

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

N080459189

FACILITY: Alutech		SRN / ID: N0804
LOCATION: 2800 YASDICK DR, STEVENSVILLE		DISTRICT: Kalamazoo
CITY: STEVENSVILLE		COUNTY: BERRIEN
CONTACT: Sushma Karanam , EH&S Supervisor		ACTIVITY DATE: 08/04/2021
STAFF: Matthew Deskins	COMPLIANCE STATUS: Compliance	
SUBJECT: Unannounced Scheduled Inspection		SOURCE CLASS: MINOR
RESOLVED COMPLAINTS:		

On August 4, 2021 AQD Staff (Matt Deskins) went to conduct an unannounced scheduled inspection of the Alutech (SRN: N0804) facility located in Stevensville, Berrien County. According to district file records, Alutech is a minor source and they currently have one air permit (PTI No. 46-01C) issued to them by the AQD for two natural gas fired aluminum melting furnaces and thirty-six electrically heated crucible furnaces. 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. Staff departed for the facility at approximately 9:20 a.m.

Staff arrived at the Alutech facility at approximately 10:30 a.m. Prior to entering the facility, staff took a few minutes of see if there were any visible emissions coming from the building or stacks and none were noted. Staff then proceeded into the office area. Upon entering the office area, staff began to sign in when a person came out into the lobby. The person that came out ended up being Jason Howland (Operations Manager) and he said that he had observed staff pull into the parking lot. Staff then introduced them self to Jason, gave him their business card, and explained the purpose of the visit. Jason then asked what staff needed to do and staff mentioned that they would first like to ask some general questions about their current operations and then take a walk through of the facility to view their processes. Staff went on to say that after that is finished they would then like to go over the permit record keeping requirements. Jason said that would be fine but he would have to contact Sushma Karanam (EH&S Supervisor), who is currently at their Benton Harbor facility, regarding any records. Staff said that would be fine and mentioned he had met with Sushma during an inspection of their Benton Harbor location the previous year. Jason then proceeded to contact Sushma who said she would come over as soon as possible. Staff then proceeded into the office area with Jason and then into a conference room. The following is a summary of staff's discussion with Jason and later on with Sushma. It will be followed by the Special Conditions of PTI No. 46-01C and the facilities compliance status with it.

NOTE: It appears from internet searches and other documentation observed by staff that the Stevensville facility is now known as Aludyne West Michigan, LLC (Stevensville) and the Benton Harbor location as Aludyne West Michigan, LLC (Benton Harbor). Staff had mentioned to Sushma during the inspection of the Benton Harbor facility last year and again during this inspection that AQD files show them both as Alutech. I again explained to her that if they want our files to reflect the new name that they have to submit a letter to us containing the information listed in our "Rule 219". She said she would talk with her management about it since they have numerous locations throughout the state.

According to Jason, Alutech strictly does aluminum melting and diecasting with clean material and scrap. He said that 100% of their business is for the automotive industry and their main customers are GM, Nissan, and Fiat-Chrysler (now known as Stellantis). He said that approximately 85% of the parts that they cast are Steering Knuckles and the other 15% are Control Arms. Staff then asked about the current number of employees and their work schedule. Jason said that he thinks they employ close to 100 people and that they currently work three shifts, five days per week. He said that business has been up and down the last four or five months due to the silicon chip shortage that's impacting a lot of businesses. He went on to say that they will work some weekends if business requires it but that hasn't been the case recently, again due to the chip shortage. He also said that they've also had a hard time finding employees, when needed, which is like a lot of other companies currently as well.

