

M4199
MAJL

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

M419950553

FACILITY: GENERAL MOTORS LLC DETROIT-HAMTRAMCK ASSEMBLY		SRN / ID: M4199
LOCATION: 2500 E GENERAL MOTORS BLVD, DETROIT		DISTRICT: Detroit
CITY: DETROIT		COUNTY: WAYNE
CONTACT: Brian Wilger , Senior Environmental Engineer		ACTIVITY DATE: 09/24/2019
STAFF: C. Nazaret Sandoval	COMPLIANCE STATUS: Compliance	SOURCE CLASS: MAJOR
SUBJECT: Targeted Inspection FY 2019		
RESOLVED COMPLAINTS:		

Inspection Date: September 24, 2019

Source: General Motors LLC, Detroit-Hamtramck Assembly Center

SRN: M4199

Address: 2500 E. General Motors Blvd., Detroit, Michigan 48211-2002

Subject: Scheduled Investigation

Author: Nazaret Sandoval, Air Quality Division, Detroit Office

Safety Equipment/Safety Training/Security

Shoes or boots are required in all areas of the facility. Coveralls (provided by the plant) are required in the paint shop. Safety glasses with side shields and cut-resistant arm sleeves (provided by the plant) are required in the body shop. Safety glasses and hearing protection are required in the boilerhouse. A hard hat is not required. Plant personnel must be notified in advance to gain access to the topcoat booth area or the paint mixing area because the clearcoat guns spray a diisocyanate and GMDH requires all visitors to these areas to have a passed a respirator test.

The main entrance to the plant is off the I-94 service drive; a visitor is required to sign in at the guard shed and give vehicle make and license plate number. A visitor must sign in at the front desk and show ID. A safety video must be viewed once per calendar year, after which time a Safety Protocol Program card will be issued for that calendar year.

Facility Background

The General Motors Detroit-Hamtramck Assembly Center (GMDH) is an auto assembly plant capable of producing approximately 78 vehicles per hour. As of the date of the inspection, GMDH was the sole production facility for the Cadillac CT6 and the Chevrolet Impala. The production of the Chevrolet Volt and the Buick LaCrosse ceased around February/March of year 2019.

A typical production shift runs from 6 AM to 4:30 PM, Monday through Friday, with maintenance shifts on off-production hours. Major areas of the plant include, the body shop, the paint shop, and the assembly area. The boilerhouse reduced its operations since January 2016, after the discontinuation the coal-handling system operations and the shutdown of the coal-fired boilers No.2 to No. 4 on December 31, 2015. Boiler No. 1 which runs on natural gas only, is the only boiler that can operate in the boilerhouse and it is used as a back-up to supplement steam to the plant. Steam for the assembly plant operations is provided by a private supplier.

When constructed in the early 1980s this facility underwent Prevention of Significant Deterioration (PSD) permitting for sulfur oxides (SO2) and nitrogen dioxide (NOx), and underwent Nonattainment New Source Review permitting for particulate matter (PM), volatile organic compounds (VOC), and carbon monoxide (CO). The source is a Clean Air Act Section 112 major source for Hazardous Air Pollutants (HAPs) and is therefore subject to the Title V program, known as the Renewable Operating Permit (ROP) program in Michigan. Paint shop operations are subject to both the New Source Performance Standards (NSPS) at 40 CFR 60, Subpart MM and the National Emissions Standards for Hazardous Air Pollutants (or MACT) at 40 CFR 63, Subpart IIII. Boiler No. 1 is subject to the MACT standards at 40 CFR 63, Subpart DDDDD; however, since boiler No. 1 is only used in a limited basis, the classification under MACT DDDDD and the applicable requirements need revision. Boiler No.1 is not subject to the NSPS, Subpart Dc regulation because its construction date was previous to Subpart Dc applicability date of June 9, 1989. The thermal oxidizers in the paint shop and the baghouses in the boiler-house are subject to the federal Compliance Assurance Monitoring (CAM) regulation at 40 CFR 64.

Process Description

GMDH assembles and paints automobiles from vehicle parts shipped to the site. Vehicle bodies are first ground and welded during various steps in the body shop. Some grinding and welding booths are equipped with add-on

fabric filters that vent back into the plant; otherwise, these operations vent uncontrolled to the in-plant atmosphere, which itself is filtered and returned.

Vehicle shells exiting the body shop are submerged in a tank and passed through a series (stages) of washes in the pretreatment system. The pretreatment begins with a deluge of water to remove any loose metal, dust, welding slag, etc. on the vehicle, followed by detergent washes, water rinses, and finally a solution wash (Zink Orthophosphate) to enhance paint adhesion and corrosion resistance. Minimal VOCs are used in these washes and the pretreatment system vents uncontrolled to ambient air. As part of a project modification approved in 2016, a stage five (hydro-cyclone) has been added to the pretreatment area. In this stage, water recirculation through a series of piping, pumps and valves helps filtering the sludge generated in the Zink Orthophosphate stage, keeping the paint bath clean of unwanted contaminants. Vehicle shells are then dip-coated with a water-based prime coat, called the electrocoat or ELPO, and then passed through a multi-staged curing oven. One electrocoat line serves all the vehicles at the plant. Formerly, exhaust from the electrocoat oven vented uncontrolled to atmosphere; now, the oven exhaust is controlled by a regenerative thermal oxidizer (RTO).

Following the ELPO, vehicles are painted with a solvent-based prime coat, called the guidecoat or primer surfacer, and dried in a curing oven. One primer surfacer line serves all the vehicles at the plant; two parallel curing ovens (north and south) serve the primer surfacer line. The primer surfacer is colored white or gray depending on the topcoat to follow. The primer surfacer is applied robotically with electrostatic spray applicators in an enclosed booth with a downdraft "waterwash" system wherein the flow of air in the booth is blown down from the ceiling through a grated floor and into a water stream flowing belowground. The spray applicators are purged internally to a collection tank. Wet sand ovens, anti-chip coating, and basecoat replacement (BCR) coating activities formerly associated with the primer surfacer booth are no longer utilized. The BCR refers to the manual application of basecoats to the underside of the gas cap, hood, and trunk within the primer surfacer booth; in 2007, these basecoats were moved to the topcoat.

After the primer surfacer, the vehicles are coated with a colored, water-based basecoat and then a transparent, solvent-based clearcoat, followed by drying in a curing oven; this coating combination is termed the topcoat. Seven topcoat lines serve the vehicles at the plant; each topcoat line has its own dedicated curing oven. An eighth topcoat line with curing oven is installed but has not been used for a number of years. As with the primer surfacer, both the basecoat and clearcoat are applied robotically with electrostatic spray applicators in enclosed booths equipped with downdraft waterwash systems; the spray applicators purge basecoat into the waterwash and clearcoat into a collection tank.

Emissions from each curing oven are incinerated in a thermal oxidizer dedicated to that oven. Each thermal oxidizer is of recuperative design; the oxidizer exhaust, prior to its vent to atmosphere, is used to preheat the curing oven. Interlocks installed at the primer and topcoat ovens automatically shut down the line associated with the oven if the oven thermal oxidizer registers a temperature less than 1300°F; the line will not restart until the temperature stabilizes above 1300°F for one minute. These interlocks were installed in response to multiple occasions in the early 2000s when the incinerator temperature at a topcoat oven fell below 1300°F for an extended period of time.

Various sealers and adhesives are applied to vehicle bodies throughout the body shop and paint shop to improve structural stability and reduce noise. Robotic hands applied the sealers and adhesives from wands as a paste or putty, therefore, 100% transfer is achieved and the application is performed open-air in the plant. Ultraviolet dyes in the sealers/adhesives allow plant inspectors to corroborate proper application when the vehicles pass under UV light. The acoustical/structural foam operation to improve crash worthiness from side impacts ceased in 2006. A sound deadener application to the underbody of the wheel housings ceased in 2010. Improved vehicle designs have rendered both operations obsolete. Some vehicles (i.e. Buick) require the application of an antichip sealer. The application occurs in a section of the sealer area. Robots spray a thin coat or a mist of antichip sealer along the main side rail of the cars (the bottom part under the door). The applied material has more than 94% solid content by weight and is similar in properties to paint shop sealer.

After leaving the paint shop, the coated vehicle shell is merged with the vehicle's undercarriage, interior, engine, etc. in the final assembly area. The vehicle is filled with gasoline, brake fluid, and other necessary liquids, tested to ensure that it will start, inspected, and then parked prior to shipping. If imperfections or scratches are observed in the surface coat during the final inspection the vehicle is driven into stand-alone enclosures, called the final repair booths, for the manual application of touch-up paint. The booths are equipped with fabric filters for particulate control. Solvent wipedowns and booth-cleaning operations throughout the plant are a source of volatile organic compound emissions.

