

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

N219969388

FACILITY: FRANKLIN METALS TRADING CORPORATION		SRN / ID: N2199
LOCATION: 609 TUPPER LAKE ST, LAKE ODESSA		DISTRICT: Grand Rapids
CITY: LAKE ODESSA		COUNTY: IONIA
CONTACT: Mark Clark , President		ACTIVITY DATE: 09/07/2023
STAFF: Eric Grinstern	COMPLIANCE STATUS: Compliance	SOURCE CLASS: MINOR
SUBJECT: Onsite investigation/inspection		
RESOLVED COMPLAINTS:		

Unannounced inspection of Franklin Metals Trading Corporation in response to a complaint received regarding the compliance status of the facility.

Prior to entering the facility, a survey of the parameter was made from the public roadway. No opacity or odors were noted.

FACILITY BACKGROUND

The facility is a metal processing operation that handles ferrous and non-ferrous metals. The facility processes metals from commercial/industrial accounts as well as street trade. Aluminum scrap is processed through a sweat furnace and sold as refined sow.

REGULATORY REVIEW

The facility holds one air use permit, PTI No. 447-89B, which covers the operation of a gas-fired aluminum sweat furnace. The aluminum sweat furnace is subject to Subpart RRR, Secondary Aluminum Production NESHAP. The facility also has an evaporator that is used for water containing oils/lubricants, etc. The facility has claimed the unit as being exempt from permitting. All other known activities at the facility have been designated by the facility as exempt from the requirements to obtain an air use permit.

COMPLIANCE EVALUATION

At the facility, EGLE staff consisting of Eric Grinstern (EG) AQD, Ryan Grant, WRD, Jonathan Vrugink, MMD, and Jay Paquett, MMD, met with facility representatives, Mark Clark, Owner, Laurie Martin, Controller, Terry Montague, and Eric McKeever, Plant Manager.

Permit to Install 447-89B

EUFURNACE

EUFURNACE is an aluminum furnace used to sweat iron containing scrap as well as to melt aluminum scrap that does not contain iron. The furnace has a holding capacity of 32,000 pounds and is equipped with a dry hearth and a side well. Emissions from the furnace are ducted to an afterburner followed by a lime coated baghouse. The furnace is custom made and is unique in design. The furnace has many of the attributes of a Group 1 reverberatory furnace, such as having a side well, is maintained with a heel in the holding chamber and is controlled by a baghouse. Emissions from the hearth of the furnace are controlled by an afterburner followed

by baghouse control. Emissions from the side well are only controlled by the baghouse.

Emission Limits

EUFURNACE restricts the emission of hydrogen fluoride (HF), hydrogen chloride (HCL), copper, nickel, cobalt, dioxin/furans (D/F), and visible emissions. Compliance with the emission limits can be demonstrated by emissions testing.

The facility last conducted testing in April 2006 to evaluate the emission of HF, D/F, and VOC. The test results showed compliance with the permitted limits. Emission limits for copper, nickel and cobalt were added to the permit when the permit was modified in 2018. Testing has not been conducted to demonstrate compliance with copper, nickel, or cobalt emission limits. Due to the length of time (17 years) since the last compliance test was performed, since compliance with the limits for copper, nickel and cobalt have never been demonstrated by testing, and as detailed below, switching to a flux with NaCl and KCl, compliance testing will be requested.

The facility provided requested baghouse maintenance records (attached) for May 2023 until the time of the inspection. The records show that they are logging daily maintenance activities. During the month of May 2023 there were four days that the pressure drop reading was recorded as 0". The August log is incomplete regarding the completion of the monthly inspection. The semi-annual inspection was completed in July 2023. Based on the baghouse records, the facility switched from adding 150 pounds of lime to each chamber of the baghouse once a month to adding 50 pounds of lime to each chamber of the baghouse after each time the baghouse is shaken (weekly). This was done at the recommendation of the facility consultant to aid in protecting the bags.

EUFURNACE limits opacity to a six-minute average of 10%. During the inspection the facility demonstrated the baghouse cleaning (shake) process. When the baghouse was restarted, opacity was observed for approximately 30 seconds. EG suggested that the observed opacity after startup was an indication of fallen bags or bags with holes. On September 10, 2023, Mr. Clark sent an email stating that they were shutting down to check if there were any bags down. Mr. Clark followed-up with an email on September 13, 2023, stating that they had 16 bags down and they were having Walz Holz come in to do a complete investigation on the baghouse. Review of facility's daily maintenance logs (attached) showed that no visible emissions had been identified.

Material Usage Limits

Metal input to the furnace is limited to 37.5 tons/day, based on a daily time period.

Review of daily records for 2023 showed compliance with the tons/day limit. The highest recorded thruput amount was under 37 tons/day.

