

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

P034054880

FACILITY: ALUTECH, LLC		SRN / ID: P0340
LOCATION: 1320 PAW PAW AVE, BENTON HARBOR		DISTRICT: Kalamazoo
CITY: BENTON HARBOR		COUNTY: BERRIEN
CONTACT: Sushma Karanam , Supervisor of HSE		ACTIVITY DATE: 08/26/2020
STAFF: Matthew Deskins	COMPLIANCE STATUS: Compliance	SOURCE CLASS: MINOR
SUBJECT: Announced Scheduled Inspection. It was announced due to COVID-19 Pandemic.		
RESOLVED COMPLAINTS:		

On August 26, 2020 AQD Staff (Matt Deskins) went to conduct an announced scheduled inspection of the Alutech facility located in Benton Harbor, Berrien County. The inspection had to be announced due to the Covid-19 pandemic. According to district file records, Alutech is a minor source with one permit (PTI No. 170-19) issued to them by the AQD for three aluminum reverb melting furnaces, thirty- two electrically heated crucibles, and two heat treat furnaces with water quench. The intent of staff's inspection was to determine the facilities compliance with their air use permit and any other state or federal air regulations that may apply. Also, staff noted after an internet search of the company that they appeared to be known as Chassic and/or Aludyne now, so staff will seek clarification on the current company name as well. The inspection was scheduled for 10:00 a.m. so staff departed for the facility at approximately 8:30 a.m.

Staff arrived at the Alutech facility at approximately 9:45 a.m. Prior to entering the facility, staff took a few minutes of see if there were any visible emissions coming from anywhere around the building and none were noted. Staff then proceeded into the reception area. Upon entering the reception area, staff signed in and began to look over the staff directory for whom to contact. While doing that, Sushma Karanam (Supervisor of HSE for Benton Harbor and Stevensville Facilities), who staff had scheduled the inspection with, noticed staff and came out into the reception area. Staff introduced them self to Sushma and she proceeded to let staff into the office area. Upon entering the office area, Sushma asked staff to fill out their Covid-19 questionnaire and she also took staff's temperature. After those procedures were finished, she led staff to a conference room where she introduced them to Sean Drzewiecki (Director of HSE), Jack Eagleston (Foundry Operator/Supervisor), Wes Aurand (Engineering Manager), and their consultant Brad Saunders (Arcadis). After introductions and the exchange of business cards, staff explained the inspection process and what staff would like to see. The following is a summary of staff's conversation with the various personnel listed above.

The first thing staff asked about was the actual name of the facility since it was permitted as Alutech but appears to be called either Chassic or Aludyne according to the internet. Sean mentioned that in 2019 the name had been changed to Aludyne. Staff then mentioned that if they want the permit and/or AQD files to reflect the current name, they will need to submit a written request to us following Rule 219. Staff then asked how business has been, the number of employees, and facility operating schedule. Sean mentioned business had been okay and that it was just beginning to pick back up and according to Wes, they have between 200 to 230 employees at any given time currently and are working 3 shifts five days per week. He said that they will work 6 or 7 days if production requires it. Staff then asked for an overview of operations to which Wes replied the following basics steps of their operations which will be gone over in little more detail later. They melt the aluminum in reverb furnaces, cast it in the machines, trim excess aluminum off the parts, heat treat the parts, conduct testing of the parts. Staff then asked what types of products that they manufacture, and Wes said it was strictly automotive parts such as front and rear knuckles along with central arms. They make these products for GM, Ford, Chrysler Fiat, and Nissan mainly with GM being their largest customer currently.

Staff then asked them to verify that the equipment listed in the permit was what was currently at the facility (even though the permit had just been issued back in April). Both Wes and Sean confirmed that it was and went into a little history about the equipment. Brad mentioned that the original EUREVERB1 was a smaller furnace that had been relocated to their Stevensville facility and was to going to be replaced by three identical reverb furnaces designated EUREVERB2, EUREVERB3, and EUREVERB4, but number 4 was never installed. The most recent permit application and permit that was issued removed EUREVERB4 and added EUREVERB5. EUREVERB5 is smaller than 2 and 3 and is used for melting aluminum chips. The chips come from other Aludyne casting facilities and the only thing that might be on it is coolant. Staff then asked if all equipment is under one "Roof" and they said it was. They did say

that they had to raise a portion of the roof to accommodate EUREVERB5. Staff then asked about their fluxing products and procedures. Staff was told that they only use 2 fluxes (Pyroflux 355 and Pyrotek GRN165) which are both dry and granular. Brad said that they had included 3 different products in their permit application but have ever used the third one. Staff was told that they hardly ever flux EUREVERB2 and EUREVERB3 and that 90% of what they flux are the crucibles and the other 10% is EUREVERB5 (Chip Melt). Pyroflux 355 is used in the crucibles and Pyrotek GRN165 in EUREVERB5. EUREVERB5 is also the only furnace equipped with low NOx burners. Staff then went on a tour of the facility and the following is our sequence of stops from the beginning of their production process until the end.

