

**MICHIGAN DEPARTMENT OF ENVIRONMENT, GREAT LAKES, AND ENERGY
AIR QUALITY DIVISION**

June 7, 2022

PERMIT TO INSTALL

69-22

ISSUED TO

National Energy of McBain

LOCATED AT

6751 West Gerwoude Drive
McBain, Michigan 49657

IN THE COUNTY OF

Missaukee

STATE REGISTRATION NUMBER

N1160

The Air Quality Division has approved this Permit to Install, pursuant to the delegation of authority from the Michigan Department of Environment, Great Lakes, and Energy. This permit is hereby issued in accordance with and subject to Section 5505(1) of Article II, Chapter I, Part 55, Air Pollution Control, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended. Pursuant to Air Pollution Control Rule 336.1201(1), this permit constitutes the permittee's authority to install the identified emission unit(s) in accordance with all administrative rules of the Department and the attached conditions. Operation of the emission unit(s) identified in this Permit to Install is allowed pursuant to Rule 336.1201(6).

DATE OF RECEIPT OF ALL INFORMATION REQUIRED BY RULE 203: May 14, 2022	
DATE PERMIT TO INSTALL APPROVED: June 7, 2022	SIGNATURE:
DATE PERMIT VOIDED:	SIGNATURE:
DATE PERMIT REVOKED:	SIGNATURE:

PERMIT TO INSTALL

Table of Contents

COMMON ACRONYMS	2
POLLUTANT / MEASUREMENT ABBREVIATIONS.....	3
GENERAL CONDITIONS	4
EMISSION UNIT SPECIAL CONDITIONS.....	6
EMISSION UNIT SUMMARY TABLE	6
EUBOILER.....	7
APPENDIX 7. Emission Calculations	19

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
PM10	Particulate Matter equal to or less than 10 microns in diameter
PM2.5	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 condition 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
EUBOILER	230 million BTU per hour boiler equipped with two air pollution control devices: A multiple cyclone collector (pre-cleaner) and an electrostatic precipitator (ESP). The boiler has a spreader-stoker design. It burns wood and Tire Derived Fuel (TDF) as fuel. It also burns natural gas as a start-up fuel.	08/01/1986	NA

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.

**EUBOILER
EMISSION UNIT CONDITIONS**

DESCRIPTION

230 million BTU per hour spreader-stoker boiler. It burns wood and tire derived fuel (TDF) to generate steam to power an electrical generator of 18 MW nameplate capacity. Natural gas is also fired during start-up of the boiler. Subject to 40 CFR 63, Subpart JJJJJJ, in the boiler subcategory defined in 40 CFR 63.11237.

Flexible Group ID: NA

POLLUTION CONTROL EQUIPMENT

Multiple Cyclonic Collector, Electrostatic Precipitator

I. EMISSION LIMIT(S)

Pollutant	Limit	Time Period/ Operating Scenario	Equipment	Monitoring/ Testing Method	Underlying Applicable Requirements
1. PM	0.10 pound per million BTU heat input	Hourly, except during periods of startup, shutdown, and malfunction	EUBOILER	SC V.2	40 CFR 60.43b(c)(1), 40 CFR 60.46b(a)
2. PM-10	0.10 pound per million BTU's heat input	Hourly	EUBOILER	SC V.2	R 336.1331(1)(c)
3. PM-10	23.0 pph	Hourly	EUBOILER	SC V.2 SC VI.1	R 336.1331(1)(c)
4. PM-10	98.9 tpy	12 month rolling time period as determined at the end of each calendar month	EUBOILER	SC VI.1	R 336.1331(1)(c), 40 CFR 52.21 (c) and (d)
5. SO ₂	0.25 pound per million BTU heat input	30-day rolling average.	EUBOILER	SC VI.4	R 336.1205(1)(a) 40 CFR 52.21 (c) and (d)
6. SO ₂	100 pph	Hourly	EUBOILER	SC VI.2	R 336.1205(1)(a) 40 CFR 52.21 (c) and (d)
7. SO ₂	57.5 pph	24-hour rolling average	EUBOILER	SC VI.2	R 336.1205(1)(a) 40 CFR 52.21 (c) and (d)
8. SO ₂	247.2 tpy	12 month rolling time period as determined at the end of each calendar month	EUBOILER	SC VI.3	R 336.1205(1)(a), 40 CFR 52.21 (c) and (d)
9. NO _x	0.25 pound per million BTU's heat input ^a	30-day rolling average.	EUBOILER	SC VI.5	R 336.1205(1)(a)
10. NO _x	57.5 pph	Hourly	EUBOILER	SC VI.2	R 336.1205(1)(a)
11. NO _x	247.2 tpy	12 month rolling time period as determined at the end of each calendar month	EUBOILER	SC VI.3	R 336.1205(1)(a)

