

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

A164130180

FACILITY: General Motors Lansing Grand River Assembly		SRN / ID: A1641
LOCATION: 920 TOWNSEND ST., LANSING		DISTRICT: Lansing
CITY: LANSING		COUNTY: INGHAM
CONTACT: JIM ECKLUND		ACTIVITY DATE: 06/23/2015
STAFF: Robert Byrnes	COMPLIANCE STATUS: Compliance	SOURCE CLASS: MAJOR
SUBJECT: FY 2015 scheduled inspection.		
RESOLVED COMPLAINTS:		

On Tuesday June 23, 2015 Director Wyant, Intern Austin Wissler and I conducted an announced inspection at the GM-LGR facility (SRN A1641). Director Wyant was attending as a day to job shadow an air quality inspector and Austin Wissler was also observing to see what the Air Quality Division does. We arrived at the facility at 10:00 am and watched the safety video prior to entering the facility. We met with Jim Ecklund, Dave Randall, and Shannon Culberson of GM. We began with a meeting deciding out the inspection plan, discussing RTO bake outs, the future ROP renewal application, facility changes, upcoming stack testing in the fall/winter and updates of staff and personnel from GM and MDEQ-AQD. The facility is currently producing the Cadillac CTS and ATS coupe & sedan models. Production of the 2016 Camaro will begin in the late summer or fall of this year.

During the Inspection we visited the final assembly plant followed by a walk through of the paint shop to view the processes with ROP conditions. After we visited the final assembly and paint shop portions of the assembly plant we concluded with a follow up meeting. A request for compliance records was sent to Jim Ecklund via e-mail on June 22, 2015. The following information was requested mostly from the month of May 2015. Jim promptly provided all the information requested in the e-mail on the day of the inspection.

Final Assembly

This portion of the plant is where the painted body and the chassis are combined to complete the automobile. Emission units in this area include the EU-VehFuelFill, EU-SpotRepair and EU-Final Repair. The emission units were observed in operating mode and everything appeared to be normal. The repair booths had particulate overspray filters installed and emissions were vented out the appropriate number of stacks.

Paint Shop

The phosphate process for vehicle bodies is done through a series of tanks with ten tanks. 1 & 2 are cleaner stages utilize soap, tanks 3 a & b use city water for rinse, tank 4 is a conditioner tank, tank 5 adds the nickel/zinc phosphating; tank 6 is for rinse, tank 7 is sealer and 8 a & b is for rinse. The ELPO process is a fully enclosed dip tank (112,000 gallons, 112 ft long, 79 degree's Fahrenheit) with enclosure tunnel until going up into the e-coat oven. Sealers are applied between the e-coat oven and guide coat booths. The cars are wet sanded and solvent wiped prior to entering the guide coat booths.

EU-GUIDECOAT

The guide coat emission unit which uses grey and white solvent borne primers, consists of a Bell section (6 side and overheads) a manual section not currently being used and a cure oven.

Guidecoat booth start-up checklist records were obtained and reviewed for May 4, 2015 through May 8, 2015. All items were listed as ok or need to watch in these reports (nothing was listed as "Not OK"). Records of the start-up check list are included as attachment "J" with this report. The records used to demonstrate positive airflow into the booth as required in SC III.1 are included as attachment "L" with this report. Also a copy of the periodic monitoring plan was obtained and reviewed to show compliance with SC III.2. See attachment "K" included with this report for details. Information on compliance for the thermal oxidizers is covered below. Method 24 VOC content is determined by the coating supplier and is done for each batch of coating.

EU-TOPCOAT

The topcoat process consists of 2 identical parallel topcoat lines using water borne basecoats and solvent borne clearcoats. The lines each consist of a feather duster, a BC robot section (4 painters, 1 opener), a BC bell section (6 side and overheads), a BC robot section (6 painters), a manual section, a heated flash for basecoat. The clearcoat portion of the line consists of a CC robot bell section (6 side and 3 overheads) then (4 side and 3 overhead bells), an observation zone with back up manual sprayers not currently being utilized and

finally a cure oven. The whole guidecoat and topcoat spray booth sections utilized all automated sprayers unless a manual is needed for quality or issues with existing robots.

The topcoat system uses a hydro purge with additive for the BC sections. No purge is collected due to the high water content and it goes straight to the booth water. No VOC credit is taken for hydro purge as the do not send it off as waste. The clear coat booths have purge cups for the robots and the bell purge is collected internally from the bell system. Only the bell cups are released into the booth water. Cleaning for both the base coat and clear coat booths is done with a high pressure water sprayer. Cleanup is minimized by utilizing masking and petroleum jelly like protective coatings which are washed into the booth water when finished/cleaning.

