

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

N005864070

FACILITY: B & L PLATING		SRN / ID: N0058
LOCATION: 21353 EDM, WARREN		DISTRICT: Warren
CITY: WARREN		COUNTY: MACOMB
CONTACT: Victor Pirrami , Plant Manager		ACTIVITY DATE: 08/10/2022
STAFF: Adam Bogнар	COMPLIANCE STATUS: Non Compliance	SOURCE CLASS: MINOR
SUBJECT: Self-Initiated Inspection		
RESOLVED COMPLAINTS:		

On Wednesday, August 10, 2022, Michigan Department of Environment, Great Lakes, and Energy-Air Quality Division (EGLE-AQD) staff, I, Adam Bogнар conducted a self-initiated inspection of B & L Plating, located at 21353 Edom, Warren, 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 Environment, Great Lakes, and Energy, Air Quality Division (EGLE-AQD) rules; and 40 CFR Part 63 Subpart N, National Emission Standards for Chromium Emissions from Decorative Chromium Electroplating Tanks (Chrome NESHAP).

EGLE-Materials Management Division staff Jim Day was also present during this inspection. This inspection was conducted to investigate an allegation filed with the EPA on August 8, 2022. The anonymous reporting party claims that B&L Plating is "Discharging untreated chrome plating toxins and metals into sanitary sewer and ground/ground water. No functioning water or air cleaning equipment in use."

The facility currently operates without a permit. Based on my observations, all process tanks are exempt from Rule 201 requirements pursuant to Rule 285 (2)(r). Rule 285 (2)(r) exempts metal treatment processes such as cleaning, electroplating, and pickling from Rule 201 requirements if emissions from process tanks are released only into the general in plant environment. All emissions from process tanks at B&L plating are exhausted into the general in plant environment.

We arrived at the facility at around 2 pm and met with Victor Pirrami, Manager. We identified ourselves, provided our business cards, and stated the purpose of the inspection.

Susan Gainer works at B & L Plating on Thursdays to take care of bookkeeping, finances, and to maintain some of the records required by the Chrome NESHAP. Susan assisted me in my record review after the inspection. Victor assisted us for the inspection of the production area.

B & L Plating operates Monday through Friday from 8:30 am to 3:30 pm. There are four full time employees including Geno Pirrami, president, and his son, Victor Pirrami. According to Victor, in the past B & L Plating plated parts at a production level, but now operates as an "off the street" plating facility at a much slower pace. Approximately 90% of the plating done is automotive related. Boats, household items, and other miscellaneous jobs make up the remainder of the work. Plating substrates include steel (90% of parts), Zinc, and Brass.

Based on my observations during this inspection, this is not a high throughput business. Most of the completed work I observed on-site appeared to be custom in nature.

Plating Operations

Victor Pirrami stated that there have not been any process changes since the last EGLE-AQD inspection in June 2019. The chrome tank is 1000-gallon capacity. At the time of this inspection the amp hour meter on the chrome rectifier read 720155 amp-hours. According to Victor, 240-amp hours is approximately 1 hour of plating. Victor stated that the manufacturer told him to use this approximation to determine plating time. During my previous inspection on June 20, 2019, I noted that total amp hours were 702669. This equates to a difference of 17,486 amp-hours. Divided by 240 amp-hours, this gives 72.85 hours of chrome plating time in the past approximately 3 years. This makes sense when compared to the reported 30.95 hours operated in 2021. I verified that B&L Plating maintains records of plating time in the chrome tank so that surface tension readings are taken at least every 40 hours of plating time.

Generally, all parts receive three layers of plating: copper → nickel → chrome. When parts first arrive at the shop they are sent through a series of tanks for cleaning in the following series of processes: Buffing/polishing → alkaline cleaning → 2x water rinse (remove cleaner) → 2-3% sulfuric acid (remove alkaline film) → water rinse (acid removal) → Copper Strike (sodium cyanide) → water rinse (cyanide is recovered) → water → 2-3% sulfuric acid → final water rinse.

