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

B579443798

FACILITY: JO MAR ENTERPRISES INC		**SRN / ID:** B5794
LOCATION: 7489 DAVISON EAST, DETROIT		**DISTRICT:** Detroit
CITY: DETROIT		**COUNTY:** WAYNE
CONTACT: Joseph Joye ,		**ACTIVITY DATE:** 03/22/2018
STAFF: Todd Zynda	**COMPLIANCE STATUS:** Compliance	**SOURCE CLASS:** MINOR
SUBJECT: Scheduled Inspection		
RESOLVED COMPLAINTS:		

PURPOSE OF INSPECTION: Targeted
INSPECTED BY: Todd Zynda (AQD)
PERSONNEL PRESENT: Joseph Joye, Jr., Jennifer Bigelow
FACILITY PHONE NUMBER: (313) 365-9200

FACILITY BACKGROUND

Jo-Mar Enterprises (Jo-Mar) located at 7489 East Davison, Detroit, Michigan, is a hard chrome plating facility that services the automotive and medical industries. The facility has five employees and operates 7:00 AM to 5:30 PM, five days a week. The facility operates equipment under Wayne County Installation Permits C-9979 and C-11172/11173 and is subject to 40 Code of Federal Regulations (CFR) Part 63, Subpart N – National Emission Standards for Chromium Emissions from Hard and Decorative Chromium Electroplating and Chromium Anodizing Tanks.

The facility operates two hexavalent chrome plating tanks (1,200 gallon [C-9979] and 700 gallon [C-11172]). Emissions are controlled by vertical mist eliminator and horizontal packed bed scrubber (C-11173).

COMPLAINT/COMPLIANCE HISTORY

There are no records of complaints for this facility on file.

During inspection of September 18, 2015, the facility was determined to be in compliance, although records demonstrating compliance were not available. During the inspection of August 20, 2013 the compliance status is listed as "unknown".

During the inspection of June 8, 2018, the facility was determined to be in noncompliance with record keeping requirements of the letter of conditions to Wayne County Installation Permit C-11172/11173, 40 CFR Part 63, Subpart N requirements (also R336.1941), and R336.1707 requirements. As a result, a violation notice was issued on July 6, 2017. The facility entered an Administrative Consent Order (ACO) AQD No. 2018-02 on February 22, 2018 for the above listed violations.

OUTSTANDING CONSENT ORDERS

None

OUTSTANDING VNs

None

INSPECTION NARRATIVE

On March 22, 2018 the MDEQ Air Quality Division (AQD) inspector, Mr. Todd Zynda, conducted an inspection of Jo-Mar located at 7489 East Davison, Detroit, Michigan. During the inspection Mr. Joseph Joye, Jr. and Ms. Jennifer Bigelow, provided information and tour of facility operations. Mr. Joye, Jr. and Ms. Bigelow are both children of Mr. Joseph Joye, Sr. who owns and started the company.

The inspection was conducted to determine the facility's compliance with the Natural Resources and Environmental Protection Act (NREPA), Act 451, Part 55, Wayne County Installation Permits C-9979 and C-11172/11173, R336.1941, 40 CFR Part 63, Subpart N, and ACO AQD No. 2018-02. Jo-Mar operates two

chrome plating tanks (1,200 gallons and 700 gallons), one cold cleaner, an enclosed sand blaster glove box unit, and two natural gas boilers (262,000 Btu/hour each). During the inspection, no visible emissions were observed.

During the inspection, the records request was discussed with Mr. Joye, Jr. and Ms. Bigelow. Records were provided. Additionally, a discussion was held regarding the material used in the chrome bath. According to Mr. Joye, the facility only uses chromic acid and sulfuric acid. The facility does not use any chemical fume suppression or surfactants. The facility provided the safety data sheets (SDS) for the material used in the chrome bath via email on March 23, 2018. According to Mr. Joye the facility does not use, and has never used in the past, material containing perfluorooctane sulfonic acid (PFOS) or per-or polyflouroaklyl substance (PFAS).

The inspection of the facility began with observation of the chrome plating tanks. Mr. Joye, Jr. provided example of work done on worn out shafts that are hard chrome plated to rebuild worn out areas on the shafts. The areas that are not plated are covered in tape to protect from plating. Areas on parts that need to be "built back up" are placed in the chrome bath. Approximately 5/10 of inch is plated per hour.

