

MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY
AIR QUALITY DIVISION

October 10, 2014

PERMIT TO INSTALL
55-14

ISSUED TO
Marquette Green Energy, LLC

LOCATED AT
413 First Street
Gwinn, Michigan

IN THE COUNTY OF
Marquette

STATE REGISTRATION NUMBER
P0004

The Air Quality Division has approved this Permit to Install, pursuant to the delegation of authority from the Michigan Department of Environmental Quality. 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: July 21, 2014 | |
| DATE PERMIT TO INSTALL APPROVED: October 10, 2014 | SIGNATURE: <i>M. C. Mitchell</i> |
| DATE PERMIT VOIDED: | SIGNATURE: |
| DATE PERMIT REVOKED: | SIGNATURE: |

PERMIT TO INSTALL

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Common Abbreviations / Acronyms

| Common Acronyms | | Pollutant/Measurement Abbreviations | |
|-----------------|---|-------------------------------------|-----------------------------------|
| AQD | Air Quality Division | BTU | British Thermal Unit |
| ANSI | American National Standards Institute | °C | Degrees Celsius |
| BACT | Best Available Control Technology | CO | Carbon Monoxide |
| CAA | Clean Air Act | dscf | Dry standard cubic foot |
| CEM | Continuous Emission Monitoring | dscm | Dry standard cubic meter |
| CFR | Code of Federal Regulations | °F | Degrees Fahrenheit |
| COM | Continuous Opacity Monitoring | gr | Grains |
| EPA | Environmental Protection Agency | Hg | Mercury |
| EU | Emission Unit | hr | Hour |
| FG | Flexible Group | H ₂ S | Hydrogen Sulfide |
| GACS | Gallon of Applied Coating Solids | hp | Horsepower |
| GC | General Condition | lb | Pound |
| HAP | Hazardous Air Pollutant | m | Meter |
| HVLP | High Volume Low Pressure * | mg | Milligram |
| ID | Identification | mm | Millimeter |
| LAER | Lowest Achievable Emission Rate | MM | Million |
| MACT | Maximum Achievable Control Technology | MW | Megawatts |
| MAERS | Michigan Air Emissions Reporting System | ng | Nanogram |
| MAP | Malfunction Abatement Plan | NO _x | Oxides of Nitrogen |
| MDNRE | Michigan Department of Natural Resources and Environment (Department) | PM | Particulate Matter |
| MIOSHA | Michigan Occupational Safety & Health Administration | PM10 | PM less than 10 microns diameter |
| MSDS | Material Safety Data Sheet | PM2.5 | PM less than 2.5 microns diameter |
| NESHAP | National Emission Standard for Hazardous Air Pollutants | pph | Pound per hour |
| NSPS | New Source Performance Standards | ppm | Parts per million |
| NSR | New Source Review | ppmv | Parts per million by volume |
| PS | Performance Specification | ppmw | Parts per million by weight |
| PSD | Prevention of Significant Deterioration | psia | Pounds per square inch absolute |
| PTE | Permanent Total Enclosure | psig | Pounds per square inch gauge |
| PTI | Permit to Install | scf | Standard cubic feet |
| RACT | Reasonably Available Control Technology | sec | Seconds |
| ROP | Renewable Operating Permit | SO ₂ | Sulfur Dioxide |
| SC | Special Condition | THC | Total Hydrocarbons |
| SCR | Selective Catalytic Reduction | tpy | Tons per year |
| SRN | State Registration Number | µg | Microgram |
| TAC | Toxic Air Contaminant | VOC | Volatile Organic Compounds |
| TEQ | Toxicity Equivalence Quotient | yr | Year |
| VE | Visible Emissions | | |
| TDF | Tire Derived Fuel | | |

* For High Volume Low Pressure (HVLP) applicators, the pressure measured at the HVLP gun air cap shall not exceed ten (10) pounds per square inch gauge (psig).

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 Environmental Quality, 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 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 R 336.1219 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 R 336.1219 and shall be sent to the District Supervisor, Air Quality Division, Michigan Department of Environmental Quality. **(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 R 336.1301, 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 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 R 336.1370(2). **(R 336.1370)**

13. The Department may require the permittee to conduct acceptable performance tests, at the permittee's expense, in accordance with R 336.2001 and R 336.2003, under any of the conditions listed in R 336.2001. **(R 336.2001)**

SPECIAL CONDITIONS

EMISSION UNIT SUMMARY TABLE

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

| Emission Unit ID | Emission Unit Description (Process Equipment & Control Devices) | Flexible Group ID |
|--|---|--------------------------------|
| EU-BOILER | Bubbling fluidized bed boiler burning wood and tire derived fuel (TDF), along with up to 120 MMBTU per hour of natural gas, to generate electric power. The nominal total heat input rate is 560 million BTU per hour. Emission controls include a hot side electrostatic precipitator (ESP), selective catalytic reduction (SCR), and combustion controls for minimization of carbon monoxide, volatile organic compounds, and toxic air contaminants. An acid gas reagent may be used as needed to comply with the SO ₂ emission limits. | FGFACILITY |
| EU-FUELHANDLING | Fuel receiving; fuel storage piles and pile management activities; system of conveyors and handling to transfer fuel to the fuel feed system, including conveyors and "transfer house"; and surge bin and equipment to feed fuel to the boiler. Fuel handling is conducted inside an enclosed building whenever practical. | FG-MTRLHANDLING, FGFACILITY |
| EU-ASHHANDLING | Ash collected in the boiler and the boiler's electrostatic precipitator is transported to the ash silo. The ash silo emissions are controlled by the electrostatic precipitator. Ash to be removed from the silo will be wetted before being loaded into trucks in a partially enclosed truck loading area. Haul trucks will be tarped before removing ash from the site. | FG-MTRLHANDLING, FGFACILITY |
| EU-SANDSILO | Silo to store sand for the fluidized bed. The sand silo emissions are controlled with a fabric filter. | FG-MTRLHANDLING, FGFACILITY |
| EU-REAGENTSILO | Silo to store SO ₂ reagent for injection into the fluidized bed for SO ₂ control as needed. Silo is controlled with a fabric filter | FG-MTRLHANDLING, FGFACILITY |
| EU-GENERATOR | A 250 kiloWatt natural gas fired emergency generator | FGFACILITY |
| Changes to the equipment described in this table are subject to the requirements of R 336.1201, except as allowed by R 336.1278 to R 336.1290. | | |

The following conditions apply to: EU-BOILER

DESCRIPTION: Bubbling fluidized bed boiler burning wood and tire derived fuel (TDF), along with up to 120 MMBTU per hour of natural gas, to generate electric power. The nominal total heat input rate is 560 million BTU per hour.

Flexible Group ID: FGFACILITY

POLLUTION CONTROL EQUIPMENT:

1. Hot side electrostatic precipitator (ESP) for the control of PM, PM10, PM2.5, inorganics, and metallic HAPs
2. Selective catalytic reduction (SCR) for the control of NOx
3. Combustion controls for the control of VOC, CO, and organic toxic air contaminants
4. Acid gas reagent for the control of SO₂

