modification Date | Flexible Group ID |
|---|---|---|---|
| | The equipment has a total combined maximum heat input capacity of 6.5 million BTU per hour. The heaters are equipped with low NOx burners | | |

**MI-ROP-B7248-2020, EU-WWASH&GASFIL**

**EU-WWASH&GASFIL: Windshield washer fill and Gasoline fill stations.**

**VOC Control: Onboard Re-fueling Vapor Recovery (ORVR) system**

**An ORVR carbon-filled canister (required by Clean Air Act, Mobile Sources) is designed to capture fuel vapors displaced while refueling, and then to inject them into the intake manifold later on, so that they are burned along with the regular fuel, during normal engine operation. On May 9, 2012, the U.S. Environmental Protection Agency (EPA) determined that the use of onboard refueling vapor recovery (ORVR) for capturing gasoline vapor when gasoline-powered vehicles are refueled is in widespread use throughout the highway motor vehicle fleet. Stage II vapor recovery system is not necessary.**

**Dispensing equipment for filling of brake fluid, anti-freeze, windshield washer fluid, and fuel fill are located in the same area/line**

**MI-ROP-B7248-2020, EU-SANDING-NORTH**

**EU-SANDING-NORTH (CAB): Color prep and reprocess spot repair operations at north paint shop. Color prep is for powder paint repair and re-process spot repair is for repairs made after topcoat.**

**PM Control: Dry Filter System**

**The color prep tack-off booth, main color spot process tack-off booth, and the rerun booth are equipped with their respective dry filter particulate control systems.**

**MI-ROP-B7248-2020, EU-SEALERS&ADHESIVES-FBP-NORTH (FRAME, BODY & PAINT; CAB)**

**EU-SEALERS&ADHESIVES-FBP-NORTH (FRAME, BODY & PAINT; CAB): Sealers and adhesives used in frame/body and paint are applied to the vehicles (truck cab). These sealers are ones that can generally be subject to the high heat that the vehicle is exposed to in the paint shop ovens. The uncontrolled emissions are released to in -plant environment.**

**VOC content is determined via formulation information.**

**The sealers are all applied after the e-coat system and prior to the powder booths in the paint shop area. In the paint shop, sealer application system is split up into north and south manual (hand application) sealer decks followed by the respective robotic application booths before converging into another sealer booth and into a single sealer oven. Also, in the paint shop, under body seam sealer is applied with the car flipped up. Some of the sealers are applied in the body shop. In the past, all VOC emissions were released either in-plant or outdoor but uncontrolled. Due to opacity issues, emissions from the sealer oven, after the sealer application, are now ducted to the corresponding RTO (north and south).**

**December 2021: 3.72 tons per year VOC generated in BODY AND PAINT SEALER APPLICATION-NORTH PAINT SHOP.**

**MI-ROP-B7248-2020, EU-E-COAT-NORTH (CAB)**

**EU-E-COAT-NORTH (CAB): Auto bodies (truck cab) are primed in an enclosed electrocoat (e-coat) dip tank system followed by a curing oven.**

**VOC Control: One regenerative thermal oxidizer (one north RTO or RTO-NORTH (truck cab)) controlling both the e-coat tank and oven.**

**Anodic e-coat (7-stage) operates with charged paint particles and grounded vehicle body resulting in electrostatic forces of attraction. The paint bath consists of 23% solids. Anodes charge paint particles.**

**Based upon the RTO-North temperature data / graph the RTO is operating at ≈1495 °F > 1450 °F (July 2019 test) ≥ 1,350°F (Permit). Apex Companies, LLC to conduct air emissions testing at the Sterling Heights Assembly Plant (SHAP) North Paint Shop (Apex Report No. 11019-000056.00, July 31,2019). North Regenerative Thermal Oxidizer Destruction Efficiency was 95.4 percent (North RTO DE 95.4% ≥ 95%) at 1450 °F. (MI-ROP-B7248-2020, EU-E-COAT-NORTH (CAB), IV.1: ≥ 95% DE and ≥ 1,350°F)**

**CY220: 271,602 vehicles painted.**

**CY221: 310,891 vehicles painted**

**December 2021:425 pounds VOC generated ELECTROECOAT-NORTH PAINT SHOP-EMISSION ID: EU-ECOAT. 0.018 (W/OUT DE) pounds of VOC per gallon of applied coating solids.**

**CY 2021: 569,424 gallons of e-coat paint per year North Paint Electro coat Dip tank system followed by a curing oven**

**CY 2021: 80 MM SCFT per year natural gas usage at North Paint Electrodeposition Bake Oven**

**MI-ROP-B7248-2020, EU-FLASH-PRIMER-NORTH**

**EU-FLASH-PRIMER-NORTH (CAB): North paint shop flash primer booth prior to anti-chip powder coating and prior to topcoat.**

**PM Control: Dry Filter particulate control system.**

**The emission unit repairs defective e-coat coatings prior to entering the anti-chip powder coating and the topcoat system. The flash prime is controlled by dry filter particulate control. The dry filter system is installed and appears to be operating properly.**

**December 2021: 20.04 pounds per month VOC generated using 6.68 gallons in FLASH PRIMER REPAIR STATION-EMISSION ID: EU-FLASH-PRIMER-NORTH**

**MI-ROP-B7248-2020, EU-TOPCOAT1-NORTH, EU-TOPCOAT2-NORTH, EU-TOPCOAT3-NORTH**

**EU-TOPCOAT1-NORTH (CAB), EU-TOPCOAT2-NORTH (CAB), EU-TOPCOAT3-NORTH (CAB): Topcoat is applied to vehicles (truck cab) automatically and manually in booths. Vehicles pass through associated curing oven(s).**

1. **PM Control:** A downdraft water-wash system
2. **VOC Control:** One regenerative thermal oxidizer (one north RTO or RTO-NORTH (truck cab)).

**EU-TOPCOAT 1, 2, & 3 - these emission units consist of 3 parallel lines (Topcoat Lines 1, 2, & 3). Topcoat Lines 2 & 3 are practically identical lines. Topcoat Line 1 is a little longer line to accommodate the tri-coat coating process. Each topcoat line consists of interior basecoat, exterior basecoat, heated flash, interior clearcoat, exterior clearcoat, and color oven zones. Topcoat Line 1 has an extra color 1 zone prior to the clearcoat zones to accommodate tri-color coating.**

**Drown-draft Water-wash particulate control systems (wet floor) are essential part of the paint process to ensure uncontaminated high-quality finish. Therefore, the system is maintained properly. Proper functioning of the water wash system is critical to high quality paint finish. (MI-ROP-B7248-2020, EU-TOPCOAT1thru3-NORTH (CAB), IV.1: proper operation of downdraft water-wash particulate controls). The wastewater from the water wash system cascades over a weir in the booth and goes to the sludge pit area where a polymer is added prior to the clarifier and filter system for solids removal. The sludge goes to a tank for outside disposal. The wastewater gets reclaimed and re-used in the water wash booth.**

**Based upon the RTO-North temperature data / graph the RTO is operating at ≈1495 °F > 1450 °F (July 2019 test) ≥ 1,350°F (Permit).**

**I did not smell any solvent odors during the walk-through indicating proper operation of the capture systems.**

**CY 2021: 346,216 Boxes painted.**

**CY 2021: EU-TOPCOAT1 = 59,041 Water-borne BC & 66,025 solvent-based CC gallons per year**

**CY 2021: EU-TOPCOAT2 = 56,395 Water-borne BC & 67,339 solvent-based CC gallons per year**
**CY 2021: EU-TOPCOAT3 = 59,868 Water-borne BC & 69,315 solvent-based CC gallons per year**

**MI-ROP-B7248-2020, EU-TOUCH-UP-NORTH (CAB):**

**EU-TOUCH-UP-NORTH (CAB): Blemished areas on vehicles (truck cab) are identified and repaired. This process is performed manually in the north paint shop area (Finesse Deck) and emissions are vented into the in-plant environment.**

**The touch-up emission unit pertains to manual repairs and touch up painting on blemishes performed in the paint shop area (Finesse Deck) and VOC emissions are vented into the in-plant environment. I neither detected visible emissions (VE or opacity) nor solvent odor during the walk-through. Formulations data is used in the calculations.**

**MI-ROP-B7248-2020, EU-PAINT-SPOT-REPAIR-NORTH (CAB)**

**EU-PAINT-SPOT-REPAIR-NORTH (CAB): The north paint shop spot repair operations consist of stalls for either re-routing damaged vehicles back to the topcoat spray booth or for repair of small paint defects or parts may be routed to a spot repair stall. Minor paint repair does not include full application of paint coating on the vehicles, only the impacted panels. Stacks are used for exhaust.**

**During the walk-through inspection, I did not observe any visible emissions (VEs) while in the area. The dry filters are installed and operating properly. (MI-ROP-B7248-2020, EU-PAINT-SPOT-REPAIR-NORTH (CAB), IV.1): dry filter particulate controls operating properly)**

**MI-ROP-B7248-2020, EU-WIPE-NORTH (CAB)**

**EU-WIPE-NORTH (CAB): Auto bodies (truck cab, north) are manually wiped with solvents wipes during different phases of painting and assembly. The emissions are vented into the in-plant environment or through a stack.**

**North truck cab auto bodies are manually wiped with solvents wipes during different phases of painting and assembly operations in various areas of the facility. The VOC emissions are either vented into in-plant or through a stack. Wipes are generally IPA (85% isopropyl alcohol or IPA & rest DI Water) containing wet clothes. The wipes are always stored in closed containers to prevent evaporation.**

**December 2021: 1.03 tons VOC per month generated.**

**CY 2021: 6,951 gallons per year - Solvent Wiping of the Vehicles in several phases of painting processes**

**MI-ROP-B7248-2020, EU-PURGE-CLEAN-NORTH (CAB)**

**EU-PURGE-CLEAN-NORTH (CAB): Purge, cleanup solvents, and non-production solvents used throughout the north facility (CAB).**

**Purge, cleanup solvents, and non-production solvents are used throughout the facility. In spray systems past paint is purged clean.**
**December 2021: 3.43 tons of VOC per Dec 2021 month - Purge and non-production solvent VOC generated. (MI-ROP-B7248-2020, EU-PURGE-CLEAN-NORTH (CAB), I.1 & VI.1: 223.2 tpy & VOC records are kept & the calculations are performed)**

**CY 2021: 129,742 gallons per year North Paint Cab Line: PURGE SOLVENT & CLEAN UP SOLVENTS**

**Purge emissions in the booth are controlled by an RTO and captured solvents and solids are disposed of as RCRA waste.**

**MI-ROP-B7248-2020, EU-PHOSPHATE-SOUTH (BOX)**

**EU-PHOSPHATE-SOUTH (BOX): A series of dip tanks and rinses for the surface treatment of light duty truck boxes at the south paint shop. None of the materials used in EU-PHOSPHATE-SOUTH (BOX) contain VOC or HAP that are emitted from the process.**

**None of the materials used in EU-PHOSPHATE-SOUTH (BOX) contain any VOC or HAP (MI-ROP-B7248-2020, EU-PHOSPHATE-SOUTH (BOX), II.1: no VOC or HAP) EU-DEADNER**

**Per Mr. Sanni, this process was uninstalled in October 2017.**

**MI-ROP-B7248-2020, EU-E-COAT-SOUTH (BOX)**

**EU-E-COAT-SOUTH (BOX): An electrodeposition coating process (E-coat) consisting of a series of dip tanks, rinses, followed by a curing oven and a sanding booth. Small amounts of flash (spot) prime may be used to repair defects in the E-coat in the sand booth. Emissions from the E-coat tanks are directed to the oven. VOC emissions from the oven are controlled by a Regenerative Thermal Oxidizer (RTO-SOUTH or south RTO).**

1. VOC Control: RTO-SOUTH (or south RTO) for VOC control from e-coat tank and oven.
2. PM Control: Dry filter system for particulate control from the e-coat sanding booth.

