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

B160726508

FACILITY: GM LLC FLINT ENGINE OPERATIONS		SRN / ID: B1607
LOCATION: 2100 W. BRISTOL RD., FLINT		DISTRICT: Lansing
CITY: FLINT		COUNTY: GENESEE
CONTACT: Alexandra Thibeault , Senior Environmental Engineer		ACTIVITY DATE: 08/20/2014
STAFF: Daniel McGeen	COMPLIANCE STATUS: Compliance	SOURCE CLASS: MAJOR
SUBJECT: Partial Compliance Evaluation (PCE) activities, conducted as part of a Full Compliance Evaluation (FCE): 1.) scheduled inspection; and 2.) review of facility recordkeeping.		
RESOLVED COMPLAINTS:		

Emission Unit ID, & Flexible Group ID	Description	ROP or exemption rule	PTI exemption rule	Federal regulation	Limits	2013 MAERS data	Status
EU-HF-CLEANING; FG-RULE290	Miscellaneous maintenance cleaning operation for HF	MI-ROP-B1607-2012	290		VOC < 1000 lbs/mo.	VOC: <500 lbs/mo	C
EU-HF-SEALERS; FGRULE287(c)	Other sealer application to HF engine assembly process	MI-ROP-B1607-2012	287(c)		200 gal/mo.	<200 gal/mo.	C
EU-COLDCLNRS; FGCOLDCLEANERS	Plant wide cold cleaners	MI-ROP-B1607-2012	281(h) or 285(r)(iv)		<5% certain halog.	0 gal/yr	C
EU-HF-RTV	Room temperature vulcanizing (RTV) sealer applied during the HF engine assembly process	MI-ROP-B1607-2012	290		VOC: 0.9 TPY (from ROP)	VOC: 0.49 tons/yr	C
EU-FAM0-RTV; FG-RULE290	RTV process used to apply sealer to provide seal/gasket between engine mating surfaces	MI-ROP-B1607-2012	290		VOC < 1000 lbs/mo.	VOC: <500 lbs/mo.	C
EU-FAM0-SEALERS; FG-RULE287(c)	Other sealer application to FAM0 engine assembly process	MI-ROP-B1607-2012	287(c)		200 gal/mo.	66 gal/yr	C
EU-FAM0-RUSTPREV; FG-RULE287(c)	Rust preventative application for FAM0	MI-ROP-B1607-2012	287(c)		200 gal/mo.	139 gal/yr	C
EU-MARKING-PENS; FG-RULE287(c)	Miscellaneous marking pen usage	MI-ROP-B1607-2012	287(c)		200 gal/mo.	7 gal/yr	C
EU-FAM0-CLEANING; FG-RULE290	Miscellaneous maintenance cleaning operations for FAM0	MI-ROP-B1607-2012	290		VOC < 1000 lbs/mo.	VOC: <500 lbs/mo.	C
EU-MACHINING	Wet and dry production machining	212(4)(d)	285(i)(vi)(c)		NA	VOC: 709 lbs/yr; PM-10: 1,378 lbs/yr	C
EUPARTSWASHERS	Aqueous production parts washers	212(4)(d)	285(i)(iii)		NA	14,998 lbs VOC/yr	C
EU-GENERATORS	4 emergency generators	212(4)(d)	285(g)	40 CFR Part 63, Subpart ZZZZ	NA	MAERS exempt	C
EU-HEATERS	Natural gas-fired space heaters	212(4)(d)	282(b)(i)		NA	MAERS exempt	C
EU-INDUCTIONHARD	Induction hardening process	212(4)(d)	282(a)(i)		NA	MAERS exempt	C
HFV6Boiler	PVI, Hot Water Heater, stack; 0.5 MMBtu/hr, natural gas-fired	212(4)(d)	282(b)(i)	40 CFR Part 63, Subpart DDDDD	Heat input <50 MMBtu/hr	MAERS exempt	C
FAM0Boiler	Lochnivar, Hot Water Heater, Stack; 0.27 MMBtu/hr, natural gas-fired	212(4)(d)	282(b)(i)	40 CFR Part 63, Subpart DDDDD	Heat input <50 MMBtu/hr	MAERS exempt	C

