

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

January 25, 2023

**PERMIT TO INSTALL
17-23**

**ISSUED TO
Billerud Escanaba, LLC**

**LOCATED AT
7100 County Road 426
Escanaba, Michigan 49829**

**IN THE COUNTY OF
Delta**

**STATE REGISTRATION NUMBER
A0884**

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: December 6, 2022	
DATE PERMIT TO INSTALL APPROVED: January 25, 2023	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
EURF15 - Chemical Recovery Furnace	7
EUST15 - Smelt Dissolving Tank	13
FLEXIBLE GROUP SPECIAL CONDITIONS.....	16
FLEXIBLE GROUP SUMMARY TABLE	16
FGLK29 - Lime Kiln System	17

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
EURF15	The Chemical Recovery Furnace is used to regenerate chemicals used in the Kraft pulping process. The #10 Recovery Furnace burns black liquor, natural gas, #6 fuel oil, and used oil. Also, the #10 Recovery Furnace receives and incinerates gases from enclosures and closed-vent systems and is used to incinerate High Volume Low Concentration (HVLC) non-condensable gases from the Digester System, Brownstock System, Evaporator System, and Chemical Recovery Furnace System. Emissions are controlled by an electrostatic precipitator. The air handling system has been modified.	1972 1994 2014 10-2017 7-14-2021	NA
EUST15	Smelt Dissolving Tank - Smelt from the recovery furnace is used to produce green liquor, a solution of sodium sulfide and sodium carbonate salts, when it is dissolved in water or weak wash in the Smelt Dissolving Tank. Emissions are controlled by a wet scrubber and mist eliminator.	1972	NA
EULK29	The Lime Kiln processes lime mud from Reausticizing System to regenerate calcium oxide. The Lime Kiln (EULK29) is fired with natural gas and/or fuel oil. Calcium oxide produced by the Lime Kiln is conveyed by bucket elevator to storage bins (EULK129). The Lime Kiln acts as a backup incineration device for the Thermal Oxidizer System. Emissions are controlled by a Venturi scrubber and mist eliminator.	1972 1989	FGLK29

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.

**EURF15 - Chemical Recovery Furnace
 EMISSION UNIT CONDITIONS**

DESCRIPTION

The Chemical Recovery Furnace is used to regenerate chemicals used in the Kraft pulping process. The #10 Recovery Furnace burns black liquor, natural gas, #6 fuel oil, and used oil. Also, the #10 Recovery Furnace receives and incinerates gases from enclosures and closed-vent systems and is used to incinerate High Volume Low Concentration (HVLC) non-condensable gases from the Digester System, Brownstock System, Evaporator System, and Chemical Recovery Furnace System. The air handling system has been modified.

Flexible Group ID: NA

POLLUTION CONTROL EQUIPMENT

Electrostatic precipitator on #10 Recovery Furnace to control particulate

I. EMISSION LIMIT(S)

Pollutant	Limit	Time Period/ Operating Scenario	Equipment	Monitoring/ Testing Method	Underlying Applicable Requirements
1. Arsenic	0.004 mg/m ³ corrected to 70°F and 29.92 inches Hg ¹	Continuous	EURF15 while burning used oil and/or blend fuel oil	SC V.3	R 336.225, R 336.1901
2. Cadmium	0.038 mg/m ³ corrected to 70°F and 29.92 inches Hg ¹	Continuous	EURF15 while burning used oil and/or blend fuel oil	SC V.3	R 336.225, R 336.1901
3. Carbon Monoxide (CO)	2000 ppm by volume, based upon a one-hour average	Hourly	EURF15	SC V.1	R 336.1201, R 336.2804
4. CO	1424 pph, based upon a one-hour average	Hourly	EURF15	SC V.1	R 336.1201, R 336.2804
5. CO	800 ppm by volume, based on a 4-hour average	4-Hour Average	EURF15	SC V.1	R 336.1201, R 336.2804
6. CO	570 pph, based on a 4-hour average	4-Hour Average	EURF15	SC V.1	R 336.1201, R 336.2804
7. Chromium	0.016 mg/m ³ corrected to 70°F and 29.92 inches Hg ¹	Continuous	EURF15 while burning used oil and/or blend fuel oil	SC V.3	R 336.225, R 336.1901

