

PERMIT TO INSTALL

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COMMON ACRONYMS

AQD	Air Quality Division
BACT	Best Available Control Technology
CAA	Clean Air Act
CAM	Compliance Assurance Monitoring
CEMS	Continuous Emission Monitoring System
CFR	Code of Federal Regulations
COMS	Continuous Opacity Monitoring System
Department/department/EGLE	Michigan Department of Environment, Great Lakes, and Energy
EU	Emission Unit
FG	Flexible Group
GACS	Gallons of Applied Coating Solids
GC	General Condition
GHGs	Greenhouse Gases
HVLP	High Volume Low Pressure*
ID	Identification
IRSL	Initial Risk Screening Level
ITSL	Initial Threshold Screening Level
LAER	Lowest Achievable Emission Rate
MACT	Maximum Achievable Control Technology
MAERS	Michigan Air Emissions Reporting System
MAP	Malfunction Abatement Plan
MSDS	Material Safety Data Sheet
NA	Not Applicable
NAAQS	National Ambient Air Quality Standards
NESHAP	National Emission Standard for Hazardous Air Pollutants
NSPS	New Source Performance Standards
NSR	New Source Review
PS	Performance Specification
PSD	Prevention of Significant Deterioration
PTE	Permanent Total Enclosure
PTI	Permit to Install
RACT	Reasonable Available Control Technology
ROP	Renewable Operating Permit
SC	Special Condition
SCR	Selective Catalytic Reduction
SNCR	Selective Non-Catalytic Reduction
SRN	State Registration Number
TBD	To Be Determined
TEQ	Toxicity Equivalence Quotient
USEPA/EPA	United States Environmental Protection Agency
VE	Visible Emissions

*For HVLP applicators, the pressure measured at the gun air cap shall not exceed 10 psig.

POLLUTANT / MEASUREMENT ABBREVIATIONS

acfm	Actual cubic feet per minute
BTU	British Thermal Unit
°C	Degrees Celsius
CO	Carbon Monoxide
CO ₂ e	Carbon Dioxide Equivalent
dscf	Dry standard cubic foot
dscm	Dry standard cubic meter
°F	Degrees Fahrenheit
gr	Grains
HAP	Hazardous Air Pollutant
Hg	Mercury
hr	Hour
HP	Horsepower
H ₂ S	Hydrogen Sulfide
kW	Kilowatt
lb	Pound
m	Meter
mg	Milligram
mm	Millimeter
MM	Million
MW	Megawatts
NMOC	Non-Methane Organic Compounds
NO _x	Oxides of Nitrogen
ng	Nanogram
PM	Particulate Matter
PM ₁₀	Particulate Matter equal to or less than 10 microns in diameter
PM _{2.5}	Particulate Matter equal to or less than 2.5 microns in diameter
pph	Pounds per hour
ppm	Parts per million
ppmv	Parts per million by volume
ppmw	Parts per million by weight
psia	Pounds per square inch absolute
psig	Pounds per square inch gauge
scf	Standard cubic feet
sec	Seconds
SO ₂	Sulfur Dioxide
TAC	Toxic Air Contaminant
Temp	Temperature
THC	Total Hydrocarbons
tpy	Tons per year
µg	Microgram
µm	Micrometer or Micron
VOC	Volatile Organic Compounds
yr	Year