Staff then asked Jason to look over the Emission Units listed in the air permit, which was modified last in 2015, to see if it accurately reflected current operations. Jason went through and said it looked to be accurate. He said that currently only the big 80,000 pound melting furnace (#5) is used and that they haven't used the 27,000 pound furnace (#6) in years. He said it's just basically for back-up purposes and the electrical components have been disconnected. He then said that of the thirty-six crucible furnaces, only twenty-five are used with the other eleven as back-up. Staff then asked about fluxing and/or degassing of the furnaces and crucibles. Jason said that the furnaces aren't fluxed but they do degass and/or flux in the crucible holding furnaces after melted aluminum is poured into them. Staff then mentioned that they last inspected the facility back in 2009 and at that time they had eight vertical diecasting machines. Jason responded by saying that they now have sixteen. Staff then asked Jason about their diecasting process and the following is what Jason stated.

According to Jason, the facility receives aluminum material in three different ways and they all meet their aluminum specification of Al356.2 (pure aluminum). One way they receive the aluminum is in ingots up to 1500 pounds, Super Sacks (recycled aluminum pieces) up to 2000 pounds, and Sows up to 1600 pounds. The aluminum is currently melted in the 80,000 pound melting furnace (#5) and then transferred to the electrically heated holding crucible furnaces. They will flux and/or degas (nitrogen and argon) the molten aluminum before it will head to one of the sixteen vertical diecast machines. Once at a diecast machine, the machine will lift up and the crucible is inserted underneath it. The diecast machine is then lowered onto the crucible and it uses counter pressure to force the molten aluminum up into the molds. Jason said that all the machines are robotic and they can cast either 2, 3, 4, or 6 parts at a time depending on the size of it. After casting the part and it has cooled down they go to another area that houses machines that trim/saw off any excess aluminum. Jason said that no machining of the parts is done at their facility and that process is shipped out. Once the parts have been trimmed/sawed, they go to the X-Ray area where they will be inspected and x-rayed to make sure not defects are present. This is done because the parts are considered a critical part, safety wise, to automobiles. If the parts pass inspection and x-ray, they are then shipped out to be heat treated. Staff then asked if they still have the ovens for keeping the molds "pre-heated" prior to use in the diecast machines. Jason said that they do and they currently have 5 of them with the largest two rated at two million btus per hour. These furnaces appear to be exempt from needing a permit under the AQD

Rule 336.1282(a) permit exemption. Staff then proceeded with Jason out to the production area.

Once out in the production area, staff observed and/or noted the following areas:

1. Raw Material Storage Area – Area where the raw aluminum in the form of ingots, sows, and sacks are stored.
2. Reverb Furnace Area – Staff observed both furnaces but only the 80,000 pound furnace (#5) was operating.
3. Vertical Diecast Machine Area - Staff observed the 16 vertical die-cast machines but only 6 were in operation that day. Jason said that Furnace #5 can serve all the machines if needed but #6 could only do five if it was being operated. Two of the diecast machines are also equipped with a robotic trimming/sawing step built into them. So parts done on these two don't have to go over to another area for that step.
4. Aluminum Scrap Area – This area had several bins containing scrapped aluminum parts and/or aluminum shavings to be re-melted. Everything appeared clean and no oil was noted on anything.
5. Electrical Pre-Heat Ovens – Staff observed three small pre-heat ovens that are used for the smaller molds prior to going into the casting machines.
6. Trim/Saw Area – There are machines that are used in this area to trim/saw the excess aluminum off the casted parts.
7. Maintenance Area – In this area is where maintenance gets conducted and where the surplus crucible holding furnaces are stored.
8. Gas Fired Pre-Heat Ovens – There are two identical gas fired pre-heat ovens rated at 2 million btus per hour for pre-heating some of their larger casting molds prior to casting.
9. Tooling Area – Tool Storage Area
10. Blast Room Area – Enclosed Blast Room equipped with appropriate filtration that uses sand as a medium for blasting off used molds.
11. X-Ray Area – Where the casted parts get inspected and x-rayed for defects
12. Warehouse and Shipping and Receiving Area – Where materials are received or where parts are shipped out for heat treat.