Pollutant	Limit	Time Period/ Operating Scenario	Equipment	Monitoring/ Testing Method	Underlying Applicable Requirements
8. HAP Metals measured as PM	0.044 gr/dscf, corrected to 8% oxygen**	Hourly	EURF15	SC V.4	40 CFR 63.861, 40 CFR 63.862 (a)(1)(i)(A), 40 CFR 63.865(b), 40 CFR 63.862 (a)(1)(ii), 40 CFR 63.865(a), 40 CFR 63.865(b)
9. NOx	400 ppm by volume	Hourly	EURF15	SC V.1	R 336.1201, R 336.2803, R 336.2804
10. NOx	468 pph	Hourly	EURF15	SC V.1	R 336.1201, R 336.2803, R 336.2804
11. PM	0.033 gr/dscf corrected to 8% oxygen***	Hourly	EURF15	SC V.1	R 336.1201, R 336.1331
12. PM	60.5 pph**	Hourly	EURF15	SC V.1	R 336.1201, R 336.1331
13. Polychlorinated Biphenyls	0.014 mg/m ³ corrected to 70°F and 29.92 inches Hg ¹	Continuous	EURF15 while burning used oil and/or blend fuel oil	SC V.3	R 336.225, R 336.1901
14. SO ₂	250 ppm by volume	Hourly	EURF15	SC V.2	R 336.1201, R 336.2803, R 336.2804
15. SO ₂	407 pph	Hourly	EURF15	SC V.2	R 336.1201, R 336.2803, R 336.2804
16. Total Reduced Sulfur	5 ppm corrected to 8% oxygen on a 12-hour average	12-Hour Average	EURF15	SC VI.2	R 336.1201, R 336.1225, 40 CFR 60.283
17. Total Reduced Sulfur	5.6 pph corrected to 8% oxygen on a 12-hour average	12-Hour Average	EURF15	SC VI.2	R 336.1201
18. Visible Emissions	20%, except for one 6-minute average per hour of not more than 27%.	6-Minute Average	EURF15	SC VI.3	R 336.1301(1)

Pollutant	Limit	Time Period/ Operating Scenario	Equipment	Monitoring/ Testing Method	Underlying Applicable Requirements
<p>** The permittee shall comply with the emission limits specified in one of the following options as provided in 40 CFR Part 63, Subpart MM:</p> <ul style="list-style-type: none"> a. The Particulate Matter (PM) concentration in the EURF15 exhaust gases shall not exceed 0.044 gr/dscf, corrected to 8% oxygen. <p>OR</p> <ul style="list-style-type: none"> b. Alternative PM emission limits established for each existing recovery furnace, smelt dissolving tank, and lime kiln that operates 6,300 hours per year or more as provided under 40 CFR 63.862(a)(1)(ii), subject to the limitations specified. <p>*** The permittee may petition the Department for an alternate particulate limit up to, but not exceeding, 0.044 gr/dscf of exhaust gases corrected to 8% oxygen. Such alternate particulate emission limit shall not be established by the Department unless the Department is reasonably convinced of all the following:</p> <ul style="list-style-type: none"> a. All reasonable measures to reduce particulate emissions have been implemented or will be implemented in accordance with a schedule approved by the Department. b. Compliance with the original particulate emission limit is either technically or economically unreasonable. c. The requested alternate particulate limit is the limit that reflects the level of emission that can be reasonable achieved on a consistent basis. 					

II. MATERIAL LIMIT(S)

Material	Limit	Time Period/ Operating Scenario	Equipment	Monitoring/ Testing Method	Underlying Applicable Requirements
1. Used Oil	The concentration of the following materials in the used oil shall not exceed the limits specified below: ¹ a. Arsenic: 4 ppmw b. Cadmium: 2 ppmw c. Chromium: 10 ppmw d. Lead: 25 ppmw e. Total Halogens: 300 ppmw f. Polychlorinated Biphenyls: 3 ppmw	Annual Test	EURF15	SC VI.9	R 336.1225, R 336.1901
2. Used Oil	The minimum flash point temperature of the used oil burned in the EURF15 shall be greater than 100°F. ¹	Annual Test	EURF15	SC VI.9	R 336.1225, R 336.1901
3. Used Oil	Not to exceed 15% of the total feed rate of the fuel oil blend ¹	As defined in Testing/Sampling	EURF15	SC VI.8	R 336.1225, R 336.1901