Melting Process – An alloy of aluminum called A356.2 is melted in EUREVERB2 or EUREVERB3 or clean aluminum chips are melted in either EUREVERB5. In EUREVERB2 or EUREVERB3, aluminum is received in 1500# T-Bars, Ingots, or Sows. They also melt recycled materials such as crushed aluminum rims/wheels that are certified clean. Staff checked them over and did not note any paint, oils, or any other type of contaminant on them. All materials melted have to meet a certain specification and everything is traceable by code. EUREVERB2 and EUREVERB3 are loaded from the rear and are tapped in the front. The process for EUREVERB5 is as follows:

Aluminum chips get delivered in an enclosed semi-trailer from the casting process done at other Aludyne facilities and get dropped off at one of two loading docks. Staff grabbed a handful of chips and they appeared to be not only clean but dry as well. The chips are centrifuged at the other locations to drive off any moisture or coolant that may be on the chips. The chips are then loaded into the hopper connected to EUREVERB5 by a small loader. The chips then are transferred via a conveyor from the hopper to a crushing screen. The chips have to meet certain size specs and a centrifuge connected to the crushing screen separates out the fines and smaller chips. The fines and non-spec material are directed into a recycle bin for off-site processing. The larger chips will then go through a heated centrifuge / cyclone (220 – 240 degrees F) to again dry off any type of moisture. This process exhausts out the main reverb stack of the furnace. The chips then go to the reverb for melting. This furnace is equipped with low NOx burners and is also equipped with an afterburner that most steps in the process exhaust to prior to discharge out the main reverb stack. Brad had mentioned to staff that prior to permitting this furnace, he had discussed it's operation with Eric Grinstern (AQD Foundry Specialist) and he had confirmed that this furnace was not subject to the Secondary Aluminum NESHAP 40 CFR Part 63 Subpart RRR. Staff followed up on this as well and found the following definition in the NESHAP and thus exempts it from the regulation. I put in bold the part of the definition that applies to this process.

Clean charge means furnace charge materials, including molten aluminum; T-bar; sow; ingot; billet; pig; alloying elements; aluminum scrap known by the owner or operator to be entirely free of paints, coatings, and lubricants; uncoated/unpainted aluminum chips that have been thermally dried or treated by a centrifugal cleaner; aluminum scrap dried at 343 °C (650 °F) or higher; aluminum scrap delacquered/ decoated at 482 °C (900 °F) or higher; and runaround scrap. Anodized aluminum that contains dyes or sealants containing organic compounds is not clean charge.

Degassing – after the aluminum is melted in any of the three reverb furnaces, it is then transferred into one of the crucibles. Each of the 32 crucibles has a 1,900-pound hold capacity. Almost all fluxing and/or Nitrogen degassing that takes place at the facility will be done in the crucibles. Once the fluxing is complete, they will skim the flux and it is placed in another recycling bin to processed off-site. Some of this material will be returned to them as “Certified Clean”. After fluxing and/or degassing is complete, the crucibles will then proceed to a casting machine. Wes said that when they are really busy, they go through about 1 crucible an hour.

Casting Process – Both EUREVERB2 and EUREVERB3 have 7 casting machines “connected” to each one. Any aluminum chips melted in EUREVERB5 will be also be transferred by crucible to one of the 14 total casting machines as needed. The casting machines are all bottom fed wherein the crucibles get placed underneath the machine and the melted aluminum is drawn up into the machines for casting.

Trim/Sawing - Once the aluminum has been casted into a part and cooled, any excess or unwanted material will then get trimmed and/or sawed off the casting.

X-Ray – After the parts have been casted and trimmed, they head to the x-ray where they will be checked for any defects, porosities, cracks, etc.

Heat Treat – All parts that have made it through x-ray will then go to one of two heat treat processes. Every 16 minutes a rack of parts will go into heat treat oven and 12 hours later they come out the other end. The parts turn almost black or a dark grey after the heat treat process.

Liquid Penetration Testing - Once the part makes it out of heat treat, it is dipped in a liquid dye that will then be analyzed under black light to again look for any cracks or defects.

Shipping – All parts that have passed all testing (Non and Destructive Testing) will then be packaged and ready for shipment.

During the plant tour, staff also observed areas for welding, maintenance, QA/QC labs, etc. They also have a compressor room and Wes told staff that everything is moved through the plant by air. Staff also observed a sand blast room that is used to blast the casting molds to prepare them for use again. The media used is a Starblast sand and the unit is controlled by a dust collector located outside the building. The area surrounding the collector was clean and it incorporates the use of both cartridge and bag filters. Lastly, staff also observed a mold pre-heat oven that pre-heats the molds after blasting and prior to use again in the machines to 400 degrees F. All of the proceeding equipment observed appears to be exempt by an AQD Permit Exemption.

Staff then proceeded with everyone back into the office area conference room. Staff then asked about maintenance on the furnaces and staff was told that they have an automated maintenance system where all PM is tracked. Once a new piece of equipment is added to the facility, they will add all manufacturer recommendations for maintenance on it to their system. Sushma said she would e-mail staff a copy of what their maintenance work order looks like. Staff then mentioned that everything appeared to look in order but staff would have to wait to make a definitive compliance determination until after a review of records that Brad had e-mailed them. Staff thanked them all for their time and Sushma led staff to the exit. Staff ended up departing the facility at approximately 12:00 noon.

The following lists the special conditions of PTI No. 170-19 and staff's comments regarding them.

EMISSION UNIT SPECIAL CONDITIONS OF PTI No. 170-19

EMISSION UNIT SUMMARY TABLE

The descriptions provided below are for informational purposes and do not constitute enforceable conditions.