**CY 2021: 0.0054 pounds of VOC per GACS and 0.42 tons of VOC per year (MI-ROP-B7248-2020, EU-E-COAT-SOUTH (BOX), I.1 & 2 limits: 0.04 lb/GACS & 2.32 tpy VOC)**

**CY2021: 241,666 & 43,097 gallons per year paint (South Paint Box Line Electro-deposition Dip Tank Process) and solvents (South Box Line: Vehicles Cleaning prior to Phosphating Process), respectively, per year**

**lb/GACS = pounds of VOC per gallon of applied coating solids. Compliance with this PSD BACT limit constitutes compliance with the NSPS MM for e-coat VOC emissions limit (1.34 lbs VOC/GACS). PSD BACT is more stringent standard than RACT Rule 336.1610 (1.2 pounds of VOC per gallon of coating). Note the different units: pounds of VOC per gallon of applied coating solids and pounds of VOC per gallon of coating.**

**All waste coatings and other materials are kept in closed containers. All access doors and windows on the electrocoat dip tank are kept closed whenever the electrocoat process is in operation. (MI-ROP-B7248-2020, EU-E-COAT-SOUTH (BOX), III.1-2)**

**Based upon the random RTO-South temperature data / graph the RTO is operating at ≈1475 °F (Set point = 1475) (1475 °F (November 8-9, 2018, test) ≤ 1,500°F (Permit).**

**I did not smell any solvent odors during the walk-through indicating proper operation of the capture systems.**

**Records of coatings, VOC, hours of operation, etc. are maintained and emissions calculations expressed in the units required are performed. South RTO temperatures are recorded in graph format, as stated above. (MI-ROP-B7248-2020, EU-E-COAT-SOUTH (BOX), VI,1-4)**

**MI-ROP-B7248-2020, EU-SEALER-SOUTH (BOX)**

**EU-SEALER-SOUTH (BOX): Manual and robotic applicators are used to apply seam sealer, deadener and underbody sealer to light duty truck boxes. A portion of the sealers will be cured during baking in the sealer oven.**

**CY 2021: 346,216 Boxes painted per year.**

**December 2021: 0.47 tons of VOC per year - Box sealer emissions (MI-ROP-B7248-2020, EU-SEALER-SOUTH (BOX), I.2 limit: 17.3 tpy VOC)**

**All waste materials are kept in closed containers. (MI-ROP-B7248-2020, EU-SEALER-SOUTH (BOX), III.1: closed containers and disposed of in an acceptable manner)**

**The required records are kept and the calculations expressed in the required units are performed. (MI-ROP-B7248-2020, EU-SEALER-SOUTH (BOX), VI.1-3: the records and calculations)**

**MI-ROP-B7248-2020, EU-POWDERCOAT-SOUTH**

**EU-POWDERCOAT-SOUTH (BOX): A powder anti-chip coating which is electrostatically applied. The spray booth also includes the application of a powder basecoat for tu-tone truck boxes. The powder spray application is controlled by a particulate filtration system which is vented inside the plant.**

**Powder anti-chip coating which includes the application of a colored powder basecoat for tutone truck boxes is applied electrostatically such that BOX is grounded and powder is charged. The powder spray application is controlled by a particulate filtration system that is vented inside the plant. The system a is closed loop system).**

**FCA-SHAP contracts an outside vendor to conduct once per week visible emission (VE) reading and the vendor performs Method 9 Opacity readings by a certified reader when a VE is observed (MI-ROP-B7248-2020, EU-POWDERCOAT-SOUTH, V.1: (at powder oven stacks) weekly opacity readings; once per month observation is allowed if there is no opacity recorded for four (4) consecutive readings (4 weeks)).**

**MI-ROP-B7248-2020, EU-MISC-SOLVENTS-SOUTH (BOX)**
**EU-MISC-SOLVENTS-SOUTH (BOX): Various solvent body wipes, cleaning solvents and purge solvents used in the manufacturing of light duty truck boxes. VOC emissions from the purge solvents used within topcoat booths are controlled by the RTO.**

**VOC Controls:**

1. South RTO (BOX) or RTO-SOUTH (BOX)
2. Purge solvent recovery system

**VOC emissions from the purge solvents used within topcoat booths are controlled by the RTO except when manifested in the waste collection system.**

**December 2021: 28,467 BOXES painted and 24,532 vehicles built.**

**December 2021: 0.131 tpy VOC SOUTH PAINT CENTER NONPRODUCTION CLEANING SOLVENTS accounting for 3,020.1 pounds VOC generated and 2,757.88 pounds of VOC reclaimed via Purge Solvent Credit. (MI-ROP-B7248-2020, EU-MISC-SOLVENTS-SOUTH (BOX), I.1 limit: 82.6 tpy VOC). 0.00038 (highest for April 2021) tons of VOC per tons per 1,000 saleable truck boxes (MI-ROP-B7248-2020, EU-MISC-SOLVENTS-SOUTH (BOX), I.2 limit: 0.2 tons per 1000 saleable truck boxes (Saleable truck boxes means the number of saleable vehicles out of final assembly))**

**Purge solvent recovery system on the clearcoat automatic robots within each of the two topcoat booths are installed and operating (MI-ROP-B7248-2020, EU-MISC-SOLVENTS-SOUTH (BOX), IV.1: a purge solvent recovery system on the clearcoat automatic robots within each of the two topcoat booths)**

**Based upon the RTO-South temperature data / graph the RTO is operating at ≈1475 ° F (Set point = 1475) (1475 °F (November 8-9, 2018, test) ≤ 1,500°F (Permit).**

**Coatings, VOC, hours of operation, saleable BOXES, etc. records are maintained and emissions calculations expressed in the units required are performed. South RTO temperatures are recorded in graph format, as stated above. (MI-ROP-B7248-2020, EU -MISC-SOLVENTS-SOUTH (BOX), VI,1-3)**

**MI-ROP-B7248-2020, EU-WAREHOUSE-NAT-GAS**

**EU-WAREHOUSE-NAT-GAS: Natural gas-fired space heating equipment to provide comfort heating at a storage warehouse, which is located across 17 Mile Road, approximately one-half mile north of the northern boundary of the main assembly plant. The equipment has a total combined maximum heat input capacity of 6.5 million BTU per hour. The heaters are equipped with low NOx burners.**

**$NO_X$ Control: Low NOx burners on all natural-gas-fired combustion equipment**

**The building is located in an industrial park north and across 17 Mile Road, approximately one-half mile north of the main assembly plant complex.**

**MI-ROP-B7248-2020, EU-AST13 (FG-OLD-MACT)**

**EU-AST13: 8,000-gallon above ground methanol storage tank**
**40 CFR Part 63, Subpart A and Subpart EEEE (NESHAP / OLD MACT 4E) for Organic Liquid Distribution (OLD) (non-gasoline)**

**MI-ROP-B7248-2020, EU-NPS4**

**EU-NPS4: 7,000-gallon above ground virgin e-coat pigment storage tank**

**MI-ROP-B7248-2020, EU-NPS5**

**EU-NPS5: 15,000-gallon above ground virgin e-coat resin storage tank.**

**MI-ROP-B7248-2020, EU-BODY-SHOP-NORTH (CAB)**

**EU-BODY-SHOP-NORTH (CAB): North body shop including natural gas-combustion (i.e. air make-up units, heaters, etc.) for space or process heating, tooling and equipment to assemble and hem vehicle panels including resistance spot welding, adhesive/sealer application, grinding and other related operations.**