When staff was finishing up the tour of the facility with Jason, Sushma arrived on-site. The three of us then proceeded back to the conference room to go over any records required to be kept by the permit. Jason excused himself at this time and staff thanked him for his time and assistance with the inspection. Staff then sat down with Sushma and the following are the Special Conditions of PTI No. 46-01C which will be followed by staff's comments to them with regards to Compliance Status.

NOTE: Staff deleted any items listed as N/A

SPECIAL CONDITIONS

EMISSION UNIT SUMMARY TABLE

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

Emission Unit ID	Emission Unit Description (Process Equipment & Control Devices)	Installation Date / Modification Date	Flexible Group ID
EU_Furnace5	Natural Gas Fired Aluminum Melting Furnace Holding Capacity: 80,000 pounds Melt Rate: 10,000 pounds/hour	February 23, 2001 / March 23, 2010	NA
EU_Furnace6	Natural Gas Fired Aluminum Melting Furnace Holding Capacity: 27,000 pounds Melt Rate: 3,000 pounds/hour	September 2015	NA
EUCRUCIBLE1-26	Electrically Heated crucible furnaces Holding Capacity: 1,500 pounds each Flux Rate: 0.5 pound/crucible furnace treatment	February 23, 2001 / March 23, 2010	FGCRUCIBLE
EUCRUCIBLE27-36	Electrically Heated crucible furnaces Holding Capacity: 1,500 pounds each Flux Rate: 0.5 pound/crucible furnace treatment	March 23, 2010	FGCRUCIBLE
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 336.1290.			

The following conditions apply to:EU Furnace5

DESCRIPTION:

Natural Gas Fired Aluminum Melting Furnace

Holding Capacity: 80,000 pounds

Melt Rate: 10,000 pounds/hour

II. MATERIAL LIMITS

1. The permittee shall melt only clean charge, internal scrap, or customer returns in EU_Furnace5. (R 336.1331, 40 CFR Part 63.1500(f))

AQD Comment: Appears to be in COMPLIANCE. Staff was told by Jason that they only melt clean material or internal scrap and staff did not observe anything of concern during the inspection.

2. The permittee shall not use any flux material in EU_Furnace5.¹ (R 336.1225)

AQD Comment: Appears to be in COMPLIANCE. Staff was told by Jason that fluxing wasn't done in either furnace.

The following conditions apply to: EU Furnace6

DESCRIPTION:

Natural Gas Fired Aluminum Melting Furnace

Holding Capacity: 27,000 pounds

Melt Rate: 3,000 pounds/hour

I. EMISSION LIMITS

Pollutant	Limit	Time Period / Operating Scenario	Equipment	Testing / Monitoring Method	Underlying Applicable Requirements
1. PM	0.2 pph	Test Protocol*	EU_Furnace6	SC V.1	R 336.1301, R 336.1331
2. PM10	0.2 pph	Test Protocol*	EU_Furnace6	SC V.1	40 CFR 52.21 (c) & (d)
3. PM2.5	0.2 pph	Test Protocol*	EU_Furnace6	SC V.1	40 CFR 52.21 (c) & (d)
* Test protocol shall specify averaging time					

AQD Comment: Appears to be in COMPLIANCE. Emissions testing on this furnace has not been requested to date and it supposedly hasn't been used in years.

II. MATERIAL LIMITS

1. The permittee shall melt only clean charge, customer returns, or internal scrap, as defined by 40 CFR Part 63 Subpart RRR. 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 was told by Jason that they only melt clean material or internal scrap and staff did not observe anything of concern during the inspection.

2. The permittee shall not use any flux material in EU_Furnace6. ¹ (R 336.1225)

AQD Comment: Appears to be in COMPLIANCE. This furnace hasn't been used in years but when it was, was told that fluxing wasn't done in it.

3. The permittee shall only burn pipeline quality natural gas in the burners of EU_Furnace6. (R 336.1225, R 336.1301, R 336.1331, 40 CFR 52.21(c) & (d))

AQD Comment: Appears to be in COMPLIANCE.