Emission Unit ID	Emission Unit Description (Including Process Equipment & Control Device(s))	Installation Date / Modification Date	Flexible Group ID
EUREVERB2	Natural Gas Fired Aluminum Melting Furnace Holding Capacity: 78,600 pounds Melt Rate: 8,000 pounds/hour Natural Gas Firing Rate: 18,735 cf/hour Maximum Flux Rate: 86 pounds/day, used for cleaning	December 2012	FGFURNACES
EUREVERB3	Natural Gas Fired Aluminum Melting Furnace Holding Capacity: 78,600 pounds Melt Rate: 8,000 pounds/hour Natural Gas Firing Rate: 18,735 cf/hour Maximum Flux Rate: 86 pounds/day, used for cleaning	December 2012	FGFURNACES
EUREVERB5	Natural Gas Fired Aluminum Melting	Permit Issue	NA

	Furnace Holding Capacity: 66,600 pounds Melt Rate: 5,000 pounds/hour Natural Gas Firing Rate: 10.6 MMBtu/hr for melting and 0.8 MMBtu/hr for the afterburner Maximum Flux Rate: 86 pounds/day, used for cleaning	Date	
EUCRUCIBLE1	Electrically Heated crucible furnace Holding Capacity: 1,900 pounds Flux Rate: 0.8 pound/treatment with nitrogen degassing	August 31, 2012	FGCRUCIBLE
EUCRUCIBLE2	Electrically Heated crucible furnace Holding Capacity: 1,900 pounds Flux Rate: 0.8 pound/treatment with nitrogen degassing	August 31, 2012	FGCRUCIBLE
EUCRUCIBLE3	Electrically Heated crucible furnace Holding Capacity: 1,900 pounds Flux Rate: 0.8 pound/treatment with nitrogen degassing	August 31, 2012	FGCRUCIBLE
EUCRUCIBLE4	Electrically Heated crucible furnace Holding Capacity: 1,900 pounds Flux Rate: 0.8 pound/treatment with nitrogen degassing	August 31, 2012	FGCRUCIBLE
EUCRUCIBLE5	Electrically Heated crucible furnace Holding Capacity: 1,900 pounds Flux Rate: 0.8 pound/treatment with nitrogen degassing	August 31, 2012	FGCRUCIBLE
EUCRUCIBLE6	Thirty-two Electrically Heated crucible furnaces Holding Capacity: 1,900 pounds each Flux Rate: 0.8 pound/crucible furnace treatment with nitrogen degassing	August 31, 2012	FGCRUCIBLE
EUCRUCIBLE7	Electrically Heated crucible furnace Holding Capacity: 1,900 pounds Flux Rate: 0.8 pound/treatment with nitrogen degassing	August 31, 2012	FGCRUCIBLE
EUCRUCIBLE8	Electrically Heated crucible furnace Holding Capacity: 1,900 pounds Flux Rate: 0.8 pound/treatment with nitrogen degassing	August 31, 2012	FGCRUCIBLE
EUCRUCIBLE9	Electrically Heated crucible furnace Holding Capacity: 1,900 pounds Flux Rate: 0.8 pound/treatment with nitrogen degassing	August 31, 2012	FGCRUCIBLE
EUCRUCIBLE10	Electrically Heated crucible furnace Holding Capacity: 1,900 pounds Flux Rate: 0.8 pound/treatment with nitrogen degassing	August 31, 2012	FGCRUCIBLE
EUCRUCIBLE11	Electrically Heated crucible furnace Holding Capacity: 1,900 pounds Flux Rate: 0.8 pound/treatment with nitrogen degassing	August 31, 2012	FGCRUCIBLE
EUCRUCIBLE12	Electrically Heated crucible furnace Holding Capacity: 1,900 pounds Flux Rate: 0.8 pound/treatment with nitrogen degassing	August 31, 2012	FGCRUCIBLE
EUCRUCIBLE13	Electrically Heated crucible furnace Holding Capacity: 1,900 pounds	August 31, 2012	FGCRUCIBLE

	Flux Rate: 0.8 pound/treatment with nitrogen degassing		
EUCRUCIBLE14	Electrically Heated crucible furnace Holding Capacity: 1,900 pounds Flux Rate: 0.8 pound/treatment with nitrogen degassing	August 31, 2012	FGCRUCIBLE
EUCRUCIBLE15	Electrically Heated crucible furnace Holding Capacity: 1,900 pounds Flux Rate: 0.8 pound/treatment with nitrogen degassing	August 31, 2012	FGCRUCIBLE
EUCRUCIBLE16	Electrically Heated crucible furnace Holding Capacity: 1,900 pounds Flux Rate: 0.8 pound/treatment with nitrogen degassing	August 31, 2012	FGCRUCIBLE
EUCRUCIBLE17	Electrically Heated crucible furnace Holding Capacity: 1,900 pounds Flux Rate: 0.8 pound/treatment with nitrogen degassing	August 31, 2012	FGCRUCIBLE
EUCRUCIBLE18	Electrically Heated crucible furnace Holding Capacity: 1,900 pounds Flux Rate: 0.8 pound/treatment with nitrogen degassing	August 31, 2012	FGCRUCIBLE
EUCRUCIBLE19	Electrically Heated crucible furnace Holding Capacity: 1,900 pounds Flux Rate: 0.8 pound/treatment with nitrogen degassing	August 31, 2012	FGCRUCIBLE
EUCRUCIBLE20	Electrically Heated crucible furnace Holding Capacity: 1,900 pounds Flux Rate: 0.8 pound/treatment with nitrogen degassing	August 31, 2012	FGCRUCIBLE
EUCRUCIBLE21	Electrically Heated crucible furnace Holding Capacity: 1,900 pounds Flux Rate: 0.8 pound/treatment with nitrogen degassing	August 31, 2012	FGCRUCIBLE
EUCRUCIBLE22	Electrically Heated crucible furnace Holding Capacity: 1,900 pounds Flux Rate: 0.8 pound/treatment with nitrogen degassing	August 31, 2012	FGCRUCIBLE
EUCRUCIBLE23	Electrically Heated crucible furnace Holding Capacity: 1,900 pounds Flux Rate: 0.8 pound/treatment with nitrogen degassing	August 31, 2012	FGCRUCIBLE
EUCRUCIBLE24	Electrically Heated crucible furnace Holding Capacity: 1,900 pounds Flux Rate: 0.8 pound/treatment with nitrogen degassing	August 31, 2012	FGCRUCIBLE
EUCRUCIBLE25	Electrically Heated crucible furnace Holding Capacity: 1,900 pounds Flux Rate: 0.8 pound/treatment with nitrogen degassing	August 31, 2012	FGCRUCIBLE
EUCRUCIBLE26	Electrically Heated crucible furnace Holding Capacity: 1,900 pounds Flux Rate: 0.8 pound/treatment with nitrogen degassing	August 31, 2012	FGCRUCIBLE
EUCRUCIBLE27	Electrically Heated crucible furnace Holding Capacity: 1,900 pounds Flux Rate: 0.8 pound/treatment with nitrogen degassing	December 15, 2012	FGCRUCIBLE
EUCRUCIBLE28	Electrically Heated crucible furnace	December 15,	FGCRUCIBLE

