

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

B619645858

FACILITY: ALLIED FINISHING INC		SRN / ID: B6196
LOCATION: 4100 BROADMOOR AVENUE SE, GRAND RAPIDS		DISTRICT: Grand Rapids
CITY: GRAND RAPIDS		COUNTY: KENT
CONTACT: Brad Hirdes , Environmental Compliance/Owner		ACTIVITY DATE: 08/09/2018
STAFF: April Lazzaro	COMPLIANCE STATUS: Non Compliance	SOURCE CLASS: MINOR
SUBJECT: Unannounced, scheduled inspection.		
RESOLVED COMPLAINTS:		

Staff, April Lazzaro arrived at the facility to conduct an unannounced, scheduled inspection and met with Brad Hirdes and Justine Lauri. During the pre-inspection meeting, I explained to them that the scope of the inspection was to include compliance with the current facility permits, and the National Emission Standard for Hazardous Air Pollutants (NESHAP) for Chromium Emissions From Hard and Decorative chromium Electroplating and Chromium Anodizing Tanks located in 40 CFR Part 63 Subpart N. Mr. Hirdes and Ms. Lauri have recently taken over environmental duties at the facility following the retirement of the previous environmental staff.

FACILITY DESCRIPTION

Allied Finishing is an electroplating job shop which plates metal parts for motorcycles, automotive industry, furniture fixtures and plumbing fixtures. Currently there are approximately 220 employees operating three shifts with variation based on production needs. Allied Finishing operates two decorative chromium plating lines permitted pursuant to Permit to Install (PTI) No. 349-01C, 40 CFR Subpart N, and they are known as the Blue Line (EUBLUE1) and the Green Line (EUGREEN1). Each line is controlled by a separate scrubber system. This permit also covers two sludge dryers, which have both been removed from the facility. PTI No. 34-06A covers the aluminum preplate line tanks including the scrubber control systems for a nitric acid tank and the zincate tank which contains sodium cyanide. The nitric acid tank has been converted to a product that is identified as an inorganic solid, has not been evaluated by the AQD based on air toxics and will be further discussed below. PTI No. 162-17 covers the new nitric acid metal stripping operation which is controlled by the scrubber control system. The woods nickel tank was changed to an externally vented system in 2010 and is not currently permitted. An evaluation will be requested. In total, there are six scrubber systems operating at the facility.

Most of the control devices are included in the Malfunction Abatement Plan (MAP)/Operation & Maintenance (O&M) Plan. AQD staff has requested that Allied update the varied individual documents into one comprehensive plan that is cohesive and easy to find and follow by facility staff. The woods nickel scrubber needs to be added to the new plan as it currently has no MAP.

This facility is also subject to the Plating and Polishing NESHAP Subpart WWWW. Since Allied Finishing is currently identified as a minor source of Hazardous Air Pollutants, the AQD does not have delegation for this regulation and compliance will not be evaluated.

COMPLIANCE EVALUATION

PTI No. 162-17

The nitric line and associated scrubber was installed in May 2018. A MAP for the scrubber was received on January 4, 2018. The permit requires scrubber monitoring according to the plan, as well as recordkeeping. The scrubber stack and fan housing is on the roof, but the scrubber body is in the plant adjacent to the line itself. The roof inspection indicates that acid is condensing in the exhaust fan and dripping out onto the scrubber support beams and corroding the metal. (see attached photos) I pointed this out to Mr. Hirdes and Ms. Lauri that this is an issue considering that it's only been running for three months. This is a violation of Rule 910, proper operation of a control device. A Violation Notice will be issued. Upon further review of the permit, it specifically requires visual inspection of the scrubber system quarterly to ensure there is proper drainage, no buildup and no evidence of chemical attack on the structural integrity of the control device. Additionally, an evaluation of the scrubber body that is housed in the plant was also conducted. The parameters as indicated in the MAP were being monitored and within the ranges identified by the manufacturer. There was a significant issue however with the air

