

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

November 26, 2019

**PERMIT TO INSTALL**  
338-06D

**ISSUED TO**  
Cargill Salt

**LOCATED AT**  
1395 135<sup>th</sup> Avenue  
Hersey, Michigan

**IN THE COUNTY OF**  
Osceola

**STATE REGISTRATION NUMBER**  
N2954

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: <b>November 21, 2019</b>	
DATE PERMIT TO INSTALL APPROVED: <b>November 26, 2019</b>	SIGNATURE:
DATE PERMIT VOIDED:	SIGNATURE:
DATE PERMIT REVOKED:	SIGNATURE:

## PERMIT TO INSTALL

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## COMMON ACRONYMS

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

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

### POLLUTANT / MEASUREMENT ABBREVIATIONS

acfm	Actual cubic feet per minute
BTU	British Thermal Unit
°C	Degrees Celsius
CO	Carbon Monoxide
CO <sub>2</sub> 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 <sub>2</sub> S	Hydrogen Sulfide
kW	Kilowatt
lb	Pound
m	Meter
mg	Milligram
mm	Millimeter
MM	Million
MW	Megawatts
NMOC	Non-Methane Organic Compounds
NO <sub>x</sub>	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 <sub>2</sub>	Sulfur Dioxide
TAC	Toxic Air Contaminant
Temp	Temperature
THC	Total Hydrocarbons
tpy	Tons per year
µg	Microgram
µm	Micrometer or Micron
VOC	Volatile Organic Compounds
yr	Year

## GENERAL CONDITIONS

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

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

**EMISSION UNIT SPECIAL CONDITIONS**

**EMISSION UNIT SUMMARY TABLE**

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

<b>Emission Unit ID</b>	<b>Emission Unit Description (Including Process Equipment &amp; Control Device(s))</b>	<b>Installation Date / Modification Date</b>	<b>Flexible Group ID</b>
EUNACLREFINERY	Sodium Chloride Refinery – Consists of product drying, cooling and compaction areas. Product drying includes product drying, crushing and handling equipment. It is controlled by the salt drying scrubber. Product cooling includes product cooling, screening and handling equipment and is controlled by a cyclone separator and the salt cooling scrubber. Product compaction includes; product handling, compaction, crushing, screening, bagging, and storage equipment and is controlled by a cyclone separator and salt compaction scrubber.	6/11/1997 6/27/2000	NA
EUTURBINE	70.6 MMBTU/hr natural gas-fired turbine used to power the evaporator compressor.	6/27/2000	NA
EUHRSG	67.0 MMBTU/hr heat recovery steam generator system	6/27/2000	NA

Changes to the equipment described in this table are subject to the requirements of R 336.1201, except as allowed by R 336.1278 to R 336.1291.

**EUNACLREFINERY  
EMISSION UNIT CONDITIONS**

**DESCRIPTION**

Sodium Chloride Refinery – Consists of product drying, cooling and compaction areas. Product drying includes product drying, crushing and handling equipment. It is controlled by the salt drying scrubber. Product cooling includes product cooling, screening and handling equipment and is controlled by a cyclone separator and the salt cooling scrubber. Product compaction includes; product handling, compaction, crushing, screening, bagging, and storage equipment and is controlled by a cyclone separator and salt compaction scrubber.

**Flexible Group ID:** NA

**POLLUTION CONTROL EQUIPMENT**

Two cyclone separators and three wet scrubbers (salt dryer scrubber, salt cooler scrubber, and salt compaction scrubber)

**I. EMISSION LIMIT(S)**

<b>Pollutant</b>	<b>Limit</b>	<b>Time Period/ Operating Scenario</b>	<b>Equipment</b>	<b>Monitoring/ Testing Method</b>	<b>Underlying Applicable Requirements</b>
1. Nitrogen oxides (NO <sub>x</sub> )	0.100 pounds per million BTU heat input	Test Protocol*	Salt dryer	SC V.2	40 CFR 52.21(c) and (d)
2. NO <sub>x</sub>	2.8 pounds per hour	Test Protocol*	Salt dryer	SCV.2	R 336.1205(3), 40 CFR 52.21(c) and (d)
3. Particulate matter	0.04 pounds per 1,000 pounds of exhaust gases, calculated on a dry gas basis <sup>a</sup>	Test Protocol*	Salt drying, crushing, handling, cooling and sizing equipment controlled by the salt dryer scrubber and salt cooler scrubber	SCV.3, VI.4	R 336.1331(1)(c), 40 CFR 60.672(a)(1) and Table 2
4. Particulate matter	8.5 pounds per hour	Test Protocol*	Salt drying, crushing, handling, cooling and sizing equipment controlled by the salt dryer scrubber and salt cooler scrubber	SCV.3, VI.4	R 336.1205(3), R 336.1331(1)(c)
5. Particulate matter	0.03 pounds per 1,000 pounds of exhaust gases, calculated on a dry gas basis <sup>a</sup>	Test Protocol*	Salt handling, compacting, crushing, screening, bagging, pressing, storage and loading equipment and product cooler controlled by the salt compaction scrubber	SCV.3, VI.4	R 336.1331(1)(c), 40 CFR 60.672(a)(1) and Table 2



