MICHIGAN DEPARTMENT OF ENVIRONMENT, GREAT LAKES, AND ENERGY

TECHNICAL FACT SHEET

September 26, 2024

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-2023-0218 from Copperwood Resources Inc. (Copperwood). The permit application is for the proposed installation and operation of a copper and silver mining and ore processing facility. The proposed Copperwood Project (Project) is subject to 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 hearing to allow all interested parties the opportunity to comment on the proposed PTI. All relevant information received during the comment period and hearing will be considered by the decision maker prior to taking final action on the application.

Figure 1: Proposed Copperwood Project Location

Background Information

Copperwood first applied for an air permit (or PTI) for the Project in 2011. PTI 180-11 was issued on July 12, 2012. However, construction of the Project did not start, so the permit was voided on July 28, 2015.

Copperwood applied for another air permit for the Project in 2018 and PTI 180-11A was issued on November 26, 2018. This PTI expired on October 16, 2023, when the Project was not constructed.

The most recent application (PTI Application No. APP-2023-0218 can be found here AQD PTI Applications of Interest) was submitted on August 22, 2023, to re-permit the Project with design changes.

Proposed Project

The Project is proposed for an area in Ironwood and Wakefield Townships in Gogebic County. This includes a new underground copper and silver mine with associated ore milling and concentrate production, concentrate handling, tailings disposal facility, and electrical power generation. The mine would be divided into an eastern part and a western part and would be developed over the 12-year life of the mine.

Underground ore mining would be done using a room and pillar method with conventional drill and blast and continuous mining with a roadheader. Fragmented ore would be placed into a hopper and a rolls/rock breaker would distribute the fragmented ore onto belt conveyors for transport to the main mine conveyor. The main mine conveyor would transport fragmented ore to the surface for further handling and processing. A propane-fired heater would initially heat the mine. A natural gas-fired heater would replace the propane at a later date.

At the surface, ore would go to a series of conveyors and then be directed to the crushed ore bins/reclaim area or the ore stockpile. See Figure 2 for a diagram showing how the ore would be processed.

The ore stockpile would provide surge capacity and temporary storage of mined ore from the underground mine. A stacker conveyor would move ore to a surge pile located at the ore stockpile. A front-end loader (FEL) would move ore from the surge pile to the ore stockpile. Ore would be moved back to the processing circuit using a FEL to put ore into the surplus ore hopper for transfer to the crushed ore bins.

From the ore bins/reclaim area, ore would be transferred by belt conveyor to the grinding circuit at the process plant. The grinding circuit includes a semi-autogenous grinding (SAG) Mill, a screen, a ball mill, and a cyclone cluster to achieve the desired ground ore size for the flotation circuit. At the SAG Mill, the ore would be mixed with water to form a slurry.

Chemical reagents would be added to the grinding and flotation circuits to produce copper-silver concentrate from the ore. The concentrate production process generates a tailings waste product that would be placed into the tailings disposal facility (TDF).

Concentrate from the flotation circuit would be processed to reduce the moisture content to approximately 7 percent. A FEL would transfer the final concentrate product to a loadout hopper. From the loadout hopper, the concentrate would be transferred to product haul trucks using a feeder and truck loading conveyor for shipment off-site. The concentrate would be the final product of the mine facility.