III. PROCESS/OPERATIONAL RESTRICTION(S)

1. The EURF15 operating load shall be reduced to 77,600 pounds of Black Liquor Solids (BLS) per hour if any two electric fields of the electrostatic precipitator are placed out of service. Return to operation exceeding 77,600 pounds of solids per hour shall not commence unless the two fields are returned to service. (R 336.1201, R 336.1331, R 336.1910, R 336.2803, R 336.2804)

2. The EURF15 operating load shall be reduced to 77,600 pounds of BLS per hour if any one of the two chambers of the electrostatic precipitator are down for maintenance, during which all other ESP fields are operating in the active chamber. Return to operation exceeding 77,600 pounds of solids per hour shall not commence unless the other chamber of the electrostatic precipitator is returned to service. **(R 336.1201, R 336.1331, R 336.1910, R 336.2803, R 336.2804)**

IV. DESIGN/EQUIPMENT PARAMETER(S)

NA

V. TESTING/SAMPLING

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

1. Within 180 days after commencement of the modification to the air system unit, the permittee shall verify carbon monoxide, nitrogen oxides, and particulate emission rates from EURF15 by testing at owner's expense, in accordance with Department requirements. Once every five-year period thereafter, the permittee shall verify the emission rates from the EURF15 by testing, to determine compliance with the emission limits specified in Section I. The permittee shall submit a complete test protocol to the AQD for approval at least 30 days prior to the anticipated test date. The permittee shall notify the AQD no less than 7 days prior to the anticipated test date. The permittee shall submit two complete test reports of the test results to the AQD, one to the Technical Program Unit and one to the district office, within 60 days following the last date of the test. **(R 336.1205, R 336.1299, R 336.2001, R 336.2003, R 336.2004, R 336.2803, R 336.2804, 40 CFR 60.285(d))**
2. The permittee shall verify sulfur dioxide (SO₂) rates from EURF15 by testing at owner's expense, in accordance with Department requirements. Testing shall be performed using an approved EPA 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 and must meet the requirements of the federal Clean Air Act, all applicable state and federal rules and regulations, and be within the authority of the AQD to make the change. The permittee shall submit a complete test protocol to the AQD for approval at least 30 days prior to the anticipated test date. The permittee shall notify the AQD no less than 7 days prior to the anticipated test date. The permittee shall submit two complete test reports of the test results to the AQD, one to the Technical Program Unit and one to the district office, within 60 days following the last date of the test. **(R 336.2001, R 336.2003, R 336.2004)**
3. If the permittee burns used oil and/or blend fuel oil during sustained operation of the EURF15, the permittee shall verify arsenic, cadmium, chromium, and polychlorinated biphenyls emissions from the EURF15 by testing at owner's expense, in accordance with Department requirements. Once within five years of permit issuance, and once every five-year period thereafter, or if the permittee subsequently burns used oil and/or blend fuel oil, the permittee shall verify the rates from the EURF15, by testing, to determine compliance with the emission limit specified in SC I. The permittee shall submit a complete test protocol to the AQD for approval at least 30 days prior to the anticipated test date. The permittee shall notify the AQD no less than 7 days prior to the anticipated test date. The permittee shall submit two complete test reports of the test results to the AQD, one to the Technical Program Unit and one to the district office, within 60 days following the last date of the test. **(R 336.1224, R 336.1225, R 336.1299, R 336.2001, R 336.2003, R 336.2004)**
4. The permittee shall conduct performance tests for Particulate Matter per the applicable performance test requirements and test methods specified in 40 CFR Part 63, Subpart A and MM. **(40 CFR 63.865)**
