

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

A864864219

FACILITY: FORD MOTOR CO ROUGE COMPLEX		SRN / ID: A8648
LOCATION: 3001 MILLER RD, DEARBORN		DISTRICT: Detroit
CITY: DEARBORN		COUNTY: WAYNE
CONTACT: Mike Larson , Env. Rep. - Dearborn paint and Assy., Section 1		ACTIVITY DATE: 06/15/2022
STAFF: Robert Byrnes	COMPLIANCE STATUS: Compliance	SOURCE CLASS: MEGASITE
SUBJECT: FY 2022, Section 1, Scheduled Inspection.		
RESOLVED COMPLAINTS:		

On June 15, 2022, Caryn Owens and I visited the Ford Dearborn Truck Plant to conduct an announced air quality inspection. we arrived at the facility at approximately 9:15 am and met with Kim Cole and Mike Larson of Ford. The purpose of this inspection was to determine compliance with MI-ROP-A8648-2022. No visible emissions were observed nor were any odors detected from the security parking lot at the time of entry to the plant. The Ford Dearborn Assembly Plant manufacturers, paints and assembles Ford F-150 and Battery Electric Vehicles (BEV) Lightning F-150 pick-up trucks. The facility currently runs 2 shifts, 10 hours Monday through Friday. 1 shift, 10 hours on both Saturday and Sunday. Occasionally there are what they call “super Sat. or Sun, in which they run 2 shift 10 hours on those days or holidays. The facility is a major source of VOC/HAP and is cover by ROP MI-ROP-A8648-2022.

The inspection began with a pre-meeting where we planned the walkthrough portion of the site visit. During that time, we discussed the records we were looking to obtain, any recent changes or new projects coming up, and work schedule. No recent changes have been made and no future changes have been scheduled for the facility at this time. The facility was not operating due to a parts shortage on this day, but we still conducted a walk through the plant to observe processes.

The permit requirements for most of this facility’s emission units fall within the various Flexible Groups. Also, given this permit has most emission limits and emission units covered under the flexible permit’s FG-Facility, individual write ups for each emission unit was not done. For example: EU-PHOSPHATE, EU-ECOAT, EU -SEALERS, EU-GUIDECOAT, EU-TOPCOAT, EU-DEADENER, EU-SOLVENTS, EU-BLACKOUT/WAX, EU-GLASS are all part of FG-FACILITY and have their requirements within that flexible group (except for Method 24 VOC determination requirements). EU-NG85, EU-NG100, EUPHOSPHWG1-2, EU-PAINTWG1-3 are all part of FG-NATURAL GAS and have requirements within that flexible group. As such most of this report will cover the flexible groups, FG-FACILITY emission limits and control device records.

VOC Controls

The facility uses carbon wheel concentrators to concentrate VOC emissions from the prime and topcoat auto booths. The concentrators then send the VOC laden air to a 3 cell RTO which also controls the emissions from the E-coat tank, E-coat cure oven,

the prime cure oven and the topcoat cure ovens. Operating parameters have been established from performance tests which demonstrate the control devices are installed, maintained and operated in a satisfactory manner.

Particulate Controls

The facility uses a water wash system to control particulate from the main prime coat and topcoat spray booths. Other areas such as final repair/spot repair, E-Coat scuff booth, topcoat (repair) scuff booth, Primer scuff booth and Black-out Wax Booth use dry filters to control particulate matter. Filter records were obtained for one week of February 2020 and 2021 as well as the whole Month of February 2022 which showed compliance as follows:

Process/week	2/17/20	2/15/21	2/7/22	2/14/22	2/21/22	2/28/22	Compliance Criteria
E-Coat Scuff	0.55	0.45	0.35	0.35	0.35	0.35	< 1.0 differential pressure
Topcoat (repair) Scuff	0.50	0.40	0.4	0.4	0.4	0.4	< 1.0 differential pressure
Prime Scuff	0.35	0.40	0.35	0.35	0.35	0.35	< 1.0 differential pressure
Blackout/Wax	0.25	0.35	0.4	0.4	0.4	0.4	< 1.0 differential pressure
Final bldg. Spoven	Y	Y	Y	Y	Y	Y	Filter Condition acceptable (Y or N)
Paint Spot Repair decks	Y	Y	Y	Y	Y	Y	Filter Condition acceptable (Y or N)

The records for the processes above are to determine compliance with FG-Facility SC VI.3. It meets the weekly inspection criteria however does not exactly include the date of the inspection and does not include the dates and reasons for repairs (unless none occurred during the month of February 2022, however a proper record should document that and possibly is document elsewhere in a report that was not asked for).

