

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

N554043664

FACILITY: TECH NICKEL INC		SRN / ID: N5540
LOCATION: 1200 S CRYSTAL AVE, BENTON HARBOR		DISTRICT: Kalamazoo
CITY: BENTON HARBOR		COUNTY: BERRIEN
CONTACT: Louie Vogl , Operations Manager		ACTIVITY DATE: 03/14/2018
STAFF: Matthew Deskins	COMPLIANCE STATUS: Compliance	
SUBJECT: Unannounced Scheduled Inspection		SOURCE CLASS: MINOR
RESOLVED COMPLAINTS:		

On March 14, 2018 AQD Staff (Matt Deskins) went to conduct an unannounced scheduled inspection of the Tech Nickel facility located in Benton Harbor, Berrien County. According to AQD district file information, Tech Nickel is a minor source and their main business is Chrome Electroplating, Electroless Nickel Plating, and Salt Bath Nitriding. They have three active air permits issued by the AQD (PTI Nos. 79-95, 80-95, and 81-95B) according to the file and the Permit Cards database related to the operations at the facility. Because of the hard chrome plating line, the facility is subject to the federal regulation 40 CFR Part 63 Subpart N (NESHAP for Chromium Emissions from Hard and Decorative Chromium Electroplating and Chromium Anodizing Tanks (a.k.a. the Chrome NESHAP). The Nickel Plating also appears to be subject to 40 CFR Part 63 Subpart WWWWWWW (NESHAP for Area Source Plating and Polishing Operations). The batch vapor degreaser that the facility once had and was subject to the Halogenated Solvent Degreaser NESHAP has been removed. The purpose of the inspection was to determine the facilities compliance status with the aforementioned permits along with the Chrome NESHAP. Please note that the AQD is not delegated to enforce the NESHAP WWWWWWW regulation at this time so no compliance determination was made pertaining to that regulation. Staff departed for the facility at approximately 9:10 a.m.

Staff arrived at the facility at approximately 10:30 a.m. Prior to entering the facility staff looked to see if any visible emissions could be seen and none were observed. Staff then proceeded into the office area and introduced them self to the receptionist (Vicki). Staff stated the purpose of the visit and asked if Louie Vogl (Operations Manager) was available. Vicki stated that he was currently in a staff meeting but said she will text him to let him know staff was there. A few minutes after she texted him Louie came out to greet staff. Staff introduced them self and stated the purpose of the visit. Louie then led staff to his office where we exchanged business cards and staff asked some general questions about operations. The following is a summary of those discussions, what staff observed during the walk through of the facility, and later followed by the various permit conditions and the facilities compliance status with them.

NOTE: Due to the states PFOS/PFAS initiative, staff also discussed present and/or past use of fume suppressants with Louie. That discussion will be included at the end of this report.

According to Louie, Tech Nickel was started by his family and originally began operations in Buchanan back in 1983. They later moved to their present location in Benton Harbor in 1995. Currently the facility is owned by Louie and his brother. They currently employ 30 people and are working three shifts a day Monday through Friday. As mentioned in the opening paragraph, the facilities main business is the various plating and/or salt bath nitriding of metal parts which mainly consists of carbon steel. Louie said that business has been very busy. Staff then asked Louie if any new equipment has been added or replaced since the last AQD inspection in 2013. Louie said that operations haven't changed and all the tanks are still the same ones. He stated that they did replace the scrubber on one of the salt bath nitride units and changed out some ductwork that was metal to PVC. He said that PVC holds up a lot better than metal to that operation. Staff then asked about the various records required to be kept by the permits and Chrome NESHAP. Louie said that all the records are stored out in the QA/QC lab or at each area of the various operations. Louie said that he has an environmental consultant come in regularly to review all regulatory matters to make sure that they are doing everything that is required. Staff then went on a tour of the facility with Louie and the following is what staff observed.

NOTE: Prior to the tour, Louie had given staff a diagram of the plant layout which includes a numbering system for where the various equipment is located throughout the plant (See Attached).

Soak Clean Area: This is the first stop for materials/parts coming into the facility. There are several tanks that use an alkaline for cleaning them materials. There are no stacks in this area and the operation of them appears to be exempt by either Rule 281(e) or 285(r).

Heat Treat Oven: Near the Soak Clean Area is a heat treat oven which exhausts outside the building. Louie said that it is used to harden Nickel plated parts at 600 degrees F. It appears to be exempt by Rule 282(a)(i).

Polishing Area: There are 2-3 polishers that uses plastic media to smooth out parts. These polishers all exhaust inside the building and none were in use during the inspection. These units appear to be exempt by Rule 285(l)(vi).

Blast cleaning area: This unit is self-contained with no outside emissions. This may be exempt by Rule 285(l)(vi).

