DEPARTMENT OF ENVIRONMENTAL QUALITY
AIR QUALITY DIVISION
ACTIVITY REPORT: On-site Inspection

N759967015

FACILITY: DEPOR INDUSTRIES		**SRN / ID:** N7599
LOCATION: 1902 NORTHWOOD, TROY		**DISTRICT:** Warren
CITY: TROY		**COUNTY:** OAKLAND
CONTACT: Ted Howard , Plant Manager		**ACTIVITY DATE:** 03/22/2023
STAFF: Owen Pierce	**COMPLIANCE STATUS:** Non Compliance	**SOURCE CLASS:** SM OPT OUT
SUBJECT: FY 2023 Inspection Report		
RESOLVED COMPLAINTS:		

On March 22, 2023, I (Owen Pierce EGLE - Air Quality Division) performed a scheduled targeted inspection of Depor Industries located at 1902 Northwood, Troy, Michigan. Noshin Khan (EGLE-AQD) joined me for the inspection. The purpose of the inspection was to determine the facility's compliance with the Federal Clean Air Act; and Article II, Part 55, Air Pollution Control of Natural Resources and Environmental Protection Act, 1994 Public Act 451 and the conditions of Permit to Install (PTI) No.489-99F. Upon arrival Noshin and I met with Ted Howard, Plant Manager, Paul Zotter, Lab Supivisor, and Dennis Brady, Quality and HES Manager, and conducted a pre-inspection meeting where we introduced ourselves, presented our credentials, and stated the purpose of the inspection.

During the pre-inspection meeting, Ted explained the facility's processes and equipment. Depor Industries coats small metal parts, including fasteners and brackets mainly for the automotive industry. This facility uses a dip-spin coating process and is permitted to operate eight dip-spin coating lines (EU-DipCoating-01 through 08), two sulfuric acid and zinc phosphate pre-treatment acid cleaning lines (EU-AcidCleaning-01 and 02), and one burnoff oven (EU-BURNOFF) that was recently added to the permit and began its operation in January 2023.

During the dip-spin coating process, the metal parts are 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. Five 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. The baskets used in the coating process are transfered to the burn-off oven to remove coating buildup via thermal destruction.

Emissions from the dip-spin 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. As stated in Special Condition (SC) IV.1, satisfactory operation of the RTO includes an air collection system operation of 85.0% (by weight) and achieving a minimum destruction efficiency of 95.0%. 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 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%. The facility also operates a zinc phosphating process. The zinc phosphate prevents rust and also allows the coating to adhere better.

This facility is a synthetic minor source and has a PTI (PTI No. 489-99F) that contains ROP opt-out permit conditions. The facility typically operates 24 hours a day for 5 days a week. Depor Industries is a wholly owned subsidiary of Magni Group, Inc., a global coatings supplier, who supplies the coatings used at this facility.

Depor Industries does not have any back-up generators or cold cleaners. According to Ted, the burnoff oven uses only natural gas for fuel.

PTI No. 489-99F

EU-BURNOFF

During the inspection, I observed the burnoff oven operating within a temperature range of 1350° F-1370°F with a setpoint of 1500°F. According to maintanence staff, operation of the burnoff oven below the minimum operating temperature of 1400°F had been a common occurance prior to the inspection. We informed Ted and the maintanence staff that the minimum operating temperature for the burnoff oven is 1400°F. Immediately, Ted shut down operation of the burnoff oven, and reinforced to the maintanence staff the requirement of the burnoff oven reaching 1400°F before operation.

Ted explained in an email sent to me on March 24, 2023 that they contacted the supplier of the burnoff oven, Pyro Technologies, and the supplier came out the same day of the inspection. According to Ted, the supplier made a gas train adjustment and now the afterburner is functioning properly and staying above the 1400°F minimum temperature. Ted also explained that they had a single paper chart that was being used for recording the afterburner temperatures continuously for weeks, and that now that problem has been remedied and a new chart is installed daily. After reviewing the temperature data charts, there were many recorded temperatures of the afterburner that were below the 1400°F minimum temperature. Failure to maintain temperature data records in a satisfactory manner is a violation of SC VI.1 and VI.3, and failure to maintain a minimum temperature of 1400°F for the afterburner is a violation of SC IV.1 and the facility will be receiving a violation notice for these equipment and recordkeeping issues.

During the walkthrough of the facility, we were shown the metal baskets that are loaded in the burnoff oven in order to remove the layers of cured paint and coatings that have been built up from the dip-spin process. Ted explained that only the metal baskets are loaded into the burnoff oven. No transformer cores are loaded into the oven and according the SDS for the paints used in the dip-spin process, no sulfur or halogens are found as ingredents in the coatings. An email was sent from the facility to the AQD District Supervisor on January 10, 2023, notifying the supervisor of the completion of the installation of the burnoff oven.