5. Performance tests shall be conducted according to procedures and test methods specified or approved by the AQD. Not less than 30 days prior to testing, a testing plan shall be submitted to the AQD for review. **(R 336.2001, R 336.2003)**
6. The permittee shall verify the CO, NO_x, SO₂, and PM emission rates from EURF15, at a minimum, every five years from the date of the last test. **(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 complete all required calculations in a format acceptable to the AQD District Supervisor and make them available by the 30th day of the calendar month, for the previous calendar month, unless otherwise specified in any monitoring/recordkeeping special condition. **(R 336.1205, R 336.1301, R 336.1331, R 336.1901, R 336.1910, R 336.2803, R 336.2804)**
2. The permittee shall monitor and record the oxygen content, opacity, and total reduced sulfur of the exhaust gases from EURF15 on a continuous basis in a manner and with instrumentation acceptable to the AQD. The TRS monitoring shall utilize the quality assurance/quality control activities of 40 CFR Part 60, Appendix F, Procedure 1 as a guideline. Daily calibrations shall be conducted in accordance with 40 CFR Part 60, Appendix F, Procedure 1 Section 4. A cylinder gas audit shall be conducted once each calendar quarter in accordance with 40 CFR Part 60, Appendix F, Procedure 1 Section 5.1.2 in lieu of performing a relative accuracy test audit. **(R 336.1201, 40 CFR 60.284)**
3. The permittee shall install, calibrate, maintain, and operate a COMS according to the provisions in 40 CFR 63.6(h) and 63.8. **(40 CFR 63.864(d))**
4. The permittee shall monitor and record the black liquor feed rate to EURF15 on a continuous basis in a manner and with instrumentation acceptable to the AQD. **(R 336.1201, R 336.1331)**
5. The permittee shall monitor the electric current and/or voltage supplied to the twelve fields of the electrostatic precipitator on a continuous basis and in a manner and with instrumentation acceptable to the AQD. **(R 336.1201, R 336.1910)**
6. The permittee shall monitor and record all occurrences when two fields of the electrostatic precipitator are taken out of service as specified under Operational Parameters below, the duration of each occurrence, and the black liquor solids firing rate during each occurrence. **(R 336.1910)**
7. The permittee shall keep a log of #6 fuel oil deliveries including date of delivery, quantity of #6 fuel oil received, and an analysis of the #6 fuel oil.¹ **(R 336.1225, R 336.1901)**
8. The permittee shall keep a record of the percentage of used oil in the fuel oil blend burned in the Recovery Furnace to determine compliance with the 15 percent limitation specified under Material Limits above.¹ **(R 336.1225, R 336.1901)**
9. An annual analysis of the used oil prior to transferring the used oil to the one million gallon #6 fuel oil storage tank shall be conducted to determine compliance with the material limits specified under Material Limits above.¹ **(R 336.1225, R 336.1901)**
10. Within 30 days after written notification by the AQD, the permittee shall submit an analysis of the used oil and blend fuel oil fired in EURF15.¹ **(R 336.1901)**
11. The permittee shall implement corrective action when the average of ten consecutive 6-minute averages result in a measurement greater than 20 percent opacity. **(40 CFR 63.864(k)(1)(i))**
12. The source will be considered in violation of the standards of 40 CFR 63.862 if opacity is greater than 35% for 2% or more of the operating time in any semiannual period as specified in and 40 CFR 63.864(k)(2). **(40 CFR 63.864(k)(2)(i))**
13. As specified in 40 CFR 63.8(c)(4)(i), each COMS must complete a minimum of one cycle of sampling and analyzing for each successive 10-second period and one cycle of data recording for each successive 6-minute period. **(40 CFR 63.864(d)(3))**
14. The COMS data must be reduced as specified in 40 CFR 63.8(g)(2). **(40 CFR 63.864(d)(4))**

