TECHNICAL FACT SHEET

January 15, 2025

Purpose and Summary

The Michigan Department of Environment, Great Lakes, and Energy (EGLE), Air Quality Division (AQD), is proposing to act on Permit to Install (PTI) application No. APP-2024-0195 from Fritz Products, Inc (Fritz) located at 255 Marion Avenue in River Rouge, Michigan (Figure 1). The permit application is for the proposed installation and operation of an aluminum sweat furnace controlled by a regenerative thermal oxidizer (RTO) at the existing aluminum products manufacturing facility. The proposed project is subject to the permitting requirements of the Department's Rules for Air Pollution Control. Before acting on this application, the AQD is holding a public comment period and a virtual public hearing, if requested in writing, to allow all interested parties the opportunity to comment on the proposed PTI. All relevant information received during the comment period and the virtual hearing, if held, will be considered by the decision maker before taking final action on the application.

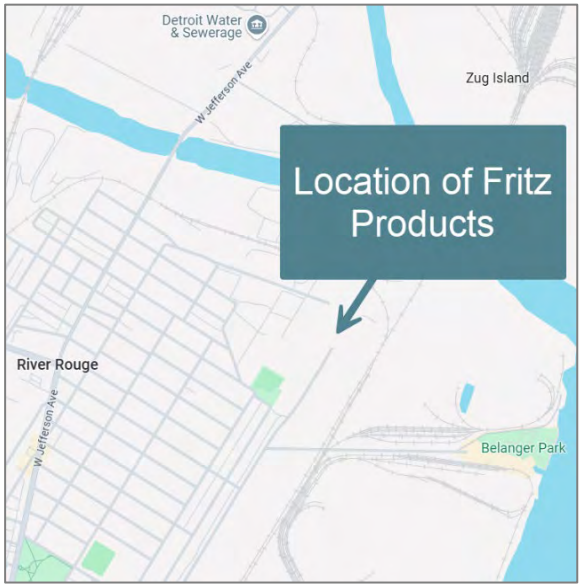

Figure 1: Location of Fritz Products, Inc.

Facility and Present Air Quality

Fritz is located in the portion of Wayne County that currently meets all of the National Ambient Air Quality Standards (NAAQS) set by the United States Environmental Protection Agency (USEPA), except for sulfur dioxide (SO_2). The air quality standards are for particulate matter less than or equal to 10 microns in diameter (PM10), particulate matter less than or equal to 2.5 microns in diameter (PM2.5), carbon monoxide (CO), nitrogen dioxide (NO_2), SO_2, ozone, and lead. The NAAQS are set at levels designed to protect public health, including sensitive populations.

The AQD operates 11 air monitoring station(s) in Wayne County, 7 of which are in the City of Detroit and within approximately 6 miles of Fritz. The closest monitoring station is the River Rouge station located 0.65 miles southwest of Fritz. The River Rouge station measures metals and carbonyls (such as formaldehyde). The purpose of the air monitoring stations is to assess the regional or area-wide air quality and is not used to determine if a specific source is in compliance with their air permit.

In this application, Fritz is proposing to install and operate an aluminum sweat furnace controlled by an RTO at their existing facility. A sweat furnace is used to recover aluminum from mixed metal scrap. This is done by heating the scrap in the sweat furnace to a temperature high enough to melt the aluminum but low enough, so the other metals do not melt. The aluminum exits the furnace and is captured into cooled molds or collecting pots. The aluminum is isolated so it can be further processed. The other metals are recycled or sold. The

sweat furnace was previously permitted to operate at 411 South Fort Street in Detroit, approximately 1.5 miles away. If the permit is approved, it will be relocated to the Fritz facility.

Pollutant Emissions

Fritz is requesting to install an aluminum sweat furnace controlled by an RTO at their facility that is currently classified as a minor source under both the Prevention of Significant Deterioration (PSD) and Nonattainment New Source Review (NNSR) regulations. The facility is also an existing area source for hazardous air pollutants (HAP).