EUCRUCIBLE29	Electrically Heated crucible furnace Holding Capacity: 1,900 pounds Flux Rate: 0.8 pound/treatment with nitrogen degassing	December 15, 2012	FGCRUCIBLE
EUCRUCIBLE30	Electrically Heated crucible furnace Holding Capacity: 1,900 pounds Flux Rate: 0.8 pound/treatment with nitrogen degassing	December 15, 2012	FGCRUCIBLE
EUCRUCIBLE31	Electrically Heated crucible furnace Holding Capacity: 1,900 pounds Flux Rate: 0.8 pound/treatment with nitrogen degassing	December 15, 2012	FGCRUCIBLE
EUCRUCIBLE32	Electrically Heated crucible furnace Holding Capacity: 1,900 pounds Flux Rate: 0.8 pound/treatment with nitrogen degassing	December 15, 2012	FGCRUCIBLE
EUCASTING	Counter-pressure casting into permanent dies	August 2012	NA
EUHEATTREAT1	A 16.962 MMBtu/hr natural gas fired heat treat furnace with water quench. The emissions from the heat treat furnace are exhausted to ambient air through three stacks. There are three exhaust stacks which are SVHEATTREAT1, SVHEATTREAT2 and SVHEATTREAT3.	December 2012	FGHEATTREAT
EUHEATTREAT2	A 16.962 MMBtu/hr natural gas fired heat treat furnace with water quench. The emissions from the heat treat furnace are exhausted to ambient air through three stacks. There are three exhaust stacks which are SVHEATTREAT5, SVHEATTREAT6 and SVHEATTREAT7.	December 2012	FGHEATTREAT

Changes to the equipment described in this table are subject to the requirements of R 336.1201, except as allowed by R 336.1278 to R 336.1291.

EUREVERB5
EMISSION UNIT CONDITIONS

DESCRIPTION

Natural Gas Fired Aluminum Melting Furnace
 Holding Capacity: 66,600 pounds
 Melt Rate: 5,000 pounds/hour
 Natural Gas Firing Rate: 10.6 MMBtu/hr for melting and 0.8 MMBtu/hr for the afterburner
 Maximum Flux Rate: 86 pounds/day, used for cleaning

Flexible Group ID: NA

POLLUTION CONTROL EQUIPMENT

Low NOx burners for melting and the afterburner

I. EMISSION LIMIT(S)

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Pollutant	Limit	Time Period / Operating Scenario	Equipment	Monitoring / Testing Method	Underlying Applicable Requirements
1. PM	3.78 pph	Hourly	EUREVERB5	SC V.1	R 336.1301, R 336.1331
2. PM10	2.51 pph	Hourly	EUREVERB5	SC V.1	40 CFR 52.21 (c) & (d)
3. PM2.5	2.19 pph	Hourly	EUREVERB5	SC V.1	40 CFR 52.21 (c) & (d)
4. Hydrogen fluoride	4.93 pph ¹	Hourly	EUREVERB5	SC V.2	R 336.1224, R 336.1225

5. The permittee shall allow no visible emissions from openings and vents of the building housing EUREVERB5. (R 336.1301, R 336.1331, R 336.1224, R 336.1225, R 336.2810)

AQD Comment: Appears to be in Compliance with the Above. The AQD has not requested and testing be performed to date to show compliance with #1 through #4 above and staff did not observe any VEs as required #5. Also, staff has not received any complaints of VEs for any nearby businesses or residences.

II. MATERIAL LIMIT(S)

Material	Limit	Time Period / Operating Scenario	Equipment	Monitoring / Testing Method	Underlying Applicable Requirements
1. Fluxing materials added to furnace	86 lb/day ¹	Daily Basis	EUREVERB5	SC VI.2	R 336.1224, R 336.1225
2. Fluxing materials added to furnace	17,888 lb/year	12-month rolling time period as determined at the end of each calendar month	EUREVERB5	SC VI.2	R 336.1224, R 336.1225, R 336.1301, R 336.1331, 40 CFR 52.21(c) & (d)

AQD Comment: Appears to be in Compliance with the above limits. This furnace was recently installed under this new PTI so a lot of records haven't been generated yet. It appears that when they flux this furnace that they typically use under 5 pounds per day, however; there was one day at the end of July when they used 43 pounds but that is still well under the limit. 12- Month Rolling Amounts ending in July 2020 were 115 pounds.