VII. REPORTING

1. The permittee shall submit any performance test reports to the AQD Technical Programs Unit and District Office, in a format approved by the AQD. **(R 336.2001(5))**
2. Quarterly reporting of TRS continuous monitoring system performance and excess TRS emissions from the EURF15 as specified in Notification and Record Keeping, 40 CFR Part 60, Subpart A. **(40 CFR 60.7(c))**
3. Semiannual reporting of excess emissions of opacity from the EURF15 as specified in 40 CFR Part 60, Subpart BB. Due March 15 for reporting period July 1 to December 31 and September 15 for reporting period January 1 to June 30. **(40 CFR 60.284(d)(1))**
4. The permittee shall submit the applicable notifications and reports specified in 40 CFR 63.9 and 40 CFR 63.10. The permittee shall submit a quarterly excess emissions report if measured parameters meet any of the Conditions specified in 40 CFR 63.864(k)(1). When no exceedances of parameters have occurred, permittee shall submit a semiannual report stating that no excess emissions occurred during the reporting period. **(40 CFR 63.867)**
5. The permittee shall submit two complete test protocols to the AQD, one to the Technical Programs Unit Supervisor and one to the District Supervisor for approval at least 30 days prior to the anticipated test. The protocol shall describe the test method(s) and the maximum routine operating conditions, including targets for key operational parameters associated with air pollution control equipment to be monitored and recorded during testing. **(R 336.2001(3))**
6. The permittee shall notify the AQD Technical Programs Unit Supervisor and the District Supervisor no less than 7 days prior to the anticipated test date. **(R 336.2001(4))**
7. The permittee shall submit two complete test reports to the AQD, one to the Technical Programs Unit Supervisor and one to the District Supervisor, within 60 days following the last date of the test. **(R 336.2001(5))**

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. SV51001S	156	284	R 336.1225, R 336.2803, R 336.2804, 40 CFR 52.21 (c) and (d)

IX. OTHER REQUIREMENT(S)

1. The air cleaning devices shall be maintained and operated in a satisfactory manner and in accordance with the Michigan Air Pollution Control Rules and existing law. The permittee shall carry out an Inspection and Maintenance Program, including keeping of records of inspections done, problems found, repairs done, and/or corrective action taken. **(R 336.1301, R 336.1331, R 336.1910)**
2. The permittee shall comply with the applicable requirements of 40 CFR Part 63, Subpart A – General Provisions which are identified in 40 CFR Part 63, Table 1 to Subpart MM – General Provisions Applicability to Subpart MM. **(40 CFR 63.860(c))**

Footnotes:

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

**EUST15 - Smelt Dissolving Tank
 EMISSION UNIT CONDITIONS**

DESCRIPTION

The Smelt Dissolving Tank (EUST15) is used to regenerate chemicals used in the kraft process. The Smelt Dissolving Tank receives smelt from the # 10 Recovery Furnace, which it mixes with weak wash to generate green liquor that is transported to the Reausticizing System.

Flexible Group ID: NA

POLLUTION CONTROL EQUIPMENT

Wet scrubber and mist eliminator on EUST15.

I. EMISSION LIMIT(S)

Pollutant	Limit	Time Period/ Operating Scenario	Equipment	Monitoring/ Testing Method	Underlying Applicable Requirements
1. HAP Metals measured as PM*	0.20 lb per ton of black liquor solids fired	Hourly	EUST15	SC V.1	40 CFR 63.862(a)(i)(B), 40 CFR 63.865(b)
2. PM	0.15 lb/1000 lbs of exhaust gases calculated on a dry gas basis	Hourly	EUST15	SC V.1 SC V.2	R 336.1201, R 336.1331, 40 CFR 52.21(c) & (d)
3. Total Reduced Sulfur (TRS), based on H ₂ S	0.0084 gr/kg of black liquor solids	Hourly	EUST15	SC V.1 SC V.2	R 336.1201, 40 CFR 52.21(c) & (d)

* Alternate Particulate Matter (PM) emission limits may be established for each existing recovery furnace, smelt dissolving tank, and lime kiln that operates 6,300 hours per year or more as provided under 40 CFR 63.862(a)(1)(ii), subject to limitations specified. **(40 CFR 63.862(a)(1)(ii), 40 CFR 63.865(a), 40 CFR 63.865(b))**

II. MATERIAL LIMIT(S)

NA

III. PROCESS/OPERATIONAL RESTRICTION(S)

NA

IV. DESIGN/EQUIPMENT PARAMETER(S)

NA

V. TESTING/SAMPLING

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

- The permittee shall verify particulate matter and Total Reduced Sulfur emission rates from EUST15 by testing at owner's expense, in accordance with the Department requirements. The hourly emission rate shall be determined by the average of three test runs per the method requirements. Testing shall be performed using an approved USEPA Method listed in:

Pollutant	Test Method Reference
PM	40 CFR Part 60, Appendix A; Part 10 of the Michigan Air Pollution Control Rules
Total Reduced Sulfur	40 CFR Part 60, Appendix A

