P0687
MSW12

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

P068739125

FACILITY: Advance Engineering Co.		**SRN / ID:** P0687
LOCATION: 7505 Baron Drive, CANTON TWP		**DISTRICT:** Detroit
CITY: CANTON TWP		**COUNTY:** WAYNE
CONTACT: Rich Kenger , Environmental Health and Safety Manager		**ACTIVITY DATE:** 03/22/2017
STAFF: C. Nazaret Sandoval	**COMPLIANCE STATUS:** Non Compliance	**SOURCE CLASS:** SM OPT OUT
SUBJECT: Targeted Inspection for FY 2017		
RESOLVED COMPLAINTS:		

SRN:	P0687
Source Name:	Advance Engineering Company (AEC)
Facility Address:	7505 Baron Drive, Canton, MI 48187
Inspection Date:	March 22, 2017
Reason for Inspection:	Targeted Inspection
Inspected By:	Nazaret Sandoval
Contact:	Rich Kenger, Environmental, Health and Safety Manager
Email / Phone Number:	rkenger@adveng.net / (313) 537-3500 Ext. 1046
Website:	www.adveng.net

BACKGROUND INFORMATION

Advance Engineering Co. (AEC) in Canton is dedicated to precision deep draw metal stamping; progressive die stamping, and line die stamping, including progressive, transfer, and eyelet stamping processes. Additionally, the plant has a range of industrial presses with capabilities ranging from 50 to 400 tons of force, combined with robotic spot and metal inert gas (MIG) welding operations.

To maximize efficiency and to enhance quality, AEC consolidated their business operations into one location in Canton, MI. The building located at 7505 Baron Drive, Canton, MI 48187 is the company's Corporate Headquarters.

The production at the Canton facility started around the third quarter of 2014 with the merge of the Redford (MI), and Northwood (OH) operations. More recently, ACE added a warehouse to accommodate the distribution, packing, and assembly operations that were handled in Oregon, OH. The operations at the warehouse started in Canton the first quarter of 2017. AEC has another facility in Beaverton, MI which is dedicated to thermoforming operations.

The facility operates 5 days a week, with two shifts of 8 to 10 hours per day. The cleaning/tumbler area operates one shift (8-10 hr. /day) or as needed.

REGULATORY REQUIREMENTS

On April 13, 2016 AQD received a permit application from AEC for the relocation of existing metal parts cleaning equipment and other exempt equipment used at their former facilities. The Redford facility, which operations closed around November of 2014, operated under exemption from Permit to Install (PTI) and relied on Rule 208a registration to remain minor for Title V/Renewable Operating Permit (ROP) purposes.

With the move of additional equipment to the new site and Rule 208a being rescinded, a re-evaluation of the process operations at the new facility was deemed necessary to determine compliance status with the requirements cited in Rule 201.

In the permit application submittal the company claimed exemptions from Rule 201 requirements to obtain a PTI for most of the equipment operating at the Canton facility. The operations qualifying for exemptions are discussed later in this report.

During the review of the permit application, it became apparent that, based on the cleaning solvent throughput stated in the permit application, Rule 278 might exclude the exemptions for the part cleaners. The company requested an opt-out permit to address VOC emissions.

PTI No. 64-16 was issued by AQD to AEC on May 13, 2016. The permit includes enforceable limits for individual hazardous air pollutants and aggregate hazardous air pollutants which have been accepted to restrict the facility's potential to emit (PTE) to less than the major source threshold to opt-out of the ROP. In addition, the facility has restricted usage rate for the cleaning solvent. For the specific permit limits, please refer to Table No. 1 under the compliance evaluation section of this report.

INSPECTION NARRATIVE

On March 22, 2017 at 1 PM I arrived at the headquarters of AEC located at 7505 Baron Drive, Canton, MI 48187 to conduct an inspection. I was received by Mr. Rich Kenger, Environmental, Health and Safety Manager of the facility. After the introductions, I stated the purpose of the inspection. The purpose of the inspection was to evaluate the facility's compliance with respect to the requirements of the federal Clean Air Act; Part 55, Air Pollution Control, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended (Act 451), and the conditions of PTI No. 64-16.