Steam for the assembly plant operations was formerly provided by four spreader stoker coal-fired boilers; boiler #1 to #4, located at the northern end of the plant at the boilerhouse. However, after the permanent shutdown of boilers #2, #3, and #4 in December of 2015; steam is provided to GMDH by a private supplier. In addition, the coal-firing capabilities for Boiler #1 (rated at 84.0 MMBtu/hr.) were removed in December 2015 and boiler #1 is currently firing natural gas only. Boiler #1 is used in rare occasions to supplement steam to the plant. The plant is

permitted to temporarily install up to two 92 MMBtu/hr natural gas-fired rental boilers.

Summary of Facility Visit

I arrived at GMDH the morning of 9/24/2019 at about 10:00 AM. At the time of my visit the plant was not in operation due to a national GM-UAW strike that started early morning on Monday, September 16, 2019. After watching the safety video, I obtained the safety certification and met at the reception with Mr. Brian Wilger, Senior Environmental Engineer, GMDH's environmental staff. As we walked into the area of the plant, I noted that all the operations were shut down, the lights were off with only emergency lights functioning. We proceeded to a conference room where we met with Ms. Midge Winkler, Staff Environmental Engineer at GMDH.

The purpose of the inspection is to verify GMDH's compliance with the requirements of Article II, Air Pollution Control, Part 55 of Act 451 of 1994, and with the conditions of permit MI-ROP-M4199-2010 renewed by AQD on 2/17/2010.

Due to the circumstances of the shut down, I did not conduct the routine walkthrough the plant and the inspection was limited to the discussion of the compliance activities regulated under the ROP and learned of any updates on their regular operations and/or any production changes.

A request for information from GMDH related to compliance activities (i.e. monitoring/recordkeeping emission records, maintenance records, etc.) regulated under the ROP had been emailed to GMDH staff on 9/18/2019 and 9/19/2019. Most of the requested records were provided in a flash drive which was handed out to me on the day of the inspection. I requested a few additional records during our meeting and those were provided via email the same day in the afternoon hours.

GMDH staff indicated that cessation of production is planned for January 2020, with no specific date. The future plans with respect to the facility are uncertain.

After the discussions of the records, I informed GMDH staff that a final compliance determination will be provided after the information collected is analyzed and a final inspection report is written. I signed out of the plant and left the property at about 11:15 AM

Compliance Status

The General Motors Corporation's Detroit Hamtramck Assembly Center was issued renewal MI-ROP-M4199-2010 (ROP) on 2/17/2010 with expiration date on 2/17/2015; the initial ROP was issued 12/4/2003. GMDH timely submitted an ROP renewal application to AQD Detroit Office (AQD) on June 27, 2014 (via email). A hard-copy of the ROP renewal application was received by AQD on June 30, 2014. An application shield letter was issued by AQD to GMDH on July 2, 2014 to acknowledge that the renewal application was administrative complete and that the existing ROP shall not expire until the renewal permit is issued or denied. Two permits to install (PTI) have been issued to the facility since the 2010 ROP renewal; PTI 196-14 and PTI 91-15. PTI 196-14, issued on April 2, 2015, proposed the modification of the topcoat operations at GMDH. The proposed project involved a variety of activities, but the main activity was the installation of new natural gas-burning equipment as part of the topcoat operations. Fourteen "air supply houses" were going to be installed, and seven regenerative thermal oxidizers (RTOs) would replace the existing oven incinerators. The project was going to be implemented in phases and the RTOs would not be installed at once. PTI 91-15, issued on July 14, 2015, was for the elimination of coal capabilities at the powerhouse and permanently shut down boilers 2,3 and 4 along with their associated coal/ash handling equipment. A technical review of the ROP application was conducted by AQD staff in early 2017 and a working draft was developed on 2/16/2017. The draft considered the incorporation of the two cited permits, PTI 196-14 and PTI 91-15. After the initial ROP review there were numerous discussions with GMDH in 2017 and 2018. Various project proposals and permitting options were brought to the table by GMDH. The last permit to install application, identified as No.69-18 and received by AQD on 4/27/2018, proposed the construction of a new paint shop and the retooling of the general assembly operations to accommodate new vehicles. The application was voided per an email request received by AQD on 8/22/2018, from Mr. Apurva Pujara (GM-Staff Environmental Engineer), to withdraw the application. Work on the ROP renewal process has been put on-hold awaiting more clarity in the future operations at GMDH.

In general, unless otherwise stated, this inspection report covers the discussions conducted during the inspection of 9/24/2019 and the compliance activities that have occurred during a 12-month period from August 2018 through July 2019.

MI-ROP-M4199-2010, General Conditions

9, 10 – Compliance – Collected air contaminants shall be removed to maintain controls at required collection efficiency; air cleaning devices installed and operated in a satisfactory manner – I couldn't evaluate if controls were installed and operating as directed by the ROP because the plant was not operating during the 9/24/2019 inspection.

11 – Compliance – Visible emissions limited to 20% over a six-minute average, with the exception of one 27% six-minute period per hour, unless otherwise specified in the ROP or in a federal new source performance standard. This limit applies to point source (non-fugitive) emission units at the plant – Since the plant was not in operation during the 9/24/2019 inspection, I couldn't make observations to evaluate visible emissions and assess opacity.

12 – Compliance – Nuisance emissions prohibited – No citizen complaints have been received by the AQD's Detroit Office for GMDH in the period since the last inspection of 9/19/2017.

19 through 23, 25 (and under individual EU/FG tables at SCs VII.1 through 3) – Compliance – Semiannual deviation reports, Rule 912 reports, compliance certifications and report certifications – Semiannual deviation reports and annual certifications for year 2018, and for the first semester of year 2019 were timely submitted and reviewed by AQD. Please see AQD review comments on the FCE FY 2019 under ROP SEMI 1 CERT and ROP SEMI 2 CERT compliance activities.

24 – Compliance – Submissions to the emissions inventory. The 2018 MAERS report was submitted online by GMDH on 3/14/2019 and the ROP certification was received by AQD on 3/15/2019. Please see report M419948934 for audit comments.

MI-ROP-M4199-2010, SOURCE-WIDE

III.1 and 2, VI.1 through 3 – Compliance – Production limited to 78.5 jobs per hour averaged over the hours of operation for a calendar month and 337,500 jobs per calendar year. Daily and monthly records of the hours of operation and jobs produced for the assembly line shall be maintained. GMDH tracks the jobs per calendar year as well as the hours of operation in a daily, monthly and yearly basis. The total jobs per hour is averaged over the hours of operation for a calendar month.

Two sets of records were collected during the inspection of 9/24/2019. One set shows the records for calendar year 2018, from January 2018 to December 2018. Another report shows records for the period from January 2019 to July 2019.

According to the records, the highest number of jobs per hour reported for each period was below the 78.5 jobs per hour permit production limit:

For year 2018: 30.98 jobs per hour reported on May 2018.

From January 2019 to July 2019: 27.8 jobs per hour, reported on January 2019

The total number of jobs for calendar year 2018 was 58,844, which is also below the 337,500 permit limit. Copies of the records provided by GMDH are in Appendix A.

MI-ROP-M4199-2010, EUPRETREATMENT

VI.1 – Compliance – Maintain chemical data for materials used in the pretreatment process – SDSs for the pretreatment chemicals were provided on 12/1/2017 as part of a follow-up item from the inspection conducted in 2017. SDS were not requested during the inspection of 9/24/2019 but GMDH staff indicated that there have been no major changes in the materials used in the pretreatment process and the information on AQD files should still be current.

VIII.1 through 9 – Compliance – Each of nine stacks to vent unobstructed vertically at a height not less than 53 feet above ground and with no minimum diameter – With the exception cited below, it is believed that the stacks have not been modified since their installation and are judged to be compliance with the cited requirements, though measurements were not performed.

According to a previous inspection report dated 9/25/2013, windy conditions damaged the stack identified as

SV006. A section of the stack broke away, leaving it 48 feet high until it was restored to a height of 65 feet on 4/6/2013.

MI-ROP-M4199-2010, EUELPOSYSTEM

I.1 through 4, VI.1 through 3 – Compliance - Monthly emissions and operations data are reported for the electrocoat in the semiannual VOC reports submitted by GMDH. The reported emission cited on the table below are the highest reported values for the evaluated period, from August 2018 through July 2019. The information was obtained from the semiannual reports received by AQD for the cited periods (NSPS MM: 7/1/2018 to 12/31/2018 - postmarked 1/29/2019; 1/1/2019 to 6/30/2019 - postmarked 7/16/2019). Records are attached in Appendix B.

The emission limits specified under SC I.1 to SC I.4 and the reported emission are summarized below.