GENERAL CONDITIONS

1. The process or process equipment covered by this permit shall not be reconstructed, relocated, or modified, unless a Permit to Install authorizing such action is issued by the Department, except to the extent such action is exempt from the Permit to Install requirements by any applicable rule. **(R 336.1201(1))**
2. If the installation, construction, reconstruction, relocation, or modification of the equipment for which this permit has been approved has not commenced within 18 months, or has been interrupted for 18 months, this permit shall become void unless otherwise authorized by the Department. Furthermore, the permittee or the designated authorized agent shall notify the Department via the Supervisor, Permit Section, Air Quality Division, Michigan Department of Environment, Great Lakes, and Energy, P.O. Box 30260, Lansing, Michigan 48909-7760, if it is decided not to pursue the installation, construction, reconstruction, relocation, or modification of the equipment allowed by this Permit to Install. **(R 336.1201(4))**
3. If this Permit to Install is issued for a process or process equipment located at a stationary source that is not subject to the Renewable Operating Permit program requirements pursuant to Rule 210 (R 336.1210), operation of the process or process equipment is allowed by this permit if the equipment performs in accordance with the terms and conditions of this Permit to Install. **(R 336.1201(6)(b))**
4. The Department may, after notice and opportunity for a hearing, revoke this Permit to Install if evidence indicates the process or process equipment is not performing in accordance with the terms and conditions of this permit or is violating the Department's rules or the Clean Air Act. **(R 336.1201(8), Section 5510 of Act 451, PA 1994)**
5. The terms and conditions of this Permit to Install shall apply to any person or legal entity that now or hereafter owns or operates the process or process equipment at the location authorized by this Permit to Install. If the new owner or operator submits a written request to the Department pursuant to Rule 219 and the Department approves the request, this permit will be amended to reflect the change of ownership or operational control. The request must include all of the information required by subrules (1)(a), (b), and (c) of Rule 219 and shall be sent to the District Supervisor, Air Quality Division, Michigan Department of Environment, Great Lakes, and Energy. **(R 336.1219)**
6. Operation of this equipment shall not result in the emission of an air contaminant which causes injurious effects to human health or safety, animal life, plant life of significant economic value, or property, or which causes unreasonable interference with the comfortable enjoyment of life and property. **(R 336.1901)**
7. The permittee shall provide notice of an abnormal condition, start-up, shutdown, or malfunction that results in emissions of a hazardous or toxic air pollutant which continue for more than one hour in excess of any applicable standard or limitation, or emissions of any air contaminant continuing for more than two hours in excess of an applicable standard or limitation, as required in Rule 912, to the Department. The notice shall be provided not later than two business days after start-up, shutdown, or discovery of the abnormal condition or malfunction. Written reports, if required, must be filed with the Department within 10 days after the start-up or shutdown occurred, within 10 days after the abnormal conditions or malfunction has been corrected, or within 30 days of discovery of the abnormal condition or malfunction, whichever is first. The written reports shall include all of the information required in Rule 912(5). **(R 336.1912)**
8. Approval of this permit does not exempt the permittee from complying with any future applicable requirements which may be promulgated under Part 55 of 1994 PA 451, as amended or the Federal Clean Air Act.
9. Approval of this permit does not obviate the necessity of obtaining such permits or approvals from other units of government as required by law.
10. Operation of this equipment may be subject to other requirements of Part 55 of 1994 PA 451, as amended and the rules promulgated thereunder.

11. Except as provided in subrules (2) and (3) or unless the special conditions of the Permit to Install include an alternate opacity limit established pursuant to subrule (4) of Rule 301, the permittee shall not cause or permit to be discharged into the outer air from a process or process equipment a visible emission of density greater than the most stringent of the following. The grading of visible emissions shall be determined in accordance with Rule 303 (R 336.1303). **(R 336.1301)**
 - a) A six-minute average of 20 percent opacity, except for one six-minute average per hour of not more than 27 percent opacity.
 - b) A visible emission limit specified by an applicable federal new source performance standard.
 - c) A visible emission limit specified as a condition of this Permit to Install.
12. Collected air contaminants shall be removed as necessary to maintain the equipment at the required operating efficiency. The collection and disposal of air contaminants shall be performed in a manner so as to minimize the introduction of contaminants to the outer air. Transport of collected air contaminants in Priority I and II areas requires the use of material handling methods specified in Rule 370(2). **(R 336.1370)**
13. The Department may require the permittee to conduct acceptable performance tests, at the permittee's expense, in accordance with Rule 1001 and Rule 1003, under any of the conditions listed in Rule 1001. **(R 336.2001)**

