

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

N818034511

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| FACILITY: SELFRIDGE TECHNOLOGIES DIV | | SRN / ID: N8180 |
| LOCATION: 56851 GRATIOT, CHESTERFIELD | | DISTRICT: Southeast Michigan |
| CITY: CHESTERFIELD | | COUNTY: MACOMB |
| CONTACT: Brian Sluck , Wastwater/Maintenance Operator | | ACTIVITY DATE: 05/12/2016 |
| STAFF: Sebastian Kallumkal | COMPLIANCE STATUS: Compliance | SOURCE CLASS: SM OPT OUT |
| SUBJECT: Onsite Inspection | | |
| RESOLVED COMPLAINTS: | | |

On Thursday, May 12, 2016, Michigan Department of Environmental Quality –Air Quality Division staff Sebastian Kallumkal conducted an annual targeted inspection at the Selfridge Plating, Inc. - Selfridge Technologies Division located at 56851 Gratiot Avenue, Chesterfield Township, Michigan. The purpose of the inspection was to verify facility’s compliance with requirements of Article II, Air Pollution Control, Part 55 of Act 451 of 1994 and with the requirements of the Permit to Install (PTI) No. 349-08 and 40 CFR Part 63 Subpart T-National Emission Standards of Halogenated Solvent Cleaning (NESHAP T). The PTI also contains opt-out limits for hazardous air pollutants (HAPs).

I arrived at the facility at about 2:45 PM and met with Brian Sluck, Maintenance/Waste Treatment Operator. I introduced myself and stated the purpose of my inspection. I provided him the “DEQ Environmental Inspections: Rights and Responsibilities” Brochure.

During the pre-inspection meeting, Mr. Sluck explained that they recently (March-April, 2016) eliminated the alkaline zinc plating line (Line 2) and the zinc phosphating process (Line 4). We discussed other processes, maintenance, recordkeeping, etc. No additional process was installed and the chemical are not changed. The facility has two batch TCE degreaser tanks (1 dirty, 1 clean, each at 2’x2’x1’, made of plastic). Both tanks are filled half way (1’). The excess liquid after cleaning is removed using air purge). The tanks are not heated.

The facility also has paint room where they touch paint the parts using brushes. The parts are painted for Nickel and silver stripping. Very small amount of specialized paint is used for this process. The emissions are released into the general plant environment. This process appears to be exempt from permit to install requirements pursuant to R336.1287 (a).

The facility is a job shop and performs various metal (silver, tin, zinc, nickel, etc.) plating on steel parts for aerospace industries. The coating could be either electroplating or electro-less plating (nickel). The process includes alkaline/acid cleaning, water rinse, metal plating and rinses. The facility also performs black oxide coating. The facility operates 5 days per week, 8 hours per day and employs about 9 people. He indicated that this facility may be closed and the operations may be relocated to the Harrison Township facility in the future.

The facility has a silver (Ag) plating line (Line 1) and CN strip line, Part of Line 4 (Nitric acid tank), Tin line (Line #5), Black oxide line (Line #6), Cyanide Strip Line (Line #7), and Electroless Nickel Plating Line (Line #8). The Electroless Nickel Plating line has two nickel plating tanks. The nickel plating tanks are vented through the composite mesh pad system to control the nickel emissions.

Mr. Sluck explained to me that that the mesh pad system is cleaned 2-3 times per day. Once a year, they de-assemble the CMP and clean individual pads. The CMP has two differential pressure monitors. Only the bottom one is connected to the system. The other one is used for calibration purpose.

The facility is subject to Halogenated Solvent Cleaning NESHAP, 40 CFR Subpart T and NESHAP for Area Source Standards for Plating and Polishing Operations, 40 CFR 63, Subpart WWWW. The initial notifications for these NESHAPs were received on October 22, 2008.

I collected copies of the records for Nickel strike bath records (2015), Quarterly Composite Mesh Pad

differential pressure monitoring records (2015 and 2016), Area Source Plating NESHAP Compliance Summary (2014 & 2015), Nickel Strike bath records (2014), 2014 and 2015 chemical usage records which includes trichloroethylene usage, PenDIP A usage, etc.

After the initial meeting, Mr. Sluck accompanied me for an inspection of the facility.

Silver Line (Line #1)

The purpose of the Silver Line is to silver plate metal parts. This line was in service during the inspection. See Attachment for a list of tanks on the Silver Line. Most of the tanks on the Silver Line vent only to the general in-plant environment and are, therefore, exempt from permitting pursuant to Rule 285(r). Tank #1 Soak, Tank #2 Electro Cleaner, and Tank #9 Cyanide Copper (Copper Strike, KOH & KCN) vent outside via Stack #1. Tank #'s 1, 2 & 9 appear to be exempt from permitting pursuant to Rule 290(a)(ii). The company provided Rule 290 demonstration for these tanks along with the application for PTI No. 349-08. This line also includes a silver stripping tank (CN strip) to strip silver off the parts that do not need to be silver plated. This tank is vented to the atmosphere. The records provided indicate that these tanks are well under the Rule 290 emissions limits.