The alkaline cleaning tank can also be electrified to strip chromium from parts. The water rinse tank after the cyanide tank is periodically pumped to an on-site chlorine treatment tank (to treat the cyanide) before being discharged. After this cleaning process, the parts are sent to one of the plating lines. This same cleaning process is also used before the nickel plating.

After the initial cleaning, the parts are sent through the following process to receive the three-part plating: copper electroplating → buffing → cleaning process → nickel electroplating (bright or semi-bright) → chromium electroplating → wiping/buffing → end customer.

The complainant noted that “No functioning water or air cleaning equipment in use.” B&L plating uses a fume suppressant as a control technology to comply with the Chrome NESHAP. This means that there is no physical “equipment” such as filters, scrubbers, or ducting used to control chromium emissions. This is an acceptable practice under the Chrome NESHAP.

The current fume suppressant used in the chrome tank is “Haviland Mist Eliminator PF Free” (SDS in file). I had Victor show me the 5-gallon container of this mist eliminator during this inspection. Haviland Mist Eliminator PF Free does not contain PFOS, PFOA, or PFAS. Previous inspections by the EGLE-AQD identified the use of fluorinated fume suppressants in the chrome tank. Based on the records I reviewed, use of these fluorinated solvents stopped prior to September 21, 2015, when a change to the Chrome NESHAP began regulating their use.

Victor provided me with records of surface tension measurements for the chrome tank. B & L Plating contracts Haviland Products to perform their surface tension measurements. Samples of the chrome tank bath solution are sent offsite to the Haviland lab for testing of multiple parameters. Haviland recommends the amount of fume suppressant that should be added based on the test results.

Surface tension of the chrome tank is measured by Haviland Products using a tensiometer. The Chrome NESHAP states that surface tension shall not exceed 33 dynes/cm² when measured with a tensiometer. A previous AQD inspection in July 2018 revealed that this surface tension limit was exceeded on a few occasions. AQD used enforcement discretion and did not issue a violation notice because there was only a few exceedances over multiple years, the exceedances were relatively small, and at the time B&L Plating was not aware that the dyne limit decreased from 45 dynes/cm² to 33 dynes/cm².

In response to this surface tension exceedance, B&L Plating sent monthly lab reports to the AQD for six months showing that their surface tension was being kept below 33 dynes/cm². The records that I reviewed over that time period and during this inspection showed that this limit has not been exceeded since my previous June 2019 inspection.

The records I reviewed showed that B&L plating performs these analyses 4-5 times per year. The most recent analyses was on July 13, 2022. This test indicated a surface tension of 25 dynes/cm².

According to the Chrome NESHAP, these tests must be taken at least once for every forty hours of plating time. Victor stated that B&L does so little plating that it would likely take over a year for this limit to be exceeded. Based on the total amp hours I recorded between my inspections, this is true (72.85 hours in 3 years). Samples are sent to Haviland more frequently than once every forty hours of plating time (4-5 times a year) so that Victor can monitor other important parameters of the tank chemistry.

Victor showed me the bottle he uses to dose the chrome tank with fume suppressant. It appeared to be approximately 1/3 liter size. Victor stated that the tank operator adds one bottle per week to the chrome tank. Records of these fume suppressant additions were not kept. This is a violation of the chrome NESHAP 40 CFR 63.346 (b)(13). A violation notice was sent to B&L Plating to address this issue.

I informed Victor during the inspection that I would need to send a violation notice for failing to maintain records of fume suppressant additions. Victor stated that he was not aware of the need to maintain these records, but B&L Plating will start keeping them going forward. Susan provided me with a spreadsheet on August 12, 2022 that B&L Plating will use to document the date, time, and volume of fume suppressant additions. 4 oz of fume suppressant will be added each week unless the lab results recommend something different.

An operation and maintenance (O&M) plan is maintained at the facility in accordance with the Chrome NESHAP. I had B&L Plating update this plan to include a procedure for documenting fume suppressant additions.

B&L Plating maintains an ongoing compliance status report in compliance with the Chrome NESHAP. B&L Plating provided me the 2021 ongoing compliance status report after the inspection on August 12, 2022. The report shows that the chrome tank was operated for 30.95 hours in 2021. Victor signed the document stating that all work practices in the operation & maintenance plan were followed.