The facility has two hexavalent chrome plating tanks (1,200 gallons and 700 gallons). According to Mr. Joye, Jr. the 700 gallon has not been in use since 2010, but could be brought online as needed. The ampere hours is estimated between 4,000 and 5,000 per day, per tank. The chrome bath concentration is 32 ounces chromic acid per gallon. Approximately 2400 cubic centimeters sulfuric acid is also added to the 1,200 gallon bath. The chrome bath is maintained at 130 degrees Fahrenheit. The process does not include an activation bath; only a chromium bath followed by a rinse. According to Mr. Joye, the facility does not discharge rinse waters to the city sewer. Any rinse water used is pumped back to the chrome tank. Mr. Joye stated that city water is used for wash mist eliminator wash downs and that water is directed back to the rinse tanks.

Emissions from chrome tanks are vented through an individual vertical mist eliminator (one for each tank). Emissions from both tank mist eliminators are then combined and vented to a horizontal packed bed scrubber located at roof level. During the inspection the pressure drop across the scrubber read 1.15 inches water and the mesh pad read 0.2 inches water. During the inspection it was observed that the pressure drop gauge was moved to a more accessible location for observation and appeared to be hooked up properly (during the previous inspection the pitot tubes were disconnected).

Prior to chrome plating, the materials to be plated are sand blasted as needed in an enclosed sand blast glove box unit, and also cleaned in a cold cleaner. Previously the facility used methyl ethyl ketone (MEK). The facility has phased out MEK and is now using an aqueous based (soap) material (Safety Kleen – ArmaKleen MM-Dip Cleaning Solution). The new Safety Kleen cold cleaner had surface area dimensions of approximately 2 feet by 3 feet. Mr. Joye provided the SDS for the new cold cleaner solution.

During the inspection the two facility boilers were not observed. According to Mr. Joye, both natural gas boilers are unchanged since the previous inspection and are rated at approximately 262,000 Btu/hour each.

APPLICABLE RULES/PERMIT CONDITIONS

Wayne County Installation Permits C-9979 and C-11172/11173 – Letter of Conditions dated August 1, 1996

SC 17. **UNKNOWN**. Total chromium emissions from the hard chrome plating line, herein after "process", with mist eliminators and three stage scrubber (RHH-43) shall not exceed 0.000023 pounds per hour nor 0.0001 ton per year. It is assumed that "process" includes both chrome tanks: 1,200 gallons (C-9979) and 700 gallons (C-11172). The AQD does not have information to evaluate compliance with this condition. At this time testing has not been requested.

SC 18 and SC 25. **COMPLIANCE**. The total chromium emission from the process shall not exceed 0.0009 milligram per dry standard cubic meter exhaust air, corrected to 70°F and 22.92 inches mercury. Testing was conducted on December 19, 1996. At that time emissions were 0.0008 mg/dscm. It is assumed that emissions are less than or equal to 0.0008 mg/dscm if the control is operating properly. During the inspection the pressure drop was as follows: scrubber – 1.15 inches water; mesh pad – 0.2 inches water; indicating that the operation is within the ±1inch water as specified by SC 24. iii. below.

SC 19. **COMPLIANCE**. Visible emissions from the process shall not exceed zero percent opacity. During the inspection there were no visible emissions.

SC 20. **COMPLIANCE**. Shall not operate the process unless the controls are installed and operating properly. During the inspection it was observed that the pressure drop gauge for the packed bed scrubber was properly hooked up. It appeared that the scrubber was operating properly.

SC 21. **COMPLIANCE**. Shall equip and maintain the controls with pressure drop indicators to measure pressure drop across the controls. See SC 20 above.

SC 22. **COMPLIANCE**. Exhaust air shall be discharged unobstructed vertically upwards with maximum diameter of 24 inches and not less than 31 feet above ground level. During the inspection the stack appeared to meet these requirements. Measurements were not collected.

SC 23. **COMPLIANCE**. Shall submit an operation and maintenance plan including start-up, shut-down, and malfunction plan of controls. The plan shall include a standardized checklist to document the operation and maintenance of the controls which addresses a systematic procedure for identifying malfunctions, reporting process to the supervisors and other actions to be followed to ensure that the controls or process malfunctions due to poor maintenance or other preventable conditions do not occur.

The facility operates using the "Operations and Maintenance Plant for Hexmaster Chrome Scrubber" identified during the previous inspection. The plan was updated to include a standardized checklist to document the operation and maintenance of equipment.

SC 24. **COMPLIANCE**. Shall perform inspections as follows: i. Inspection of mesh pads quarterly; ii. Wash down mesh pads in accordance with manufacturer recommendations. This includes wash down for the multiple section of the scrubber during hours of plating operation as follows.