Pollutant	Limit	Time Period/ Operating Scenario	Reported Emissions (*)
1. VOC	76.8 pph	Averaged over the operating hours in a calendar month (LAER)	16.41 – Nov 2018 (App. B.1) 10.46 – May 2019 (App. B.2)
2. VOC	0.16 kilograms per liter of applied coating solids	Calendar month volume weighted average (NSPS)	0.10 – Aug 2018 (App.B.1) 0.08 – March 2019 (App. B.2)
3. VOC	1.2 pounds per gallon coating, minus water, as applied	Calendar month volume weighted average (Rule 610)	0.69 – Aug 2018 (App B.1) 0.59 – May 2019 (App B.2)
4. VOC	172.8 tpy	As determined at the end of each calendar year (LAER)	15.69 - end of Dec. 2018 (App. B.1)

(*) same units cited for limits

Each semiannual VOC report contains material usage and production information. As it has been observed in previous inspection reports, GMDH reports ELPO emissions data without applying a credit for VOCs abated by the RTO that controls emissions from the ELPO oven exhaust; the VOC emissions data for the ELPO emissions unit is therefore conservative.

V.1 – Compliance – Currently, the VOC content for water-borne and non-water-borne primers are determined by the coating manufacturer, using EPA Reference Method 24. Accordingly, the VOC contents are listed in the primers SDS, and used for emissions calculations. However, GMDH expressed its preference to determine the VOC contents for the said primers from formulation data. Per information cited in the previous inspection report (year 2015), it appears as if GMDH submitted a request to the AQD to use formulation data.

VIII.1 through 14 – Compliance – Each of fourteen stacks to vent unobstructed vertically at a height not less than 53 feet above ground and with no minimum diameter –The oven exhaust from the electrocoat ovens have been redirected to an RTO which vents unobstructed vertically through a stack at a height equivalent to the listed oven stacks.

IX.1 – Compliance – Electrocoat must meet the requirements of NSPS MM – SC I.2 is based on the NSPS and semiannual reports have been received to demonstrate compliance with the emission limit.

A more detailed compliance analysis of this special conditions is included later in this report under “NSPS MM for Automobile and Light-Duty Truck Coating Operations”.

MI-ROP-M4199-2010, EUPRIMERSURFACER

Special Conditions SC I.1 to SC I.8 are evaluated below. Reporting period 8/2018 to 7/2019

Pollutant	Limit	Time Period/ Operating Scenario	Reported Emission Rate
1. PM	2.42 pph	Averaged over the operating hours in a calendar month.	0.52 pph - Highest reported in Dec 2018 (App. C.1)
2. PM	5.45 tpy	As determined at the end of each calendar year	0.40 tpy - 12-month rolling total (App. C.1)
3. VOC	109 pph	Averaged over the operating hours in a calendar month (LAER)	14.47 pph - Highest reported in Dec 2018 (App. C.2)
4. VOC	1.40 kilograms per liter of applied coating solids	Calendar month volume weighted average (NSPS)	0.74 Kgs /LSA - Highest reported on 9 &10/2018 – see report M419950484 in App. C.5
5. VOC	14.9 pounds per gallon of applied coating solids	Calendar day volume weighted average as determined by the procedure specified in R 336.1610 (6)(b)	4.17 lbs/GSA - Highest controlled reported six days in Sept 2018 – see report M419950484 in App. C.5
6. VOC	245 tpy	As determined on a 12-month rolling total at the end of each calendar month (LAER)	11.47 tpy – end of 7/2019 (App. C.2)
7. VOC	12.6 pph	Averaged over the operating hours in a calendar month	N/A - see explanation below under I.7 and 8, VI.13 and 14
8. VOC	28.5 tpy	As determined on a 12-month rolling total at the end of each calendar month	N/A - see explanation below under I.7 and 8, VI.13 and 14

I.1 and 2, VI.11 and 12 – Compliance – PM emission rates in pph and tpy are limited to the values showed on the table above for the operating scenarios. Record to be maintained.

PM records for the period 8/2018 through 7/2019 were provided on the day of the inspection on 9/24/2019. During this period, the maximum monthly emission rate and the total PM emissions for the 12-month period were below the permit limits. Although the annual emission limit is only to be applied at the end of each calendar year, the 12-month total indicates the annual calendar year PM emissions are likely far below the annual PM emission limit.

I.3 through 6, VI.1.a through f, VI.2.a and b – Compliance – VOC emissions are limited to the values showed on the table above for the operating scenario. Records to be maintained.

VOC emission records for the period 8/2018 through 7/2019 were provided by GMDH as part of the inspection. Based on the data, during the evaluated period the maximum monthly VOC emission rate in pounds per hour in a calendar month and the 12-month rolling total at the of end of July 2019 were below the (LAER) ROP limits. See summary table above and records in Appendix C.2.

Monthly coating usage, coating composition, vehicle data, and VOC emissions are reported for the primer surfacer in the semiannual VOC reports submitted by GMDH. The semiannual reports covering the period 8/2018 through 7/2019 were evaluated. During this period AQD received two NSPS MM and two VOC Protocol reports on the following dates: 1/29/2019 and 7/16/2019. Please see report M419950484.

I.7 and 8, VI.13 and 14 – Not Applicable –The anti-chip application was last utilized in the 1990s and is not currently in operation.

III.1, VI.9 – Compliance – Primer surfacer booths shall not be operated unless the downdraft waterwash system is installed and operating properly; daily visual inspections – Since the plant was not in operation the waterwash system at the primer surfacer booth couldn't be inspected during the 9/24/2019 inspection. Waterwash inspection logs for the primer surfacer booth for the month of June 2019 were provided on the day of the inspection. Records show that visual inspections are conducted daily and no issues were noted on the inspection logs. See App. D.1

III.2, IV.1, VI.3 through 8, 15 and 16 – Compliance – Primer surfacer booths shall not be operated unless the associated oven incinerators are installed and operating properly, including maintaining either a minimum 1300° F oven temperature or a 1300°F average over three hours in each incinerator, and maintaining a minimum retention time of 0.5 seconds in each incinerator; temperature measuring device installed, temperature recorded at least once every 15 minutes, and device accurate to either 0.75% of temperature or within 2.5°C; monthly

summary of thermal oxidizer data and operational status of oxidizers; calibration of temperature devices kept; inspections of oxidizers (annual) and heat exchangers (18 months) and records kept of annual/maintenance inspections; records kept of bypass events.

Since the plant was shut down and the north and south prime ovens were not in operation, the oxidizers temperatures could not be monitored during the inspection of 9/24/2019. Examples of daily prime oven oxidizer temperature records for 6/20/2019 and a monthly summary of the oxidizer's operational status for year 2019 were requested during the inspection. The records provided by GMDH are in Appendix E.1.

The south oven did not operate on 6/20/2019. The north prime oven oxidizer temperature records are given in 10-minute intervals and demonstrate the 1300°F minimum was met during production hours. The 2019 monthly incinerator report records from January to August shows that the south prime oven only operated in January and February and a few days on March. The north prime oven has been properly operating during the reported period except for one deviation reported on 2/1/2019. The temperature fell below 1300 F and the deviation lasted for 14 minutes. No emission exceedances occurred during that time. Annual inspections of the incinerators associated with both prime ovens were conducted by GMDH on 12/17/2018 with no issues noted on the inspection sheets. Calibrations of the probes were last performed on 1/15/2019 and both were found to measure within at least 4°F (which is within the acceptable tolerance and represents about 0.3% of 1300°F). In the semiannual deviation report for period 7/1/2018 to 12/31/2018 GMDH did not report any deviations for the prime ovens. A multiple layer system was created to ensure visual inspections are conducted every 18-month. Inspections were conducted on the primer incinerators and heat exchangers in the month of October 2018. Visual inspections occurred on October 9-10. Thermal imagery of the burners and incinerator shells for the two prime ovens was conducted on October 18-19. The results were acceptable as noted on the copy of the "Prime and Topcoat Oven Incinerator - 18-Month Inspection Report" dated 11/14/2018, submitted to GMDH from a contractor company and handed out to AQD on the day of the inspection (see App. E.4). GMDH indicated that bypass lines have not been used during the evaluated period. Per previous inspection reports, this has been the case since 10/1/2011.

Incinerators are designed to achieve the 0.5 second retention time; please see 9/26/2007 submittal where the residence times are calculated at 0.94 seconds and 0.88 seconds for the north prime and south prime, respectively. AQD did not request residence times calculations during the inspection of 9/24/2019.

V.1 through 3, VI.2.c through e, VI.10 – Compliance – Tests for transfer efficiency, oven loading rates, and oxidizer destruction efficiency within 180 days of permit issuance if not conducted in the last five years; records of tests maintained; description of paint system maintained with a record of the changes made and annual reviews required to determine if the performance tests remain representative of current operations.

On the day of the inspection AQD requested records to verify the most recent performance tests results on the prime lines (Solids Transfer efficiency-TE, Oxidizer Destruction Efficiency-DE and Oven Solvent Loading test - OSL). A copy of the annual review report is attached in App. F.

The most recent TE test on the prime lines was conducted on 10/7/2016. The last DE test was conducted on 4/15/2015 and the last OSL test was in 9/28/2015.

The annual review, pursuant to the EPA protocol for the VOC monthly emission calculations was conducted on 6/20/2019. The results demonstrated that the TE, DE and OSL has remained the same since the most recent testing. Therefore, the current values used in the monthly emission calculations remain valid.

