

DEPARTMENT OF ENVIRONMENTAL QUALITY
AIR QUALITY DIVISION
ACTIVITY REPORT: On-site Inspection

N304468854

FACILITY: EMERALD GRAPHICS INC		SRN / ID: N3044
LOCATION: 4949 GREENBROOKE DR SE, KENTWOOD		DISTRICT: Grand Rapids
CITY: KENTWOOD		COUNTY: KENT
CONTACT: Brian Dillon , Paint Manager		ACTIVITY DATE: 08/30/2023
STAFF: April Lazzaro	COMPLIANCE STATUS: Non Compliance	SOURCE CLASS: SM OPT OUT
SUBJECT: A PCE was conducted to assess the status of EU-ROBOT.		
RESOLVED COMPLAINTS:		

Staff, April Lazzaro arrived at the facility to conduct an unannounced, scheduled inspection. This Partial Compliance Evaluation was conducted to assess the status of EU-ROBOT. Additional on-site evaluations occurred on April 4, 2023, during a compliance stack test of the catalytic oxidizer. As I approached the facility, I did not observe any visible emissions or odors. Upon arrival, I was met by Brian Dillon, Paint Manager.

FACILITY DESCRIPTION

Emerald Graphics is a plastic parts coating facility operating two coating lines and is permitted pursuant to General Permit to Install (PTI) No. 401-08 and Opt-out PTI No. 91-12. Emerald Graphics applies paint to plastic parts for the automotive and appliance industries. Very little plastic molding is conducted on-site, as most of it is customer owned/provided.

COMPLIANCE EVALUATION / BACKGROUND

On September 1, 2022, the AQD sent Emerald Corporation a Violation Notice citing catalytic oxidizer destruction efficiency and volatile organic compound (VOC) emission limit violations discovered during an inspection and stack test. The AQD recognizes that repairs to the catalytic oxidizer for control of VOCs were completed in February 2023, and a subsequent stack test report received on April 25, 2023, indicates that the unit is now achieving an 86% destruction efficiency (note the report is still undergoing review by the Technical Programs Unit). At the time of this report, the VOC emission exceedances are ongoing due to the delay of the catalytic oxidizer repairs and the limit being based on a 12-month rolling time period.

PTI No. 401-08

This is a General PTI for coating lines and covers volatile organic compound (VOC) emissions for both the EU-ROBOT line, which is controlled by a catalytic oxidizer and consists of five booths; and the EU-BUTTON line, which exhausts uncontrolled and consists of three booths. The EU-BUTTON line was not observed during this inspection.

FG-COATING

Prior to the parts entering the EU-ROBOT line, each one is blown off with air and is wiped with a disposable cloth that comes pre-saturated with water and isopropyl alcohol, which is a VOC. Emissions from these wipes have been added to the line as a monthly emission of VOC that is uncontrolled in association with EU-ROBOT.

Mr. Dillion observed and inspected each of the booths associated with the EU-ROBOT line. We have discussed the pressure drop monitoring that occurs that is associated with paint filter maintenance, as well as maintaining a negative pressure in the booths and associated paint distribution areas. There was very little solvent odor in the general plant environment.

Each booth is equipped with a series of six particulate filters to ensure no particulates are entrained in the air stream when it reaches the catalytic oxidizer.

Emission Limits

As of the month of April 2023, EU-ROBOT is meeting the 2,000 pound monthly limit for VOC emissions. The reported VOC emissions for April-August are as follows:

- April: 1,044 lbs
- May: 1,107 lbs
- June: 1,159 lbs
- July: 892 lbs

- August 946 lbs

Process/Operational Restrictions

In each of the five booths on the EU-ROBOT line, there is a purge can which the robot uses to dispose of purge MEK used in between color changes.

Design/Equipment Parameters

The lines have been considered non-fugitive enclosures with 100% capture efficiency. Based on the observations made during the inspection this appears accurate, with the comment being made that the areas with the paint distribution pots on the EU-ROBOT line must have the doors closed to claim 100% capture. These doors should be closed when paint distribution pots are present. The robots utilize HVLP technology and Emerald has test caps available.

Emerald has installed a thermocouple for the outlet temperature of the catalytic oxidizer after a previous inspection to meet the permit requirements. The inlet temperature at the time of the inspection was 667°F and the outlet temperature was 684° F. This indicates a small temperature increase over the catalyst and is consistent with data collected during the April 2023 stack test. The pressure drop of the oxidizer was 1.0" H₂O.

Testing/Sampling

Testing of the coating formulations are not required at this time.

Monitoring/Recordkeeping

Monitoring and recordkeeping for EU-ROBOT were evaluated during this PCE and found to be acceptable.

Stack/Vent Restrictions

The stacks were not measured at the time of this inspection. No changes were observed.

Emerald Graphics does not own or operate any boilers or emergency generators.

CONCLUSION

Emerald Graphics, Inc. was in continued non-compliance at the time of the inspection. Due to the changes in control efficiency, the emission rates indicate compliance with the monthly limit, and the 12-month rolling emission rate continues to lower each month as expected. The company will notify the AQD within 15 days after the first month when emissions calculations indicate compliance with both the monthly and 12-month rolling VOC limit as requested in the May 12, 2023, Violation Notice. This is expected to occur on or before March of 2024. At that time, Emerald will also submit any necessary updates to the General PTI through an application using the Additional Information Narrative page found on the EQP5759 application form.

NAME April Lazzaro

DATE 09/19/2023

SUPERVISOR HH