

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

N320931973

FACILITY: ELM PLATING CO		SRN / ID: N3209
LOCATION: 1319 S ELM ST, JACKSON		DISTRICT: Jackson
CITY: JACKSON		COUNTY: JACKSON
CONTACT: Sean Peck , Environmental/Process Specialist		ACTIVITY DATE: 10/23/2015
STAFF: Michael Gabor	COMPLIANCE STATUS: Compliance	SOURCE CLASS: MINOR
SUBJECT: Scheduled Inspection		
RESOLVED COMPLAINTS:		

Minor Source Inspection

State Registration Number (SRN): N3209.

Facility Contact

Sean Peck (SP) – Vice President, (517) 782-8161, Sean.Peck@elmplating.com

Allen Kinsler (AK) – Environmental Compliance, (517) 990-1035,
allen.kinsler@elmplating.com

Purpose

On October 23, 2015, I conducted a scheduled, multi-media inspection, unannounced, of the Elm Plating Company, Plant Number 1 (EPC1) facility in Jackson. This multi-media inspection was conducted by representatives from the Water Resources Division, Ken Mroczkowski, the Office of Waste Management and Radiological Protection, Tim Sonnenberg, and the Air Quality Division (AQD), Michael Gabor. The purpose of the inspection was to determine the facility's compliance status with the applicable federal and state air pollution regulations, particularly Michigan Act 451, Part 55, Air Pollution Control Act and administrative rules, and conditions of EPC1's Permit to Install (PTI) numbers 136-00 and 238-04. This facility was last inspected on February 15, 2012.

Facility Location

The facility is located in the city of Jackson at 1319 South Elm St., in a commercial and industrial area. A public park is located about 1,000 feet west of the facility.

Facility Background

EPC1 provides their customers with 2 main services at this location, which include zinc barrel plating (both zinc and chromate plating) and heat treating of all-metal fasteners and stampings. Currently, most of their production is for the auto industry. Additional information from their website regarding their services is attached to this report.

Regulatory Applicability

Processes at EPC1 operate under PTI numbers 136-00 and 238-04, and permit exemption Rules 290 (a)(ii)(A), 285(l)(iii) and 285(r)(i). EPC1 is also subject to 40 CFR Part 63, National Emission Standards for Hazardous Air Pollutants (NESHAP), Subpart WWWW (6W), Plating and Polishing Operations, Area Sources. The state of Michigan has not been delegated authority to enforce this NESHAP and so, it is only federally enforceable. EPC1 provided initial notification to the EPA on October 23,

2008, as required by subpart 6W.

Arrival & Facility Contact

Visible emissions or odors were not observed upon our approach to the facility via Elm Street. We arrived at approximately 10:26 am, entered the facility, requested access for an inspection, and provided identification / business cards. We were met by SP and AK.

Emission Unit Details

PTI No. 136-00: Zinc Barrel Plating Line / AKA Barrel (B) Line 4 (B4).

The permit for this barrel line does not specify air pollution control equipment and requires a single required stack (Stack 1). The permit does not specify dimensions for the acid dip tank containing hydrochloric acid (HCLTANK6), a soak cleaner tank containing potassium hydroxide (KOHTANK2) and an electro cleaner tank containing potassium hydroxide (KOH) (KOHTANK10). Permit special condition (SC) 1 requires the facility to maintain a 20 percent or less hydrochloric acid (HCl) concentration in HCLTANK6 and to keep records of the HCl purchased and concentration used in HCLTANK6. Permit SC 2 requires the facility to keep records of the amount used and concentration of potassium hydroxide (KOH) in KOHTANK2 and KOHTANK10.

PTI 238-04: Heat Treat Lines with Oil Quench.

The permit for the 3 heat treat lines does not specify air pollution control equipment or stack requirements. The heat treat lines are identified as emission units (EU) EUOQ1, EUOQ2 and EUOQ3 (also all 3 EU are organized as FG123) and all are described as a heat treat line equipped with a hardening furnace, oil quench, a draw furnace and auxiliary equipment. The group of heat treat lines has a particulate emission of 2,460 pounds per month (SC 1.1) determined monthly based upon a material balance recordkeeping identified in Appendix I of the permit. Per permit SC 1.2, the visible emissions from the group must not exceed a six-minute average of 10 percent opacity. Per SC 1.3, the process must not use more than 335.0 gallons of quench oil in the group per month. The facility must calculate the particulate emission rate from the group for each calendar month, using a material balance for quench oil usage (Appendix I). All weekly quench oil purchased or weekly usage rate (column A), amount of spent oil sent off-site for recycling (column B), amount of spent oil or sludge sent off-site for disposal (column C), documentation of the solids content in spent oil or sludge prior to recycling or disposal, amount of oil spilled (column D) and emission calculations (column E).

Permit Exemption Rule 290: Zinc Barrel Plating Lines / AKA B2 and B3.

