

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

B246030620

FACILITY: General Motors LLC - Bay City		SRN / ID: B2460
LOCATION: 1001 Woodside Ave., BAY CITY		DISTRICT: Saginaw Bay
CITY: BAY CITY		COUNTY: BAY
CONTACT: JEFF JATCZAK,		ACTIVITY DATE: 08/11/2015
STAFF: Gina McCann	COMPLIANCE STATUS: Compliance	SOURCE CLASS: SM OPT OUT
SUBJECT: Scheduled Inspection for facility operations and records in Opt-Out PTI #31-05.		
RESOLVED COMPLAINTS:		

I (GLM) conducted an announced inspection at the General Motors LLC - Bay City plant. I was accompanied by GM Bay City Plant environmental engineers Mr. Jeff Jatczak. GM Bay City was issued PTI#31-05 on May 1, 2005 for three 72 MMBtu/hr natural gas fired boilers, several wet and dry machining operations, automatic parts ink markers, and maintenance painting operations. Emissions of concern are NOx, CO, and VOCs. The facility also has Rule 201 permit exempt emission units. There were no violations of air permit PTI# 31-05 found during the inspection.

Prior to the start of the inspection, I viewed an 8-10 minute safety video and was given a card of completion.

#### DESCRIPTION

The GM Bay City plant is a machining plant within the GM Powertrain Division. The plant performs wet and dry machining of various rough metallic parts such as camshafts, oil pumps and pistons rods. The plant has 1.2 million square feet of manufacturing space and employs approximately 400 people. In addition to machining, parts may undergo thermal deburring, washing or cleaning, and marking. The final finished products are shipped to GM engine and transmission plants for final assembly operations.

There are several wet and dry machining lines. Metal working fluid (MWF) is used to lubricate tooling ware. Some machining operations are ventilated to oil-mist collectors then back into the workplace. Dry machines are ventilated to dust collectors and exhausted back into the workplace. Machining operations can generate emissions of particulate and VOCs released from MWF.

Deburring operations may emit a small amount of particulate. A natural gas burner warms the parts prior to deburring which may release small trace amounts of NOx.

All but two parts washers use water based solvents. Defoaming agents in the solvents contain a small amount of organics (1%). Washing and rinsing operations are not exhausted to the environment. Particulate may be exhausted during the drying process and are estimated to be less than 0.1 ton/yr.

Pistons are heat treated in a natural gas fired furnace. NOx, CO, particulate, and VOC are emitted as byproducts of combustion.

Parts are marked using a paint or a coating that usually contains a high VOC fraction (~85%) as the ink must dry very quickly.

An on-site powerhouse, wastewater plant, and general maintenance operations support the plant's manufacturing operations. The Powerhouse burns natural gas and was originally designed with the ability to burn fuel oil. The site cleaned and disabled the fuel oil tank for the powerhouse in the fall of 2010. Emissions from the Powerhouse boilers include NOx, CO, VOC, and particulate. If fuel oil was burned then SO2 would be emitted at elevated levels.

Maintenance operations include tooling parts washers, building space heaters, air make-up units, painting activities, refrigerants, asbestos, and, fuel filling operations. Tool part cold cleaners are supplied by Safety Kleen. The site uses both water based and solvent based parts washers. Painting is conducted in a maintenance paint booth and with portable equipment. VOCs are emitted from painting activities and from clean up solvents.

PTI #31-05: Compliant

#### FG-BOILERS: Compliant

The Powerhouse has three 72 MM Btu/hr. The boilers were installed in 1965. The powerhouse provides steam and compressor supply for the site. The powerhouse generally operates one boiler at a time. Fuel oil has not been burned for a number of years. Fuel oil was burned for maintenance purposes. The fuel oil tanks have been emptied, cleaned, and lines disconnected in the fall of 2010. However, the site does maintain recordkeeping requirements for diesel usage and has entered a zero usage and zero emissions for the 12-month rolling time period from July 2014 through June 2015.