EMISSION UNIT 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 (Including Process Equipment & Control Device(s))	Installation Date / Modification Date	Flexible Group ID
EU80MILLFURNCS**	80" Hot strip mill including five natural gas and coke oven gas-fired steel slab reheat ovens	9-01-1961	FGFIP
EUBOP-HMT**	No. 2 BOP Shop No. 2 Baghouse	9/1/1995	FGFIP
EUBHMP-1-8**	No. 8 Boiler at Main Plant No. 1 Boiler House	1/1/1969	FGFIP
EUBHMP-1-9**	No. 9 Boiler at Main Plant No. 1 Boiler House	1/1/1969	FGFIP
EUBLAST-FCE-A1**	"A1" Blast Furnace consisting of: 1. "A1" Blast Furnace proper 2. Group of 3 stoves ("A1" BF Stoves) and a stack 3. Cast house emission control system (CECS) - a collection hood followed by a baghouse and stack 4. Blast Furnace Gas (BFG) dust collector for and scrubber removal of particulate from blast furnace gas generated by "A1" Blast Furnace 5. Clean gas safety valve(s) 6. Dirty gas safety valve(s) 7. Explosion Valve 8. Slag Pits 9. BFG Flare System	6-5-1955 / 11-19-1988	FGFIP
EUBLAST-FCE-B2	"B2" Blast Furnace consisting of: 1. "B2" Blast Furnace proper 2. Group of 4 stoves ("B2" BF Stoves) and a stack 3. Cast house emission control system (CECS) - a collection hood followed by a baghouse and stack 4. Blast Furnace Gas (BFG) dust collector and scrubber for removal of particulate from blast furnace gas generated by "B2" Blast Furnace 5. Clean gas safety valve(s) 6. Dirty gas safety valve(s) 7. Explosion Valve 8. Slag Pits 9. BFG Flare System	12-1-1941 / 9-24-1986 / 12-7-2002	FGFIP

Emission Unit ID	Emission Unit Description (Including Process Equipment & Control Device(s))	Installation Date / Modification Date	Flexible Group ID
EUBLAST-FCE-D4	"D4" Blast Furnace consisting of: 1. "D4" Blast Furnace proper 2. Group of 3 stoves ("D4" BF Stoves) and a stack 3. Cast house emission control system (CECS) - a collection hood followed by a baghouse and stack 4. Blast Furnace Gas (BFG) dust collector and scrubber for removal of particulate from blast furnace gas generated by "D4" Blast Furnace 5. Clean gas safety valve(s) 6. Dirty gas safety valve(s) 7. Explosion Valve 8. Slag Pits 9. BFG Flare System	9-22-1952 / 10-19-1993	FGFIP
EUBFG-FLARE-A-B**	BLAST FURNACE GAS FLARES includes - Blast Furnace Gas and Natural Gas Consumed at "A-B" BFG Flare	1/1/1955	FGFIP
EUBFG-FLARE-D**	BLAST FURNACE GAS FLARES includes - Blast Furnace Gas and Natural Gas Consumed at "D" BFG Flare	1/1/1955	FGFIP
EUBHZI-1**	Boilerhouse 1 (all Stacks combined)	1/1/1937	FGFIP
**Other applicable permit requirements for the emission units in this table can be found in the Title V permit, ROP NO. 199600132d.			

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.

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
FGFIP	Several emission units included in SO ₂ Federal Implementation Plan (FIP).	EU80MILLFURNCS EUBOP-HMT EUBHMP-1-8 EUBHMP-1-9 EUBLAST-FCE-A1 EUBLAST-FCE-B2 EUBLAST-FCE-D4 EUBFG-FLARE-A-B EUBFG-FLARE-D EUBHZI-1

**FGFIP
 FLEXIBLE GROUP CONDITIONS**

DESCRIPTION

Several emission units included in SO₂ Federal Implementation Plan (FIP).

