

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

N570670716

<b>FACILITY:</b> Elite Fence Products Inc.		<b>SRN / ID:</b> N5706
<b>LOCATION:</b> 50925 Richard W. Blvd., CHESTERFIELD		<b>DISTRICT:</b> Warren
<b>CITY:</b> CHESTERFIELD		<b>COUNTY:</b> MACOMB
<b>CONTACT:</b> Karl Stinson , Operations Manager		<b>ACTIVITY DATE:</b> 01/31/2024
<b>STAFF:</b> Owen Pierce	<b>COMPLIANCE STATUS:</b> Non Compliance	<b>SOURCE CLASS:</b> MINOR
<b>SUBJECT:</b> FY 24 Compliance Inspection		
<b>RESOLVED COMPLAINTS:</b>		

On January 31, 2024, I (Owen Pierce EGLE - Air Quality Division) performed a scheduled targeted inspection of Elite Fence Products, Inc located at 50925 Richard W Blvd, Chesterfield Township, Michigan. The purpose of the inspection was to determine the facility's compliance with the Federal Clean Air Act; and Article II, Part 55, Air Pollution Control of Natural Resources and Environmental Protection Act, 1994 Public Act 451 and the conditions of Permit to Install (PTI) No. 130-18. Upon arrival, I met with Karl Stinson, Operations Manager, and conducted a pre-inspection meeting where I introduced myself, presented my credentials, and stated the purpose of the inspection.

During the pre-inspection meeting, Karl explained the facility's processes and equipment. Elite Fence Products processes, assembles, paints, and ships out aluminum fences and gates. Elite Fence has a General PTI for one burn-off oven to remove dried paint from paint racks. The burn-off oven was installed in August 2018.

The facility has approximately 105 employees and operates five days a week from 6:30am to 4:00pm. According to Karl, there have been no recent process or equipment changes, and there are no cold cleaners, boilers, or emergency generators at the facility. Non-permitted equipment at the facility includes a parts washer and powder coating line. Following the pre-inspection meeting, Karl lead me on a tour of the facility.

### Facility Walk-through Observations

During the facility tour, I was first lead to the burn-off oven. Karl showed me the burn-off oven manual which is kept close by the emission unit, and the manual described the presence of an interlock system in the oven. I observed that the burn-off oven has a primary and secondary chamber and a device to continuously monitor the temperature in the secondary chamber, or afterburner, as well as a device to record the temperature at least once every 15 minutes. Karl explained that the burn-off oven only burns natural gas, and no other material other than cured paints, oil, or grease on metal parts, racks and/or hangers is loaded into the emission unit as required in Special Condition (SC) III.1. Karl also indicated that transformer cores are not loaded into the burn-off oven which is in compliance with SC III.2. I observed paint racks being loaded and unloaded from the burn-off oven during the walk-through. The stack for the burn-off oven appeared to meet the stack height restrictions listed in SC VIII.1.

Next, Karl lead me through the coating portion of the facility which consists of a pre-treatment process followed by the coating process. The pre-treatment process is broken into four stages. In the first stage, fence parts are sprayed with Bulk Kleen 749 HD, a heated alkaline solution, which is composed of approximately 30-40% Potassium Hydroxide. In October 2023, Elite Fence changed their Bulk Kleen usage from Bulk Kleen 655 LF (which is comprised of approximately 15 - 30% Phosphoric Acid, 1.28 - 2.1% Diethylene Glycol Monobutyl Ether, and 0.36 - 0.55% Hydrofluoric Acid) to Bulk Kleen 749 HD.

Phosphoric acid (Initial Threshold Screening Level (ITSL) =10 micrograms per cubic meter), diethylene glycol monobutyl ether (ITSL =1 micrograms per cubic meter), and hydrofluoric acid (ITSL =14 micrograms per cubic meter) found in Bulk Kleen 655 LF and potassium hydroxide (ITSL =20 micrograms per cubic meter) found in Bulk Kleen 749 HD, are all considered toxic air contaminants. According to Rule 290, for toxic air contaminants with an ITSL greater than or equal to 0.04 micrograms per cubic meter and less than 2.0 micrograms per cubic meter, the total uncontrolled emissions shall not exceed 20 pounds per month. In addition, according to Rule 290, for those air contaminants with an ITSL

greater than 2.0 micrograms per cubic meter, the total uncontrolled emissions shall not exceed 1,000 pounds per month, and there shall be no emissions of air contaminants with an ITSL of less than 0.04 micrograms per cubic meter.