Pollutant	Limit	Time Period/ Operating Scenario	Equipment	Monitoring/ Testing Method	Underlying Applicable Requirements
6. Particulate matter	5.8 pounds per hour	Test Protocol*	Salt handling, compacting, crushing, screening, bagging, pressing, storage and loading equipment and product cooler controlled by the salt compaction scrubber	SCV.3, VI.4	R 336.1205(3), R 336.1331(1)(c)
7. Fugitive visible emissions	None	NA	Evaporator building and salt compaction building	SCV.1	40 CFR 60.672(e)(1) and (2)
8. CO	2.36 pounds per hour	Hourly	EUNACLREFINERY	SC V.4	R 336.1205(3)
9. NO <sub>x</sub>	12.57 tpy	12-month rolling time period as determined at the end of each calendar month.	EUNACLREFINERY	SC VI.6, VI.7	R 336.1205(3)
10. CO	10.35 tpy	12-month rolling time period as determined at the end of each calendar month.	EUNACLREFINERY	SC VI.6, VI.7	R 336.1205(3)

\* Test protocol shall specify averaging time.

<sup>a</sup> Compliance with this particulate matter limit shall be considered compliance with the particulate matter limit established by **R 336.1331(1)(c)** and also compliance with the particulate matter limit in **40 CFR 60.672(a)(1) and Table 2**.

## II. MATERIAL LIMIT(S)

Material	Limit	Time Period/ Operating Scenario	Equipment	Monitoring/ Testing Method	Underlying Applicable Requirements
1. Natural gas	0.01 percent, by weight, of total sulfur	NA	Salt dryer	SC VI.5	R 336.1205(3)

2. The permittee shall not burn more than 246.5 MMSCF per year of natural gas in EUNACLREFINERY based on 12-month rolling time period as determined at the end of each calendar month. **(R 336.1205(3))**

## III. PROCESS/OPERATIONAL RESTRICTION(S)

- The permittee shall not operate EUNACLREFINERY unless the salt cooler scrubber, the salt compaction scrubber, and the salt dryer scrubber are installed and operating properly. **(R 336.1205(3), R 336.1910)**
- The permittee shall maintain the sodium chloride storage area with a covering dome to reduce fugitive particulate emissions. **(R 336.1301(1))**

3. The permittee shall maintain the **salt cooler scrubber** inlet pressure, fan differential pressure, and fan spray nozzle pressure within the normal operating ranges identified in the Source-Wide MAP. The normal operating ranges shall be determined by the most recent stack test. **(R 336.1205(3), R 336.1910, R 336.1911)**
4. The permittee shall maintain the **salt dryer scrubber** inlet pressure, fan differential pressure, and fan spray nozzle pressure within the normal operating ranges identified in the Source-Wide MAP. The normal operating ranges shall be determined by the most recent stack test. **(R 336.1205(3), R 336.1910, R 336.1911)**
5. The permittee shall maintain the **salt compaction scrubber** inlet pressure, fan differential pressure, and fan spray nozzle flow within the normal operating ranges identified in the Source-Wide MAP. The normal operating ranges shall be determined by the most recent stack test. **(R 336.1205(3), R 336.1910, R 336.1911)**

