

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

A864846304

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: 07/12/2018
STAFF: Robert Byrnes	COMPLIANCE STATUS: Non Compliance	SOURCE CLASS: MEGASITE
SUBJECT: 2018 Scheduled Inspection, Section 1.		
RESOLVED COMPLAINTS:		

On July 12, 2018, Samantha Braman and I visited the Ford Dearborn Truck Plant to conduct an announced air quality inspection. I arrived at the facility at approximately 9:15 am and met with Tamberlyn Shell Reed, Mike Ostrach, Rob Williams of Ford and Jay from GZA. The purpose of this inspection was to determine compliance with MI-ROP-A8648-2015. 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 manufactures, paints and assembles Ford 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. A copy of the work schedule is attached to this report for the week of 6/4/2018. The facility is a major source of VOC/HAP and is cover by ROP MI-ROP-A8648-2015.

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, the 10-day MAP/O&M reports, 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 majority of this site inspection focused on discussions about the 10-day malfunction reports, a walk through the plant to observe processes operating and to obtain operational parameters from the VOC abatement equipment.

### VOC Controls

The facility uses carbon wheel concentrators to concentrate VOC emissions from the 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. The facility also uses a fluidized bed concentrator and an RTO to control the emissions from the prime coat auto booths.

The following operational parameters were recorded during the day of the inspection:

### Prime Abatement System

Adsorber differential pressure -2.0" wc

Adsorber tray differential pressure -1.78" wc

Desorber tray differential pressure not observed

Desorption temps from top to bottom 98.7, 285.1, 648.5, 256.1 (previously 85, 347, 501, 240) degree Fahrenheit

Oxidizer 1417 (previously 1422) degrees Fahrenheit

The recording devices on the oxidizers, concentrators and chart recorders were previously calibrated on 8/13/17.

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. Abatement Equipment Parameters observed during this inspection were written down on the inspection notes and are attached to the hard copy of this report.

### Topcoat Abatement System

The Topcoat abatement equipment consists of 2 rotary carbon wheels followed by a 3 tower RTO. The main abatement systems controls the E-coat, prime, color 1 & 2 ovens which are sent directly to the RTO and the CC 1 & 2 bells and e-coat dip tank which are sent to the concentrator wheels and then the RTO for VOC abatement. The following operational parameters were recorded:

Concentrator Desorb 375 (previously 391) degrees Fahrenheit

Concentrator Outlet Temperature 258 (previously 244) degrees Fahrenheit

Exhaust Temperature 90 degrees Fahrenheit.  
 RTO inlet temperature 261 degrees F  
 Pressure drop -1.39" (previously 1.59") wc  
 Average chamber temperature 1532 (previously 1506), degrees Fahrenheit  
 Outlet temperature 348 (previously 350) degrees Fahrenheit

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### Complaint

During part of this inspection, a follow up to an anonymous complaint received on January 22, 2018 for the oven doors not having proper seals 50 to 75 feet in the air. They were not sure a 100% if it was the topcoat oven. My brief notes were hard to understand but he was talking about needing to be at 0.06 ppm (formaldehyde?) but was measuring 100 ppm. It wasn't clear how they knew this but talked as if they wore those badge type things that measured stuff. He mentioned he was part of a cleaning crew up in the oven areas during November and December shutdowns. I believe he said they had to wear respirators. We visited the painting areas, the cure oven entry points and around the e-coat ovens. The e-coat ovens had a very significant amount of smoke that had accumulated on the nearby walls. This did not seem normal and I requested Tamberlyn to take a picture and to respond as to what would have caused this. I also suggested they wash a portion of the wall for future reference and send it back to demonstrate the issue is not ongoing. When an oven's air balance is off sometimes a facility will open a door in which cases I have seen smoke in the upper parts near cure ovens. The amount of smoke on the wall surely suggest it had been ongoing for some time.

On August 3, 2018 I received an e-mail response from Tamberlyn outlining the corrective actions taken. The e-mail states in December 2017 there was booth balance issues on the enamel #2 topcoat oven. Air flows were adjusted, as well as increasing building exhaust and fresh air ventilation to the affected work stations. As a further action, a third party consultant was contracted to review each oven and ensure proper balancing. Additional adjustments were made to correct imbalances of the E-coat and enamel #2 ovens. In addition, the plant has implemented a weekly Preventative Maintenance (PM) task to monitor the air flow to ensure oven balance. See 8/3/18 email response from Tamberlyn for more details, a copy is attached to this report.