Topcoat booth start-up checklist records were obtained and reviewed for May 4, 2015 through May 8, 2015. All items were listed as ok or need to watch in these reports (nothing was listed as "Not OK"). Records of the start-up check list are included as attachment "J" with this report. The records used to demonstrate positive airflow into the booth as required in SC III.1 are included as attachment "L" with this report. Also a copy of the periodic monitoring plan was obtained and reviewed to show compliance with SC III.2. See attachment "K" included with this report for details. Information on compliance for the thermal oxidizers is covered below. Method 24 VOC content is determined by the coating supplier and is done for each batch of coating.

Rotary Thermal Oxidizer No. 1

The Rotary thermal oxidizer No. 1 controls VOC emissions from the ELPO tank enclosure, the ELPO oven, the prime oven and the 2 topcoat cure ovens. Actual operating parameters recorded during the inspection were as follows:

Inlet temperature: 313 degrees Fahrenheit
Outlet temperature: 394 degrees Fahrenheit
Combustion Chamber Temperature: 1557 degrees Fahrenheit

The operating temperature was well above the permit limit of 1400 degrees F. Also, a copy of the temperature records for May 4, 2015 through May 8, 2015 which showed the operating temperature again well above the 1400 degree Fahrenheit permit limit. A copy of the temperature record is included as Attachment "G" with this report.

Records of maintenance are included as Attachment "F" with this report. This record shows the differential pressure getting up around 22.8". Also, during a brief review of the maintenance record for this oxidizer in its control room it was discovered that an RTO bake out had recently been conducted. In a previous discussion in our pre-meeting it was stated no bake outs had been conducted at this facility. GM was reminded of our desire to observe an RTO bake out procedure in the future. All other records appeared to be normal maintenance.

Rotary Thermal Oxidizer #2 & Concentrators

The Rotary Thermal Oxidizer No. 2 controls the Guide coat bells, the Base coat flash, and the clear coat auto zones. Actual operating parameters recorded during the inspection were as follows:

Inlet temperature: 182 degrees Fahrenheit
Outlet temperature: 369 degrees Fahrenheit
Combustion Chamber Temperature: 1480 degrees Fahrenheit

The operating temperature was well above the permit limit of 1400 degrees F. Also, a copy of the temperature records for May 4, 2015 through May 8, 2015 which showed the operating temperature again well above the 1400 degree Fahrenheit permit limit. A copy of the temperature record is included as Attachment "H" with this report.

Records of maintenance are included as Attachment "F" with this report. All other records appeared to be normal maintenance.

RTO #2 is preceded by 2 rotary concentrators. Both concentrators are used at the same time. A single line from the booths splits into the 2 concentrators. The desorb temperature for the concentrator was at 265 degrees F. during the inspection and above 260 degrees F for the week of May 4th through May 8, 2015. Both of these are above the permit limit of 250 degrees F. A copy of the temperature record is included as Attachment "H" with this report. The inlet temperature of the concentrator was 92 degree's Fahrenheit. Attached to this report is a copy of the May 2015 preventative maintenance records for concentrator #1 and #2. See attachments to this report to view the records mentioned above.

OLD MACT and FG-Storage Tanks

GM is subject to MACT EEEE because of their Methanol storage tank which is used for windshield wiper fluid. They are not subject to any emission limitations, operating limits or work practice standards. No further notifications are required unless they make one of the following changes to the affected facility:

- a) Any storage tank became subject to control under this subpart EEEE.
- b) Any storage tank greater than 5,000 gallons became part of the affected source, but is not subject to any emission limitations, operating limits or work practice standards of this subpart.

The other storage tanks (transmission fluid, gasoline, oil, etc.) at the facility are equipped with submerged fill pipes. A complete list of storage tanks, their capacities, sizes, etc., are included with this report as Attachment "N".

AUTO MACT

GM has provided their semiannual compliance certifications as required. All information was timely and complete. Records of the HAP emission calculations were requested for the month of June 2014 through May 2015 for review as part of the site inspection. A review of the records showed the facility is in compliance with all applicable emission limits. Copies of the June 2014 through May 2015 HAP records are included with this report as attachment "C".

Pollutant	MACT Limit	Actual Emissions June 2014
HAP – PS, Topcoat, Glass Install, Final Repair	0.5 lbs HAP/GSA	.01 lbs HAP/GSA
HAP – Sealers and Adhesives	0.01 Lbs HAP/Lb material	0.00 Lbs HAP/Lb material
HAP – Deadener	0.01 Lbs HAP/Lb material	0.00 Lbs HAP/Lb material

GM uses the compliance method specified in 63.3091(b) which is the combined emissions from primer surfacer, topcoat, final repair, glass bonding primer and glass bonding adhesives. Electrodeposition is excluded from the grouping per 63.3092(a) since it contains no more than 1.0 percent by weight of any organic HAP and no more than 0.1 percent by weight organic HAP which is a carcinogen.