flow in the strip area. The room has two "bay door" style garage doors at the interior of the system as well as a regular door behind the scrubber on the exterior wall. The bay door on the north west side was open, as well as the regular door. This was creating air flow through the room. As the three of us stood next to the scrubber I looked up and saw that the exterior of the unit was dripping with green condensation. (likely condensed nitric acid solution) Then, when the rack was pulled up out of solution, we were hit with nitric fumes as it traveled past us and out the door to the ambient air, bypassing the scrubber. There is clearly an air balance issue in this room. Mr. Hirdes said that the scrubber manufacturer was just out yesterday and told them to keep the exterior door closed to avoid this, but it was open. Since the air flow issues directly relate to the capture and control of emissions at the facility, Allied Finishing shall amend the MAP to include a set of measures to ensure the air flow problem is corrected and monitored. The MAP shall be amended within 45 days of this report and submitted to the AQD upon completion. This area should be closely monitored, and future stack testing may be required.

PTI No. 349-01C

This permit covers the two chrome plating lines, EUBLUE1 and EUGREEN1 as well as two sludge dryers. Both sludge dryers and the associated venturi scrubbers have been removed from the facility.

EUBLUE1

The Blue Line emission unit is described as three chrome plating tanks controlled by a single packed bed wet scrubber with mist eliminator. There have been no known changes to the facility's rectifier capacity. The facility demonstrates compliance with the Chrome NESHAP using surface tension as identified on the 1995 Initial Notification form. The scrubbers are required by the AQD air toxics regulations. The highest reported surface tension reading reported to AQD as recorded by a tensiometer in 2017 and 2018 was 32 dynes/cm for each of the three tanks in EUBLUE1. The NESHAP limit is 33 dynes/cm and the data indicates compliance with the limit.

Allied Finishing replaced one chrome tank in March 2014 which operated until 2017 when it was damaged and swapped out with a refurbished tank. There was no NESHAP notification received for this change, nor was a permit application submitted. This 'new' tank is currently in storage to be used for backup. AQD will request a timeline and cost list of all tank repairs and replacements that have occurred since 2006 to evaluate as to whether or not reconstruction has occurred. The NESHAP considers each individual tank the affected source. This means that when a subject tank is installed, initial notification etc. is required.

The NESHAP also has language that prohibits the use of perfluorooctane sulfonic acid (PFOS). The permittee stated they have not used PFOS in the chrome plating process since 2012 and currently use Fumetrol 21 as the fume suppressant.

The Blue Line scrubber underwent stack testing in 2001. However, due to changes at the facility which include changes to the scrubber and the time lapsed the AQD will be requesting stack testing for total chromium on this unit to determine compliance with the permit limit of 3.00×10^{-4} pph. This testing will be required to take place within 90 days of the letter. The permit also contains a pound per year limit, and compliance with that value will be determined following the stack test.

The permit also limits the hours of operation of the Blue Line to 5,600 hours per year based on a 12-month rolling time period as determined at the end of each calendar month. The highest reported amp hours to date in 2018 was the 12-month period ending January 2018 at 2,802.7 amp hours. This value indicates compliance with the limit.

Copies of the quarterly scrubber inspections for the past two years was requested and received. A review of the information indicates the work has been completed and documentation is attached. Also attached is a copy of the daily scrubber inspection form that includes the pressure drop readings. The required testing shall establish new parameters going forward for proper operation of the scrubber. The O&M Plan for EUBLUE1 lists the reading on the magnehelic gauge should be +/-2 of the value 1.3" H₂O. This is not an acceptable range, because -2" of H₂O would present as a negative number. A scrubber with a negative pressure drop would indicate improper operation. This was identified and discussed with Allied Finishing staff. They will update the O&M Plan within 45 days of this report and resubmit to the AQD. The stack was not measured at the time of the inspection, but dimensions should be confirmed prior to any future permitting action.

EUGREEN1

The Green Line consists of three chrome plating tanks controlled by a scrubber and the associated ancillary tanks and equipment. There have been no known changes to the facility's rectifier capacity. The facility demonstrates compliance with the Chrome NESHAP using surface tension for the two existing tanks as identified on the 1995 Initial Notification form. The scrubbers are required by the AQD air toxics regulations. The highest reported surface tension reading reported to AQD as recorded by a tensiometer in 2017 and 2018 was 32 dynes/cm for each of the three tanks in EUGREEN1. The NESHAP limit is 33 dynes/cm and the data indicates compliance with the limit.

