

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

N685754721

FACILITY: PPI Aerospace		SRN / ID: N6857
LOCATION: 23514 Groesbeck Highway, WARREN		DISTRICT: Warren
CITY: WARREN		COUNTY: MACOMB
CONTACT: Paul Clark , President		ACTIVITY DATE: 08/18/2020
STAFF: Kerry Kelly	COMPLIANCE STATUS: Compliance	SOURCE CLASS: SM OPT OUT
SUBJECT: DRAFT: FY 2020 targeted, scheduled full compliance evaluation		
RESOLVED COMPLAINTS:		

On August 18, 2020, I (Kerry Kelly) conducted a scheduled inspection of PPI Aerospace located at 23514 Groesbeck Highway, Warren, MI. The purpose of this inspection was to determine the facility's compliance status with the Federal Clean Air Act; Article II, Part 55, Air Pollution Control of Natural Resources and Environmental Protection Act, 1994 Public Act 451; Michigan Department of Environment, Great Lakes, and Energy-Air Quality Division (EGLE-AQD) rules; 40 CFR Part 63, Subpart T – National Emission Standards for Halogenated Solvent Cleaning; Permit to Install Nos. 120-02 and 294-00F; and Consent Order number 2020-01.

I arrived at the facility at approximately 9:00 AM and met with Mr. Paul Clark. Mr. Clark accompanied me during my inspection and explained the current operations at PPI Aerospace. Ms. Janette Lutz, Consultant, and Ms. Wendi Michael, Consultant, joined us for the record review facility inspection.

SOURCE INFORMATION and HISTORY

PPI Aerospace performs surface finishing, electrolytic and electroless metal plating, and conversion coating of metal parts for various aerospace applications. The facility is located in southern Macomb County and is bordered by commercial and industrial properties to the north, south, and west, and residential properties to the east. The nearest residence is approximately two-tenths of a mile east of PPI Aerospace.

The facility is classified as a synthetic minor for hazardous air pollutants (HAP).

Based on information in previous AQD inspection reports, Michigan Air Emissions Reporting System (MAERS) reports, and PTIs issued to PPI Aerospace, chromium electroplating took place at the facility from about 2001 through 2011. The March 1, 2012 AQD inspection report indicates all chrome electroplating at PPI Aerospace ceased as of August 2011. The chrome electroplating line was last permitted in PTI 294-00D, which was approved March 2, 2006. PTI 294-00D included requirements for the one chromium electroplating line (EUALINE), one Detrex VS800 batch vapor degreaser (EUDEGREASER), another electroplating line (EUBLINE), and facility-wide HAP emission limits that applied to all processes at the facility (FGFACILITY).

PPI Aerospace applied for a PTI (PTI application 294-00F) to remove the chromium electroplating line (EUALINE), EUBLINE, and other equipment in PTI 294-00D that was either no longer at the facility or was now considered exempt from the requirement to have a PTI.

PTI 294-00F was approved September 6, 2019. Equipment/processes included in PTI No. 294-00F are: one Detrex VS800 batch vapor degreaser (EUDEGREASER) and hazardous air pollutant limits that apply to all process equipment including equipment covered by other permits, grand-fathered equipment and exempt equipment (FGFACILITY).

PROCESS DESCRIPTION

Equipment/processes used in the surface finishing, electrolytic and electroless metal plating, and conversion coating of metal parts at PPI Aerospace include; six plating/coating lines (A, B, C, D, E, and F), a halogenated solvent degreaser, sand blasting units, six electric ovens, a cold cleaner, two boilers, two spray paint booths, and a masking application. The equipment/processes are located within two building on the property. The main building at PPI contains plating lines A through E, the degreaser, the masking room, four electric ovens, five sand blasting units, the cold cleaner, and one boiler. The back building contains the plating line F, two spray paint booths, two electric curing ovens, and one sandblasting unit.

There is a "zero emissions" vapor degreaser that PPI purchased that is stored in the back building as well. This degreaser was not set up for use (installed) at the time of the inspection. According to Mr. Clark, PPI plans to eliminate the chrome and alodine line (Line D), install the new degreaser where the D Line was, and stop using the Detrex degreaser.

