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

A174445382

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| **FACILITY:** Tawas Plating Company & Tawas Powder Coating, Inc. | | **SRN / ID:** A1744 |
| **LOCATION:** 510 INDUSTRIAL AVENUE, TAWAS CITY | | **DISTRICT:** Saginaw Bay |
| **CITY:** TAWAS CITY | | **COUNTY:** IOSCO |
| **CONTACT:** Kevin Jungquist , President | | **ACTIVITY DATE:** 07/17/2018 |
| **STAFF:** Meg Sheehan | **COMPLIANCE STATUS:** Compliance | **SOURCE CLASS:** MINOR |
| **SUBJECT:** Target site inspection | | |
| **RESOLVED COMPLAINTS:** | | |

**On Tuesday, July 17, 2018, a scheduled site inspection was conducted by AQD District staff at the Tawas Plating Company & Tawas Powder Coating (TPC) in Tawas City, Iosco County, Michigan. TPC representatives Kevin Jungquist (President) and Brian Plawecki (Vice President) provided a tour of the facility. Most of the facility was in operation upon arrival. Site inspection activities were conducted with the intent of confirming compliance with permit conditions, as well as determining current and historical use of products containing PFAS (Per- and Polyfluoroalkyl Substances). It should be noted that since the last compliance inspection was performed on February 3, 2017, the facility reports that there have been no changes or modifications in the process or process equipment, except for an additional batch cure oven that was installed and appears to be exempt. Therefore, some language has been copied from the previous inspection report.**

## FACILITY DESCRIPTION

TPC is made up of two main buildings, one houses Tawas Plating Company and the other houses Tawas Powder Coating (see attached map). 75-80% of the parts that TPC plates or coats are for the automotive industry, with orders being placed by major manufacturers such as Ford and GM. TPC employs 40 people and is ISO 9001:2008 certified; they are currently in the process of transitioning to ISO 9001:2015. Attached are example images of what the different types of plating and powder coatings look like when they are finished.

Two Permits to Install (PTI) 876-87 and 710-88 are associated with the facility, and were approved on February 12, 1988 and October 26, 1988, respectively. PTI No. 876-87 is for a non-cyanide zinc electroplating process with a chromate conversion process, and an electroless nickel plating process. PTI No. 710-88 is for a powder coating process with a burn off oven. It should be noted that the permit application for the zinc and nickel lines also included information for an evaporator, but no permit conditions were included with respect to the unit.

## PROCESSES

Electroless Nickel Plating Lines

Electroless nickel plating uses liquid nickel sulfate to form a nickel-phosphorous alloy deposit onto suitable substrates using a chemical reduction process rather than an external electrical current. The nickel line consists of seven 200-gallon plating tanks and 10 cleaning tanks. Plated parts are cured overnight in electric heat treat ovens (total of three) to increase the parts' hardness and complete the process. When chemicals in the line tanks are spent, the tanks are drained, and nitric acid is used to strip the tanks before they are prepped and refilled. Facility staff report that the spent nickel is pumped into a tanker and transported offsite for disposal.

Non-Cyanide Zinc Electroplating Lines

Zinc electroplating involves placing a clean ferrous component in an aqueous zinc solution and utilizing an electric current to deposit the zinc metal. The parts then undergo a chromate conversion process by immersing the part into a trivalent chrome passivate solution with an additional sealer step. Colored coatings can be applied to the zinc plated parts to add corrosion resistance (passivate). The zinc line consists of two 3,000-gallon tanks.

Powder Coating

Powder coatings are applied electrostatically and then cured under heat forming a "skin." Prior to coating, the parts go through a wash line and drying oven. The powder coating is conducted in a booth that is equipped with filters and is vented internally. Two burn off ovens are associated with the powder coating process and have stacks on the south end of the building. Empty racks that hold the parts during the coating process are placed in the ovens to remove coating.

Waste Stream

The facility concentrates their waste stream, and the nickel related fluids are processed through atmospheric evaporators and sand filters, ultimately to be trucked out. Liquid wastes associated with the zinc plating process are reported to go to the local municipality's waste water treatment plant in East Tawas. District files contain correspondence dated October 30, 1989 from McNamee Industrial Services which report that the pre-treatment waste stream from TPC did not contain any VOCs, and that based on the data no VOCs would be emitted to the atmosphere by the atmospheric evaporators.

**COMPLIANCE HISTORY**

No complaints are of record for the facility. At the time of the most recent site inspection (February 2017), the facility was found to be in compliance with its permits and air rules. To date the facility has not been required to report to MAERS.

**COMPLIANCE EVALUATION**

PTI No. 876-87

- No visible emissions were observed from any of the plating or passivating tanks during the inspection. It should be noted that the facility has clarified that the "chromic acid plating tanks" referenced in the permit are passivating tanks.
- The facility reported that no changes have been made to any materials or processes since the February 2017 inspection. Historically, the facility has switched to using different materials than what were initially listed in the permit application. These different materials are reported to be more "environmentally friendly" and would result in a decrease in emissions. Most notably, the company has switched from using hexavalent chromium in the passivating tanks to trivalent chromium.
- After the switch was made to trivalent chromium, the facility discontinued use of the foam beads/balls as required by Special Condition 12. AP-42 states that "as a result of the chemistry of the trivalent chromium electrolyte, misting does not occur during plating as it does during hexavalent chromium plating." (See attachment from AP-42.) It should again be emphasized that these are not plating tanks, and the parts undergo passivation by immersion and without an electrical current which would facilitate misting. It also appears that this change may be exempt under Rule 285(2)(r)(i) or (iii) which states: "Equipment used for any of the following metal treatment processes if the process emissions are only released into the general in-plant environment: (i) Surface treatment or (iii) Acid dipping." The company has been advised that it would be a good idea to pursue having this condition removed or modified in the permit.