### Control Device Maintenance Reports & Maintenance Work Order Details

A copy of the Preventative Maintenance (PM) reports was requested as part of the inspection. Ford had switched from a DURR report as they hired a new maintenance contractor. Review of these reports show some concerns or at least were confusing as the dates do not seem intuitive. I was told by Ford it give a date to be completed, some PM's have longer times allowed to be completed, but nothing really documents it has been completed I think. Some of the items attached to this report have been tabbed and appear concerning like an October 10<sup>th</sup>, 2017 email from a PCE Monarch employee (new PM contractor) stating below is a list of tasks not completed by PCE during the July 2017 shutdown. The email later ends with "I hope this meets with your approval on what was needed", so it appears Ford is stating what does and doesn't need to have PM but documentation is hard to follow as to if it ever was completed or just delayed to the next timeframe. Over a dozen of the reports were marked with "hot" or "Hot EL", or "electrical" and discussed the use of an IR camera to detect temperature hot spots. These did not seem to be normal as Hot wires usually suggest connection issues, bad wiring, overloaded equipment, etc., which should be fixed to prevent abatement downtime. Again, none of the reports show corrective actions but just the number of reported "hot" issues seems excessive and indicative of poor upkeep and/or maintenance. The maintenance PM's are attached to the hard copy portion of this report. Again, as mentioned above, it would be more transparent if the reports showed the date(s) completed and the actions that were either taken or not taken were documented. Perhaps Ford can summarize these reports for future reference.

### FG-Facility

A review of the most recent emission data for the month of June 2017 was reviewed for compliance with the emission and material limits in FG-Facility as follows:

Limit	Permit Limit	June 2018 Actual Emissions	Compliance?
VOC	897 tons per 12 month rolling time period	739.0 tpy	Yes

VOC	4.8 Lbs VOC/Job per 12 month rolling time period	4.1	Yes
NOx	79.5 tons per 12 month rolling time period	40.8 tons	Yes
PM 10	19.0 tons per 12 month rolling time period	8.3 tons	Yes
Natural Gas	1600 MMCF/12 month rolling time period	912 MMCF	Yes

A copy of the June 2018 emission reports can be found attached to the hard copy of this report.

**Conclusion:**

This inspection did not review all the details of the facility but did included a brief visit to final assembly and then mostly concentrated on the paint shop and the abatement equipment. Specific details and additional information was obtained for each of the last 8 malfunction events which lasted more than 2 hours. Follow up discussions regarding the 8 events were held at the Ford Corporate Environmental office on August 11, 2018 and at Constitution Hall on August 18, 2018. Notes and emails related to these discussions are attached to the hard copy of this report. In general, the inspection and observed activities appeared to be in compliance with MI-ROP-A8648-2015 requirements. However, the inspection lacked enough detail as to what corrections actions and future plans Ford was taking to address the 8 malfunction events so far this year. The meetings held on August 11<sup>th</sup> & 18<sup>th</sup> seemed productive as the AQD has requested the following changes to better address these events: Responses need to include the actions taken and the time lines for changes to prevent recurrence of the malfunction. It was noted it is simply not good enough to state a 3<sup>rd</sup> party vendor was called and repairs were made. Future responses should include a root cause analysis and what steps were taken to prevent a future recurrence of the issue.

Summarizing my notes from the August 18, 2018 meeting are as follows: Ford is in the process updating their responses to malfunctions from all facilities, standardizing more parts between plants as logic controllers become outdated within 6-7 years, they will be looking to minimizing emissions in portions of the process where production might not be necessary or by re-routing emissions, Feasibility studies are underway which possible may eliminate the prime abatement equipment by recirculating more booths and sending all emissions to the main RTO. Ford again stated they have not exceeded any emission limits, they feel operational requirements to run control equipment coincide with their limits, abatement equipment malfunctions are not 100% preventable and these are their reasons behind their view of Rule 912 and Rule 915. I stated it has been the states policy that during malfunctions Rules 912/915 require that emissions be minimized to the maximum extent practical which in our view means the curtailment of production (but we do allow the finishing of product already in process). We also have rule 910/condition stating the permittee shall not operation the process unless the control equipment is installed, maintained and operated in a satisfactory manner. Mary Ann reminded them of the BACT PTI obligations and that the flex permit program did not intend this type of operation during equipment malfunctions. I discussed the need for better communication, follow up on 10 day reports should be within the week, and reports need to discuss emissions curtailment and be clear on what actions have been taken to prevent each malfunction from recurring again. I stated it was not enough to just report something was fixed, the reports and the immediate discussions afterword need to convey an outline of the current actions taken, future actions to be taken and the alternatives that maybe looked into. burners should have been replaced and high temp fault of the fluidized bed when PTI monitoring data showed no high temp faults within the system).

Because of the ongoing concerns with the main RTO burners not being replaced in July 2018 this report will be marked as non-compliant. A VN will be sent mainly because of the August 3<sup>rd</sup> and 4<sup>th</sup> RTO burner malfunction event. A second item was going to be added to the VN for the bypass event for a high temp fault in the prime desorb unit. High temp faults have been problematic and ongoing plus the permit monitoring data showed there was no high temp fault and could have continued operation. Ford has since argued this has not been the ongoing issue and is a new item that has recently came up so this has been left out of the VN. I would also add prior malfunctions resulted in adjustments of the carbon flow, however that may have been only masking this newly reported item.

NAME *Andrew Beyers*

DATE 9/26/18

SUPERVISOR *W.M.*