Boiler

There is one 1.6MM BTU/hr natural gas fired boiler present used for indirect heating of process tanks. Based on my observations, this boiler is exempt from Rule 201 requirements pursuant to Rule 282 (2)(b)(i).

Buffing & Polishing

Buffing and polishing operations are exhausted to a Cyclone located outside of the facility. This cyclone was installed in 1996. The cyclone is exhausted outdoors. Permit exemption Rule 285 (2)(l)(vi) for buffing/polishing operations requires a fabric filter be installed with a mechanical pre-cleaner. The cyclone can only be considered a mechanical pre-cleaner.

B & L plating is a relatively small volume plating facility. Victor Pirrami estimates that approximately 25 parts per week are plated, with each part weighing about 1-2 pounds (2,600 lbs/year). AP-42 emission factor for uncontrolled grey iron grinding is 17 lbs of PM per ton processed and 1.7 lbs of PM10/PM2.5 per ton processed. Combining estimated throughput with this emission factor shows that potential PM emissions at B&L Plating will be approximately 22.1 lbs/year and PM10/PM2.5 emissions will be 2.21 lbs.

It is likely that less than this will be emitted. Some of the particulate matter emissions will likely be larger diameter particles that will be captured by the cyclone.

Based on my observations and calculations, buffing and polishing operations are exempt from Rule 201 requirements pursuant to Rule 291 (2)(f). This rule states, in part, that emissions from a PM emitting process can be considered “de minimis” if they do not have a potential to emit greater than 10 tons per year of total PM, 5 tons per year of PM10, and 3 tons per year of PM2.5. Based on my emission calculation, B&L plating will not exceed these potential emissions even if throughput increases by 450x. If production does increase substantially from where it is now, then B&L plating may need to provide more detailed calculations or install a fabric filtration system. I did not see any evidence during this inspection that throughput has increased in a meaningful way.

Other Plating Operations

B&L Plating operates two nickel electroplating tanks and one copper electroplating tank. Based on my observations during the inspection, these tanks are exempt from Rule 201 requirements pursuant to Rule 285 (2)(r). These tanks are vented to the general in-plant environment. A wetting agent is periodically added to the nickel tanks. The SDS indicates that the wetting agent does not contain PFAS (See file). I informed Victor that he needs to maintain an annual compliance certification report in accordance with 40 CFR Part 63 Subpart WWWWWW (6W) National Emission Standards for Hazardous Air Pollutants – Area Source Standards for Plating and Polishing Operations. The AQD has not taken delegation of 40 CFR Part 63 Subpart WWWWWW (6W).

Materials Management Division

Jim was not able to substantiate the claim that B&L Plating was discharging untreated chrome into the sanitary sewer or ground. There is a water treatment system on site used to treat cyanide before sending it to the city wastewater treatment plant. The on-site wastewater treatment system also has a recirculating PFAS remediation filter. This PFAS filter draws water from the

treatment reservoir, runs the water through a carbon filter, then adds the water back to the same treatment reservoir. Victor stated that he runs the PFAS remediation filter during working hours and shuts it down at night; however, Victor stated that the PFAS filter is currently offline because a filter needs to be changed. Jim notified Eric Moore of the EGLE Water Resources Division of the status of the PFAS filter.

We left the facility at around 3:30 pm.

Compliance Determination

B&L Plating did not maintain records of fume suppressant additions to the chrome plating tank. This is a violation of 40 CFR 63.346 (b)(13). A violation notice was sent to B&L Plating to address this issue.

Based on my inspection and record review, B&L Plating is in compliance with all other requirements of 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 Environment, Great Lakes, and Energy, Air Quality Division (EGLE-AQD) rules; and 40 CFR Part 63 Subpart N, National Emission Standards for Chromium Emissions from Decorative Chromium Electroplating Tanks (Chrome NESHAP).

NAME Adam Bogner

DATE 8/22/2022

SUPERVISOR K. Kelly