

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

B728143393

FACILITY: AUTO ANODICS		SRN / ID: B7281
LOCATION: 2407 16TH ST, PORT HURON		DISTRICT: Southeast Michigan
CITY: PORT HURON		COUNTY: SAINT CLAIR
CONTACT: Max Andrew Wiener, Vice President		ACTIVITY DATE: 01/19/2018
STAFF: Adam Bognar	COMPLIANCE STATUS: Compliance	SOURCE CLASS: MINOR
SUBJECT: Scheduled Inspection		
RESOLVED COMPLAINTS:		

On Thursday, January 19, 2018, Michigan Department of Environmental Quality-Air Quality Division (MDEQ-AQD) staff, I, Adam Bognar, Joe Forth, and Lauren Magirl conducted a targeted inspection of Auto Anodics, Inc., located at 2407 16th St, Port Huron, MI. The purpose of this inspection was to determine the facility's compliance status 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) rules; Permit to Install Nos. 369-80, 370-80, 371-80, and 273-99; and 40 CFR Part 63 Subpart N – National Emissions Standards for Chromium Emissions From Hard and Decorative Chromium Electroplating and Chromium Anodizing Tanks (Chrome NESHAP).

We arrived at Auto Anodics at around 10 am. We met with Mr. Max Andrew Wiener Jr. (Max Andrew), Vice President. We introduced ourselves, provided identification, and stated the purpose of the inspection.

During the pre-inspection meeting we discussed PTI's Nos. 369-80, 370-80, 371-80, and 273-99, as well as the previous inspection report. Mr. Max Weiner Sr. (Max Sr.), President, joined us for the meeting. Max Andrew provided us with records to review and explained the processes at Auto Anodics.

Auto Anodics specializes in aluminum anodizing and chromium flash electroplating. Both processes consist of a series of tanks in which parts are submerged via an automatic hoist to receive surface treatment. Nearly all processed parts are for the automotive industry. GM, Ford, and Chrysler are all customers. Thirty-eight people are employed at Auto Anodics. They operate from 8:30 am to 4:30 pm, Monday through Friday.

Max Andrew explained that customer demand has shifted heavily towards aluminum anodizing and away from chromium electroplating. They are considering the replacement of the chromium flash electroplating line with an additional aluminum anodizing line. A new robotic buffing system was installed in October 2017. Another buffing system will likely be installed in the next few months.

PTI No. 273-99 and Chromium Electroplating NESHAP

Auto Anodics performs chromium flash electroplating which is a form of decorative chromium electroplating. The flash process is distinct from other decorative chrome electroplating in two key ways – the chromium is plated directly onto the metal substrate instead of on top of underplating such as copper and nickel. Also, the thickness of the chrome layer is only around 15% as thick as ordinary decorative chrome plating.

Only stainless-steel parts are chromium plated. The average plating thickness is around 5 millionths of an inch, or 12.6 microns. The electroplating current applied varies between 1000 and 3400 amps and plating time varies between 2.5 and 3 minutes, depending on the workpiece. The maximum rectifier capacity is around 6000 amps.

In the chromium flash electroplating line there is one chrome electroplating tank (chrome tank), one acid

activator tank, and several rinse tanks. The chrome tank is subject to 40 CFR Part 63 Subpart N (Chrome NESHAP). Auto Anodics complies with the Chrome NESHAP by adding a wetting agent type fume suppressant to the tank. Additionally, there is a recirculating wet scrubber present. Max Sr. explained that the recirculating wet scrubber may be replaced with an identical unit in a few months.

Special Condition 1: States that wetting agent shall be applied at a sufficient frequency and quantity to maintain the chrome tank's surface tension below 45 dynes/cm². Since 2015, the new surface tension limit pursuant to the updated Chrome NESHAP is 40 dynes/cm² when measured with a stalagmometer. It appears that the facility was not aware of this change. Max Andrew showed us the records of stalagmometer readings. They have been maintaining surface tension below 45 dynes/cm², but they have occasional exceedances of the new 40 dynes/cm² limit. The attached copies of records ranging in dates from August 14, 2017 to January 18, 2017 demonstrate some of these exceedances (Attachment 1).