V.4 – Compliance – VOC content to be determined according to EPA protocol – The VOC content of the coatings is determined by the coating manufacturers and it is reported on the SDS. The information is included in the semiannual VOC reports submitted to AQD.

VII.4, IX.2 and 3 – Compliance – CAM compliance; semiannual reporting of exceedances and excursions – 40 CFR 64 requirements are covered by the monitoring conditions in the emission unit. CAM semiannual reports for Sections 1 and 2 were received and reviewed by AQD. The semiannual deviation/CAM reports for period 7/1/2018 through 12/31/2018 were received/postmarked by AQD on 3/15/2019. The deviation/CAM reports for the reporting period 1/1/2019 through 6/30/2019 were received by AQD on 7/18/2019. For the AQD review comments please refer to MACES ROP Semi 1 and Semi 2 Cert in the FCE FY 2019

For the 12-month evaluated period from July 1, 2018 to June 30, 2019 GMDH reported a total of nine (9) deviations associated with the assembly plant operations (Section 1). Only one deviation was related to depressed temperatures (below 1300 F) within the thermal oxidizer associated with the prime ovens. However, the short-term oven malfunctions, with a duration of 14 minutes did not result in VOC emission exceedances and therefore, had no impact on the compliance status of the source in relation to the emission limits. There were no periods of monitor downtime reported.

Each of the events at the oven incinerators does not represent a violation of 40 CFR 64 because each excursion was halted and compliant conditions restored in a timely fashion.

Currently, GMDH achieves compliance with each VOC mass emissions limitation and each performance based VOC content limitation without the need to apply reductions provided by the oven incinerators. This is demonstrated through a review of the VOC data submitted semiannually by GMDH for the paint shop operations (i.e. the electrocoat, the primer surfacer, and the topcoat coating lines).

VIII.1 through 13 – Compliance – Primer surfacer/topcoat booth stack to vent unobstructed vertically at a height not less than 147 feet above ground and with no minimum diameter; each of four oven stacks (two primary stacks and two bypass stacks) and eight wet sand oven stacks to vent unobstructed vertically at a height not less than 53 feet above ground and with no minimum diameter – These stacks were not observed during the inspection of 9/24/2017 but there have been no changes in their dimensions since the last inspection. It is noted that the wet sand operations have not been used for a number of years. According to GMDH during an earlier inspection, “wet sand” refers to manual sanding, conducted with water, to remove defects in the vehicle body and the ovens installed to dry the vehicles.

IX.1 – Compliance – Primer surfacer must meet the requirements of NSPS MM – Please see section below on NSPS MM. SC I.4 is based on the NSPS and semiannual reports have been received to demonstrate compliance with the emission limit.

MI-ROP-M4199-2010, EUTOPCOATSYSTEM

The AQD evaluation of compliance with the emission limits for EUTOPCOATSYSTEM cited under the ROP special conditions SC. I. 1 to I.6 is summarized in the last column of the table below. The analysis is based on the review of the emissions records provided by GM for period August 2018 to July 2019. Record are in Appendix C.

Pollutant	Limit	Time Period/ Operating Scenario	Reported Emission Rate
1. PM	11.3 pph	Averaged over the operating hours in a calendar month,	1.39 pph - Highest reported in Nov 2018 (See App. C.3)
2. PM	26.6 tpy	As determined at the end of each calendar year	1.18 tpy - 12 month rolling reported for the end of July 2019 (See App. C.3)
3. VOC	367 pph	Averaged over the operating hours in a calendar month (LAER)	73.55 pph - Highest reported in Nov 2018 (See App. C.4)
4. VOC	1.47 kilograms per liter of applied coating solids	Calendar month volume weighted average (NSPS)	0.86 KGS /LSA - Highest reported in Oct 2018 and in Jun 2019 (see report M419950484 in App. C.5)
5. VOC	14.9 pounds per gallon of applied coating solids	Calendar day volume weighted average as determined by the procedure specified in R 336.1610 (6)(b)	6.29 lbs/GSA - Highest controlled (10/12/2018) (see report M419950484 in App. C.5)
6. VOC	796 tpy	As determined on a 12-month rolling total at the end of each calendar month (LAER)	67.06 tpy – end of July 2019 (See App. C.4)

I.1 and 2, VI.11 and 12 – Compliance – PM emission rates in pph and in tpy are limited to the values showed in the table above for the operating scenarios. Record to be maintained. –

PM records for the period 8/2018 through 7/2019 were provided on the day of the inspection on 9/24/2019. During this period, the maximum monthly emission rate and the total PM emissions for the 12-month period were below the permit limits. Although the annual emission limit is only to be applied at the end of each calendar year, the 12-month total indicates the annual calendar year PM emissions are likely far below the annual PM emission limit.

I.3 through 6, VI.1.a through f, VI.2.a and b – Compliance – VOC emissions are limited to the values showed on the table above for the operating scenario. Records to be maintained.

VOC emission records for the period 8/2018 through 7/2019 were provided by GMDH as part of the inspection.

Based on this data, during the evaluated period the maximum monthly VOC emission rate in pounds per hour in a calendar month and the 12-month rolling total at the of end of July 2019 were below the (LAER) ROP limits. See summary table above and records in Appendix C.4.

Monthly coating usage, coating composition, vehicle data, and VOC emissions are reported for the topcoat system in the semiannual VOC reports submitted by GMDH. The semiannual reports covering the period 7/1/2018 through 6/30/2019 were evaluated. During this period AQD received two NSPS MM and two VOC Protocol reports on the following dates: 1/29/2019 and 7/16/2019. GMDH does not account for oven abatement in the NSPS emissions calculations and reports a maximum of 0.86 kilograms per liter of applied coating solids (see dates on table above). Oven abatement is utilized for the Auto Protocol calculations and GMDH reports a maximum of 6.29 pounds per gallon of applied coating solids (10/12/2018); without oven abatement, the maximum reported emissions remain compliant at 9.35 pounds per gallon of coating of applied coating solids (1/24/2019). Please see report M419950484.

III.1, VI.9 – Compliance – Topcoat spray booths shall not be operated unless the downdraft waterwash system is installed and operating properly; daily visual inspections – Waterwash inspection logs for the topcoat booth for the month of June 2019 were collected on the day of the inspection. Records show that visual inspections are conducted daily and no issues were noted on the inspection logs. See App. D.2

III.2, IV.1, VI.3 through 8, 13 and 14 – In Compliance – Topcoat booths shall not be operated unless the associated oven incinerators are installed and operating properly, including maintaining either a minimum 1300° F oven temperature or a 1300°F average over three hours in each incinerator, and maintaining a minimum retention time of 0.5 seconds in each incinerator; temperature measuring device installed, temperature recorded at least once every 15 minutes, and device accurate to either 0.75% of temperature or within 2.5°C; monthly summary of thermal oxidizer data and operational status of oxidizers; calibration of temperature devices kept; inspections of oxidizers (annual) and heat exchangers (18 months) and records kept of annual/maintenance inspections; records kept of bypass events.

Examples of daily topcoat ovens oxidizer temperature records for 6/20/2019 and a monthly summary of the operational status of the topcoat ovens oxidizers for year 2019 were requested during the inspection of 9/24/2019. The records are attached in Appendix E.1. Topcoats #1, #3, #4 and #5 were in operation on 6/20/2019. Topcoat #2, #6 and #7 were down. Topcoat #8 has not been in use for several years. No deviations were reported for any of the mod-oven oxidizer on 6/20/2019. Topcoat oven oxidizer temperature records are given in 10-minute intervals and demonstrate the 1300°F minimum was met during production hours.

Annual inspections (through sight glass) of the incinerators associated with the topcoat ovens were conducted by GMDH on 12/17/2018. Topcoat oven #2, was down at that and was not inspected until 1/15/2019. No issues were found for any of the incinerators serving the topcoat ovens. See Appendix E.3.

Calibrations of the temperature monitoring devices were last performed on 1/15/2019 and all were found to measure within at least 2°F (which represents about 0.15% of 1300°F).

GMDH hired an external contractor to complete the 18-month inspection of the heat exchangers at all (8) thermal oxidizers (incinerators) serving the eight (8) topcoat ovens. The incinerator heat exchanger inspections were conducted during the month of October 2018; starting on October 2, 2018 and finalizing on October 24, 2018. The scope of the work included visual and internal inspections of the oven incinerator and heat exchanger bundle tube sheet, internal inspection of the combustion chamber, and thermal imagery of the burner and incinerator shells. The results of the inspections were acceptable as noted on the copy of the report "Prime and Topcoat Oven Incinerator - 18-Month Inspection Report" dated 11/14/2018, submitted to GMDH from the contractor company and provided to AQD on the day of the inspection of 9/24/2019.

Incinerators are designed to achieve the 0.5 second retention time; please see 9/26/2007 submittal where the residence times, in seconds, are calculated at 1.05, 0.98, 1.07, 1.18, 1.11, 0.82, 0.86, and 0.84 for oven incinerators #1 through #8, respectively. AQD did not request residence times calculations during the inspection of 9/19/2017. GMDH reported that bypass lines have not been used for several years (beginning 10/1/2011).