**Each combustion equipment burns only pipeline quality sweet natural gas (NG).**

**CY2020 NG: 29.18 million standard cubic feet per year (MM SCFT/Yr)**

**CY2021 NG: 67.44 million standard cubic feet per year (MM SCFT/Yr)**

**(MI-ROP-B7248-2020, EU-BODY-SHOP-NORTH (CAB), II.1 limit: 718 MM SCFT/Yr)**

**MI-ROP-B7248-2020, Flexible Groups (FGs)**

| Flexible Group ID | Flexible Group Description | Associated Emission Unit IDs |
|---|---|---|
| FG-FACILITY-NORTH | This flexible group covers all equipment at automotive assembly and north painting operations (CAB) excluding south paint shop (BOX), where truck boxes are painted. One regenerative thermal oxidizer (north RTO or RTO-NORTH) for control of VOC emissions. | All emission units associated with automotive assembly and north painting operations (CAB) excluding south paint shop (BOX) emission units. This includes clean up and purge activities, fuel storage tanks, and boilers in the north plant (CAB).<br><br>The emission units include:<br><br>EU-FINAL-REPAIR, EU-WWASH&GASFIL, EU-BOILER1, EU-BOILER2, EU-BOILER3, EU-SANDING-NORTH, EU-SEALERS&ADHESIVES-FBP-NORTH (FRAME, BODY & PAINT; CAB), EU-ECOAT-NORTH, EU-FLASH-PRIMER-NORTH, EU-TOPCOAT1-NORTH, EU-TOPCOAT2-NORTH, EU-TOPCOAT3-NORTH, EU-TOUCH-UP-NORTH, EU-FINAL-SEALER, EU-PAINT-SPOT-REPAIR-NORTH, EU-WIPE-NORTH, EU-PURGE-CLEAN-NORTH, EU-AST1 thru EU-AST15, EU-DC1, EU-NPS1, EU-NPS3 thru EU-NPS5, EU-NPS7, EU- |

| | | |
|---|---|---|
| | | BODY-SHOP-NORTH, EU-HWG1 thru EU-HWG3. |
| FG-CONTROL-NORTH | Regenerative thermal oxidizer (north RTO or RTO-NORTH) used for control of VOC emissions from the north paint spray booths and curing ovens. The north RTO (or RTO-NORTH) controls the E-coat tank, basecoat heated flash zones, the clearcoat automatic sections of the paint spray booths, and the coating ovens associated with E-coat and topcoat, in the North Paint Shop. | All emission associated with automotive assembly and north painting operations in north paint shop (CAB) with VOC controls in FG-FACILITY-NORTH.<br><br>The emission units include:<br><br>EU-ECOAT-NORTH, EU-TOPCOAT1-NORTH, EU- |

| Flexible Group ID | Flexible Group Description | Associated Emission Unit IDs |
|---|---|---|
| | | TOPCOAT2-NORTH, EU-TOPCOAT3-NORTH. |
| FG-BOILERS | Three (3) natural gas fired boilers used to generate hot water for in-plant use. One boiler has a heat input capacity of 85 million BTU per hour and the other two (2) each have a heat input capacity of 118 million BTU per hour. Boiler Nos. 2 and 3 are equipped with low NOx burner technology. EU-HWG 1, 2 & 3 are each a 31.5 million BTU per hour natural gas fired hot water generator. EU-HWG 4, 5 & 6 are each 18 million BTU per hour natural gas fired hot water generator. All boilers are equipped with Oxygen Trim Systems. | EU-BOILER1<br>EU-BOILER2<br>EU-BOILER3<br>EU-HWG1<br>EU-HWG2<br>EU-HWG3.<br>EU-HWG4<br>EU-HWG5<br>EU-HWG6 |
| FG-CAM | Compliance Assurance Monitoring (CAM) requirements for north RTO (RTO-NORTH) and south RTO (RTO-SOUTH), The RTOs reduce VOC emissions to comply with the corresponding emission limits in various north and south paint shop processes. | EU-ECOAT-NORTH<br>EU-TOPCOAT1-NORTH<br>EU-TOPCOAT2-NORTH<br>EU-TOPCOAT3-NORTH<br>EU-E-COAT-SOUTH<br>EU-TOPCOAT1-SOUTH EU-TOPCOAT2-SOUTH<br>EU-MISC-SOLVENTS-SOUTH |
| FG-AUTOMACT | Each new, reconstructed, or existing affected source as defined in Title 40 of the Code of Federal Regulations (CFR), Part 63.3082, that is located at a facility which applies topcoat to new automobile or new light duty truck bodies or body parts for new automobiles or new light duty trucks; AND/OR in which you choose to include, pursuant to 40 CFR 63.3082(c), any coating operations which apply coatings to new other motor vehicle bodies or body parts for new other motor vehicles; parts intended for use in new automobiles, new light duty | EU-ECOAT-NORTH<br>EU-FLASH-PRIMER-NORTH<br>EU-TOPCOAT1-NORTH<br>EU-TOPCOAT2-NORTH<br>EU-TOPCOAT3-NORTH<br>EU-TOUCH-UP-NORTH<br>EU-SEALERS&ADHESIVES-FBP-NORTH<br>EU-FINAL-REPAIR-NORTH |

| Flexible Group ID | Flexible Group Description | Associated Emission Unit IDs |
|---|---|---|
| | trucks or new other motor vehicles; or aftermarket repair or replacement parts for automobiles, light duty trucks or other motor vehicles; and that is a major source, is located at a major source, or is part of a major source of emissions of hazardous air pollutants (HAPs) except as provided in 63.3081(c). This includes equipment covered by other permits, grandfathered equipment, and exempt equipment. An affected source is a new affected source if you commenced its construction / reconstruction after December 24, 2002. Coating operations at SHAP consist of two separate painting facilities: north plant (CAB) with RTO-NORTH and south plant (BOX) with RTO-SOUTH. Both south and north coating operations are considered new. | EU-FINAL-SEALER<br>EU-PAINT-SPOT-REPAIR-NORTH<br>EU-WIPE-NORTH<br>EU-PURGE-CLEAN-NORTH<br>EU-AST15<br>EU-NPS1<br>EU-NPS3<br>EU-NPS4<br>EU-NPS5<br>EU-NPS7<br>EU-E-COAT-SOUTH<br>EU-SEALER-SOUTH<br>EU-POWDERCOAT-SOUTH<br>EU-TOPCOAT1-SOUTH<br>EU-TOPCOAT2-SOUTH<br>EU-MISC-SOLVENTS-SOUTH<br>EU-SPOT-REPAIR1-SOUTH<br>EU-SPOT-REPAIR2-SOUTH<br>EU-HEAVY-REPAIR-SOUTH<br>EU- AST-PURGE-SOUTH<br>EU-SOBL-APPLICATION |
| FG-TOPCOAT-SOUTH | A color preparation sanding booth (topcoat sand), followed by two (2) identical and parallel topcoat lines, each consisting of: A water-borne basecoat application followed by a solvent borne clearcoat. All paint application will be performed by robotic and bell applicators (except in emergency back-up situations). A heated flash zone | EU-TOPCOAT1-SOUTH<br>EU-TOPCOAT2-SOUTH |

| Flexible Group ID | Flexible Group Description | Associated Emission Unit IDs |
|---|---|---|
| | separates the basecoat and clearcoat sections. Once clearcoat application is complete, the light duty truck box proceeds to the main bake oven. VOC emissions from the water-borne basecoat booths, the heated flash zone, the clearcoat spray booths and the topcoat cure oven and controlled by a south Regenerative Thermal Oxidizer (RTO-SOUTH). | |
| FG-REPAIR-SOUTH | Spot and final repair operations for the south paint shop used to paint truck boxes. | EU-SPOT-REPAIR1-SOUTH<br>EU-SPOT-REPAIR2-SOUTH<br>EU-HEAVY-REPAIR-SOUTH |
| FG-NG-SOUTH | Three (3) natural gas fired hot water generators equipped with low NOx burners with a maximum heat input of up to 18 million BTU (MM BTU) per hour each. This flexible group also includes all natural gas combustion in all air supply houses, space heaters, heated flash, cure ovens, emergency engines (generators) and the RTO-SOUTH, associated with the south paint shop. All air supply houses are direct fire units. | EU-E-COAT-SOUTH<br>EU-SEALER-SOUTH<br>EU-POWDERCOAT-SOUTH<br>EU-TOPCOAT1-SOUTH<br>EU-TOPCOAT2-SOUTH<br>EU-HWG 4<br>EU-HWG 5<br>EU-HWG 6<br>EU-ENG-GEN1-SOUTH<br>EU-ENG-GEN2-SOUTH |
| FG-CONTROL-SOUTH | This flexible group covers the Regenerative Thermal Oxidizer (RTO-SOUTH or south RTO), the dry filter particulate control systems and the water wash particulate control system at the paint shop (BOX). | EU-E-COAT-SOUTH<br>EU-TOPCOAT1-SOUTH<br>EU-TOPCOAT2-SOUTH<br>EU-MISC-SOLVENTS-SOUTH<br>EU-SPOT-REPAIR1-SOUTH<br>EU-SPOT-REPAIR2-SOUTH |

| Flexible Group ID | Flexible Group Description | Associated Emission Unit IDs |
|---|---|---|
| | | EU-HEAVY-REPAIR-SOUTH |
| FG-FACILITY-SOUTH | All process equipment associated with the south paint line/paint shop used for painting truck boxes. | EU-PHOSPHATE-SOUTH |
| | | EU-E-COAT-SOUTH |
| | | EU-SEALER-SOUTH |
| | | EU-POWDERCOAT-SOUTH |
| | | EU-TOPCOAT1-SOUTH |
| | | EU-TOPCOAT2-SOUTH |
| | | EU-MISC-SOLVENTS-SOUTH |
| | | EU-SPOT-REPAIR1-SOUTH |
| | | EU-SPOT-REPAIR2-SOUTH |
| | | EU-HEAVY-REPAIR-SOUTH |
| | | EU- AST-PURGE SOUTH |
| | | EU-HWG4 |
| | | EU-HWG5 |
| | | EU-HWG6 |
| | | EU-ENG-GEN1-SOUTH |
| | | EU-ENG-GEN2-SOUTH |
| FG-RTO-SOUTH&POWDER-OVEN-PM | Flexible group for PM, PM10 and PM2.5 emissions from the RTO-SOUTH and powder coat oven. | EU-E-COAT-SOUTH |
| | | EU-POWDERCOAT-SOUTH |
| | | EU-TOPCOAT1-SOUTH |
| | | EU-TOPCOAT2-SOUTH |
| | | EU-MISC-SOLVENTS-SOUTH |
| FG-OLD-MACT | FG-OLD-MACT: The affected source is each new, reconstructed, or existing Organic Liquid Distribution (OLD) (non-gasoline) operation that is located at, or is part of a major source of hazardous air pollutant (HAP) | EUAST13 |

| Flexible Group ID | Flexible Group Description | Associated Emission Unit IDs |
|---|---|---|
| | emissions. The affected source is comprised of storage tanks, transfer racks, equipment leak components associated with storage tanks, transfer racks and pipelines, transport vehicles, and all containers while loading or unloading at transfer racks subject to this subpart. Equipment that is part of an affected source under another NESHAP is excluded from the affected source. (40 CFR 63.2338(c))<br><br>These conditions specifically cover existing (construction pre-dates April 2, 2002) liquid storage tanks which hold more than 5,000 gallons but less than 50,000 gallons and/or new liquid storage tanks which hold more than 5,000 gallons but less than 10,000 gallons of methanol/windshield washer fill solvents that are dispensed to newly assembled vehicles. | |
| FG-BOILER-MACT-5D | Requirements for existing Gas 1, (Natural Gas only) for Boilers and Process Heaters at major sources of Hazardous Air Pollutants per 40 CFR Part 63, Subpart DDDDD. These existing boilers or process heaters must comply with this subpart no later than January 31, 2016, except as provided in 40 CFR 63.6(i). | EU-BOILER1<br>EU-BOILER2<br>EU-BOILER3<br>EU-HWG1<br>EU-HWG2<br>EU-HWG3<br>EU-HWG4<br>EU-HWG5<br>EU-HWG6 |
| FG-ENG-FIREPUMP | 40 CFR Part 60, Subpart IIII – New Source Performance Standards, for, new emergency, compression ignition (CI) reciprocating internal combustion engines (RICE), that have a maximum site rating of less than 500 brake hp. The emergency | EU-ENG-PH1<br>EU-ENG-PH2 |