I informed Max Andrew that the surface tension limit is now 40 dynes/cm². He agreed to begin adhering to this new standard. I asked him to send me records in one month of daily stalagmometer readings showing that surface tension is being kept below the 40 dynes/cm² required to comply with the Chrome NESHAP.

NESHAP Subpart N states that if the surface tension limit is exceeded, then the monitoring frequency shall decrease from once every 40 hours of operating time to once every 4 hours of operating time. Once compliance is demonstrated with the 4-hour monitoring frequency for 40 consecutive hours, the monitoring frequency can be increased to every 8 hours. Then, once compliance is demonstrated with the 8-hour monitoring frequency for 40 consecutive hours, the monitoring frequency can finally return to one measurement every 40 hours of operating time. Auto Anodics monitors their surface tension daily, and the tank is operated much less than four hours per day. The chrome tank is only operated 2 or 3 days a week. There is no need for Auto Anodics to increase their current daily monitoring frequency.

The wetting agent type fume suppressant currently used is known as "Havachrome Mist Eliminator III" (Safety Data Sheet – Attachment 2). It does not contain PFAS/PFOS/PFOA based surfactants. It appears that the PFOS based surfactant known as Fumitol was used in the past, but not after September 21, 2015.

Special Condition 2: States that records shall be kept indicating the date and time of fume suppressant additions to the chrome tank. Records of these additions are kept. Max Andrew provided me with these records from August 14, 2017 to January 18, 2018 (Attachment 3). Additionally, quarterly samples of the chrome tank are sent to Haviland for a more detailed analysis of the bath solution. Records of these analyses for the past two quarters are attached (Attachment 3).

Special Condition 3-4: States that the chrome tank shall not be operated unless the packed bed scrubber is operating properly with a liquid flow indicator present. I verified that water was flowing to the scrubber. A liquid flow indicator was present (rotameter). The rotameter indicated that the flow rate to the scrubber was 1.5 gallons/minute at the time of the inspection.

Special Condition 5: Requires that an approvable operation and maintenance plan be maintained for the packed bed scrubber. The plan must include a requirement that liquid flow rate readings be taken daily. I reviewed the operation and maintenance plan for the chrome tank on-site and found it to be approvable. The plan includes the information required to comply with the Chrome NESHAP. Daily readings of flow rate to the scrubber are kept (Attachment 1). Max Andrew stated that this scrubber is taken apart and cleaned twice a year - sometime near Christmas and again during the fourth of July.

Special Condition 6: Production records of parts processed on an hourly basis must be maintained. These records were made available to me during the inspection. The records I reviewed indicated that the tanks are operated less than the 3 to 4 runs per hour stated in the permit application. Additionally, the chrome tanks are only operated 2 to 3 days of the week. There are not nearly as many parts run through the chrome line as there were in the past. Chrome flash electroplating is in such low demand

they are considering shutting down the line in 2-3 months.

Special Condition 7: Specifies stack requirements. I did not perform a rooftop inspection to verify stack parameters. I observed that exhaust from the scrubber is directed out of the roof. Auto Anodics appears to comply with these requirements.

PTI No. 369-80 and PTI No. 371-80 – Storage Tanks

These PTI's refer to four storage tanks, each with a 5000-gallon capacity containing phosphoric acid, nitric acid, sulfuric Acid, and caustic soda. The tanks supply chemicals mainly for the aluminum anodizing process. The permits are relatively old, both were issued August 18, 1983. The specify emission limits for each tank, state that no visible emissions above 20% opacity shall be emitted, and require all tanks be vented to a lime box. I did not observe any visible emissions from the tanks. I observed that the exhaust from each tank was vented to a lime box. I did not notice any strong odors near the storage tanks. Max Andrew provided me with purchase/usage records for these chemicals. I collected the most recent full month, December 2017 (Attachment 4). Based on what I observed during the inspection, the storage tanks appear to comply with the permit conditions.