Fritz is considered a secondary metal production plant. As such, it would become a major source under the PSD regulations if the emissions of a regulated New Source Review (NSR) pollutant are 100 tons per year (tpy) or more. Therefore, only an increase of greater than 100 tpy for any regulated NSR pollutant would subject this application to PSD review. Likewise, an increase of greater than 100 tpy of SO_2 would then subject this application to NNSR.

As the following table shows, emissions from the proposed project will be below 100 tpy for all regulated NSR pollutants; therefore, the project is not subject to either the PSD or the NNSR regulations.

Table 1: Project Potential Emissions Summary

Pollutant	Estimated Emissions (tpy)	Subject to PSD and/or NNSR
Oxides of Nitrogen (NO_x)	1.50	No
CO	1.26	No
Particulate Matter (PM)	1.75	No
PM10	1.75	No
PM2.5	1.75	No
SO_2	0.01	No
Volatile Organic Compounds (VOC)	0.80	No

Key Permit Review Issues

Staff evaluated the proposed project to identify all state rules and federal regulations which are, or may be, applicable. The tables in Appendix 1 summarize these rules and regulations.

- **Federal NESHAP Regulations**

  National Emission Standards for Hazardous Air Pollutants (NESHAP) were established under 40 CFR Part 61 or 63. The proposed aluminum sweat furnace is subject to the NESHAP for Secondary Aluminum Production, 40 CFR Part 63 Subpart RRR.

- **Rule 224 T-BACT Analysis**

  State of Michigan Rule 224 requires that emissions of toxic air contaminants, or TAC, do not exceed the maximum allowable emission rate that results from the application of Best Available Control Technology for Toxics (T-BACT). The requirements of Rule 224 do not apply to HAP emissions from any process subject to a federal NESHAP or to any emission

units that emit VOCs that comply with Rule 702 VOC BACT. Therefore, HAP emissions from processes subject to 40 CFR Part 63, Subparts RRR are not subject to Rule 224.

Additionally, the projected total particulate emissions from the furnace are less than 2 tpy, of which only a portion will be TACs. Therefore, it has been determined that additional controls would not be economically feasible and not required as T-BACT.

- **Rule 225 Toxics Analysis**

  EGLE Rules for Air Pollution Control require the ambient air concentration of TACs be compared against health-based screening levels. However, a Residual Risk and Technology Review was promulgated for NESHAP Subpart RRR by the USEPA on September 18, 2015. As a result, no TACs that are also HAPs are subject to the requirements of Rule 225 as specified in Rule 226(b) The remaining TACs were reviewed and had impacts below their respective screening levels. Therefore, it was determined that the proposed project will comply with Rule 225.

- **Rule 702 VOC Emissions**

  This rule requires an evaluation of the following four items to determine what will result in the lowest maximum allowable emission rate of VOCs:

  a. BACT or a limit listed by the department on its own initiative

  b. New Source Performance Standards (NSPS)

  c. VOC emission rate specified in another permit

  d. VOC emission rate specified in the Part 6 rules for existing sources

  An evaluation of these four items determined that a BACT analysis performed via Rule 702(a) would dictate the lowest maximum allowable emission rate of VOC from the proposed project. As the potential annual emissions of VOCs from the proposed furnace are less than 0.1 tpy, it was determined that additional emission controls would not be economically feasible. Therefore, the proposed emission rate of 0.08 tpy was determined to be BACT under Rule 702(a).

- **Criteria Pollutants Modeling Analysis**

  Fritz conducted, and the AQD verified, computer dispersion modeling to predict the impacts of PM2.5 from the aluminum sweat furnace. Emissions were evaluated against both the NAAQS and the PSD increments.

  The first step in this evaluation is to determine the predicted pollutant impacts from the proposed project. After the impacts are determined, they are compared to the applicable Significant Impact Levels (SIL). For pollutants with impacts less than the SIL, the emissions are presumed to comply with both the NAAQS and the PSD Increments, and no further review is required.

  As shown in Table 2, the predicted impacts for PM2.5 for all averaging times are under their respective SILs.