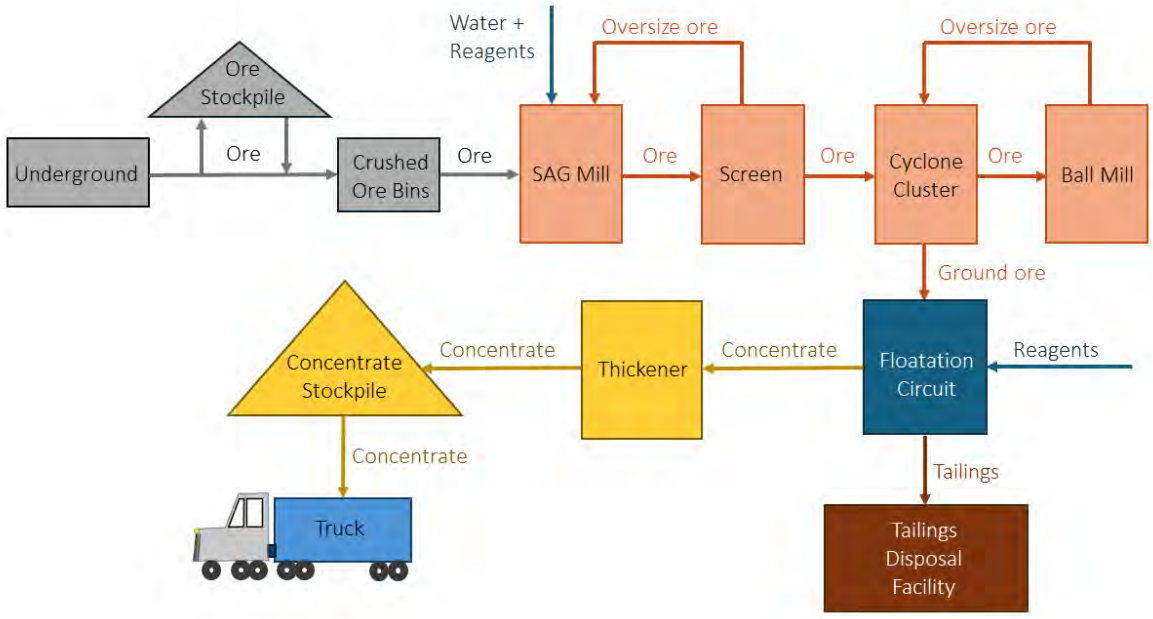

Figure 2: Ore Processing Flow Diagram

The tailings from concentrate production would be a slurry containing about 50 percent solids and discharged from the process plant through a piping system to the TDF. The TDF would be constructed in layers and stages over the approximately 12-year life of the mine. The overall surface area of tailings within the TDF would be approximately 230 acres at full build-out with a

pond on top. Around the pond would be a beach of exposed tailings totaling approximately 40 acres; approximately 75% of the beach would be wet and 25% would be dry. Initially, the high moisture content of the tailings would limit the particulate emissions. As the tailings dry, a crust will form at the surface limiting the release of particulate matter.

The process plant is proposing to use propane-fired space heaters. The total heat input rate for the heaters is estimated to be 4.2 million British Thermal Units per hour.

The facility has also proposed to use a 175 horsepower diesel emergency fire pump engine and a 725 kilowatt (kW) diesel-fired Caterpillar construction generator to provide power during initial construction.

Three natural gas-fired 2,000 kW Caterpillar generators have been proposed to provide power and the diesel-fired generator would be removed. Two generators would be located by the process plant and be expected to provide prime power at all times. The third would be located by the mine portal and serve as an emergency backup. Once a power line has been constructed to the facility, one generator would continue to operate all the times with the other two operating approximately 900 hours per year each. Each generator would be equipped with Selective Catalytic Reduction (SCR) to control emissions of nitrogen dioxide (NO_2) and an oxidation catalyst to reduce emissions of carbon monoxide (CO).

Present Air Quality

The proposed facility is located in Gogebic County, Michigan, an area classified as in attainment with all of the National Ambient Air Quality Standards (NAAQS) set by the United States Environmental Protection Agency (USEPA). These air quality standards are for particulate matter equal to or less than 10 microns in diameter (PM10), particulate matter equal to or less than 2.5 microns in diameter (PM2.5), ozone, sulfur dioxide (SO_2), CO, NO_2, and lead. These standards are set at levels designed to protect public health.

The AQD does not operate air monitoring stations in Gogebic County, however, the AQD does have a nearby monitoring station in Negaunee Township near Marquette, Michigan. The Negaunee Township station measures PM2.5.

Pollutant Emissions

The proposed project will be a minor source for Prevention of Significant Deterioration (PSD) and Nonattainment New Source Review (NNSR). The following table provides the estimated emissions for each regulated pollutant:

Table 1: Emissions Summary

Pollutant	Potential Emissions* Tons Per Year (tpy)	PSD Major Source Threshold** (tpy)	Subject to PSD?
Oxides of Nitrogen (NO_x)	59.7	250	No
Volatile Organic Compounds (VOC)	17.5	250	No
Particulate Matter (PM)	25.3	250	No
PM10	10.3	250	No
PM2.5	5.4	250	No

Pollutant	Potential Emissions* Tons Per Year (tpy)	PSD Major Source Threshold** (tpy)	Subject to PSD?
SO_2	3.5	250	No
CO	85.5	250	No
Lead	$2.45x10^{-4}$	250	No

* The potential emissions do not include fugitive emissions because the proposed facility is not one of the 28 source categories listed in the regulations that is required to include fugitive emissions in the potential to emit.