Karl provided usage records of Bulk Kleen 749 HD and Bulk Kleen 655 LF for 2022 and 2023. In 2023, 12,400 lbs of Bulk Kleen 749 HD and 8,080 lbs of Bulk Kleen 655 LF were used equating to a monthly average use of 1,033.33 lbs of Bulk Kleen 749 HD used per month and 673.33 lbs of Bulk Kleen 655 LF used per month. Based on the average monthly pounds of Bulk Kleen used in 2023, and by conservatively using the highest projected percentage of each air contaminant contained in either Bulk Kleen solution, the following are the approximate toxic air contaminant emissions produced for 2023:

- 40% Potassium Hydroxide x 1,033.33 lbs of Bulk Kleen 749 HD per month = approximately 413.33 lbs per month emitted
- 30% Phosphoric Acid x 673.33 lbs of Bulk Kleen 655 LF = approximately 201.99 lbs per month emitted
- 2.1% Diethylene Glycol Monobutyl Ether x 673.33 lbs of Bulk Kleen 655 LF = approximately 14.14 lbs per month emitted
- 0.55% Hydrofluoric Acid x 673.33 lbs of Bulk Kleen 655 LF = approximately 3.70 lbs per month emitted

In 2022, only 11,615 lbs of Bulk Kleen 655 LF were used equating to a monthly average use of 967.92 lbs of Bulk Kleen 655 LF used per month. Based on the average monthly pounds of Bulk Kleen used in 2022, and by conservatively using the highest projected percentage of each air contaminant contained in Bulk Kleen 655 LF, the following are the approximate toxic air contaminant emissions produced for 2022:

- 30% Phosphoric Acid x 967.92 lbs of Bulk Kleen 655 LF = approximately 290.38 lbs per month emitted
- 2.1% Diethylene Glycol Monobutyl Ether x 967.92 lbs of Bulk Kleen 655 LF = approximately 20.33 lbs per month emitted
- 0.55% Hydrofluoric Acid x 967.92 lbs of Bulk Kleen 655 LF = approximately 5.32 lbs per month emitted

The monthly emissions of Diethylene Glycol Monobutyl Ether (ITSL =1 micrograms per cubic meter) for 2022 were approximately 20.33 lbs per month and appear to exceed the Rule 290 requirement of 20 lbs per month. Since Bulk Kleen 655 LF is no longer being used by the facility, and has been replaced with Bulk Kleen 749 HD, a violation notice will not be issued as the Diethylene Glycol Monobutyl Ether is no longer being emitted. Therefore the application of Bulk Kleen appears to be exempt from obtaining a PTI per Rule 290(2)(a)(ii).

In stage two, parts are sprayed with city water, and in stage three, the parts are sprayed with reverse osmosis water. These stages do not appear to emit to ambient air and therefore appear to be exempt from obtaining a PTI per Rule 285(2)(m).

Finally in stage four, parts are sprayed with E-CLPS 2100 which pretreats the aluminum parts preparing them for the coating process. According to the SDS provided by Karl, E-CLPS 2100 is comprised of approximately 1.28 - 2.1% Fluotitanic Acid. Since the solution contains no VOCs, and is not considered a toxic air contaminant, according to Rule 290, for all other air contaminants the total uncontrolled emissions shall not exceed 1,000 pounds per month. Karl provided usage records of E-CLIPS 2100 for 2022 and 2023. In 2023, 9,100 lbs of E-CLPS 2100 were used, equating to a monthly average use of approximately 758.33 lbs of E-CLPS 2100 used per month. In 2022, 10,465 lbs of E-CLPS 2100 were used equating to a monthly average use of 872.08 lbs of E-CLPS 2100 used per month. By conservatively using the highest projected percentage of Fluotitanic Acid in E-CLPS 2100, the estimated monthly emissions for 2023 and 2022 are as follows:

