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

N278728303

FACILITY: ELECTRO CHEMICAL FINISHING		**SRN / ID:** N2787
LOCATION: 2610 REMICO S W, WYOMING		**DISTRICT:** Grand Rapids
CITY: WYOMING		**COUNTY:** KENT
CONTACT: Steve Hulst , Environmental Manager		**ACTIVITY DATE:** 01/16/2015
STAFF: April Lazzaro	**COMPLIANCE STATUS:** Non Compliance	**SOURCE CLASS:** MINOR
SUBJECT: Unannounced, scheduled inspection.		
RESOLVED COMPLAINTS:		

Staff, April Lazzaro, Air Quality Division (AQD); and Reed Sneller, Office of Waste Management and Radiological Protection arrived at the facility at 8:55 AM to conduct an unannounced, scheduled joint inspection. I had contacted Steve Hulst, Quality Manager/Environmental Health & Safety Manager at approximately 8:10 AM to tell him we would be there at 9:00 AM. Mr. Hulst was provided a copy of the DEQ Environmental Inspections: Rights and Responsibilities brochure and its contents were discussed. I informed him that he was on my schedule for a routine inspection this year, but that the timing of the inspection was based on the chrome plating wastewater release recently identified. We discussed the scope of the AQD inspection to include the current Permit to Install No. 584-91C, 40 CFR Part 63 Subpart N- National Emission Standards (NESHAP) for Chromium Emissions From Hard and Decorative Chromium Electroplating and Chromium Anodizing Tanks and 40 CFR Part 63 Subpart T- NESHAP for Halogenated Solvent Cleaning.

Electro Chemical Finishing (ECF) is a hexavalent and trivalent chrome plating facility providing parts to the automotive industry. They also do buffing that is internally controlled and vented, they have a halogenated solvent (trichloroethylene) vapor degreaser, a sludge dryer, one spray booth and associated ovens, a nitric acid rack stripping line and a waste water pre-treatment system. The facility is located at the east end of an industrial park, with residential homes to the immediate east. Two of the homes to the east of the facility have swimming pools. The facility currently employs 160 employees and operates two shifts, five days a week with an occasional Saturday shift.

I asked Mr. Hulst if the facility had installed the two new trivalent chromium plating tanks pursuant to the November 13, 2012 permit revision. He indicated that they had, and I told him that the AQD did not receive a notification form pursuant to the Subpart N requirements. Mr. Hulst indicated he thought he sent it in. I double checked the records and even looked in the database under the 44th Street facility and could not find it. This is a violation of 40 CFR Part 63 Subpart N 63.345(b) which states that installation of an affected facility (an affected facility is each chrome plating tank) needs to submit information to the AQD indicating that they have a new affected source. Additionally, PTI No. 584-91C Special Condition No. VII.1 requires that 30 days after completion of the installation the permittee shall notify the AQD District Supervisor in writing. This was not done and is a violation of that condition. On January 27, 2014 Mr. Hulst provided via e-mail copies of these notifications which were dated 2012 and 2013.

Mr. Hulst was informed that an inspection of the roof was needed, and we decided to do that first. Before we accessed the roof, we went past the maintenance department where the daily records are kept regarding the operating condition of the five wet scrubbers located on the roof. I observed the top sheet on the clipboard that contained records for the month of January. The daily records were available on a clipboard including the day of the inspection, January 16th. The sheet that is in use to record the data pursuant to the Operation and Maintenance Plan (O&M Plan) is not the current one on file. (see attached for examples) This daily log sheet required by the O&M Plan has a section for each scrubber and the person conducting the inspection has to look at the following conditions of each unit: Water Feed Meter Reading, Magnehelic Reading, Are the nozzles Spraying Adequately?, Are there any Issues with the Scrubber Housing?(Note conditions such as Cracks, Stress, Leaks etc.), Are there any issues with the Blower Assembly?(Note conditions such as Vibration, Belt Squeal, etc.), Are there any Visible Emissions from the Stack? Each question has a yes/no check box and a line for comments if necessary. Based on the brief review of the paper work in maintenance, it was documented that an inspection of each scrubber was completed the day of the inspection and an issue with the rack stripper scrubber was noted by a check mark after the question "are there any issues with the Scrubber Housing".