I asked Mr. Kenger to provide a layout of the facility. A copy of the plant outline is attached to this report. Using the illustration Mr. Kenger described the various operations occurring at the building and before proceeding to tour the facility I asked him to identify the main equipment.

The plant makes specialty stamping for industry from various types of sheet metals, which is stamped into various configurations to meet industries demands. Cutting oils are used in order to facilitate the stamping process. The finished stampings are then washed to remove any oil or small metal burns. Depending on the workpiece material and the type of cutting fluid used during the stamping process, the oil from the finished product is removed by washing the parts using detergent (water-based fluids) or using flash-solvents (VOC containing fluids).

The building is divided in three sections from the Baron Drive Entrance, from North to South: Building No. 1 (B1), Building No. 2 (B2), and Building No.3 (B3).

The automatic presses, loading docks and quality control rooms are located in B1. The eyelet presses and welding operations lineup along B2 from west to east. The tool area, maintenance, waste water treatment and the tumble/wash area are located in the east side of B2.

Mr. Kenger pointed out that the mineral oils and the flash-solvents storage containers/drums have been relocated to the South-East area of B2. They were moved closer to the Tumbles/Wash Area to facilitate the transfer and disposal operations. There are (2) 500-gal drums for storage of fresh flash solvent and (1) 500-gal container for used flash-solvent. The plant layout needs to be updated to reflect the changes.

I noticed that the facility has three types of parts washers: a) A Portable Conveyor Belt part-washer that uses soapy water, b) An Ultrasonic part-washer, where no chemicals are used. Metal parts are placed in a hopper and the cleaning takes places by vibrating the parts against one another, c) Four Rotary Parts Tumblers, this system is mostly used to clean parts using a solvent that is a mix of Petroleum Hydrocarbon (commonly known as "142 Flash Solvent" or flash solvent) but it seems like this system has also been used to clean parts with water-based solvents.

Surface grinders with dust collectors are located at the Northeast corner of B2. The grinders are used to polish fabricated metal parts and to remove rough edges. Particulate from the grinders is collected using a hood system and vacuum blower fed to a dust collector. The unit, labeled as "Dustkop and Mistkop" manufactured by AGET, comes with a filter and the ductwork vents inside the facility. The waste collected is disposed or recycled. The dust collector appeared in good working conditions, and no fugitive dust emissions were noted.

The facility has a Natural Gas Fired Heat Treating Furnace that can operate to a maximum temperature of 2000 °F. It is a "Lucifer Model DL7GF-K24" with a maximum Heat Input Rate of 125,000 BTU per hour.

The warehouse and the new truck wells (loading docks) are on B3.

The facility does not have emergency generators, boilers or area heaters.

The air emissions from this facility are from the part-cleaning operations using flash-solvent. Mr. Kenger explained a situation associated with the part cleaning operations and the "net amount" of flash solvent used to clean the parts. A flaw was noticed during the preparation of the 2016 VOC emission report. The records showed that the total gallons of used-flash-solvent collected in the 500-Gal "used-flash-solvent storage tank" was higher than the volume of fresh flash solvent purchased to the supplier during the calendar year. After some investigation it was determined that the extra volume of used-flash-solvent was a result of the mix of different fluids from the various part-washing operations, including water-based and flash solvents, and possibly used mineral oils.

As a result of the situation explained above, the facility was unable Therefore, for year 2016, Mr. Kenger collected all the purchase orders and he added the total gallons of flash-solvent that the company had bought from the supplier during the calendar year. The summary sheet was handed out to me during our meeting. He also handed out the Uniform Waste Manifest forms collected for year 2016, which included the monthly quantities of all wasted fluids.