Table 2 – Preliminary Modeling Impacts from the Aluminum Sweat Furnace

Pollutant	Averaging Time	SIL (µg/m^3)	Predicted Impact (µg/m^3)	Additional Modeling?
PM2.5	Annual	0.2	0.07	No
PM2.5	24-hr	1.2	1.187	No

Because the modeling passed the SIL for PM2.5 at all averaging times, modeling against the NAAQS and PSD increment was not required or performed.

Key Aspects of Proposed Permit Conditions

- **Emission Limits (By Pollutant)**

  The proposed permit includes emission limits for the following pollutants:

  - PM2.5,
  - PM10, and
  - Dioxins and furans.

- **Usage Limits**

  The proposed permit restricts the following:

  - The amount of charge per day that can be processed in the furnace.
  - Prohibits the use of flux in the furnace.

- **Process/Operational Restrictions**

  The proposed permit includes the following process/operational requirements:

  - The aluminum sweat furnace may not be operated unless the associated RTO is also installed and operating properly.
  - A minimum operating temperature and retention time in the RTO must be maintained.
  - A Preventative Maintenance/Malfunction Abatement Plan must be developed and implemented.
  - An Operation, Monitoring, and Maintenance Plan (OMMP) must be developed and implemented.

- **Testing & Monitoring Requirements**

  The proposed permit includes the following requirements:

  - Verify PM10 and PM2.5 emission rates through stack testing.

- **Federal Regulations**

  The proposed aluminum sweat furnace is subject to the NESHAP for Secondary Aluminum Production, 40 CFR Part 63 Subpart RRR. The proposed permit conditions require compliance with associated emission limits, operational restrictions, monitoring, recordkeeping, notifications, and reporting.

Conclusion

Based on the analyses conducted, the proposed project would comply with all applicable state and federal air quality requirements. This project, as proposed, would not violate the federal NAAQS or the state and federal PSD increments.

Based on these analyses, we have developed proposed permit terms and conditions to ensure the proposed facility design and operation are enforceable and that sufficient monitoring, recordkeeping, and reporting would be performed to determine compliance with these terms and conditions. If the permit application is deemed approvable, the delegated decision maker may determine a need for additional or revised conditions to address issues raised during the public participation process.

If you would like additional information about this proposal, contact Ambrosia Brown, AQD, at 517-730-1158 or BrownA39@Michigan.gov.

Appendix 1

STATE AIR REGULATIONS

State Rule	Description of State Air Regulations
R 336.1201	Requires an Air Use Permit for new or modified equipment that emits, or could emit, an air pollutant or contaminant. However, there are other rules that allow smaller emission sources to be installed without a permit (see Rules 336.1279 through 336.1290 below). Rule 336.1201 also states that the Department can add conditions to a permit to assure the air laws are met.
R 336.1205	Outlines the permit conditions that are required by the federal Prevention of Significant Deterioration (PSD) Regulations and/or Section 112 of the Clean Air Act. Also, the same types of conditions are added to their permit when a plant is limiting their air emissions to legally avoid these federal requirements. (See the Federal Regulations table for more details on PSD.)
R 336.1224	New or modified equipment that emits toxic air contaminants must use the Best Available Control Technology for Toxics (T-BACT). The T-BACT review determines what control technology must be applied to the equipment. A T-BACT review considers energy needs, environmental and economic impacts, and other costs. T-BACT may include a change in the raw materials used, the design of the process, or add-on air pollution control equipment. This rule also includes a list of instances where other regulations apply and T-BACT is not required.
R 336.1225 to R 336.1232	The ambient air concentration of each toxic air contaminant emitted from the project must not exceed health-based screening levels. Initial Risk Screening Levels (IRSL) apply to cancer-causing effects of air contaminants and Initial Threshold Screening Levels (ITSL) apply to non-cancer effects of air contaminants. These screening levels, designed to protect public health and the environment, are developed by Air Quality Division toxicologists following methods in the rules and U.S. EPA risk assessment guidance.
R 336.1279 to R 336.1291	These rules list equipment to processes that have very low emissions and do not need to get an Air Use permit. However, these sources must meet all requirements identified in the specific rule and other rules that apply.
R 336.1301	Limits how air emissions are allowed to look at the end of a stack. The color and intensity of the color of the emissions is called opacity.
R 336.1331	The particulate emission limits for certain sources are listed. These limits apply to both new and existing equipment.
R 336.1370	Material collected by air pollution control equipment, such as dust, must be disposed of in a manner, which does not cause more air emissions.
R 336.1601 to R 336.1651	Volatile organic compounds (VOCs) are a group of chemicals found in such things as paint solvents, degreasing materials, and gasoline. VOCs contribute to the formation of smog. The rules set VOC limits or work practice standards for existing equipment. The limits are based upon Reasonably Available Control Technology (RACT). RACT is required for all equipment listed in Rules 336.1601 through 336.1651.