Pollutant	Limit	Time Period/ Operating Scenario	Equipment	Monitoring/ Testing Method	Underlying Applicable Requirements
12. CO	0.25 pound per million BTU heat input	24-hour rolling average	EUBOILER	SC VI.5	R 336.1205(1)(a)
13. CO	57.5 pph	24-hour rolling average	EUBOILER	SC VI.2	R 336.1205(1)(a)
14. CO	247.2 tpy	12 month rolling time period as determined at the end of each calendar month	EUBOILER	SC VI.3	R 336.1205(1)(a)
15. VOC	0.020 pound per million BTU heat input	Hourly	EUBOILER	SC V.2	R 336.1702(c)
16. VOC	4.6 pph	Hourly	EUBOILER	SC V.2	R 336.1702(c)
17. VOC	19.1 tpy	12 month rolling time period as determined at the end of each calendar month	EUBOILER	SC VI.1	R 336.1702(c)
18. Lead	5.0 x 10 ⁻⁴ pound per million BTU heat input	Hourly	EUBOILER	SC V.2	R336.1205(1)(a)
19. Lead	0.12 pph	Hourly	EUBOILER	SC V.2	R 336.1205(1)(a)
20. Lead	0.5 tpy	12 month rolling time period as determined at the end of each calendar month	EUBOILER	SC VI.1	R 336.1205(1)(a)
21. Dioxins and Furans ^b	2.9 x 10 ⁻⁵ microgram per standard cubic meter @ 7% oxygen ¹	Hourly	EUBOILER	SC V.2	R 336.1225(1) R 336.1225(6)(a)
22. Dioxins and Furans ^b	6.5 x 10 ⁻⁹ pph ¹	Hourly	EUBOILER	SC V.2	R 336.1225(1) R 336.1225(6)(a)
23. Dioxins and Furans ^b	2.9 x 10 ⁻⁸ tpy ¹	12 month rolling time period as determined at the end of each calendar month	EUBOILER	SC VI.1	R 336.1225(1) R 336.1225(6)(a)
24. Mercury	1.4 microgram per standard cubic meter @7% oxygen ¹	Hourly	EUBOILER	SC V.2	R 336.1225(1)
25. Mercury	3.2 x 10 ⁻⁴ pph ¹	Hourly	EUBOILER	SC V.2	R 336.1225(1)
26. Mercury	0.0014 tpy ¹	12 month rolling time period as determined at the end of each calendar month	EUBOILER	SC VI.1	R 336.1225(1)
27. Arsenic	40.0 micrograms per standard cubic meter @ 7% oxygen ¹	Hourly	EUBOILER	SC V.2	R 336.1225(1)
28. Arsenic	0.009 pph ¹	Hourly	EUBOILER	SC V.2 SC VI.1	R 336.1225(1)

Pollutant	Limit	Time Period/ Operating Scenario	Equipment	Monitoring/ Testing Method	Underlying Applicable Requirements
29. Arsenic	0.04 tpy ¹	12 month rolling time period as determined at the end of each calendar month	EUBOILER	SC VI.1	R 336.1225(1)
30. Total Chromium	23.0 micrograms per standard cubic meter, at 7% oxygen ¹	Hourly	EUBOILER	SC V.2	R 336.1225(1)
31. Total Chromium	0.0052 pph ¹	Hourly	EUBOILER	SC V.2	R 336.1225(1)
32. Total Chromium	0.023 tpy ¹	12 month rolling time period as determined at the end of each calendar month	EUBOILER	SC VI.1	R 336.1225(1)
33. Benzo(a)pyrene	0.008 microgram per standard cubic meter @ 7% oxygen ¹	Hourly	EUBOILER	SC V.2	R 336.1224(1)
34. Benzo(a)pyrene	1.9 x 10 ⁻⁶ pph ¹	Hourly	EUBOILER	SC V.2	R 336.1224(1)
35. Benzo(a)pyrene	8.4 x 10 ⁻⁶ tpy ¹	12 month rolling time period as determined at the end of each calendar month	EUBOILER	SC VI.1	R 336.1224(1)
36. Sulfuric Acid (H ₂ SO ₄)	0.03 pound per million BTU heat input ¹	Hourly	EUBOILER	SC V.2	R 336.1225(1)
37. H ₂ SO ₄	7.6 pph ¹	Hourly	EUBOILER	SC V.2	R 336.1225(1)
38. H ₂ SO ₄	33.3 tpy ¹	12 month rolling time period as determined at the end of each calendar month	EUBOILER	SC VI.1	R 336.1225(1)
39. Visible emissions	20% opacity except for one 6 minute average of no more than 27% opacity per hour ^c	6 minute average	EUBOILER	SC VI.7	R 336.1301(1)

- a. Compliance with this streamlined NO_x limit shall be considered compliance with the NO_x limit in **40 CFR 60.44b(d)**, an additional applicable requirement that has been subsumed within this condition.
- b. "Dioxins and furans" are defined as polychlorinated dibenzodioxins and polychlorinated dibenzofurans, expressed as 2, 3, 7, 8-tetrachlorodibenzo-p-dioxin toxic equivalents.
- c. Compliance with this streamlined opacity limit shall be considered compliance with the visible emission limit in **40 CFR 60.43b(f)**, an additional applicable requirement that has been subsumed within this condition.