Stage one: 15 second wash down conducted once per hour.
Stage two: 15 second wash down conducted once every three hours.
Stage three: 5 second wash down conducted once every three hours.
iii. If pressure drop across the air pollution control device varies by more than ±1inch of water gauge, from the pressure drop determined during the initial testing, the variation shall be documented, and the operating and maintenance procedures shall be reviewed.

The facility provided records for the above conditions. Based on the records provided the facility is not maintaining the stage two and stage three wash downs every 3 hours as required. During a phone call on March 26, 2018, a discussion was held with Mr. Joye regarding this issue. Mr. Joye stated that he would begin performing the wash downs once every three hours as required. Records indicate that stage two and three wash downs are performed approximately every four to five hours. The AQD is using discretion on this issue, pending that the facility corrects the issue going forward and performs washdowns every three hours as required. Records provided indicate that stage one wash downs are performed approximately once every hour.

The testing conducted on December 19, 1996 indicates the following pressure drops: Stage one - N/A, Stage two - 0.5 inches, and Stage three - 0.1 inches. The facility is maintaining records of pressure drop as required. Records provided for August 1, 2017 through March 21, 2018 indicate that the pressure drop for stage two and three have been within the ±1inch of water of the values from the December 19, 1996 stack testing.

SC 26 and 27. **COMPLIANCE**. On a quarterly basis, the operator shall visually inspect the control device to ensure proper drainage to ensure to chromic acid build up on the mesh pads and that the structural integrity is sound. Shall maintain records of inspections required to comply with applicable work practice standards of 40 CFR §63.342(f). Records shall identify the device inspected, the date, approximate time of inspection, and a brief description of the working condition of the device during the inspection.

The facility provided records of quarterly inspections as required in Subpart N, Table 1. According to Mr. Joye, the facility has not had any malfunctions or maintenance performed since the facility began maintaining records in August 2017.

As described above the facility has not meet the wash down frequency requirement for stage two and three of the control device per SC 24. The facility has stated that washdowns will be increased to every three hours as required.

SC 28. **COMPLIANCE**. Monitoring and recording of emissions, operating and maintenance information is required to comply with 40 CFR Part 63, Subparts A and N. Records to be kept on file for at least 5 years.

The facility appears to be performing monitoring and record keeping requirements of Subpart N.

Federal Requirements

40 CFR Part 60, Subpart Dc - Standards of Performance for Small Industrial, Commercial, Institutional Steam Generating Units

The boilers at the facility are not subject to Subpart Dc per §60.40c(a). Each boiler has a heat input capacity less than 10 MMBtu/hour.

40 CFR Part 63, Subpart N – National Emission Standards for Chromium Emissions from Hard and Decorative Chromium Electroplating and Chromium Anodizing Tanks

R336.1941 states that the provisions of Subpart N are adopted by reference in R336.1902.

The facility is defined as a "small hard chromium electroplating facility as the maximum cumulative potential rectifier capacity is less than 60 million amp-hr/year. The facility reports the approximate capacity as 5,000 amp-hr per day for each tank, or approximately 3.65 million amp-hr/year.

As described above, the emissions from chrome tanks are vented through an individual vertical mist eliminator (one for each tank). Emissions from both tank mist eliminators are then combined and vented to a horizontal packed bed scrubber located at roof level. Based on descriptions it appears that the following Subpart N definitions apply to the control equipment:

Composite mesh-pad system (facility vertical mist eliminators) – an add-on air pollution control device typically consisting of several meshpad stages. The purpose of the first stage is to remove large particles. Smaller particles are removed in the second stage, which consists of the composite mesh pad. A final stage may remove any reentrained particles not collected by the composite mesh pad.

Packed-bed scrubber - an add-on air pollution control device consisting of a single or double packed bed that contains packing media on which the chromic acid droplets impinge. The packed-bed section of the scrubber is followed by a mist eliminator to remove any water entrained from the packed-bed section.

§63.342(c)(1)(ii) – **COMPLIANCE** – total chromium in the exhaust gas stream not to exceed 0.015 mg/dscm for all open surface hard chromium electroplating tanks located at small hard chromium electroplating facilities. Testing was conducted on December 19, 1996. At that time emissions were 0.0008 mg/dscm, demonstrating initial compliance pursuant to §63.343(b)(1). During the inspection the pressure drop was as follows: scrubber – 1.15 inches water; mesh pad – 0.2 inches water; indicating that the operation is within the ±2inch water of the pressure drop established during the performance test, as specified by §63.343(c)(1) below and thus demonstrating continued compliance.