We arrived to the roof through an access hatch, to identify approximately 2.5" of snow covering the roof. Two men were changing filters on the building HVAC system. This was relatively close (~15-20') and to the NW of the roof access hatch. Other than the footprints directly leading to and from the HVAC system, the roof had no other identifiable footprints. I asked Mr. Hulst how much snow we had received over night and he said not much. (See attached for a precipitation summary for the past week. No more than a trace amount of snow had occurred each day for the past week.) Therefore, it is impossible for the maintenance staff to have conducted the inspections as listed on the daily check list for some time.

Photos of all scrubbers evaluated are attached to this report via a data CD.

EUCLINE

We first inspected the EUCLINE single packed bed fume scrubber unit which is located at the north east portion of the roof. It provides secondary control to a hexavalent chromium electroplating line consisting of one decorative chromic acid plating tank that is subject to 40 CFR Part 63 Subpart N currently with a Tank ID# C-20 (formerly ID# C-18). Water flow was identified in the unit on the east side where the nozzles are present. It was identified that the magnehelic gauge to determine pressure drop across the unit had been removed. The lines existed, but were cut and hanging at the side of the unit. This emission unit is in violation of the permit and Rule 910, for failure to install, maintain and operate in a satisfactory manner, due to cutting off the magnehelic gauges. Also, the emission unit is in violation of 40 CFR 63.6(e)(1)(i) for failure to operate and maintain any affected source, including associated air pollution control equipment and monitoring equipment, in a manner consistent with safety and good air pollution control practices for minimizing emissions. EUCLINE is limited to 4,000 hours per year based on a 12-month rolling time period. Current 12-month rolling records through December 2014 indicate hours of operation are 2,365 Mr. Hulst provided the surface tension records required by 40 CFR Subpart N and they are within appropriate parameters. The permit also requires that the facility implement an operation and maintenance plan (O&M Plan) for the scrubber and to set a preventative maintenance procedure to ensure proper operation. When asked, Mr. Hulst was not aware of whether or not the quarterly inspections were being done. The facility is in violation of this special condition for failure to maintain the magnehelic gauges per the O&M Plan, failure to maintain inspection records and for failure to set a preventative maintenance procedure to ensure proper operation. A request for stack testing will be made.

Rack Strip Line

Next we observed the rack strip line scrubber MW-100 manufactured by Midwest Air Products Co, Inc. which is slightly south west of EUCLINE. It controls a nitric acid strip line which was originally included in the PTI application 584-91, and the only requirement in the special conditions at that time was that the scrubber must be installed and operating properly. Based on file review, it appears as though while the company asked for a permit revision to include all existing equipment, the next permit only included A, B and C lines with the addition of the sludge dryer. It is recommended that the facility modify the permit to include this line. At this time, it is unclear exactly what happened. At the sight panes of the scrubber, there was significant air infiltration that was identified audibly and then by placing my hand near the pane. Air velocity in a scrubber has a direct correlation as to the efficiency of the unit and air infiltration reduces the quantity of gas pulled from the process. Water was visible near the nozzles. It was identified that the magnehelic gauge on this scrubber was also cut off, so pressure drop could not be determined. The lines existed, but were cut and hanging at the side of the unit. Because of the air infiltration and the failure to maintain the magnehelic gauges, this emission unit is in violation of Rule 910, for failure to install, maintain and operate the control device in a satisfactory manner.