#### **IV. DESIGN/EQUIPMENT PARAMETER(S)**

1. The permittee shall install, maintain, and operate the **salt cooler scrubber** with an inlet pressure gauge, fan differential pressure gauge, and fan spray nozzle pressure gauge. The differential pressure gauges and fan spray nozzle pressure gauge must be certified by the manufacturer to be accurate within  $\pm 250$  Pascals ( $\pm 1$  inch water gauge) and  $\pm 5$  percent of the spray nozzle design pressure, respectively. **(R 336.1205(3), 40 CFR 60.674(a) and (b))**
2. The permittee shall install, maintain, and operate the **salt dryer scrubber** with an inlet pressure gauge, fan differential pressure gauge, and fan spray nozzle pressure gauge. The differential pressure gauges and fan spray nozzle pressure gauge must be certified by the manufacturer to be accurate within  $\pm 250$  Pascals ( $\pm 1$  inch water gauge) and  $\pm 5$  percent of the spray nozzle design pressure, respectively. **(R 336.1205(3), 40 CFR 60.674(a) and (b))**
3. The permittee shall install, maintain, and operate the **salt compaction scrubber** with an inlet pressure gauge, fan differential pressure gauge, and fan spray nozzle flow rate gauge. The differential pressure gauges and flow rate gauge must be certified by the manufacturer to be accurate within  $\pm 250$  Pascals ( $\pm 1$  inch water gauge) and  $\pm 5$  percent of the design flow rate, respectively. **(R 336.1205(3), 40 CFR 60.674(a) and (b))**
4. The maximum design heat input capacity for EUNACLREFINERY shall not exceed, on a fuel heat input basis, 28.7 MMBtu per hour. **(R 336.1205(3))**
5. The permittee shall install, calibrate, maintain, and operate in a satisfactory manner a device to monitor and record the natural gas flow rate to EUNACLREFINERY on a continuous basis. **(R 336.1205(3))**

#### **V. TESTING/SAMPLING**

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

1. The permittee shall use USEPA Method 22 to determine fugitive visible emissions on an annual basis. The performance test shall be conducted while all affected facilities inside the building are operating. The performance test shall be at least 75 minutes in duration, with each side of the building and the roof being observed for at least 15 minutes. **(40 CFR 60.675(d))**
2. Upon request from the AQD District Supervisor, the permittee may be required to verify, in a manner acceptable to the AQD, the NO<sub>x</sub> emission rates to demonstrate compliance with the limits in SC I.1 and I.2. 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 date. 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. 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. The permittee shall submit two complete test reports of the test results 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 336.1205(3), R 336.2001, R 336.2003, R 336.2004)**
3. Upon request from the AQD District Supervisor, the permittee may be required to verify, in a manner acceptable to the AQD, the particulate matter emission rates to demonstrate compliance with the limits in SC I.3, I.4, I.5, and I.6 and to correlate particulate matter emission rates with differential and spray nozzle pressures measured during testing. Monitoring based on testing shall be based on the most recent completed testing available. 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 date. 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. 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. The permittee shall submit two complete test reports of the test results 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 336.1205(3), R 336.2001, R 336.2003, R 336.2004)**

4. Within 180 days of permit issuance, the permittee shall verify CO emission rates from EUNACLREFINERY by testing at the 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. The emission rate during testing shall be determined by the average of the acceptable test runs performed in accordance with the method requirements. An alternate method, or a modification to the approved EPA Method, may be specified in an AQD approved Test Protocol. No less than 30 days prior to testing, the permittee shall submit a complete test plan to the AQD Technical Programs Unit and District Office. The AQD must approve the final plan prior to testing, including any modifications to the method in the test protocol that are proposed after initial submittal. The permittee must submit a complete report of the test results to the AQD Technical Programs Unit and District Office within 60 days following the last date of the test. **(R 336.1205(3), 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 last day of the calendar month, for the previous calendar month, unless otherwise specified in any recordkeeping, reporting or notification special condition. **(R 336.1205(3))**
2. The permittee shall calibrate the differential pressure gauges, the fan spray nozzle pressure gauges, and the inlet pressure gauges installed on the **salt cooler scrubber** and **salt dryer scrubber** on an annual basis in accordance with the manufacturer's instructions and maintain records of each calibration. **(R 336.1205(3), 40 CFR 60.674(a) and (b))**
3. The permittee shall calibrate the differential pressure gauge, the fan spray nozzle flow rate gauge, and the inlet pressure gauge installed on the **salt compaction scrubber** on an annual basis in accordance with the manufacturer's instructions and maintains records of each calibration. **(R 336.1205(3), 40 CFR 60.674(a) and (b))**
4. The permittee shall continuously monitor and record twice per shift the **salt cooler scrubber**, **salt dryer scrubber**, and **salt compaction scrubber** fan differential pressures and inlet pressures of each scrubber, and fan spray nozzle pressures of the **salt cooler scrubber** and **salt dryer scrubber**, and fan spray nozzle flow rate of the **salt compaction scrubber**. **(R 336.1205(3), 40 CFR 60.674(a) and (b))**
5. The permittee shall maintain on file the natural gas fuel quality characteristics in a current, valid purchase contract, tariff sheet or transportation contract for the natural gas specifying the maximum total sulfur content. **(R 336.1205(3))**
6. The permittee shall monitor and record, in a satisfactory manner, the natural gas usage for EUNACLREFINERY for each calendar month and 12-month rolling time period as determined at the end of each calendar month. The permittee shall keep all records on file and make them available to the Department upon request. **(R 336.1205(3))**
7. The permittee shall calculate and keep, in a satisfactory manner, records of monthly and 12-month rolling time period CO and NOx emission rates for EUNACLREFINERY. The permittee shall keep all records on file and make them available to the Department upon request. The calculations shall be performed using a method approved by the District Supervisor. **(R 336.1205(3))**
8. The permittee shall maintain records of all information necessary to demonstrate compliance with the emission limits of this permit for EUNACLREFINERY. This information shall include, but shall not be limited to the following:
  - a) Compliance tests and any testing required under the special conditions of this permit.
  - b) Verification of heat input capacity.
  - c) Identification, type, and amount of fuel combusted on a calendar month basis.
  - d) Records of total hours of operation of EUNACLREFINERY.