State Rule	Description of State Air Regulations
R 336.1702	New equipment that emits VOCs is required to install the Best Available Control Technology (BACT). The technology is reviewed on a case-by-case basis. The VOC limits and/or work practice standards set for a particular piece of new equipment cannot be less restrictive than the Reasonably Available Control Technology limits for existing equipment outlined in Rules 336.1601 through 336.1651.
R 336.1910	Air pollution control equipment must be installed, maintained, and operated properly.
R 336.2001 to R 336.2060	Allow the Department to request that a facility test its emissions and to approve the protocol used for these tests.

FEDERAL AIR REGULATIONS

Citation	Description of Federal Air Regulations or Requirements
Section 109 of the Clean Air Act – National Ambient Air Quality Standards (NAAQS)	The United States Environmental Protection Agency has set maximum permissible levels for seven pollutants. These NAAQS are designed to protect the public health of everyone, including the most susceptible individuals, children, the elderly, and those with chronic respiratory ailments. The seven pollutants, called the criteria pollutants, are carbon monoxide, lead, nitrogen dioxide, ozone, particulate matter less than 10 microns (PM10), particulate matter less than 2.5 microns (PM2.5), and sulfur dioxide (SO_2). Portions of Michigan are currently non-attainment for either ozone or SO_2. Further, in Michigan, State Rules 336.1225 to 336.1233 are used to ensure the public health is protected from other compounds.
40 CFR 60 – New Source Performance Standards (NSPS)	The United States Environmental Protection Agency has set national standards for specific sources of pollutants. These New Source Performance Standards (NSPS) apply to new or modified equipment in a particular industrial category. These NSPS set emission limits or work practice standards for over 60 categories of sources.
40 CFR 63— National Emissions Standards for Hazardous Air Pollutants (NESHAP)	The United States Environmental Protection Agency has set national standards for specific sources of pollutants. The National Emissions Standards for Hazardous Air Pollutants (NESHAP) (a.k.a. Maximum Achievable Control Technology (MACT) standards) apply to new or modified equipment in a particular industrial category. These NESHAPs set emission limits or work practice standards for over 100 categories of sources.
Section 112 of the Clean Air Act **Maximum Achievable Control Technology (MACT)** **Section 112g**	In the Clean Air Act, Congress listed 189 compounds as Hazardous Air Pollutants (HAPS). For facilities which emit, or could emit, HAPS above a certain level, one of the following two requirements must be met: 1) The United States Environmental Protection Agency has established standards for specific types of sources. These Maximum Achievable Control Technology (MACT) standards are based upon the best-demonstrated control technology or practices found in similar sources. 2) For sources where a MACT standard has not been established, the level of control technology required is determined on a case-by-case basis.

Notes: An “Air Use Permit,” sometimes called a “Permit to Install,” provides permission to emit air contaminants up to certain specified levels. These levels are set by state and federal law, and are set to protect health and welfare. By staying within the levels set by the permit, a facility is operating lawfully, and public health and air quality are protected.

The Air Quality Division does not have the authority to regulate noise, local zoning, property values, off-site truck traffic, or lighting.

These tables list the most frequently applied state and federal regulations. Not all regulations listed may be applicable in each case. Please refer to the draft permit conditions provided to determine which regulations apply.