I. EMISSION LIMITS

| Pollutant | Limit | Time Period / Operating Scenario | Equipment | Testing / Monitoring Method | Underlying Applicable Requirements |
|----------------------|--|--|-----------|-----------------------------|-------------------------------------|
| 1. Visible emissions | 10% opacity on a six-minute average, except for one six-minute average per hour of not more than 20% opacity | Six-minute average | EU-BOILER | SC VI.1 | R 336.1301(1)(c) |
| 2. PM* | 0.025 lb/MMBTU heat input | Test protocol** | EU-BOILER | SC V.1, V.4 | R 336.1331, 40 CFR 63.11201 |
| 3. PM | 14.0 lb/hr | Test protocol** | EU-BOILER | | R 336.2803, R 336.2804 336.1205(1) |
| 4. PM10 | 14.0 lb/hr | Test protocol** | EU-BOILER | SC V.3, V.4 | R 336.2803, R 336.2804 336.1205(1) |
| 5. PM2.5 | 14.0 lb/hr | Test protocol** | EU-BOILER | SC V.3, V.4 | R 336.2803, R 336.2804 336.1205(1) |
| 6. NO _x | 39.2 lb/hr | Test protocol** | EU-BOILER | SC VI.2 | R 336.2803, 336.1205(1), R 336.2804 |
| 7. CO | 67.2 lb/hr | Test protocol** | EU-BOILER | SC VI.2 | R 336.2803, R 336.280 |
| 8. CO | 246 Tons per year | Rolling 12-month time period as determined at the end of each calendar month | EU-BOILER | SC VI.2, VI.9 | R 336.1205(1) |
| 9. SO ₂ | 33.6 lb/hr | Test protocol** | EU-BOILER | SC V.2, VI.2 | R 336.1401, 336.1205(1) |
| 10. VOC | 0.015 lb/MMBTU heat input | Test protocol** | EU-BOILER | SC V.3, V.4 | R 336.1205(1), R 336.1702(a) |
| 11. VOC | 8.4 lb/hr | Test protocol** | EU-BOILER | SC V.3, V.4 | R 336.1205(1), R 336.1702(a) |
| 12. Pb | 1.2 X 10 ⁻⁴ lb/MMBTU heat input | Test Protocol** | EU-BOILER | GC 13 | R 336.2803, R 336.2804 |

* PM is a pollutant regulated under 40 CFR Part 60 Subpart Db and R 336.1331. It consists entirely of material captured on a filter during testing, and is sometimes called "filterable PM." It does not include condensable material.

** Test protocol will specify the averaging time.

II. MATERIAL LIMITS

1. The permittee shall maintain EU-BOILER with an annual capacity factor of no greater than 4,100,000 MMBtu/year. The annual capacity factor is based upon the total heat release of all fuels fired in EU-BOILER. Compliance with the capacity factor shall be determined according to procedure specified in Appendix D. **(R 336.1205(1)(b))**

III. PROCESS/OPERATIONAL RESTRICTIONS

1. The permittee shall burn only wood and clean wood (including processed construction/demolition material) waste as defined by the Wood Fuel Procurement and Monitoring Plan (WFPMP), tire derived fuel (TDF), and natural gas in EU-BOILER. The WFPMP shall include provisions to prevent the burning of chemically treated wood, non-processed construction/demolition wood waste, and other inappropriate materials. The WFPMP shall be submitted to, and approved by, the AQD District Supervisor prior to startup of EU-BOILER. Except as allowed by SC IV.6, the permittee shall not burn any fossil fuel in EU-BOILER. In addition, the permittee shall not receive, store, or handle whole scrap tires intended to be used as fuel at the facility; this does not prohibit short term storage and handling of tires generated from maintenance of the permittee's owned or leased equipment at the facility. **(R 336.1205(1), R 336.1224, R 336.1702)**
2. The permittee shall comply with all provisions of the federal Standards of Performance for New Stationary Sources as specified in 40 CFR Part 60 Subparts A and Db, as they apply to EU-BOILER. **(40 CFR Part 60 Subparts A & Db)**
3. The permittee shall submit an acceptable plan that describes how EU-BOILER emissions will be minimized during all startups, shutdowns and malfunctions (SSM) to the AQD District Supervisor and receive approval of the plan prior to startup of EU-BOILER. The SSM plan shall incorporate procedures recommended by the equipment manufacturer as well as incorporating standard industry practices, and shall describe at what operating conditions solid fuel is introduced to the boiler during startup and at what operating conditions solid fuel feed is stopped during shutdown. **(R 336.1205(1), R 336.1911, R 336.1912)**
4. The permittee shall submit a malfunction abatement plan (MAP) for EU-BOILER to the AQD District Supervisor. The initial MAP and any future amended MAP shall be subject to review and approval, as provided in Rule 911. The permittee shall not operate EU-BOILER unless the MAP, amended as necessary according to the procedures of Rule 911, is implemented and maintained. The MAP shall include procedures for maintaining and operating equipment in a satisfactory manner, including during malfunction events, and a program for corrective action for such events. If at any time the MAP fails to address or inadequately addresses an event that meets the characteristics of a malfunction, the permittee shall amend the MAP within 45 days after such an event occurs. The permittee shall also amend the MAP within 45 days if new equipment is installed or upon request from the District Supervisor. The permittee shall submit the MAP and any amendments to the MAP to the AQD District Supervisor for review and approval.
 - a. The permittee shall submit an initial MAP to the AQD District Supervisor before beginning operation of EU-BOILER.
 - b. No later than 270 days after commencing operation of EU-BOILER, the permittee shall amend the MAP, based on equipment operating history and the results of the emission testing, and submit the amended MAP to the AQD District Supervisor.**(R 336.1911)**
5. The permittee shall not burn any fuel other than wood, TDF and natural gas in EU-BOILER unless the WFPMP is being followed at all times. The WFPMP shall, at a minimum, specify the following:
 - a. A description of wood fuel to be burned.
 - b. Odor minimization measures to be taken.The permittee shall amend the WFPMP within 45 days if any changes are deemed necessary or upon request by the AQD District Supervisor. The permittee shall submit the WFPMP and any amendments to the AQD District Supervisor for review and approval. **(R 336.1205(1), R 336.1224; R 336.1702, R336.1901)**

IV. DESIGN/EQUIPMENT PARAMETERS

1. The permittee shall not burn solid fuels in EU-BOILER unless the hotside ESP is installed, maintained, and operated in a satisfactory manner. Satisfactory operation of the hotside ESP includes maintaining all operational parameters within the ranges identified in the approved MAP as constituting satisfactory operation. **(R 336.1205(1), R 336.1224, R 336.1301(1), R 336.1331(1), R 336.1910)**
2. The permittee shall not operate EU-BOILER unless the selective catalytic reduction system (SCR system) is installed, maintained, and operated in a satisfactory manner. Satisfactory operation of the SCR system includes maintaining all operational parameters within the ranges identified in the approved MAP as constituting satisfactory operation. **(R 336.1205(1), R 336.1910)**
3. The permittee shall not operate EU-BOILER unless the acid gas reagent system (SO₂ system) is installed, maintained, and operated in a satisfactory manner. Satisfactory operation of the SO₂ system includes having the system available to inject reagent into EU-BOILER to keep the SO₂ emissions in compliance with the emission limits and maintaining all operational parameters within the ranges identified in the approved MAP as constituting satisfactory operation. **(R 336.1205(1), R 336.1910)**
4. The permittee shall install, calibrate, maintain and operate in a satisfactory manner, a device to monitor and record the emissions of NO_x, CO, SO₂, carbon dioxide, exhaust temperature, flow rate, and wattage from EU-BOILER on a continuous basis. **(R 336.1205(1))**
5. The permittee shall install, calibrate, maintain and operate in a satisfactory manner, a device to monitor and record the visible emissions from EU-BOILER on a continuous basis. **(40 CFR 60.48b(a))**
6. The heat input capacity of all natural gas burners in EU-BOILER combined shall not exceed a maximum of 120 MMBTU per hour. **(40 CFR 60.40Da(a)(1))**
7. The permittee shall equip and maintain EU-BOILER with devices to monitor the operational parameters identified in the approved MAP as being used to determine whether the hotside ESP, the SCR system, and the acid gas reagent system are operating in a satisfactory manner. **(R 336.1205(1), R 336.1910)**