Calibration records for the burnoff oven were provided and according to those records, the thermocouples were tested and found to be in range. The burnoff oven is equipped with an automatic temperature control system for the primary and secondary chambers and contains an interlock system as shown in the oven manual.

RTO

During the inspection, the RTO temperature was approximately 1547°F. At the time, Ted let us know that the temperature data records were collected in the digital recorder however they were having troubble downloading the data from the recorder. Noshin and I attempted to scroll through the temperature data records on the digital recorder, however, the records only went back to March 2, 2023. The lowest temperature we observed was 1502°F which is in compliance with the minimum combustion zone temperature of 1501°F as determined by the most recent stack test which occured in 2014. Repeat stack testing was waived by the AQD, and in a 2018 email exchange between AQD staff and the facility, the facility was informed that they may postpone stack testing until the next five year cycle. After speaking with former maintanence staff, Ted let us know that they do have the capability of downloading the data from the digital recorder and said that they would work on gathering that data and email us the files as soon as they could.

On March 26, 2023 in an email from Ted, it was explained that the facility was able to access all of the data from the digital recorder, however they had to use an older computer that supported the older software needed to download the data from the digital recorder. According to Ted, the older software can only export 11 days at a time and since the temperature is recorded every 30 seconds, the task of providing the AQD 2 years of data was proving to be very difficult. With this in mind and after discussion with senior staff, I modified my request of data from all of 2021 and

2022 to two weeks of data from 2021 (April 4-11 and September 5-12) and two weeks of data from 2022 (February 6-12 and June 5-11).

The temperature data records show that the RTO temperatures were above 1501°F during operation for those periods of time. Ted indicated that the facility is now consulting with their device supplier and pursuing a new recorder with more modern software. With this in mind, no violation notice will be issued for failure to keep satisfactory temperature data records.

The facility provided a malfunction abatement plan (MAP) that details a complete preventative maintenance program including the following: identification of the supervisory personnel responsible for overseeing the inspection, maintenance, and repair of air-cleaning devices, a description of the items or conditions to be inspected, the frequency of the inspections or repairs, and an identification of the major replacement parts that shall be maintained in inventory for quick replacement.

EU-DipCoating-01 through 08

During the inspection, I observed eight dip-spin coating lines with seven of the eight lines running sequencially on one side of the warehouse and one paint line located on the opposite side of the warehouse. Each paint line contained a paint booth and cure oven. According to Ted, various coatings are used in the dip-spin lines, depending on client specifications. Ted explained that maintaining coating viscosity is crucial for the dip-spin process, and viscosity is adjusted by adding reducer or adding more coating. Paints and solvents were observed as being stored in closed containers in a storage room. In the paint mixing room, Noshin and I observed a paint buckets used for transfering paint from the storage containers to the mixing room with no lids on them. A verbal warning was given to keep the lids on the paint buckets in the mixing room. It was explained that waste from cleaning the paint tanks is collected as hazardous waste in 55-gallon drums and shipped off site. Hazardous waste from plant operations is processed by US Ecology.

According to the Volatile Organic Compound (VOC) and Hazardous Air Pollutant (HAP) records for the coatings used in the dip-spin coating process, the highest 12-month rolling emissions from 2021-2023 are as follows: VOC emissions were 16.75 tons (limit is 40 tons); ethyl benzene emissions were 0.02 ton (limit is 0.9 ton); dibasic ester emissions were 1.43 tons (limit is 3.2 tons); naphthalene emissions were 0.41 ton (limit is 2.5 tons); and formaldehyde emissions were 0.03 ton (limit is 0.1 ton). Facility-wide individual HAP emissions were below 9.0 tons each per year. Aggregate HAPs emissions were 1.43 tons (limit is 22.5 tons).

The company's records show 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 SDS. Depor uses the VOC content reported in the SDS when calculating VOC emissions, which is higher than the EPA Method 24 VOC analysis.

EU-AcidCleaning-01 and 02

During the inspection, two sulfuric acid and zinc phosphate pre-treatment acid cleaning lines were observed. According to the SDS provided for the acid cleaning tanks, only sulfuric acid is used in the acid cleaning tanks. The stacks for each line were observed as being unobstructed. Waste from the pre-treatment cleaning process was observed as being stored in closed containers. According to Ted, the sulfuric acid used in the process gets reclaimed and the acid cleaning tanks are emptied and cleaned on an annual basis. The sludge removed from the tanks are collected and disposed of as hazardous waste.

Conclusion

Based on the information obtained during the inspection, the company is in violation of PTI No.489-99F, Special Conditions IV.1 and VI.1 and VI.3. A violation notice for these violations will be issued.

NAME Owen Pierce DATE 4/25/2023 SUPERVISOR K. Kelly