III.3, V.5 – Compliance – Purge capture system for solvent-borne materials installed and operating to provide 85% VOC capture; test for purge capture within 180 days of permit issuance if not conducted in the last five years – According to records in file purge capture system tests were last conducted on 8/3/2010 through 8/4/2010. The results showed that each robot tested measured 100% recovery of the purged solvent-borne material, in compliance with the 85% minimum required at Condition III.3.

V.1 through 3, VI.2.c through e, VI.10 – Compliance – Tests for transfer efficiency, oven loading rates, and oxidizer destruction efficiency within 180 days of permit issuance if not conducted in the last five years; records of tests maintained; description of paint system maintained with a record of changes made and annual reviews

required to determine if the performance tests remain representative of current operations.

On the day of the inspection on 9/24/2019 AQD requested records to verify the most recent performance tests results on the Topcoat System (Solids Transfer efficiency-TE, Oxidizer Destruction Efficiency-DE and Oven Solvent Loading test - OSL). Records were provided by GMDH and are attached in App. F.

The last TE test on the topcoat lines was conducted on October 7, 2016. In the submittal of the records GM stated that the values used in the protocol calculations are derived from the results of the test conducted in October 2016. The last DE test was conducted on 12/13/ 2013 and the last OSL test was on 9/28/2015. The annual review conducted by GM DH on 6/20/2019 indicated that the current purge capture, TE, DE, and OSL values used in VOC monthly emission calculations remain valid.

V.4 – Compliance – VOC content to be determined according to EPA protocol – VOC content of the coatings are given in the semiannual VOC reports and in the SDSs. The most recent SDSs for the operations at the plant (i.e. for: pretreatment, primer, topcoat, misc. solvents, seals and adhesives, final repair, and purge) were collected as part of the 2017 routine inspection. SDSs were received by AQD on 12/1/2017.

VII.4, IX.1 and 2 – In Compliance – CAM compliance; semiannual reporting of exceedances and excursions

40 CFR 64 requirements are covered by the monitoring conditions in the emission unit. CAM semiannual reports for Sections 1 and 2 were received by AQD. The Semiannual Deviation/CAM reports covering the period 7/1/2018 through 12/31/2018 (postmarked on 3/15/2019) was reviewed - see review comments in MACES activity report "FCE FY 2019 Summary Report". The review details for the Semiannual Deviation/CAM reports covering period 1/1/2019 through 6/30/2019, postmarked 7/18/2019, are also included in FCE FY 2019 Summary Report.

For the 12-month evaluated period from July 1, 2018 to June 30, 2019 GMDH reported a total of 9 deviations associated with the assembly plant operations (Section 1). Eight (8) of the deviations were related to depressed temperatures (below 1300 F) within the thermal oxidizer associated with the topcoat ovens. However, none of the short-term oven malfunctions, with durations ranging from 5 to 14 minutes caused VOC emission exceedances and therefore, had no impact on the compliance status of the source in relation to the emission limits. There were no periods of monitor downtime reported.

Each of the events at the oven incinerators does not represent a violation of 40 CFR 64 because each excursion was halted and compliant conditions restored in a timely fashion.

Currently, GMDH achieves compliance with each VOC mass emissions limitation and each performance based VOC content limitation without the need to apply reductions provided by the oven incinerators. This is demonstrated through a review of the VOC data submitted semiannually by GMDH for the paint shop operations (i.e. the electrocoat, the primer surfacer, and the topcoat coating lines).

VIII.1 through 17 – Compliance – Primer surfacer/topcoat booth stack to vent unobstructed vertically at a height not less than 147 feet above ground and with no minimum diameter; each of sixteen oven stacks (eight primary stacks and eight bypass stacks) to vent unobstructed vertically at a height not less than 53 feet above ground and with no minimum diameter – The stacks were not observed during the inspection of 9/24/2019 but there have been no changes in their dimensions since the last inspection.

NSPS MM for Automobile and Light-Duty Truck Coating Operations

The federal New Source Performance Standards (NSPS) at 40 CFR 60, Subparts A and MM regulates volatile organic compound emissions from automobile and light-duty truck surface coating operations installed after 10/5/1979. The electrocoat, primer surfacer, and topcoat lines at GMDH were all installed in the early 1980s and are subject to this subpart.

60.392(a)(1)(i), (b), (c) – Compliance – The electrodeposition prime coat (electrocoat) must meet a VOC emission rate equal to or less than 0.17 kilogram per liter of applied coating solids; the guidecoat (primer surfacer) must meet a VOC emission rate equal to or less than 1.40 kilogram per liter (equivalent to 11.7 pounds per gallon) of applied coating solids; the topcoat must meet a VOC emission rate equal to or less than 1.47 kilogram per liter (equivalent to 12.3 pounds per gallon) of applied coating solids.

60.303(b), 60.395(a)(1), 60.395(b) – Compliance – An initial performance test must be conducted by calculating the monthly volume weighted average mass of VOC emitted per volume of applied coating solids (60.303(b)) and this test shall be repeated monthly; these results shall be reported (60.395(a)(1)) initially; any exceedances

during subsequent tests shall be reported (60.395(b)). Though incinerators control the oven exhaust from the electrocoat, primer surfacer, and topcoat coating operations, GMDH does not apply any credit for VOC reduction within these affected facilities when calculating for compliance with the NSPS MM standards, therefore, the performance of the incinerators does not fall under the regulatory scope of the NSPS at this time.

The emission limits have been incorporated into the ROP at SC I.2 of EUELPOSYSTEM, SC I.4 of EUPRIMERSURFACER, and SC I.4 of EUTOPCOATSYSTEM. The monthly calculations and records necessary to determine continued compliance with the emissions limits are also incorporated into the ROP. Semiannual NSPS MM reports for the period 7/1/2018 to 12/31/2018 were received on 1/29/2019, and for the period 1/1/2019 to 6/30/2019 were received on 7/16/2019. Please see review comments in report M419950484.

MI-ROP-M4199-2010, EUDEADNER

I.1 through 5, III.1, V.1, VI.1 through 5, VII.1 through 3, VIII.1 and 2 – Compliance – The deadener booth last operated in 5/2011 and is no longer in use. According to GMDH, during the inspection in 2011, the design of the Volt rendered the deadener booth obsolete. In addition, in recent years non-VOC materials were used as the deadener and no VOCs have been reported emitted from this emission unit. While unused this emission unit does not release emissions to the ambient air and is therefore considered to be in compliance with all applicable requirements.

MI-ROP-M4199-2010, EUFINALREPAIR

I.1 through 3, VI.1 through 4 – Compliance – VOC emissions limited to: 3.1 pounds per hour averaged over the operating hours in a calendar month (LAER); 4.8 pounds per gallon of coating, minus water, as applied, on a calendar day volume weighted average (Rule 610); 6.8 tons per 12-month rolling time period (LAER). Records to be maintained; monthly records permitted unless an individual coating exceeds the 4.8 pounds per gallon of coating, minus water, as applied, and then daily records of the coating are required.

Final repair records for the period 8/2018 through 7/2019 were provided during the inspection and are included in Appendix G. During that period, a total of 171.4 gallons of coating were used with 593.7 pounds, or 0.30 tons, of VOCs emitted over 2,626 production hours. The highest monthly emission rate per hour was reported on 12/2018, when 43.4 pounds of VOC were emitted over 120 hours for a monthly average of 0.36 pounds per hour. The highest average rate of VOC emissions in lbs VOC per gal was 3.70 lbs VOC/gal, reported on May and June, 2019.

SC VI.3 of EUFINALREPAIR requires the facility to monitor and record the VOC content for all coatings utilized in the final repair operations to ensure compliance with the 4.8 pounds VOC per gallon minus water, on a daily average, performance measure stipulated within Rule 610 and SC I.2. If all coatings utilized in the month meet the standard individually then only a monthly average need be reported, as any combination of coatings will calculate to a daily average less than the standard. If not, then daily averaging must be recorded on those days when coatings with an individual VOC content in excess of 4.8 pounds VOC per gallon minus water are utilized, in order to ensure that the combination of coatings used in the day average to less than the standard. GMDH indicated that monthly records are maintained for all coatings, and daily records are maintained on those days when the higher VOC content coatings are used. Records for the month of July 2019 were provided as part of the 9/24/2019 inspection -See App. G.

III.1, VI.5 – Compliance – Each final repair booth not to be operated unless the associated dry filters are installed and operating properly – On 9/24/2019, GMDH submitted records of booth inspections from 1/2019 to 8/2019, which occur every other week. See App. G. A note from GM included with the records provided for the repair booth, indicated that the filters are changed based on visual inspection. Filters in Booth 7 were changed six weeks ago and for the rest of the booths the filters were changed approximately three months ago (based on the day of this inspection 9/24/2019).