Line #2

This line includes the Soak Tank, Electro Cleaner Tank, and the Nitric Acid Tank which are vented outside. These tanks appear to be exempt from permitting pursuant to Rule 290(a)(ii). During the inspection I requested that the company provide an estimate of usage of the materials used in the Soak Tank, the Electro Cleaner Tank, and the Nitric Acid Tank. The records provided indicate that these tanks are well under the Rule 290 emissions limits.

Tin Line (Line #5)

The purpose of the Tin Line is to tin plate metal parts. Mr. Sluck explained that this line is currently running limited production. Most of the tanks on the Tin Line vent only to the general in-plant environment and are, therefore, exempt from permitting pursuant to Rule 285(r). The Copper Tank and the Soak Tank vent outside. These tanks appear to be exempt from permitting pursuant to Rule 290(a)(ii). The company provided Rule 290 demonstration for the Copper Tanks and the Soak Tank with the permit application for PTI No. 349-08.

Black Oxide Line (Line #6)

The purpose of the Black Oxide Line is to apply a rust prevention coating to stainless steel parts. The Black Oxide Line was not operating during the inspection. See attachment for a list of the tanks on the Black Oxide Line. Most of the tanks on the Black Oxide Line vent only to the general in-plant environment and are exempt from permitting pursuant to Rule 285(r). The Oil Tank vents to the general in-plant environment and appears to be exempt from permitting pursuant to Rule 290(a)(i). Tank #6 Non Certified Black Oxide Tank and Tank #7 Certified Black Oxide Tank vent outside.

Cyanide Strip Line (Line #7)

The Cyanide Strip Line is used to strip coating off of botched electroless nickel plating jobs. The Cyanide Strip Line was not in service during the inspection. See attachment for a list of the tanks on the Cyanide Strip Line. Most of the tanks on the Cyanide Strip Line vent only to the general in-plant environment and are, therefore, exempt from permitting pursuant to Rule 285(r). Tank #3 Cyanide Strip Tank vents outside. This tank appears to be exempt from permitting pursuant to Rule 290(a)(ii). The company provided Rule 290 demonstration for this tank with the permit application for PTI No. 349-08.

Electroless Nickel Line (Line #8)

The purpose of the Electroless Nickel Line is to apply nickel plating to metal parts. See attachment for a list of the tanks on the Electroless Nickel Line. Most of the tanks on the Electroless Nickel Line vent only to the general in-plant environment and are, therefore, exempt from permitting pursuant to Rule 285(r). This line has two electroless nickel tanks, which are covered by Permit to Install No. 349-08. Tank #10

High Phosphorous Nickel Tank and Tank #11 Medium Phosphorous Nickel Tank vent to a composite mesh pad scrubber. The scrubber is used to control nickel emissions before venting the exhaust air outside. The electroless nickel tanks are covered when not in use. Mr. Sluck told me that they ceased the use of high Phos Nickel Plating tank and only the mid phos tank is used. During the inspection, Tank #11 was operating and Tank #10 was covered.

The composite mesh pad scrubber was manufactured by North American Air Products, Inc. Selfridge Plating developed a Operation & Maintenance Plan for the operation of the scrubber. The O&M Plan and the manufacturer's operating manual were made available during the inspection.

The scrubber is equipped with a pressure drop gauge. It is also equipped with a secondary (back-up gauge). Mr. Sluck explained that he calibrates the pressure drop gauges when he pulls the mesh pads once or twice per year. Mr. Sluck records the pressure drop on a weekly basis. He provided pressure drop records during the inspection. The records show that the scrubber has been operating within the proper range for pressure drop. According to Mr. Sluck the wash down schedule of the mesh pads is set-up according to the manufacturer's recommendations (31.8 gallons per minute for approximately 30 seconds). Mr. Sluck explained that when the pressure drop is currently low because only of the mid phos tanks is used and the load to the mesh pad is low. He maintains records of the quarterly inspections. Mr. Sluck explained that he maintains all the necessary spare parts for the scrubber on-site.

PTI No. 349-08-Two Electroless Nickel Plating and Phosphate Coating Tank

Section 1- Condition 1-Emission Limit: Nickel emissions are limited to 0.0006 pph. The nickel tank emissions are controlled by composite mesh pad (CMP) scrubber control system with 90% control efficiency. A properly maintained and operated Composite Mesh Pad scrubber system appears to achieve this emission limit. Based on the records the scrubber system is properly maintained.