Emission Unit: EU80MILLFURNCS, EUBOP-HMT, EUBHMP-1-8, EUBHMP-1-9, EUBLAST-FCE-A1, EUBLAST-FCE-B2, EUBLAST-FCE-D4, EUBFG-FLARE-A-B, EUBFG-FLARE-D, EUBHZI-1

POLLUTION CONTROL EQUIPMENT

NA

I. EMISSION LIMIT(S)

Pollutant	Limit	Time Period / Operating Scenario	Equipment	Monitoring / Testing Method	Underlying Applicable Requirements
1. SO ₂	0.31 pph	Hourly	Each oven within EU80MILLFURNCS	SC VI.2, SC VI.3	FIP, Docket Id No. EPA-R05-OAR-2021-0536, 40 CFR 52.1189(b)(1)(ii)(A), Act 451 324.5503(b)
2. SO ₂	3.30 pph	Hourly	EUBOP-HMT	SC VI.2, SC VI.3	FIP, Docket Id No. EPA-R05-OAR-2021-0536, 40 CFR 52.1189(b)(1)(ii)(A), Act 451 324.5503(b)
3. SO ₂	0.07 pph	Hourly	EUBHMP-1-8 EUBHMP-1-9	SC VI.2, SC VI.3	FIP, Docket Id No. EPA-R05-OAR-2021-0536, 40 CFR 52.1189(b)(1)(ii)(A), Act 451 324.5503(b)
4. SO ₂	0.00 pph	Hourly	“A1” BF Stoves within EUBLAST-FCE-A1	SC VI.2, SC VI.3	FIP, Docket Id No. EPA-R05-OAR-2021-0536, 40 CFR 52.1189(b)(1)(ii)(A), Act 451 324.5503(b)
5. SO ₂	40.18 pph	Hourly	“B2” BF stoves within EUBLAST-FCE-B2	SC VI.2, SC VI.3	FIP, Docket Id No. EPA-R05-OAR-2021-0536, 40 CFR 52.1189(b)(1)(ii)(A), Act 451 324.5503(b)
6. SO ₂	40.18 pph	Hourly	“D4” BF stoves within EUBLAST-FCE-D4	SC VI.2, SC VI.3	FIP, Docket Id No. EPA-R05-OAR-2021-0536, 40 CFR 52.1189(b)(1)(ii)(A), Act 451 324.5503(b)

Pollutant	Limit	Time Period / Operating Scenario	Equipment	Monitoring / Testing Method	Underlying Applicable Requirements
7. SO ₂	60.19 pph	Hourly	EUBFG-FLARE-A-B	SC VI.2, SC VI.3	FIP, Docket Id No. EPA-R05-OAR-2021-0536, 40 CFR 52.1189(b)(1)(ii)(A), Act 451 324.5503(b)
8. SO ₂	60.19 pph	Hourly	EUBFG-FLARE-D	SC VI.2, SC VI.3	FIP, Docket Id No. EPA-R05-OAR-2021-0536, 40 CFR 52.1189(b)(1)(ii)(A), Act 451 324.5503(b)
9. SO ₂	55.0 pph	Hourly	EUBHZI-1	SC VI.2, SC VI.3	FIP, Docket Id No. EPA-R05-OAR-2021-0536, 40 CFR 52.1189(b)(1)(ii)(A), Act 451 324.5503(b)

10. The emission limits shall apply to the owner or operator of the equipment located at 1 Quality Drive (Ecorse) and 1300 Zug Island, Detroit, Michigan (River Rouge). **(FIP, Docket Id No. EPA-R05-OAR-2021-0536, 40 CFR 52.1189(b)(1)(ii)(A), Act 451 324.5503(b))**

II. MATERIAL LIMIT(S)

NA

III. PROCESS/OPERATIONAL RESTRICTION(S)

NA

IV. DESIGN/EQUIPMENT PARAMETER(S)

NA

V. TESTING/SAMPLING

NA

VI. MONITORING/RECORDKEEPING

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

1. 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 monitoring/recordkeeping special condition. **(R 336.1205(1)(a))**
2. The owner or operator shall determine SO₂ emissions from each unit within FGFIP using mass balance calculations. To determine compliance with the limits in SC I.1 through SC I.9, the owner or operator shall calculate hourly SO₂ emissions using all raw material sulfur charged into each affected emission unit and assume 100 percent conversion of total sulfur to SO₂. The owner or operator must submit a CAP for any idled units prior to resuming operations. **(FIP, Docket Id No. EPA-R05-OAR-2021-0536, 40 CFR 52.1189(b)(3)(ii) & (4), Act 451 324.5503(b))**