- For 2023: 2.1% Fluotitanic Acid x 758.33 lbs of E-CLPS 2100 used per month = approximately 15.92 lbs per month emitted
- For 2022: 2.1% Fluotitanic Acid x 872.08 lbs of E-CLPS 2100 used per month = approximately 18.31 lbs per month emitted

The application of E-CLPS 2100 appears to be exempt from obtaining a PTI per Rule 290(2)(a)(ii).

Following pre-treatment, the fence pieces move to the coating line. Elite Fence uses powder coatings. They electrostatically charge the fence parts and paint, so that there is efficient adhesion of the coatings. The leftover powder coatings are collected in a hopper and re-mixed with virgin powder coatings and re-used. The ventilation system in the coating room is equipped with fabric filters. There are no direct emissions to ambient air from the coating line. For the final stage of the coating process the coated fence parts go through an infrared oven that cures the coatings. The powder coating booth and associated curing oven appear to be exempt from obtaining a PTI per Rule 287(2)(d).

### **PTI No. 130-18 Compliance Evaluation**

The facility was issued PTI No. 130-18 for a burn-off oven equipped with an afterburner. Recordkeeping requirements were provided during the inspection. Elite Fence Products is required to maintain thermocouple calibration records, malfunction records, records of the chemical composition of each material processed in the burn-off oven, and temperature data records for the burn-off oven afterburner. The temperature data records are recorded on paper charts, and all records from January 2020 through December 2023 were reviewed during the inspection.

#### ***EU-BURNOFF***

SC VI.2 states that the permittee shall calibrate the thermocouples associated with the primary and secondary chambers at least once per year. Karl explained that these records were not available as he was unaware of this permit requirement. However, Karl indicated in an email from February 2, 2024, that since the day of the inspection, a thermocouple calibration has been scheduled. Nevertheless, a violation notice will be issued for failure to maintain thermocouple calibrations at least once per year from January 2020 through December 2023.

SC VI.3 states that the permittee shall keep, in a satisfactory manner, temperature data records for the burn-off oven secondary chamber, or afterburner. A review of the temperature data records from January 2020 through December 2023 revealed that from approximately August 10, 2023 until October 26, 2023 there was an issue with the pen used to record the temperature of the afterburner on the paper chart temperature recorder, resulting in missing temperature records for that time period. Following the inspection in an email dated February 2, 2024, Karl explained that after correcting the issue with the pen, it was explained to the Elite Fence team the importance of having both pens working properly, daily, and that if a problem does occur a team leader should be notified immediately. All other temperature records reviewed appeared to indicate that Elite Fence is in compliance with the requirements of SC IV.1 which states that the secondary chamber or afterburner maintains a minimum temperature of 1400<sup>0</sup>F. A violation notice will be issued for the missing temperature records from August 10, 2023 to October 26, 2023.

SC VI.4 explains that the permittee shall keep in a satisfactory manner, records of the date, duration, and description of any malfunction of the control equipment, any maintenance performed and any testing results for EU-BURNOFF. According to Karl, there were no malfunctions nor maintenance performed on the burn-off oven from January 2020 through December 2023.

SC VI.5 requires that the permittee maintain current information from the manufacturer that EU-BURNOFF is equipped with a secondary chamber or afterburner, an automatic temperature control system for the primary chamber and secondary chamber or afterburner, and an interlock system that shuts down the primary chamber burner when the secondary chamber or afterburner is not operating properly. As previously stated, a burn-off oven manual is kept close by the emission unit and contains all current pertinent information from the manufacturer.

### **Conclusion**

Based on the observations made during the inspection, and an analysis of the requested records, Elite Fence Products, Inc is in violation with the conditions and requirements of PTI No. 130-18 SC VI.2 and SC VI.3, and a violation notice will be issued.

NAME Owen Pierce

DATE 3/13/2024

SUPERVISOR K. Kelly