Section III-Condition 1 requires facility to submit an approvable operation and maintenance plan. AQD received the plan initially on June 1, 2009, and additional information was submitted by June 22, 2009. The plan was reviewed and found approvable.

Section IV-Condition 1 requires facility to install, operate and maintain a composite mesh pad (CMP) system in a satisfactory manner for the operation of the electroless nickel plating process. During the inspection I verified that that the CMP system is installed. The air flow appears to be vented to the CMP system.

Section IV-Condition 2 requires the installation of a device to monitor the pressure drop across the CMP system. I observed that two pressure monitors were installed on the system. Only one was connected to the system. Mr. Sluck informed me that they will use the other one during the annual calibration of the working gauge.

Section V-Condition 1 requires verification and quantification of the nickel emission rate from the nickel plating process by testing, if requested by AQD. This emission rate has not been verified analytically and AQD has not requested a verification of the emissions.

Section VI-Conditions 1-3 requires the permittee to perform inspections of the CMP system. Permittee keeps records of the differential pressure monitoring on a weekly basis and the visual inspections of the CMP system on a quarterly basis. The records show the date, time and operator name and brief description of the working condition.

Section VI-Condition 4 requires keeping records of the annual calibration of the differential pressure gauge. The gauge calibration records are kept at the facility.

Section VIII- Condition 1 limits the stack dimensions. I did not verify these parameters. Mr. Sluck informed me that the stack dimensions are in compliance with the permit limits.

FGFACILITY

Permit to Install No. 349-08 is an opt-out permit for hazardous air pollutants (HAPs). Section 1-Condition 1 and 2 limits the individual HAP emissions and aggregate HAP emissions to less than 9 tons per year and 22.5 tons per year based on a 12-month rolling time period as determined at the end of each calendar month. Facility uses Trichloroethylene in its cold cleaners. It keeps records of the TCE purchases.

The only HAPs emitted at the facility appears to be from the use of TCE as solvent. Based on the usage records provided by the company the TCE emission was calculated and determined that they emit well under the HAP limits of the permit. The most individual TCE they've emitted in 2014 was 2680 pounds (1.34 tons) based on 220 gallons usage and 12.18 pounds per gallon density. In 2015, the facility used 275 gallons (3350 pounds or 1.7 tons).

Facility used about 55 gallons of MEK (Methyl Ethyl Ketone [MEK] in 2016. MEK (2-Butanone, CAS No. 78-93-3) was delisted from the HAP list (Title 129 List) as of December 14, 2016.

From previous conversations with the facility contacts it was believed that the rust preventative oil (Pen Dip A) used in the Zinc Phosphate Line and the Black Oxide Line contained about 1% xylene (HAP). On 5/18/2016, a technical representative (Tom Madeu) from manufacturer (Heatbath Corporation) of Pen Dip® A informed AQD staff that Pen Dip A does not contain xylene. The SDS also does not reference xylene.

Solvent

The company ceased operating the large cold cleaner unit. Instead it is using two plastic containers (2'x2'x1') with 1' TCE. It is a batch processes and not heated (batch cold cleaner). I informed Mr. Sluck that the covers need to be kept tightly closed all the time when not in use.

The cold cleaner is exempt from permitting pursuant to Rule 281(h); however, it is subject to NESHAP T because of the use of TCE, a halogenated solvent. Subpart T requires that facility shall employ a tightly fitting cover and shall be closed at all times except during parts entry and removal and have a freeboard ratio of 0.75 or greater. From the information provided the freeboard is 1 [one].

The company's compliance approach to NESHAP T is to keep the unit covered when not in use, maintain greater than 0.75 freeboard ratio, and follow work practices including draining parts for at least 15 seconds or until dripping ceases. Operating procedures, pursuant to Michigan Administrative Rule R336.1707(4) are to be posted near the cold cleaner.

Ovens

Three electric ovens are used to bake silver plated parts and electroless nickel plated parts.

Sandblaster

Selfridge Plating uses a Sand Blast Room to sandblast coatings off of metal parts using aluminum oxide as the blasting agent. Exhaust is controlled by a dust collector and is vented to the general in-plant environment. The sandblaster is exempt from permitting pursuant to Rule 285(l)(vi)(B).

Boiler

The company has one natural-gas fired boilers located on-site. The boiler is rated at 600,000 BTU/hr and is, therefore, exempt from permitting pursuant to Rule 282(b)(i).

Compliance Determination

As a result of the inspection and record review, Selfridge Plating Inc. – Technologies Division appears to be in compliance with the federal Clean Air Act Part 55, Air Pollution Control of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended, Permit to Install No. 349-08, and NESHAP T.

NAME Sebertang Kallenn Kal

DATE 5/18/2016

SUPERVISOR CTE