V. TESTING/SAMPLING

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

1. Within 60 days after achieving the maximum production rate, but not later than 180 days after initial startup, the permittee shall verify PM emission rates from EU-BOILER, as required by federal Standards of Performance for New Stationary Sources, by testing at owner's expense, in accordance with 40 CFR Part 60 Subparts A and Db. The permittee shall notify the AQD District Supervisor in writing within 15 days of the date of commencement of trial operation in accordance with 40 CFR 60.7(a)(3). Stack testing procedures and the location of stack testing ports shall be in accordance with the applicable federal Reference Methods, 40 CFR Part 60 Appendix A. No less than 30 days prior to testing, the permittee shall submit a complete test plan to the AQD. The AQD must approve the final plan prior to testing. Verification of emission rates includes the submittal of a complete report of the test results to the AQD within 60 days following the last date of the test. **(R 336.1205(1), R 336.1331(1), R 336.2001, R 336.2003, R 336.2004, 40 CFR 60.46b(b))**

2. Within 60 days after achieving the maximum production rate, but not later than 180 days after initial startup, the permittee shall verify SO₂ emission rates from EU-BOILER, as required by federal Standards of Performance for New Stationary Sources, by testing at owner's expense, in accordance with 40 CFR Part 60 Subparts A and Db. The permittee shall notify the AQD District Supervisor in writing within 15 days of the date of commencement of trial operation in accordance with 40 CFR 60.7(a)(3). Stack testing procedures and the location of stack testing ports shall be in accordance with the applicable federal Reference Methods, 40 CFR Part 60 Appendix A. No less than 30 days prior to testing, the permittee shall submit a complete test plan to the AQD. The AQD must approve the final plan prior to testing. Verification of emission rates includes the submittal of a complete report of the test results to the AQD within 60 days following the last date of the test. **(R 336.1205(1), R 336.2001, R 336.2003, R 336.2004, 40 CFR 60.45b(b))**
3. Within 180 days after commencement of trial operation, the permittee shall verify PM₁₀, PM_{2.5} and VOC emission rates from EU-BOILER by testing at owner's expense, in accordance with Department requirements. No less than 30 days prior to testing, the permittee shall submit a complete test plan to the AQD. The AQD must approve the final plan prior to testing. Verification of emission rates includes the submittal of a complete report of the test results to the AQD within 60 days following the last date of the test. **(R 336.1205(1), R 336.1702(a), R 336.2001, R 336.2003, R 336.2004)**
4. No later than five years after completing the last of the stack tests required by SC V.1, SC V.2, and V.3, and every five years thereafter, the permittee shall verify PM, PM₁₀, PM_{2.5}, and VOC emission rates from EU-BOILER by testing at owner's expense, in accordance with Department requirements. No less than 30 days prior to testing, the permittee shall submit a complete test plan to the AQD. The AQD must approve the final plan prior to testing. Verification of emission rates includes the submittal of a complete report of the test results to the AQD within 60 days following the last date of the test. **(R 336.1205(1), R 336.1331(1), R 336.1702(a), R 336.2001, R 336.2003, R 336.2004)**
5. Within 180 days after commencement of trial operation, the permittee shall determine HAP emission rates from EU-BOILER by testing at owner's expense, in accordance with Department requirements. The test shall determine the emissions of all the HAPs listed in Appendix A. If the results of the initial HAP testing indicate total emissions greater than 0.0072 pound per MMBTU heat input for all HAPs measured, or greater than 0.00241 pound per MMBTU heat input for any individual HAP, the permittee shall repeat the testing annually for the next two years. No less than 30 days prior to testing, the permittee shall submit a complete test plan to the AQD. The AQD must approve the final plan prior to testing. Determination of emission rates includes the submittal of a complete report of the test results to the AQD within 60 days following the last date of the test. **(R 336.1205(1), R 336.1224, R 336.2001, R 336.2003, R 336.2004)**

VI. MONITORING/RECORDKEEPING

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

1. The permittee shall continuously monitor and record, in a satisfactory manner, the visible emissions from EU-BOILER. The permittee shall operate the continuous opacity monitoring system (COMS) to meet the timelines, requirements and reporting detailed in Appendix B and shall use the COMS data for determining compliance with SC I.1. **(R 336.1301(1), R 336.1331(1), 40 CFR 60.48b(a))**
2. The permittee shall continuously monitor and record, in a satisfactory manner, the emissions of NO_x, CO, SO₂, carbon dioxide, exhaust temperature, and flow rate from EU-BOILER. The permittee shall operate each Continuous Emission Rate Monitoring System (CERMS) to meet the timelines, requirements and reporting detailed in Appendix C and shall use the CERMS data for determining compliance with SC I.6, I.7, I.8, and I.9. **(R 336.1205(3))**
3. The permittee shall keep, in a manner acceptable to the AQD District Supervisor, records of the amount of each fuel combusted monthly and calculate the annual capacity factor individually for each fuel type and for natural gas, as required by 40 CFR 60.49b(d). The permittee shall keep all records on file at the facility and make them available to the Department upon request. **(40 CFR 60.49b(d))**

4. The permittee shall keep, in a manner acceptable to the AQD District Supervisor, records of the occurrence and duration of each start-up, shutdown, or malfunction of EU-BOILER, any malfunction of the air pollution control equipment, and any periods during which a continuous monitoring system or monitoring device is inoperative. The permittee shall keep all records on file at the facility and make them available to the Department upon request. **(R 336.1205(1), R 336.2810)**
5. The permittee shall maintain all monitoring and recordkeeping requirements outlined in the approved WFPMP. The permittee shall keep all records on file at the facility and make them available to the Department upon request. **(R 336.1205(1), R 336.1224; R 336.1702)**
6. The permittee shall monitor, in a manner acceptable to the AQD District Supervisor, the process variables described in EU-BOILER SC IV.7. The permittee shall monitor the process variables at the respective frequencies described in the approved MAP. **(R 336.1205(1), R 336.1910)**
7. The permittee shall keep, in a manner acceptable to the AQD District Supervisor, all records of process variables for EU-BOILER, as required by EU-BOILER SC IV.7, on file at the facility and make them available to the Department upon request. **(R 336.1205(1), R 336.1910)**
8. The permittee shall keep, in a manner acceptable to the AQD District Supervisor, monthly and 12-month rolling time period emission records for CO, FOR EU-BOILER. The permittee shall keep all records on file and make them available to the Department upon request. **(R 336.1205(1))**

VII. REPORTING

1. The permittee shall submit all quarterly "Excess Emissions and Monitoring Systems Performance Report" and "Summary Report" records for EU-BOILER, as required by Appendix B and Appendix C, to the AQD District Supervisor in an acceptable format within 30 days following the end of the calendar quarter in which the records were collected. **(40 CFR Part 60 Subparts A & Db)**
2. Within 30 days after completion of the installation, construction, reconstruction, relocation, or modification authorized by this Permit to Install, the permittee or the authorized agent pursuant to Rule 204, shall notify the AQD District Supervisor, in writing, of the completion of the activity. Completion of the installation, construction, reconstruction, relocation, or modification is considered to occur not later than commencement of trial operation of EU-BOILER. **(R 336.1201(7)(a))**
3. The permittee shall provide written notification of construction and operation to comply with the federal Standards of Performance for New Stationary Sources, 40 CFR 60.7. The permittee shall submit this notification to the AQD District Supervisor within the time frames specified in 40 CFR 60.7. **(40 CFR 60.7)**

VIII. STACK/VENT RESTRICTIONS

The exhaust gases from the stacks listed in the table below shall be discharged unobstructed vertically upwards to the ambient air unless otherwise noted:

| Stack & Vent ID | Maximum Exhaust Diameter/Dimensions (inches) | Minimum Height Above Ground (feet) | Underlying Applicable Requirements |
|-----------------|--|------------------------------------|-------------------------------------|
| 1. SV-BOILER | 120 | 150 | R 336.1225, R 336.2803, R 336.2804, |

IX. OTHER REQUIREMENTS

1. The permittee shall comply with all of the applicable requirements contained in the Clean Air Interstate Rule, as it applies to EU-BOILER. **(40 CFR Part 97)**
2. The permittee shall comply with all of the applicable requirements contained in the federal Acid Rain Program, as it applies to EU-BOILER. **(40 CFR Parts 72-76)**

3. The permittee shall perform biennial tune-ups of EU-BOILER as specified in 40 CFR 63.11223.

Footnotes:

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

The following conditions apply to: EU- ASHHANDLING

DESCRIPTION: Ash and bed sand collected in the boiler and the boiler's electrostatic precipitator is transported to the ash silo. The ash silo emissions are controlled by the electrostatic precipitator. Ash to be removed from the silo will be wetted before being loaded into trucks in a partially enclosed truck loading area. Haul trucks will be tarped before removing ash from the site.