II. MATERIAL LIMIT(S)

Material	Limit	Time Period/ Operating Scenario	Equipment	Monitoring/ Testing Method	Underlying Applicable Requirements
1. Natural Gas	490,200,000 cubic feet per year	12-month rolling time period	EUBOILER	SC VI.10	R 336.1205(1)(a)
2. Construction and Demolition Wood	96,336 tons received per year	12-month rolling time period	EUBOILER	SC VI.12	R 336.1205(1)(a)
3. Construction and Demolition Wood	268 tons burned per day	24-hour time period	EUBOILER	SC VI.13	R 336.1205(1)(a)
4. Creosote Treated Wood	189,300 tons received per year	12-month rolling time period	EUBOILER	SC VI.12	R 336.1205(1)(a)
5. Creosote Treated Wood	528 tons burned per day	24-hour time period	EUBOILER	SC VI.13	R 336.1205(1)(a)
6. Particle Board and Plywood	35,604 tons received per year	12-month rolling time period	EUBOILER	SC VI.12	R 336.1205(1)(a)
7. Particle Board and Plywood	99 tons burned per day	24-hour time period	EUBOILER	SC VI.13	R 336.1205(1)(a)
8. Tire Derived Fuel (TDF)	16,060 tons received per year	12-month rolling time period	EUBOILER	SC VI.12	R 336.1205(1)(a), 40 CFR 52.21(c) and (d)
9. TDF	44 tons burned per day	24-hour time period	EUBOILER	SC VI.13	R 336.1205(1)(a)
10. Total Chromium	30 ppmw dry ¹	Any fuel burned	EUBOILER	SC V.1	R 336.1225
11. Mercury	0.5 ppmw dry ¹	Any fuel burned	EUBOILER	SC V.1	R 336.1225

III. PROCESS/OPERATIONAL RESTRICTION(S)

1. The permittee shall not operate EUBOILER for more than 8600 hours per 12 month calendar time period. **(R 336.1205(1)(a)(ii)(B))**
2. The permittee shall not operate EUBOILER unless the cyclonic collector and electrostatic precipitator are installed and operating properly. **(R 336.1910)**
3. The permittee shall properly maintain the monitoring system including keeping necessary parts for routine repair of the monitoring equipment. **(40 CFR 60.13)**
4. Except as specified in paragraph (c) of Section 63.11223, stated in SC III.8, the permittee must conduct a tune-up of the boiler biennially to demonstrate continuous compliance as specified in paragraphs (b)(1) through (7) of Section 63.11223, as listed below. The permittee must conduct the tune-up while burning the type of fuel (or fuels, in the case of boilers that routinely burn multiple types of fuel at the same time) that provided the majority of the heat input to the boiler over the 12 months prior to the tune-up. Each biennial tune-up must be conducted no more than 25 months after the previous tune-up. **(40 CFR 63.11223(a) and (b))**

- a) As applicable, inspect the burner, and clean or replace any components of the burner as necessary (the permittee may delay the burner inspection until the next scheduled unit shutdown, not to exceed 36 months from the previous inspection). Units that produce electricity for sale may delay the burner inspection until the first outage, not to exceed 36 months from the previous inspection. **(40 CFR 63.11223(b)(1))**
 - b) Inspect the flame pattern, as applicable, and adjust the burner as necessary to optimize the flame pattern. The adjustment should be consistent with the manufacturer's specifications, if available. **(40 CFR 63.11223(b)(2))**
 - c) Inspect the system controlling the air-to-fuel ratio, as applicable, and ensure that it is correctly calibrated and functioning properly (the permittee may delay the inspection until the next scheduled unit shutdown, not to exceed 36 months from the previous inspection). Units that produce electricity for sale may delay the inspection until the first outage, not to exceed 36 months from the previous inspection. **(40 CFR 63.11223(b)(3))**
 - d) Optimize total emissions of CO. This optimization should be consistent with the manufacturer's specifications, if available, and with any nitrogen oxide requirement to which the unit is subject. **(40 CFR 63.11223(b)(4))**
 - e) Measure the concentrations in the effluent stream of CO in parts per million, by volume, and oxygen in volume percent, before and after the adjustments are made (measurements may be either on a dry or wet basis, as long as it is the same basis before and after the adjustments are made). Measurements may be taken using a portable CO analyzer. **(40 CFR 63.11223(b)(5))**
 - f) Maintain on-site and submit, if requested by the Administrator, a report containing the information in paragraphs (b)(6)(i) through (iii) of Section 63.11223, as listed below. **(40 CFR 63.11223(b)(6))**
 - i. The concentrations of CO in the effluent stream in parts per million, by volume, and oxygen in volume percent, measured at high fire or typical operating load, before and after the tune-up of the boiler. **(40 CFR 63.11223(b)(6)(i))**
 - ii. A description of any corrective actions taken as a part of the tune-up of the boiler. **(40 CFR 63.11223(b)(6)(ii))**
 - iii. The type and amount of fuel used over the 12 months prior to the tune-up of the boiler, but only if the unit was physically and legally capable of using more than one type of fuel during that period. Units sharing a fuel meter may estimate the fuel use by each unit. **(40 CFR 63.11223(b)(6)(iii))**
 - g) If the unit is not operating on the required date for a tune-up, the tune-up must be conducted within 30 days of startup. **(40 CFR 63.11223(b)(7))**
5. Boilers with an oxygen trim system that maintains an optimum air-to-fuel ratio that would otherwise be subject to a biennial tune-up must conduct a tune-up of the boiler every 5 years as specified in paragraphs (b)(1) through (7) of Section 63.11223, stated in SC III.7. Each 5-year tune-up must be conducted no more than 61 months after the previous tune-up. The permittee may delay the burner inspection specified in paragraph (b)(1) of Section 63.11223 and inspection of the system controlling the air-to-fuel ratio specified in paragraph (b)(3) of Section 63.11223 until the next scheduled unit shutdown, but the permittee must inspect each burner and system controlling the air-to-fuel ratio at least once every 72 months. **(40 CFR 63.11223(c))**
6. The boiler shall comply with the definition of the biomass subcategory: the boiler burns any biomass and is not in the coal subcategory. Where biomass means any biomass-based solid fuel that is not a solid waste. This may include wood waste derived fuels if they are substantially similar to virgin wood. **(40 CFR 63.11200(b), 40 CFR 63.11237)**