Environmental contacts:

Alexandra W. Thibeault, Senior Environmental Engineer; 810-691- 7337; alexandra.thibeault@gm.com

Apurva Pujara, Senior Environmental Engineer, RE&F Energy & Environment; General Motors Company; 248-255-7795; apurva.pujara@gm.com

Melissa Peterson, Environmental Scientist; Tetra Tech; 734-213-4010; melissa.peterson@tetratech.com

Facility description:

This facility is principally involved with engine assembly operations for GM.

Regulatory overview:

Flint Engine operations has a very small amount of air emissions, on an annual basis. However, it is contiguous and adjacent to the GM Flint Truck & Bus Assembly Plant, State Registration Number (SRN) B1606, which is a major source of Hazardous Air Pollutants (HAPs). Therefore, Flint Engine Operations is also considered to be a major source, based on the definition from Section 112 of the Clean Air Act. Because it does not support the primary activity of the assembly plant, Flint Engine Operations is thus treated as a separate stationary source, and has its own Renewable Operating Permit (ROP).

The facility has a current ROP, MI-ROP-B1607-2010. The ROP consists of exempt emission units, which are exempt under Rules 287(c), 290, and 281(h) and/or 285(r)(iv). These are detailed in the emission unit table at the start of this activity report. Additionally, there are exempt emission units which were not required to be included in the ROP, and these are also detailed in the emission unit table.

On 4/9/2014, Permit to Install (PTI) No. 231-08A was issued, to allow for modification of the sealer in the existing engine area. This will enable the facility to use a specific sealer when they begin to produce a line of Small Gasoline Engines (SGE), in the future. This PTI will be rolled into the ROP, during the next ROP renewal (2015).

This facility is not considered subject to 40 CFR Part 63, Subpart MMMM, the National Emissions Standards for Hazardous Air Pollutants (NESHAP) for Miscellaneous Metal Parts & Coatings, because the sealers they use here do not contain Hazardous Air Pollutants (HAPs), and the marking inks they use here have a usage rate of less than 250 gallons per year.

The parts cleaners at this facility are not considered subject to 40 CFR Part 63, Subpart T, National Emissions Standards for Halogenated Solvent Cleaners, because they use aqueous solutions rather than halogenated solvents.

There are two boilers onsite which are subject to 40 CFR Part 63, Subpart DDDDD, the NESHAP for Major Sources: Industrial, Commercial, and Institutional Boilers and Process Heaters.

The facility is not subject to 40 CFR Part 63, Subpart HHHHHH, the NESHAP for Paint Stripping and Miscellaneous Coating Operations at Area Sources, AQD Permit Engineer Julie Brunner determined, during the New Source Review process for PTI No. 231-08A,. She noted that the facility does not do hand-held spray application of coatings, nor does it appear to use any of the HAPs identified in the NESHAP (chromium, cadmium, lead, manganese, and nickel).

Location:

Flint Engine Operations is bordered on the north by a new paint shop currently under construction for GM Flint Truck & Bus Assembly. It is bordered on the west by the GM Flint Metal Center (SRN B1608), and on the east by Van Slyke Road, and some commercial and undeveloped properties. This

has been a heavy industrial area for decades. To the south are commercial and/or industrial properties. The nearest residence is approximately 600 feet to the east of the facility. There are no complaints associated with Flint Engine Operations in AQD files as far back as 1991, and possibly even earlier.