The facility is interested in separating any waste flash solvent from the remaining material that is shipped from the plant for reclaim or off-site disposal. They addressed the cited problem by training the operator to follow the "used flash solvent" storage procedures. They placed labels on the storage tank that reads: *"Used Flash Solvent Only". No Water. No Oil. No Other.*

After a brief explanation of the permit requirements, I asked Mr. Kenger for the Safety Data Sheets of the chemicals used at the plant (i.e. cutting oils, flash-solvent, etc.) . I also asked for the records of the flash solvent usage during the part cleaning operations for year 2016.

During the closure meeting I indicated that a final determination of compliance with the Air Quality regulations and permit requirements will be provided in the inspection report after a further evaluation of the records and permit conditions.

I left the building at about 5 PM.

COMPLIANCE EVALUATION WITH PTI No. 64-16

The following conditions apply to FGFACILITY

I - Emission limits

TABLE No 1 – Emission Limits Evaluation

Pollutant	Limit	Time Period / Operating Scenario	Monitoring Method According to	Facility Records	Is the facility in compliance (YES or NO)
1. VOC	40 tpy	12-month rolling time period as determined at the end of each calendar month	SC VI.2	25.05 tpy According to purchase orders for calendar year 2016 Assuming 100% VOC in the solvent	Unable to determine compliance with this emission limit. The reported value is the total for calendar year 2016
2. Individual HAP	Less than 9 tpy	12-month rolling time period as determined at the end of each calendar month	SC VI.3	According to the SDS there are not HAPs in the solvents used at the plant	YES

Pollutant	Limit	Time Period / Operating Scenario	Monitoring Method According to	Facility Records	Is the facility in compliance (YES or NO)
3. Aggregate HAPs	Less than 22.5 tpy	12-month rolling time period as determined at the end of each calendar month	SC VI.3	According to the SDS there are not HAPs in the solvents used at the plant	YES

II – Material Limits

Table No. 2 - Material Limits Evaluation

Material	Limit	Time Period / Operating Scenario	Monitoring Method According to	Facility Records	Is the facility in compliance (YES or NO)
1. Net cleaning solvent used[A]	11,940 gallons per year	12-month rolling time period as determined at the end of each calendar month	SC VI.2	7,425 gallons per year Total fresh solvent purchased in calendar year 2016 Assuming 100% VOC in the solvent. Facility did not report reclaimed solvent	Unable to determine compliance with this material limit. The reported value is the total for calendar year 2016, per purchase orders invoices

[A] "Net cleaning solvent used" means the difference between the amount of fresh cleaning solvent introduced to facility operations and the amount of spent cleaning solvent reclaimed/recovered.

VI. MONITORING/RECORDKEEPING

Records shall be maintained on file for a period of five years. N/A

There have been less than five year since the permit was issued

Evaluation of the Monitoring Requirements

1. The permittee shall complete all required calculations in a format acceptable to the AQD District Supervisor by the last day of the calendar month, for the previous calendar month, unless otherwise specified in any monitoring/recordkeeping special condition.

Non-Compliance - The facility failed to provide the calculations required by this special condition.

2. The permittee shall keep the following information on a monthly basis for FGFACILITY:

a. Gallons or pounds of each VOC containing material used.

In compliance – The flash solvent is the only fluid used at the facility containing VOC. The flash-solvent purchase order information was provided for calendar year 2016. The facility assumed 100 % VOC in the flash solvent. The Safety Data Sheets (SDS) for "142 Flash Solvent" was provided. Records are attached.

b. Where applicable, gallons or pounds of each VOC containing material reclaimed.

N/A – For year 2016, the facility was unable to calculate the reclaimed solvent amount due to a problem with the storage of the used flash-solvent. In other words, in absence of data, they assumed the worst case scenario and reported total gallons of fresh solvent as "net cleaning solvent".

c. VOC content, in pounds per gallon or pounds per pound, of each VOC containing material used.