COMPLIANCE EVALUATION**PTI 294-00F****EUDEGREASER**

PPI Aerospace operates one Detrex VS-2000-S batch vapor degreaser with a built-in freeboard chiller (condenser). This degreaser is inaccurately identified in PTI 294-00F as a Detrex Model VS800. Though the name is incorrect, the permitted equipment specifications match the VS-2000-S specifications. Trichloroethylene (TCE) is used as the degreasing solvent. There are two chiller sections, one uses a refrigerant (404A) and the other water. The degreaser is equipped with a vapor level control (VLC) that shuts off solvent heater if the vapor level rises above the condensing coils, a vapor up (VU) thermostat that indicates when the vapors fill the tank to proper level to show the machine is ready to operate, and a liquid level temperature control (LTC) that turns off the solvent heater if the liquid level is too low or if the temperature of the liquid solvent increases because of build up of contaminants. To degrease a part, an operator opens the degreaser lid, lowers the parts into the degreaser vapor zone, and then closes the lid. A reboiler at the bottom of the degreaser causes TCE to continuously vaporize and re-condense on the parts and condensers. This process removes oils, greases, and other debris from the parts.

TCE emissions are limited, in EUDEGREASER Special Conditions (SC) I.1 and I.2, to 8.9 tons/year based on a 12-month rolling total and 150 kg/m²/month based on a 3-month rolling average. Ms. Lutz provided records of the monthly, 3-month rolling average, and 12-month rolling total TCE emissions, as required in EUDEGREASER SC VI. 5 through 7, for September 2019 through July 2020 (Attachment 1). These records include the amount of TCE added and removed from the degreaser each month as required in EUDEGREASER SC VI. 2 through 4. The highest 12-month rolling TCE emissions reported were 8.0 tons reported for the 12-month period ending April 2020. The 3-month rolling average TCE emissions reported were less than 150 kg/m²/month for all months between September 2019 and June 2020 except March and April 2020. PPI reported 161 kg/m²/month in March 2020 and 158 kg/m²/month in April 2020. 40 CFR 63.464(c) states that if the applicable 3-month rolling average limit is not met, an exceedance has occurred and, that all exceedances shall be reported as required in 40 CFR 63.468(h). PPI Aerospace reported these exceedances in the quarterly reports received in April 2020 and July 2020, including the reason for the exceedance and corrective actions taken, as required in 40 CFR 63.468(h). According to the exceedance reports, the exceedances were caused by parts that were excessively oily/contaminated that were received from two particular customers. The report also states that PPI informed the affected customers that excessively oily/contaminated parts would no longer be accepted due to the adverse impact on degreaser operation. Additionally, PPI receiving staff are required to check all incoming parts for unacceptable conditions, and to advise management before further processing of the parts. A notice of violation will not be issued for the exceedance of the 150 kg/m²/month limit in SC I.2 and 63.464(a)(1)(ii) because PPI reported the exceedance as required 40 CFR 63.464(c), identified the cause of the exceedance, and implemented corrective actions to prevent a recurrence.

PPI is required, per SC III.1, to ensure that on the first operating day of every month EUDEGREASER contains only clean liquid solvent. This includes, but is not limited to, fresh unused solvent, recycled solvent, and used solvent that has been cleaned of soils. Additionally, a fill line must be established, and the degreaser solvent must be filled to the same fill line at the beginning of each month prior to calculating monthly TCE emissions. According to Mr. Clark, at the beginning of each month, PPI ensures EUDEGREASER contains only clean liquid solvent by transferring the liquid in the degreaser to a tote, allowing water to separate from the TCE and then transferring the clean TCE back to the degreaser. According to Mr. Clark, the TCE is filtered going into the tote and going back into the degreaser. A long metal rod with markings on it is used to measure the clean solvent depth and how much fresh, unused TCE needs to be added. TCE is added to the tank until it reaches the 10 inch mark on the rod. Each inch of depth is approximately 32 gallons of TCE. Fresh solvent is added occasionally during the month to bring the liquid level to the fill line and to ensure the liquid solvent level is above the heating coils at all times.