Flexible Group ID: FGFACILITY

POLLUTION CONTROL EQUIPMENT: Ash from the boiler and from the ESP is pneumatically conveyed to the ash storage silo for storage. Air displaced from the ash storage silo is directed to the inlet of the electrostatic precipitator.

I. EMISSION LIMITS

NA

II. MATERIAL LIMITS

NA

III. PROCESS/OPERATIONAL RESTRICTIONS

1. The permittee shall not operate EU-ASHHANDLING unless a malfunction abatement plan (MAP) as described in Rule 911(2) is implemented and maintained. If at any time the MAP fails to address or inadequately addresses an event that meets the characteristics of a malfunction, the permittee shall amend the MAP within 45 days after such an event occurs. The permittee shall also amend the MAP within 45 days, if new equipment is installed or upon request from the District Supervisor. The permittee shall submit the MAP and any amendments to the MAP to the AQD District Supervisor for review and approval. If the AQD does not notify the permittee within 90 days of submittal, the MAP or amended MAP shall be considered approved. Until an amended plan is approved, the permittee shall implement corrective procedures or operational changes to achieve compliance with all applicable emission limits. (R 336.1331, R 336.1910, R 336.1911, R 336.2803, R 336.2804, 40 CFR 52.21(c) and (d))

IV. DESIGN/EQUIPMENT PARAMETERS

1. The permittee shall not operate any portion of EU-ASHHANDLING unless the discharge from the storage silo is routed to the inlet of the hot side electrostatic precipitator. (R 336.1901, R 336.1910, R 336.1911, R 336.2803, R 336.2804, R 336.2810)

V. TESTING/SAMPLING

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

NA

VI. MONITORING/RECORDKEEPING

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

NA

VII. REPORTING

NA

VIII. STACK/VENT RESTRICTIONS

NA

IX. OTHER REQUIREMENTS

NA

Footnotes:

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

The following conditions apply to: EU-REAGENTSILO

DESCRIPTION: Storage and handling of acid gas reagent. The acid gas reagent is delivered via truck to facility and is stored in a silo. Emissions are controlled by fabric filter.

Flexible Group ID: NA

POLLUTION CONTROL EQUIPMENT: Emissions from the storage silo are controlled by a fabric filter.

I. EMISSION LIMITS

| Pollutant | Limit | Time Period / Operating Scenario | Equipment | Testing / Monitoring Method | Underlying Applicable Requirements |
|------------|---|---|---|-----------------------------|--|
| 1. Opacity | 10 percent | Test Protocol will specify averaging time | The drop points and transfer points of EU-REAGENTSILO | SC VI.2 | R 336.1301(c), R 336.2803, R 336.2804, |
| 2. Opacity | 5 percent | Test Protocol will specify averaging time | SV-REAGENTSILO | SC VI.3 | R 336.1301(c), R 336.2803, R 336.2804, |
| 3. PM | 0.004 gr/dscf calculated on a dry gas basis | Test Protocol will specify averaging time | SV-REAGENTSILO | GC 13 | R 336.1331 |
| 4. PM10 | 0.03 pph | Test Protocol will specify averaging time | SV-REAGENTSILO | GC 13 | R 336.2803, R 336.2804 |

II. MATERIAL LIMITS

NA

III. PROCESS/OPERATIONAL RESTRICTIONS

1. Within 180 days of initial start-up of EU-REAGENTSILO the permittee shall submit to the AQD District Supervisor a program for continuous fugitive emissions control for all material handling operations. The program shall be reviewed and approved by the District Supervisor. Subsequently it shall be implemented and maintained at the site all the time. If at any time the fugitive dust control program fails to address or inadequately addresses an event that meets the characteristics of a revision or update, the permittee shall amend the fugitive dust control program within 45 days after such an event occurs. The permittee shall also amend the fugitive dust control program within 45 days, if new equipment is installed or upon request from the District Supervisor. The permittee shall submit the fugitive dust control program and any amendments to the fugitive dust control program to the AQD District Supervisor for review and approval. If the AQD does not notify the permittee within 90 days of submittal, the fugitive dust control program or amended fugitive dust control program shall be considered approved. Until an amended plan is approved, the permittee shall implement corrective procedures or operational changes to achieve compliance with all applicable emission limits. (R 336.1371, R 336.1901, R 336.2803, R 336.2804)

2. The permittee shall not operate EU-REAGENTSILO unless a malfunction abatement plan (MAP) as described in Rule 911(2) is implemented and maintained. If at any time the MAP fails to address or inadequately addresses an event that meets the characteristics of a malfunction, the permittee shall amend the MAP within 45 days after such an event occurs. The permittee shall also amend the MAP within 45 days, if new equipment is installed or upon request from the District Supervisor. The permittee shall submit the MAP and any amendments to the MAP to the AQD District Supervisor for review and approval. If the AQD does not notify the permittee within 90 days of submittal, the MAP or amended MAP shall be considered approved. Until an amended plan is approved, the permittee shall implement corrective procedures or operational changes to achieve compliance with all applicable emission limits. **(R 336.1331, R 336.1910, R 336.1911, R 336.2803, R 336.2804)**

IV. DESIGN/EQUIPMENT PARAMETERS

1. The permittee shall not operate any portion of EU-REAGENTSILO unless the fabric filters is installed, maintained and operated in a satisfactory manner. The permittee shall equip the fabric filter with broken bag leak detectors, or an alternative monitoring method approved in writing by the AQD Supervisor. Satisfactory manner includes operating and maintaining each control device and/or implementing each alternative monitoring method in accordance with a malfunction abatement plan (MAP), approvable by the AQD District Supervisor. **(R 336.1901, R 336.1910, R 336.1911, R 336.2803, R 336.2804)**

V. TESTING/SAMPLING

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

1. NA

VI. MONITORING/RECORDKEEPING

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

1. The permittee shall keep monitoring records from the broken bag leak detectors, or alternative monitoring measures, as approved by the AQD District Supervisor on each fabric filter of EU-REAGENTSILO. **(R 336.1901, R 336.1910, R 336.1911, R 336.2803, R 336.2804)**
2. The permittee shall perform and document non-certified visible emissions observations as required in Emission Limit SC I.1 on a daily basis when EU-REAGENTSILO is operating. If during the observation there are any visible emissions detected from an emission point, a USEPA Method 9 certified visible emissions observation shall be conducted for a minimum of 15 minutes to determine the actual opacity from that emission point. Records of the non-certified visible emissions observations, USEPA Method 9 observations that are performed, the reason for any visible emissions observed and any corrective actions taken shall be kept on file and in a format acceptable to the AQD. **(R 336.1301(c), R 336.2803, R 336.2804,)**
3. If the permittee does not install a bag leak detection system per the alternative monitoring requirements outlined in SC IV.1, the permittee shall perform and document non-certified visible emissions observations as required in Emission Limit SC I.2 on a daily basis when EU-REAGENTSILO is operating. If during the observation there are any visible emissions detected from an emission point, a USEPA Method 9 certified visible emissions observation shall be conducted for a minimum of 15 minutes to determine the actual opacity from that emission point. Records of the non-certified visible emissions observations, USEPA Method 9 observations that are performed, the reason for any visible emissions observed and any corrective actions taken shall be kept on file and in a format acceptable to the AQD. **(R 336.1301(c), R 336.2803, R 336.2804)**