4. The permittee shall not melt more than 3,000 pounds per hour of aluminum in EU_Furnace6. (R 336.1225, R 336.1301, R 336.1331, 40 CFR 52.21(c) & (d))

AQD Comment: Appears to be in COMPLIANCE. This furnace hasn't been used in years so there are no melting records for this furnace to be reviewed.

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 may be required to verify PM, PM10, and PM2.5 emission rates from EU_Furnace6 by testing at owner's expense, in accordance with Department requirements. 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. Verification of emission rates includes the submittal of 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, 40 CFR 52.21(c) & (d))

AQD Comment: Appears to be in COMPLIANCE. Emissions testing on this furnace has not been requested to date and it supposedly hasn't been used in years.

VI. MONITORING/RECORDKEEPING

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

1. The permittee shall keep, in a satisfactory manner, a daily charge log of the weight and types of material charged for EU_Furnace6. The permittee shall keep all records on file at the facility and make them available to the Department upon request. (R 336.1225, R 336.1702, 40 CFR 52.21 (c) & (d))

AQD Comment: Appears to be in COMPLIANCE. This furnace hasn't been used in years so there are no process records for this furnace to be reviewed.

VIII. STACK/VENT RESTRICTIONS

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. SV_Furnace6	30	35	R 336.1225, 40 CFR 52.21 (c) & (d)

AQD Comment: Appears to be in COMPLIANCE with the stack dimensions listed above.

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
FGCRUCIBLE	All crucible furnaces and associated activities.	EUCRUCIBLE1-26 EUCRUCIBLE27-36

The following conditions apply to: FGCRUCIBLE

DESCRIPTION: All crucible furnaces and associated activities.

Emission Units: EUCRUCIBLE1-26, EUCRUCIBLE27-36

II. MATERIAL LIMITS

1. The flux rate for FGCRUCIBLE shall not exceed 150 pounds per day. (R 336.1225)

AQD Comment: Appears to be in COMPLIANCE. Staff reviewed records dating back to January of this Calendar Year and noted the following:

January: 952 pounds used for the month with Highest Daily Amount being 44.75 pounds.

February: 776 pounds used for the month with Highest Daily Amount being 42.00 pounds.

March: 953 pounds used for the month with Highest Daily Amount being 42.00 pounds.

April: 406 pounds used for the month with Highest Daily Amount being 26.75 pounds.

May: 292 pounds used for the month with Highest Daily Amount being 29.00 pounds.

June: 659 pounds used for the month with Highest Daily Amount being 32.00 pounds.

July: 362 pounds used for the month with Highest Daily Amount being 28.75 pounds.

2. The permittee shall melt only clean charge, internal scrap, or customer returns in FGCRUCIBLE. (R 336.1331, 40 CFR Part 63.1500(f))

AQD Comment: Appears to be in COMPLIANCE. Staff was told by Jason that they only melt clean material or internal scrap and staff did not observe anything of concern during the inspection.

VI. MONITORING/RECORDKEEPING

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

1. The permittee shall monitor and record, in a satisfactory manner, the flux usage rate and hours of operation for FGCRUCIBLE on a daily basis. (R 336.1225)

AQD Comment: Appears to be in COMPLIANCE.

VIII. STACK/VENT RESTRICTIONS

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. SVEF13	36 ¹	22.5 ¹	R 336.1225
2. SVEF14	36 ¹	20.9 ¹	R 336.1225

Stack & Vent ID	Maximum Exhaust Diameter/Dimensions (inches)	Minimum Height Above Ground (feet)	Underlying Applicable Requirements
3. SVEF15	36 ¹	22.5 ¹	R 336.1225

AQD Comment: Appears to be in COMPLIANCE. All the stacks appear to meet the dimensions listed above

INSPECTION SUMMARY: The facility appears to be in Compliance with conditions contained in PTI No. 46-01C at the present time. Staff thanked Sushma for her time and departed the facility at approximately 12:20 p.m.

NAME Matt Deak

DATE 8-17-21

SUPERVISOR RIL 8/18/21