An alternate method, or a modification to the approved USEPA 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)**

2. The permittee shall verify the PM and TRS emission rates from EUST15, at a minimum, every five years from the date of the last test. **(R 336.2001, R 336.2003, R 336.2004)**
3. 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)**
4. Permittee shall conduct performance tests for particulate matter per the applicable performance test requirements and test methods specified in 40 CFR Part 63, Subpart A and MM. **(40 CFR 63.7, 40 CFR 63.865)**

VI. MONITORING/RECORDKEEPING

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

1. The permittee shall install, calibrate, maintain and operate a continuous monitoring system to measure fan run status and the scrubbing liquid flow rate at least once every successive 15-minute period using the procedures in 40 CFR 63.8. **(40 CFR 63.864(e)(10), 40 CFR 60.13(a), 40 CFR 63.8(b)(1))**
2. The minimum scrubber liquid flow rate established during the most recent performance test approved by the Administrator shall be used as an indicator of proper operation of the scrubber. **(40 CFR 63.864(i))**
3. The permittee shall maintain operating parameters within the range established according to 40 CFR 63.864(i). The source will be considered in violation of the standards in 40 CFR 63.862 if six or more 3-hour average parameter values within any semi-annual reporting period are outside the established operating range, at all times except during periods of startup and shutdown. No more than one exceedance will be attributed to any 24-hour period. **(40 CFR 63.864(k)(2)(iii), 40 CFR 63.864(k)(3))**
4. The permittee shall implement corrective action when any 3-hour average parameter value is outside the range of values established as provided in 40 CFR 63.864(l). **(40 CFR 63.864(k)(1)(ii))**
5. The permittee shall maintain the records specified in 40 CFR 63.866(b) and (c) in addition to the record keeping requirements of 40 CFR 63.10(b)(2). **(40 CFR 63.866(b)-(c))**
6. The monitoring device used for continuous measurement of the scrubbing liquid flow rate must be certified by the manufacturer to be accurate within ± 5 percent of the design scrubbing liquid flow rate. **(40 CFR 63.864(e)(10)(ii))**

VII. REPORTING

1. The permittee shall submit any performance test reports to the AQD Technical Programs Unit and District Office, in a format approved by the AQD. **(R 336.2001(5))**
2. The permittee shall submit the applicable notifications and reports specified in 40 CFR 63.9 and 40 CFR 63.10. The permittee shall submit a quarterly excess emissions report if measured parameters meet any of the conditions specified in 40 CFR 63.864(k)(2). When no exceedances of parameters have occurred,

permittee shall submit a semiannual report stating that no excess emissions occurred during the reporting period. **(40 CFR 63.867)**

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. SV15007S	48	288	R 336.1901, 40 CFR 52.21(c) & (d)

IX. OTHER REQUIREMENT(S)

1. The air cleaning devices shall be maintained and operated in a satisfactory manner and in accordance with the Michigan Air Pollution Control Rules and existing law. The permittee shall carry out an Inspection and Maintenance Program, including keeping of records of inspections done, problems found, repairs done, and/or corrective action taken. **(R 336.1301, R 336.1910)**
2. The permittee shall comply with the applicable requirements of 40 CFR Part 63, Subpart A – General Provisions which are identified in 40 CFR Part 63, Table 1 to Subpart MM – General Provisions Applicability to Subpart MM. **(40 CFR 63.860(c))**

Footnotes:

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

FLEXIBLE GROUP SPECIAL CONDITIONS

FLEXIBLE GROUP SUMMARY TABLE

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

Flexible Group ID	Flexible Group Description	Associated Emission Unit IDs
FGLK29	The Lime Kiln System (FGLK29) includes the Lime Kiln (EULK29) and two Lime Storage Bins (EULKI29), one for hot lime storage, one for purchased lime storage. The Lime Kiln is fired with natural gas and/or fuel oil. Also, the Lime Kiln is a backup incineration device for the Thermal Oxidizer System. Controls include a venturi scrubber and mist eliminator on the Lime Kiln and common baghouse dust collector on the Lime Storage Bins.	EULK29 EULKI29