Waste TCE is stored in closed drums and collected by Clean Harbors for off-site disposal. Ms. Lutz provided records of the shipping manifests for the waste TCE sent off between September 2019 and July 2020 and analysis conducted on a TCE waste sample taken September 24, 2019 (Attachment 2). The waste TCE sample analysis indicates the waste contained 70% TCE. It appears PPI is capturing and disposing of all waste solvent in an acceptable manner in compliance with all applicable state rules and federal regulations as required in EUDEGREASER SC III.3.

PPI is prohibited, in EUDEGREASER SC III.2, from operating EUDEGREASER unless a malfunction abatement plan (MAP) is submitted to the AQD within 30 days of permit issuance and the MAP is implemented and maintained. The MAP must contain, at a minimum; a complete preventative maintenance program and identification of the source and air-cleaning device operating variables that shall be monitored to detect a

malfunction or failure, the normal operating range of these variables, and a description of the method of monitoring or surveillance procedures. I received the MAP via email on October 4, 2019, which was within 30 days of PTI 294-00F being issued. The MAP submitted states the preventive maintenance program is based on manufacturer recommendations as outlined in the Operation and Instruction Manual for Production Plating, Detrex Model VS-2000-S and PPI has determined the following schedule:

- Pump seals are checked for leaks with use. Any leaks are repaired as soon as possible.
- Gaskets are checked for leaks with use. Any leaks are repaired as soon as possible.
- Spray nozzle is checked with use for signs of clogging or excessive build-up.
- If the degreaser begins to take noticeably longer than two hours to heat up, the machine will be inspected to determine if a maintenance clean-out is necessary.
- The TCE in the degreaser should be tested on a regular basis to ensure appropriate minimum level of non-amine acid acceptors (NAA) are present. NAA testing is recommended every 48 hours of degreaser operation and the solvent should have an absolute minimum NAA of 0.06% according to the Detrex Manual.

In addition, per Appendix B (SOLVENT CONTROL AND CONSERVATION INSTRUCTIONS FOR DETREX SOLVENT VAPOR DEGREASERS AND STILLIS) of the Detrex Operation Instruction Manual, proper operation for the controlled and economical use of solvents includes:

- Not allow air drafts over degreaser.
- Never letting solvent level below 2 inches above heaters.
- Removing moisture, chips and metal fines from parts as much as possible before entering degreaser.
- Spraying of work be done well below vapor level.
- Keeping covers closed at all times possible.
- Setting VLC & VU control to 175 degrees Fahrenheit
- Setting LTC to 215 degrees Fahrenheit

Ms. Lutz provided records of the solvent analysis conducted between January 3, 2020 and August 3, 2020 (Attachment 3). These records indicate and the NAA levels of the TCE is tested regularly for quality control, approximately every other day and that the percentage of NAA in the samples were above the recommended absolute minimum for all but three samples (4/29/20, 5/1/20, and 5/4/20). PPI added TCE and stabilizers to address the low NAA.

In October 2019, May 2020, and August 2020, PPI Aerospace observed issues with the degreaser and contacted an outside contractor, Green, to inspect and repair the degreaser and freeboard chiller. In October 2019, PPI noticed the freeboard chiller was icing up. Green's service reports from October 2019 (Attachment 4), provided by Ms. Lutz, indicate that Green set the condenser pressure switch to cycle between 10 and 45 psi, insulation was replaced on the condensing unit, and that the condenser doesn't appear to be set up to defrost properly. In May 2020, PPI called Green to investigate the reason for issues with the panel alarms and fire pump on the degreaser. Green stated in the service report for the alarm and fire pump investigation (Attachment 5) that a leak in the degreaser manifold was discovered and repaired and that the fire panel was clear and in normal state. Green was called again in August 2020 to investigate why the chiller, and therefore also the degreaser, would not start. In the service report from Green dated August 10, 2020 (Attachment 6), Green indicated that they reset the unit, the temperatures and pressures were ok, and there were no issues with the condenser.