EUBLINE

The next unit we observed was the EUBLINE Duall brand single packed bed fume scrubber unit which is located at the north west area of the roof. The B-line scrubber controls an electroless preplating line containing two chromic acid etch tanks that utilize a fume suppressant along with the scrubber. This line is not subject to 40 CFR Part 63 Subpart N. There was a small water leak identified near the exhaust fan of the unit, as seen by accumulation of ice at the base of the stack as well as two small icicles near the top of the stack. One was on the stack and one was on the support wire directly adjacent to the stack. The stack had surface discoloration, and so did the scrubber housing. It was identified that the magnehelic gauge on this scrubber was cut off, so pressure drop could not be determined. The lines existed but were cut and hanging at the side of the unit. As we observed the unit, I smelled odors which I described as a chlorine smell. Mr. Hulst indicated it may be hydrochloric acid I smell as it is used on the line. After this was noted, the surface discoloration made sense on the unit as possible corrosion from HCl emissions. Based on the drip like pattern of the stack discoloration, it is evident that droplet reentrainment is/has been occurring on this scrubber. The odor identified indicates that this may be ongoing. MSDS of materials used on this line containing methanol has been requested and is attached. EUBLINE is limited to 4,000 hours per year based on a 12-month rolling time period. Current 12-month rolling records through December 2014 indicate hours of operation are 2,481. Mr. Hulst provided the surface tension records required by the permit and they are below the 60 dynes/cm. The permit also requires that the facility implement an O&M Plan for the scrubber and to set a preventative maintenance procedure to ensure proper operation. When asked, Mr. Hulst was not aware of whether or not the quarterly inspections were being done. The facility is in violation of Rule 910 and S.C. VI.2 for failure to maintain the magnehelic gauges, failure to maintain inspection records and for failure to set a preventative maintenance procedure to ensure proper operation per the O&M Plan. A request for stack testing will be made.

EUALINE

The EUALINE packed bed fume scrubber was visually inspected last, even though it is the closest scrubber to the roof

access hatch. It provides secondary control to a hexavalent chromium electroplating line that contains one flash decorative chrome electroplating tank and two trivalent chrome electroplating tanks that are subject to 40 CFR Part 63 Subpart N. It is identified as Brass on the attached O&M records. This scrubber is in very poor operating condition, as evidenced by the fact that large sheets of ice are on the roof below the unit, descending from large groups of icicles along the base of the unit, indicating scrubber water is leaking out of the system. Also, there are large icicles present under the rain sleeve of the stack, indicating droplet reentrainment. The walls of this scrubber are bowed inward, indicating that at some point (possibly now) the pressure drop was so high that the walls caved in. The magnehelic gauge on this scrubber was cut off, so pressure drop could not be determined. The lines existed, but were cut and hanging at the side of the unit. The water flow meter is located on a panel dedicated to EUALINE on the inside of the facility and it was found to be totally inoperable. During a discussion with Dave Titcomb, Maintenance Department staff back in the plant after the visual observation of the water flow meter indicated that he started doing the maintenance logs in mid-December after the former employee on second shift no longer worked there. He noticed the meter was not working, and ordered it the first week of January after the holiday shut-down. While we were looking for the flow meter for EUALINE, we walked back to the scrubber water recirculation tank. The immediate area next to the water recirculation tank had standing waste from the line. Mr. Hulst indicated that it's possible that employees are in a hurry to discharge a tank and they do it too fast. Due to this standing liquid that was green in color (see photos) and likely contained chrome, I was unable to evaluate whether or not the water recirculation tank for this line was properly operating. It appeared to be located in a containment area, and would not be considered a spill per 40 CFR Part 63.342 for housekeeping practices. This emission unit is in violation of the permit IV.1, VI.2, and Rule 910, for failure to install, maintain and operate the control device in a satisfactory manner, due to the very poor condition of the unit, failure to maintain inspection records as well as for cutting off the magnehelic gauges and for operating without a water flow meter. Also, the emission unit is in violation of 40 CFR 63.6(e)(1)(i) for failure to operate and maintain any affected source, including associated air pollution control equipment and monitoring equipment, in a manner consistent with safety and good air pollution control practices for minimizing emissions. When asked, Mr. Hulst was not aware of whether or not the quarterly inspections were being done. In addition, the emission unit is in violation of the permit S.C. VI.4 for failure to maintain record of control device inspections. EUALINE is limited to 4,000 hours per year based on a 12-month rolling time period. Current 12-month rolling records through December 2014 indicate hours of operation are 507. Mr. Hulst provided the surface tension records required by 40 CFR Subpart N and found they were within appropriate parameters. The permit also requires that the facility implement an O&M Plan for the scrubber and work practice standards for surface tension monitoring equipment. A request for stack testing will be made.