** The major source threshold for the proposed facility is 250 tpy because the project is not one of the 28 source categories listed in the regulations that has a major source threshold of 100 tpy.

How to evaluate this table: To help with understanding the contents of this table, look at whether the potential emissions are greater than the PSD major source threshold. If it is not, then that pollutant is not subject to specific types of permit reviews called PSD. As shown in Table 1, the potential emissions are all less than the major source thresholds, so the project is not subject to PSD.

Key Permit Review Issues

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

- **Prevention of Significant Deterioration (PSD) Regulations**
  For the Project to be subject to the PSD regulations, the criteria pollutant emissions would have to be at or above the 250 tpy major source threshold. As shown in Table 1, the Project is not subject to PSD review.

- **Federal NSPS Regulations**
  Federal New Source Performance Standards (NSPS) were established under Title 40 of the Code of Federal Regulations (40 CFR) Part 60.

  Each crusher, screen, conveyor belt transfer point, enclosed storage area, truck unloading station, and truck loading station is subject to NSPS Subpart LL for Metallic Mineral Processing Plants. NSPS Subpart LL sets mass and opacity emission limits for these various operations. It also establishes specific reporting and testing requirements.

  The construction generator and emergency fire pump engines are subject to NSPS Subpart IIII for Stationary Compression Ignition Internal Combustion Engines. NSPS Subpart IIII sets mass emission limits for the engines as well as testing and operational requirements.

  The natural gas generator engines are subject to NSPS Subpart JJJJ for Stationary Spark Ignition Internal Combustion Engines. NSPS Subpart JJJJ sets mass emission limits for the engines as well as testing and operational requirements.

- **Federal NESHAP Regulations**
  National Emission Standards for Hazardous Air Pollutants (NESHAP) were established under 40 CFR Part 61 or Part 63.

  The various engines are subject to 40 CFR Part 63 Subpart ZZZZ for Stationary Reciprocating Internal Combustion Engines. For these engines, compliance with the applicable NSPS will satisfy Subpart ZZZZ requirements with the exception of notifications. The facility is an area source of HAPs, so the engines are not subject to the major source requirements of the NESHAP.

- **Rule 224 T-BACT Analysis**
  Michigan Air Pollution Control Rule 224 requires Best Available Control Technology (BACT) for toxic air contaminants (TACs) called T-BACT.

  The AQD determined that the TACs from the proposed project would meet Rule 224 with the proposed freshwater sprays at the underground feed hopper and underground conveyor transfer points, the enclosed conveyor transfer points, the enclosed process building, the water spray on the SAG Mill transfer point, and the fugitive dust control plan.

  The requirements of Rule 224 do not apply to TACs that are VOCs and are in compliance with VOC BACT. As discussed under "Rule 702 VOC Emissions", the AQD determined the proposed project complies with Rule 702 BACT for VOCs, so the TACs that are VOCs are not subject to Rule 224.

- **Rule 225 Toxics Analysis**
  The Michigan Air Pollution Control Rules require the ambient air concentration of TACs from the proposed project to be compared against health-based screening levels.

  The first step in the TAC evaluation showed the proposed emission rates of most TACs are less than their Allowable Emission Rates (AER) determined according to Rule 227(1)(a) and therefore, comply with the requirements of Rule 225.

  Several TAC emission rates were not less than the AERs, so Copperwood conducted air dispersion modeling to determine the predicted ambient impacts of these TACs. The AQD staff reviewed Copperwood's air quality modeling. The modeling analysis found that the impacts of these TACs are less than the AQD health-based screening levels and will comply with the requirements of Rule 225. See Table 2 for the TAC modeling results.