Records for the weekly water wash certification checklist were obtained for February 2022 for the Prime Booth, Topcoat #1, Topcoat #2. The records documents booth pressure drop readings were completed, recorded (but not part of this record) and reported to paint management. It also similarly mentions pump PSI checks, flood sheets inspected repairs reported to paint supervision (although none listed) and dates, time and reason recorded for any repairs. This record for process equipment determine compliance with FG-Facility SC VI.3, although it does not document the reasons for repairs.

Concentrator/RTO VOC Abatement System

The VOC abatement equipment consists of 2 rotary carbon wheels followed by a 3 tower RTO. The main abatement system (concentrators and RTO) controls the E-coat, Primer automatic sections, Topcoat 1 & 2 clearcoat automatic sections. The Ecoat, Primer and Topcoat ovens are sent directly to the RTO.

Temperature operating data for the RTO and the concentrators was obtained for February 14, 2022 through February 20, 2022. The data consisted of a reading once every 5 minutes for RTO chamber temperature average and the Concentrator desorb air temperature. The data was consistently at 1425 degrees Fahrenheit (PTI limit is 1400 degrees F) for the RTO and 375 for the concentrators both based upon a 3-hour average. There was a brief 4 hour period where the concentrator temperature fell below the most recent tested values but it was noted that there was no production on the am shift, only the pm shift had production. The time was on February 16, 2022 from 12:40 pm to 1:45 pm. All other times both before and after this time period either met the proper 3-hr average or meet the value instantaneously.

Thermocouples for the Desorb heater, RTO zone 2, RTO Exhaust, RTO, prime abatement?, and Desorb heater 2 were all calibrated on March 20, 2022. Prime abatement was listed but this system was removed and all primer source emissions have been ducted to KZR concentrators and main 3 chamber RTO.

A review of the Annual Auto Protocol reviews was obtained for 2019, 2020 and 2021. Each reviewed showed that nothing had changed from the previous years. Transfer efficiency was tested in December of 2017 for Guidecoat and Topcoat. Capture efficiency tests were last conducted in December of 2017 as well.

No operational parameters were observed/recorded for the KZR concentrators and 3 chamber RTO because the facility was not operating due to a parts shortage this day. The recording devices on the oxidizers, concentrators and chart recorders were previously calibrated on 3/20/22. Abatement Preventative Maintenance (PM) were also obtained which mentions a completed task to again re-calibrate the thermocouples. All control device parameters were very similar to previously observed values and were above the respective minimum values for control credit.

Control Device Maintenance Reports & Maintenance Work Order Details

A copy of the Preventative Maintenance (PM) reports was requested as part of the inspection.

Review of these reports show most every inspection point in the control device(s) processes recommended "no action". Both of the concentrator KZR wheels had an issue with cuts on the seals however actions taken for both units state the seals were replaced. However, both units mentioned an outlet flex maybe preventing proper clearance of ducting to the seals and is causing the cutting of the seals. Status of these changes mentioned it could not be completed in July 2021 because the shut down was cancelled, the December 2021 shutdown period it was not repaired due to cold weather conditions and the equipment being outside. The July 2022 shut down is the next opportunity in which it was scheduled for. A follow up email will be sent to ask if this item has been addressed. Outlet tower 3 on the RTO had a valve replaced in June 2021.

FG-Facility

A review of the most recent emission data for the month of December 2021 was reviewed for compliance with the emission and material limits in FG-Facility as follows:

Limit	Permit Limit	December 2021 Actual Emissions	Compliance?
VOC	897 tons per 12 month rolling time period	553.0 tpy	Yes
VOC	4.8 Lbs VOC/Job per 12 month rolling time period	3.8	Yes
NOx	79.5 tons per 12 month rolling time period	40.1 tons	Yes

PM 10	19.0 tons per 12 month rolling time period	8.5 tons	Yes
Natural Gas	1600 MMCF/12 month rolling time period	896 MMCF	Yes

Conclusion:

This inspection did not observe all portions of the facility but did include a visit to final assembly and then mostly concentrated on the paint shop, the abatement equipment, and the Battery Electric Vehicle (BEV) center. The inspection and observed activities all appeared to be in compliance with MI-ROP-A8648-2022 Section 1 requirements.

NAME Robert Byrnes

DATE 08/26/2022

SUPERVISOR APRIL WENDLING 08/26/2022