The following is a timeline presented in AQD reports documenting the poor scrubber maintenance over the past 10.5 years.

The facility discussed replacement of the EUALINE scrubber, as documented in a July 2004 AQD inspection report. At that time, the AQD inspector noted, "The shell is in bad shape....bowing in noticeably in several places....seam leaks evident in several places. Visible degradation of the support iron below the fan drain." Mr. Hulst confirmed in a 2015 e-mail that the EUALINE scrubber was replaced in 2004.

In a September 2006 inspection report, the AQD inspector noted that a couple of the scrubbers had the sides visibly bowed in due to negative pressure and deterioration of the structural strength and integrity of the PVC shell. The report continues that there is "no major inleakage evident, yet... Steve (Hulst) is aware... and is monitoring the situation".

In an August 2007 inspection report, the AQD inspector noted, that "mostly minor issues were observed, which I pointed out to Steve (Hulst). One collector had a fan vibration issue that was significant enough to possibly cause fatigue in vulnerable parts of the shell. Steve (Hulst) to follow up. No overt evidence of past or pending emissions problems visible from/on the roof."

In a June 2010 inspection report, the AQD inspector noted that the EUALINE scrubber "appears to be under excessive negative pressure causing the scrubber walls/enclosure to bow visibly inward and creating excessive mechanical stress in the PVC walls." A corrective action was suggested. Also, it was noted that "some of the plastic tubing connecting the manometers to the ductwork seemed to be very fragile and shattered/broken in some cases. There were also maintenance issues with the manometers themselves, and I asked Steve (Hulst) to look into them as well." Mr. Hulst responded in writing to the AQD inspectors concerns on July 1, 2010 and indicates that the facility has formed an Air Permit Review Committee to oversee matters dealing with air quality. The committee consists of personnel from Maintenance, Production Environmental Services and Executive Management, and will meet monthly.

In a April 2012 inspection report, a former AQD inspector noted that, "magnehelics seem to be a general issue; some were reading barely above zero; some were obviously not working at all and had water/condensation inside the housing. Some were relatively protected from the elements, others weren't. Steve (Hulst) didn't know what the normal pressure drop ranges were, but said the maintenance guys did and were up on the roof weekly, checking everything out. The "A line" scrubber had a small leak which was dripping onto the roof. .2" w.g. seems low for a pressure drop. Operationally, all the

scrubbers seemed fine; adequate water flow and spray patterns as best I could tell."

The above documentation depicts a timeline that ECF has a long history of failure to properly maintain air pollution control equipment, and actions to comply were reactionary to AQD inspector suggestions.