3. The permittee shall melt only clean charge, customer returns, or internal scrap, as defined by 40 CFR Part 63 Subpart RRR in EUREVERB5. This condition is necessary to avoid requirements of 40 CFR Part 63 Subpart RRR, National Emission Standards for Secondary Aluminum Production. (R 336.1224, R 336.1225, 40 CFR Part 63 Subpart RRR)

AQD Comment: Appears to be in Compliance. Staff only observed clean charge materials as defined by the NESHAP RRR during the inspection.

4. The permittee shall only burn pipeline quality natural gas in the burners of EUREVERB5. (R 336.1224, R 336.1225, R 336.1301, R 336.1331, 40 CFR 52.21(c) & (d))

AQD Comment: Appears to be in Compliance. They only burn natural gas in their furnaces and other operations.

III. PROCESS/OPERATIONAL RESTRICTION(S)

NA

IV. DESIGN/EQUIPMENT PARAMETER(S)

1. The permittee shall ensure only low NOx burners with total maximum burn rates of no more than 10.6 MMBtu/hr for melting and 0.8 MMBtu/hr for the afterburner are used in EUREVERB5. The permittee shall install, maintain, and operate these low NOx burners in a satisfactory manner. (R 336.1205, R 336.1910, 40 CFR 52.21(c) and (d))

AQD Comment: Appears to be in Compliance with the Above.

2. The permittee shall not install or modify EUREVERB5 so that the maximum hourly melt rate exceeds 5,000 lb/hr. (R 336.1205, R 336.1224, R 336.1225R 336.1910, 40 CFR 52.21(c) and (d))

AQD Comment: Appears to be in Compliance. Staff has to assume that they haven't modified this unit to melt more than this amount.

V. TESTING/SAMPLING

Records shall be maintained on file for a period of five years. (R 336.1201(3))

AQD Comment: Appears to be in Compliance with #1 and #2 Below. The AQD has not requested any testing to date.

1. Upon request from the AQD District Supervisor, the permittee shall verify PM, PM10 and PM2.5 emission rates from EUREVERB5 by testing at the owner's expense, in accordance with Department requirements. Testing shall be performed using an applicable approved EPA Method listed in 40 CFR Part 60, Appendix A; Part 10 of the Michigan Air Pollution Control Rules, or 40 CFR Part 51, Appendix M. An alternate method, or a modification to the approved EPA Method, may be specified in an AQD approved Test Protocol. No less than 60 days prior to testing, the permittee shall submit a complete test plan to the AQD Technical Programs Unit and District Office. The AQD must approve the final plan prior to testing, including any modifications to the method in the test protocol that are proposed after initial submittal. The permittee must submit a complete report of the test results to the AQD Technical Programs Unit and District Office within 60 days following the last date of the test. (R 336.1205, R 336.1331, R 336.2001, R 336.2003, R 336.2004, 40 CFR 52.21(c) & (d))
2. Upon request from the AQD District Supervisor, the permittee shall verify hydrogen fluoride emission rate from EUREVERB5 by testing at the owner's expense, in accordance with Department requirements. Testing shall be performed using an applicable approved EPA Method listed in 40 CFR Part 60, Appendix A. An alternate method, or a modification to the approved EPA Method, may be specified in an AQD approved Test Protocol. No less than 60 days prior to testing, the permittee shall submit a complete test plan to the AQD Technical Programs Unit and District Office. The AQD must approve the final plan prior to testing, including any modifications to the method in the test protocol that are proposed after initial submittal. The permittee must submit a complete report of the test results to the AQD Technical Programs Unit and District Office within 60 days following the last date of the test. (R 336.2001, R 336.2003, R 336.2004, R 336.1224, R 336.1225)

VI. MONITORING/RECORDKEEPING

Records shall be maintained on file for a period of five years. (R 336.1201(3))

AQD Comment: Appears to be in Compliance with #1 through #5 Below. The records for #1 and #2 are kept on an electronic spreadsheet and they have the SDS for any fluxes used as required by #3. For #4 they have Maintenance/Work Orders.

1. The permittee shall keep, in a satisfactory manner, records of the weight and description of all charge materials and fluxing materials or agents added to EUREVERB5 on a daily basis. The permittee shall keep all records on file at the facility and make them available to the Department upon request. (R 336.1224, R 336.1225, R 336.1301, R 336.1331, 40 CFR 52.21 (c) & (d))
2. The permittee shall calculate the total weight of all fluxing materials and agents used in EUREVERB5 on a daily, monthly, and rolling 12-month time period basis. The permittee shall complete all required calculations in a format acceptable to the AQD District Supervisor by the last day of the calendar month, for the previous calendar month, unless otherwise specified in any recordkeeping, reporting or notification special condition. The permittee shall keep all records on file at the facility and make them available to the Department upon request. (R 336.1224, R 336.1225, R 336.1301, R 336.1331, 40 CFR 52.21 (c) & (d))
3. The permittee shall maintain a current listing from the manufacturer of the chemical composition of each flux material used, including the weight percent of each component. The data may consist of Material Safety Data Sheets, manufacturer's formulation data, or both as deemed acceptable by the AQD District Supervisor. The permittee shall keep all records on file and make them available to the Department upon request.¹
(R 336.1224, R 336.1225)
4. The permittee shall keep a copy of the furnace manufacturer maintenance recommendations and a log of all maintenance and repairs performed on EUREVERB5. The permittee shall keep all records on file and make them available to the Department upon request. (R 336.1205, R 336.1224 R 336.1225, R 336.1301, R 336.1331, 40 CFR 52.21 (c) & (d))

VII. REPORTING

1. Within 30 days after completion of the installation authorized by this Permit to Install, the permittee or the authorized agent pursuant to Rule 204, shall notify the AQD District Supervisor, in writing, of the completion of the activity. Completion of the installation is considered to occur not later than commencement of trial operation of EUREVERB5. (R 336.1201(7)(a))

AQD Comment: Appears to be in Compliance.

