

P0687
MANILADEPARTMENT OF ENVIRONMENTAL QUALITY
AIR QUALITY DIVISION
ACTIVITY REPORT: Off-site Inspection

P068773647

FACILITY: Advance Engineering Co.		SRN / ID: P0687
LOCATION: 7505 Baron Drive, CANTON TWP		DISTRICT: Detroit
CITY: CANTON TWP		COUNTY: WAYNE
CONTACT: Monica Pilzner ,		ACTIVITY DATE: 09/18/2024
STAFF: Jill Zimmerman	COMPLIANCE STATUS: Compliance	SOURCE CLASS: SM OPT OUT
SUBJECT: FY 2024 Inspection		
RESOLVED COMPLAINTS:		

SCHEDULED INVESTIGATION REPORT
(PCE for an FCE source)**Date of Investigation:** September 18, 2024**Date of Report:** September 18, 2024**Source:** Advance Engineering Co.**SRN:** P0687**Address:** 7505 Baron Drive, Canton, Michigan 48187**Subject:** Fiscal Year 2024 Inspection (Off-Site)**Author:** Jill Zimmerman and Jeff Korniski, Air Quality Division, Detroit District Office**Facility Background:**

The Advance Engineering Company (AEC) is a precision metal stamping facility capable of deep draw and eyelet stamping, progressive die stamping, and line die stamping. The facility is equipped with industrial presses ranging from 50 to 400 tons along with robotic spot and metal inert gas (MIG) welding operations. Production at this Canton location started in 2014 after moving from a previous location in Redford (SRN A7469).

The Redford facility operated its equipment under various exemptions from the Permit to Install (PTI) program, and as a facility registered under the former Rule 208a to remain synthetic minor for purposes of the Title V program. Upon moving, AEC again claimed an exemption for each equipment and process installed at the Canton facility. However, upon rescission of Rule 208a, AEC decided to obtain PTI No. 64-16 in order to maintain legally enforceable restrictions on volatile organic compounds (VOC) and hazardous air pollutants (HAP) and thereby remain synthetic minor with respect to the Title V program.

Summary of Off-Site Inspection and Compliance Status:

As an existing synthetic minor Title V opt-out source, AEC is scheduled for a full compliance evaluation (FCE) within the 2024 fiscal year; the last FCE was conducted in 2019. Diminished resources owing to temporary staff vacancies resulted in this being assigned as an off-site inspection for this fiscal year. AEC was considered an appropriate candidate for an off-site inspection because, although an opt-out, emissions have historically been well below 50% of the major source thresholds and are determined by a mass balance calculation.

At the time of the 2019 inspection, AEC was operating the following equipment under PTI exemptions:

- 1) Lucifer Natural Gas Fired Heat Treating Furnace with maximum heat input rate 125,000 BTU per hour – R 336.1282 (2)(a)(i). Furnaces for heat treating using natural gas with maximum total heat input less than 10 MMBtu per hour.
- 2) Combustion of natural gas occurs at the Rotary Drum Parts-Washers. Indirect heating is used to warm-up the alkaline solution used in the equipment – R 336.1282(2)(b)(i).
- 3) Stamping Presses – R 336.1285(2)(l)(i).
- 4) Welding Equipment – R 336.1285(2)(i).
- 5) Portable Torch Cutting Equipment used for repairs – R 336.1285(2)(j).
- 6) Parts Washers – R 336.1285(2)(r)(iv).

7) Dust Collector System serving the surface grinders – R 336.1285(2)(l)(vi)(B). The equipment has emissions that are released only into the general in-plant environment.

PTI No. 64-16, FGFACILITY, Special Conditions (SC)

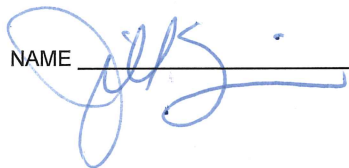
This permit provides collective emissions limits for all equipment (grandfathered, exempt, or permitted) at the facility. Facility-wide annual limits are 40 tons VOC, less than 9 tons of individual HAPs, and less than 22.5 tons aggregate HAPs, evaluated on a 12-month rolling time period (SCs I.1 through I.3). Compliance is determined through calculations and recordkeeping at SCs VI.1 through VI.3. The substantive enforcement mechanism is a limitation on the net cleaning solvent used (fresh solvent minus spent solvent reclaimed) to 11,940 gallons per 12-month rolling time period.

At the time of the permit application, a cleaning solvent was being utilized in the parts washers. The cleaning solvent was identified as “142 solvent”, a mineral spirit with a density of 6.697 pounds per gallon and VOC content of 100%. An MSDS obtained during a 2017 inspection indicates the solvent is a mixture of petroleum hydrocarbons with CAS Nos. 64742-47-8 (hydrotreated light petroleum distillates) and 64742-88-7 (medium aliphatic petroleum naphtha). Being derived from petroleum stock, such substances may contain lower percentages of HAPs such as benzene, toluene, tetrachloroethylene, etc., but not typically of a magnitude such that the HAP emissions would approach the 10/25 ton per year limit before the VOC emissions would approach the 40 ton per year limit. Therefore, the net solvent limitation within the PTI is based on the result of 11,940 gallons per year multiplied by 6.697 pounds VOC per gallon divided by 2000 pounds per ton, which yields the VOC limit of 40 tons per year.

The AQD received this facility’s annual air emissions report for calendar year 2023 on 2/1/2024. VOC emissions are reported at 14.73 tons per year based on 4,400 gallons of 142 solvent purchased (assumed used), a density of 6.697 pounds VOC per gallon, 100% VOC content, and a worst-case assumption that none of the solvent recovered is credited against the amount used. VOC emissions are less than the 40 tons per year annual limit in SC I.1. Based on the composition of the 142 solvent, it is assumed the facility is in compliance with the individual HAP limit of 9 tons per year in SC I.2 and the aggregate HAP limit of 22.5 tons per year in SC I.3. The annual solvent usage of 4,400 gallons is beneath the annual limit of 11,940 gallons.

Conclusion:

At the time of the investigation the Advance Engineering Company appears to be in compliance with applicable federal and State air regulatory requirements.

NAME 

DATE 9/19/24

SUPERVISOR 