Suspa polishing area: Suspa is the manufacturer of this piece of polishing equipment and it uses a high density ceramic media to smooth out parts. It exhausts inside the building and appears to be exempt by Rule 285(l)(vi). There is also a washer in this area that uses hot water and some detergent that exhausts inside the building. This appears to be exempt by Rule 281(e).

Chrome plating area: The plating area consists of three tanks (J, K, and L) with a capacity to plate 350-400 square inches per day. Tanks K and L are for chrome and tank J is strictly a rinse tank. Only tank K was being used during the inspection and all the tanks are tied into the scrubber. As mentioned earlier, the chrome plating operations are subject to the chrome NESHAP Subpart N and is covered by PTI 81-95B. The scrubber is three staged with a magnehelic gauge for each stage. These gauges are read and recorded daily and the upper range is 2.7. The permit requires that the pressure totals cannot vary +/- 1 of this range that was established during the stack test. Staff looked at numerous readings and none appear to have exceeded this. (NOTE: The NESHAP allows for +/- 2 variation). They are required to wash down the composite mesh pads daily and this is also recorded on a sheet. A fume supressant is used in the chrome tanks but this is not required since they have the scrubber system. Louie said that they use it just as an extra control step. There are quarterly inspections requirements including inspection of the mesh pads, scrubber, and ductwork. These inspections are also being recorded on a sheet. The chrome NESHAP requires semi-annual compliance reports and the facility has been doing them. The chrome scrubber is located outside of the building next to the water cooler and acid scrubber. The chrome scrubber was stack tested on May 12, 1998.

Nickel plating operation: This operation consists of 7 tanks. The nitric acid tank and HCl tank are controlled by the acid scrubber and are covered by PTI 80-95. The acid scrubber is outside located next to the chrome scrubber and it is equipped with a magnehelic gauge. The flow is monitored by a makeup tank with a sump and this tank is visually monitored to ensure flow through the scrubber. The other 5 tanks consist of a water rinse tank, a hot water rinse tank, 2 nickel tanks, and a final hot water rinse tank. These tanks are also controlled by the nickel scrubber covered under PTI 79-95 and it is equipped with a differential pressure gauge. The nickel scrubber is located outside next to the acid scrubber. The nickel tanks have a "push, pull" air flow into the scrubber where air is blown in at the front of the tanks and is pulled in at the back. As mentioned earlier, the nickel plating operation appears to be subject to the area source MACT WWWW. The AQD is not delegated to enforce this area source MACT so compliance with the regulation was not determined.

Salt Bath Nitriding System: This consist of two separate nitriding treatment areas and both of have their emissions controlled by a scrubber. Only one system was in use during the inspection. These systems treat metal using molten salt and the process roughly consists of a bake step at 800 degrees for one hour, two steps with molten salt at 1,075 degrees, another step at 500 degrees, and a rinse step. This process turns the metal black in color. These systems are being operating under the Rule 290 exemption. A spreadsheet was provided that estimates monthly emissions and they appear to be under the monthly emission limit (mainly ammonia).

Aluminum oxide blasting operation: This operation is located outside is located in a semi-truck trailer that is backed into a storage building. It is equipped with a dust collector and appears to be exempt by Rule 285(l)(vi)(C).

During the facility walk through staff and Louie had stopped by the QA/QC lab where the majority of the records are kept. The following are the special conditions of the three PTIs that have been issued to the facility and staff's comments regarding them.

PTI 81-95B SPECIAL CONDITIONS (Chrome Plating Process)

Emission Unit Identification

Emission Unit ID	Emission Unit Description	Stack Identification
EUCHROMEJ1/2	Hard chrome electroplating tank (J) with 3-stage mesh pad scrubber with mist eliminator for control. This is a double plating tank, i.e., divided into two parts, a 2000 amp max section and 3000 amp max section	SV1
EUCHROMEK	Hard chrome electroplating rinse tank (K) with 3-stage mesh pad scrubber with mist eliminator for control.	SV1
EUCHROMEL3	Hard chrome electroplating tank (L) with 3-stage mesh pad scrubber with mist eliminator for control.	SV1

Flexible Group Identification

Flexible Group ID	Emission Units Included in Flexible Group	Stack Identification
FGCHROME1	EUCHROMEJ1/2, EUCHROMEK, EUCHROMEL3	SV1
The 3-stage mesh pad scrubber with mist eliminator controls all three hard chrome electroplating tanks.		

The following conditions apply to: FGCHROME1

Emission Limits

	Pollutant	Equipment	Limit	Time Period	Compliance Method	Applicable Requirements
1.1a	Hexavalent chromium	FGCHROME1	0.015 milligram per dry standard cubic meter, corrected to 70°F and 29.92 inches Hg	Test Method	GC 14 SC 1.8 SC 1.9 SC 1.10	R336.1225, R336.1941 40 CFR Part 63 Subpart N

	Pollutant	Equipment	Limit	Time Period	Compliance Method	Applicable Requirements
1.1b	Hexavalent chromium	FGCHROME1	0.000545 pounds per hour	Test Method	GC 14 SC 1.8 SC 1.9 SC 1.10	R336.1225, R336.1941 40 CFR Part 63 Subpart N

AQD Comment: Appears to be in COMPLIANCE. The facility stack tested back in May of 1998 and met the above emission limits.