Final Repair emissions were reviewed and the facility uses the assumed transfer efficiency (TE) of 40% as allowed by 40 CFR 63.3161(h). Two of the materials listed in final repair were for polish cream and micro finish polish which don't readily appear to be coatings. The solids from these materials were also included in the calculation

VOC Calculations

Review of the VOC calculations was performed for the month of May 2015. All processes associated with painting and assembling and automobile were included in the ton per year and pound VOC/job calculations. A review of the records showed the facility is in compliance with all applicable emission limits. Copies of the records for May 2015 are included as attachments "A & B" with this report. The table below shows how the actual emissions for May 2015 are below the respective permit limits under FG-Facility. Natural gas usage records were also reviewed from January 2015 through May 2015. The usage rate is well below the natural gas usage limit. A copy of the records for natural gas usage are included as attachment "D" with this report.

FG-Facility

Special Condition/Pollutant	Limit	Time Period	Actual Emissions May 2015	Compliance
SC I.1 VOC	606 tpy	12 month rolling	128	Yes
SC I.3 VOC	5.73 lb/job*	12 month rolling	5.29	Yes
SC I.4 NOx	36.5 tpy	12 month rolling	14.5	Yes
SC II.1 NG usage limit	769 MMCF/yr	12 month rolling	309.70	Yes

*the lb/job limit does not apply to production rates less than 60,000 vehicles per year.

FG-Cold Cleaners

Any cold cleaner that is grandfathered or exempt from Rule 201 pursuant to Rule 278 and Rule 281(h) or Rule 285(r)(iv). Existing cold cleaners were placed into operation prior to July 1, 1979. New cold cleaners were placed into operation on or after July 1, 1979.

A copy of all cold cleaners operated at the facility was obtained. The Body, Paint and General Assembly areas have a total of 20 parts washers. The list obtained only showed an inspection log with no record. As such the information provided was not adequate to determine if Rule 702 applied or if they were in compliance with Rule 702. Further information will be requested in the future to make this determination. A copy of the parts washer list is included with this report as Attachment "M".

Odors

The GM-LGR facility had previously been a source of musty/moldy odor complaints since the fall of 2009 through the summer of 2012. The AQD has not received an odor complaint on this facility since October 23, 2012.

Body Shop

A walk through of the body shop was not conducted during this site visit. This portion of the facility builds door panels, hoods, body parts and such, by welding. The various welded pieces are then assembled throughout the plant. The body shop contains various welding and laser brazing operations which are exempt under Rule 285(i). The welding operations are controlled by Torit cartridge filters and exhaust to the in plant environment. 2 laser welders are operated in complete enclosures and are vented internally as well. Various sealers are used in various places to seal body panels which are being put together prior to going to the paint shop. The sealer emissions are included with the other sealer usages accounted for in the paint and final assembly areas. No stamping is done at this facility as all the body parts are mostly received from the GM-Delta and Pontiac stamping facilities. However, as mentioned in our pre-meeting discussion GM is currently constructing a new stamping plant for the facility.

Testing

In November 2013 the facility conducted revised TE testing for the clear coat booth. Testing for TE of the primer booth was conducted in December 2011. Testing for other portions of the paint shop was conducted in December 2011. Destruction efficiency and removal efficiency was conducted during October 19-22, 2009 and on November 11, 2009 for RTO No 1 (96.87% DE), RTO No 2 (99.13% DE). The combined removal and destruction efficiency of RTO No 2 and the Rotary Carbon Concentrator (RCC) was 92.99%. No testing is currently planned for the facility but when Camaro production begins the facility will look to re-establish all tested values within 6 months of saleable vehicle production. Auto Protocol reviews conducted in November 2014 documents the recent testing and that no changes have been made since these tests. See attachments "E" included with this report for the protocol review documentation.

Recent Changes

As part of the e-mail information request, GM was asked for a list of any changes made at the facility under the flexibility provisions of the ROP. GM provided three memo's to file of the following changes: addition of an area to add decals/stripping to vehicles with new natural gas radiant heaters. No increase in emissions needed; The addition of three new basecoat paint systems in the paint mix room for addition of new colors for the new Camaro. No increase in emissions needed; The addition of 2 new robots in Zone 2 of the Guidecoat (Prime) booth. Construction of these robots will take place in November 2015. No increase in emissions needed. Because all of these changes will be primarily for the new Camaro vehicle, and since it will be the higher volume body style all testing (TE, DE, RE, OSL, CE, etc.) will be conducted on the new Camaro in the Fall 2015 through Spring 2016 timeframe.

Conclusion:

The site inspection concluded in the afternoon with a closure meeting and briefly reviewing the information requested via an e-mail sent on June 22, 2015. A copy of the information requested is included as Attachment "O" with the paper copy of this report. The only area of concern was that GM had in fact conducted a bake out of the South RTO. It is not clear whether the facility would have been in compliance with Rule 301 at that time. GM was told that the AQD would like to observe an RTO bake out the next time one is scheduled. There were no other outstanding issues at the GM Lansing Grand River assembly plant and based upon my review at this time.

NAME *[Signature]*

DATE 7/14/15

SUPERVISOR *[Signature]*