VII. REPORTING

- NA

VIII. STACK/VENT RESTRICTIONS

The exhaust gases from the stacks listed in the table below shall be discharged unobstructed vertically upwards to the ambient air unless otherwise noted:

| Stack & Vent ID | Maximum Exhaust Diameter/Dimensions (inches) | Minimum Height Above Ground (feet) | Underlying Applicable Requirements |
|----------------------------|---|---|---|
| 1. SV-REAGENTSILO | 6 | 40 | R 336.2803, R 336.2804 |

IX. OTHER REQUIREMENTS

1. Within 12 months after completion of the installation, construction, reconstruction, relocation, or modification authorized by this Permit to Install, the permittee or the authorized agent pursuant to Rule 204, shall notify the AQD District Supervisor, in writing, of the activity. Completion of the installation, construction, reconstruction, relocation, or modification is considered to occur not later than commencement of trial operation of EU-REAGENTSILO. (R 336.1201(7)(b))

Footnotes:

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

The following conditions apply to: EU-FUELHANDLING

DESCRIPTION

Solid fuel handling system: Equipment includes a truck dump station, a railcar dumping station, conveyors, fuel storage. Fuel will consist of chipped tire derived fuel and biomass. Fuel handling will consist of underground and/or totally enclosed conveyors and totally enclosed transfer points.

POLLUTION CONTROL EQUIPMENT

All conveyors will be located below ground and completely covered. All above ground conveyors and transfer points shall be totally enclosed. Screening and hogging operations shall be located inside the fuel storage building.

I. EMISSION LIMIT(S)

NA

II. MATERIAL LIMIT(S)

NA

III. PROCESS/OPERATIONAL RESTRICTION(S)

1. The permittee shall not operate EU-FUELHANDLING unless the program for continuous fugitive emissions control for all material handling operations, approved by the AQD District Supervisor, has been implemented and is maintained. (R 336.1371, R 336.1901)
2. The permittee shall not operate any portion of EU-FUELHANDLING unless the above ground conveyors and transfer house are totally enclosed and are installed, maintained and operated in a satisfactory manner, and/or in accordance with a malfunction abatement plan (MAP), approvable by the AQD District Supervisor. (R 336.1901, R 336.1910, R 336.1911, R 336.2803, R 336.2804, R 336.2810)
3. All fuel shall be stored indoors except when it is necessary to stockpile biomass outdoors during the winter months because of inaccessibility of biomass retrieval. (R336.1901)

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))

NA

VII. REPORTING

NA

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:

NA

IX. OTHER REQUIREMENT(S)

NA

The following conditions apply to: EU-SANDSILO

DESCRIPTION: Storage and handling of sand for use in the combustion zone of EU-BOILER. Sand is delivered via truck to facility and is stored in a silo. Emissions are controlled by fabric filter.

Flexible Group ID: FG-FACILITY

POLLUTION CONTROL EQUIPMENT: Emissions are controlled by a bin filter.

I. EMISSION LIMITS

| Pollutant | Limit | Time Period / Operating Scenario | Equipment | Testing / Monitoring Method | Underlying Applicable Requirements |
|------------|---|---|-------------|-----------------------------|---------------------------------------|
| 1. Opacity | 5 percent | Test Protocol will specify averaging time | SV-SANDSILO | SC VI.3 | R 336.1301(c), R 336.2803, R 336.2804 |
| 2. PM | 0.004 gr/dscf calculated on a dry gas basis | Test Protocol will specify averaging time | SV-SANDSILO | GC 13 | R 336.1331 |
| 3. PM10 | 0.03 pph | Test Protocol will specify averaging time | SV-SANDSILO | GC 13 | R 336.2803, R 336.2804, |

II. MATERIAL LIMITS

NA

III. PROCESS/OPERATIONAL RESTRICTIONS

1. Within 180 days of initial start-up of EU-SANDSILO the permittee shall submit to the AQD District Supervisor a program for continuous fugitive emissions control for all material handling operations. The program shall be reviewed and approved by the District Supervisor. Subsequently it shall be implemented and maintained at the site all the time. If at any time the fugitive dust control program fails to address or inadequately addresses an event that meets the characteristics of a revision or update, the permittee shall amend the fugitive dust control program within 45 days after such an event occurs. The permittee shall also amend the fugitive dust control program within 45 days, if new equipment is installed or upon request from the District Supervisor. The permittee shall submit the fugitive dust control program and any amendments to the fugitive dust control program to the AQD District Supervisor for review and approval. If the AQD does not notify the permittee within 90 days of submittal, the fugitive dust control program or amended fugitive dust control program shall be considered approved. Until an amended plan is approved, the permittee shall implement corrective procedures or operational changes to achieve compliance with all applicable emission limits. (R 336.1371, R 336.1901, R 336.2803, R 336.2804)
2. The permittee shall not operate EU-SANDSILO unless a malfunction abatement plan (MAP) as described in Rule 911(2) is implemented and maintained. If at any time the MAP fails to address or inadequately addresses an event that meets the characteristics of a malfunction, the permittee shall amend the MAP within 45 days after such an event occurs. The permittee shall also amend the MAP within 45 days, if new equipment is installed or upon request from the District Supervisor. The permittee shall submit the MAP and any amendments to the MAP to the AQD District Supervisor for review and approval. If the AQD does not notify the permittee within 90 days of submittal, the MAP or amended MAP shall be considered approved. Until an amended plan is approved, the permittee shall implement corrective procedures or operational changes to achieve compliance with all applicable emission limits. (R 336.1331, R 336.1910, R 336.1911, R 336.2803, R 336.2804)

IV. DESIGN/EQUIPMENT PARAMETERS

1. The permittee shall not operate any portion of EU-SANDSILO unless the fabric filter is installed, maintained and operated in a satisfactory manner. The permittee shall equip the fabric filter with broken bag leak detectors, or an alternative monitoring method approved in writing by the AQD Supervisor. Satisfactory manner includes operating and maintaining each control device and/or implementing each alternative monitoring method in accordance with a malfunction abatement plan (MAP), approvable by the AQD District Supervisor. (R 336.1901, R 336.1910, R 336.1911, R 336.2803, R 336.2804)

V. TESTING/SAMPLING

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

NA

VI. MONITORING/RECORDKEEPING

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

1. The permittee shall keep monitoring records from the broken bag leak detectors, or alternative monitoring measures, as approved by the AQD District Supervisor on the fabric filter of EU-REAGENTSILO. (R 336.1901, R 336.1910, R 336.1911, R 336.2803, R 336.2804)
2. The permittee shall perform and document non-certified visible emissions observations as required in Emission Limit SC I.1 on a daily basis when EU-SANDSILO is operating. If during the observation there are any visible emissions detected from an emission point, a USEPA Method 9 certified visible emissions observation shall be conducted for a minimum of 15 minutes to determine the actual opacity from that emission point. Records of the non-certified visible emissions observations, USEPA Method 9 observations that are performed, the reason for any visible emissions observed and any corrective actions taken shall be kept on file and in a format acceptable to the AQD. (R 336.1301(c), R 336.2803, R 336.2804)
3. If the permittee does not install a bag leak detection system per the alternative monitoring requirements outlined in SC IV.1, the permittee shall perform and document non-certified visible emissions observations as required in Emission Limit SC I.2 on a daily basis when EU-SANDSILO is operating. If during the observation there are any visible emissions detected from an emission point, a USEPA Method 9 certified visible emissions observation shall be conducted for a minimum of 15 minutes to determine the actual opacity from that emission point. Records of the non-certified visible emissions observations, USEPA Method 9 observations that are performed, the reason for any visible emissions observed and any corrective actions taken shall be kept on file and in a format acceptable to the AQD. (R 336.1301(c), R 336.2803, R 336.2804)