e) All calculations necessary to show compliance with the limits contained in this permit.

The permittee shall keep all records on file and make them available to the Department upon request.  
**(R 336.1205(3))**

**VII. REPORTING**

1. On a semi-annual basis, the permit shall report all occurrences when the measurements of the salt cooler scrubber, salt compaction scrubber, and salt dryer scrubber pressure loss (or gain) and liquid flow rates differ by more than  $\pm 30$  percent from the average determined during the most recent performance test. These reports are due July 30 and January 30. **(40 CFR 60.676(e))**
2. The permittee shall submit written reports of all Method 22 observations to the AQD within 60 days following the last date of observations. **(40 CFR 60.676(f))**

**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:

<b>Stack &amp; Vent ID</b>	<b>Maximum Exhaust Dimensions (inches)</b>	<b>Minimum Height Above Ground (feet)</b>	<b>Underlying Applicable Requirements</b>
1. SVNACLSCRUBDRYCOOL	45.6	147	<b>40 CFR 52.21(c) and (d)</b>
2. SVNACLSCRUBCOMP	60	150	<b>40 CFR 52.21(c) and (d)</b>

**IX. OTHER REQUIREMENT(S)**

1. The permittee shall comply with all applicable requirements of 40 CFR, Part 60, Subpart OOO. **(40 CFR, Part 60, Subpart OOO)**

**Footnotes:**

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

**EUTURBINE  
EMISSION UNIT CONDITIONS**

**DESCRIPTION**

70.6 MMBTU/hr natural gas-fired turbine used to power the evaporator compressor.

**Flexible Group ID:** NA

**POLLUTION CONTROL EQUIPMENT**

NA

**I. EMISSION LIMIT(S)**

Pollutant	Limit	Time Period/ Operating Scenario	Equipment	Monitoring/ Testing Method	Underlying Applicable Requirements
1. Nitrogen oxides (NO <sub>x</sub> )	0.120 pounds per million BTU heat input	Test Protocol*	EUTURBINE	SC V.1	R 336.1205(3), 40 CFR 60.332(a)(2), 40 CFR 52.21(c) and (d)
2. NO <sub>x</sub>	8.5 pounds per hour	Test Protocol*	EUTURBINE	SC V.1	R 336.1205(3), 40 CFR 60.332(a)(2), 40 CFR 52.21(c) and (d)
3. Total particulate	0.0226 pounds per million BTU heat input	Test Protocol*	EUTURBINE	SC V.2	R 336.1205(3), R 336.1331(1)(c)
4. Total particulate	1.6 pounds per hour	Test Protocol*	EUTURBINE	SC V.2	R 336.1205(3), R 336.1331(1)(c)
5. CO	5.8 pounds per hour	Hourly / except during startup and shutdown	EUTURBINE	SC V.3	R 336.1205(3)
6. NO <sub>x</sub>	35.94 tpy	12-month rolling time period as determined at the end of each calendar month.	EUTURBINE	SC VI.4, VI.5, VI.6	R 336.1205(3)
7. CO	24.63 tpy	12-month rolling time period as determined at the end of each calendar month.	EUTURBINE	SC VI.4, VI.5, VI.6	R 336.1205(3)

