

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

B601054616

<b>FACILITY:</b> ELECTROPLATING INDUSTRIES, INC		<b>SRN / ID:</b> B6010
<b>LOCATION:</b> 21410 CARLO DRIVE, CLINTON TWP		<b>DISTRICT:</b> Warren
<b>CITY:</b> CLINTON TWP		<b>COUNTY:</b> MACOMB
<b>CONTACT:</b> Colleen Klein , Office Manager		<b>ACTIVITY DATE:</b> 08/07/2020
<b>STAFF:</b> Kaitlyn Leffert	<b>COMPLIANCE STATUS:</b> Compliance	<b>SOURCE CLASS:</b> SM OPT OUT
<b>SUBJECT:</b> FY2020 Scheduled Inspection		
<b>RESOLVED COMPLAINTS:</b>		

On August 7, 2020, Michigan Department of Environment, Great Lakes, and Energy (EGLE) Air Quality Division (AQD) staff Kaitlyn Leffert conducted a scheduled inspection of Electroplating Industries (EPI), located at 21410 Carlo Drive, Clinton Township. The source is identified by the Source Registration Number (SRN) of P0956. The purpose of the inspection was to determine compliance with the Federal Clean Air Act; Article II, Part 55, Air Pollution Control, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended (Act 451); AQD administrative rules; and Permit to Install (PTI) Number 718-86B.

On July 27<sup>th</sup>, I contacted Colleen Klein, Electroplating Industries to request the required records and schedule the inspection. Ms. Klein responded on Friday, July 31<sup>st</sup> to provide chemical purchase records and suggest dates for the inspection. While inspections are not typically scheduled ahead of time, that is current department policy due to ongoing concerns related to COVID-19.

On August 7<sup>th</sup>, I arrived at the facility at 10:30 am and was greeted by Ms. Klein. She first led me to her office area, where I provided an overview of the purpose of the inspection and asked some general questions. Ms. Klein and I also discussed the permit, including the required records and emission limits. She indicated that during previous inspections, they were not required to supply emission records and instead the purchase records, along with annual emission calculations was sufficient to demonstrate compliance. Due to this previous determination by the AQD, I informed her that I would not need any additional information at this time but that I would let her know if additional records of emission calculations were required to demonstrate compliance. Following our discussion, Ms. Klein then introduced me to Pete Ferrante, Plant Manager, who led me on a walk through the facility. Throughout my time on site, Ms. Klein, Mr. Ferrante, and I wore face masks and maintained safe social distance from each other.

Electroplating Industries is permitted to operate six electroplating lines which coat various metal parts for use in automotive and military applications. The plant has 14 employees and is currently operating two shifts, one from 5:00 am to 1:30 pm and another from 1:30 pm to 9:00 pm. Ms. Klein explained that this is less than the operated before the COVID-19 shutdown, since they usually would operate until midnight. She also explained that they did not stop operations during the COVID shut down, but that they did decrease operations to only support critical infrastructure. They have now resumed some of their regular functions, including coating parts for the automotive industry.

### Facility Walk Through

The facility has not made any changes to the equipment operated on site since the previous inspection. EPI operates six electroplating lines, which include three zinc lines, one aluminum line, one zinc phosphate line, and one copper line. The use of each type of coating depends on the type of metal part and the desired final characteristics of the coating. Generally, many of the coatings provide corrosion protection and prepare the surface for application of coatings.

All of the lines are structured in a similar layout. First, the parts are dipped in an alkaline cleaner, rinsed, and then dipped in electro tank with another alkaline cleaner. The parts are then rinsed again, before dipped in hydrochloric acid, rinsed, and then finally dipped in the plating tank. Some of the tanks are rack lines, where larger parts are paced on racks and then moved through the lines, while some are barrel lines, where smaller parts can be loaded into a barrel that then moves through the coating tanks.

In addition to the permitted equipment, EPI operates the following equipment:

- **Natural Gas Fired Boilers (2):** Located in the main production area on a platform above the coating

lines. These boilers are used to generate heat for the heated portion of the coating process.

- **On-Site Wastewater Treatment:** Wastewater from the coating lines is treated for metals and to correct the pH of the water before being discharged to the city water system.
- **Natural-Gas Powered Baking Oven:** Small oven located in the shipping area of the plant. This oven is for heat treating parts following coating and is used on an as needed basis. The oven appears to be exempt per Rule 282(2)(a)(i).
- **Hydrochloric Acid Storage Tank:** Located in the shipping area of the plant, used to storage hydrochloric acid for use in the coating lines. The hydrochloric acid storage tank appears to be exempt per Rule 284(2)(h)(iv).
- **Burner Under the Phosphate Line:** This burner is not regularly used, but instead used as a backup source of heat for the phosphate line when the boilers are not operating.
- **Testing Lab:** Located adjacent to the office area of the building. The lab is used to test the chemical properties of the solutions at each stage of the coating process.