Allied Finishing replaced one chrome tank on EUGREEN1 on May 5, 2014 which is still in operation today. There was no NESHAP notification received for this change, nor was a permit application submitted. AQD will request a timeline and cost list of all tank repairs and replacements that have occurred since 2006 to evaluate as to whether or not reconstruction has occurred. However, since this tank is still in operation without the proper notification pursuant to 40 CFR Part 63 Subpart N, the installation of the tank constitutes a violation of Part 63. A Violation Notice will be issued for the NESHAP. The permittee stated they have not used PFOS in the chrome plating process since 2012 and currently use Fumetrol 21 as the fume suppressant. In 2017 the company identified the use of a product called HMEIII. AQD staff requested an SDS of this product because I couldn't find anything about it on the internet. Ms. Lauri provided the SDS and it was determined that it did not contain PFOS. An inquiry to the manufacturer of the product confirmed that it was never known to contain PFOS.

The Green Line scrubber does not appear to have any stack test data available because it was installed in 2004 and AQD has no record of stack testing on file in the Grand Rapids office except for the 2001 data. During the 2001 testing, this line was equipped with two different scrubber systems which no longer exist. As such, the AQD will request stack testing for total chromium on this unit to determine compliance with the permit limit of 5.00×10^{-4} pph. This testing will be required to take place within 90 days of the letter. The permit also contains a pound per year limit, and compliance with that value will be determined following the stack test.

The permit also limits the hours of operation of the Green Line to 5,600 hours per year based on a 12-month rolling time period as determined at the end of each calendar month. The highest reported amp hours to date in 2018 was the 12-month period ending January 2018 at 2,503.4 amp hours. This value indicates compliance with the limit.

Copies of the quarterly scrubber inspections for the past two years was requested and received. A review of the information indicates the work has been completed and documentation is attached. Also attached is a copy of the daily scrubber inspection form that includes the pressure drop readings. The required testing shall establish new parameters going forward for proper operation of the scrubber. The O&M Plan for EUGREEN1 lists the reading on the magnehelic gauge should be ± 2 of the value of 0.25" H₂O for the pre filter and 0.6" H₂O for the post filter. This is not an acceptable range, because -2" of H₂O would present as a negative number. A scrubber with a negative pressure drop would indicate improper operation. This was identified and discussed with Allied Finishing staff. They will update the O&M Plan within 45 days of this report and resubmit to the AQD. The stack was not measured at the time of the inspection, but dimensions should be confirmed prior to any future permitting action.

EUSLUDGE1 and EUSLUDGE2

As previously indicated the two sludge dryers have been removed from the facility, and the conditions in each emission unit no longer apply.

PTI No. 34-06A

This permit describes EUALUMPREPLATE as an aluminum pre-plate line consisting of a variety of tanks. The nitric acid tank, etch tank and two desmut tanks are controlled by a packed bed scrubber and the aluminum soak tank and the zincate tank are controlled by the cyanide scrubber which is also a packed bed. Material usage limits for this line include limiting the use of nitric acid to not more than 10,000 gallons of nitric acid per year on this line based on a 12-month rolling time period as determined at the end of the month. The use of nitric acid has been discontinued on this line and has been replaced by a different organic solid used with sulfuric acid. Allied Finishing should evaluate whether or not the

change requires a permit. However, at this time, there is no nitric used on this line to compare to the material limit.

Visual inspection of the cyanide scrubber system indicated no visible issues. Note this is the "smaller" of the two scrubbers for the EUALUMPREPLATE line. The acid scrubber was also observed, and the packing was dark with some sort of growth. Also, the flex connect material on the scrubber outlet to stack needs replacement.

During the file review, I was unable to find a document with O&M Plan requirements for these two scrubbers. The facility is keeping daily record of the acid scrubber pressure drop on a daily basis as required. There should also be a weekly record of the cyanide scrubber spray nozzle operation observation. This should be added to the O&M Plan and submitted within 45 days of this report.