VII. REPORTING

NA

VIII. STACK/VENT RESTRICTIONS

The exhaust gases from the stacks listed in the table below shall be discharged unobstructed vertically upward ambient air unless otherwise noted:

| Stack & Vent ID | Maximum Exhaust Diameter/Dimensions (inches) | Minimum Height Above Ground (feet) | Underlying Applicable Requirements |
|----------------------------|---|---|---|
| 1. SV-REAGENTSILO | TBD | TBD | R 336.1901, R 336.2803, R 336.2804 |

IX. OTHER REQUIREMENTS

1. Within 12 months after completion of the installation, construction, reconstruction, relocation, or modification authorized by this Permit to Install, the permittee or the authorized agent pursuant to Rule 204, shall notify the AQD District Supervisor, in writing, of the activity. Completion of the installation, construction, reconstruction, relocation, or modification is considered to occur not later than commencement of trial operation of EU-REAGENTSILO. **(R 336.1201(7)(b))**

The following conditions apply to: EU-GENERATOR

DESCRIPTION: A 250 kiloWatt natural gas fired emergency generator. The generator is a four stroke, rich burn, spark ignition engine manufactured in 2014

Flexible Group ID: FGFACILITY

POLLUTION CONTROL EQUIPMENT:

I. EMISSION LIMITS

| Pollutant | Limit | Time Period / Operating Scenario | Equipment | Testing / Monitoring Method | Underlying Applicable Requirements |
|--------------------|-------------|----------------------------------|--------------|-----------------------------|--|
| 1. NO _x | 2.0 g/HP-hr | Test Protocol* | EU-GENERATOR | SC VI.1 | R 336.2803, R 336.2804, Table 1 to Subpart JJJJ of Part 60 |
| 2. CO | 4.0 g/HP-hr | Test Protocol* | EU-GENERATOR | SC VI.1 | R 336.2804, R 336.2810, Table 1 to Subpart JJJJ of Part 60 |
| 3. VOC | 1.0 g/HP-hr | Test Protocol* | EU-GENERATOR | SC VI.1 | R 336.2803, R 336.2804, R 336.2810, Table 1 to Subpart JJJJ of Part 60 |

*Test protocol will specify the averaging time.

II. MATERIAL LIMITS

NA

III. PROCESS/OPERATIONAL RESTRICTIONS

1. No later than 60 days after issuance of this permit, the permittee shall submit to the AQD District Supervisor, for review and approval, a preventative maintenance / malfunction abatement plan (PM / MAP) for EU-GENERATOR. After approval of the PM / MAP by the AQD District Supervisor, the permittee shall not operate EU-GENERATOR unless the PM / MAP, or an alternate plan approved by the AQD District Supervisor, is implemented and maintained. The plan shall incorporate procedures recommended by the equipment manufacturer as well as incorporating standard industry practices. At a minimum the plan shall include:

- a) Identification of the equipment and, if applicable, air-cleaning device and the supervisory personnel responsible for overseeing the inspection, maintenance, and repair
- b) Description of the items or conditions to be inspected and frequency of the inspections or repairs
- c) Identification of the equipment and, if applicable, air-cleaning device, operating parameters that shall be monitored to detect a malfunction or failure, the normal operating range of these parameters and a description of the method of monitoring or surveillance procedures
- d) Identification of the major replacement parts that shall be maintained in inventory for quick replacement
- e) A description of the corrective procedures or operational changes that shall be taken in the event of a malfunction or failure to achieve compliance with the applicable emission limits

If the plan fails to address or inadequately addresses an event that meets the characteristics of a malfunction at the time the plan is initially developed, the owner or operator shall revise the plan within 45 days after such an event occurs and submit the revised plan for approval to the AQD District Supervisor. Should the AQD determine the PM / MAP to be inadequate, the AQD District Supervisor may request modification of the plan to address those inadequacies. (R 336.1702(a), R 336.1910, R 336.1911, R 336.1912, R 336.2803, R 336.2804)

2. The permittee shall operate and maintain EU-GENERATOR such that it meets the emission limits in SC I.1, I.2, and I.3 over the entire life of the engine. **(40 CFR 60.4234, 40 CFR 60.4243(b))**
3. If the permittee purchased a certified engine, according to procedures specified in 40 CFR Part 60 Subpart JJJJ, for the same model year, the permittee shall meet the following requirements for EU-GENERATOR:
 - a) Operate and maintain the certified engine and control device according to the manufacturer's emission-related written instructions,
 - b) Keep a maintenance plan and the permittee may only change those engine settings that are permitted by the manufacturer. If you do not operate and maintain the certified engine and control device according to the manufacturer's emission-related written instructions, the engine will be considered a non-certified engine, and
 - c) Meet the requirements as specified in 40 CFR 1068 Subparts A through D.
(40 CFR 60.4243(b)(1))
4. If the permittee purchased a certified engine, according to procedures specified in 40 CFR Part 60 Subpart JJJJ, for the same model year, the permittee shall meet the following requirements for EU-GENERATOR:
 - a) Operate and maintain the certified engine and control device according to the manufacturer's emission-related written instructions,
 - b) Keep a maintenance plan and the permittee may only change those engine settings that are permitted by the manufacturer. If you do not operate and maintain the certified engine and control device according to the manufacturer's emission-related written instructions, the engine will be considered a non-certified engine, and
 - c) Meet the requirements as specified in 40 CFR 1068 Subparts A through D.
(40 CFR 60.4243(b)(1))
5. The permittee shall not operate EU-GENERATOR for more than 200 hours per year in non-emergency conditions. **(R 336.1205(3))**
6. The permittee shall install and maintain a non-resettable hour meter on EU-GENERATOR to monitor and record the time that EU-GENERATOR is operated. **(R336.1205(3))**

IV. DESIGN/EQUIPMENT PARAMETERS

1. The permittee shall install, calibrate, maintain and operate in a satisfactory manner a device to monitor and record the natural gas usage for EU-GENERATOR on a continuous basis. **(R 336.1225, R 336.2803, R 336.2804)**
2. The permittee shall operate and maintain any control device for EU-GENERATOR according to the manufacturer's written instructions and in conjunction with the PM / MAP specified in SC III.1, over the entire life of the engine. **(R 336.1702(a), R 336.1910, R 336.2803, R 336.2804)**

V. TESTING/SAMPLING

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

1. The permittee shall conduct an initial performance test for EU-GENERATOR within one year after startup of the engine to demonstrate compliance with the emission limits in 40 CFR 60.4233(e), unless the engines have been certified by the manufacturer as required by 40 CFR Part 60 Subpart JJJJ and the permittee maintains the engine as required by 40 CFR 60.4243(b)(1). If a performance test is required, the performance tests shall be conducted according to 40 CFR 60.4244. No less than 30 days prior to testing, a complete test plan shall be submitted to the AQD. The final plan must be approved by the AQD prior to testing. Verification of emission rates includes the submittal of a complete report of the test results to the AQD within 60 days following the last date of the test. **(40 CFR 60.4243, 40 CFR 60.4244, 40 CFR Part 60 Subpart JJJJ)**

VI. MONITORING/RECORDKEEPING

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

1. Permittee shall maintain the following records for EU-GENERATOR:

- a) All notifications submitted to comply with 40 CFR Part 60 Subpart JJJJ
- b) Maintenance conducted on the engine.
- c) Documentation from the engine manufacturer that the engine is certified to meet the emission standards and information as required in 40 CFR parts 90, 1048, 1054 and 1060 as applicable.
- d) Total operating hours of the engine when operating in a non-emergency mode. Total operating hours in non-emergency mode shall be maintained on a rolling 12-month time period basis.