Equipment

1.2 The permittee shall not operate FGCHROME1 unless the composite mesh pad scrubber with mist eliminator is installed, maintained, and operated in a satisfactory manner. [R336.1224, R336.1225, R336.1941, 40 CFR Part 63 Subpart N]

AQD Comment: Appears to be in Compliance.

1.3 The permittee shall equip and maintain the composite mesh pad scrubber with mist eliminator with a pressure drop indicator for each stage. [R336.1224, R336.1225, R336.1910, R336.1941, 40 CFR 63.343(c)]

AQD Comment: Appears to be in Compliance. Each stage of the scrubber has a pressure drop indicator.

Process/Operational Limits

1.4 The permittee shall follow the approved operation and maintenance plan that was submitted to the AQD District Supervisor. The plan shall contain all information required by 40 CFR 63.342(f)(3)(i), which includes the following: [R336.1224, R336.1225, R336.1942, 40 CFR Part 63 Subpart N]

- a) Operation and maintenance criteria for FGCHROME1, add-on control device(s), and for the process and control device(s) monitoring equipment as well as a standardized checklist to document the operation and maintenance of the equipment;
- b) The work practice standards for the add-on control device(s) and monitoring equipment;
- c) Procedures to be followed to ensure that equipment or process malfunctions due to poor maintenance or other preventable conditions do not occur; and
- d) A systematic procedure for identifying process equipment, add-on control device(s) and monitoring equipment malfunctions and for implementing corrective actions to address such malfunctions.

AQD Comment: Appears to be in Compliance. The facility has an O/M plan and it is included as part of this particular permits file.

1.5 The permittee shall use fresh water for any make-up water, and shall supply this water to the unit at the top of the mesh pad system. [R336.1224, R336.1225, R336.1910, R336.1941, 40 CFR Part 63 Subpart N]

AQD Comment: Appears to be in Compliance.

Monitoring

1.6 The permittee shall perform inspections of the composite mesh pad (CMP) system as follows: [R336.1224, R336.1225, R336.1910, R336.1941, 40 CFR Part 63 Subpart N]

- a) Determine pressure drop across the CMP system on a daily basis. If the pressure drop across the control varies by more than ± 1 inch of water gauge, from the pressure drop determined during compliance testing, the variation shall be documented, and the operation and maintenance procedures shall be reviewed. Any corrective action shall be documented.
- b) Visually inspect the CMP system, on a quarterly basis, to ensure there is proper drainage, no chromic acid build up on the pads, and no evidence of chemical attack on the structural integrity of the control device.
- c) Visually inspect the back portion of the mesh pad closest to the fan, on a quarterly basis, to ensure there is no breakthrough of chromic acid mist.
- d) Visually inspect ductwork from tanks to the CMP system, on a quarterly basis, to ensure there are no leaks.
- e) At least once each day, the permittee shall turn off the fan and the plating tank and wash down the composite mesh pads for at least ten minutes.

AQD Comment: Appears to be in Compliance. The facility is meeting the requirements of (a) through (e) above and is documenting all inspections and malfunctions.

1.7 The permittee shall monitor emissions and operating and maintenance information in accordance with the National Emission Standards for Hazardous Air Pollutants as specified in 40 CFR Part 63 Subparts A and N. [R336.1941, 40 CFR Part 63 Subpart N]

AQD Comment: Appears to be in Compliance.

Recordkeeping/Reporting/Notification

1.8 The permittee shall maintain records of inspections required to comply with applicable work practice standards of 40 CFR 63.342(f). Each inspection record shall identify the device inspected, the date, approximate time of inspection (for monitoring data), and a brief description of the working condition of the device during the inspection. The permittee shall also record any actions taken to correct the deficiencies found during the inspection. All records are for the purpose of compliance demonstration and shall be kept on file for a period of at least five years and made available to the Department upon request. [R336.1224, R336.1225, R336.1910, R336.1941, 40 CFR Part 63 Subpart N]

AQD Comment: Appears to be in Compliance. The facility appears to be documenting everything.

1.9 The permittee shall keep records of emission information and operating and maintenance information to comply with the National Emission Standards for Hazardous Air Pollutants as specified in 40 CFR Part 63 Subparts A and N. All source emissions and operating and maintenance information is for the purpose of compliance demonstration and shall be kept on file for a period of at least five years and made available to the Department upon request. [R336.1941, 40 CFR Part 63 Subpart N]

AQD Comment: Appears to be in Compliance.