\*Test protocol shall specify averaging time

**II. MATERIAL LIMIT(S)**

Material	Limit	Time Period/ Operating Scenario	Equipment	Monitoring/ Testing Method	Underlying Applicable Requirements
1. Natural gas	0.01 percent, by weight, of total sulfur	NA	EUTURBINE	SC VI.2	R 336.1205(3)

2. The permittee shall not burn more than 606.3 MMSCF per year of natural gas in EUTURBINE based on 12-month rolling time period as determined at the end of each calendar month. **(R 336.1205(3))**

### **III. PROCESS/OPERATIONAL RESTRICTION(S)**

1. The total number of startups for EUTURBINE shall not exceed 75 events per 12-month rolling time period as determined at the end of each calendar month. **(R 336.1205(3))**
2. The total number of shutdowns for EUTURBINE shall not exceed 75 events per 12-month rolling time period as determined at the end of each calendar month. **(R 336.1205(3))**
3. The total hours for operation at temperatures less than 0°F for EUTURBINE shall not exceed 250 hours per 12-month rolling time period as determined at the end of each calendar month. **(R 336.1205(3))**

### **IV. DESIGN/EQUIPMENT PARAMETER(S)**

1. The maximum design heat input capacity for EUTURBINE shall not exceed, on a fuel heat input basis, 70.6 MMBtu per hour. **(R 336.1205(3))**
2. The permittee shall not operate EUTURBINE unless the SoLoNOx dry low NOx burner is installed, maintained, and operated in a satisfactory manner. **(R 336.1205(3))**
3. The permittee shall install, calibrate, maintain, and operate in a satisfactory manner a device to monitor and record the natural gas flow rate to EUTURBINE on a continuous basis. **(R 336.1205(3))**

### **V. TESTING/SAMPLING**

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

1. Upon request from the AQD District Supervisor, the permittee may be required to verify, in a manner acceptable to the AQD, the NO<sub>x</sub> emission rate to demonstrate compliance with the limits in SC I.1 and I.2. 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 date. 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. 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. The permittee shall submit two complete test reports of the test results 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 336.1205(3), R 336.2001, R 336.2003, R 336.2004)**
2. Upon request from the AQD District Supervisor, the permittee may be required to verify, in a manner acceptable to the AQD, for verification of the total particulate emission rate to demonstrate compliance with the limits in SC I.3 and I.4. 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 date. 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. 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. The permittee shall submit two complete test reports of the test results 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 336.1205(3), R 336.2001, R 336.2003, R 336.2004)**
3. Within 180 days of permit issuance, the permittee shall verify CO emission rates from EUTURBINE by testing at the 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. 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 336.1205(3), 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 last day of the calendar month, for the previous calendar month, unless otherwise specified in any recordkeeping, reporting or notification special condition. **(R 336.1205(3))**
2. The permittee shall maintain on file the natural gas fuel quality characteristics in a current, valid purchase contract, tariff sheet or transportation contract for the natural gas specifying the maximum total sulfur content. **(40 CFR 60.334(h)(3)(i))**
3. The permittee shall monitor and record the natural gas usage of the turbine on a daily basis in a manner and with instrumentation acceptable to the AQD. **(R 336.1205(3))**
4. The permittee shall monitor and record, in a satisfactory manner, the natural gas usage for EUTURBINE for each calendar month and 12-month rolling time period as determined at the end of each calendar month. The permittee shall keep all records on file and make them available to the Department upon request. **(R 336.1205(3))**
5. The permittee shall calculate and keep, in a satisfactory manner, records of monthly and 12-month rolling time period CO and NOx emission rates for EUTURBINE. The permittee shall keep all records on file and make them available to the Department upon request. The calculations shall be performed using a method approved by the District Supervisor. **(R 336.1205(3))**
6. The permittee shall maintain records of all information necessary to demonstrate compliance with the emission limits of this permit for EUTURBINE. This information shall include, but shall not be limited to the following:
  - a) Compliance tests and any testing required under the special conditions of this permit.
  - b) Verification of heat input capacity.
  - c) Identification, type, and amount of fuel combusted on a calendar month basis.
  - d) Records of the duration of all dates and times of startup, shutdown, and malfunction events.
  - e) Records of the hours of operation at temperatures less than 0°F.
  - f) Records of total hours of operation of EUTURBINE.
  - g) All calculations necessary to show compliance with the limits contained in this permit.