| Flexible Group ID | Flexible Group Description | Associated Emission Unit IDs |
|---|---|---|
| | engines are for the fire pumps located in the pump house. | |
| FG-ENG-DATACTR | 40 CFR Part 63, Subpart ZZZZ - National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines (RICE), located at a major source of HAP emissions, new or reconstructed, either combustion ignition or spark ignition, emergency RICE greater than 500 brake hp.<br><br>(FG-63-4Z-M/N/ClorSI/E/NG/>500) | EU-ENG-DATACTR |
| FG-MACT-ZZZZ–EXISTING-EMERGENCY CI > 500 HP | Existing CI Engines located at a Major Source > 500 HP, Emergency | EU-ENG-GENASSY |
| FG-NSPS IIII EMERGENCY PRE-2007 < 10 l/CYL: | This flexible group includes new emergency compression ignition (CI) stationary reciprocating internal combustion engines (RICE) ) that have a maximum site rating of greater than 500 brake horsepower (HP) and subject to 40 CFR 60, Subpart IIII. | EU-ENG-DATACTR (4091 HP, CI, built date 12/5/2006) |
| FG-NSPS JJJJ EMERGENCY > 100 BUT < 500 HP | This flexible group includes new emergency spark ignition (SI) natural gas fired stationary reciprocating internal combustion engines (RICE) ) that have a maximum site rating of greater than or equal to 100 brake horsepower (≥ 100 HP) but less than 500 (< 500 HP) and subject to 40 CFR 60, Subpart JJJJ (NG SI RICE NSPS 4J). | EU-ENG-NORTH-PSHOP1<br>EU-ENG-NORTH-BSHOP |
| FG-NSPS JJJJ EMERGENCY > 500 HP | This flexible group includes new emergency spark ignition (SI) natural gas fired stationary reciprocating internal combustion engines (RICE) ) that have a maximum site rating of greater than or equal to 500 brake | EU-ENG-PSHOP-NC-701HP<br>EU-ENG-GEN1-SOUTH<br>EU-ENG-GEN2-SOUTH |

| Flexible Group ID | Flexible Group Description | |
|---|---|---|
| | horsepower (HP) and subject to 40 CFR 60, Subpart JJJJ (NSPS 4J). | |
| Associated Emission Unit IDs | | |
| FG-SOBL | Spray-on Bedliner (SOBL) facility where fully assembled and painted trucks from the main assembly plant will be routed into one of several booths in which bedliner materials will be robotically sprayed onto the truck beds. Raw materials include cleaning solvents, a bonding agent, and a two-part (2-part) polyurethane resin. Natural gas-fired equipment will be used for process and space heating. This equipment is located at 7566 Metropolitan Parkway, directly across the street from the South Paint Shop (BOX) at the main assembly plant. | EU-SOBL-APPLICATION<br>EU-SOBL-NAT-GAS |
| FGRULE287(2)(c) | Any emission unit that emits air contaminants and is exempt from the requirements of Rule 201 pursuant to Rule 278, Rule 278a and Rule 287(2)(c). Emission units installed/modified before December 20, 2016, may show compliance with Rule 287 in effect at the time of installation/modification. | EU-FINAL-REPAIR |
| FGRULE290 | Any emission unit that emits air contaminants and is exempt from the requirements of Rule 201 pursuant to Rule 278, Rule 278a and Rule 290. Emission units installed/modified before December 20, 2016, may show compliance with Rule 290 in effect at the time of installation/modification. | EU-ENG-DATACTR<br>EU-ENG-GENASSY |

**MI-ROP-B7248-2020, FG-FACILITY-NORTH (CAB)**

**FG-FACILITY-NORTH (CAB): This flexible group covers all equipment at north automotive assembly and painting operations (CAB) excluding south paint shop (BOX), where truck boxes are painted.**

**Emission Units: All emission units associated with automotive assembly and north painting operations (CAB) excluding south paint shop (BOX) emission units. This includes clean up and purge activities, fuel storage tanks, and boilers in the north plant (CAB).**

**Control equipment of NORTH PAINT SHOP (CAB): One north regenerative thermal**

**oxidizer (north RTO or RTO-NORTH) for control of VOC emissions from the e-coat tank, the basecoat heated flash zones, and the clearcoat automatic sections of the paint spray booths, as well as the coating ovens associated with e-coat and topcoat. Three (3) water-wash systems control particulate emissions from the three (3) north topcoat lines. An ORVR (Onboard Re-fueling Vapor Recovery) system controls the gasoline filling operations. Dry filter particulate control systems on the welding, grinding, sanding, and scuff operations and the low bake operations.**

## MI-ROP-B7248-2020, FG-FACILITY-NORTH (CAB) EMISSION LIMIT(S), I.1-5

| Pollutant | Limit | Time Period/Operating Scenario | Equipment | CY2020 | CY2021 |
|---|---|---|---|---|---|
| 11. VOC | 673.2[2 Δ] tpy | 12-month rolling time period as determined at the end of each calendar month | FG-FACILITY-NORTH (CAB) | 263.15 | 247.40 |
| 22. VOC | 4.5[2 β γ Δ] pounds per job | 12-month rolling time period as determined at the end of each calendar month | FG-FACILITY-NORTH (CAB) minus EU-PURGE-CLEAN-NORTH | 1.91 | 2.98 |
| 4.5 pounds of VOC per job represents a quasi-flexible permit limit of VOC. | | | | | |
| 33. PM10 | 55.8[2] tpy | 12-month rolling time period as determined at the end of each calendar month | FG-FACILITY-NORTH (CAB) | 11.73 | 14.73 |

| Pollutant | Limit | Time Period/Operating Scenario | Equipment | CY2020 | CY2021 |
|---|---|---|---|---|---|
| 44. PM2.5 | 51.3[2] tpy | 12-month rolling time period as determined at the end of each calendar month | FG-FACILITY-NORTH (CAB) | 10.15 | 14.65 |
| 55. NOx | 72.0[2] tpy | 12-month rolling time period as determined at the end of each calendar month | FG-FACILITY-NORTH (CAB) | 30.33 | 49.13 |

**[β] Note: This 4.5 lb/job VOC limit for FG-FACILITY-NORTH (CAB) does NOT include VOC emissions from EU-PURGE-CLEAN-NORTH (CAB).**

**[γ] Note: A job is defined as a painted vehicle leaving the assembly line.**

**[Δ] Note: The requirements of the NSPS MM, concerning north paint shop (CAB), are inherent in the 4.5 pounds of VOC per vehicle (without purge and cleanup) and the 673.2 tons of VOC per year (including EU-PURGE-CLEAN-NORTH) limits. Compliance with these PSD BACT VOC limits constitutes compliance with the NSPS MM. 4.52 pounds of VOC per job limit represents a quasi-flexible permit.**

**MI-ROP-B7248-2020, FG-FACILITY-NORTH (CAB) natural gas usage:**

1. **CY 2020** NG usage, MM SCFT per Year: 1,174.11
2. **CY 2021** NG usage, MM SCFT per Year: 1,591.49

**(MI-ROP-B7248-2020, II.1 limit: 1,914 million standard cubic feet per year (MM SCFT per Year))**

**Downdraft water-wash particulate control system are installed and operating properly. The proper operation of the system is mandatory for quality paint finish purposes and the system may be deemed a part of a paint process. Where water wash system is not used in the plant, dry filter systems are used. (MI-ROP-B7248-2020, IV.1: each spray coating or sanding booth operate properly water-wash or another particulate control technology such as dry filter)**

1. **TE & CE Jan 24, 2019:** RWDI#I803869 January 24, 2019: Transfer Efficiency (TE) and Capture Efficiency (CE) (For Granite, TE 5 was removed since the weight gain was outside of the limit of tolerance.). Basecoat (White Solid Basecoat) TE = **82.4%.** Basecoat (Granite Metallic) TE = **68.9%**. Clearcoat TE = **73.9%**. Solid Basecoat (White) CE = **63.4%**. Metallic Basecoat (Granite) CE = **33.1%**. Clearcoat CE = **85.2%**.

2. **July 30** (**EU-TOPCOAT3)-31** (**RTO-NORTH at 1450 °F), 2019**: Apex Report No. 11019-000056.00. EU-TOPCOAT3 BC Zone = 0.27, EU-TOPCOAT3 CC Observation Deck = 0.25 and RTO-North outlet = **1.4, pounds of PM per hour**, respectively. **RTO-NORTH DE = 95.4 > 95%.** Tests by Apex Companies, LLC. Reference Methods 1 through 5, 25A, 202, and 205. Since only total PM was measured using USEPA Reference Method 5, the PM10 and PM2.5 fractions were assumed to be equivalent

to the PM measured. EU-TOPCOAT3 uses a downdraft ventilation and water wash scrubber system below the booth grating to control paint overspray. Approximately 90% of the booth air is recycled. VOC emissions from the topcoat heated flash zones, clearcoat, and bake ovens are directed to a seven-chamber RTO for pollution control prior to exhausting to the atmosphere. An RTO controls emissions from the paint application and curing operations. The RTO consists of the following main components: the regenerator columns, the combustion chamber with burner system, and the required air-directing system with valves and fan. The regenerator columns are filled with a ceramic packing material for heat absorption and recovery. The combustion chamber is lined with an insulation layer to maintain the high reaction temperatures. The natural gas burner is located at the side of the combustion chamber to allow easy access. A separate duct introduces combustion air within the combustion chamber.

