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

N732443060

FACILITY: DYNA-PLATE, INC.		**SRN / ID:** N7324
LOCATION: 344 MART ST. SW, GRAND RAPIDS		**DISTRICT:** Grand Rapids
CITY: GRAND RAPIDS		**COUNTY:** KENT
CONTACT: Josh Burns , Operations Manager		**ACTIVITY DATE:** 01/17/2018
STAFF: April Lazzaro	**COMPLIANCE STATUS:** Compliance	**SOURCE CLASS:** Minor
SUBJECT: Unannounced, scheduled inspection.		
RESOLVED COMPLAINTS:		

April Lazzaro arrived at the facility to conduct an unannounced, scheduled inspection and met with Josh Burns, Operations Manager. We sat down briefly so that I could explain the purpose of the inspection and what to expect. The Air Quality Division had not been to the facility since 2004, and while the owner, Craig Hill is the same, Mr. Burns was a different facility contact.

FACILITY DESCRIPTION

This facility conducts zinc barrel plating on steel parts, with over half of the product dedicated to the automotive industry and the rest for the furniture industry. Zinc plating line number 84 and line number 98 currently operate 2, 12-hour shifts 7 days a week. The process includes the various stages including zinc plating, hydrochloric acid cleaning, electroless chromium conversion coating, phosphate degreasing and the associated dryers. The zinc plating line known as number 91 has been removed. The area is undergoing restoration and cleanup and a new line with similar functions that will be named line number 18 and will be installed this year.

COMPLIANCE EVALUATION

Each of the two existing lines are similar in that they conduct zinc barrel plating. Line number 98 has a bit larger capacity and is equipped with two internally vented drum style dryers, where line number 84 only has one. The future line number 18 will also have two internally vented drum style dryers. These drum style dryers are exempt from permitting per Rule 282(2)(a). There is one hydrogen embrittlement batch oven that operates under 425°F which is exempt per Rule 282(2)(a).

On the plating line, there are several air ducts that are venting emissions and are located to exhaust the various cleaning, hydrochloric acid and non-electrolytic chromate conversion coating tanks. In the future line 18, these same tanks will be similarly vented. During the previous inspection in 2004, a Violation Notice was issued for failure to obtain a permit to install for the hydrochloric acid (HCl) tanks and the chromate conversion coating tanks. During the process of addressing the violations, the facility provided emissions calculations stating that the emissions of HCl were a maximum of 0.619 pounds per year, and as such were exempt from permitting pursuant to Rule 290. No process changes appear to have changed, and as such this empirical calculation is still valid. This information is acceptable as a one time demonstration for Rule 290 recordkeeping.

The chromate conversion tanks violation did not appear to have been properly addressed at that time. Due to the fact that each tank is considered an emission unit, I conducted research to find out what (if any) emissions were generated by the chromate conversion tanks. Mr. Burns supplied the Safety Data Sheets for the products used, which are attached. During the inspection Mr. Burns showed me the line 84 chromate conversion tank. He raised the lid, and inside was the liquid with bubbles on top. He explained that they aerate the tank so the solids don't just sink to the bottom and hence the bubbles. Mr. Burns stated that Dyna-Plate does not use any surfactant or mist suppressant in any of the tanks at the facility. Because these tanks are non-electrolytic, there is a smaller expectation that chromium is liberated due to lack of electrical charge. However, the emissions are not zero.

The AQD utilizes the EPA document titled, "The Metal Finishing Facility Risk Screening Tool (MFFRST): Technical Documentation and User's Guide", to look up plating process, how they work and to evaluate and choose an emission factor to determine emissions. This PDF document will be provided to Mr. Burns via e-mail, and the pertinent sections are attached to this report.

Table 2-4 on page 2-35 was found which identifies the daily mass emission levels external to the plant, from the non-electrolytic chromium conversion process. The uncontrolled daily emission rate was found to be $3.1E^{+4}$ mg/day. Per the information provided, this number is multiplied by the factor of $2.203E^{-6}$ to get lb/day. Based on this conversion, the chromium potential to emit for each tank is .68 lb/day, 74 lb/yr and 0.04 tons per year.

This level of emissions enables each of the chromate conversion tanks to utilize the Rule 291 Permit to Install exemption. It is recommended that the facility keep the EPA document, and this report with the emissions information readily available for future requests. Rule 291 does not require monthly recordkeeping, however if any changes to the process are made the information used in the calculations should be reevaluated.

Due to the various heated tanks as well as the natural gas fired dryers and oven, I requested the fuel usage from the facility to ensure that the combustion emissions were not over major source thresholds. The largest combustion related annual emission rate appeared to be from nitrogen oxides, which were just over one ton per year. This is below the permitting or regulated threshold.

CONCLUSION

Based on the information as detailed above, Dyna-Plate was in compliance at the time of the inspection.

NAME Agil Sangar DATE 2-6-18 SUPERVISOR