PTI No. 370-80 – Aluminum Anodizing System

The primary source of business at Auto Anodics is their aluminum anodizing process. Only aluminum parts are processed. No chromic acid is used. The process consists of a series of dip tanks: Parts first enter a pretreat/brighten tank that consists of a phosphoric acid bath. The phosphoric acid removes the existing oxide layer from the aluminum so that the aluminum substrate is clean. Next, parts are quickly rinsed and transferred to the anodizing tanks, minimizing contact with ambient air that would tend to prematurely oxidize the aluminum surface. In the anodizing tanks the parts react with the oxygen liberated during electrolysis forming a protective layer of aluminum oxide on the part's surface. This is a thicker oxide layer than what would occur naturally. These anodizing tanks contain approximately 15% sulfuric acid as a catalyst/electrolyte. Finally, the parts are transferred to a tank containing boiling water. The boiling water serves to "seal" the coating by causing the aluminum oxide to become hydrated and swell, thus reducing porosity.

Acid fumes from the tanks are controlled by a packed fume caustic scrubber, an anodize fume scrubber, and a mist eliminator. Fumes from the tanks appeared to be ventilated to these scrubber units. I observed that scrubber purge water is collected in a waste drum located below the scrubbers. Max Andrew stated that the scrubbers were operating, but he was not able to show me the flow rate or the pH of the scrubber water in either scrubber. He stated that there is no flow meter for these scrubbers and pH measurements are taken in the on-site lab and not recorded. I discussed this issue with him and we came up with a plan that will allow Auto Anodics to better demonstrate that the scrubbers are operating correctly. Max Andrew stated that he will begin keeping daily records of scrubber pH, and daily records verifying that fluid is flowing through the scrubber unit. I informed him that I will follow up in a month to check that these records are being kept.

This is a relatively old permit, also issued August 18, 1983. The special conditions specify that opacity shall not exceed 20%, and limits the emission rates of phosphoric, nitric, and sulfuric acids to 5.2, 0.06, and 0.06 tons per year, respectively. The records I reviewed show that the actual usage of these chemicals is around half (or less) of what was estimated in the permit application (Attachment 4). Based on the low material usage these emission limits should be achieved. I did not observe any visible emissions.

"RoboBuff" System

Auto Anodics recently purchased and installed a robotic buffing station consisting of one FANUC industrial robot. The robot has a single arm equipped with a buffing wheel. The buffing robot is contained in a metal/glass enclosure to prevent metal dust particles from dispersing throughout the plant. The buffing enclosure is ventilated through a wet dust collector and into the general in-plant

environment. The RoboBuff system appears to be exempt from Rule 201 requirements pursuant to Rule 285 (2)(l)(vi)(B). Max Sr. stated that an additional RoboBuff system may be purchased in the future that is basically identical to the currently installed unit.

Boilers

There are two identical natural gas fired boilers on-site that are used for process heating. Only one boiler at a time is active. The other is always used for backup. Max Andrew stated that the boilers both have a rated heat input of 5,230,000 BTU/hr. These boilers appear to be exempt from Rule 201 requirements pursuant to Rule 282 (2)(b)(i).

The company does not have any cold cleaners or emergency generators.

We left the facility at around 11:30 am.

Compliance Determination

Auto Anodics appears to comply with the federal Clean Air Act, Part 55, Air Pollution Control of the Natural Resources and Environmental Protection Act, 1994 Public Act 451; Michigan Department of Environmental Quality, Air Quality Division (MDEQ-AQD) rules; Permit to Install Nos. 369-80, 370-80, 371-80, and 273-99; and the Chrome NESHAP (Subpart N).

NAME Adam Bogart DATE 2/23/2018 SUPERVISOR SK