1.10 The permittee shall keep daily records of the daily wash downs and daily pressure drop readings. [R336.1224, R336.1225, R336.1910, R336.1941, 40 CFR Part 63 Subpart N]

AQD Comment: Appears to be in Compliance. The facility is recording these.

Stack/Vent Restrictions

	Stack & Vent ID	Maximum Diameter (inches)	Minimum Height Above Ground Level (feet)	Applicable Requirements
1.11	SV1	24	32.3	R336.1225
The exhaust gases shall be discharged unobstructed vertically upwards to the ambient air.				

AQD Comment: Appears to be in Compliance. The stack dimensions above appear to be correct.

PTI No. 80-95 SPECIAL CONDITIONS (Nitric Acid and HCL Cleaning Tanks used in Nickel Plating Process)

15.The hydrochloric acid emission rate from the acid cleaning and nitric acid passivation processes, hereinafter "process", shall not exceed 0.56 pound per hour.

AQD Comment: Appears to be in Compliance. The AQD has not requested any emissions testing be done to show compliance with the above limit.

16.The nitric acid emission rate from the process shall not exceed 0.011 pound per hour.

AQD Comment: Appears to be in Compliance. The AQD has not requested any emissions testing be done to show compliance with the above limit.

17.Visible emissions from the process shall not exceed 0% opacity.

AQD Comment: Appears to be in Compliance. No VEs were observed by staff during the inspection.

18.Applicant shall not operate the process unless the wet scrubber is installed and operating properly.

AQD Comment: Appears to be in Compliance. The wet scrubber was in operation during the inspection.

19.Applicant shall equip and maintain the wet scrubber with a liquid flow and a pressure drop indication device.

AQD Comment: Appears to be in Compliance. The scrubber is equipped with the above.

20.The exhaust gases from the process shall be discharged unobstructed vertically upwards to the ambient air from a stack with a maximum diameter of 26 inches at an exit point not less than 32.3 feet above ground level.

AQD Comment: Appears to be in Compliance. The stack dimensions above appear to be correct.

PTI No. 79-95 SPECIAL CONDITIONS (Nickel Plating Process)

15.Visible emissions from the electroless nickel plating process, hereinafter "process", shall not exceed 0% opacity.

AQD Comment: Appears to be in Compliance. No VEs were observed by staff during the inspection.

16.Applicant shall not operate the process unless the mist eliminator is installed and operating properly.

AQD Comment: Appears to be in Compliance. The wet scrubber was in operation during the inspection.

17.Applicant shall equip and maintain the mist eliminator with a pressure indicating device.

AQD Comment: Appears to be in Compliance. The scrubber is equipped with the above.

18. The exhaust gases from the process shall be discharged unobstructed vertically upwards to the ambient air from a stack with a maximum diameter of 28 inches at an exit point not less than 32.3 feet above ground level.

AQD Comment: Appears to be in Compliance. The stack dimensions above appear to be correct.

PFOS/PFAS and Wastewater Discussion

According to Louie, the facility has always used fume suppressants along with the wet scrubber on their chrome operations as an additional means of control. He mentioned that their fume suppressant supplier (Haviland out of Grand Rapids) had switched the suppressant a number of years ago (~ 2014). Staff asked if they had an SDS for both the current and former suppressant. Louie said that they have one for the new product but probably not for the old one. Louie was able to obtain a copy of the new one and it indicated PF free which we both assumed was PFOS/PFAS free. Louie then called the supplier to confirm that was the case to which it was. The supplier stated that they had to reformulate the product because the rules had changed and that they had to quit using PFOS/PFAS.

NOTE: The facility would only be in non-compliance with the Chrome NESHAP if they were still using a foam suppressant with a PFOS/PFAS content greater than 1% after September 21, 2015 which they are not. The NESHAP was updated back then to include the PFOS/PFAS restriction on suppressants.

Wastewater treatment: According to Louie, the facility pretreats their water prior to discharging to the Benton Harbor-St. Joseph WWTP. He said that they precipitate out all metals and the precipitate then gets filtered off and all the metals collected. The collected metals get hauled off site and the water is then tested to make sure it meets the WWTP discharge limits. They discharge their waste water in batches and they have a storage tank that contains it until it can be discharged.

Stormwater Discharges: The facility doesn't have any storm water discharges.

INSPECTION SUMMARY: The facility appears to be in COMPLIANCE with their various permits and the special conditions contained within them. As mentioned previously, staff did not make a compliance determination pertaining to 40 CFR Part 63 Subpart WWWW since the AQD is not delegated by the EPA to enforce the regulation at area sources of HAPs. Staff thanked Louie for his time and departed the facility at approximately 12:50 p.m.

NAME Matt Dehn

DATE 3-15-18

SUPERVISOR MA 3/16/2018