VII. REPORTING

1. The permittee must submit an initial notification as required in 40 CFR 60.7(a)(1), if EU-GENERATOR has not been certified by an engine manufacturer to meet the emission standards in 40 CFR 60.4231. The notification must include the following information:

- a) Name and address of the owner or operator;
 - b) The address of the effected source;
 - c) Engine information including make, model, engine family, serial number, model year, maximum engine power, and engine displacement;
 - d) Emission control equipment; and
 - e) Fuel used.
- (40 CFR 60.4245(c))

VIII. STACK/VENT RESTRICTIONS

The exhaust gases from the stacks listed in the table below shall be discharged unobstructed vertically upwards to the ambient air unless otherwise noted:

| Stack & Vent ID | Maximum Exhaust Diameter/Dimensions (inches) | Minimum Height Above Ground (feet) | Underlying Applicable Requirements |
|-----------------|--|------------------------------------|--------------------------------------|
| 1. SV-GENERATOR | 4 | 8 | R 336.2803, R 336.2804, R 336.225 |

IX. OTHER REQUIREMENTS

NA

Footnotes:

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

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 |
|--------------------------|---|---|
| FG-MTRLHANDLING | All material handling operations at the facility | EU-FUELHANDLING, EU-ASHHANDLING, EU-SANDSILO, EU-REAGENTSILO |
| FGFACILITY | All process equipment source-wide including equipment covered by other permits, grandfathered equipment and exempt equipment. | EU-BOILER, EU-GENERATOR, EU-FUELHANDLING, EU-ASHHANDLING, EU-SANDSILO, EU-REAGENTSILO |

The following conditions apply to: FG-MTRLHANDLING

DESCRIPTION: All material handling operations at the facility

Emission Units: EU-FUELHANDLING, EU-ASHHANDLING, EU-SANDSILO, EU-REAGENTSILO

POLLUTION CONTROL EQUIPMENT:

1. All fuel handling is conducted inside an enclosed building whenever possible.
2. Electrostatic precipitator for ash, sand, and SO₂ reagent storage.
3. Wetting system to wet collected ash before transfer to trucks.
4. Partial enclosure for the truck loading area for ash removal.
5. Ash trucks will be tarped prior to leaving the site.

I. EMISSION LIMITS

NA

II. MATERIAL LIMITS

NA

III. PROCESS/OPERATIONAL RESTRICTIONS

1. The permittee shall not operate FG-MTRLHANDLING unless the approved program for continuous fugitive emissions control for all plant roadways, the plant yard, all material storage piles, and all material handling operations has been implemented and is maintained. (R 336.1205(1), R 336.1910, R 336.2803, R 336.2804)

IV. DESIGN/EQUIPMENT PARAMETERS

1. The permittee shall not operate the fuel receiving and handling equipment, except for the seasonal outdoor storage pile, unless the operations are conducted within a building and the structural integrity of the building is maintained. (R 336.1205(1), R 336.1910, R 336.2803, R 336.2804)
2. The permittee shall not operate EU-ASHHANDLING unless the conveyor enclosures and the electrostatic precipitator are installed, maintained, and operated in a satisfactory manner. (R 336.1205(1), R 336.1910, R 336.2803, R 336.2804)
3. The permittee shall not operate EU-SANDSILO unless the conveyor enclosures and the electrostatic precipitator are installed, maintained, and operated in a satisfactory manner. (R 336.1205(1), R 336.1910, R 336.2803, R 336.2804)
4. The permittee shall not operate EU-REAGENTSILO unless the conveyor enclosures and the electrostatic precipitator are installed, maintained, and operated in a satisfactory manner. (R 336.1205(1), R 336.1910, R 336.2803, R 336.2804)
5. The permittee shall equip and maintain all conveyors and transfer points in EU-ASHHANDLING, EU-SANDSILO, and EU-REAGENTSILO with enclosures and exhaust systems that direct emissions from conveying and transfer operations to an exhaust point controlled with the electrostatic precipitator. (R 336.1205(1), R 336.1910, R 336.2803, R 336.2804)

6. The permittee shall not load trucks with ash unless the ash wetting system is installed, maintained, and operated in a satisfactory manner. (R 336.1205(1), R 336.1910, R 336.2803, R 336.2804)
7. The permittee shall cover each ash haul truck prior to the truck leaving the plant site. (R 336.1205(1), R 336.1910, R 336.2803, R 336.2804)

V. TESTING/SAMPLING

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

NA

VI. MONITORING/RECORDKEEPING

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

1. The permittee shall monitor all outdoor fuel storage piles to ensure the effectiveness of fugitive dust control activities by performing non-certified visible emissions observations for the fuel storage piles a minimum of once per calendar day, or an alternate schedule approved by the AQD District Supervisor. If visible emissions are observed, the permittee shall immediately take measures to reduce visible emissions from the fuel storage piles. (R 336.1301)
2. The permittee shall keep, in a satisfactory manner, records of all visible emissions observations for FG-MTRLHANDLING. At a minimum, records shall include the date, time, name of observer, and whether visible emissions were observed. For any periods that all visible emissions observations listed in SC VI.1 were not performed, the permittee shall record the reason. The permittee shall keep all records on file at the facility and make them available to the Department upon request. (R 336.1205(1), R 336.1910, R 336.2803, R 336.2804)
3. The permittee shall keep, in a satisfactory manner, records of all actions taken in response to visible emission observations for FG-MTRLHANDLING: collector inspections, collector maintenance, fugitive emissions control activities, and any other actions. At a minimum the records shall include the date and time of the visible emissions observation triggering such action; the results of the collector inspection, if applicable; the collector maintenance performed, if applicable; and the measures taken to reduce visible emissions from the fuel storage piles, if applicable. The permittee shall keep all records on file at the facility and make them available to the Department upon request. (R 336.1205(1), R 336.1910, R 336.2803, R 336.2804)

VII. REPORTING

NA

VIII. STACK/VENT RESTRICTIONS

NA

IX. OTHER REQUIREMENTS

NA

Footnotes:

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

The following conditions apply Source-Wide to: FGFACILITY

POLLUTION CONTROL EQUIPMENT: As described for specific emission units

I. EMISSION LIMITS

| Pollutant | Limit | Time Period / Operating Scenario | Equipment | Testing / Monitoring Method | Underlying Applicable Requirements |
|-----------------------|----------|----------------------------------|------------|-----------------------------|------------------------------------|
| 1. Any individual HAP | 9.8 tpy | 12-month rolling time period* | FGFACILITY | SC VI.1 | R 336.1205(1) |
| 2. Total HAPs | 24.5 tpy | 12-month rolling time period* | FGFACILITY | SC VI.1 | R 336.1205(1) |

* 12-month rolling time period as determined at the end of each calendar month.

II. MATERIAL LIMITS

NA

III. PROCESS/OPERATIONAL RESTRICTIONS

NA

IV. DESIGN/EQUIPMENT PARAMETERS

NA

V. TESTING/SAMPLING

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

NA

VI. MONITORING/RECORDKEEPING

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

1. The permittee shall keep, in a manner acceptable to the AQD District Supervisor, monthly and 12-month rolling time period emission calculation records for individual HAPs, and total HAPs for FGFACILITY. The HAP emission records shall be compiled on a monthly basis, and a rolling 12 month time period. The permittee shall utilize test data or use emission factors if there is not test data available. Test data and emission factors shall be related to a measurable parameter such as fuel usage, or heat released to the boiler. The records shall indicate the emission factor, and the measurable parameter for each emission factor as well as the quantity of the measureable parameters used. The permittee shall keep all records on file and make them available to the Department upon request. (R 336.1205(3))

VII. REPORTING

NA

VIII. STACK/VENT RESTRICTIONS

NA

IX. OTHER REQUIREMENTS

NA

Footnotes:

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

Appendix A
List of HAPs for EU-BOILER Testing

The initial stack testing required by EU-BOILER SC V.5 shall determine the individual and total emissions of the following hazardous air pollutants:

- Acenaphthylene
- Acetaldehyde
- Acrolein
- Benzene
- Bromomethane (Methyl bromide)
- Cadmium
- Carbon tetrachloride
- Chlorine
- Chlorobenzene
- Chloroform
- Chloromethane (Methyl chloride)
- 1,2-Dichloroethane (Ethylene dichloride)
- Dichloromethane
- 2,4-Dinitrophenol
- Ethylbenzene
- Formaldehyde
- Hydrogen chloride
- Naphthalene
- 4-Nitrophenol
- Phenol
- Propanal/propionaldehyde
- Styrene
- Tetrachloroethene
- Toluene
- 1,1,1-Trichloroethane
- Trichloroethene (Trichloroethylene)
- 2,4,6-Trichlorophenol
- Vinyl chloride
- o-Xylene

If repeat HAP testing is required, as specified in EU-BOILER SC V.5, the permittee may propose, in the test plan submitted prior to the repeat testing, to exclude from the repeat testing those HAPs that were determined to be emitted at a rate equivalent to or less than 0.1 tons per year during the initial stack testing. The permittee shall include all HAPs listed above in the repeat testing unless the AQD approves the permittee's request to excluded specific HAPs from the repeat testing.