PTI No. 710-88

- No visible emissions were observed from the powder coater. The batch cure ovens are loaded in the evening and were not in operation at the time of my inspection. The burn off ovens were not operating either.
- No request for testing was found in the District files.
- The powder coating booths are equipped with filters which are changed when a decrease in performance of the filtration system is noticed. They are monitored via the differential pressure and appeared to be operating properly at the time of my inspection. It should be noted that the powder coating booths filtration system is entirely self-contained, and does not vent to the atmosphere.
- The facility reports no change in fuels since permitting. All the ovens operate on natural gas.
- The ovens exhaust through stacks at the same points that are indicated in the permit application. In the powder coating building, five stacks were present at the time of initial permitting. These included two on the rinse line (water only), one on the drying oven, one on the curing oven and one on the burn off oven. Since that time, an additional stack has been added for the more recently installed burn off oven (discussed below).

No equipment maintenance, monitoring/recordkeeping, or reporting requirements are associated with the referenced permits.

The following equipment appears to be exempt based on information provided by the company (see attached information in the file). For Tawas Powder Coating:

- R 336.1281(2)(e)
  - o One water dry off oven – Natural gas fired and rated at 4 MMBtu/Hr
- R 336.1282(2)(a)(i)
  - o Two cleaning line burners – Both natural gas fired and rated at 3.8 MMBtu/Hr
  - o Five space heaters – All natural gas fired and all rated at 625,000 Btu/Hr

- R 336.1287(2)(d)
  - Three batch cure ovens and powder coating booths – All natural gas fired, one rated at 4 MMBtu/Hr and two rated at 500,000 Btu/Hr. One of the ovens (500,000 Btu/Hr) was recently installed in April of 2018, after Mr. Jungquist contacted district staff regarding permitting requirements. Based on the information that was provided, it appeared that this oven would meet the exemption criteria.
- R 336.1290
  - Two burn off ovens – Both natural gas fired, rated at 950,000 Btu/Hr. The original burn off oven was permitted under 710-88. No estimate of emissions was calculated nor required at that time. A second burn off oven was installed at the facility in 1998. TPC applied for a Rule 290 PTI exemption in February of 1998. Emission estimates were calculated for that burn off oven only and submitted in the application. More recent estimated emissions for both burn off ovens indicated that emissions for both units were well below the Rule 290 limits of <500 lbs per month (controlled) or <1,000 lbs per month (uncontrolled). See district file for additional information.

For Tawas Plating Company:

- R 336.1281(2)(e)
  - Two room dryers – Both natural gas fired, one in the nickel room rated at 250,000 Btu/Hr and one in the zinc room rated at 400,000 Btu/Hr
- R 336.1282(2)(a)(i)
  - 125 HP Boiler – Natural gas fired, rated at 5.25 MM Btu/Hr
  - Six space heaters – All natural gas fired, two rated at 300,000 Btu/Hr and four rated at 500,000 Btu/Hr
  - Three heat treat ovens – Electric, rated less than 10 MMBtu/Hr
- R 336.1285(2)(l)(iii)
  - The 2000 compliance inspection report indicated that process emissions were released in the general environment. At the time of the June 2012 inspection, six overhead ventilation fans had been installed in the plating activity areas. In the February 2017 inspection report, district staff indicated that based on the information they were provided regarding this change, it would meet the criteria of this exemption.

40 CFR Part 63, Subpart WWWWWW – National Emission Standards for Hazardous Air Pollutants: Area Source Standards for Plating and Polishing Operations

Currently, the MDEQ does not have delegation for this NESHAP. As part of the 2012 inspection it was determined that the facility was not subject to the 40 CFR Part 63, Subpart N – NESHAP for hard and decorative chrome platers but was subject to Subpart WWWWWW. Upon being brought to the attention of the facility, they responded to the requirements promptly.

**PFAS EVALUATION**

While TPC is not subject to Subpart N, a PFAS use evaluation was conducted as part of the MDEQ's investigation into the use of PFAS by industry. The checklist which was filled out as part of the inspection and will be sent to Steve Lachance in the Air Quality Division, has been attached to this inspection report in the district file.

The source does use a chemical fume suppressant (Envirowetter Plus) in the nickel tanks. A Safety Data Sheet was provided by Mr. Jungquist and can also be found in the file. The chemicals are listed as proprietary on the SDS, but Mr. Jungquist reported that the supplier stated there are no PFAS chemicals in the Envirowetter Plus. He believes they have certification of this which will be forwarded to the field office and included in the file. TPC staff also reports that they do not believe there has been historical use of PFAS at the site, as it would not work well with their plating processes.

**COMPLIANCE DETERMINATION**

At this time, Tawas Plating Company & Tawas Powder Coating appears to be in general compliance with their permit conditions, and all applicable rules and regulations.

NAME Meg Sheehan DATE 8/14/18 SUPERVISOR C. Hare