V.1 – Compliance – VOC content determined by EPA Method 24 with formulation data as an alternative; records maintained – The VOC content of the final repair coatings are included in the records submitted by GMDH - in App. G. The information is obtained from the SDS for each coating. The SDSs provide VOC content information in four ways: formula VOC with water; formula VOC without water; EPA Method 24 with water; EPA Method 24 without water. GMDH uses the EPA Method 24 data without water for the final repair daily average.

MI-ROP-M4199-2010, EUSEALERADH

I.1 through 7, VI.1 through 4 – Compliance – VOC emissions limited to: 60.8 pounds per hour averaged over the operating hours in a calendar month (LAER); either 4.8, 4.3, 3.5, or 3.0 pounds per gallon of coating, minus water, as applied, on a calendar day volume weighted average depending on the coating type (Rule 621); 137 tons per 12-month rolling time period (LAER). Records to be maintained.

Sealers and adhesives records for the period 8/2018 through 7/2019 were provided by GMDH on the day of the inspection (See Appendix H). A total of 206,578 gallons of coating were used with 36,760 pounds, or 18.38 tons, of VOCs emitted over 2,134 production hours. The highest monthly emission rate per hour is reported on 11/2018, when 3,885 pounds VOC were emitted over 143 hours for a monthly average of 27.22 pounds per hour. The highest monthly average pounds VOC per gallon was 0.19 pounds per gallon, reported for various months in the analyzed period.

V.1 – Compliance – VOC content determined by EPA Method 24 with formulation data as an alternative; records maintained – The VOC content of the sealers and adhesives is included within the records provided by GMDH during the inspections.

MI-ROP-M4199-2010, EUBOOTHCLEAN

I.1, V.1, VI.1 through 3 – Compliance – VOC emissions limited to 350 tons per 12-month rolling time period (LAER). Records to be maintained – Per records provided during the inspection, for period 8/2018 through 7/2019, the 12-month rolling emission total as of July 2019 was 1.36 tons. -See Appendix I.

MI-ROP-M4199-2010, EUPURGE

I.1, V.1, VI.1 through 3 – Compliance – VOC emissions limited to 650 tons per 12-month rolling time period (LAER). Records to be maintained – Purge solvent records for the period 8/2018 through 7/2019 are included in Appendix J. The 12-month rolling total VOC emissions were 197,637.52 pounds, or 98.82 tons.

MI-ROP-M4199-2010, EUMISCSOLV

I.1, V.1, VI.1 through 3 – Compliance – VOC emissions limited to 307 tons per 12-month rolling time period (LAER). Records to be maintained – Miscellaneous solvent emissions records for the period 8/2018 through 7/2019 are included in Appendix K. The records show the VOC content in lbs per gal per each individual solvent, as well as the monthly quantities of coating and material used. The 12-month rolling emission total as of July 2019 was 7.67 tons or 15,337.34 pounds.

MI-ROP-M4199-2010, EU-Acoustical/Structural Foam

I.1 and 2, III.1, V.1, VI.1 and 2, VII.1 through 3, VIII.1 – Compliance – The acoustical/structural foam application has not been observed in operation since the 2005 inspection and according to the 9/27/2011 and 9/25/2013 submittals has not been operated since 8/2006. While unused this emission unit does not release emissions to the ambient air and is therefore considered to be in compliance with all applicable requirements.

MI-ROP-M4199-2010, FG-MACT

The federal National Emissions Standards for Hazardous Air Pollutants (NESHAP) at 40 CFR 63, Subparts A and IIII (MACT IIII) regulates hazardous air pollutants (HAP) emissions from the surface coating of automobiles and light-duty trucks. GMDH is a major source of HAPs. At 63.3082(g), GMDH is an existing affected source under MACT IIII for auto and light truck surface coating with an initial compliance date of 4/26/2007 (63.3083 (b)). The Notice of Compliance Status (NOCS) was received on 6/27/2007. Semiannual compliance reports required at 63.3120(a) are to cover the periods 1/1 through 6/30 and 7/1 through 12/31. Reports are due (postmarked) by 7/31 and 1/31, respectively. However, according to 63.3120 (a)(1) (iv), since GMDH is a Title V – ROP source, the reports may be submitted following the schedule established in the ROP for the semiannual reports (i.e. postmarked by 9/15 for 1/1 through 6/30; and 3/15 for 7/1 through 12/31)

In the NOCS GMDH stated that the compliance options at 63.3091(b), 63.3092, 63.3090(c), and 63.3090(d) have been chosen. In other words, the ELPO or electrocoat is separated from the other materials and would be evaluated on its own. The control devices installed at the electrocoat, primer surfacer, and topcoat operations are not employed to achieve compliance with the HAP emissions limitations, therefore, the testing and monitoring of control device performance is not required for purposes of this regulation.

I.2, I.5 and I.5a – Compliance – Organic HAP emissions from combined primer surfacer, topcoat, final repair, glass bonding primer, and glass bonding adhesive operations plus all coatings and thinners must meet 0.132 kilograms per liter (1.10 pounds per gallon) of coating solids deposited on a calendar month basis; under 63.3092(a) each material in the electrocoat must contain no more than 1.0 percent by weight of any organic HAP and 0.10 percent by weight of any organic HAP which is an OSHA carcinogen per 29 CFR 1910.1200(d)(4).

AQD received two semiannual MACT reports covering the period 7/1/2018 through 12/31/2018 (postmarked 3/15/2019) and 1/1/2019 to 6/30/2019 (postmarked 7/18/2019). In the semiannual reports GMDH did not report the pounds of HAP generated, the HAP emissions, or the gallons of solids applied. However, GMDH has asserted compliance with 63.3091(a) which is the combined emissions from ELPO, primer-surfacer, topcoat, final repair, glass bonding primer, and glass bonding adhesive operations (adhesive and sealer materials that are not part of the glass bonding system are excluded from the grouping). AQD noticed that this option [(63.3091(a))] is different from what GMDH had chosen in the NOC submittal of 2007. The HAP limit under (63.3091(a) is 0.6 lbs. / gallon of solid applied (GSA).

The MACT HAP report summary for period 7/2018 to 6/2019 was provided during the inspection of 9/24/2019 – See Appendix L. According to the records, the lbs. HAP per GSA for each month was below the limit cited above, varying from 0.03 to 0.08 lbs. HAP/GSA.

Electrocoat SDSs updates were provided during the inspection of 9/24/2019 and they are included in Appendix R. According to the SDSs, it appears as if most of the materials used in Electrocoat operations do not contain HAPs and if they do, the content is not more than 1.0 percent by weight. It looks like there are no materials with organic HAP containing OSHA carcinogen per 29 CFR 1910.1200(d)(4) listed on the SDS for Electrocoat.

I.3 – Compliance – HAP emissions from all sealer and adhesive materials not components of glass bonding systems to no more than 0.010 kilograms HAP per kilogram (pound per pound) sealer/adhesive material on a calendar month basis.

In the semiannual reports GMDH did not specify the emissions of HAP (pounds per pound sealer/adhesive) for each month operated from July 1, 2018 through June 20, 2019; however, they certified compliance with this condition. Information about the HAP content in the coating and the amount of sealers and adhesives used during the evaluated period is provided as part of the MACT Work Practice Plan (WPP) in the excel sheet included with the WPP.

Record for period 7/2018 to 6/2019 were provided during the inspection of 9/24/2019 – See Appendix L. GMDH reports emissions of 0.000 pounds HAP per pound sealer/adhesive for each month operated in the cited period.

I.4 – Compliance – HAP emissions from all deadener materials to no more than 0.010 kilograms HAP per kilogram (pound per pound) deadener material on a calendar month basis – In the semiannual reports, GMDH reports deadener operations were not conducted in this period. From an information submittal of 9/27/2011, GMDH reports the deadener booth was last used in 5/2011. An acoustical/structural foam operation installed in 2004 to improve the crash worthiness of side impacts was discontinued in 8/2006.

III.1 – Compliance – Work practice plan to be developed and implemented – During the inspection of 9/24/2019 GMDH provided a copy of the “Work Plan for the Minimization of organic HAP emissions”, last revised on 6/20/2019, included in App M. The Work Plan, as written, addresses the sub-conditions of III.1 and the MACT as follows:

III.1.a through e – Compliance – HAP containing coatings, thinners, cleaning materials, and waste materials to be stored in closed containers (63.3094(b)(1)); risk of HAP spills minimized (63.3094(b)(2)); HAP materials to be conveyed in closed containers or pipes (63.3094(b)(3)); mixing vessels with HAPs closed except when adding, removing, or mixing in materials (63.3094(b)(4)); HAP emissions minimized during cleaning operations (63.3094(b)(5)) – Addressed at II.A through E of the Work Plan revised on 6/20/2019, see App. M - pages 1 through 3.