Table 2: TAC Modeling Results

TAC	Averaging Time	Screening Level Type*	Screening Level ($\mu g/m^3$)	Predicted Impact ($\mu g/m^3$)	Percent of Screening Level
Acetaldehyde	Annual	ITSL	9	0.027	0.3
	Annual	IRSL	0.5	0.027	5.3
Acrolein	Annual	ITSL	0.4	0.016	4.0
	1 hour	ITSL	5	1.08	21.5
Arsenic	Annual	IRSL	0.0002	0.00003	15.0
Barium and soluble barium compounds	8 hour	ITSL	5	0.47	0.9
Benzene	Annual	ITSL	30	0.0022	0.01

TAC	Averaging Time	Screening Level Type*	Screening Level (µg/m³)	Predicted Impact (µg/m³)	Percent of Screening Level
	24 hour	ITSL	30	0.029	0.1
	Annual	IRSL	0.1	0.0022	2.2
Total PAH	Annual	IRSL	0.001	0.00008	8.0
Beryllium	24 hour	ITSL	0.02	0.00008	0.4
	Annual	IRSL	0.0001	0.00001	2.5
1,3-Butadiene	Annual	ITSL	33	0.00088	0.003
	Annual	IRSL	0.03	0.00088	2.9
cadmium	Annual	IRSL	0.0006	0.00001	1.7
Cobalt and cobalt compounds that release cobalt ions	8 hour	ITSL	0.2	0.0021	1.1
	Annual	IRSL	0.00013	0.00017	130.8
	Annual	SRSL	0.0013	0.00017	13.1
Copper	8 hour	ITSL	2	0.89	44.5
1,2-Dibromoethane	Annual	ITSL	9	0.00014	0.002
	Annual	IRSL	0.002	0.00014	7.0
Formaldehyde	24 hour	ITSL	30	2.63	8.8
	Annual	IRSL	0.08	0.17	207.7
	Annual	SRSL	0.8	0.17	20.8
Manganese and manganese compounds	Annual	ITSL	0.3	0.01	3.4

µg/m³ = Microgram per Cubic Meter
*ITSL = Initial Threshold Screening Level IRSL = Initial Risk Screening Level
SRSL = Secondary Risk Screening Level

How to evaluate this table: To help understand the contents of this table, look at whether the predicted impact is above the screening level. If it is not, then that pollutant complies 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 VOC BACT (702(a)) analysis would dictate the lowest maximum allowable emission rate of VOC from the facility. VOC emissions are primarily from combustion equipment (the generator engines, heaters, and fire pump engine); limiting the sizes, specifying the fuels allowed to be used, and limiting the amount of fuel allowed to be used, as well as requiring oxidation catalysts for the natural gas generators, was determined to meet Rule 702(a).

- **Criteria Pollutants Modeling Analysis**
  Copperwood conducted, and the AQD verified, computer dispersion modeling to predict the impacts of air emissions from PM2.5, PM10, SO_2, CO, NO_x, and lead. NO_x refers specifically to nitrogen oxide and NO_2, with the larger portion being NO_2. NO_2 is a highly reactive gas and is the pollutant for which the USEPA established a NAAQS.

  Emissions from the proposed facility were evaluated against both the NAAQS and the PSD increments. The NAAQS are intended to protect human health and the environment. The PSD increments are intended to allow industrial growth in an area while ensuring that the area will continue to meet the NAAQS.

  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 3, the predicted impacts exceed the SILs so additional modeling is required.

Table 3: Preliminary Modeled Impacts

Pollutant	Averaging Time	SIL (µg/m^3)	Predicted Impact (µg/m^3)	Additional Modeling Required?
PM2.5	Annual	0.2	0.32	Yes
PM2.5	24-hr	1.2	3.94	Yes
PM10	Annual	1	2.62	Yes
PM10	24-hr	5	30.3	Yes
SO_2	Annual	1	3.74	Yes
SO_2	24-hr	5	57.4	Yes
SO_2	3-hr	25	213	Yes
SO_2	1-hr	7.8	29.6	Yes
CO	8-hr	500	2,347	Yes
CO	1-hr	2,000	5,458	Yes
NO_2	Annual	1	3.54	Yes
NO_2	1-hr	7.5	141	Yes

As shown in Table 4, the predicted impacts of PM2.5, PM10, SO_2, and NO_2 are less than the PSD Increments. Note a PSD Increment analysis includes both the emissions from the proposed facility as well as nearby emission sources. However, the AQD did not identify any emission sources near the proposed facility.