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 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:

<b>Stack &amp; Vent ID</b>	<b>Maximum Exhaust Diameter / Dimensions (inches)</b>	<b>Minimum Height Above Ground (feet)</b>	<b>Underlying Applicable Requirements</b>
1. SVTURBINE/HRSG	72	130	<b>40 CFR 52.21(c) and (d)</b>



**IX. OTHER REQUIREMENT(S)**

1. Permittee shall comply with applicable parts of 40 CFR, Part 60, Subpart GG. **(40 CFR 60, Subpart GG)**

**Footnotes:**

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

**EUHRSG  
EMISSION UNIT CONDITIONS**

**DESCRIPTION**

67.0 MMBTU/hr heat recovery steam generator system.

Flexible Group ID: NA

**POLLUTION CONTROL EQUIPMENT**

NA

**I. EMISSION LIMIT(S)**

Pollutant	Limit	Time Period/ Operating Scenario	Equipment	Monitoring/ Testing Method	Underlying Applicable Requirements
1. Nitrogen oxides (NO <sub>x</sub> )	0.161 pounds per MMBTU heat input	Test Protocol*	EUHRSG	SC V.1	R 336.1205(3), 40 CFR 52.21 (c) and (d)
2. NO <sub>x</sub>	10.78 pounds per hour	Test Protocol*	EUHRSG	SC V.1	R 336.1205(3), 40 CFR 52.21 (c) and (d)
3. CO	13.4 pounds per hour	Hourly	EUHRSG	SC V.2	R 336.1205(3)
4. NO <sub>x</sub>	36.38 tpy	12-month rolling time period as determined at the end of each calendar month.	EUHRSG	SC VI.4, VI.5	R 336.1205(3)
5. CO	45.26 tpy	12-month rolling time period as determined at the end of each calendar month.	EUHRSG	SC VI.4, VI.5	R 336.1205(3)

\*Test protocol shall specify averaging time

**II. MATERIAL LIMIT(S)**

Material	Limit	Time Period/ Operating Scenario	Equipment	Monitoring/ Testing Method	Underlying Applicable Requirements
1. Natural gas	0.01 percent, by weight, of total sulfur <sup>2</sup>	NA	EUHRSG	SC VI.2	R 336.1205(3)

2. The permittee shall not burn more than 443.07 MMSCF per year of natural gas in EUHRSG based on 12-month rolling time period as determined at the end of each calendar month. (R 336.1205(3))

**III. PROCESS/OPERATIONAL RESTRICTION(S)**

NA

**IV. DESIGN/EQUIPMENT PARAMETER(S)**

1. The maximum design heat input capacity for EUHRSG shall not exceed, on a fuel heat input basis, 67.0 MMBtu per hour. (R 336.1205(3))

2. The permittee shall install, calibrate, maintain, and operate in a satisfactory manner a device to monitor and record the natural gas flow rate to EUHRSG on a continuous basis. **(R 336.1205(3))**

#### **V. TESTING/SAMPLING**

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

1. Upon request from the AQD District Supervisor, the permittee may be required to verify, in a manner acceptable to the AQD, the NO<sub>x</sub> emission rate to demonstrate compliance with the limits in SC I.1 and I.2. 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 date. 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. 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. The permittee shall submit two complete test reports of the test results 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 336.1205(3), R 336.2001, R 336.2003, R 336.2004)**
2. Within 180 days of permit issuance, the permittee shall verify CO emission rates from EUHRSG by testing at the 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. 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 336.1205(3), 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 last day of the calendar month, for the previous calendar month, unless otherwise specified in any recordkeeping, reporting or notification special condition. **(R 336.1205(3))**
2. The permittee shall maintain on file the natural gas fuel quality characteristics in a current, valid purchase contract, tariff sheet or transportation contract for the natural gas specifying the maximum total sulfur content. **(R 336.1205(3), 40 CFR 60, Subpart Dc)**
3. The permittee shall monitor and record the natural gas usage of the HRSG on a daily basis in a manner and with instrumentation acceptable to the AQD. **(R 336.1205(3), 40 CFR 60.48c(g))**
4. The permittee shall monitor and record, in a satisfactory manner, the natural gas usage for EUHRSG for each calendar month and 12-month rolling time period as determined at the end of each calendar month. The permittee shall keep all records on file and make them available to the Department upon request. **(R 336.1205(3))**
5. The permittee shall calculate and keep, in a satisfactory manner, records of monthly and 12-month rolling time period CO and NO<sub>x</sub> emission rates for EUHRSG. The permittee shall keep all records on file and make them available to the Department upon request. The calculations shall be performed using a method approved by the District Supervisor. **(R 336.1205(3))**
6. The permittee shall maintain records of all information necessary to demonstrate compliance with the emission limits of this permit for EUHRSG. This information shall include, but shall not be limited to the following:
  - a) Compliance tests and any testing required under the special conditions of this permit.
  - b) Verification of heat input capacity.