3. **January 09** (**EUBOILER2) & 10 (EU-BOILER1 and EU-BOILER3), 2018:** RWDI#18DI649, February 28, 2018. EU·BOILER1, EU-BOILER 2 AND EU·BOILER3. Nitrogen Oxides (NOx), and Particulate (PM, PM10, PM2.5, and condensable particulate) on three (3) Boilers (EU-BOILER1, EU-BOILER2 and EU-BOILER3) using U.S. EPA Reference Methods 1,2,3,4,3A,7E and 201 a and 202, EU-**BOILER1** (1 Run) $NO_X$ = 0.0000075 lb/dscf, 6.6 lb/hr & 0.0898 lb/MMBtu. US EPA Method 201A/202 **BOILER1** (1 Run) **PM** = 0.0021 lb/dscf, 0.268 lb/hr & 0.0046 lb/MMBtu; **PM10** = 0.0019 lb/dscf, 0.240 lb/hr, 0.0042 lb/MMBtu; **PM2.5** = 0.0017 lb/dscf, 0.213 lb/hr, 0.0037 lb/MMBtu; **$PM_{condesable}$** = 0.0015 lb/dscf, 0.190 lb/hr, 0.0033 lb/MMBtu. US EPA Method **7E** EU-**BOILER2** (3 Run Avg) $NO_X$ = 5.1E-06 lb/dscf, 4.2 lb/hr & 0.0621 lb/MMBtu. US EPA Method 201A/202 BOILER2 (3 Run Avg) **PM** = 0.0023 lb/dscf, 0.275 lb/hr & 0.0048 lb/MMBtu; **PM10** = 0.0021 lb/dscf, 0.250 lb/hr, 0.0043 lb/MMBtu; **PM2.5** = 0.0020 lb/dscf, 0.232 lb/hr, 0.0040 lb/MMBtu, $PM_{condesable}$ = 0.0020 lb/dscf, 0.232 lb/hr, 0.0040 lb/MMBtu. Similar results were obtained for EU-BOILER3.

**(MI-ROP-B7248-2020, FG-FACILITY-NORTH (CAB), V.1, TESTS: PM10, PM2.5 from EU-SANDING-NORTH, PM10, EU-PAINT-SPOT-REPAIR-NORTH, EU-TOPCOAT1-3-NORTH & RTO-NORTH and BOILERS, NOx from BOILERS, Overall TE, CE, DE).**

**As noted above as emission rates, the required records and calculations expressed in units of emissions limits are performed. Weekly inspections of PM control systems are performed. (MI-ROP-B7248-2020, FG-FACILITY-NORTH (CAB), VI.1-2: records and calculations)**

**FCA SHAP is deemed to be in compliance with 40 CFR Part 60, Subpart MM (NSPS MM) if it is in compliance with 4.52 pounds per job (ppj) as this limit (quasit flexible permit with ppj limit) subsumes NSPS MM.**

**MI-ROP-B7248-2020, FG-CONTROL-NORTH (CAB)**

**FG-CONTROL-NORTH (CAB): Regenerative thermal oxidizer (north RTO or RTO-NORTH) used for control of VOC emissions from the north paint spray booths and curing ovens.**

**Emission Units: All emission units associated with automotive assembly and painting operations in north paint shop (CAB) with VOC controls.**

**VOC control: Regenerative thermal oxidizer (north RTO or RTO-NORTH) used for control of VOC emissions from portions of the north painting operations and curing**

**ovens.**

**I did NOT review the FG-CONTROL-NORTH (CAB) malfunction abatement plan (MAP) (MI-ROP-B7248-2020, FG-CONTROL-NORTH (CAB), III.1: malfunction abatement plan (MAP)). It may be noted that FCA SHAP is prohibited from operating the paint process unless the control equipment is operating. Based upon the Pinga's review MAP has been submitted and acceptable.**

**FCA SHAP instituted a malfunction abatement plan that included alarm systems, and an interlock system that shuts the process during an RTO malfunction. Temperature monitoring devices for RTO-NORTH of FG-CONTROL-NORTH (CAB) are installed and operated properly. FCA SHAP provided temperature graphs for random dates. (MI-ROP-B7248-2020, FG-CONTROL-NORTH (CAB), VI.1-3: temperature monitoring)**

**During the inspection of RTO-North, five ceramic towers were running and two towers were on back-up. Switching of the ceramic towers occurs based on the temperature of ceramics packing.**

**MI-ROP-B7248-2020, FG-BOILERS**

**FG-BOILERS: There are three (3) natural gas fired boilers used to generate steam for in-plant use and six (6) natural gas fired hot water generators. One (1) boiler has a heat input capacity of 85 (BOILER1) million BTU per hour and the other two (2) each have a heat input capacity of 118 (BOILER2 & BOILER3) million BTU per hour. Boiler Nos. 2 and 3 are equipped with low NOx burner technology. EU-HWG 1, 2 & 3 are each a 31.5 million BTU per hour natural gas fired hot water generator. EU-HWG 4, 5 & 6 are each an 18 million BTU per hour natural gas fired hot water generator. EU-HWG 4, 5 & 6 are part of FG-NG-SOUTH as well; NSPS Dc requirements are covered in FG-BOILERS. All boilers are equipped with Oxygen Trim Systems.**

**$NO_x$ Control: Low NOx burners for EU-BOILER2 & EU-BOILER3.**

**All boilers and heaters burn only pipeline quality sweet natural gas (MI-ROP-B7248-2020, FG-BOILERS, II.1, III.1-3: only natural gas). FCA SHAP complies with NSPS Dc by keeping NG usage records and submitting annually MAERS (MI-ROP-B7248-2020, FG-BOILERS, III.4-5 & VI.1: NSPS Dc NG only).**

**Natural gas usage (December 2021):**

| | | |
|---|---|---|
| **Boiler #1** | **MMBTU** | **0** |
| **Boiler #2** | **MMBTU** | **14,920** |
| **Boiler #3** | **MMBTU** | **27,710** |
| **New Facilities -Hot Water Generators Boilers-NPS** | **MMBTU** | **52,880** |
| **Regenerative Themal Oxidizer-NPS** | **MMBTU** | **8,708** |

| | | |
|---|---|---|
| **BIW Gas Usage** | **MMBTU** | **10,868** |
| **Plantwide Gas Usage (excluding South Paint)** | **MMBTU** | **43,472** |
| **Overall Total Plantwide Gas Consumption** | **MMBTU** | **158,558** |

| | | |
|---|---|---|
| **Total Plant Operation hours** | **Hours** | **562.5** |

**CY 2021: BOILER1 = 59, BOILER2 = 67, BOILER3 = 109 MM SCF per year Powerhouse - Natural Gas Boiler Number 1-3**

**MI-ROP-B7248-2020, FG-CAM**

**FG-CAM: Compliance Assurance Monitoring (CAM) requirements concerning coating processes controlled by Two (2) Regenerative Thermal Oxidizers, namely RTO-NORTH and RTO-SOUTH, to reduce VOC emissions to comply with VOC emission limits specified in EU-E-COAT-SOUTH, EU-MISC-SOLVENTS-SOUTH, FG-FACILITY-NORTH and FG-TOPCOAT-SOUTH.**

**Two (2) Regenerative Thermal Oxidizers (CAM):**

1. RTO-NORTH (CAB) or north RTO
2. RTO-SOUTH (BOX) or south RTO

**These requirements, already, have been incorporated into other flexible groups or emissions. Two (2) Regenerative Thermal Oxidizers (RTO-NORTH – five (5) ceramic towers running with two (2) on backup & RTO-SOUTH four (4) ceramic towers running with one (1) on backup) with ceramic packings for heat recovery. I noted at RTO-SOUTH Towers 1-5 Operating Temperatures, °F T1 = 1484, T2 = 1486, T3 = 1462, T4 = 1432 & T5 = 1465. T= 1750°F is setpoint for high temperatures. At South RTO or RTO-SOUTH, either minimum average temperature of 1,500°F (≥ 1,500°F) or ≥ 95% DE at tested temperature is required. Hence, Temperature of 1475 °F is OK provided it assures ≥ 95% DE. South RTO DE 98% ≥ 95% at 1475 °F. (MI-ROP-B7248-2020, FG-CAM). The temperatures are logged once in 15 minutes using a data logger and graphs of operating temperatures are drawn. The temperatures represent minimum 95% destruction efficiencies (≥ 95% DE) via stack testing for destruction efficiencies (DE).**

**Compliance Assurance Monitoring (CAM) excursions or exceedances: Semi1 (Jan-June 2022) = 0 dev. Auto MACT 4l (Jan-Jun 2022) = zero deviation. Auto CAM (Jan-Jun 2022) = zero EXCURSION**

**MI-ROP-B7248-2020, FG-CAM, III.1, IV.1-9)**

**MI-ROP-B7248-2020, FG-AUTOMACT**

**FG-AUTOMACT: Each new, reconstructed, or existing affected source as defined in Title 40 of the Code of Federal Regulations (CFR), Part 63.3082, that is located at a facility which applies topcoat to new automobile or new light duty truck bodies or body parts for new automobiles or new light duty trucks; AND/OR in which you choose to include, pursuant to 40 CFR 63.3082(c), any coating operations which apply coatings to new other motor vehicle bodies or body parts for new other motor vehicles; parts intended for use in new automobiles, new light duty trucks or new other motor vehicles; or aftermarket repair or replacement parts for automobiles, light duty trucks or other motor vehicles; and that is a major source, is located at a major source, or is part of a major source of emissions of hazardous air pollutants (HAPs) except as provided in 63.3081(c). This includes equipment covered by other permits, grandfathered equipment, and exempt equipment. An affected source is a**

**new affected source if you commenced its construction / reconstruction after December 24, 2002. Coating operations at SHAP consist of two separate painting facilities: north plant (CAB) with RTO-NORTH and south plant (BOX) with RTO-SOUTH. Both south and north coating operations are considered new (after December 24, 2002).**

**Semi-Annual Compliance Report for Surface Coating of Autos and Light Duty Trucks (Auto MACT) and Boiler MACT. No exceedance identified in the report. Semi1 (Jan-June 2022) = 0 dev. Auto MACT 4I (Jan-Jun 2022) = zero deviation. Auto CAM (Jan-Jun 2022) = zero EXCURSION. It may be noted that all American automakers comply with NESHAP / Auto MACT 4I via paint reformulation such that emission limits in the Table are complied with. Work practice standards as required also by the permit are practiced. As required by the permit all testing requirements, such as CE, DE, TE, etc. have been completed. ''Protocol for Determining Daily Volatile Organic Compound Emission Rate of Automobile and Light-Duty Truck Topcoat Operations,'' EPA–450/3–88–018 (Docket ID No. OAR–2002–0093 and Docket ID No. A–2001–22), commonly known as Auto Protocol is used for VOC calculations. (MI-ROP-B7248-2020, FG-AUTOMACT, I.1-4, III.1-3, VI.1-3).**