III.1.f.i through viii – Compliance – Minimize organic HAP emissions from the cleaning and purging of the following equipment subject to the HAP emissions standards (63.3094(c)(1)(i) through (viii)): vehicle body wipes, coating line purging, coating line flushing, cleaning of spray booths (grates, walls, equipment, and external areas), and additional housekeeping – This is addressed at III.A through H of the 6/20/2019 updated Work Plan, in App M, pages 3 through 10. Prevalent in the MACT standards and referenced in the Work Plan is the use of

"low-HAP or no HAP" solvents and cleaners, however, EPA declines to define this phrase for the purposes of MACT IIII (unlike MACT GGGG, for example, where a "low-HAP solvent option" is defined as a solvent where the volume fraction of each HAP comprises 1% or less by volume of the solvent). As such, MACT IIII provides no standard by which to judge; therefore, AQD accepts GMDH's use of the cleaners specified.

V.1 and 3, VI.1, 2, 4, and 5, VII.4 and 5 – Compliance – Determine HAP content of materials and conduct compliance demonstrations in accordance with 63.3150 through 63.3152 (adhesives, sealers, and deadeners) and 63.3170 through 63.3173 (primer surfacer, topcoat, glass bonding primer, and glass bonding adhesive with separate electrodeposition); records kept and reports submitted.

The Work Practice Plan provided by GMDH during the inspection of 9/24/2019 mentioned in Page 1, Section I. that the "MACT Work Practice Plan Appendix" identifies the HAP containing materials subject to the work plan requirements. The appendix includes calculations and HAP contents. Please refer to the excel spread sheet in App. M

IX.1 – Compliance – Facility to comply with all applicable requirements of MACT IIII – The relevant provisions are included in the flexible group FG-MACT.

MI-ROP-M4199-2010, FGFUELFILL

I.1, VI.1 through 3 – Compliance – VOC emissions limited to 12 tons per 12-month rolling time period (LAER); gasoline usage, gasoline VOC content, and the EPA TANKS program to be used to calculate emission rate; records maintained – In the 2018 MAERS, GMDH reports 225.24 pounds (0.11 tons) VOC emitted from EUFUELFILL and 8,723.28 (4.36 tons) from EUTANKS with a gasoline throughput of 204,760 gallons. The combined total 8948.52 pounds (4.47 tons) is less than the 12 tons per year limit.

The VOC content of the gasoline used by GMDH to fuel the vehicles is not expected to vary significantly from a standard default VOC content utilized for the TANKS program.

IV.1 and 2, IX.1 and 2 – Compliance – Gasoline tanks of greater than 2,000 gallons equipped with a permanent submerged fill pipe and must meet requirements of either Rule 606 (existing) or Rule 703 (new).

Per R 336.1104(h), GMDH meets the definition of a dispensing facility: "a location where gasoline is transferred to a motor vehicle tank from a stationary vessel". According to the 9/25/2013 submittal, each of the three gasoline tanks was installed in 1983 (and therefore "new" tanks) and have capacities of 20,000, 20,000, and 12,000 gallons, respectively. Therefore, under Rule 703(1) through (4) each storage tank shall be equipped with a permanently submerged fill pipe, a vapor balance system, a system to ensure a vapor-tight collection line is connected prior to gasoline loading, and a device to ensure the vapor-tight collection line closes on disconnection.

A schematic of the gasoline tanks is provided in the 11/4/2003 submittal. The schematic illustrates the submerged fill pipe and the vapor balance system. In the letter to the 11/4/2003 submittal, GMDH states "[t]he two connections are made with cam-lock fittings, and the valves are manually opened and closed to maintain vapors during the loading process". No changes to the cited description were reported during the inspection.

VI.4 and 5, IX.3 – Compliance – For each gasoline tank, records to be maintained on the tank's identification, location, capacity, date of installation/modification, material contained, and vapor pressure – This information was collected during the inspection of 9/24/2019 and it is included in Appendix N. Since the NSPS Kb revisions of 7/23/1984, the requirement in SC VI.5 only applies to those tanks with a design capacity of 19,800 gallons and greater. Regardless, these gasoline tanks, installed in 1983, predate the 7/23/1984 applicability date of NSPS Kb (60.110b(a)). The tanks do not qualify for regulation under NSPS K or Ka because their capacities are less than 40,000 gallons (60.110 and 60.110a(a)).

VI.6 – Compliance – Notice to AQD to be given prior to the construction, reconstruction, or modification of any volatile organic liquid storage vessel greater than 19,800 gallons – No notices have been received since ROP issuance; AQD is unaware of any such tank that has been constructed, reconstructed, or modified without notice. All tanks currently in use at the tank farm were installed in 1983 (See Appendix N).

MI-ROP-M4199-2010, FGTANKS

III.1 and 2, IX.1 and 2 – Compliance – Gasoline tanks of greater than 2,000 gallons equipped with a permanent submerged fill pipe – The three gasoline tanks are covered under the FGFUELFILL and meet these same

conditions in that flexible group.

IV.1.a through f – Compliance – Tanks within the flexible group shall meet either subparagraph (b), (c), (d), (e), (g), or (l) within the Rule 284 exemption. Exemption determinations were not asked during the inspection. According to the records provided on 9/24/2019, none of the tanks exceed 20,000 gallons and the vapor pressures listed are less than 1.5 psia. The diesel fuel tank is likely exempt under Rule 284(2)(d) for the storage of nos. 1 through 6 fuel oil. The tanks for the automatic transmission fluid, power steering fluid, and antifreeze are likely exempt under the Rule 284(2)(c).

VI.1 and 2, IX.3 – Compliance – For each tank, records to be maintained on the tank's identification, location, capacity, date of installation/modification, material contained, vapor pressure, and annual emissions – This information is provided in Appendix N and in the annual MAERS report; for 2018 MAERS, GMDH reported 4.36 tons VOC total emitted from EUFUELFILL and EUTANKS. Since the NSPS Kb revisions of 7/23/1984, the requirement in SC VI.2 only applies to those tanks with a design capacity of 19,800 gallons and greater. Regardless, all of the tanks in the tank farm were installed in 1983 and therefore predate the 7/23/1984 applicability date of NSPS Kb (60.110b(a)). The tanks do not qualify for regulation under NSPS K or Ka because their capacities are less than 40,000 gallons (60.110 and 60.110a(a)).

VI.3, IX.4 – Compliance – Notice to AQD to be given prior to the construction, reconstruction, or modification of any volatile organic liquid storage vessel greater than 19,800 gallons; a new emission unit may be installed provided it does not represent a minor or significant modification to the ROP – No notices have been received since ROP issuance; AQD is unaware of any such tank that has been constructed, reconstructed, or modified without notice. All tanks currently in use at the tank farm were installed in 1983 (9/25/2013 submittal).

MACT EEEE for Non-Gasoline Organic Liquid Distribution

The federal National Emissions Standards for Hazardous Air Pollutants (NESHAP) at 40 CFR 63, Subparts A and EEEE (MACT EEEE) regulates hazardous air pollutants (HAP) emissions from the surface coating of automobiles and light-duty trucks. GMDH is a major source of HAPs. On 6/3/2004, the AQD received the Initial Notification from the facility. At that time, the facility believed the Final Rule would be revised to "not apply to end users of organic liquids such as automobile/light duty-truck assembly plants". AQD's records do not contain evidence that a Notification of Compliance Status (NOCS) was received.

Organic liquid storage tanks are regulated by the standard, where "organic liquid" is defined at 40 CFR 63.2406 as liquid mixture containing 5% by weight organic HAP (as listed in the subpart). Gasoline, distillate oils, hazardous waste, and wastewater are excluded from the definition. Therefore, MACT EEEE does not apply to GMDH's three gasoline storage tanks and diesel fuel storage tank. In the 9/27/2011 submittal, GMDH indicates that none of the tanks in the tank farm are subject to the MACT EEEE regulation.

MI-ROP-M4199-2010, FGCOLDCLEANERS

II.1 – Compliance – Less than 5% of any combination of methylene chloride, perchloroethylene, trichloroethylene, 1,1,1-trichloroethane, carbon tetrachloride, and chloroform – MSDSs were not requested for this inspection. Since ROP issuance, none of the cold cleaners at the facility have been found using chlorinated cleaning solvents in excess of 5%.

III.1 and 2, IV.1 through 5, VI.1 through 4 – Compliance – Cold cleaner operational requirements including draining parts, closing cover when not in use, posting operating procedures near the cleaner, and storing waste solvents in closed containers; cold cleaner operational requirements are based on the type of cleaner and the vapor pressure of the solvent; information on each cold cleaner to be maintained on file.

The plant was not in operation and there was not access to the equipment or operations. The cold cleaners were not observed during the 9/24/2019 inspection; however, information on cleaners currently installed at the plant was provided during the inspection, see Appendix O. The list includes the identification and location of the cleaners as well as the solvent used, the vapor pressure, date of installation and Rule exemption. The list appears to have been updated from the previous inspection of 9/19/2017, with cleaner FF35 at the body shop and Paint Mix #4 being deleted and two new listed cleaners (already installed in Sept. 2016) located at the PX Booths #1 and #2. GMDH lists four cold cleaners utilizing a cleaning solution with a vapor pressure equal to or greater than 0.3 psia and less than 0.6 psia; the cleaners appear to have mechanically assisted covers. GMDH lists two cold cleaners utilizing a cleaning solution with a vapor pressure greater than 0.6 psia. These cleaners comply with Rule 707(2) by maintaining the ratio of the freeboard height to the width of the cleaner in excess of

0.7 (SC IV.5.a). There are three cold cleaners located at the Paint Mix, identified as Paint Mix #1 to Paint Mix #3.