In Compliance –The flash-solvent density values was reported on the SDW. The value used in the calculations is 6.695 pounds per gallon.

d. VOC emission calculations determining the monthly emission rate of each in tons per calendar month using mass balance or an alternate method acceptable to the AQD District Supervisor.

e. VOC emission calculations determining the annual emission rate of each in tons per 12-month rolling time period as determined at the end of each calendar month using mass balance or an alternate method acceptable to the AQD District Supervisor. For the first month following permit issuance, the calculations shall include the summation of emissions from the 11-month period immediately preceding the issuance date. For each month thereafter, calculations shall include the summation of emissions for the appropriate number of months prior to permit issuance plus the months following permit issuance for a total of 12 consecutive months.

Non Compliance (d. and e.) - Please note that the reported VOC emission rate of 25.05 tons per year is not based on the 12-month rolling time period.

3. The permittee shall keep the following information on a monthly basis for FGFACILITY:

a. Gallons or pounds of each HAP containing material used.

b. Where applicable, gallons or pounds of each HAP containing material reclaimed.

c. HAP content, in pounds per gallon or pounds per pound, of each HAP containing material used.

d. Individual and aggregate HAP emission calculations determining the monthly emission rate of each in tons per calendar month using mass balance or an alternate method acceptable to the AQD District Supervisor.

e. Individual and aggregate HAP emission calculations determining the annual emission rate of each in tons per 12-month rolling time period as determined at the end of each calendar month using mass balance or an alternate method acceptable to the AQD District Supervisor. For the first month following permit issuance, the calculations shall include the summation of emissions from the 11-month period immediately preceding the issuance date. For each month thereafter, calculations shall include the summation of emissions for the appropriate number of months prior to permit issuance plus the months following permit issuance for a total of 12 consecutive months.

The permittee shall keep the records on file at the facility, in a format acceptable to the AQD District Supervisor, and make them available to the Department upon request.

Compliance comments (a. to e. above):
From the information received by the company (SDS), it appears as if the plant does not use HAPs.

PERMIT TO INSTALL EXEMPTIONS

During the permit application process the facility indicated that there were some equipment and/or operations exempt from permitting. To determine if the facility is in fact eligible for the specific exemptions listed in R 336.1280 to R336.1290 I conducted an evaluation during the plant inspection. From my observations I confirmed that the following emission units are exempt from permitting based on the rules cited below:

- "Lucifer" Natural Gas Fired Heat Treating Furnace with maximum heat input rate 125,000 BTU per hour - R 336.1282(a)(i) Furnaces for heat treating using natural gas with maximum total heat input less than 10 MBTU per hour
- Stamping Presses - R 336.1285 (l)(i)
- Welding Equipment - R 336.1285 (i)
- Portable Torch Cutting Equipment used for repairs - R 336.1285 (j)
- Dust Collector System serving the surface grinders - R336.285 (l)(vi) (B). The equipment has emissions that are released only into the general in-plant environment.

The specific language for the rules cited above is referred on the "PTI Exemption Handbook" (2014 edition - effective when PTI No. 64-16 was issued)

In a letter of 4/11/2016 Advance Engineering Company submitted a complete inventory of equipment at the facility, with associated Rule 201 exemption information and Potential to Emit (PTE) calculations. The document demonstrated that R 336.1278 does not apply to the cited process or process equipment. A copy of the information is in the permit file for PTI No.64-16

MAERS REPORT REVIEW

MAERS for the emission period from 1/1/2016 to 12/1/2016 was received by AQD on 3/4/2017. I reviewed the report and the emissions appeared to have been accurately reported. The VOC emissions resulting from the facility are a consequence of the solvent parts cleaning operations.

The records showed that the parts washer throughput for calendar year 2016 was a total of 7,425 gallons. This translated into total VOC emissions of 49,725 pounds (approximately 25 tons). The company did not report reclaim solvent.

CONCLUSION

Based on the 2017 annual inspection the facility was found to be in violation of the "Recordkeeping and Monitoring" special conditions VI.1, VI.2.d and VI.2.e cited on PTI No. 64 -16. AQD issued a Violation Notice to Advance Engineering Company on May 10, 2017.

NAME Handoval DATE 5/10/17 SUPERVISOR JK