

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

N722826918

FACILITY: Global Engine Manufacturing Alliance (GEMA)		SRN / ID: N7228
LOCATION: 5800 N. ANN ARBOR RD, DUNDEE		DISTRICT: Jackson
CITY: DUNDEE		COUNTY: MONROE
CONTACT: Shelly Elisech , Environmental Specialist		ACTIVITY DATE: 08/06/2014
STAFF: Sersena White	COMPLIANCE STATUS: Compliance	SOURCE CLASS: MAJOR
SUBJECT: An announced targeted inspection to ensure appropriate personnel would be available. First inspection since the ROP was issued in January of 2013.		
RESOLVED COMPLAINTS:		

SRN: N7228

Facility Name: Chrysler Group LLC GEMA Engine Plant

Facility Address: 5800 North Ann Arbor Road, Dundee, MI 48131

Facility Contacts: Scott Goeglein- Environment Health and Safety Lead; Shelly Elisech – Environmental Specialist; Ben Bosah – Air Compliance Engineer

Facility Contact E-mail: Scott – [sag58@chrysler.com](mailto:sag58@chrysler.com); Shelly – [se276@chrysler.com](mailto:se276@chrysler.com); Ben – [cb966@chrysler.com](mailto:cb966@chrysler.com)

**Introduction:** Global Engineering Manufacturing Alliance, LLC. Engine Plant Complex, is located at 5800 North Ann Arbor Road in Dundee, Michigan. The facility consists of two parallel engine manufacturing plants (North and South) with assembly in the middle of the facility. The parts start at the back of the plant and move forward, then to the middle. The finished engines are loaded on racks and are shipped by truck to the designated automotive assembly plant. The aluminum engine blocks, engine heads and green cast crank shafts arrive pre-cast. These components are machined and assembled with other pre-fabricated engine components to complete an engine. A sample of the different engine types are tested in the dynos. The Hot Test stations are designed to complete more intrinsic testing of the engines. The entire facility is environmentally controlled to maintain quality and cleanliness of the engine manufacturing process for temperature and humidity. They operate ten hours a day, six days a week on a two crew basis. This facility began operation in January 2012 and the products are: 2.0 liter (I-4) and 2.4 liter (I-4) World Engines; 1.4 liter (I-4) Fully Integrated Robotized Engine (FIRE) and 1.4 liter (I-4) Fully Integrated Robotized Engine (FIRE) Turbocharged; 2.0 liter Tigershark (I-4); and 2.4 liter Tigershark (I-4).

**PPE:** The required PPE is safety glasses with side shields, non-slip shoes or steel toed boots/shoes and a high visibility vest which they provided. Hearing protection is required in some areas, but we did not go to any of those areas.

**Purpose:** This was an announced targeted inspection to evaluate compliance with Federal and State Air Quality regulations, namely, the Renewable Operating Permit MI-ROP-N7228-2013. This is the first inspection to occur since the permit was issued on January 18, 2013.

**Inspection:** On August 6, 2014, I arrived at approximately 9:23 a.m. and met Ben, Scott and Shelly in the lobby. I briefly explained the plan to conduct the inspection which is outlined in the inspection brochure. After arriving in their office, I gave them a brochure and explained that I had briefly covered the outline of the process and pointed out the survey website on the back. I asked them to educate me on the processes there before reviewing the permit. We discussed the methods of collecting information related to record keeping and I took a couple of spreadsheets that I could not understand. Ben explained how the data was calculated and summarized the basis for the emission calculations for EUWET and EUDRY. I was told that they use a checklist reminder system to ensure the data is captured and entered by the 15<sup>th</sup> of the month by a reminder on the 11<sup>th</sup> of the month.

We then toured the south side of the plant since the plants are identical so that I could observe the process from the beginning to the end. The tour of the South Plant began at approximately 11:52 a.m. and ended at approximately 12:40 p.m. We returned to their office to recap my observations and to confirm follow-up information to be provided in support of the requirements of the permit. I left the facility at approximately 12:57 p.m.

EUDRYMACHINE: This emission unit represents dry machining processes on the major engine components. The dry reference is due to particulate matter (PM) emission control on the grinding, boring and drilling processes. The actual activity is enclosed in a booth to improve capture and to maintain the controlled environmental conditions within the plant. The particulate emissions are captured and ducted to a PM filtration system. The collection units are maintained according to a Preventative Maintenance Plan, to ensure compliance with the particulate and opacity limits. The particulate emission limit can only be verified using a test method. The emissions are calculated based upon the number of hours of operation, the airflow exhausted through the system and the emission factor in the permit.

EUWETMACHINE: This emission unit represents wet machining processes on the major engine components where oil or a lubricant is centrally plumbed to the stations where grinding, boring or drilling occurs. The shavings and liquid are centrally collected and processed by the Henry filter system. The collection units are maintained according to the Preventative Maintenance Plan to ensure compliance with the particulate and opacity limits. The PM emission limit can only be verified using a test method. The emissions are calculated based upon the number of hours of operation, the airflow exhausted through the system and the emission factor in the permit.

FG-DYNOS: These emission units are individual test cells where engines are tested for performance under controlled operating scenarios. There are a total of six engine dynamometers and unleaded gasoline is used to fuel the engines. Only Dyno #1 was in operation during the time of the inspection. These emission units have a carbon monoxide (CO) and a nitrogen oxide (NOx) pound per gallon emission limit, and pound per hour emission limit for NOx. These limits can only be verified using a test method. The CO has a ton per year limit on a 12 month rolling time period. The emissions are calculated based on the pound per gallon emission factors and the amount of fuel combusted. There is also a limit on the amount of fuel combusted on a 12 month rolling time period. There is also a limit on the amount of fuel used hourly, but no specific requirement to track number of hours operated.

FG-HEATERS: These emission units are used in maintaining and controlling the in-plant environment for temperature and humidity and providing heated water. Natural gas usage is the only limit on a 12 month rolling time period for this flexible group. The CO, NOx and PM emissions are calculated based on emission factors in the permit for inclusion in the FG-FACILITY totals. There is one master natural gas meter for this flexible group.

FG-HOT TEST: These emission units are used to perform intrinsic diagnostic engine testing beyond what can be accomplished in the engine dynamometers. Natural gas is used for the fuel in these two test stations. Natural gas usage is the only limit on a 12 month rolling time period for this flexible group. The CO, NOx and PM emissions are calculated based on emission factors in the permit and are included in FG-FACILITY totals.

FG-FACILITY: This represents the all of the emission units at the facility. The facility has PM, NOx, and CO emission limits on a ton per year basis as determine on a 12 month rolling time period. The permit provides emission factors for all of the above units contributing emissions.

FG-RULE 290: These emission units are actually robotic adhesive application stations where depending upon the type of engine, a specific adhesive is applied in very small quantities. These were not in operation at the time of the inspection, but I could observe the amount and location of the adhesive that had been applied to one of the engines.

FG-EMERG-RICE and FG-GASDISPENSE were not discussed except to remind them that when they certify compliance that they must include these flexible groups also.

Records: Records were received via e-mail as agreed upon during the inspection.

Conclusion: Based upon my observations and the methods described to capture and calculate emission limits in the permit, including their use of an indicator when close to the limit, this facility is complying with the requirements for emission units and flexible groups under Michigan's authority for regulation.

Attachments: Records and brief description and photo of the location from the internet.

NAME Susan M White DATE 9-17-2014 SUPERVISOR [Signature]