- c) Identification, type, and amount of fuel combusted on a calendar month basis.
- d) Records of total hours of operation of EUHRSG.
- e) All calculations necessary to show compliance with the limits contained in this permit.

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 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:

<b>Stack &amp; Vent ID</b>	<b>Maximum Exhaust Diameter / Dimensions (inches)</b>	<b>Minimum Height Above Ground (feet)</b>	<b>Underlying Applicable Requirements</b>
1. SVTURBINE/HRSG	72	130	<b>40 CFR 52.21(c) and (d)</b>

**IX. OTHER REQUIREMENT(S)**

- 1. Permittee shall comply with applicable parts of 40 CFR, Part 60, Subpart Dc. **(40 CFR 60, Subpart Dc)**

**Footnotes:**

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

## FGFACILITY CONDITIONS

**DESCRIPTION:** The following conditions apply source-wide to all process equipment including equipment covered by other permits, grand-fathered equipment and exempt equipment.

### POLLUTION CONTROL EQUIPMENT

NA

#### I. EMISSION LIMIT(S)

Pollutant	Limit	Time Period / Operating Scenario	Equipment	Monitoring / Testing Method	Underlying Applicable Requirements
1. NO <sub>x</sub>	89.57 tpy	12-month rolling time period as determined at the end of each calendar month.	FGFACILITY	SC VI.3	R 336.1205(3)
2. CO	89.42 tpy	12-month rolling time period as determined at the end of each calendar month.	FGFACILITY	SC VI.3	R 336.1205(3)

#### II. MATERIAL LIMIT(S)

1. The permittee shall not burn more than 1,308.8 MMSCF per year of natural gas in FGFACILITY based on 12-month rolling time period as determined at the end of each calendar month. **(R 336.1205(3))**

#### III. PROCESS/OPERATIONAL RESTRICTION(S)

1. The permittee shall implement and maintain a Malfunction Abatement Plan (MAP), as approved by the AQD district supervisor, for the facility. **(R 336.1205(3), R 336.1911)**

#### 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))**

NA

#### VI. MONITORING/RECORDKEEPING

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

1. The permittee shall complete all required calculations in a format acceptable to the AQD District Supervisor and make them available by the last day of the calendar month, for the previous calendar month, unless otherwise specified in any recordkeeping, reporting or notification special condition. **(R 336.1205(3))**
2. The permittee shall monitor and record, in a satisfactory manner, the natural gas usage for FGFACILITY for each calendar month and 12-month rolling time period as determined at the end of each calendar month. The permittee shall keep all records on file and make them available to the Department upon request. **(R 336.1205(3))**
3. The permittee shall calculate and keep, in a satisfactory manner, records of monthly and 12-month rolling time period CO and NO<sub>x</sub> emission rates for FGFACILITY. The permittee shall keep all records on file and make them available to the Department upon request. The calculations shall be performed using a method approved by the District Supervisor. **(R 336.1205(3))**

**VII. REPORTING**

NA

**VIII. STACK/VENT RESTRICTION(S)**

NA

**IX. OTHER REQUIREMENT(S)**

1. The permittee shall implement and maintain a facility-wide MAP approved by the District Supervisor. If the MAP fails to address or inadequately addresses an event that meets the characteristics of a malfunction, the permittee shall revise the MAP within 45 days after such an event occurs. The revised plan shall include procedures for operating and maintaining the process equipment, add-on air pollution control device, or monitoring equipment during similar malfunction events, and a program for corrective action for such events. **(R 336.1205(3), R 336.1910, R 336.1911)**

**Footnotes:**

- <sup>1</sup> This condition is state only enforceable and was established pursuant to Rule 201(1)(b).