

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

N741768462

FACILITY: AUSTEMPER INC.		SRN / ID: N7417
LOCATION: 33180 KELLY RD., CLINTON TWP		DISTRICT: Warren
CITY: CLINTON TWP		COUNTY: MACOMB
CONTACT: Kyle Stansik , Safety and Quality Administrator		ACTIVITY DATE: 08/03/2023
STAFF: Owen Pierce	COMPLIANCE STATUS: Non Compliance	SOURCE CLASS: MINOR
SUBJECT: FY 2023 Inspection Report		
RESOLVED COMPLAINTS:		

On August 3, 2023, I (Owen Pierce EGLE - Air Quality Division) performed a scheduled targeted inspection of Austemper Inc. located at 33180 Kelly Road, Clinton 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. 276-04A. Upon arrival, I met with Marty Poljan, President, Steve Foss, Director of Quality/Business Operations, Kirk Cejmer, Plant Manager, and Chris Fryer, Quality Manager, conducted a pre-inspection meeting where I introduced myself, presented my credentials, and stated the purpose of the inspection.

During the pre-inspection meeting, Kirk explained the facility's processes and equipment. Austemper, Inc. is a metal heat treating company that conducts miscellaneous metal parts heat treat processes for customers in the automotive, and other industries. Austemper Inc., is permitted to operate two belt furnaces, each utilizing a molten salt quench, and a tempering furnace. Heat treating is a process to harden the metal by subjecting the metal in a two stage heat application processes. The first phase is called austertizing (hardening) process. In this process, the metal is subjected to high temperatures, such as 1500°F, to alter the properties, then cooled rapidly through a cooling medium (salt quench) known as the quenching process. After the first heating stage, the metal is usually cleaned and then subjected to a lower heating temperature known as the tempering process.

The facility has 11 employees and operates approximately 16 hours a day for five to six days a week depending on their work demand. According to Kirk, there have been no recent process or equipment changes. Non-permitted equipment includes one atmosphere generator and tools used for cutting, grinding, etc. The atmosphere generator appears to be exempt from the requirement to obtain a permit to install per R336.1285(2)(I)(iv) because it is used in connection with metal heat treating processes. The tools used for cutting, grinding, etc appear to be exempt from the requirement to obtain a permit to install per R336.1285(2)(I)(vi)(B) because they have emissions that are released only into the general in-plant environment. Following the pre-inspection meeting, Kirk lead me on an inspection of the facility.

Facility Walkthrough Observations

During the facility walkthrough, I observed two hardening furnaces (EUHARDENING1 and EUHARDENING5) operating, and Kirk explained that both furnaces run at approximately 1500°F or higher. I observed that the tempering furnace was installed and operational but not operating at the time of the inspection.

The quench tanks were observed as being located in ground and fully covered as part of the continuous belt line connected to each hardening furnace. Parts coming out of the belt line from quenching were emptied into a series of wash tanks and then either dried for packaging or conveyed to the tempering furnace and subjected to a secondary lower temperature heat treating process.

PTI No. 276-04A Compliance Evaluation

FGHEATREAT

The facility was issued PTI No. 276-04A for 2 hardening furnaces with molten salt quenching and 1 tempering furnace. Recordkeeping requirements were submitted to AQD staff by email from Kyle Stansik, Safety and Quality Administrator.

Special condition (SC) I.1 sets the PM emission limit at 2.16 tpy based off a 12-month rolling time period as determined at the end of each calendar month, and SC VI.1 states that the permittee shall use a mass balance equation, as shown in Appendix A, for quench salt usage to calculate the PM emission rate for each calendar month. The mass balance equation found in Appendix A to calculate the PM emission rate equals the salt added to the quench tanks to replenish lost quench salt and bring salt levels up to operating levels, less any amount of quench salt reclaimed, disposed of, or spilled/cleaned up.

Original PM emission records were calculated using only newly purchased salt that was added to the quench tanks, which caused an underestimation of PM emissions due to the fact that reclaimed salt cubes are also added to the quench tanks in addition to newly purchased salt. Reclaimed salt was originally recorded/identified as the reclaimed cubes added to the quench tank each month, which caused an underestimation of PM emissions due to the fact that this data was recorded in the incorrect section.

After many discussions and meetings concerning the methodology to record the quench salt usage, the final PM emission rate records were submitted for 2018-2022. These records include the following assumptions agreed upon by facility staff and AQD staff:

1. Salt added to the quench tanks includes all salt added to the quench tanks (reclaimed cubes and newly purchased salt).
2. Reclaimed salt includes the pounds of salt returned to the facility, in the form of 1,850 pound blocks, in a given year. Based on invoice records from 2018-2022, the number of trucks sent to Austemper to collect the used stored saltwater, for each year, was recorded, and an assumption that each truck returns approximately seven blocks to Austemper was established from an estimated range of six to eight blocks per truck. Therefore the number of trucks per year, times an average of seven blocks returned, times the weight of each block (1,850 pounds), equals the total weight, in pounds, of reclaimed salt for each year. In the spreadsheet for each year, the reclaimed salt is pro-rated for each month, for each furnace at the facility (2 furnaces), based on the amount of salt added per month, per furnace.
3. The amount of salt "dragged out" (drag out) of the quench tanks from parts going through the heat treating process was considered and included in the disposed portion of the mass balance equation. Drag out was estimated as five percent of the total amount of salt added/used each year plus five percent of a one-time per year tank recharge for each tank at the facility (2 quench tanks). According to Kyle, a tank recharge is performed once a year for each quench tank, where each tank is filled to a max quench salt capacity of 220,000 pounds. Over the course of the year the facility estimates that approximately five percent of the max capacity is removed from each quench tank as drag out. Drag out totals for each year are then pro-rated for each month, for each furnace at the facility, based on the amount of salt added per month, per furnace.

According to the final records, PM emissions were under the limit for every month except for September, October, November, and December of 2022. PM emissions in September 2022 were 2.83 tpy, PM emissions in October 2022 were 3.52 tpy, PM emissions in November 2022 were 4.73 tpy, and PM emissions in December 2022 were 6.09 tpy, and all are over the permitted limit of 2.16 tpy which is a violation of SC I.1. A violation notice will be issued.

SC I.2 sets a visible emissions opacity limit of 10% and SC VI.2 states that the permittee shall perform and document non-certified visible emissions observations as required in Emission Limit SC I.2 on a daily basis when FGHEATTREAT is operating. During the inspection, Kirk showed me the log of daily visible emissions records and according to the records no visible emissions have been observed.

SC II.1 states that the permittee shall not exceed the net molten quench salt usage rate of 4,320 pounds in FGHEATTREAT per year, based on 12-month rolling time period as determined at the end of each calendar month. According to the records from 2018-2022, the net molten quench salt usage rate was under the limit for every month except for September, October, November, and December of 2022. The net molten quench salt usage rates were 5,662 pounds for September 2022, 7,032 pounds for October 2022, 9,450 pounds for November 2022 and 12,180 pounds for December 2022 which are all over the permitted limit of 4,320 pounds which is a violation of SC II.1. A violation notice will be issued.

Conclusion

Based on the information obtained during the inspection, the company is in violation of PTI No. 276-04A, Special Conditions I.1 and II.1. A violation notice for these violations will be issued.

NAME Owen Pierce

DATE 9/27/2023

SUPERVISOR K. Kelly