No parts were being degreased in EUDEGREASER during my inspection. The degreaser appeared to be located in an area free from drafts and to be completely covered during the inspection. I looked inside the degreaser and observed the solvent vapors were contained below the top of the chiller. The solvent bath temperature was 186.3 degrees Fahrenheit at the time of the inspection and the chiller compressor pressure was 38 psi.

I did not observe the VLC, VU, nor LTC settings during the inspection, however, Ms. Lutz provided photos of the VLC, VU, and LTC dials indicating the settings following the inspection (Attachment 7). The photos indicate the parameters are set at the levels indicated in the Detrex manual.

EUDEGREASER SC VI.8 requires PPI to determine the potential to emit (PTE) from all solvent cleaning operations at the facility. The PTE was submitted as a part of the application for PTI 294-00F and was determined to be 90.4 tons per year.

PPI must submit a solvent emission report on February 1 every year that specifies the size and type of degreaser, the average monthly solvent consumption, and the 3-month rolling average emission estimates per EUDEGREASER SC VII.2. Additionally, an exceedance report must be sent to the AQD on a quarterly basis per EUDEGREASER SC VII.1. PPI submitted annual reports and exceedance reports for 2017 and 2018 via email on January 30, 2019. Since January 30, 2019, PPI Aerospace has submitted all annual reports and exceedance reports on time. PPI Aerospace has reported exceeding the 150 kg/m²/month limit in EUDEGREASER SC I.2 and 40 CFR 63.464(a)(1)(ii) two months between January 2019 and June 2020 (March 2020 and April 2020).

EUDEGREASER SC IX.1 requires PPI to comply with the National Emission Standards for Hazardous Air Pollutants: Area Source Standards for Plating and Polishing Operations (NESHAP WWWWWW). The AQD has not accepted delegation to enforce the standards of NESHAP WWWWWW. PPI's compliance with NESHAP WWWWWW was not evaluated.

FGFACILITY

FGFACILITY includes all equipment at the facility including equipment covered by other permits, grand-fathered equipment, and exempt equipment. This flexible group table contains HAP opt-out limits. HAP emissions are limited to 8.9 tons/year of each individual HAP and 22.4 tons/year of aggregate HAPs. To show compliance with these limits, PPI is required to keep 12-month rolling records of individual and aggregate HAP emissions per FGFACILITY SC. Ms. Lutz provided records of the individual and aggregate HAP emissions for all HAP emitting equipment/processes at the facility (Attachment 8). These records indicate the highest 12-month rolling individual HAP emitted was 8.0 tons TCE and the highest 12-month rolling aggregate HAP emissions reported were 8.3 tons reported in April 2020 which are within the limits in FGFACILITY SC I.1 and I.2. TCE and hydrochloric acid combined make up approximately 99% HAP emissions reported at PPI Aerospace.

PTI 120-02

PTI 120-02 is a general permit for coating booths that applies to one or more coating lines and all associated purge and clean-up operations, where each coating line is a single series in a coating process and is comprised of one or more coating applicators, any associated flash-off areas, drying areas, and ovens where one or more surface coatings are applied and subsequently dried or cured (FG-COATING) and all coating lines and all associated purge and clean-up operations at the stationary source (FG-SOURCE). The permit restricts VOC emissions to 2000 lb/month/coating line and 10 tons/year/coating line and 30 tons/year for all coatings lines combined at the facility. Equipment associated with this general permit is the masking process. Two PTI exempt coating booths were installed since the last AQD inspection. VOC emissions from these coating booths were included in the calculations for the source.

In the masking room a waxy coating is applied to workpieces. The masking process involves cleaning parts, then applying, with a brush, a masking agent to areas of the part that PPI does not want plated/coated. Only brush application of coating takes place in the masking room. There are VOC/HAP contained in the masking wax. Emissions from the masking application area are exhausted through hoods, uncontrolled, to a stack that is vertical and unobstructed.

Ms. Lutz provided records of the date, quantity, type of coating used, chemical composition of the coatings, and VOC mass emission calculations as required in FG-COATING SC VI.3 and VI.4 and FG-SOURCE VI.1, for the masking area and both coating booths (Attachment 9). The records provided indicate the highest monthly and 12-month rolling VOC emissions for the coating processes between September 2019 and July 2020 were 64 lbs/month and 0.14 tons/year respectively which are less than the limits in PTI 120-02.