Lines B2 and B3 consists of several tanks, including alkaline cleaner tanks (KOH), HCl acid tanks, and an electro cleaner tanks containing KOH. These specific tanks have a blower associated with each line that exhausts via a single stack. Past compliance for HCl emissions was demonstrated through Rule 290 and the KOH tanks are exempt by Rule 285(l)(iii). Then the plater tanks follow and vent into the in-plant environment and are exempt per Rule 285(r)(vii). Approximately 10% of parts that are zinc plated on line B3 receive a chromate coating, per customer finishing needs. The requirements to comply with Rule 290 include: (1) A description of the emission unit is maintained throughout the life of the unit; (2) Records of material use and calculations identifying

the quality, nature, and quantity of the air contaminant emissions are maintained in sufficient detail to demonstrate that the emissions meet the emission limits outlined in this rule; and (3) The records are maintained on file for the most recent 2-year period and are made available to the air quality division upon request.

Permit Exemption Rule 285(r)(i): Chromate Conversion Lines

EPC1 also has two chromate (C) lines, C1 and C3. Sixteen tanks are associated with line C1 and 8 tanks with line C3. EPC1 offers 3 chromate finishes, including hexavalent yellow, hexavalent olive drab, and black chromatic bath and sealer. The lines do not exhaust to the exterior. See the attached summary for C1 and C3 provided by the facility.

Pre-Inspection Meeting

A pre-inspection meeting was held with SP and AK, during which a copy of the MDEQ brochure: *Rights and Responsibilities Environmental Regulatory Inspections* was provided. We informed SP and AK of our intent to conduct a facility inspection and to review the various records required by their permits and Rule 290. I also reviewed the requirements of both permits, informed SP that the facility was subject to NESHAP 6W, and requested that I receive a copy of any future deviation reports that EPC1 submits to the EPA. I also requested records from January 2014 through September 2015, to demonstrate compliance with: (1) Rule 290 for lines B2 and B3, (2) SCs 1 and 2 of PTI No. 136-00, (3) SCs 1.1, 1.2, and 1.4 of PTI No. 238-04 by October 30, 2015. AK indicated that we would email them to me. We then proceeded to tour the facility and operation. SP and AK extended their cooperation during the inspection and accompanied us during the full duration of the inspection.

Onsite Inspection

SP and AK then escorted us, as we conducted the onsite tour portion of the inspection. We first observed the chromate conversion line C1 and I did not observe an associated stack. Then we proceeded to observe line B4. SP pointed out the line's tanks and the single stack. SP explained that the metal parts need to be cleaned prior to the zinc plating and addition of the chrome finish. When then observed line C3 and I did not observe an associated stack. We then observed zinc barrel line B2, which was installed in 1983.

We then observed the 3 heat treat lines with oil quenching. We observed each line's hardening furnace, oil quench, and the second, reheat furnace. The general indoor area around the 3 heat treat lines was smoky and steamy. SC 1.2 of PTI No. 238-04, requires that visible emissions from FG121 not exceed a six minute average of 10% opacity. AK accompanied me outside, to the facility's eastern, exterior side to view the stacks associated with FG123, stacks 3, 4, and 6. I did observe slight visible emissions from the stacks, but did not conduct a Method 9 assessment to determine compliance with SC 1.2. I did advise AK to obtain appropriate certification in order to assess the opacity requirements of SC 1.2.

I rejoined the group and we then observed the area that once occupied line B1, which was removed and now serves as a parts sorting area. We then observed line B3. We then proceed to facility's exterior western side. At the time of the inspection, 2 large access doors were opened in the area that houses the heat treatment lines. The open doors were observed on the facility's western and eastern sides, and appeared to

create a cross draft. SP informed me that the doors were opened to help control the interior temperature and worker comfort. I informed him that I was concerned with the heat threat line-generated emissions that were escaping via the open bay doors (see Figure 1). I added that they should take a look at the process to be sure that associated emission were properly captured and vented to the outdoors via the stacks.

AK informed me that he suspects that the building would come under negative pressure and perhaps the stack performance may be diminished if the doors remained open. I advised him to look into providing sufficient "make-up air" in order to ensure proper emission capture and stack performance. We then returned to the facility's interior and concluded the inspection.

Post-Inspection Meeting

I informed RM and AK that I did not note any major issues or concerns during the inspection, except for the need to assess the capture and venting of the emissions associated with heat treat lines, and that I would need to review their records prior to making a final compliance determination. We thanked RM and AK for their time and cooperation, and departed the facility at approximately 11:35 am.

Recordkeeping Review

I requested records from January 2014 through September 2015, to demonstrate compliance with: (1) Rule 290 for lines B2 and B3, (2) SCs 1 and 2 of PTI No. 136-00, (3) SCs 1.1, 1.2, and 1.4 of PTI No. 238-04 by October 30, 2015, close of business. I also requested information regarding the Btu per hour rating for the furnaces / ovens associated with B2, B3, and B4.

