

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

N278770912

FACILITY: ELECTRO CHEMICAL FINISHING		SRN / ID: N2787
LOCATION: 2610 REMICO S W, WYOMING		DISTRICT: Grand Rapids
CITY: WYOMING		COUNTY: KENT
CONTACT: Kyle Thaxton , EHS Specialist		ACTIVITY DATE: 01/30/2024
STAFF: April Lazzaro	COMPLIANCE STATUS: Compliance	SOURCE CLASS: MINOR
SUBJECT: Unannounced, scheduled inspection.		
RESOLVED COMPLAINTS:		

Air Quality Division (AQD) staff, April Lazzaro and Laura Martin arrived at the facility to conduct an unannounced, scheduled inspection and met with Don Post, President, Eric Vaughn, Technical Project Manager and Kyle Thaxton, EHS Specialist. Both Eric and Kyle accompanied us on the inspection of the facility. Prior to our arrival, off-site observations were conducted, and no visible emissions or odors were identified.

FACILITY DESCRIPTION

Electro Chemical Finishing (ECF) is a decorative chromium electroplating facility that provides plating services to the automotive, housewares and plumbing industries. The facility has replaced three large scrubbers and one small scrubber with brand new units pursuant to the Rule 285(2)(d) exemption, which allows for the reconstruction or replacement of air pollution control equipment with equivalent or more efficient equipment. The facility is subject to PTI 584-91F, 40 CFR Part 63 Subpart N- National Emission Standards for Hazardous Air Pollutants (NESHAP) for Chromium Emissions From Hard and Decorative Chromium Electroplating and Chromium Anodizing Tanks and permit exemptions. Operations are also subject to the Plating and Polishing Area Source NESHAP found in 40 CFR Part 63 Subpart WWWWWW. Compliance with the provisions of Subpart WWWWWW was not evaluated as Michigan does not have delegated authority over that federal regulation.

In early 2023, the facility changed the fume suppressant to its replacement material which is the Ankor LF19. The safety data sheet (SDS) states that the product does not contain perfluorooctane sulfonic acid (PFOS) which makes it NESHAP compliant. The SDS also states it does not contain perfluorooctanoic acid (PFOA) or other perfluorochemicals.

The company stated that they suffered a small fire in 2023 that while not significant as a fire, did cause smoke damage to the facility and corrective updates to mitigate the smoke damage are still occurring in some areas.

COMPLIANCE EVALUATION

EUATRICHROME3

This emission unit is for one trivalent decorative chrome electroplating tank. ECF does not use a wetting agent incorporated as a bath ingredient, it is added separately, and as such the tank (affected source) is subject to the surface tension limitations identified in the provisions of NESHAP Subpart N. The company is maintaining surface tension records as required, and the data indicates compliance. They currently use a stalagmometer for these measurements. This tank is controlled by a composite mesh pad (CMP) system shared with FGALINE. Scrubber pressure drop readings recorded during the inspection were as follows: Stage 1- 0.2” H₂O, Stage 2- 0.9” H₂O, Stage 3- 2.1” H₂O and overall pressure drop was 3.2” H₂O. Pressure drop readings are comparable to last inspection readings, although the first and second stages were slightly higher this year. The values remain within the ranges established in the O&M Plan. ECF conducts a manual washdown of the unit on a daily basis. This emission unit does not have any limitations on hours of operation.

EUBLINE

The EUBLINE is an electroless nickel preplating process that includes two chromic acid etch tanks that use a fume suppressant and are connected to the EUCLINE packed bed scrubber. The remaining tanks of EUBLINE for the electroless nickel process are vented to the EUBLINE CMP scrubber. EUBLINE scrubber pressure drop readings recorded during the inspection were as follows: Stage 1- 1.4” H₂O, Stage 2- 0.2” H₂O, Stage 3- 1.2” H₂O. The Hepa filter has been removed from the unit as the manufacturer indicated it was not necessary. The overall pressure drop was 3.0” H₂O, which is slightly higher than during the previous inspection, and are within the ranges established in the O&M Plan. The EUBLINE operations are limited to 4,000 hours of operation per year

based upon a 12-month rolling time period as determined at the end of each calendar month. The current 12-month rolling hours of operation through December 2023 are 195.74 hours which indicates compliance with the limit.

The surface tension limit for the chromic acid etch tanks is 60 dynes/cm, and the records reviewed indicate compliance with that limit.

EUCLINE

The EUCLINE is a decorative hexavalent chrome electroplating line containing one decorative chrome plating tank that is ducted to the EUCLINE scrubber with mist eliminator that was replaced in July 2023. In a 2023 email from the company, they indicated that the previous scrubber had 18" of random dump pack and a chevron mist eliminator which will remove 80% of the chemistries passing through it, whereby the new scrubber is comprised of a 4' dump pack and a chevron blade mist eliminator which will remove 98% of the chemistries passing through it.

The remaining tanks of EUCLINE are ducted to the EUBLINE CMP scrubber. The EUCLINE scrubber pressure drop reading recorded during the inspection was 0.7" H₂O. Water flow was observed at 90-95 gallons per minute. These readings are within the ranges established in the O&M Plan.