IV. DESIGN/EQUIPMENT PARAMETER(S)

1. The permittee shall install, calibrate, maintain and operate in a satisfactory manner, a device to monitor and record the NO_x and SO₂ concentrations from EUBOILER on a continuous basis (CEMS). **(40 CFR 60.13, 40 CFR 60.48b(b), R 336.2150)**
2. The permittee shall install, calibrate, maintain and operate in a satisfactory manner, a device to monitor and record the CO concentration from EUBOILER on a continuous basis (CEMS). **(40 CFR 60.13, 40, R 336.2150, R 336.1205)**

3. The permittee shall install, calibrate, maintain and operate in a satisfactory manner, a device to monitor and record the O₂ concentration from EUBOILER on a continuous basis (CEMS). **(40 CFR 60.13, R 336.2150)**
4. The permittee shall install, calibrate, maintain and operate in a satisfactory manner, a device to monitor and record visible emissions from EUBOILER on a continuous basis (COMS). **(40 CFR 60.13, 40 CFR 60.48b(a), R 336.2150)**
5. The procedures under 40 CFR 60.13 and 40 CFR Part 60, Appendix B, Performance Specification 1 shall be followed for installation, initial evaluation, and operation of the COMS. **(40 CFR 60.13, 40 CFR 60.48b(a), R 336.2150)**
6. The procedures under 40 CFR 60.13 and Performance Specification 2 of Appendix B to 40 CFR Part 60 shall be followed for installation, initial evaluation, and operation of the NO_x and SO₂ CEMS. **(40 CFR 60.13, 40 CFR 60.48b(b), R 336.2150)**
7. The procedures under 40 CFR 60.13 and 40 CFR Part 60, Appendix B, Performance Specification 3 shall be followed for installation, initial evaluation, and operation of the O₂ CEMS. **(40 CFR 60.13, R 336.2150)**
8. The procedures under 40 CFR 60.13 and 40 CFR Part 60, Appendix B, Performance Specification 4 shall be followed for installation, initial evaluation, and operation of the CO CEMS. **(40 CFR 60.13, 40, R 336.2150, R 336.1205)**
9. The span value for the NO_x, SO₂, CO, and O₂ CEMS shall be 2.0 times the lowest emission standard or as specified in the federal regulations. **(40 CFR 60.13, R 336.2154)**
10. Span value for the COMS shall be between 60 and 80 percent. **(40 CFR 60.48(b)(e)(1))**
11. The permittee shall calibrate and standardize the COMS in accordance with procedures set forth in Appendix F of 40 CFR Part 60, including daily system checks, quarterly performance audits, and an annual zero path alignment. **(40 CFR Part 60, Appendix F, Procedure 3)**
12. The boiler shall maintain an oxygen trim system that maintains an optimum air-to-fuel ratio. **(40 CFR 63.11200(f))**

V. TESTING/SAMPLING

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

1. The permittee shall sample each type of fuel burned in EUBOILER on an annual basis and have the samples tested for Chromium and Mercury content in ppm dry weight. Records of the test results shall be made available to the AQD upon request. **(R 336.2001, R 336.2003, R 336.2004)**
2. The permittee shall verify PM₁₀, PM, VOC, lead, dioxins and furans, mercury, arsenic, total chromium, benzo(a)pyrene, and sulfuric acid emission rates from EUBOILER by testing at owner's expense, in accordance with the Department requirements. Testing shall be performed using an approved EPA Method listed in:

Pollutant	Test Method Reference
PM	40 CFR Part 60, Appendix A; Part 10 of the Michigan Air Pollution Control Rules
PM ₁₀	40 CFR Part 51, Appendix M
Sulfuric Acid	40 CFR Part 60, Appendix A
VOC	40 CFR Part 60, Appendix A
Lead	40 CFR Part 60, Appendix A; 40 CFR Part 61, Appendix B; 40 CFR Part 63, Appendix A
Arsenic	40 CFR Part 60, Appendix A; 40 CFR Part 61, Appendix B; 40 CFR Part 63, Appendix A
Dioxins / Furans	40 CFR Part 60, Appendix A
Total Chromium	40 CFR Part 60, Appendix A