§63.342(f)(1)(i), §63.342(f)(1)(ii) – **COMPLIANCE** – At all times, including startup, shutdown, and malfunction shall operate and maintain any affected source, including associated pollution control devices and monitoring equipment in a manner with good air pollution control practices. Malfunctions shall be corrected as soon as practicable. The facility appears to meeting this requirement. According to Mr. Joye the facility has not had any malfunction since August 2017.

§63.342(f)(3)(i)(A) – **COMPLIANCE** – Shall prepare an operation and maintenance plan. The plan shall specify the operation and maintenance criteria for the affected source and air pollution control device, and standardized checklist to document the operation and maintenance of this equipment.

The facility operates using the "Operations and Maintenance Plant for Hexmaster Chrome Scrubber" identified during the previous inspection. The plan was updated to include a standardized checklist to document the operation and maintenance of equipment.

§63.342(f)(3)(i)(B) and (F) – **COMPLIANCE** – The operation and maintenance plan shall incorporate practices identified in Subpart N, Table 1. The plan shall include housekeeping procedures as specified in Table 2 of Subpart N. The updated plan meets these requirements.

§63.342(f)(3)(i)(D) and (E) – **COMPLIANCE** – The plan shall specify procedures to be followed to ensure that equipment or process malfunctions due to poor maintenance or other preventable conditions do not occur. The plan shall include procedure for identifying malfunctions and for implementing corrective actions to address such malfunctions. The plan appears to satisfy these requirements.

§63.343(c)(3) and §63.343(c)(1) – **COMPLIANCE** – For sources that use packed-bed scrubber in conjunction with a composite mesh-pad system shall meet emission limitations of §63.342 and shall meet monitoring requirements for composite mesh-pad systems of §63.343(c)(1). Shall establish as a site-specific operating parameter the pressure drop across the system, setting the value that corresponds to compliance with the applicable emission limitation, using the procedures in §63.344(d)(5). An owner or operator may conduct multiple performance tests to establish a range of compliant pressure drop values, or may set as the compliant value the average pressure drop measured over the three test runs of one performance test and accept ±2 inches of water column from this value as the compliant range. The pressure drop across the composite mesh-pad system shall be monitored and recorded once each day that the source is operating.

Testing was conducted on December 19, 1996. At that time emissions were 0.0008 mg/dscm. The following pressure drop readings were reported during the testing: Stage 1 - N/A, Stage 2 - 0.5 inches, and Stage 3 - 0.1 inches. According to the Retro-Hex specification sheet in AQD files (see attached), stage 1 is packing type (existing scrubber), stage 2 is coalescing pad type – mono-filament, and stage 3 is mist eliminator type – 2 inch diameter polypropylene packing.

The facility records the pressure drop once per day as required. According to a conversation with Mr. Joye on April 4, 2018, the facility does not record pressure drop during nonoperating days. Mr. Joye stated that going forward he would write "not operating" on the checklist for days when operations did not occur. The recorded pressure drops during operating days are with the ±2 inches of water column requirement.

§63.346(a) – **COMPLIANCE** – Shall fulfill all recordkeeping requirements of Table 1 of Subpart N. Per Table 1 the following are required quarterly: 1. visually inspect device to ensure there is proper drainage, no chromic acid buildup on the pads, and no evidence of chemical attack on the structural integrity of the device; 2. visually inspect back portion of the mesh pad closet to the fan and ensure there is no breakthrough of chromic acid mist; 3.visually inspect ductwork from tank to the control device to ensure there are no leaks. Additionally, perform wash down of the composite mesh-pads in accordance with manufacturer's recommendations.

The facility provided records of quarterly inspections as required in Subpart N, Table 1. According to Mr. Joye, the facility has not had any malfunctions or maintenance performed since the facility began maintaining records in August 2017.

As described above the facility has not meet the wash down frequency requirement for stage two and three of the control device. The facility has stated that washdowns will be increased to every three hours as required.

§63.346(b)(1), (2), (3), (4), (8), (9), (10), (11)– **COMPLIANCE** – Shall maintain inspection records included in Table 1, records of maintenance, records of occurrence, duration and cause of malfunctions, records of actions taken during periods of malfunction to minimize emissions, records of monitoring data required by §63.343(c) that are used to demonstrate compliance with the standard including the date and time the data are collected, the specific identification of each period of excess emissions, as indicated by monitoring data, that occurs during malfunction of the process, add-on pollution control, or monitoring equipment, and the total process operating time.

