

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

P063440133

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: 05/18/2017
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.

FACILITY DESCRIPTION

Worthen Coated Fabrics is a textile coating facility that mixes 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 formulation room and a parts washer generate uncontrolled emissions.

The facility is permitted via Permit to Install No. 151-15, 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, 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 was determined to be acceptable for determining compliance.

During the compliance inspection, it was noted that a parts washer was present. This was not included in the Renewable Operating Permit (ROP) application that is currently at the working draft stage. An information request has been sent to the company seeking clarification. Worthen plans to submit a modification to the application to include the parts washer as required.

COMPLIANCE EVALUATION

PTI No. 151-15

The emission unit EU-FabricCoating, covers only the two coating applicators contained in the PTE's during solvent-based coating application emissions are controlled by the RTO. The emissions from the water-based coating application by-pass the RTO as they reportedly contain zero VOC. This appears correct based on the attached laboratory results.

EMISSION LIMITS

The VOC emission is limited to 26.6 tons per 12-month rolling time period. The reported VOC emissions are 2.24 tons for the time period from May 2016-April 2017.

MATERIAL LIMITS

The VOC content of water-based coatings is limited to 1.2 lb/gal (minus water) as applied. Worthen is reporting that there are no VOC's in the water-based coatings currently in use.

PROCESS/OPERATIONAL RESTRICTIONS

During the inspection, AQD staff did not observe improper handling or capture of waste or cleanup solvents. The coating mix room containing two primary mixers and one water based mixer were covered while in use which is appropriate.

A malfunction abatement plan (MAP) has been submitted to the AQD. During the preparation for the inspection, it was noted to be deficient in a couple areas. AQD has asked Worthen to update and submit a revised 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. Worthen needs to further differentiate recordkeeping to only provide the times when coating is being applied, or identify and exclude the data for when the line is down. This is currently in progress.

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 proved 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 PTE's. At the time of record request, Mr. Hoffman e-mailed to state the control panel went offline, and they were unable to pull any data out of it. The initial repair was not successful, and the manufacturer came on-site to assist. It was determined that the panel would not start up after the last run. There was no solvent-based coating application on the coating line during this downtime. In fact the system is designed that it will not allow operation if the data logger is inoperable. 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. Method 24 information was provided and it was determined that there can be improvement in this area. The company was required to conduct destruction efficiency testing of the RTO within 180 days of completion of trial operation. Due to a myriad of operational issues, this did not occur. AQD had previously determined to not send a violation notice for this infraction.

MONITORING/RECORDKEEPING

The recordkeeping was up-to-date, and Mr. Hoffman stated that due to a personnel shift at the plant, Tony Harb would be monitoring and inputting the data for the recordkeeping, with weekly oversight by the environmental consultant, Andy Boddy.

All permit required recordkeeping was requested and reviewed. Worthen was found in violation of recordkeeping as a result of the previous inspection, and the violation was determined to be satisfied following correction of the issues at that time.

Staff requested the current listing from the manufacturer of the chemical composition of each material to verify that the emissions are being calculated correctly. This information was received, reviewed and is attached. The information appears to be properly maintained.

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. Recordkeeping can be improved upon which is why this condition was added to the working draft ROP: The permittee shall monitor and record, in a satisfactory manner, all RTO by-pass times, and the reason for the by-pass. (R 336.1910, R 336.1213(3)) AQD asked Worthen for comments on this condition, and none were received.

Data from the control panel/chart recorder/data logger was requested. Mr. Hoffman was able to provide data from March 24th to the present. Data prior to March 24th was difficult to locate due to employee changeover. In the end, Worthen was unable to provide the data prior to March 24, 2017. This is a violation of PTI No. 151-15, EU-FabricCoating Special Condition No. VI.5. While the records were not available, Worthen was able to verify the RTO was in operation.

REPORTING

The facility previously notified the AQD District Supervisor of the completion of this installation.

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. They also could determine compliance with the 98% overall control efficiency option. The facilities first Notification of Compliance Status (NOCS) has not yet been submitted, and that will identify the compliance option that they plan to utilize. The records as provided indicate that they are currently at 0.002 kg HAP per kg of solids applied.

A request has been made to review all HAP containing materials used in the facility. This information was received, and it was found to be in compliance.

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. 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). All other restrictions that were observed appeared to be correctly implemented.

DESIGN/EQUIPMENT PARAMETERS

NA

TESTING/SAMPLING

The permittee is determining the mass fraction of organic HAP for each material used by formulation data. Records of the mass fraction of organic HAP for each material was requested and evaluated. Worthen needs to ensure that the values obtained during testing are utilized in the recordkeeping as there was some discrepancy. Mr. Hoffman indicated that they were working with the systems operators in Massachusetts to ensure this is always accurate. Worthen formulations change slightly frequently 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. It is also possible that the company may choose to comply with the 98% overall control efficiency option. This will be identified when the facility submits the Notification of Compliance Status (NOCS). Approximately 30% of the coatings used at the facility were evaluated for HAP content. Due to the fact that the information contains proprietary chemical composition information this data has been placed in the confidential file. If needed, Worthen could produce less detailed emissions data for

the file, however a detailed review was necessary to ensure compliance. Non-confidential emissions data is attached to this report.

Worthen was able to provide data to demonstrate that the RTO was in operation. This information is attached, and includes a synopsis of the coater operation and interlocks, as well as an example of the daily tenter sheets upon which the operator writes the coating in production and whether or not the RTO is in operation. It is noted that the successive three hour block 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) 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 as required.

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. 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. Compliance assurance monitoring (CAM) doesn't apply to this facility anyway, because the monitoring contained in the NESHAP is considered presumptively acceptable.

The first set of temperature data included time periods in which Worthen was processing water-based coatings, and had low temperatures with the RTO at standby. This is not useful data. It was requested that Worthen only provide three hour average readings during times when solvent-based coatings are being processed. The line is equipped with an interlock system so that solvent-based coatings cannot be processed if the control panel or RTO is not up to temperature. This is important because if the temperature is not above the combustion chamber temperature of 1,567°F as determined during testing, a control efficiency of zero must be applied during that time. Mr. Hoffman was able to provide this data which was acceptable.

REPORTING

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

STACK/VENT RESTRICTIONS

NA

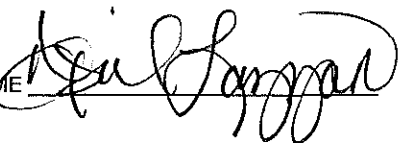
OTHER REQUIREMENTS

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

SUMMARY

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

NAME



DATE

6-7-17

SUPERVISOR