VIII. STACK/VENT RESTRICTION(S)

The exhaust gases from the stacks listed in the table below shall be discharged unobstructed vertically upwards to the ambient air unless otherwise noted:

Stack & Vent ID	Maximum Exhaust Diameter / Dimensions (inches)	Minimum Height Above Ground (feet)	Underlying Applicable Requirements
1. SVREVERB5	48	45	R 336.1225, 40 CFR 52.21 (c) & (d)

AQD Comment: Appears to be in Compliance; however, staff did not go up on the roof. From the height of the building, staff estimated that it meets the height requirement and where it exhausted out the roof from inside the building appeared to meet the diameter requirement.

IX. OTHER REQUIREMENT(S)

NA

Footnotes:

¹ This condition is state only enforceable and was established pursuant to Rule 201(1)(b).

FLEXIBLE GROUP SPECIAL CONDITIONS

FLEXIBLE GROUP SUMMARY TABLE

The descriptions provided below are for informational purposes and do not constitute enforceable conditions.

Flexible Group ID	Flexible Group Description	Associated Emission Unit IDs
FGFURNACES	Two natural gas fired reverberatory furnaces. Only clean charge is melted in the furnaces. Periodic fluxing is conducted to clean the furnaces.	EUREVERB2, EUREVERB3
FGCRUCIBLE	Thirty-two Electrically Heated crucible furnaces Holding Capacity: 1,900 pounds each Flux Rate: 0.8 pound/crucible furnace treatment with nitrogen degassing	EUCRUCIBLE1, EUCRUCIBLE2, EUCRUCIBLE3, EUCRUCIBLE4, EUCRUCIBLE5, EUCRUCIBLE6, EUCRUCIBLE7, EUCRUCIBLE8, EUCRUCIBLE9, EUCRUCIBLE10, EUCRUCIBLE11, EUCRUCIBLE12, EUCRUCIBLE13, EUCRUCIBLE14, EUCRUCIBLE15, EUCRUCIBLE16, EUCRUCIBLE17, EUCRUCIBLE18, EUCRUCIBLE19, EUCRUCIBLE20, EUCRUCIBLE21, EUCRUCIBLE22, EUCRUCIBLE23, EUCRUCIBLE24, EUCRUCIBLE25, EUCRUCIBLE26, EUCRUCIBLE27, EUCRUCIBLE28, EUCRUCIBLE29, EUCRUCIBLE30, EUCRUCIBLE31, EUCRUCIBLE32
FGHEATTREAT	Two heat treat furnace systems with combined heat input of 33.924 MMBTU/hr consisting of two solution furnaces, two heated water quench tanks, and two aging furnaces.. The emissions from the heat treat furnaces are exhausted to ambient air through six stacks.	EUHEATTREAT1, EUHEATTREAT2

FGFURNACES FLEXIBLE GROUP CONDITIONS

DESCRIPTION

Two natural gas fired reverberatory furnaces. Only clean charge is melted in the furnaces. Periodic fluxing is conducted to clean the furnaces

Emission Unit: EUREVERB2, EUREVERB3

POLLUTION CONTROL EQUIPMENT

NA

I. EMISSION LIMIT(S)

Pollutant	Limit	Time Period / Operating Scenario	Equipment	Monitoring / Testing Method	Underlying Applicable Requirements
1. PM	0.80 pph	Hourly	Each Furnace in FGFURNACES	SC V.1	R 336.1301, R 336.1331
2. PM10	0.80 pph	Hourly	Each Furnace in FGFURNACES	SC V.1	40 CFR 52.21 (c) & (d)
3. PM2.5	0.50 pph	Hourly	Each Furnace in FGFURNACES	SC V.1	40 CFR 52.21 (c) & (d)

AQD Comment: Appears to be in Compliance with #1 through #3 Above. The AQD has not requested any testing be conducted to date.

II. MATERIAL LIMIT(S)

Material	Limit	Time Period / Operating Scenario	Equipment	Monitoring / Testing Method	Underlying Applicable Requirements
1. Aluminum charged to the furnace	96 tons/day	Daily basis	Each Furnace in FGFURNACES	SC VI.1	R 336.1225, R 336.1301, R 336.1331, 40 CFR 52.21 (c) & (d)
2. Fluxing materials added to furnace	86 lb/day ¹	Daily basis	Each Furnace in FGFURNACES	SC VI.2	R 336.1224, R 336.1225
3. Fluxing materials added to furnace	17,888 lb/year	12-month rolling time period as determined at the end of each calendar month	Each Furnace in FGFURNACES	SC VI.2	R 336.1224, R 336.1225, R 336.1301, R 336.1331, 40 CFR 52.21 (c) & (d)

AQD Comment: Appears to be in Compliance with #1 through #3 Above. Daily and/or 12-Month Rolling Records reviewed by staff showed them under these limits.