### Emission Limits and Recordkeeping

The permit contains five special conditions, which all relate to emissions limits of VOCs, TACs, HAPS, and associated testing and recordkeeping requirements. The permit requires EPI to maintain monthly records of coating usage, as well as daily calculations of VOC emitted in pounds. The facility supplied chemical purchase records but did not supply daily VOC emissions calculations. As mentioned earlier, Ms. Klein explained that she had not previously been required to demonstrate compliance with that recordkeeping requirement. According to staff reports from previous inspections, AQD staff stated that the daily and month emission calculations were not necessary to demonstrate compliance since EPI was meeting the annual emission limits in the PTI.

Based on the information provided in the most recent MAERS submittal, EPI appears to be in compliance with the annual permitted VOC emission limits. The VOC emissions reported in the 2019 MAERS season for each coating line, as well as the total for all coating lines, are provided in Table 1. The VOC limit in the permit for is 6 tons per year (or 12,000 lb/year) on emissions from all of the coating lines combined. Based on the MAERS submittal, VOC emissions are well below the annual permitted limit. In fact, emissions are only around 7% of the permitted limit.

**Table 1: VOC Emissions by Line, from 2019 MAERS**

Line # and Type	VOC (lbs/year)	Annual Operating Hours	VOC (lbs/hour)
1: Zinc	146.8	4,160	0.035
2: Copper	205.2	2,600	0.079
3: Zinc	66.5	4,160	0.016
4: Zinc Phosphate	53.8	2,600	0.021
5: Aluminum	4.6	4,160	0.001
6: Zinc	310.9	4,160	0.075
Total	787.8		0.23

In addition to the annual emission limits, the facility is also permitted to emit 2.7 pounds of VOC per hour from the combined coating lines. While EPI was not able to supply hourly usage or emission rates, hourly emissions were estimated by dividing the annual emissions by the annual hours of operation, as provided in the 2019 MAERS submittal. These calculated values for each coating line, as well as the total for all combined lines, are also shown in Table 1. The estimated hourly emission rate is well below the permitted limits and it appears that EPI is in compliance with the permitted hourly emission limit.

In addition, the permit has facility-wide emission limits for hazardous air pollutants (HAPs) of 9.0 tpy for any individual HAP and 22.5 tpy for any combination of HAPs from the stationary source. Compliance with these limits is to be determined based on stack testing, which has not been done at the facility. However, EPI is presumed to be in compliance with the HAP emission limits due to compliance with the VOC limits, which are lower than the allowed HAP emission limits.

The permit also contains annual and hourly toxic air contaminant (TAC) emission limits for hydrochloric acid,

sodium hydroxide, sodium cyanide, phosphoric acid, nitric acid, sulfuric acid, and all other non-VOC TACs. These compounds are either used in a diluted solution in the coating process (hydrochloric acid, nitric acid, sodium cyanide), or are components of one of the other coatings used (sodium hydroxide, phosphoric acid, nitric acid, sulfuric acid).

Compliance with these TAC emission limits is to be determined via stack testing and the permit does not require the facility to maintain records of TAC emission calculations. EPI did provide records of all chemicals and coatings purchased so far in 2020. The purchase records indicate that the quantity of TAC-containing coatings purchased by the facility so far this year is in excess of the permitted TAC emission limits. However, available emissions information and U.S. Environmental Protection Agency AP-42 emission factors for the metal finishing process indicate that emissions from metal coating lines, such as zinc and nickel are 5-7 magnitudes lower than the total quantity of coating material used in the tank. Therefore, while exact TAC emission estimates are not available, it is presumed that the facility continues to operate in compliance with the TAC emission limits based on the relatively low quantity of coating materials used.

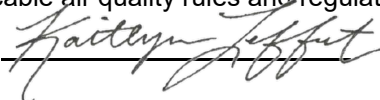
### Chrome Coating Process

Upon reviewing the previous inspection report, I noted that some of the coating lines use materials containing hexavalent and/or trivalent chromium for a chromating process. The chromating process is different from chrome plating and does not use electricity for the application of coatings. I asked Ms. Klein about this process whether they used any PFAS-containing compounds. She informed me that they still operate this process as a part of the zinc and copper coating lines. Ms. Klein provided MSDS for the coating materials that contained hexavalent chromium. According to the MSDS, the chromium solution is composed of a mixture of chromium trioxide, acetic acid, nitric acid, magnesium sulfate, and sulfuric acid. The chromium trioxide composes approximately 20-30% of the solution. According to the information provided by Ms. Klein, the facility does not use any PFAS in the process. Wastewater from the facility was also recently tested by the Great Lakes Water Authority and they did not find any PFAS present in the wastewater.

### Conclusion

Based on my on-site inspection and review of the associated records and emissions reports, Electroplating Industries (SRN: B6010) appears to be in compliance with the emission limits in PTI No. 718-86B and all applicable air quality rules and regulations.

NAME



DATE

09/28/2020

SUPERVISOR

