

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

P063447487

FACILITY: Worthen Coated Fabrics		SRN / ID: P0634
LOCATION: 1125 41st Street SE, GRAND RAPIDS		DISTRICT: Grand Rapids
CITY: GRAND RAPIDS		COUNTY: KENT
CONTACT: Jack Hoffman , Program Manager		ACTIVITY DATE: 11/27/2018
STAFF: April Lazzaro	COMPLIANCE STATUS: Non Compliance	SOURCE CLASS: MAJOR
SUBJECT: Unannounced, scheduled inspection.		
RESOLVED COMPLAINTS:		

Staff, April Lazzaro arrived at the facility to conduct an unannounced, scheduled inspection and met with Jack Hoffman, Program Manager. Jerry Henry, who is located at company headquarters provided the requested recordkeeping and information requests in a timely manner.

FACILITY DESCRIPTION

Worthen Coated Fabrics is a textile coating facility that compounds coatings on-site and applies them to a variety of textiles via a coating line. The coating line is a knife coater where a textile web is continuously fed to a coater stand. The coating is poured onto the fabric then scraped into an even layer by the knife blade. The excess coating returns to the coating pan. One coater stand is located within one of two permanent total enclosures, (PTE) each followed by an oven for this coating line, where a fabric can either be coated once or twice in sequence. Both solvent based and water based coatings can be applied at the coater stand. The solvent based coatings are ducted through a regenerative thermal oxidizer (RTO) for destruction. The water based coatings by-pass the RTO and vent directly to atmosphere. Solvent cleanup that takes place in either PTE is also controlled by the RTO. The coating mix room and a parts washer generate uncontrolled emissions.

The facility is permitted via Renewable Operating Permit No. MI-ROP-P0634-2017 which limits Volatile Organic Compounds (VOC) from EU-FabricCoating to 26.6 tons per year. Therefore the emission unit has synthetic minor limits for VOC, but this is not considered a VOC Opt-out. The permit does not limit Hazardous Air Pollutants (HAP), and therefore Worthen is a major source of HAP. As such, the facility is subject to 40 CFR Part 63, Subpart OOOO- National Emission Standards for Hazardous Air Pollutants: Printing, Coating and Dyeing of Fabrics and Other Textiles. The initial start-up date was January 4, 2016. The compliance testing which was late was conducted on October 11, 2016. The information obtained during testing was determined to be acceptable for determining compliance.

COMPLIANCE EVALUATION

MI-ROP-P0634-2017

The emission unit EU-FabricCoating, covers the two coating applicators contained in the PTE's during solvent-based coating application and emissions are controlled by the RTO, as well as during water-based coating application when emissions are uncontrolled.

EMISSION LIMITS

The VOC emissions are limited to 26.6 tons per 12-month rolling time period. The reported VOC emissions for the time period of December 2017-November 2018 are 3.78 tons.

MATERIAL LIMITS

The VOC content of water-based coatings is limited to 1.2 lb/gal (minus water) as applied. Worthen is currently using water-based coatings that contain small amounts of VOC. The records that were supplied to AQD do not contain the lb/gal (minus water) as applied VOC number. However, based on the gallons used and the reported VOC it is clear that all are less than 1.0 lb/gal VOC content. Worthen should modify the records going forward to include a column for this value to make compliance easier to assess.

PROCESS/OPERATIONAL RESTRICTIONS

During the inspection, AQD staff did not observe improper handling or capture of waste or cleanup solvents.

A malfunction abatement plan (MAP) has been submitted to the AQD. It is suggested that Worthen periodically review and evaluate the effectiveness of this plan.

The permittee is required to maintain a minimum of 0.007" H₂O pressure differential between the PTE and the adjacent area on a continuous basis. Continuous means during times when either solvent-based or water-based coating application is taking place. Months of records were picked at random and evaluated for compliance. Of these records, Friday August 17, 2018 showed that there were 43 minutes where PTE #2 was at a value of 0.0075-0.0078" H₂O. Using the mathematical rules of rounding, these readings could indicate non-compliance. However using the three decimal places as listed in the permit, and due to the extremely small difference this will be considered compliance. Worthen could evaluate monitoring parameters to ensure this scenario does not become routine. The data extrapolated from the spreadsheet provided is attached and sorted by time and value for PTE #2.

DESIGN/EQUIPMENT PARAMETERS

The facility has installed and operates an RTO for solvent-based coatings. Testing indicated that performance was above the required 98% destruction efficiency. Retention time was proven based on air flow and design capacity. The facility uses a data logger to monitor and record temperature of the RTO, as well as the pressure drop of the two. The differential pressure gauges appeared to be operating properly.

The permittee is required to determine VOC content, water content and density as applied and as received using Method 24. Test data was requested and received for the 5 most frequently used water based and solvent based coating in 2017. I made a second request for 2018 test results via email and learned that no coatings were tested in 2018. This is a violation of MI-ROP-P0634-2017; EU-FabricCoating, Special Condition V.1 and V.2. A Violation Notice will be issued.

A deviation was reported wherein the RTO temperature recorder failed to operate. Worthen believes compliance was maintained because the unit will shut down if the temperature is not above 1,567°F. Corrective actions included replacing the faulty recorder and keeping a replacement backup unit on site for a quick change out if it fails again. This response to the deviation is acceptable.

MONITORING/RECORDKEEPING

Permit recordkeeping was requested and reviewed. Staff requested the current listing from the manufacturer of the chemical composition of some high use materials to verify that the emissions are being calculated correctly. This information was received, reviewed and is attached.