Mercury	40 CFR Part 60, Appendix A; 40 CFR Part 61, Appendix B; 40 CFR Part 63, Appendix A
Benzo(a)pyrene	40 CFR Part 63, 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 30 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)**

3. The permittee shall verify the PM10, PM, VOC, lead, dioxins and furans, mercury, arsenic, total chromium, benzo(a)pyrene, and sulfuric acid emission rates from EUBOILER, at a minimum, every five years from the date of the last test. **(R 336.2001, R 336.2003, R 336.2004)**
4. The permittee shall perform exhaust gas flow rate testing for EUBOILER to determine the average flow rate which shall be used, in conjunction with CEM data, to calculate NOx, SO₂, and CO pound per hour emission rates. Testing shall be performed using an approved 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 30 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)**
5. The permittee shall verify the exhaust gas flow rate from EUBOILER, at a minimum, one calendar year from the date of the last test. **(R 336.2001, R 336.2003, R 336.2004)**
6. The permittee shall notify the AQD Technical Programs Unit Supervisor and the District Supervisor not less than 30 days of the time and place before performance tests are conducted. **(R 336.1201)**

VI. MONITORING/RECORDKEEPING

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

1. The permittee shall calculate and maintain records of the hourly and annual emission rates for PM10, VOCs, lead, dioxins and furans, mercury, arsenic, total chromium, benzo(a)pyrene, and sulfuric acid using emission factors derived from the most recent stack testing data. **(R 336.1205(1)(a), R 336.1225(1), R 336.1225(6)(a), R 336.331(1)(c), R 336.1702(c))**
2. The permittee shall calculate and maintain records of SO₂, NO_x and CO pound per hour emission rates using continuous emission monitoring data, in parts per million, hourly average values, and the average flow rate established during the most recent flow rate testing. **(R 336.1205(1)(a), 40 CFR 52.21 (c) and (d))**
3. The permittee shall calculate and maintain records of the annual emission rates for SO₂, NO_x, and CO. **(R 336.1205(1)(a), 40 CFR 52.21 (c) and (d))**
4. The permittee shall monitor and record the SO₂ emissions from the EUBOILER on a continuous basis in a manner and with instrumentation acceptable to the AQD. **(R 336.1205(1)(a)(ii)(E))**
5. The permittee shall monitor and record the CO and NO_x emissions from EUBOILER on a continuous basis in a manner and with instrumentation acceptable to the AQD. **(R 336.1205(1)(a)(ii)(E))**
6. The permittee shall monitor and record the O₂ concentration in exhaust gasses from EUBOILER on a continuous basis in a manner and with instrumentation acceptable to the AQD. **(R 336.1201)**
7. The permittee shall monitor and record the visible emissions from EUBOILER on a continuous basis in a manner and with instrumentation acceptable to the AQD. **(40 CFR 60.13, 40 CFR 60.49b(f), R 336.2150)**

8. The permittee shall monitor and record the natural gas usage in EUBOILER on a continuous basis in a manner and with instrumentation acceptable to the AQD. **(R 336.1205(1)(a))**
9. The permittee shall maintain all emissions records required in Conditions 1 through 8 of this section in a manner acceptable to the AQD. The permittee shall have these records available to supply to the AQD, upon request, no later than the fifth calendar day of the following calendar month. **(R 336.1201)**
10. By the fifth calendar day of each month permittee shall record the total usage of natural gas for the previous 12-calendar month time period. The calendar month natural gas usage rate records and the 12-calendar month time period calculations shall be made available to the AQD upon request. **(R 336.1205(1)(a), 40 CFR 49b(d)(1))**
11. The permittee shall monitor and record the quantity of each of the fuels received during each calendar day in a manner acceptable to the AQD. The records shall be made available to the AQD upon request. **(R 336.1205(1)(a))**
12. By the fifth day of each calendar month, permittee shall record the total fuel received for the previous 12 calendar month time period for the creosote treated wood fuel, particle board/plywood fuel, construction/demolition wood, and tire derived fuel. **(R 336.1205(1)(a))**
13. The permittee shall calculate the total fuel burned for the previous 24-hour period for creosote treated wood fuel, particle board/plywood fuel, construction/demolition wood, and for tire derived fuel in a manner acceptable to the AQD. All records shall be made available to the AQD upon request. **(R 336.1205(1)(a))**
14. The permittee shall record and maintain records of the amount of each fuel combusted during each day and calculate the annual capacity factor individually for natural gas and wood. The annual capacity factor shall be determined on a 12 month rolling time period basis with a new annual capacity factor calculated at the end of each calendar month. **(40 CFR 60.49b(d))**
15. The permittee shall maintain records of the following information for each steam generating unit operating day: **(40 CFR 60.49b(g))**
 - a) Calendar date;
 - b) The average hourly NO_x emission rates (expressed as NO₂) (in lb/MMBtu heat input) measured or predicted;
 - c) The 30-day average NO_x emission rates in lb/MMBtu heat input, calculated at the end of each steam generating unit operating day from the measured or predicted hourly nitrogen oxide emission rates for the preceding 30 steam generating unit operating days;
 - d) Identification of the steam generating unit operating days when the calculated 30-day average NO_x emission rates are in excess of the NO_x emissions standards under 40 CFR 60.44b, with the reasons for such excess emissions as well as a description of corrective actions taken;
 - e) Identification of the steam generating unit operating days for which pollutant data have not been obtained, including reasons for not obtaining sufficient data and a description of corrective actions taken;
 - f) Identification of the times when emission data have been excluded from the calculation of average emission rates and the reasons for excluding data;
 - g) Identification of "F" factor used for calculations, method of determination, and type of fuel combusted;
 - h) Identification of the times when the pollutant concentration exceeded full span of the CEMS;
 - i) Description of any modifications to the CEMS that could affect the ability of the CEMS to comply with Performance Specification 2 or 3; and
 - j) Results of daily CEMS drift tests and quarterly accuracy assessments as required under Appendix F, Procedure 1 of this part.
16. The permittee shall maintain a log of the hours of operation of EUBOILER. This log shall be maintained in an electronic or written format acceptable to the AQD and shall be made available to the AQD upon request. **(R 336.1205(1)(a))**