**US EPA received 40 CFR, Part 63, Subpart IIII (Auto MACT 4I) CDX CEDRI Notification for FCA SHAP. The company stated that FCA SHAP was in compliance with Auto MACT 4I (without accounting for two RTOs used for thermal destruction of VOCs as required by the Top-down PSD BACT quasi flexible permit).**

**MI-ROP-B7248-2020, FG-TOPCOAT-SOUTH (BOX)**

**FG-TOPCOAT-SOUTH (BOX): A color preparation sanding booth (topcoat sand), followed by two (2) identical and parallel topcoat lines (TOPCOAT1 & TOPCOAT2 or EU-TOPCOAT1-SOUTH (BOX) & EU-TOPCOAT2-SOUTH (BOX)), each consisting of: A water-borne basecoat (BC) application followed by a solvent borne clearcoat (CC). All paint application will be performed by robotic and bell applicators (except in emergency back-up situations). A heated flash zone separates the basecoat and clearcoat sections. Once clearcoat application is complete, the light duty truck box proceeds to the main bake oven. VOC emissions from the water-borne basecoat booths, the heated flash zone, the clearcoat spray booths and the topcoat cure oven are controlled by a south Regenerative Thermal Oxidizer (RTO-SOUTH or South RTO).**

**A heated flash zone separates the basecoat and clearcoat sections. Once clearcoat application is complete, the light duty truck box proceeds to the main bake oven. VOC emissions from the water-borne basecoat booths, the heated flash zone, the clearcoat spray booths and the topcoat cure oven are controlled by the South Paint Shop RTO.**

**VOC and particulate controls:**

1. A downdraft water wash system for particulate control for spray coating operations.
2. An RTO (RTO-SOUTH or south RTO) for VOC control.
3. A dry filter particulate control system for the topcoat sanding booth.

**MI-ROP-B7248-2020, FG-TOPCOAT-SOUTH (BOX), I.1-7 Table**

| Pollutant | Limit | Time Period/ Operating Scenario | Equipment | CY 2020 | CY 2021 |
|---|---|---|---|---|---|
| 1. VOC | 2.32[2] lb/GACS[6] | Calendar day averaging | FG-TOPCOAT-SOUTH (BOX) | 0.31 Highest for Feb 2020 | 0.37 Highest for Jan 2021 |
| 2. VOC, | 105.7[2] | 12-month rolling time period as | FG-TOPCOAT-SOUTH | 22.04 | 37.17 |

| Pollutant | Limit | Time Period/ Operating Scenario | Equipment | CY 2020 | CY 2021 |
|---|---|---|---|---|---|
| Acetone, Methyl Acetate, and TBA combined | tpy | determined at the end of each calendar month | (BOX) | | Highest for Dec 2021 |
| 3. PM | 0.0031[2] pound per 1,000 pounds of exhaust gas [β] | Hourly | FG-TOPCOAT-SOUTH (BOX) (each observation zone) | | PM: 0.0002 gr/dscf 0.0004 lb/1000 lb & 0.046 lb/hr @ SV-BASE COAT OBSV 2 BOX<br><br>0.0009 gr/dscf 0.0017 lb/1000 lb & 0.359 lb/hr @SV-CLEAR COAT OBSV 2 BOX |
| 4. PM10 | 0.11[2] pound per hour per zone | Hourly | FG-TOPCOAT-SOUTH (BOX) base coat observation zone (each line has 1 base coat observation zone) | | PM10: 0.0002 gr/dscf & 0.037 lb/hr @ SV-BASE COAT OBSV 2 BOX |
| 5. PM10 | 0.19[2] pound per hour per zone | Hourly | FG-TOPCOAT-SOUTH (BOX) clear coat observation zone (each line has 1 clear coat observation zone) | | PM10:0.0009 gr/dscf & 0.0359 lb/hr @ SV-CLEAR COAT OBSV 2 BOX |
| | | | | | |

| Pollutant | Limit | Time Period/ Operating Scenario | Equipment | CY 2020 | CY 2021 |
|---|---|---|---|---|---|
| 6. PM2.5 | 0.11[2] pound per hour per zone | Hourly | FG-TOPCOAT-SOUTH (BOX) base coat observation zone (each line has 1 base coat observation zone) | | PM2.5: 0.0001 gr/dscf & 0.017 @ SV-BASE COAT OBSV 2 BOX |
| 7. PM2.5 | 0.19[2] pound per hour per zone | Hourly | FG-TOPCOAT-SOUTH (BOX) clear coat observation zone (each line has 1 clear coat observation zone) | | PM2.5: 0.0001 gr/dscf & 0.017 @ SV-BASE COAT OBSV 2 BOX |

θ lb/GACS= pounds of VOC per gallon of applied coating solids. Compliance with this PSD BACT limit of 2.32 lb/GACS is deemed to be compliance with NSPS MM topcoat limit of 12.27 lbs VOC/GACS. PSD BACT is more stringent standard than RACT Rule 336.1610 (14.9 pounds of volatile organic compounds per gallon of applied coating solids).

β Pound of PM per 1,000 pounds of exhaust gas shall be calculated on a wet gas basis
RWDI #1804652 date January 15, 2019: RTO on Nov 7-9 and PM on Nov 13-16, 2018.

**All materials are captured and stored in closed containers and disposed of via RCRA Manifest. I did not detect any odor indicating that booths are under negative pressure with respect to the surroundings. MI-ROP-B7248-2020, FG-TOPCOAT-SOUTH (BOX), III.1-2).**

**As stated before, RTO-SOUTH is operated properly demonstrating minimum required VOC thermal destruction, data-logging RTO-SOUTH operating temperature, etc. Per Destruction Efficiency (DE) (RWDI #1804652 date January 15, 2019: RTO on Nov 7-9 and PM on Nov 13-16, 2018) tests based on Total Hydrocarbon (THC) concentration, using US EPA Reference Method 25A for Determination of Total Gaseous Organic Concentration Using a Flame Ionization Analyzer, DE = 98.7% (at 1400 < 1500°F) > 95% was obtained (Inlet & Outlet ppmv as propane or NMOC, DE%, 2018-11-08-01 Run = 80.4 & 1.2, 98.5%; 2018-11-08-02 Run = 89.4 & 1.2, 98.7%; 2018-19-08-03 Run = 101.4 & 1.0, 98.8%). Hence FCA SHAP can operate RTO-SOUTH at 1400°F for it provides DE ≥ 95%. Per the temperature graphs provided at random dates, RTO-SOUTH operated in the range of 1475 thru 1476 degrees Fahrenheit (1475 > 1400 °F (DE = 98.7 > 95%) 1475 °F being the set-point).**

**(MI-ROP-B7248-2020, FG-TOPCOAT-SOUTH (BOX), I.1: RTO-SOUTH T ≥ 1500°F or DE ≥ 95% (DE = 98.7% (at 1400 < 1500°F); II.2-3 dry filter for sanding & downdraft water wash which is a quality requirement as well.**

**RWDI#I803870 dated December 4, 2018, Transfer Efficiency (TE) and Capture Efficiency (CE) Testing: TE = 77.8 for Basecoat (White Solid Basecoat), TE = 77.8 for Basecoat (BC) (Granite Metallic) and TE = 69.1 for Clearcoat (CC). For EU-TOPCOAT2 -BOX, CE = 83.4 for Solid BC White, CE = 84.2 for Metallic BC (Granite), CE = 79.6 for CC. At EU-TOPCOAT 2 BOX, Fanuc Cartridge Fanuc Versa Bell II+ were used for Basecoat (BC) (Fluid Tip = 0.9 mm, Bell Size = 65 mm, Gun Voltage = 40-80 kV, RPM = 40-50,000, Gun-to-Target Distance = 10 inches, Water-borne BC) and Clearcoat (CC) (Fluid Tip = 1.2 mm, Bell Size = 65 mm, Gun Voltage = 40-80 kV, RPM = 35-75,000, Gun-to-Target Distance = 10 inches, as always solvent-borne CC) as well. Spray booth and bake oven temperatures were about 70-85 °F and 260-390 °F depending on oven zones 1-6, respectively. (MI-ROP-B7248-2020, FG-TOPCOAT-SOUTH (BOX), V.2: testing)**

**As stated elsewhere (see the table above as well), CE, DE, TE, PM tests were performed. (MI-ROP-B7248-2020, FG-TOPCOAT-SOUTH (BOX), V.1-4: testing).**

**The required calculations expressed in the units of the limits are performed, the temperatures are logged and charts are drawn demonstrating DE > 95% tested temperatures are maintained, coating information is maintained, jobs per month are recorded, surface area coated is calculated, coating usage rates (including solids and solvent fractions ( ) are maintained, etc. (MI-ROP-B7248-2020, FG-TOPCOAT-SOUTH (BOX), VI.1-4: records and monitoring)**

**Pertaining to NESHAP / MACT A & 4I, FCA SHAP submits compliance certification to AQD and US EPA CEDRI as stated above. Like all American Automakers, FCA SHAP complies with HAP limits via coating formulation without taking credit for thermal destruction in respective RTO although the quasi-flexible PSD BACT permit requires such control (RTO-NORTH & RTO-SOUTH) (MI-ROP-B7248-2020, FG-TOPCOAT-SOUTH (BOX), IX.2: MACT 4I)**

**NSP MM (topcoat limit of 12.27 lbs VOC/GACS based upon NSPS Table TE values) & Rule 336.1610 (14.9 pounds of volatile organic compounds per gallon of applied coating solids based upon tested TE values) requirements are subsumed in the permit's emissions limit (2.32 lb/GACS). Contrary to common intuition, 14.9 lb/GACS limit is more stringent than 12.27 lbs VOC/GACS as US EPA listed TE values in 90s Vs actual TE values in 60s (percent units). (MI-ROP-B7248-2020, FG-TOPCOAT-SOUTH (BOX), IX.1: NSPS A & MM)**