While we were on the roof, I asked Mr. Hulst if he had told the maintenance department that an inspection was taking place today and he stated that he had called and asked them if their records were up-to-date and was told they were. I informed Mr. Hulst that I wanted to collect the records from the clipboard as soon as we got off the roof. After we came down and walked back through the maintenance department, we stopped to talk to the maintenance personnel responsible for the recordkeeping and maintenance on the scrubbers. This included Dave Titcomb, who has been recording the information on the daily records since mid-December and the maintenance department supervisor, Larry Keeney. I noted that there were no readings recorded for pressure drop (on any unit) or for gpm on the EUALINE scrubber. Mr. Titcomb stated that the previous maintenance personnel that had been keeping records left employment of ECF mid-December. Based on a review of the daily O&M recordkeeping back to September 2014, the flow meter on EUALINE (Brass) has not worked at all, and the flow was not recorded once. I noted on the form that the pressure drop readings weren't on the January clipboard and specifically asked Mr. Titcomb about it. He showed me a 'portable' pressure drop gauge and stated that he checked the pressure drop with it about once every ten (10) days. There is no record of pressure drop being recorded even one time back through September 2014. Additionally, based on the condition of the EUALINE scrubber, with obvious issues, including "cracks, stress, leaks" as required to be recorded by the O&M plan, along with the fact that nobody from the facility had been up on the roof for quite some time, indicates a significant compliance issue. It is unclear to this staff how the records were generated without actually looking at the equipment. The EUBLINE, EUCLINE and rack stripper scrubbers could not have been evaluated as per the daily sheet check mark indicates because it is physically impossible to observe the operational status of them from the roof hatch. The EUALINE scrubber is observable from the roof hatch, and ECF staff would have clearly seen that there were large icicles that had formed hanging from the sides of the unit, as well as from the stack had the inspections actually been conducted.

The failure of maintenance personnel to identify these problems is a significant issue. Based on the timeline presented above, the problems with the maintenance of the scrubbers was repeatedly pointed out to ECF by former AQD staff.

EUSLUDGEDRYER

The EUSLUDGEDRYER stack was observed while on the roof, and although it was not in operation visual cues of the roof did not indicate problems. The housing of the scrubber was not inspected at the time. The hours of operation limited to 2,500 per year based upon a 12-month rolling time period as determined at the end of each calendar month. The reported hours of operation through December 2014 are 1,301.8. I did not check the liquid flow gauge on this scrubber during the inspection as it was not in operation.

Waste Treatment Plant

We also observed the waste treatment plant scrubber and the magnehelic gauge on this scrubber was cut off, so pressure drop could not be determined. The lines existed, but were cut and hanging at the side of the unit. This scrubber is one of the two lines that was included in the original permit, but was not carried through to the next revision. The only requirement in the original permit was to install and operate the scrubber properly. Due to the failure to maintain the magnehelic gauges, this emission unit is in violation of Rule 910, for failure to install, maintain and operate the control device in a satisfactory manner.

Back on the plant floor, we observed the shared scrubber water supply tank. The EUBLINE, EUCLINE and rack strip line scrubbers share a water supply recirculation tank. On the supply water display panel, Mr. Hulst identified the following: PRE2= B-line: reading 11.9 gpm, RS2= rack strip: reading 14.4 gpm, CH2= C-line: reading 19.2 gpm. The facility also injects a liquid caustic that is on an automatic feed, and the vessel was full at the time of the inspection. The pH display read 4.5, and Mr. Hulst indicated 5 is normal. AQD research into scrubber pH indicates that it should be closer to 6. The scrubber pH may be below acceptable levels and should be re-evaluated.

The facility operates a Rule 287(c) lacquer spray booth and associated ovens, utilizing HVLP technology. The purchasing is done in 1 gallon containers, and MEK is used as the thinner. The facility sprays between 50-100 gallons per month. Filters were in good condition.

The facility operates an existing vapor degreaser that utilizes trichloroethylene as the solvent. It is subject to 40 CFR 63 Subpart T for Halogenated Solvent Cleaning. The unit was idle and off with solvent in the tank during the inspection. The facility has not submitted an Annual Report since 2009. Mr. Hulst stated that he has been maintaining them on site, like he does for the Chrome NESHAP. Unfortunately, this is in violation of 63.468(f). A copy of the regulation was provided to Mr. Hulst for review. Mr. Hulst did provide the AQD with the notification forms via e-mail.

The last Potential to Emit (PTE) evaluation was conducted in 2000, and based on equipment changes at the facility, the AQD is requesting a new determination. The request for this has been included in the VN.

SUMMARY

Based on the issues with the scrubbers, maintenance and recordkeeping the facility was in non-compliance at the time of the inspection.

NAME [signature] DATE 1-30-15 SUPERVISOR [signature]