**FGLK29 - Lime Kiln System
 FLEXIBLE GROUP CONDITIONS**

DESCRIPTION

The Lime Kiln System (FGLK29) includes the Lime Kiln (EULK29) and two Lime Storage Bins (EULKI29), one for hot lime storage, one for purchased lime storage. The Lime Kiln System processes lime mud from the Reausticizing System to regenerate calcium oxide. Evaporator condensate is used for lime mud washing. Filtrate from lime mud washing, known as weak wash, is used in the Bleaching System and the Chemical Recovery Furnace System as an air scrubbing medium. Lime mud is mixed, washed, and fed to the Lime Kiln where it is converted to calcium oxide. Calcium oxide is conveyed by bucket elevator to the lime storage bin. From the storage bins, calcium oxide is utilized in the Reausticizing Process. The Lime Kiln is fired with natural gas and/or fuel oil. The Lime Kiln acts as a backup incineration device for the Thermal Oxidizer System.

Emission Units: EULK29 and EULKI29

POLLUTION CONTROL EQUIPMENT

Venturi scrubber and mist eliminator on EULK29. A common baghouse dust collector serves EULKI29.

I. EMISSION LIMIT(S)

Pollutant	Limit	Time Period/ Operating Scenario	Equipment	Monitoring/ Testing Method	Underlying Applicable Requirements
1. HAP Metals measured as PM*	0.064 gr/dscf corrected to 10% oxygen on a 3-hour average	3-Hour Average	EULK29	SC V.1	40 CFR 63.861, 40 CFR 63.6(f), 40 CFR 63.862(a)(1)(i)(c), 40 CFR 63.862(a)(1)(ii)
2. PM	0.20 lb / 1000 lbs of exhaust gases measured at operating conditions	Hourly	EULK29	SC V.1	R 336.1201, R 336.1331
3. PM	0.10 lb / 1000 lbs of exhaust gas measured at operating conditions	Hourly	EULKI29	SC V.1	R 336.1331
4. SO ₂	9 pph	Hourly	EULK29	SC V.2	R 336.1201
5. Total Reduced Sulfur	20 ppmv corrected to 10% oxygen on a 12-hour average	12-Hour Average	EULK29	SC VI.1	R 336.1201

* Either of the following are acceptable:

- a. 0.064 gr/dscf corrected to 10% oxygen on a 3-hour average at all times as specified in 40 CFR 63.864(k)(2)

OR

- b. Alternate Particulate Matter (PM) emission limits may be established for each existing recovery furnace, smelt dissolving tank, and lime kiln that operates 6,300 hours per year or more as provided under 40 CFR 63.862(a)(1)(ii), subject to limitations specified. **(40 CFR 63.862(a)(1)(ii), 40 CFR 63.865(a), 40 CFR 63.865(b))**

II. MATERIAL LIMIT(S)

NA

III. PROCESS/OPERATIONAL RESTRICTION(S)

1. The permittee shall not operate EULK29 unless the venturi scrubber and mist eliminator are operating properly. **(R 336.1201, R 336.1910)**

IV. DESIGN/EQUIPMENT PARAMETER(S)

NA

V. TESTING/SAMPLING

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

1. The permittee shall verify Particulate Matter (PM) emission rates from FGLK29 by testing at the owner's expense, in accordance with the Department requirements. Testing shall be performed using an approved USEPA Method listed in 40 CFR Part 63, Subpart A and MM. An alternate method, or a modification to the approved USEPA 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)**
2. The permittee shall verify sulfur dioxide (SO₂) rates from FGLK29 by testing at owner's expense, in accordance with Department requirements. Testing shall be performed using an approved EPA 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 and must meet the requirements of the federal Clean Air Act, all applicable state and federal rules and regulations, and be within the authority of the AQD to make the change. The permittee shall submit a complete test protocol to the AQD for approval at least 30 days prior to the anticipated test date. The permittee shall notify the AQD no less than 7 days prior to the anticipate test date. The permittee shall submit two complete test reports of the test results to the AQD, one to the Technical Program Unit and one to the 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 FGLK29 emission rates from FGLK29, 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 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(3))**