AK emailed several of the requested recordkeeping items to me by October 30, 2015, and included operational data for the year 2014 and January through September 2015. I granted the facility an additional week and requested all items by November 6, 2015. See the attached email dated November 2, 2015, which detailed my questions, comments, concerns, and additional recordkeeping items that were requested. Some additional recordkeeping items were received and on November 12, 2015, I summarized, by email, items that were received and pending (attached), and requested that remaining items be provided as soon as possible. All final version of the provided recordkeeping items have been attached to this report.

PTI No. 136-00 / B4 Records Review:

Records for the requested time period indicate compliance with permit SC 1, which requires the facility to maintain a 20 percent or less hydrochloric acid (HCl) concentration in HCLTANK6 (full Excel HCl concentration spreadsheet was too long to attach to the file, so an example of the records maintained was attached) and to keep records of the HCl purchased and concentration used in HCLTANK6 (the HCl concentration was generally between 9 and 11% during the time period reviewed). All HCl-related records have been attached to the report.

Records for the requested time period indicate compliance with permit SC 2, which requires the facility to keep records of the amount used and concentration of potassium hydroxide (KOH) in KOHTANK2 and KOHTANK10. Records of the amount of KOH used, in gallons, for KOHTANK2 and KOHTANK10 were attached. The facility

also maintains records of the concentration of KOH used in both tanks. The full Excel spreadsheet was too long to attach to the file, so an example of the KOH concentration records maintained was attached. The KOH concentration was generally between 1.9 and 3% and 0.4 and 0.6% for KOTANK2 and KOHTANK10, respectively, during the time period reviewed.

PTI No. 238-04 Records Review:

The records provided by EPC1 appear to demonstrate compliance with permit SC 1.1, which limits particulate emissions from the 3 heat treat lines to 2,460 pounds / month and with S.C. 1.3, which limits quench oil usage to 335 gallons per month. A monthly summary datasheet was provided and was attached to this report.

Permit Exemption Rule 290: Zinc Barrel Plating Lines B2 and B3 Records Review:

The records provided by EPC1 for the requested timeframe appear to demonstrate compliance with Rule 290 requirements, which include emitting less than the monthly emission limit, providing a description of the emission units, and providing records for the requested timeframe. EPC1 has demonstrated compliance with Rule 290(a)(ii)(A), which limits HCl (not identified as a carcinogen) emissions to 1,000 pounds per month (uncontrolled). EPC1 provided records for both B2 and B3 that indicate that monthly emissions are generally less than 1 pound of HCl per month for each barrel line. An email dated November 13, 2015, which details the emissions calculations, is attached to this report. The full Excel spreadsheet was too long to attach to the file, so an example of the monthly HCl emissions recordkeeping for the month of January 2014 was attached for both B2 and B3. Past compliance demonstration with Rule 290 records are also attached to this report as background.

Regulatory Applicability Determination for Boilers and Furnaces Associated with B2, B3, and B4:

Barrel line boilers input heat ratings are listed below:

B2: 840,000 Btu/hr

B3: 1,256,000 Btu/hr

B4: 2,512,000 Btu/hr

These boilers are exempt from obtaining a PTI under Rule 282(b)(i). The boilers are not subject to the Federal NSPS subpart Dc standard because their rating is less than 10 million Btu/hr. Also, since the boilers use only natural gas, they are exempt from the Federal NESHAP, subpart 6 J standard.

Each barrel line has an associated oven, which are exempt from obtaining a PTI under Rule 282(a)(i). An additional oven is on site. The Btu/hr ratings for each are provided below:

Bake Oven for B2: 1,200,000 Btu/hr

Bake Oven B3: 1,200,000 Btu/hr

Bake Oven B4: 1,200,000 Btu/hr

Perceptive Industries Bake Oven: 1,600,000 Btu/hr

It appears that EPC1 is maintaining adequate records in an adequate format.

Compliance Summary

Based upon the inspection and the review of the records, EPC1 appears to be in substantial compliance. Several correspondences with EPC1 were necessary in order to establish several recordkeeping items. I advise EPC1 pursue additional steps to ensure that the current recordkeeping system continuously tracks emissions in order to demonstrate compliance with air quality rules, e.g. Rule 290.

I also will advise EPC1 to review and take appropriate actions regarding the heat treat process to ensure that associated emissions are properly captured and vented to the outdoors via the stacks. I recommend a follow up visit, to occur in the next 6 months, to observe the heat treat lines after EPC1 conducts their assessment.



Image 1(Figure 1) : One of 2 bay doors located on the facility's western side. Emissions, generated from the heat treat lines, were escaping underneath the top of the door opening. 10/23/15, 11:25 am.

NAME Michael M. Kohn DATE 11/23/15 SUPERVISOR [Signature]