**MI-ROP-B7248-2020, FG-REPAIR-SOUTH (BOX)-**

**FG-REPAIR-SOUTH (BOX): Spot and final repair operations for the south paint shop used to paint truck boxes.**

**PM Control: Dry filter particulate control system**

**MI-ROP-B7248-2020, FG-REPAIR-SOUTH (BOX), I.1-5**

| Pollutant | Limit | Time Period/ Operating Scenario | Equipment | | December 2021 |
|---|---|---|---|---|---|

| | | | | | |
|---|---|---|---|---|---|
| 1. VOC | 4.8[2] pounds per gallon (minus water), as applied | Daily volume weighted average | FG-REPAIR-SOUTH (BOX) | | 1.61 |
| 2. VOC, acetone, methyl acetate and TBA combined | 11.0[2] tpy | 12-month rolling time period as determined at the end of each calendar month | FG-REPAIR-SOUTH (BOX) | | 0.045 12-mo for June 2020 |
| 3. PM | 0.0031[2] | Hourly | FG-REPAIR-SOUTH (BOX) | | 0.0003 lb/1000 lb 0.098 lb/hr |

| Pollutant | Limit | Time Period/ Operating Scenario | Equipment | | December 2021 |
|---|---|---|---|---|---|
| | pounds per 1,000 pounds of exhaust gas[β] | | (each spot repair booth) | | 0.0002 gr/dscf |
| 4. PM10 | 0.026[2] pounds per hour per zone | Hourly | FG-REPAIR-SOUTH (BOX) (each spot repair booth) | | 0.052 lb/hr 0.0001 gr/dscf |
| 5. PM2.5 | 0.026[2] pounds per hour per zone | Hourly | FG-REPAIR-SOUTH (BOX) (each spot repair booth) | | 0.035 lb/hr 0.0001 gr/dscf |

[β] Pounds of PM per 1,000 pounds of exhaust gas shall be calculated on a wet gas basis

CY 2020: 294,004 BOXES painted

December 2021: 27,750 CABs painted & 28,467 BOXES Painted and 24,532 vehicles built and rolled out the door for sale.

RWDI#1804652 dated January 15, 2019, Combined stack for Spot Repair (EU-SPOT REPAIR 1 BOX SPOT REPAIR 2 BOX). The PM limits are being revised. There is a problem with the testing for PM, PM10 and PM2.5 because EU-SPOT REPAIR 1 BOX and EU-SPOT REPAIR 2 BOX have a common stack and the emission limit is for each repair booth.

**The waste coatings and volatile materials are stored in closed containers (MI-ROP-B7248-2020, FG-REPAIR-SOUTH (BOX), III.1)**

**The dry filter systems are installed in both the booths. (MI-ROP-B7248-2020, FG-REPAIR-SOUTH (BOX), IV.1: dry filter particulate control system(s) in each booth). As stated above, all the required stack tests especially PM, PM10, PM2.5 have been performed (RWDI#1804652 dated January 15, 2019). (MI-ROP-B7248-2020, FG-REPAIR**
**-SOUTH (BOX), V.1-3: stack testing)**

**The required calculations expressed in the units of limits such as 1.61 pounds of VOC per gallon of coating have been performed, coating information is kept, coating and solvent usage recorded, etc. . (MI-ROP-B7248-2020, FG-REPAIR-SOUTH (BOX), VI.1-3: monitoring and records)**

**Note: SV-SPOT-REPAIR1-SOUTH (BOX) & SV-SPOT-REPAIR2-SOUTH (BOX) are combined into one stack. Hence, stack test problem.**

**MI-ROP-B7248-2020, FG-NG-SOUTH (BOX)**

**FG-NG-SOUTH (BOX): Three (3) natural gas fired hot water generators equipped with low NOx burners with a maximum heat input of up to 18 million BTU (MM BTU) per hour each. This flexible group also includes all natural gas combustion in all air supply houses, space heaters, heated flash, cure ovens, emergency engines (generators) and the RTO-SOUTH. All air supply houses are direct fire units.**

**MI-ROP-B7248-2020, FG-NG-SOUTH (BOX), I.1**

| Pollutant | Limit | Time Period/ Operating Scenario | Equipment | | CY 2021 |
|---|---|---|---|---|---|
| 1. NOx | 27.6[2] tpy | 12-month rolling time period as determined at the end of each calendar month | FG-NG-SOUTH (BOX) | | 7.8 tpy associated with 477 MM SCFT NG usage per year |

**FCA SHAP used only pipeline quality NG of 477 MM SCFT per year (MI-ROP-B7248-2020, FG-NG-SOUTH (BOX), III.1-2: only NG & < 1,068 million SCF per year).**

**Three (3) natural gas fired hot water generators are equipped with low NOx burners with a maximum heat input of up to 18 million BTU (MM BTU) per hour each. (MI-ROP -B7248-2020, FG-NG-SOUTH (BOX), IV.1-3:)**

**FCA SHAP keeps natural gas usage and performs NOX emissions calculations. (MI-ROP-B7248-2020, FG-NG-SOUTH (BOX), VI.1-3:)**

**FCA SHAP complies with Boiler NSPS Dc via usage recordkeeping and submitting MAERS annually. (MI-ROP-B7248-2020, FG-NG-SOUTH (BOX), IX.1)**

**MI-ROP-B7248-2020, FG-CONTROL-SOUTH (BOX)**

**FG-CONTROL-SOUTH (BOX): This flexible group covers the Regenerative Thermal Oxidizer (RTO-SOUTH or south RTO), the dry filter particulate control systems and the water wash particulate control system at the south paint shop (BOX).**

1. Regenerative Thermal Oxidizer (RTO-SOUTH or south RTO) for control of VOC emissions from e-coat and topcoat at the south paint shop (BOX).
2. Dry filter particulate control for the sanding booth portions of e-coat, topcoat, spot repair and heavy repair at the south paint shop (BOX).
3. Downdraft Water wash particulate control for topcoat at the south paint shop (BOX).

**FCA-SHAP submitted a Malfunction Abatement Plan (MAP). As part of MAP, FCA SHAP conducts weekly, monthly, quarterly, semi-annual and annual maintenance activities for the RTO, the water wash system, and the dry filter control systems. (FG-CONTROL-SOUTH (BOX), III.1: Malfunction Abatement Plan (MAP))**

**Both RTO-NORTH & RTO-SOUTH are equipped with thermocouple and temperature**

**logging system. Temperature data is graphed showing compliance with the tested temperatures that provide DE > 95%. Periodic maintenance activities are conducted per MAP. The particulate control systems are periodically inspected and maintained as required. Thermocouples are replaced / calibrated on an annual basis. (FG-CONTROL-SOUTH (BOX), VI.1-6: Monitoring).**

**MI-ROP-B7248-2020, FG-FACILITY-SOUTH (BOX)**

**FG-FACILITY-SOUTH (BOX): All process equipment associated with the south paint line/paint shop used for painting truck boxes.**

**FCA SHAP produced 371,746 saleable vehicles in 12-month period (Highest for June 2020) (FG-FACILITY-SOUTH (BOX)), iii.1: maximum 407,000 saleable truck boxes per 12-month period).**

**MI-ROP-B7248-2020, FG-RTO-SOUTH&POWDER-OVEN-PM (BOX) (BOX), I.1-3**

**FG-RTO-SOUTH&POWDER-OVEN-PM (BOX): Flexible group for PM, PM10 and PM2.5 emissions from the RTO-SOUTH and powder coat oven.**

**MI-ROP-B7248-2020, FG-RTO-SOUTH&POWDER-OVEN-PM (BOX) (BOX), I.1-3**

| Pollutant | Limit | Time Period/ Operating Scenario | Equipment | | |
|---|---|---|---|---|---|
| 1. PM | 0.0034[2] [β] pounds per 1,000 pounds of exhaust gas | Hourly | RTO-SOUTH and Cure Oven portion of EU-POWDERCOAT-SOUTH (BOX) | | 0.0009 lb/1000 lb of exhaust gas 0.0005 gr/dscf 0.031 lb/hr |
| 2. PM10 | 1.68[2] pounds per hour | Hourly | RTO-SOUTH and Cure Oven portion of EU-POWDERCOAT-SOUTH (BOX) | | 0.0247 gr/dscf 1.62 lb/hr (includes condensable fraction). |
| 3. PM2.5 | 1.68[2] | Hourly | | | 0.0246 gr/dscf |

| Pollutant | Limit | Time Period/ Operating Scenario | Equipment | | |
|---|---|---|---|---|---|
| | pounds per hour | | RTO-SOUTH and Cure Oven portion of EU-POWDERCOAT-SOUTH (BOX) | | 1.60 lb/hr (includes condensable fraction). |
| β Pounds per 1,000 pounds of exhaust gas shall be calculated on a wet gas basis. RWDI#1804652 dated January 15, 2019. PTI 27-17B. Particulate (PM, PM10 and PM2.5) testing for Powder Ovens in addition to RTO-South DE, etc. | | | | | |

**As stated above in the table the required PM stack tests have been conducted. (MI-ROP-B7248-2020, FG-RTO-SOUTH&POWDER-OVEN-PM (BOX) (BOX), V.-1-3)**

**Per the stack tests, FCA SHAP can operate RTO-SOUTH at 1400°F for it provides DE ≥ 95%. Per the temperature graphs provided at random dates, RTO-SOUTH operated in the range of 1475 thru 1476 degrees Fahrenheit (1475 > 1400 °F (DE = 98.7 > 95%) (1475 °F being the set-point). . (MI-ROP-B7248-2020, FG-RTO-SOUTH&POWDER-OVEN-PM (BOX) (BOX), VI.1): RTO-SOUTH at a minimum average temperature of 1,500°F (≥ 1,500°F) or at the temperature that provides DE ≥ 95%.**

**MI-ROP-B7248-2020, FG-OLD-MACT (EU-AST13)**

**FG-OLD-MACT(40 CFR Part 63, Subparts A and EEEE): The affected source is each new, reconstructed, or existing Organic Liquid Distribution (OLD) (non-gasoline) operation that is located at, or is part of a major source of hazardous air pollutant (HAP) emissions. The affected source is comprised of storage tanks, transfer racks, equipment leak components associated with storage tanks, transfer racks and pipelines, transport vehicles, and all containers while loading or unloading at transfer racks subject to this subpart. Equipment that is part of an affected source under another NESHAP is excluded from the affected source. (40 CFR 63.2338(c)). These conditions specifically cover existing (construction pre-dates April 2, 2002) liquid storage tanks which hold more than 5,000 gallons but less than 50,000 gallons and/or new liquid storage tanks which hold more than 5,000 gallons but less than 10,000 gallons of methanol/windshield washer fill solvents that are dispensed to newly assembled vehicles.**