MISCELLANEOUS

The woods nickel tank has been at the facility for years, and in 2010 as a result of the Plating and Polishing NESHAP for Area Sources in 40 CFR Part 63 Subpart WWWW, the facility was required to add an exhaust system by July 1, 2010. The woods nickel tank scrubber was manufactured in February 2010, and the maintenance of this scrubber is not included in the O&M Plan. Additionally, a file review indicated that Rule 285(f) (2008) had previously been applied to the addition of this ventilation system. Rule 285(f) (2008) applies only to the installation of *additional* control equipment on an existing source. AQD exemption documentation states that the activity is to result in a positive reduction of an air contaminant from existing sources. Since the woods nickel tank was internally vented, and the emission of nickel from the scrubber was new, this exemption was not intended for this use. Therefore, Allied Finishing will be asked to determine if the woods nickel tank is exempt or requires a permit. This approach has been taken with other plating facilities who have made a similar change.

There have been no changes to the two small exempt natural gas fired boilers.

COMPLIANCE SUMMARY

Allied Finishing was in non-compliance at the time of the inspection. A Violation Notice will be sent which will detail the violations and the expectations going forward.

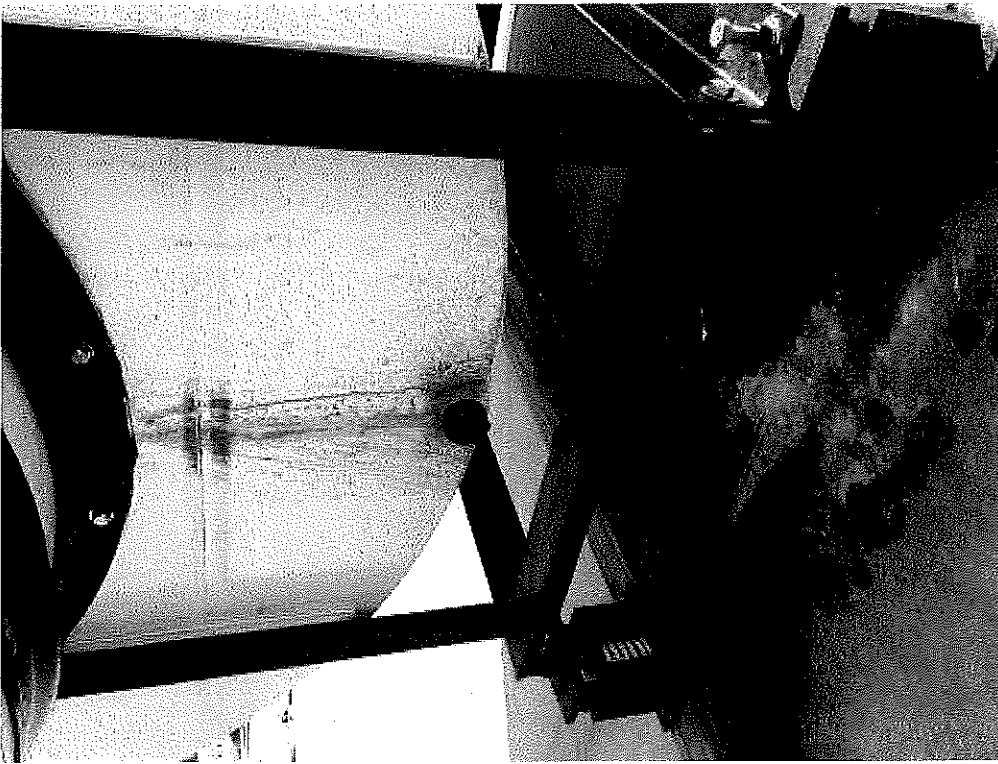


Image 1(New Nitric Scrubber) : Discoloration and acid attack



Image 2(Nitric Scrubber) : Metal framework showing acid attack

NAME Asin Lloyd

DATE 10-2-18

SUPERVISOR [Signature]