17. The permittee shall maintain written procedures for the opacity monitor quality assurance program, and shall make them available to Federal, State, and Local Air Quality representatives upon request. **(40 CFR Part 60, Appendix F, Procedure 3(9.1))**
18. The permittee must maintain the records specified in paragraphs (c)(1) through (7) of Section 63.11225, as listed below. **(40 CFR 63.11225(c))**
 - a) As required in Section 63.10(b)(2)(xiv), the permittee must keep a copy of each notification and report that the permittee submitted to comply with 40 CFR Part 63, Subpart JJJJJJ and all documentation supporting any Initial Notification or Notification of Compliance Status that the permittee submitted. **(40 CFR 63.11225(c)(1))**
 - b) The permittee must keep records to document conformance with the work practices, emission reduction measures, and management practices required by Sections 63.11214 and 63.11223 as specified in paragraphs (c)(2)(i) through (vi) of Section 63.11225, as listed below. **(40 CFR 63.11225(c)(2))**
 - i. Records must identify each boiler, the date of tune-up, the procedures followed for tune-up, and the manufacturer's specifications to which the boiler was tuned. **(40 CFR 63.11225(c)(2)(i))**
 - ii. For operating units that combust non-hazardous secondary materials that have been determined not to be solid waste pursuant to 40 CFR Section 241.3(b)(1), the permittee must keep a record which documents how the secondary material meets each of the legitimacy criteria under 40 CFR Section 241.3(d)(1). If the permittee combusts a fuel that has been processed from a discarded non-hazardous secondary material pursuant to 40 CFR Section 241.3(b)(4), the permittee must keep records as to how the operations that produced the fuel satisfies the definition of processing in 40 CFR Section 241.2 and each of the legitimacy criteria in 40 CFR Section 241.3(d)(1). If the fuel received a non-waste determination pursuant to the petition process submitted under 40 CFR Section 241.3(c), the permittee must keep a record that documents how the fuel satisfies the requirements of the petition process. For operating units that combust non-hazardous secondary materials as fuel per 40 CFR Section 241.4, the permittee must keep records documenting that the material is a listed non-waste under 40 CFR Section 241.4(a). **(40 CFR 63.11225(c)(2)(ii))**
 - iii. For each boiler required to conduct an energy assessment, the permittee must keep a copy of the energy assessment report. **(40 CFR 63.11225(c)(2)(iii))**
 - c) Records of the occurrence and duration of each malfunction of the boiler. **(40 CFR 63.11225(c)(4))**
 - d) Records of actions taken during periods of malfunction to minimize emissions in accordance with the general duty to minimize emissions in Section 63.11205(a), stated in SC IX.4, including corrective actions to restore the malfunctioning boiler to its normal or usual manner of operation. **(40 CFR 63.11225(c)(5))**
19. The permittee's records must be in a form suitable and readily available for expeditious review. The permittee must keep each record for 5 years following the date of each recorded action. The permittee must keep each record on-site or be accessible from a central location by computer or other means that instantly provide access at the site for at least 2 years after the date of each recorded action. The permittee may keep the records off site for the remaining 3 years. **(40 CFR 63.11225(d))**

See Appendix 7

VII. REPORTING

1. The permittee shall submit any performance test reports, including RATA reports, to the AQD Technical Programs Unit and District Office, in a format approved by the AQD. **(R 336.2001(5))**
2. Prior to installation or replacement of any CEMS or COMS, the permittee shall submit a monitoring plan to the District Supervisor for review and approval. The monitoring plan shall include drawings or specifications showing proposed locations and descriptions of all required monitor(s). **(R 336.2155, 40 CFR 60.13)**
3. In accordance with 40 CFR 60.7(c) and (d) an excess emissions report (EER) and summary report shall be submitted in an acceptable format to the District Supervisor within 30 days following the end of each calendar quarter for all CEMS and COMS. The EER shall include each occurrence of all exceedances and the magnitudes of the excess emissions of the specified permit limit, the cause of the excess emissions, if known, periods of monitoring system downtime, any corrective action taken and the total operating time of the source(s). If no

exceedances or monitoring system downtime occurred during the reporting period, the permittee shall report that fact. **(R 336.2170, 40 CFR 60.7, 40 CFR 60.49b(h))**

