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

N759940392

FACILITY: DEPOR INDUSTRIES		SRN / ID: N7599
LOCATION: 1902 NORTHWOOD, TROY		DISTRICT: Southeast Michigan
CITY: TROY		COUNTY: OAKLAND
CONTACT: Ted Howard, Plant Manager		ACTIVITY DATE: 06/08/2017
STAFF: Francis Lim	COMPLIANCE STATUS: Compliance	SOURCE CLASS: SM OPT OUT
SUBJECT: Inspection		
RESOLVED COMPLAINTS:		

On June 8, 2017, Francis Lim and Rob Joseph conducted an air quality inspection at Depor Industries, Inc. located at 1902 Northwood, Troy. The purpose of the inspection was to determine compliance with the Federal Clean Air Act; Article II, Part 55, Air Pollution Control of Natural Resources and Environmental Protection Act, 1994 Public Act 451; Michigan Department of Environmental Quality, Air Quality Division (MDEQ-AQD) Administrative Rules; and the conditions of Permit-To-Install (PTI) No. 489-99E. Dennis Brady, Quality Manager and Don Guigar, Maintenance Manager assisted during the inspection.

Depor Industries coats small metal parts, including fasteners and brackets mainly for the automotive industry. It uses a process called dip spin. This facility is a synthetic minor source. PTI No. 489-99E contains ROP opt out permit conditions.

This facility is considered a Tier III automotive supplier. Depor is a wholly owned subsidiary of Magni Group, Inc., a global coatings supplier. Magni supplies the coatings used at this facility.

Permit # 489-99E.

This opt out permit covers the coating operation and acid cleaning/pickling system. The coating operation consists of eight dip spin coating lines. Dip spin coating is a process where the product is automatically loaded in a mesh basket, submerged in a coating solution, and spun to remove the excess coating. The temperature and viscosity of the coating, immersion time and spin velocity are controlled. Spin direction is determined by the type of machine. 5 dip spin lines spin on its vertical axis, two are dip-spin-tilting lines (WMV), and one spins on its horizontal axis (Reinhardt). Dip spin coating has a very high transfer efficiency – more than 90% transfer efficiency. Coated parts go through a flash-off zone, then cured in the oven. In the curing zone, multiple trays holding the parts go through the layers inside the oven. To remove coating buildup in the spin baskets, the baskets are washed in hot caustic solution.

Emissions from the coating process are controlled by a regenerative thermal oxidizer (RTO). Operation of the RTO allows the facility to use non-compliance coatings and opt out of the ROP program. Overall efficiency of the RTO is 88.8% (99.6% destruction efficiency and 89.2% capture efficiency – based on a 2014 stack test). The RTO has a multi chamber for better emissions control. The ceramic heat transfer bricks of the RTO have been replaced. The bricks are regularly cleaned by vacuuming. An additional layer of ceramic saddles were added for better heat transfer. The RTO is rated at 50,000 acfm. According to Don, air flow to RTO with all 8 lines running is 38,000 to 40,000 acfm. The air flow to the RTO is carried out by a variable frequency drive (VFD) fan motor. VFD operates by varying the fan motor speed and torque by varying the motor input frequency. Hertz (Hz, one cycle per second) is a measure of frequency. Facility monitors motor frequency to assess fan performance, air flow to the RTO and monitor back pressure to the RTO.

During the inspection, oxidizer temperature was at approximately 1500°F. I conducted a random check

of RTO temperature data and chart from April 3 to April 9, 2017. RTO temperatures were above 1450° F. According to Dennis and Don, the coating lines are shutdown when the RTO goes below a preset temperature. In the past, the RTO would be shut down from 12 midnight until 6 AM since the facility operated only two shifts.

Depor Industries follows a monthly and semiannual preventive maintenance schedule for the oxidizers. Please see attached random maintenance records. During the previous inspection, Joyce Zhu observed some corrosive appearance on the elbow duct (from the building to the incinerator) and on the exhaust stack. Joyce also noticed that Depor placed canvas tarps around the RTO to prevent water vapor in the air ducts from condensing.

Various coatings are used in the dip spin lines, depending on client specifications. Maintaining coating viscosity is crucial for the dip spin process. Viscosity is adjusted by adding reducer or adding more coating. Paints and solvents are stored in closed containers in a storage room. Waste solvents are stored in 55-gallon drums. Hazardous waste from plant operations is processed by US Ecology.

The acid cleaning/pickling operations consists of two lines. Each line has the following: rinsing tanks, descaling tanks (sulfuric acid), conditioning tanks and drying area. Sulfuric acid concentration in the bath is 5%. There are no scrubbers in the pickling lines.

Facility also operates a zinc phosphating process. The zinc phosphate prevents rust and also allows the coating to adhere better.

For the 12 month period ending April 2017, VOC emissions were 22.6 tons (limit is 40 tons); ethyl benzene emissions were 0.03 ton (limit is 0.9 ton); dibasic ester emissions were 1.3 tons (limit is 3.2 tons); naphthalene emissions were 0.38 ton (limit is 2.5 tons); and formaldehyde emissions were 0.04 ton (limit is 0.1 ton). Facility-wide individual HAP emissions were below 9.0 tons each per year. Aggregate HAPs emissions were 1.7 tons (limit is 22.5 tons). Emissions for the 12-month period ending April 2016 were also below permit limits. See attached 2016 and 2017 records.


The company's record shows that the VOC and HAPs emissions have been below the permit limits. Depor uses formulation data in calculating emissions. Random sampling and Method 24 VOC analysis is conducted to verify and compare formulation data. Magni (coating manufacturer) used to report VOC content based on Method 24 analysis in the MSDS. Depor uses the higher formulation data (compared to Method 24 analysis) when calculating VOC emissions. Attached is the Method 24 results from 2016 and 2017 samples for B18 and B06J coatings.

Waste water is treated on site first before it goes to the sewer. Sludge collected from waste water treatment is sent to Republic for processing.

Hazardous waste from plant operations is processed by US Ecology.

Consent Order CO No. 11-2008

This consent order was for alleged violations of emission limits of PTI No. 489-99B. This consent order remains in full force for at least 5 years from date of signing (June 6, 2008). The consent order terminates only upon written notice of termination issued by the AQD Director after company submits a written request certifying that Depor Industries has fully complied with the requirements of the consent order.

 06-26-17 