**Annually, FCA SHAP certifies that FCA SHAP is in compliance with the OLD MACT 4E.**
**MI-ROP-B7248-2020, FG-BOILER-MACT-5D**

**Requirements for new and existing boilers, hot water generators and process heaters that are designed to burn gas 1 (pipeline quality sweet natural gas only) subcategory fuel with a heat input capacity of 10 MM BTU per hour or greater at major sources of HAP emissions per 40 CFR Part 63, Subpart DDDDD (Boiler MACT 5D). Units that**

**burn liquid fuel for testing or maintenance purposes for less than a total of 48 hours per year, or that burn liquid fuel during periods of curtailment or supply interruptions are included in this definition.**

**Existing: Three (3) natural gas fired boilers used to generate steam for in-plant use. One has a heat input capacity of 85 MM BTU per hour and the other two each have a heat input capacity of 118 MM BTU per hour. Boilers 2 and 3 are equipped with low NOx burner technology. In addition, the boilers are equipped with continuous oxygen trim systems**

**New: HWG 1, 2 & 3 are 31.5 MM BTU per hour each, natural gas fired hot water generators that have continuous oxygen trim systems. HWG 4, 5 & 6 are a maximum of 18 MM BTU per hour each, natural gas fired hot water generators that have continuous oxygen trim systems.**

1. **Existing** Boilers are EU-BOILER1 (85 MM BTU per hour), EU-BOILER2 (118 MM BTU per hour) & EU-BOILER3 (118 MM BTU per hour).
2. **New** Boilers are EU-HWG1, EU-HWG2, EU-HWG3 (HWG 1 thru 3: 31.5 MM BTU per hour each), EU-HWG4, EU-HWG5 & EU-HWG6 (HWG 4 thru 6: 18 MM BTU per hour each).

**Boiler Nos. 2 and 3 are equipped with Low NOx burners**

**All boilers and heaters burn only burn pipeline quality sweet natural gas as defined in 40 CFR 63.7575. (MI-ROP-B7248-2020, FG-BOILER-MACT-5D, II.1). Mr. Sanni stated that the heaters are due for tune-up in November 2023. ALL units are equipped with oxygen trim system (OTS) (pentennial or quinquennial or once in five years if equipped with OTS). (MI-ROP-B7248-2020, FG-BOILER-MACT-5D, III.1)**

**MI-ROP-B7248-2020, FG-ENG-FIREPUMP (NSPS 4I)**

**FG-ENG-FIREPUMP (EU-ENG-PH1 (certified) and EU-ENG-PH2 (certified)): 40 CFR Part 60, Subpart IIII – New Source Performance Standards, for, new emergency, compression ignition (CI) reciprocating internal combustion engines (RICE), that have a maximum site rating of less than 500 brake hp. The emergency engines are for the fire pumps located in the pump house.**

**FCA SHAP burns only ULSD 15 ppm sulfur (MI-ROP-B7248-2020, FG-ENG-FIREPUMP, II.1)**

**As stated before, the engines are certified.**

**CY 2021: EU-ENG-PH1 = 0.72 & EU-ENG-PH2 = 1.152 gallons of ULSD 15 ppm S per year Pump House Emergency Generator for Fire Suppression-Pump Station PH1 & Pump House Emergency Generator for Fire Suppression Pump Station PH2**

**MI-ROP-B7248-2020, FG-MACT-ZZZZ–EXISTING-EMERGENCY CI > 500 HP**

**FG-MACT-ZZZZ–EXISTING-EMERGENCY CI > 500 HP (EU-ENG-GENASSY): Existing CI Engines located at a Major Source > 500 HP, Emergency**

**The emergency engines are fired only for testing purposes.**

**MI-ROP-B7248-2020, FG-ENG-DATACTR**

**FG-ENG-DATACTR (EU-ENG-DATACTR (4091 HP, CI, built date 12/5/2006)): This flexible group consolidates NSPS 4I and MACT 4Z requirements as noted below:**

**FG-NSPS IIII EMERGENCY PRE-2007 < 10 l/CYL: This flexible group includes new emergency compression ignition (CI) stationary reciprocating internal combustion engines (RICE) ) that have a maximum site rating of greater than 500 brake horsepower (HP) and subject to 40 CFR 60, Subpart IIII.**

**FG-63-4Z-M/N/CIorSI/E/NG/>500: 40 CFR Part 63, Subpart ZZZZ - National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines (RICE), located at a major source of HAP emissions, new or reconstructed, either combustion ignition or spark ignition, emergency RICE greater than 500 brake hp.**

**FCA SHAP burns only ULSD 15 ppm Sulfur (MI-ROP-B7248-2020, FG-ENG-DATACTR, II.1)**

**FCA SHAP fires the engine only for testing purposes.**

**CY 2021: EU-ENG-DATACTR = 0.376 gallons per year ULSD 15 ppm S. Data Center Stationary Emergency Generators**

**MI-ROP-B7248-2020, FG-NSPS JJJJ EMERGENCY > 100 BUT < 500 HP**

**FG-NSPS JJJJ EMERGENCY > 100 BUT < 500 HP (EU-ENG-NORTH-PSHOP1 (383 HP, 05/01/2013, certified) and EU-ENG-NORTH-BSHOP (335 HP, 05/01/2013, certified)): This flexible group includes new emergency spark ignition (SI) natural gas fired stationary reciprocating internal combustion engines (RICE) ) that have a maximum site rating of greater than or equal to 100 brake horsepower (≥ 100 HP) but less than 500 (< 500 HP) and subject to 40 CFR 60, Subpart JJJJ (NG SI RICE NSPS 4J).**

**FCA SHAP fires the engine only for testing purposes.**

**MI-ROP-B7248-2020, FG-NSPS JJJJ EMERGENCY > 500 HP**

**FG-NSPS JJJJ EMERGENCY > 500 HP (EU-ENG-PSHOP-NC-701HP(05/01/2013 after July 1, 2008), EU-ENG-GEN1-SOUTH 01/19/2018 after July 1, 2008) & EU-ENG-GEN2-SOUTH (01/19/2018 after July 1, 2008). All (3) engines are not certified per NSPS 4J ): This flexible group includes new emergency spark ignition (SI) natural gas fired stationary reciprocating internal combustion engines (RICE) ) that have a maximum site rating of greater than or equal to 500 brake horsepower (HP) and subject to 40 CFR 60, Subpart JJJJ (NSPS 4J). The engines (3) are not certified per NSPS 4J. All SI RICE engines are pipeline quality sweet natural gas only fired.**

**FCA SHAP burns only only pipeline quality sweet natural gas (MI-ROP-B7248-2020, FG-NSPS JJJJ EMERGENCY > 500 HP, II.1)**

**ngines are fired only for testing purposes and periodic stack tests conducted.**

**MI-ROP-B7248-2020, FG-SOBL, 7566 Metropolitan Parkway**

**FG-SOBL (EU-SOBL-APPLICATION and EU-SOBL-NAT-GAS) : Spray-on Bedliner (SOBL) facility where fully assembled and painted trucks from the main assembly plant will be routed into one of several booths in which bedliner materials will be robotically sprayed onto the truck beds. Raw materials include cleaning solvents, a bonding agent, and a two-part (2-part) polyurethane resin. Natural gas-fired equipment will be used for process and space heating. This equipment is located at 7566 Metropolitan Parkway, directly across the street from the South Paint Shop (BOX) at the main assembly plant.**

**As stated before, during the Bedliner inspection, Allen Kinsler (Phone: 313-462-2290-ext. 2107; E-mail: aKinsler@gfxLTD.com) and Gary Mansolf (Phone: 248-320-8645; E-mail: Mansolf@gfxLTD.com ), assisted me.**

**FG-SOBL is operated by a contractor.**

**Vehicles move in 24/7. Fully assembled vehicles to be processed are washed thoroughly. After washing and masking, the vehicles are routed into one of several booths in which bedliner materials will be robotically sprayed onto the truck beds. Raw materials include cleaning solvents, a bonding agent, and a two (2) part polyurethane resin. Natural gas-fired equipment is be used for process oven and space heating. In all, seven (7) spray booths are present. The booths operated at 95 ° F.**

**Quality inspection is conducted, and repairs are performed if necessary. About 450 trucks are process per day. Each vehicle stays in the booth about 12 minutes. The bed liner material is sprayed at 160°F to reduce viscosity. Solvent is used for clearing purposes (70% IPA & rest water)**

| Pollutant | Limit | Time Period / Operating Scenario | Equipment | | |
|---|---|---|---|---|---|
| 1. VOC and methyl acetate combined | 8.8[2] tpy | 12-month rolling time period as determined at the end of each calendar month | FG-SOBL | | Apr 2020 (highest): 8.0 tpy<br>Jan 2021: 1.11 tpm<br>Dec 2021: 0.61 tpm |

**SOBL operates filter systems properly, stores materials in closed containers. (MI-ROP-B7248-2020, FG-SOBL, III.1-3)**

**SOBL only pipeline quality natural gas and uses about 45 MM SCF NG (MI-ROP-B7248-2020, FG-SOBL, III.4-5: < 176.0 million SCF per year, only NG)**

**The usage records are kept and the required calculations are performed. (MI-ROP-B7248-2020, FG-SOBL, VI.1-5)**

**CY 2021: 287,527 gallons per year - Spray-on Bed liners in an enclosed booths with dry filters and 7.8 MM SCF NG per year Frame Sequencing Center-Space heater for**

**comfort heating**

**CY 2021: 11 MM SCF per year NG -South Paint Box Lines: Sealer Bake Oven**

**MI-ROP-B7248-2020, FGRULE287(2)(c)**

**FGRULE287(2)(c) (EU-FINAL-REPAIR): Any emission unit that emits air contaminants and is exempt from the requirements of Rule 201 pursuant to Rule 278, Rule 278a and Rule 287(2)(c). Emission units installed/modified before December 20, 2016, may show compliance with Rule 287 in effect at the time of installation/modification.**

**MAINTENANCE SPRAY PAINT = 9 pounds of VOC per month in December 2021 FGRULE287(2)(c) < 15 (CY 2020) & < 14 (CY 2021) << 200 gallons per month (MI-ROP-B7248-2020, FGRULE287(2)(c), II.1 limit: 200 gallons per month)**

**Conclusion**

**FCA SHAP is in compliance with MI-ROP-B7248-2020.**

NAME J Shenanahall DATE November 15, 2022 SUPERVISOR Joyce