The monitoring program on the coating line monitors the status of the line whether or not it is in solvent-based application or water-based application. The facility typically runs water-based coatings during the beginning of the week, and solvent-based coatings at the end of the week. That way they can better control the RTO operation and not worry about switching back and forth all the time. The permittee shall monitor and record, in a satisfactory manner, all RTO by-pass times, and the reason for the by-pass.

REPORTING

The reporting requirements are currently being met.

STACK/VENT RESTRICTIONS

The stack was not specifically measured, but no changes have occurred from the design plan according to facility staff.

FG-MACT-0000

EMISSION LIMITS

The facility is currently keeping records to demonstrate compliance with the 0.08 kg HAP per kg of solids applied and 98% overall control efficiency per 12-month rolling time period as determined at the

end of each calendar month. The records as provided indicate that they are currently at 0.001 kg HAP per kg of solids applied for the 12-month period of December 2017-November 2018. The reported overall control efficiency is 98.81%.

MATERIAL LIMITS

There are no material limits listed in this flexible group.

PROCESS/OPERATIONAL RESTRICTIONS

There are a variety of operating limits as prescribed by the NESHAP/MACT. This includes limits for the capture systems and add-on control device, work practice standards, and start-up, shutdown malfunction plans (SSM).

The operating limits for the capture and control devices were determined during the stack test of October, 2016. The three-hour block average temperature for the RTO as determined in accordance with 63.4363(a) is 1,567°F. A three-hour block only needs to be calculated if the temperature goes below 1,567°F on an instantaneous basis. The three-hour block average pressure drop reading is to be determined upon updating the capture system monitoring plan as required in 63.4364(e).

DESIGN/EQUIPMENT PARAMETERS

NA

TESTING/SAMPLING

The permittee is determining the mass fraction of organic HAP for each material used by formulation data. Worthen needs to continue to ensure that the values obtained during testing are utilized in the recordkeeping. Worthen formulations change slightly on a frequent basis so test data from a particular day may be different from the next batch. Mr. Hoffman is also working to reduce any variation with this. It does not impact compliance.

The permittee conducted a satisfactory performance test of the emission capture system and add-on control device in October 2016. The two enclosures are verified Method 204 PTE's.

MONITORING/RECORDKEEPING

AQD staff reviewed the calculations provided by Worthen and determined that they are sufficient to demonstrate compliance. The facility is currently keeping records to determine compliance with the option of limiting organic HAP emissions to the atmosphere to no more than 0.08 kg of organic HAP per kg of solids applied and comply with the 98% overall control efficiency option. Emissions data is attached to this report.

It is noted that the successive three-hour block RTO temperature averages should begin at midnight each night. As stated in 63.4364, to have a valid hour of data you must have at least three of four equally spaced data values from an hour. (currently, Worthen uses a data point every 10 minutes vs. every 15 which is fine) According to the regulation, to calculate a three-hour average, you must have at least two of three of the hourly averages for that period. Since they have 6 data points per hour, they need at least five to have a valid hour, since that represents more than 75% of the hour. Next, the information is placed in a rolling average format if required. A deviation was reported, wherein the recorder failed to operate. Worthen believes compliance was maintained because the unit will shut down if the temperature is not above 1,567°F. Corrective actions included replacing the unit, and from now on keeping a replacement backup unit on site for quick changes outs if it fails again.

As indicated, the two enclosures at Worthen qualify as Method 204 Permanent Total Enclosures, as reviewed and evaluated by AQD Technical Programs Unit staff Jeremy Howe. (see file for detailed review) To be considered a PTE the booths must meet the physical design standards, which they do. They also must meet air flow standards, of at least 200 feet per minute (fpm). Alternatively, 200 fpm corresponds to a pressure drop of 0.007" H₂O. The three hour average readings taken during the compliance test were a pressure drop of -0.032" H₂O. Worthen is required to develop a site-specific monitoring plan that contains information as required in 63.4364(e). This is not the same as the compliance assurance monitoring (CAM) plan. It would be acceptable for Worthen to identify

parameters between 0.007" H2O and 0.032" H2O as a valid range for ensuring that the capture efficiency of 100% is maintained. The data supports that Worthen was in compliance with the range of pressure drop readings.

REPORTING

The reporting requirements are ongoing, but currently are being met.

STACK/VENT RESTRICTIONS

NA

OTHER REQUIREMENTS

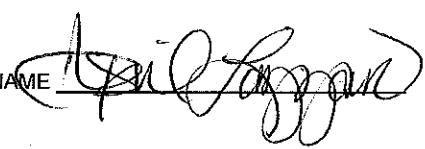
Worthen shall comply with all requirements of 40 CFR 63, Subparts A and OOOO.

Mix Room

The coating mix room contains three mixers which are covered while in use, unless ingredients are being added which is appropriate. Emissions from mix rooms are typically negligible, however during the MAERS fees review I noted that the mix room emissions for 2017 were over 9 tons of VOC. I contacted the company because it was believed to be an error in reporting. The company responded that the 9.48 tons of VOC emissions were correct. I reviewed the permit file and did not find that this level of emissions was identified in the permit application and was not reviewed for inclusion toward the VOC emission limit in EU-FabricCoating. Levels of emissions from the mix room continue to exceed exempt levels through 2018. Since the mix room emissions also do not fit any permit exemption, this is a violation of Rule 201, for failure to obtain a Permit to Install. A Violation Notice will be issued. The company was informed during the inspection that this is a violation.

SUMMARY

Worthen Coated Fabrics was in non-compliance at the time of the inspection.

NAME 

DATE 1-8-19

SUPERVISOR 