APPENDIX B
Continuous Opacity Monitoring System (COMS) Requirements

1. Within 30 calendar days after initial startup of EU-BOILER, the permittee shall submit two copies of a Monitoring Plan to the AQD for review and approval. The Monitoring Plan shall include drawings or specifications showing proposed locations and descriptions of the required COMS.
2. Within 150 calendar days after initial startup of EU-BOILER, the permittee shall submit two copies of a complete test plan for the COMS to the AQD for approval.
3. Within 180 calendar days after initial startup of EU-BOILER, the permittee shall complete the installation and testing of the COMS.
4. Within 60 days of completion of testing, the permittee shall submit to the AQD two copies of the final report demonstrating the COMS complies with the requirements of Performance Specification (PS) 1.
5. The span value shall be 2.0 times the lowest emission standard or as specified in the federal regulations.
6. The COMS shall be installed, calibrated, maintained, and operated in accordance with the procedures set forth in 40 CFR 60.13 and PS 1 of Appendix B, 40 CFR Part 60.
7. Until such time as the US EPA promulgates quality assurance requirements for COMS under Appendix F to 40 CFR Part 60, the permittee shall perform an annual audit of the COMS using the procedures set forth in USEPA Publication 450/4-92-010, "Performance Audits Procedures for Opacity Monitors", or a procedure acceptable to AQD. The results of the annual audit shall be submitted to the AQD within the quarterly EER for the quarter in which the annual audit is conducted. Upon promulgation of COMS quality assurance requirements under Appendix F of Part 60, the permittee shall follow such procedures.
8. In accordance with 40 CFR 60.7(c) and (d), the permittee shall submit two copies of an excess emission report (EER) and summary report in an acceptable format to the Air Quality Division within 30 days following the end of each calendar quarter. The Summary Report shall follow the format of Figure 1 in 40 CFR 60.7(d). The EER shall include the following information:
 - a) A report of each exceedance above the limits specified in the conditions of this permit. This includes the date, time, magnitude, cause and corrective actions of all occurrences during the reporting period.
 - b) A report of all periods of COMS downtime and corrective action.
 - c) A report of the total operating time of EU-BOILER during the reporting period.
 - d) If no exceedances or COMS downtime occurred during the reporting period, the permittee shall report that fact.

The permittee shall keep all monitoring data on file for a period of at least five years and make them available to the AQD upon request.

APPENDIX C
NO_x, CO, SO₂, and Carbon Dioxide Monitoring
Continuous Emission Rate Monitoring System (CERMS) Requirements

1. Within 30 calendar days after initial startup of EU-BOILER, the permittee shall submit two copies of a Monitoring Plan to the AQD for review and approval. The Monitoring Plan shall include drawings or specifications showing proposed locations and descriptions of the required CERMS.
2. Within 150 calendar days after initial startup of EU-BOILER, the permittee shall submit two copies of a complete test plan for the CERMS to the AQD for approval.
3. Within 180 calendar days after initial startup of EU-BOILER, the permittee shall complete the installation and testing of the CERMS.
4. Within 60 days of completion of testing, the permittee shall submit to the AQD two copies of the final report demonstrating the CERMS complies with the requirements of the corresponding Performance Specifications (PS) in the following table.

| Pollutant | Applicable PS |
|-----------------|---------------|
| NO _x | 2 |
| CO | 4 |
| SO ₂ | 2 |
| Carbon Dioxide | 3 |
| CERMS | 6 |

5. The span value shall be 2.0 times the lowest emission standard or as specified in the federal regulations.
6. The CERMS shall be installed, calibrated, maintained, and operated in accordance with the procedures set forth in 40 CFR 60.13 and PS 2, 3, 4, and 6 of Appendix B to 40 CFR Part 60.
7. Each calendar quarter, the permittee shall perform the Quality Assurance Procedures of the CERMS set forth in Appendix F of 40 CFR Part 60. Within 30 days following the end of each calendar quarter, the permittee shall submit the results to the AQD in the format of the data assessment report (Figure 1, Appendix F).
8. In accordance with 40 CFR 60.7(c) and (d), the permittee shall submit two copies of an excess emission report (EER) and summary report in an acceptable format to the AQD within 30 days following the end of each calendar quarter. The Summary Report shall follow the format of Figure 1 in 40 CFR 60.7(d). The EER shall include the following information:
 - a) A report of each exceedance above the limits specified in the conditions of this permit. This includes the date, time, magnitude, cause and corrective actions of all occurrences during the reporting period.
 - b) A report of all periods of CERMS downtime and corrective action.
 - c) A report of the total operating time of EU-BOILER during the reporting period.
 - d) A report of any periods that the CERMS exceeds the instrument range.
 - e) If no exceedances or CERMS downtime occurred during the reporting period, the permittee shall report that fact.

The permittee shall keep all monitoring data on file for a period of at least five years and make them available to the AQD upon request.

**APPENDIX D
 Procedure for Calculating the Annual Capacity Factor for EUBOILER**

The capacity of EUBOILER is limited to 4,100,000 MMBTU/year, based upon a 12 month rolling time period. In order to show compliance with this limit, it is necessary to determine the amount of each fuel burned, and the heating value of each fuel burned. The fuels which may be combusted in EUBOILER are wood materials, tire derived fuel (TDF), and natural gas.

At the end of each calendar month, the amount of each fuel combusted is recorded and summed in the appropriate units. The total amount of each fuel combusted is multiplied by the respective heating value of each fuel. The heating value is expressed in British Thermal Units (BTU's) per unit of measure (e.g. BTU/lb or BTU/cubic foot). The annual capacity factor is expressed as a rolling 12-month period. The following example table indicates how the calculations may be performed:

| Fuel | Fuel Processed, weight (or volume)/month | Heating Value | Total Heat Release (Fuel processed X Heating value) |
|-------------------|--|-------------------|---|
| Natural Gas | MM Cubic Feet/month | BTU/MM Cubic Feet | MMBTU/month |
| TDF | lbs/month | BTU/lb | MMBTU/month |
| Wood | lbs/month | BTU/lb | MMBTU/month |
| Total MMBTU/month | | | MMBTU/month |

The heating value of the natural gas and TDF shall be determined on a monthly basis.

The heating value of the wood material shall be determined on a daily basis by taking a representative sample of the material from a representative portion of the storage pile and determine the caloric heating value.

For the first month of operation the following limits shall not be exceeded:

| Month | MMBTU/Month | Total MMBTU |
|-------|-------------|-------------|
| 1 | 341666.67 | 341666.7 |
| 2 | 341666.67 | 683333.37 |
| 3 | 341666.67 | 1025000.04 |
| 4 | 341666.67 | 1366666.71 |
| 5 | 341666.67 | 1708333.38 |
| 6 | 341666.67 | 2050000.05 |
| 7 | 341666.67 | 2391666.72 |
| 8 | 341666.67 | 2733333.39 |
| 9 | 341666.67 | 3075000.06 |
| 10 | 341666.67 | 3416666.73 |
| 11 | 341666.67 | 3758333.4 |
| 12 | 341666.67 | 4100000.07 |