Fee category:

Because Flint Engine Operations is classified as a major source, it is considered a Category I source, and pays an annual Category I facility fee, and pays per ton of pollutants discharged. It annually reports estimated air emissions via the Michigan Air Emissions Reporting System (MAERS). A 2014 audit of the facility's MAERS report for the 2013 calendar year found the facility's emissions of Volatile Organic Compounds (VOCs) to be below the limits for emissions set by the ROP and Rule 290. Facility coatings throughput for various emission units in 2013 was well below the 200 gallons per month allowed by Rule 287(c). Please see the column for 2013 emissions in the table at the start of this report.

Arrival:

The purpose of this site visit was to conduct a scheduled compliance inspection, and to review required recordkeeping, as Partial Compliance Evaluation (PCE) activities, part of a Full Compliance Evaluation (FCE). The U.S. Environmental Protection Agency Compliance Monitoring Strategy for Fiscal Year 2014 is that 50% of Title V major sources undergo a FCE this year. The time and date for this inspection had been arranged in advance, to make sure the necessary environmental staff would be available. As I drove east on Bristol Road and then north on Van Slyke Road to reach the facility parking lot, I detected no odors from the engine plant. There were no visible emissions, other than steam from stacks near the center of the plant. Weather conditions were 70 degrees F, slightly foggy, and winds were 5 miles per hour out of the west. The time was 9:49 AM.

I met with Ms. Alexandra Thibeault, Senior Environmental Engineer, who is the environmental contact for this facility. Also attending were Mr. Apurva Pujara, Senior Environmental Engineer, from GM's RE&F, Energy & Environment, and Ms. Melissa Peterson, Environmental Scientist for Tetra Tech. Ms. Peterson takes care of environmental reporting, for this facility. I provided a copy of the DEQ *Environmental Inspections: Rights and Responsibilities* brochure, per AQD procedure.

This facility assembles 4 cylinder Family 0 (FAM0) engines and 6 cylinder High Feature (HF V-6) engines for GM. The FAM0 engines replaced the L6 engines, which had previously been made here. The FAM0 line will eventually be replaced here with a line for making small, 4 cylinder SGE engines, under PTI No. 231-08A.

FAM0 machining and coolant galleries:

For the FAM0 engines, coolant galleries along the east wall of the plant feed water-based coolant into the machining systems. This liquid also serves as a lubricant. A washing solution is used to remove lubricants, chips, oils, and sealer. The washing solution consists of 92% water, and 8% cleaner. We observed coolant galleries for FAM 0 Mod 1, Mod 2, and Mod 3 blocks, heads, and cranks.

Mist collectors are the larger air filtration units. All of the large machining lines are served by these units. These exhaust to the outside air. Mist eliminators are for the parts washers, and are located within the exhaust stacks themselves. They exhaust outside. Collected metal chips are recycled. There is an onsite wastewater treatment plant, which separates oils from the wastewater. Collected coolant is recycled.

FAM0 heads are made from aluminum, while cranks and blocks are made from iron. There are various sub-assembly operations for machined parts.

EU-FAM0-SEALER:

The FAM0 engines receive a sealer in the assembly process, which provides a seal between mating surfaces. It is used for covers on these engines.

EU-FAM0-RTV:

A Room Temperature Vulcanizing (RTV) sealer is used for the FAM0 engines. It is exhausted to the in-plant environment, and is not regulated by the ROP other than under Rule 290 and the Flexible Group Rule 290. This emission unit has four work stations, three of which are run by machines, with the remaining one being done by hand.

There are small maintenance areas within the plant with occasional metal working tools. These could easily be considered exempt under Rule 285(I)(vi)(A) and/or (B), because they are used on a non-production basis, and exhaust into the general in-plant environment.

HF side of plant:

HF parts undergo machining, and also finishing, polishing, and balancing, in a number of enclosed cells. Polishing is done by wet sanding with fine grits of sandpaper.

EU-HF-SEALER:

The HF engines also receive a sealer in the assembly process, which is used for the oil pan and the face of the engines.