During the inspection, it was noted that this scrubber appeared to have a small greenish drip occurring on the outlet fan gasket. We also discussed that being the largest scrubber this unit was operating at the time of the fire, and did experience some media plugging from the smoke cause by the fire. The filters were cleaned which did improve the pressure drop back into normal ranges, however they are still communicating with the manufacturer on whether filter replacements are needed. Since the manufacturer was already scheduled to come out, ECF will have them check to identify the cause of the discolored liquid that was observed. (see attached photo) In a follow up discussion, ECF stated that the scrubber was inspected by the manufacturer who indicated that a gasket was defective, and it will be replaced. ECF also stated that all the scrubbers will be cleaned professionally by the manufacturer in the near future.

The surface tension limit for the chrome plating tank is 40 dynes/cm, when measured with a stalagmometer and the records reviewed indicate compliance with that limit except for one measurement taken on December 8, 2023, where the recorded value was 48 dynes/cm. This value was discussed with Mr. Thaxton, who stated that on that day, no plating occurred, however a bath purification process was done. This process involves removing impurities from the bath, and it also removes wetting agents. Due to the daily routine of taking the surface tension measurements, this was done as usual, however it missed review and flagging/removal by the company. Since no plating was conducted on that day, this is not an exceedance for purposes of the NESHAP or the permit, and the rationale provided for the value recorded is acceptable. This emission unit does not have any limitations on hours of operation.

EUSLDGDRYER

The EUSLDGDRYER is a packed column scrubber to control emissions from the electric sludge dryer. The pressure drop was 0.6" H₂O and the water flow is non-variable at 9 gpm. These readings are within the ranges established in the O&M Plan. The 12-month rolling hours of operation for the sludge dryer are 601.8 through December 2023 which indicates compliance with the 2,500 hour per year limit, based on a 12-month rolling time period. The calculated 12-month rolling total hexavalent chromium emissions are 0.00057 pounds which indicates compliance with the emission limit of 0.004 pounds per year based on a 12-month rolling time period.

EUNITRIC

The EUNITRIC/Rack Strip line is not in the permit, but the scrubber has been replaced and is maintained through the existing O&M Plan with operating ranges identified. The pressure drop during the inspection was 1.8" H₂O and the flow was 46-49 gpm. The pressure drop of the mist eliminator was 0.1" H₂O during the inspection. These readings are within the ranges established in the O&M Plan. This unit operates pursuant to a Rule 290 one-time demonstration. (see file) The maximum uncontrolled emissions calculated based on capacity as provided by the consultant is 909.1 lbs of nitric acid and 18.2 lbs of sulfamic acid per month. The reported maximum controlled emissions calculated based on capacity as provided by the consultant is 46.4 lbs of nitric acid and 0.9 lbs sulfamic acid per month. These demonstrate compliance with Rule 290.

FGALINE

The FGALINE is a decorative chrome electroplating line which has two permitted trivalent chrome electroplating tanks. The tanks are vented to the same scrubber as EUATRICHROME3. As indicated above, the CMP scrubber appeared to be performing satisfactorily pursuant to the O&M Plan requirements and visual observations. The two tanks identified in FGALINE are limited to 4,000 hours of operation per year based upon a 12-month rolling time period as determined at the end of each calendar month. The 12-month rolling FGALINE operating hours are identified in the records under the heading "Tri Cr Total". The current 12-month rolling hours of operation through December 2023 are 375.13 hours.

The Waste Treatment Scrubber is not part of the permit as the waste-water treatment equipment is exempt from permitting via Rule 285(2)(m) with minimal emissions. A packed bed scrubber is used to control emissions and odors from the waste treatment tanks. The scrubber is maintained through the existing O&M Plan with operating ranges identified. The pressure drop during the inspection was 0.8" H₂O and the flow was 61-64E gpm. These readings are within the ranges established in the O&M Plan. The media in the scrubber was discolored and showing growth of an unknown origin, which is apparently typical for this unit. Mr. Vaughn had previously checked with the manufacturer who said that the growth wasn't bad enough to affect the particulate control and they monitor the pressure drop closely. Instead of cleaning and putting the media back in, they just replace it. The pressure drop was 1.0". This reading was within the ranges established in the O&M Plan.

A visual inspection of each scrubber was conducted, and there were no apparent visual signs of structural issues or leaks, aside from the observations noted above for EUCLINE, which are being addressed by the company.

Surface tension records were obtained and there were no reported exceedances for the time period evaluated.

The halogenated solvent degreaser has been dismantled and removed from the facility.

In August 2023, the facility began using the paint booth, which was idle during the previous inspection. The booth currently operates pursuant to the Rule 287(2)(c) permit exemption which limits paint usage to 200 gallons per month, minus water. Records were requested, and the highest usage month was October 2023 with 40.57 gallons of coating used. The records provided indicate compliance with the 200 gallon limit.

I requested all maintenance records that the O&M Plan requires for the quarterly scrubber inspections. Mr. Thaxton is currently conducting the O&M Plan daily visual observations.

The Ongoing Compliance Status Reports required by the NESHAP Subpart N were requested and received while on site. During a review of these reports, each indicating compliance with the NESHAP was achieved, it was noted that these are being signed by Mr. Thaxton. These should be signed by the owner or plant manager in the future.

See attached for documentation required by the permit and O&M Plan that was reviewed as part of this compliance inspection.

CONCLUSION

Electro Chemical Finishing was in compliance at the time of the inspection.



Image 1(3 scrubbers) : Front: EUCLINE Middle left: EUNITRIC Back left: EUBLINE



Image 2(EUCLINE) : Small drip of greenish liquid, bottom middle bolt area.

NAME April Lazzaro

DATE 02/28/2024

SUPERVISOR HH