PPI is required to capture all purge/clean-up solvents and waste coatings from all coating applicators at the facility, to store these materials in closed containers, and to dispose of them in an acceptable manner in compliance with all applicable state rules and federal regulations. During the inspection, waste materials from the coating operations were stored in closed containers.

CONSENT ORDER NUMBER 2020-01

During a scheduled inspection conducted at PPI Aerospace on May 3, 2018, I identified violations of EUDEGREASER operating, recordkeeping, and reporting requirements contained in PTI 294-00D and 40 CFR 63 Subpart T. In addition, PPI Aerospace failed to submit annual reports to the Michigan Air Emission Reporting System (MAERS) for reporting years (RY) 2017. Four notices of violation were sent to PPI Aerospace between May 23, 2018 and July 25, 2018 for these violations. On October 8, 2019, AQD staff member Adam Bogner issued a notice of violation to PPI for failure to ensure EUDEGREASER contains only clean fresh solvent at the beginning of each month. Consent Order 2020-01, approved December 16, 2020, constituted a civil settlement and satisfaction as to the resolution of these violations.

The compliance program and implementation schedule in 9.A, 9.B, and 9.C of CO 2020-01 requires PPI to comply with:

- PTI numbers 294-00F and 120-02 and any subsequent revisions
- The NESHAP for Halogenated Solvent Cleaning in 40 CFR Part 63, Subpart T
- Rule 2 and submit Michigan Air Emissions Reporting System (MAERS) forms to the AQD no later than March 15 of the following year the emissions data were collected

Compliance with PTI 294-00F, PTI 120-02, and 40 CFR Part 63, Subpart T are addressed in sections PTI 294-00F and PTI 120-02 of this report.

PPI submitted annual reports and exceedance reports, required in PTI 294-00F, EUDEGREASER SC I.2, and 40 CFR 63, Subpart T, for 2017 and 2018 via email on January 30, 2019. After January 30, 2019, PPI submitted all annual reports and exceedance reports on time.

PPI submitted emissions data collected in 2019 to MAERS on time (February 27, 2020). Reported VOC emissions for 2019 coincide with records the company submitted for this inspection.

PTI EXEMPT PROCESSES/EQUIPMENT

Plating Line Tanks

All but 14 tanks used for plating at the facility are vented to the general in-plant environment. Though tank B-1 has a hood, the duct connected to the hood for tank B-1 is now completely covered with a piece of plastic so the emissions do not exhaust outside. The tanks that are vented to the general in-plant environment, including tank B-1, appear to be exempt from Rule 201 requirements pursuant to Rule 285(2)(r).

The 14 tanks equipped with a ventilation hood that vent through a packed bed scrubber system to a stack are tank numbers; A-5, A-6, A-29, A-31, B-3, B-4, B-6, B-7, B-8, B-9, B-10, B-23, B-31, and B-32. PPI provided calculations with permit application number 294-00F that demonstrate the emissions from each of these tanks are below the limits in Rule 291. These tanks appear to be exempt from Rule 201 requirements pursuant to Rule 291.

New Coating Booths

PPI finished installing two spray booths and two curing ovens after the last AQD inspection. The new booths and ovens are located in the back building that also contains the F line. These booths appear to be exempt from Rule 201 requirements per Rule 287(2)(c) and not prohibited from exemption by Rule 278 since the facility has a HAP opt-out permit and is meeting the opt-out limits. Rule 287(2)(c) requires the usage rate not exceed 200 gallons per month per coating line, the exhaust system be supplied with properly installed, maintained, and operated dry filters, and records of the monthly coating usage be kept. Ms. Lutz provided records of the coating usage at the facility (Attachment 9). These records indicate the highest monthly usage for all coating applications at the facility, since the two new coating booths were installed, was 28 gallons/month which is less than the per coating booth limit of 200 gallons in Rule 287(2)(c). Particulate emissions from the paint booths are controlled by dry filters. During the inspection the filters appeared to be properly installed, completely covering the booth exhaust. Ms. Lutz provided maintenance records for the paint booth filters (Attachment 10). These records indicate the filters are to be inspected weekly and changed every month to month and a half.