The facility has provided records demonstrating compliance with these requirements. According to Mr. Joye, the facility has not had any malfunctions or maintenance performed since the facility began maintaining records in August 2017.

§63.347(h)(1) – **COMPLIANCE** – Shall prepare a summary report to document ongoing compliance status of the affected source. The report shall contain the information identified in §63.347(g)(3) and shall be completed annually.

On February 1, 2018, the "Ongoing Compliance Status Report 2017" was received. The facility has agreed to submit biannual status reports going forward until notified by the AQD.

40 CFR Part 63, Subpart T – National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines

The cold cleaners (MEK or Safety Kleen) at the facility are not subject to Subpart T. The materials used in either cleaner does not contain any of halogenated HAPs as defined in §63.460.

40 CFR Part 63, Subpart JJJJJJ – National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boiler Area Sources

Subpart JJJJJJ applies to boilers not classified at "gas-fired boilers" at area sources. The boilers at the facility are natural gas boilers. The AQD is not the delegated authority for Subpart JJJJJJ.

PERMIT TO INSTALL EXEMPT EQUIPMENT

Boilers

The two natural gas boilers (each approximately 262,000 Btu/hour) are exempt from PTI requirements under the following Rule.

R336.1282(2)(b)(i): "The requirement to obtain a PTI does not apply to...fuel burning equipment... which burns only.. sweet natural gas, synthetic natural gas..and the equipment has a rated heat input capacity of not more than 50,000,000 Btu per hour"

Cold Cleaner

The cold cleaner at the facility is exempt from PTI requirements under the following Rule.

R336.1281(2)(h): "The requirement to obtain a PTI does not apply to.. cold cleaners that have an air/vapor interface of not more than 10 square feet.

The Safety Kleen cold cleaner has surface area dimensions of approximately 2 feet by 3 feet. The Safety Kleen material is ArmaKleen MM-Dip Cleaning Solution.

The Safety Kleen cold cleaner is subject to R336.1707 for new cold cleaners.

R336.1707(2) – **NOT APPLICABLE** - It is unlawful for a person to operate a new cold cleaner using a solvent having a Reid vapor pressure of more than 0.6 psia or heated above 120 degrees Fahrenheit, unless at least 1 of the following conditions is met: (a) The cold cleaner is designed such that the ratio of the freeboard height to the width of the cleaner is equal to or greater than 0.7. (b) The solvent bath is covered with water if the solvent is insoluable and has a specific gravity of more than 1.0. (c) The cold cleaner is controlled by a carbon adsorption system, condensation system, or other method of equivalent control approved by the department.

The ArmaKleen MM-Dip Cleaning Solution has a vapor pressure of 17.5mmHg (0.34 psi).

R336.1707(3)(a) –**COMPLIANCE** - a cover shall be installed and closed whenever parts are not being handled in the cleaner. The cover shall be mechanically assisted in any of the following situations: (i) The Reid vapor pressure of the solvent is more than 0.3 psia. (ii) The solvent is agitated. (iii) The solvent is heated. During the inspection the lid on the cold cleaner was closed. The lid appeared to be mechanically assisted as required.

R336.1707(4) – **COMPLIANCE** – Written operational procedures shall be posted in an accessible, conspicuous location near the cold cleaner. Operational procedures were posted.

Enclosed Glove Box Sand Blaster

The enclosed glove box sand blaster is exempt from PTI requirements under the following Rule.

R336.1285(2)(l)(vi)(B): "The requirement to obtain a PTI does not apply to equipment and any exhaust system or collector serving the equipment for...sand blast cleaning...metal...that has emissions that released only into the general in-plant environment.

APPLICABLE FUGITIVE DUST CONTROL PLAN CONDITIONS

Not Applicable. All lots are paved.

MAERS

The facility is a Category III fee source. The facility is not required to submit MAERS.

FINAL COMPLIANCE DETERMINATION:

The facility appears to be in compliance with the letter of conditions to Wayne County Installation Permit C-11172/11173, 40 CFR Part 63, Subpart N, and ACO AQD No. 2018-02. The facility has agreed to increase the wash downs on stage two and stage three of the control device to once every three hours as required. The facility does not use, and has never used in the past, material containing PFOS or PFAS, indicating compliance with §63.342(c)(1)(v).

NAME _____ DATE 4/4/18 SUPERVISOR JK