1. The permittee shall monitor and record the total reduced sulfur concentration from EULK29 exhaust gases on a continuous basis in a manner and with instrumentation acceptable to the AQD. Although the source is not subject to the NSPS (40 CFR Part 60, Subpart BB), the monitoring shall utilize the quality assurance/quality control activities of 40 CFR Part 60, Appendix F, Procedure 1 as a guideline. Daily calibrations shall be conducted in accordance with 40 CFR Part 60, Appendix F, Procedure 1, Section 4. A Cylinder gas audit shall be conducted once each calendar quarter in accordance with 40 CFR Part 60, Appendix F, Procedure 1 Section 5.1.2 in lieu of performing a relative accuracy test audit.¹ **(R 336.1901)**

2. The permittee shall install, calibrate, maintain and operate a continuous monitoring system to measure the pressure drop across the scrubber and the scrubbing liquid flow rate at least once every successive 15-minute period using the procedures in 40 CFR 63.8. **(40 CFR 63.864(e)(10))**
3. The permittee shall maintain operating parameters within the range established according to 40 CFR 63.864(j). The source will be considered in violation of the standards in 40 CFR 63.862 if six or more 3-hour average parameter values within any semi-annual reporting period are outside the established operating range, at all times. No more than one exceedance will be attributed to any 24-hour period. **(40 CFR 63.864(k)(2)(iii), 40 CFR 63.864(k)(3))**
4. The permittee shall implement corrective action when any 3 hour average parameter value is outside the range of values established as provided in 40 CFR 63.864(l). **(40 CFR 63.864(k)(1)(ii))**
5. The permittee shall maintain the records specified in 40 CFR 63.866(b)(c) in addition to the record keeping requirements of 40 CFR 63.10(b)(2). **(40 CFR 63.866(b)-(c))**
6. The permittee shall establish scrubber differential pressure and flow operating ranges as specified in 40 CFR 63.864(j) and 40 CFR 63.865. The operating ranges are the ranges determined during the last performance test approved by the Administrator. **(40 CFR 63.864(j))**
7. The monitoring device used for the continuous measurement of the pressure drop of the gas stream across the scrubber must be certified by the manufacturer to be accurate to within a gage pressure of ± 500 pascals (± 2 inches of water gage pressure). **(40 CFR 63.864(e)(10)(i))**
8. The permittee shall continuously measure pressure drop and record for a daily average as an indicator of proper operation of the EULK129 baghouse. The indicator range is a minimum of 0.25 inches of water column (0.25 "WC) based on a daily average or a range determined during the most recent performance test which showed compliance with the emission limits and approved by the AQD. **(R 336.1201(3))**
9. The pressure gauge shall continuously monitor the differential pressure across the baghouse. The averaging period is daily. The gauge shall be calibrated annually or according to manufacturer's specifications and/or good engineering practice whichever is more frequent. **(R 336.1201(3))**
10. The monitoring device used for continuous measurement of the scrubbing liquid flow rate must be certified by the manufacturer to be accurate within ± 5 percent of the design scrubbing liquid flow rate. **(40 CFR 63.864(e)(10)(ii))**

VII. REPORTING

1. The permittee shall submit the applicable notifications and reports specified in 40 CFR 63.9 and 40 CFR 63.10. The permittee shall submit a quarterly excess emissions report if measured parameters meet any of the conditions specified in 40 CFR 63.864(k)(1) or (2). When no exceedances of parameters have occurred, permittee shall submit a semiannual report stating that no excess emissions occurred during the reporting period. **(40 CFR 63.867)**

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. SV29037S	56	147.6	R 336.1901, 40 CFR 63.861, 40 CFR 63.862

IX. OTHER REQUIREMENT(S)

1. The air cleaning devices shall be maintained and operated in a satisfactory manner and in accordance with the Michigan Air Pollution Control Rules and existing law. The permittee shall carry out an Inspection and Maintenance Program, including keeping of records of inspections done, problems found, repairs done, and/or corrective action taken. **(R 336.1301, R 336.1331, R 336.1910)**
- 2.. The permittee shall comply with the applicable requirements of 40 CFR Part 63, Subpart A – General Provisions which are identified in 40 CFR Part 63, Table 1 to Subpart MM – General Provisions Applicability to Subpart MM. **(40 CFR 63.860(c))**

Footnotes:

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