All cleaners are listed as PTI exempt under either Rule 281(h) or Rule 285(r)(iv).

IX.1 – Compliance – Additional cold cleaners may be installed without modifying the ROP provided the installation is exempt and does not represent a minor or significant modification to the ROP – According to the information provided during the inspection of 9/24/2019, no new cold cleaners have been installed since the date of the last inspection (which was conducted on 9/19/2017). As of the date of this report, there are a total of fifteen (15) cold cleaners serving the various GMDH operations. See Appendix O.

MI-ROP-M4199-2010, FGRULE287(c)

I.1 through 3, VI.2 – Compliance – Not more than 2000 pounds VOC per month per emission unit, 10 tons per 12-month rolling time period per emission unit, and 30 tons per 12-month rolling time period for all emission units combined; records kept – In the records provided on 9/24/2019 (Appendix P), the facility reports that a maintenance spray booth operates under this flexible group. Use is limited. For period 7/2018 through 6/2019, the highest monthly VOC emission rate was 21.62 pounds/month -approx. 0.01 tons - reported in September 2018. The 12-month rolling total VOC emitted at the end of June 2019 was 0.02 tons.

II.1, VI.1.a – Compliance – Not more than 200 gallons per month, minus water, for each emission unit; records on usage to be maintained – According to the records in Appendix P the highest monthly usage was 10 gallons, reported for September 2018.

III.1, IV.1, VI.1.b – Undetermined – The paint spray booth shall have a particulate control system installed and operating properly; records to be maintained on filter replacements – The maintenance spray booth was not observed during the 9/24/2019 inspection and information concerning the particulate control system was not asked of the facility during this inspection period.

IX.1 – Compliance – Additional Rule 287(c) emission units may be installed without modifying the ROP provided the installation is exempt and does not represent a minor or significant modification to the ROP – The maintenance spray booth was installed prior to the renewal date of the ROP.

MI-ROP-M4199-2010, FGRULE290

During the inspection of 9/24/2019 GMDH reported that there is an emission unit operating exempt from PTI under the provisions of Rule 290. Records were provided and they are included in Appendix Q. The operation exempt under this rule is in the sealers area and it is identified as "Antichip Sealer Application". GMDH indicated that the material used has more than 94% solid content by weight and is similar in properties to the paint shop sealers. In a previous inspection (9/19/2017) GMDH confirmed that this operation is not conducted in the Primer Surfacer or Basecoat booth. The records in Appendix Q show total emissions of Non-Carcinogenic VOC equal to 15.90 pounds per month (uncontrolled).

MI-ROP-M4199-2010 - SECTION 2

EUBOILER1 – PTI 91-15

Steam for the assembly plant operations was formerly provided by four spreader stoker coal-fired boilers; boiler #1 to #4, located at the northern end of the plant at the boiler-house.

In compliance with SC. VII.1 of PTI 91-15, GMDH provided written notification of the removal of the coal-firing capability for boiler #1 and permanent shutdown of boilers #2, #3 and #4 in a letter dated December 11, 2015 (please refer to Appendix R in the AQD inspection report dated 9/19/2017).

During the facility inspection of 9/19/2017 AQD verified the decommissioning required under PTI 91-15 and confirmed the completion of the shut-down activities described in the cited letter. As a result, the following units, EUBOILER2, EUBOILER3, EUBOILER4, EUASHCONVEYOR, EUASHSILO and EUHOPPER, under MI-ROP-M4199-2010 - SECTION 2, are no longer active emission sources. Under PTI 91-15, EUBOILER1 is only capable of operating using natural gas as fuel source. Therefore, compliance evaluation is being reduce to the applicable requirements and special conditions cited in PTI 91-15 for EUBOILER1.

After the permanent shutdown of boilers #2, #3, and #4 in December of 2015; steam is provided to GMDH by a private supplier and Boiler #1 is used in rare occasions to supplement steam to the plant. EUBOILER1 is natural gas-fired boiler with a maximum heat input capacity of 84 MMBtu/hr.

I.1, and 2, VI.3 and VI.4 – In Compliance – NOx emission rates limited to 0.2 lb/MMBtu and demonstrated by testing, testing requirements within 180 days after EUBOILER becomes effective to verify NOx emission rates per SC. I.1; 12-month rolling total NOx mass emission is limited to 73.58 tpy, records to be maintained; to demonstrate compliance with emission limits.

In compliance with PTI 91-15, SC V.1 - Testing /Sampling, GMDH conducted testing of NOX for EUBOILER1 on November 24, 2015. The test protocol was approved by AQD -TPU staff on November 9, 2015. The results of the 11/24/2015 test showed NOx emission rates ranging from 0.065 lbs./MMBtu to 0.069 lbs./MMBtu in three test runs; all below the permit limits (0.2 lbs./MMBtu) cited in SC I.1.

According to the 2018 MAERS submittal the 12-month total tons NOx emissions for year 2018 was 0.02 pounds, or 0.00 tpy, which is below the permit limit (SC I.2)

II.1, IV.1 and 2, VI.1 and 2 – Compliance – Only natural gas burning in EUBOILER1; heat input for boiler #1 not to exceed 84 million Btu per hour; records of natural gas usage to be maintained. -

Monthly records of natural gas usage are maintained by GMDH. According to the records supporting the 2018 MAERS submittal, boiler # 1 had a limited use in 2018, operating 3 days in the calendar year for a total of 72 hours. The only fuel used at boiler #1 was natural gas. The boiler combusted 0.25 million cubic feet of natural gas in the year.

VII. – In Compliance - GMDH shall submit a notification stating the date the EUBOILER permanently ceased burning coal – Refer to the first paragraph of section “EUBOILER1 - PTI 91-15”

VIII.1 – Compliance – EUBOILER1 stack shall emit vertically upwards at a height no less than 250 feet above ground and with a maximum diameter of 120 inches. The stack was not observed during the inspection of 9/24/2019 but there have been no changes in its dimensions since the last inspection.

IX. MACT DDDDD for Steam Boilers and Process Heaters -Compliance

The federal National Emissions Standards for Hazardous Air Pollutants (NESHAP) at 40 CFR 63, Subparts A and DDDDD (MACT DDDDD) regulates hazardous air pollutants (HAP) emissions from boilers and process heaters installed at major sources of HAPs. GMDH is a major source of HAPs.

On 1/31/2013, the EPA issued revised standards within MACT DDDDD (78 FR 7138) and on 5/30/2013 the AQD received GMDH's Initial Notification for the revised standard. Per 40 CFR 63.7545(b), the Initial Notification must be submitted within 120 days from 1/31/2013, or by 5/31/2013; therefore, the AQD considers the submittal to be timely.

MACT DDDDD applies to industrial boilers, commercial boilers, institutional boilers, and process heaters located at Section 112 major sources (40 CFR 63.7490(a) through (e)). An “industrial boiler” is defined at 40 CFR 63.7575 as “a boiler used in manufacturing, processing, mining, and refining or any other industry to provide steam, hot water, and/or electricity.” Boiler No. 1 produces steam for use at the plant and therefore meets the definition of an “industrial boiler” under the standard. Construction of boiler #1 commenced prior to 6/4/2010 and therefore it is considered an “existing” industrial boiler (40 CFR 63.7490(d)). Per the Initial Notification, each boiler was a coal-fired spreader stoker design and therefore they all were within the subcategory stoker designed to burn coal/solid fossil fuel” at 40 CFR 63.7499(b). However, since boilers #2, #3 and #4 have been decommissioned and boiler # 1 has only capability of combusting natural gas. Compliance with MACT DDDDD is required not later than 1/31/2016 for existing boilers and process heaters (40 CFR 63.7495(b)). However, since boiler #1 is only used in a limited basis (i.e. steam is produced outside of the GMDH facility), AQD needs to revisit its classification under MACT DDDDD and the applicable requirements. This will be done as part of the ROP renewal.

MI-ROP-M4199-2010, FGTEMPBOILERS Conditions

During the inspection GMDH reported that the facility did not utilize temporary boilers in 2018 or in 2019. The 2018 MAER submittal indicated that RGTEMPBOILERS were not operated and reported “zeros” throughput. During the visit of 9/24/2019 GM indicated that there were no temporary boilers on-site.

Conclusion:

At the time of completion of the investigation the facility was found to be in compliance with the requirements of Article II, Air Pollution Control, Part 55 of Act 451 of 1994, and with the conditions of permit MI-ROP-M4199-2010.

NAME Handoral

DATE 10/3/2019 SUPERVISOR JK