4. The permittee shall report the results of the quality assurance procedures of the CEMS set forth in 40 CFR Part 60, Appendix F, Procedure 1 of to the AQD District Supervisor within the quarterly EER for the quarter in which the audit is conducted. **(40 CFR Part 60, Appendix B, Procedure 1)**
5. The permittee shall submit the results of the quality assurance procedures of the COMS set forth in 40 CFR Part 60, Appendix F, Procedure 3 to the AQD District Supervisor within the quarterly EER for the quarter in which the audit is conducted. **(40 CFR Part 60, Appendix B, Procedure 3)**
6. The permittee must prepare, by March 1 of each year, and submit to the delegated authority upon request, an annual compliance certification report for the previous calendar year containing the information specified in paragraphs (b)(1) through (4) of Section 63.11225. For boilers that are subject only to a requirement to conduct a 5-year tune-up according to Section 63.11223(a) and not subject to emission limits or operating limits, the permittee may prepare only a 5-year compliance report as specified in paragraphs (b)(1) and (2) of Section 63.11225, as listed below. **(40 CFR 63.11225(b))**
 - a) Company name and address. **(40 CFR 63.11225(b)(1))**
 - b) Statement by a responsible official, with the official's name, title, phone number, email address, and signature, certifying the truth, accuracy and completeness of the notification and a statement of whether the source has complied with all the relevant standards and other requirements of 40 CFR Part 63, Subpart JJJJJJ. The permittee's notification must include the following certification(s) of compliance, as applicable, and signed by a responsible official: **(40 CFR 63.11225(b)(2))**
 - i. "This facility complies with the requirements in Section 63.11223 to conduct a biennial or 5-year tune-up, as applicable, of each boiler." **(40 CFR 63.11225(b)(2)(i))**
 - ii. For units that do not qualify for a statutory exemption as provided in Section 129(g)(1) of the Clean Air Act: "No secondary materials that are solid waste were combusted in any affected unit." **(40 CFR 63.11225(b)(2)(ii))**
7. If the permittee intends to commence or recommence combustion of solid waste, the permittee must provide 30 days prior notice of the date upon which the permittee will commence or recommence combustion of solid waste. The notification must identify: **(40 CFR 63.11225(f))**
 - a) The name of the owner or operator of the affected source, the location of the source, the boiler(s) that will commence burning solid waste, and the date of the notice. **(40 CFR 63.11225(f)(1))**
 - b) The currently applicable subcategory under 40 CFR Part 63, Subpart JJJJJJ. **(40 CFR 63.11225(f)(2))**
 - c) The date on which the permittee became subject to the currently applicable emission limits. **(40 CFR 63.11225(f)(3))**
 - d) The date upon which the permittee will commence combusting solid waste. **(40 CFR 63.11225(f)(4))**
8. If the permittee has switched fuels or made a physical change to the boiler and the fuel switch or change resulted in the applicability of a different subcategory within 40 CFR Part 63, Subpart JJJJJJ, in the boiler becoming subject to 40 CFR Part 63, Subpart JJJJJJ, or in the boiler switching out of 40 CFR Part 63, Subpart JJJJJJ due to a change to 100 percent natural gas, or the permittee has taken a permit limit that resulted in the permittee being subject to 40 CFR Part 63, Subpart JJJJJJ, the permittee must provide notice of the date upon which the permittee switched fuels, made the physical change, or took a permit limit within 30 days of the change. The notification must identify: **(40 CFR 63.11225(g))**
 - a. The name of the owner or operator of the affected source, the location of the source, the boiler(s) that have switched fuels, were physically changed, or took a permit limit, and the date of the notice. **(40 CFR 63.11225(g)(1))**
 - b. The date upon which the fuel switch, physical change, or permit limit occurred. **(40 CFR 63.11225(g)(2))**

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 Dimensions (inches)	Minimum Height Above Ground (feet)	Underlying Applicable Requirements
1. SVBOILER	72	150	R 336.1205, 40 CFR 52.21