Table 4: PSD Increment Analysis

Pollutant	Averaging Time	PSD Increment (µg/m^3)	Predicted Impact (µg/m^3)	Percent of Increment
PM2.5	Annual	4	0.39	9.7
PM2.5	24-hr	9	4.36	48.4
PM10	Annual	17	2.62	15.4
PM10	24-hr	30	26.4	88.1
SO_2	Annual	20	3.74	18.7

Pollutant	Averaging Time	PSD Increment (µg/m^3)	Predicted Impact (µg/m^3)	Percent of Increment
SO_2	24-hr	91	50.2	55.2
SO_2	3-hr	512	213	41.6
NO_2	Annual	25	3.54	14.1

As shown in Table 5, the predicted impacts of PM2.5, PM10, SO_2, NO_2, CO, and lead are less than the NAAQS. Note a NAAQS analysis includes the emissions from the proposed facility, emissions from nearby sources, and background concentrations. However, the AQD did not identify any emission sources near the proposed facility.

Table 5: NAAQS Analysis

Pollutant	Averaging Time	NAAQS (µg/m^3)	Predicted Impact + Background(µg/m^3)	Percent of NAAQS
PM2.5	Annual	9	6.22	69.1
PM2.5	24-hr	35	20.1	57.5
PM10	24-hr	150	75.13	50.1
SO_2	3-hr	1,300	223.5	17.2
SO_2	1-hr	196	28.8	14.7
CO	8-hr	10,000	3,043	30.4
CO	1-hr	40,000	6,579	16.4
NO_2	Annual	100	5.64	5.6
NO_2	1-hr	188	149.5	79.5
Lead	3-month	0.15	0.002*	1
* The lead impact is a 24-hour average rather than a three-month average, which results in a conservative analysis.				

The dispersion modeling analysis demonstrates the criteria pollutant emissions from the proposed facility are below the PSD Increments and the NAAQS.

- **Fugitive Emissions**
  Fugitive particulate emissions would primarily be produced by ore handling on the surface, the ore stockpile, concentrate handling, vehicle travel on facility roads, and the TDF. A variety of control practices are proposed to reduce fugitive emissions, including enclosed conveyor transfer points, applying water or chemical dust suppressants to facility roadways, limiting vehicle speed on facility roadways, and a truck wheel wash for the concentrate trucks after they are loaded. Fugitive emissions are addressed in the draft Nuisance Minimization Plan for Fugitive Dust which is included as an appendix to the proposed permit conditions.

Key Aspects of Draft Permit Conditions

- **Emission Limits (By Pollutant)**
  The proposed permit includes PM, PM10, and PM2.5 emission limits for each mine vent, a CO emission limit for the facility, criteria pollutant emission limits for the engines, and visible emission limits for most sources except the combustion sources.

- **Usage Limits**
  The proposed permit limits the following:

- Facility heaters can use only propane or natural gas as fuel.
- The amount of propane and natural gas the mine heaters can use.
- The fire pump and construction generator can use only diesel as fuel.
- The sulfur content of the diesel fuel to 0.0015 percent.
- The power generators can use only natural gas as fuel.
- The moisture content of the concentrate must be at least 7 percent.
- The amount of emulsion that can be used.

- **Process/Operational Restrictions**
  The proposed permit requires the following:
  - Building doors to be closed.
  - Concentrate truck wheels must be washed.
  - The hours of operation of the emergency engines are limited.
  - The propane mine heater cannot operate at the same time as the natural gas mine heater.
  - The number of concentrate trucks and the number of water trucks are limited.
  - A malfunction abatement plan for the air pollution control equipment is required.
  - A nuisance minimization plan for fugitive dust is required.

- **Design/Equipment Parameters**
  The sizes of the engines and heaters are limited.

- **Federal Regulations**
  The proposed facility is subject to NSPS Subpart LL for metallic mineral processing plants, which sets opacity emission limits and establishes specific reporting and testing requirements.

  The proposed engines are subject to NSPS Subpart IIII or JJJJ, which set mass emission limits and have testing and operating requirements.

- **Emission Control Device Requirements**
  The proposed permit requires the following air pollution control requirements:
  - Dust suppression systems, including water sprays, are required in the underground mine.
  - Belt conveyors and conveyor transfer points at the surface must be enclosed.
  - The concentrate conveyor discharge must be in an enclosed building.
  - The ore discharge conveyor to the stockpile must have a discharge chute.
  - The lime silo must have a bin vent filter.
  - Each natural gas generator must have SCR and an oxidation catalyst.