EU-HF-RTV:

A RTV sealer is used for the HF engines. This sealer is different than the FAM0 RTV sealer because it contains a small amount of a single carcinogen, and is not exempted from the ROP. It is exhausted to the outside air, after filtration by a particulate filter. This emission unit has four work stations, two of which are robotic, with the remaining two being operated by hand.

EU-INDUCTIONHARD:

An induction hardening process for cranks used in the HF engines exhausts to the outside air. It is exempt under Rule 282(a)(i), as it has a maximum rated heat input of not more than 10,000,000 Btu/hr. It is exempt from being included in the ROP. Only HF parts receive heat treating. Parts are heated, electrically it appeared, and are quenched with a chemical product

HFV6 Boiler and FAM0Boiler; 40 CFR Part 63, Subpart DDDDD; Rule 282(b)(I):

There are two natural gas-fired boilers onsite, which are subject to 40 CFR Part 63, Subpart DDDDD. They have submitted the required initial notification for these units, in May 2013. Currently there are no requirements under this Maximum Achievable Control Technology (MACT) standard. The next compliance date will be January 2016. However, they may be determined to be exempt, under EPA guidance, I was informed. These boilers are hot water heaters for restrooms and showers. There is a difference between the definitions of a boiler and a hot water heater, under the MACT. Mr. Pujara will look into this matter with GM's boiler MACT expert, to confirm where these units stand.

These two boilers are considered exempt from needing a PTI by Rule 282(b)(I).

EU-MARKING-PENS: FGRULE287(c):

GM is interested in moving away from solvent use for marking pens, in the future.

Future Small Gas Engine line:

In or around September 2014, they will temporarily install validation equipment as a trial, to see if they can manufacture the Small Gas Engine (SGE) line, in the future. This temporary installation of equipment would be exempt. The actual production machinery would not be installed for some time, as

it is still being designed. Actual production is not expected to begin until the end of October, 2015.

EU-GENERATORS; Rule 285(g):

They currently have 4 emergency generators, as 1 was removed last year, and 1 is out of service, as of last year. it was explained that they are all existing, under the RICE MACT. May of 2013 was the first compliance date. They do weekly and monthly readiness testing of the generators, I was informed. I was given a copy of their monthly emergency generator recordkeeping for hours of use since May, 2013 (please see attached). Readiness testing hours are tracked differently than actual emergency hours would be.

Review of facility recordkeeping:

After the walk through portion of the inspection, we discussed facility recordkeeping. I was provided with printouts of their spreadsheets for January through July, 2014 (please see attached). They track emissions and throughput under Rules 290 and Rule 287(c), respectively. Please see the table below for comparison of data with the relevant limits for emissions and throughput.

Emission unit	Limit from ROP or rules	Highest value from January-July, 2014	Compliance status
EU-HF-CLEANING	Rule 290: 1,000 lbs/month VOC	139 lbs/month VOC for March	Compliance
EU-HF-SEALERS	Rule 287(c): 200 gallons/month	18 gallons/month in	Compliance
EU-HF-RTV	ROP: 0.9 TPY VOC	Highest 2014 monthly value was 89.5 lbs, in March; 0.49 tons VOC, for calendar year 2013*	Compliance
EU-FAM0-RTV	Rule 290: 1,000 lbs/month VOC	119 lbs/month VOC for January	Compliance
EU-FAM0-CLEANING	Rule 290: 1,000 lbs/month VOC	287 lbs/month VOC for March	Compliance

***From MAERS report for the 2013 operating year.**

I left the plant at 11:49 AM. There were no odors or visible emissions detected. Weather conditions were partly sunny, humid, and 75-80 degrees F, with winds 0-5 miles per hour, out of the south southwest.

Conclusion:

The facility was very clean and well-maintained. GM and Tetra Tech staff were very knowledgeable and professional. I could not find any instances of noncompliance during the inspection, nor any areas of concern. Flint Engine Operations appeared to be in compliance with its ROP, and the Air Pollution Control Rules.

NAME _____ DATE 9/22/2014 SUPERVISOR _____