Flux usage is restricted to 285 lb/ton of metal charged, based on a daily time period. Additionally, the facility is restricted to using flux with a maximum fluorine content of 60.32%. Review of the daily records for 2023 showed compliance with the flux usage limit. Review of the SDS for the flux showed that it had a fluorine content less than 60.32%. Based on the SDS provided, the facility has switch fluxes from the flux used when the permit was last modified in 2018. When the permit was modified, the

facility switched to cryolite flux, which contained Na_3AlF_6 , $\text{Na}_5\text{Al}_3\text{F}_{14}$, NaCaAlF_6 and Al_2O_3 . The current flux, CFS 012 (SDS attached), has the same constituents as cryolite, but also contains, sodium chloride (30-60%) and potassium chloride (3-22%). The presence of NaCl and KCl will result in emissions of HCl.

Process/Operational Limits

EUFURNACE requires the afterburner used to control emissions from the sweat furnace hearth to have a minimum temperature of 1,600 degrees F and a retention time of 1.0 second. The afterburner manufacturer certified that the afterburner installed has a minimum residence time of 1.0 second or greater. During the inspection, observation of the afterburner showed a temperature of 1740 degrees F. The facility supplied the calibration reports for the afterburner for 2022 and 2023. The report states that they were "unaccredited calibration". Consolidated Controls provided an explanation that there was no difference between "accredited" and "unaccredited".

One of the underlying applicable requirements for the afterburner temperature of 1,600 degrees is Subpart RRR. Subpart RRR requires an operating temperature of 1,600 degrees based on a 3-hour block average. As required by Subpart RRR, compliance with the 3-hour block average is based on the operation of a monitoring system that is capable of recording the temperature in 15-minute block averages and the average temperature for each 3-hour block period (63.1510(g)(2)(ii)). The facility supplied requested temperature records for July and August 2023, documenting compliance with the afterburner temperature requirement.

The facility was required to submit an O&M plan for the control equipment, within 30 days of issuance of PTI No. 447-89B. The facility submitted an updated copy of the O&M plan on October 29, 2018.

Equipment

The facility is required to install and operate an afterburner and lime coated baghouse equipped with a pressure drop gauge.

The facility has installed and is operating the afterburner and baghouse with a pressure drop gauge. The east chamber had a reading of -2.5 inches and the west chamber had a reading of -2.0 inches.

The baghouse is a lime coated baghouse, not a lime injected baghouse. The facility introduces 50 pounds of lime to each chamber of the baghouse once a week after the bags are cleaned. This results in up to 500 pounds of lime being added to the baghouse a month as opposed to the previous practice which added 300 pounds of lime a month.

Monitoring/Recordkeeping

The permit requires the facility to install and maintain a device to monitor and record the temperature and residence time of the afterburner on a continuous basis.

The afterburner temperature is monitored and recorded on a continuous basis. The residence time of the afterburner is based upon the design and certification by the

manufacturer. Staff is not aware of a residence time monitor and considers this part of the condition to be an error.

The facility is required to monitor on a daily basis, the lime injection or coating rate. EG reviewed records that showed compliance with the requirement. The facility records when lime is added to each chamber. The facility provided requested lime purchase records for the previous 5 years. Lime is added to the bottom of the compartments which results in it being drawn up to the bags.

Secondary Aluminum Production NESHAP – Subpart RRR

The facility's aluminum sweat furnace is subject to Subpart RRR.

Area source sweat furnaces are only subject to dioxin/furan limit under the NESHAP.

The hearth is controlled by an afterburner and baghouse, while the side well emissions go directly to the baghouse. Emission testing was conducted in 2006, at which time compliance with the dioxin/furan limits was demonstrated at the baghouse exhaust. Due to the length of time since the last performance test, re-testing will be requested.

The facility is currently in compliance with the NESHAP requirements regarding the submittal of semi-annual/annual excess emission certifications.

The facility has in place the required OM&M and SSM plans. Review of the facility records showed that they have been performing and documenting the required inspection/maintenance actions required by Subpart RRR and contained in the OM&M plan.

Subpart RRR, 63.1510(d) requires the source to inspect each capture and collection system at least once per year. This inspection requires the collection of the actual volumetric measurements to verify the minimum volumetric flow rate is being maintained in accordance with Chapters 3 and 5 of ACGIH manual. The facility is conducting this inspection annually. The facility provided the most recent inspection documents for 2021 and 2022.

Miscellaneous

The facility has a stormwater evaporator in the northwest portion of the facility.

The facility previously provided an exemption determination that was conducted prior to the installation of the unit. The determination utilized Rule 285(2)(m), but also stated that Rule 290 was also applicable.

Conclusion

Based on the information and observations made during this inspection, the facility appears to be in compliance with all applicable air quality rules and regulations. The facility will be requested to conduct performance testing to verify compliance with the emission limits in EUFURNACE for HF, HCL, Copper, Nickel, Cobalt, and D/F.

NAME *Cate Hunter*

DATE *11/8/2023*

SUPERVISOR *[Signature]*