3. The owner/operator shall maintain the following records continuously for five years beginning on the effective date of the FIP. The effective date of the FIP is November 14, 2022: **(FIP, Docket Id No. EPA-R05-OAR-2021-0536, 40 CFR 52.1189(b)(5), Act 451 324.5503(b))**
 - (i) All records of production for each affected emission unit.
 - (ii) All records of hourly emissions calculated in accordance with the CAP.
 - (iii) Records of quality assurance and quality control activities for emission monitoring systems including, but not limited to, any records required by 40 CFR part 60, appendix F Procedure 1.
 - (iv) Records of all major maintenance activities performed on emission units, air pollution control equipment, CEMS, and other production measurement devices.
 - (v) Any other records required by the Quality Assurance Requirements for Gas Continuous Emission Monitoring Systems Used for Compliance Determination rule at 40 CFR part 60, appendix F Procedure 1 or the National Emission Standards for Hazardous Air Pollutants for Integrated Iron and Steel Manufacturing Facilities rule at 40 CFR part 63, subpart FFFFF.

VII. REPORTING

1. Beginning on the effective date of the FIP, all reports under this section shall be submitted quarterly, unless otherwise specified, to Compliance Tracker, Air Enforcement and Compliance Assurance Branch, U.S. Environmental Protection Agency, Region 5, Mail Code AE-17J, 77 W. Jackson Blvd., Chicago, IL 60604-3590. The effective date of the FIP is November 14, 2022. A copy of the reports shall be sent the AQD District Supervisor at the same time. **(FIP, Docket Id No. EPA-R05-OAR-2021-0536, 40 CFR 52.1189(b)(6), Act 451 324.5503(b))**
2. The owner or operator submitted CAP in accordance with SC VI.1 and SC VI.2 within 30 days of the effective date of the FIP. A copy of the CAP shall be sent to the AQD District Office within 30 days of permit issuance. **(FIP, Docket Id No. EPA-R05-OAR-2021-0536, 40 CFR 52.1189(b)(6)(i), Act 451 324.5503(b))**
3. The owner or operator shall report hourly mass balance calculations quarterly in accordance with the CAP requirements set forth in SC VI.1 no later than the 30th day following the end of each calendar quarter. **(FIP, Docket Id No. EPA-R05-OAR-2021-0536, 40 CFR 52.1189(b)(6)(ii), Act 451 324.5503(b))**
4. The owner or operator shall submit quarterly excess emissions reports for all units identified in SC I.1 through SC I.9 no later than the 30th day following the end of each calendar quarter. Excess emissions means emissions that exceed the emission limits specified in SC I.1 through SC I.9. The reports shall include the magnitude, date(s), and duration of each period of excess emissions, specific identification of each period of excess emissions that occurs during all periods of operation including startups, shutdowns, and malfunctions of the unit, the nature and cause of any malfunction (if known), and the corrective action taken, or preventative measures adopted. When no excess emissions have occurred during the reporting period, such information shall be stated in the quarterly reports. **(FIP, Docket Id No. EPA-R05-OAR-2021-0536, 40 CFR 52.1189(b)(6)(iv) and (vii), Act 451 324.5503(b))**

VIII. STACK/VENT RESTRICTION(S)

NA

IX. OTHER REQUIREMENT(S)

1. The permittee shall notify the AQD District Supervisor, in writing, of the date on which there is a change in the owner/operator of Boilerhouse No. 2. Upon the date of change, the new owner/operator shall comply with the emission limits and any additional requirements as specified within the Permit to Install (PTI) No. XX, submitted under Application Number APP-2022-0290. **(FIP, Docket Id No. EPA-R05-OAR-2021-0536, 40 CFR 52.1189(b), Act 451 324.5503(b))**