4. The permittee shall melt only clean charge, customer returns, or internal scrap, as defined by 40 CFR Part 63 Subpart RRR in FGFURNACES. This condition is necessary to avoid requirements of 40 CFR Part 63 Subpart RRR, National Emission Standards for Secondary Aluminum Production. (R 336.1224, R 336.1225, 40 CFR Part 63 Subpart RRR)

AQD Comment: Appears to be in Compliance. Staff only observed clean charge materials as defined by the NESHAP RRR during the inspection.

5. The permittee shall only burn pipeline quality natural gas in the burners of FGFURNACES. (R 336.1225, R 336.1301, R 336.1331, 40 CFR 52.21(c) & (d))

AQD Comment: Appears to be in Compliance. The facility only burns natural gas in their furnaces and other operations.

III. PROCESS/OPERATIONAL RESTRICTION(S)

NA

IV. DESIGN/EQUIPMENT PARAMETER(S)

NA

V. TESTING/SAMPLING

Records shall be maintained on file for a period of five years. (R 336.1201(3))

1. Upon request from the AQD District Supervisor, the permittee shall verify PM, PM10, and PM2.5 emission rates from either furnace in FGFURNACES by testing at the owner's expense, in accordance with Department requirements. Testing shall be performed using an applicable approved EPA Method listed in 40 CFR Part 60, Appendix A; Part 10 of the Michigan Air Pollution Control Rules, or 40 CFR Part 51, Appendix M. An alternate method, or a modification to the approved EPA Method, may be specified in an AQD approved Test Protocol. No less than 60 days prior to testing, the permittee shall submit a complete test plan to the AQD Technical Programs Unit and District Office. The AQD must approve the final plan prior to testing, including any modifications to the method in the test protocol that are proposed after initial submittal. The permittee must submit a complete report of the test results to the AQD Technical Programs Unit and District Office within 60 days following the last date of the test. (R 336.1205, R 336.1331, R 336.2001, R 336.2003, R 336.2004, 40 CFR 52.21(c) & (d))

AQD Comment: Appears to be in Compliance. The AQD has not requested any testing be conducted to date.

VI. MONITORING/RECORDKEEPING

Records shall be maintained on file for a period of five years. (R 336.1201(3))

AQD Comment: Appears to be in Compliance with #1 through #3 Below. The records for #1 through #2 are kept on an electronic spreadsheet and they have the SDS for all fluxes used for #3.

1. The permittee shall keep, in a satisfactory manner, records of the weight and description of all charge materials and fluxing materials or agents added to each furnace in FGFURNACES on a daily basis. The permittee shall keep all records on file at the facility and make them available to the Department upon request. (R 336.1224, R 336.1225, R 336.1301, R 336.1331, 40 CFR 52.21 (c) & (d))
2. The permittee shall calculate the total weight of all fluxing materials and agents used in each furnace in FGFURNACES on a daily, monthly, and 12-month rolling time period basis. The permittee shall

complete all required calculations in a format acceptable to the AQD District Supervisor by the last day of the calendar month, for the previous calendar month, unless otherwise specified in any recordkeeping, reporting or notification special condition. The permittee shall keep all records on file at the facility and make them available to the Department upon request. (R 336.1224, R 336.1225, R 336.1301, R 336.1331, 40 CFR 52.21 (c) & (d))

3. The permittee shall maintain a current listing from the manufacturer of the chemical composition of each flux material used, including the weight percent of each component. The data may consist of Material Safety Data Sheets, manufacturer's formulation data, or both as deemed acceptable by the AQD District Supervisor. The permittee shall keep all records on file and make them available to the Department upon request.¹
(R 336.1224, R 336.1225)

VII. REPORTING

NA

VIII. STACK/VENT RESTRICTION(S)

The exhaust gases from the stacks listed in the table below shall be discharged unobstructed vertically upwards to the ambient air unless otherwise noted:

Stack & Vent ID	Maximum Exhaust Diameter / Dimensions (inches)	Minimum Height Above Ground (feet)	Underlying Applicable Requirements
1. SVREVERB2	48	45	R 336.1225, 40 CFR 52.21 (c) & (d)
2. SVREVERB3	48	45	R 336.1225, 40 CFR 52.21 (c) & (d)

AQD Comment: Appears to be in Compliance; however, staff did not go up on the roof. From the height of the building, staff estimated that they both meet the height requirement and where they exhausted out the roof from inside the building appeared to meet the diameter requirements.

IX. OTHER REQUIREMENT(S)

NA

Footnotes:

¹ This condition is state only enforceable and was established pursuant to Rule 201(1)(b).

**FGCRUCIBLE
FLEXIBLE GROUP CONDITIONS**

DESCRIPTION

Thirty-two electrically heated crucible furnaces, with the holding capacity of 1,900 lbs each.

Emission Unit: EUCRUCIBLE1, EUCRUCIBLE2, EUCRUCIBLE3, EUCRUCIBLE4, EUCRUCIBLE5, EUCRUCIBLE6, EUCRUCIBLE7, EUCRUCIBLE8, EUCRUCIBLE9, EUCRUCIBLE10, EUCRUCIBLE11, EUCRUCIBLE12, EUCRUCIBLE13, EUCRUCIBLE14, EUCRUCIBLE15, EUCRUCIBLE16, EUCRUCIBLE17, EUCRUCIBLE18, EUCRUCIBLE19, EUCRUCIBLE20, EUCRUCIBLE21, EUCRUCIBLE22, EUCRUCIBLE23, EUCRUCIBLE24, EUCRUCIBLE25, EUCRUCIBLE26, EUCRUCIBLE27, EUCRUCIBLE28, EUCRUCIBLE29,

EUCRUCIBLE30, EUCRUCIBLE31, EUCRUCIBLE32

POLLUTION CONTROL EQUIPMENT

NA

I. EMISSION LIMIT(S)

NA

II. MATERIAL LIMIT(S)

1. The permittee shall not use more than a daily average of 15 lbs of flux per hour or 360 lbs of flux per day in FGCRUCIBLE. (R 336.1224, R 336.1225, 40 CFR 52.21 (c) & (d))

AQD Comment: Appears to be in Compliance. Records reviewed by staff showed they were well under these limits.