IX. OTHER REQUIREMENT(S)

1. The permittee shall not burn the alternative wood fuels and tire derived fuel unless the Fuel Procurement and Handling Plan as approved by the District Supervisor has been implemented and maintained.¹ **(R 336.1224, R 336.1225)**
2. The permittee may burn any alternative fuels simultaneously if stack tests, approved by the AQD, demonstrate that these fuels can be co-fired without exceeding any emission limit specified in this permit. ¹ **(R 336.1224, R 336.1225)**
3. The permittee shall not burn the alternative wood fuels and tire derived fuel unless there is an approved Emergency Response Program for any on-site and off-site emergency that may occur as a result of their operations. Approval of this program must be by those state and local officials responsible for the review and approval of these programs. This program must include an aggressive action to extinguish any fire that may occur at the permittee's facility. A copy of an approved program must be kept on file at all times and be made available to the AQD upon request.¹ **(R 336.1224, R 336.1225)**
4. The permittee shall perform the COMS quality assurance procedure set forth in 40 CFR Part 60, Appendix F, Procedure 3, or a method acceptable to the AQD. Within 30 days after completion of Procedure 3, the permittee shall submit the results to the AQD. **(40 CFR Part 60, Appendix F)**
5. The permittee shall perform the quarterly quality assurance procedures of the CEMS set forth in Appendix F of 40 CFR Part 60. **(R 336.2170, 40 CFR Part 60, Appendix F)**
6. The permittee shall develop and implement a quality control plan and program for the opacity monitor, as specified in 40 CFR Part 60, Appendix F. **(40 CFR Part 60, Appendix F, Procedure 3(9.0))**
7. If the opacity monitor fails two consecutive annual audits, two consecutive quarterly audits, or five consecutive daily checks, the permittee shall either revise quality control procedures for the opacity monitor or determine whether the opacity monitor is malfunctioning and take Federally specified corrective actions. **(40 CFR Part 60, Appendix F, Procedure 3(9.2))**
8. At all times the permittee must operate and maintain any affected source, including associated air pollution control equipment and monitoring equipment, in a manner consistent with safety and good air pollution control practices for minimizing emissions. The general duty to minimize emissions does not require the permittee to make any further efforts to reduce emissions if levels required by this standard have been achieved. Determination of whether such operation and maintenance procedures are being used will be based on information available to the Administrator that may include, but is not limited to, monitoring results, review of operation and maintenance procedures, review of operation and maintenance records, and inspection of the source. **(40 CFR 63.11205(a))**
9. If the permittee owns or operates an industrial, commercial, or institutional boiler and would be subject to 40 CFR Part 63, Subpart JJJJJJ except for the exemption in Section 63.11195(b) for commercial and industrial solid waste incineration units covered by 40 CFR Part 60, Subpart CCCC or Subpart DDDD, and the permittee ceases combusting solid waste, the permittee must be in compliance with 40 CFR Part 63, Subpart JJJJJJ on the effective date of the waste to fuel switch as specified in Section 60.2145(a)(2) and (3) of Subpart CCCC or Section 60.2710(a)(2) and (3) of Subpart DDDD. **(40 CFR 63.11196(d))**

10. For affected boilers that ceased burning solid waste consistent with Section 63.11196(d) and for which the initial compliance date has passed, the permittee must demonstrate compliance within 60 days of the effective date of the waste-to-fuel switch as specified in Section 60.2145(a)(2) and (3) of Subpart CCCC or Section 60.2710(a)(2) and (3) of Subpart DDDD. If the permittee has not conducted their compliance demonstration for 40 CFR Part 63, Subpart JJJJJJ within the previous 12 months, the permittee must complete all compliance demonstrations for 40 CFR Part 63, Subpart JJJJJJ before commencing or recommencing combustion of solid waste. **(40 CFR 63.11210(g))**
11. For affected boilers that switch fuels or make a physical change to the boiler that results in the applicability of a different subcategory within 40 CFR Part 63, Subpart JJJJJJ or the boiler becoming subject to 40 CFR Part 63, Subpart JJJJJJ, the permittee must demonstrate compliance within 180 days of the effective date of the fuel switch or the physical change. Notification of such changes must be submitted according to Section 63.11225(g), stated in SC VIII.18. **(40 CFR 63.11210(h))**
12. Table 8 to 40 CFR Part 63, Subpart JJJJJJ, shows which parts of the General Provisions in Sections 63.1 through 63.15 apply to the permittee. **(40 CFR 63.11235)**
13. The permittee shall comply with all provisions of 40 CFR Part 63, Subpart JJJJJJ, National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers, Area Sources. **(40 CFR Part 63, Subpart JJJJJJ)**

Footnotes:

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

APPENDIX 7. Emission Calculations

The permittee shall use the following calculations in conjunction with monitoring, testing or recordkeeping data to determine compliance with the applicable requirements referenced in EUBOILER.

For NO_x, CO, and SO₂ pollutants monitored by CEMS the following formula shall be used to calculate the pound per hour emission rates:

$$\text{lb/hr} = \text{PPM (Dry Vol)} * \text{Mol. Wt} * \text{SCFM (Dry)} * 1.56\text{E-}07$$

For pollutants **not** monitored by CEMS or COMS, the following formula shall be used to calculate emissions:

$$\text{Feed (calculated)} * \frac{\text{Emissions (test)*}}{\text{Feed (test)*}} = \text{Emissions (calculated)}$$

Where:

Emissions (test) – is the final result of pollutant emissions in the appropriate units (i.e. #/MMBTU, lb/hr, ppmv, etc.)

*value taken from the most recent valid stack testing data

Feed (test) – is the feed rate achieved during testing

*value taken from the most recent valid stack testing data

Feed (calculated) – is the average feed rate in pounds per hour calculated semi-annually.