Sand Blasting

Adjacent to the masking room is a shot/sand blasting area. These sand blast units are exhausted through one of two Torit dust collectors and to the general in plant environment. During the inspection the area around both dust collectors was clean indicating the dust collectors are properly operated and maintained. In addition, there's a self-contained sand-blasting unit in the back building that also vents to the general in-plant environment. These sand blast units appear to be exempt from Rule 201 requirements pursuant to Rule 285(2)(l)(vi).

Ovens

I observed six electric ovens, four in the main building and two in the back building, during my inspection at PPI Aerospace. According to Mr. Clark, the ovens are used for stress relieving or curing coatings. Emissions from all ovens are released to the general in-plant environment. The paint curing ovens are covered in PTI 120-02 and the Rule 287(2)(c) exemption. The ovens used for stress relieving appear to be exempt from Rule 201 requirements per Rule 282(2)(a)(i).

Boilers

There are two natural gas-fired boilers at PPI Aerospace: one Industrial Boiler Company boiler with a maximum

rated heat input capacity of 5.2 MMBtu/hour that was manufactured in 1987 and one Lochnivar boiler with a maximum heat input capacity of 2.7 MMBtu/hour that was manufactured in 2005. These boilers appear to be exempt from Rule 201 requirements pursuant to Rule 282(2)(b)(l) and do not appear to be subject to the New Source Performance Standards for Small Industrial-Commercial-Institutional Steam Generating Units (40 CFR Part 63, Subpart Dc) because the rated heat input capacity is less than 10 MMBtu/hr. Compliance with the National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers Area Sources (NESHAP JJJJJJ) was not evaluated because the AQD has not accepted delegation to enforce the standards of NESHAP JJJJJJ.

Cold Cleaner

There is one cold cleaner with an approximately 6 square feet air vapor interface. According to Mr. Clark PPI no longer used the cold cleaner. Previously this cold cleaner was used to remove the masking agent off of parts using MEK. MEK has a Reid vapor pressure of 3.5 psia and was removed from the HAP list by the EPA in December 2005. During the inspection I observed that the cold cleaner lid was closed and that usage instructions were posted. This cold cleaner appears to be exempt from the Rule 201 requirements per Rule 281 (2)(h) and meeting the requirements of Rule 707.

Emergency Generator

There is one emergency engine at the facility that appears to be permanently disabled. I inspected the engine and could not find a nameplate. I did see, however, several wires on the engine that appeared to be cut and capped, indicating the engine had been permanently disabled. In addition, Mr. Clark indicated that the engine has been permanently disconnected from the electrical circuit box in the plant.

FY 2019 INPECTION VIOLATION

On October 8, 2019, Adam Bognar, EGLE-AQD, issued a notice of violation to PPI Aerospace for not cleaning the degreaser of soils and filling it with clean solvent at the beginning of every month which is a violation of PTI No. 294-00F (Section III – SC 1) and NESHAP T.

During the inspection I conducted on August 18, 2020 Mr. Clark stated PPI now ensures EUDEGREASER contains only clean liquid solvent at the beginning of each month by transferring the liquid in the degreaser to a tote, allowing water to separate from the TCE and then transferring the clean TCE back to the degreaser. The TCE, according to Mr. Clark, is filtered going into the tote and going back into the degreaser. The violation noted in the October 8, 2019 notice of violation appears to be resolved.

COMPLIANCE DETERMINATION

Based on information collected during this inspection, PPI Aerospace appears to be in compliance with the Federal Clean Air Act; Article II, Part 55, Air Pollution Control of Natural Resources and Environmental Protection Act, 1994 Public Act 451; Michigan Department of Environment, Great Lakes, and Energy-Air Quality Division (EGLE-AQD) rules; 40 CFR Part 63, Subpart T – National Emission Standards for Halogenated Solvent Cleaning; Permit to Install Nos. 120-02 and 294-00F; and Consent Order number 2020-01.

NAME K. Kelly DATE 9/29/20 SUPERVISOR Joyce