III. PROCESS/OPERATIONAL RESTRICTION(S)

NA

IV. DESIGN/EQUIPMENT PARAMETER(S)

NA

V. TESTING/SAMPLING

Records shall be maintained on file for a period of five years. (R 336.1201(3))

NA

VI. MONITORING/RECORDKEEPING

Records shall be maintained on file for a period of five years. (R 336.1201(3))

AQD Comment: Appears to be in Compliance with #1 through #4 Below. They keep record of #1 through #3 on an electronic spreadsheet and they have the SDS for all fluxes used for #4.

1. The permittee shall monitor and record, in a satisfactory manner, the flux usage rate in pounds per day for FGCRUCIBLE on a daily basis. The permittee shall keep all records on file and make them available to the Department upon request ¹ (R 336.1225)
2. The permittee shall monitor and record the hours of operation of FGCRUCIBLE on a daily basis. The permittee shall keep all records on file and make them available to the Department upon request.¹ (R 336.1225)
3. The permittee shall calculate average daily flux usage in lbs/hr for FGCRUCIBLE on a daily basis. The permittee shall keep all records on file and make them available to the Department upon request¹ (R 336.1225)
4. The permittee shall maintain a current listing from the manufacturer of the chemical composition of each flux material used, including the weight percent of each component. The data may consist of Material Safety Data Sheets, manufacturer's formulation data, or both as deemed acceptable by the AQD District Supervisor. The permittee shall keep all records on file and make them available to the Department upon request.¹ (R 336.1224, R 336.1225)

VII. REPORTING

NA

VIII. STACK/VENT RESTRICTION(S)

NA

IX. OTHER REQUIREMENT(S)

NA

Footnotes:

¹ This condition is state only enforceable and was established pursuant to Rule 201(1)(b).

FGHEATTREAT**FLEXIBLE GROUP CONDITIONS****DESCRIPTION**

Two heat treat furnace systems with combined heat input of 33.924 MMBTU/hr consisting of two solution furnaces, two heated water quench tanks, and two aging furnaces. The emissions from the heat treat furnaces are exhausted to ambient air through six stacks.

Emission Unit: EUHEATTREAT1 and EUHEATTREAT2

POLLUTION CONTROL EQUIPMENT

NA

I. EMISSION LIMIT(S)

NA

II. MATERIAL LIMIT(S)

1. The permittee shall only burn pipeline quality natural gas in FGHEATTREAT. (R 336.1225, R 336.1331, 40 CFR 52.21 (c) & (d))

AQD Comment: Appears to be in Compliance. Staff was told that they only burn natural gas at the facility.

2. The permittee shall not use quench oil, die lubricants, or release agents in FGHEATTREAT. (R 336.1224, R 336.1225, R 336.1702, 40 CFR 52.21 (c) & (d))

AQD Comment: Appears to be in Compliance. Staff was told that all parts are dry going into this the Heat Treat Ovens.

III. PROCESS/OPERATIONAL RESTRICTION(S)

NA

IV. DESIGN/EQUIPMENT PARAMETER(S)

NA

V. TESTING/SAMPLING

Records shall be maintained on file for a period of five years. (R 336.1201(3))

NA

VI. MONITORING/RECORDKEEPING

Records shall be maintained on file for a period of five years. (R 336.1201(3))

NA

VII. REPORTING

NA

VIII. STACK/VENT RESTRICTION(S)

The exhaust gases from the stacks listed in the table below shall be discharged unobstructed vertically upwards to the ambient air unless otherwise noted:

Stack & Vent ID	Maximum Exhaust Diameter / Dimensions (inches)	Minimum Height Above Ground (feet)	Underlying Applicable Requirements
1. SVHEATTREAT1	21	45	R 336.1225, 40 CFR 52.21 (c) & (d)
2. SVHEATTREAT2	21	45	R 336.1225, 40 CFR 52.21 (c) & (d)
3. SVHEATTREAT3	12	40	R 336.1225, 40 CFR 52.21 (c) & (d)
4. SVHEATTREAT5	21	45	R 336.1225, 40 CFR 52.21 (c) & (d)
5. SVHEATTREAT6	21	45	R 336.1225, 40 CFR 52.21 (c) & (d)
6. SVHEATTREAT7	12	40	R 336.1225, 40 CFR 52.21 (c) & (d)

AQD Comment: Staff will assume these are all in Compliance. Staff did not go out on the roof nor did they observe where all these stacks exited the building to see what diameter they were.

IX. OTHER REQUIREMENT(S)

NA

Footnotes:

¹ This condition is state only enforceable and was established pursuant to Rule 201(1)(b).

Inspection Conclusion: The facility appears to be in Compliance with the terms and conditions of PTI No. 170-19 at the present time.

NAME Matt Dersh

DATE 9-3-20

SUPERVISOR RIL 9/9/20