- **Testing, Monitoring, and Recordkeeping Requirements**
  The proposed permit includes the following requirements:
  - Testing of the PM, PM10, and PM2.5 emissions from the east and west mine vents.
  - Testing of emissions from the engines if the engines are not certified to meet the NSPS limits or if the AQD determines testing is needed.
  - Records of any visible emissions observed and any actions taken to reduce visible emissions.
  - Records of the concentrate moisture content.
  - Records of the amount of fuel used in the various engines and heaters.
  - Records of the number of concentrate trucks and water trucks passing through the facility.
  - Records of the amount of emulsion used.

- **Notification Requirements**
  The proposed permit requires Copperwood to notify the AQD of the start of underground blasting, the start-up of each mine vent, the startup of the underground propane heater, and the startup of the underground natural gas heater.

Conclusion

Based on the analyses conducted, AQD staff concludes that the proposed project would comply with all applicable state and federal air quality requirements. We conclude that this project, as proposed, would not violate the federal NAAQS or the state and federal PSD Increments.

Based on these conclusions, we have developed proposed permit terms and conditions which would ensure that the proposed facility design and operation are enforceable and that sufficient monitoring, recordkeeping, and reporting would be performed by the applicant 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 Andrew Drury, AQD, at DruryA@Michigan.gov or 517-648-6663.

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 336.1401 and R 336.1402	Limit the sulfur dioxide emissions from power plants and other fuel burning equipment.
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.
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 336.1801	Nitrogen oxide emission limits for larger boilers and stationary internal combustion engines are listed.
R 336.1910	Air pollution control equipment must be installed, maintained, and operated properly.
R 336.1911	When requested by the Department, a facility must develop and submit a malfunction abatement plan (MAP). This plan is to prevent, detect, and correct malfunctions and equipment failures.
R 336.1912	A facility is required to notify the Department if a condition arises which causes emissions that exceed the allowable emission rate in a rule and/or permit.

State Rule	Description of State Air Regulations
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.
R 336.2801 to R 336.2804 Prevention of Significant Deterioration (PSD) Regulations **Best Available Control Technology (BACT)**	The PSD rules allow the installation and operation of large, new sources and the modification of existing large sources in areas that are meeting the National Ambient Air Quality Standards (NAAQS). The regulations define what is considered a large or significant source, or modification. In order to assure that the area will continue to meet the NAAQS, the permit applicant must demonstrate that it is installing the BACT. By law, BACT must consider the economic, environmental, and energy impacts of each installation on a case-by-case basis. As a result, BACT can be different for similar facilities. In its permit application, the applicant identifies all air pollution control options available, the feasibility of these options, the effectiveness of each option, and why the option proposed represents BACT. As part of its evaluation, the Air Quality Division verifies the applicant's determination and reviews BACT determinations made for similar facilities in Michigan and throughout the nation.
R 336.2901 to R 336.2903 and R 336.2908	Applies to new "major stationary sources" and "major modifications" as defined in R 336.2901. These rules contain the permitting requirements for sources located in nonattainment areas that have the potential to emit large amounts of air pollutants. To help the area meet the NAAQS, the applicant must install equipment that achieves the Lowest Achievable Emission Rate (LAER). LAER is the lowest emission rate required by a federal rule, state rule, or by a previously issued construction permit. The applicant must also provide emission offsets, which means the applicant must remove more pollutants from the air than the proposed equipment will emit. This can be done by reducing emissions at other existing facilities. As part of its evaluation, the AQD verifies that no other similar equipment throughout the nation is required to meet a lower emission rate and verifies that proposed emission offsets are permanent and enforceable.

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 336.1232 are used to ensure the public health is protected from other compounds.
40 CFR 52.21 – Prevention of Significant Deterioration (PSD) Regulations **Best Available Control Technology (BACT)**	The PSD regulations allow the installation and operation of large, new sources and the modification of existing large sources in areas that are meeting the NAAQS. The regulations define what is considered a large or significant source, or modification. In order to assure that the area will continue to meet the NAAQS, the permit applicant must demonstrate that it is installing BACT. By law, BACT must consider the economic, environmental, and energy impacts of each installation on a case-by-case basis. As a result, BACT can be different for similar facilities. In its permit application, the applicant identifies all air pollution control options available, the feasibility of these options, the effectiveness of each option, and why the option proposed represents BACT. As part of its evaluation, the Air Quality Division verifies the applicant's determination and reviews BACT determinations made for similar facilities in Michigan and throughout the nation.

Citation	Description of Federal Air Regulations or Requirements
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.