Natural gas usage is metered for the facility and the boilers. The facility calculates emissions based on AP 42

factors. The PTI limits for the FG-BOILERS are 19.2 ton/yr. NOx, 16.2 ton/yr CO, 20.3 ton/yr SO2, and 383 MMCF of natural gas. We reviewed the FG-BOILER on site emissions records for the period from July 2104 to June 2015. FG-BOILERS 12 month values were 6.01 ton NOx, 5.05 ton CO, 0.04 ton SO2, and 120.29 MMCF gas used. Print outs of the gas usage report for and for the gas usage and emissions for July 2014 to June 2015 are attached.

**EU-MACHINING: Compliant**

The facility has numerous machining lines to perform wet and dry machining on parts received from suppliers. Wet machines use metal working fluid as a lubricant. Machining operations can generate particulate matter and VOCs. Oil-mist collectors and dust collectors receive ventilated air from machining operations w/the collectors exhaust directed back into the workplace. The PTI limits VOC emissions from EU-MACHINING to 49 ton/yr. and metal working fluids use to a 12 month rolling 610,000 gallons /yr. Machining fluids usage is tracked using a corporate wide chemical management database. The usage of each VOC containing fluid is recorded monthly. VOC content of each fluid is used to determine emissions. Tetra Tech generates required regulatory reports.

For the period of July 2014 to June 2015, on site records showed VOC emissions of 2.13 tons/yr. and 53,481.1 gallons of metal working fluid used.

Parts washers throughout the plant have fabric filter conveyors that collect fine metal from machining operations. The accumulated metal is sent off site for recycling. Once the shavings are removed from the filter, the filter is shredded and used in cement making.

**EU-INKMARKING: Compliant**

The site uses quick drying inks to mark parts. The PTI limits ink usage to 2,900 gal/yr. and VOC emissions to 10.4 ton/yr for a 12 month rolling average. We viewed one of the marking operations and ink usage records for the site. Each ink type is tracked for monthly use and 12 month rolling average. For the 12 month period of July 2014 to June 2015, the total ink usage was 466.50 gals/yr. and the VOC emissions were 1.56 ton/yr. A copy of the ink usage and emission records is attached.

**EU-MAINTPAINTING: Compliant**

The site has a maintenance painting booth and mobile painting units. The mobile units are used for architectural painting such as aisle way marking on floors. Painting volume is very low. A log of paint type and amount used is maintained by the operators and kept in the booth. The PTI limits paint and solvent usage to 2,400 gal/yr. and VOC emissions to 10.4 ton/yr. For the 12 month period of July 2014 to June 2015, the total pain usage was 22.18 gal/yr. and the VOC emissions were 0.06 tons/yr. A copy of paint use records for the month of June 2015 is attached.

**EU-AIRMAKEUP: Compliant**

The PTI limits for the EU-AIRMAKEUP are 59.1 ton/yr. NOx and 49.6 ton/yr. CO. There is no limit for SO2 or for natural gas usage. Natural gas usage must be recorded. EU-AIRMAKEUP values were 3.36 ton NOx, 2.82 ton CO, 0.02 ton SO2, and 67.19 MMCF gas used. Records for 12 month time period of July 2104 to June 2015 is attached.

**FGFACILITY: Compliant**

The PTI limits natural gas usage to 1,740 MMcf /yr. and emissions of both NOx and CO to 89.9 ton/yr. for FGFACILITY. The onsite records reviewed showed natural gas use and emissions for July 2104 to June 2015 of 187.48 MMCF gas, 9.37 ton/yr. NOx, and 7.87 ton/yr. CO.

**MISC:**

A small number of parts, mostly pistons, are heat treated. The heat treat process has a 6 MM Btu/hr furnace. The maximum NOx emissions from the heat treat operation, assuming 8760hr/yr., is 2.6 Tons/yr. Exemption applicability records are maintained onsite.

The in plant tool cold cleaners appear to meet the Rule 201 permit exemption per Rule 285 (r)(iv). Two non-aqueous cold cleaners are still on site in the production area. The facility has Safety Kleen service the parts washers including the recycle and disposal of spent solvents. The facility/General Motors contracts with Tetra Tech to manage the cold cleaners, including maintaining records and coordinating with Safety Kleen for solvent hauling.

NAME Gina L. Mc DATE 8/17/15 SUPERVISOR C. Gore