

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

March 29, 2024

**PERMIT TO INSTALL
6-12B**

**ISSUED TO
ANR Storage Company**

LOCATED AT
4963 State Road NE, Excelsior Compression Station
Kalkaska, Michigan 49646

**IN THE COUNTY OF
Kalkaska**

**STATE REGISTRATION NUMBER
B7196**

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: January 31, 2024	
DATE PERMIT TO INSTALL APPROVED: March 29, 2024	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
EUEXGLYDEH	7
FLEXIBLE GROUP SPECIAL CONDITIONS.....	11
FLEXIBLE GROUP SUMMARY TABLE	11
FGMACTHHHSMALL	12
FG MACT DDDDD	23
APPENDIX A	27
APPENDIX B	28

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
EUEXGLYDEH	Glycol Dehydration Unit with maximum process capacity of 11.458 MMscf/hr of natural gas. Control devices include a thermal oxidizer and a backup condenser.	09/01/1989, 2023	FGMACTHHHSMALL
EUEXBOILER	Cleaver Brooks Natural gas boiler, 2.51 MMBTU/hr	10/28/1981	FG MACT DDDDD
EUEXHTR-A	Sivalls Natural Gas fired withdrawal heater, 10 MMBTU/hr	1980	FG MACT DDDDD
EUEXHTR-B	Sivalls Natural Gas fired withdrawal heater, 10 MMBTU/hr	1980	FG MACT DDDDD
EUEXDEHREB	2.0 MMBTU/hr Dehydration Unit Reboiler	2023	FG MACT DDDDD

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.

**EUEXGLYDEH
 EMISSION UNIT CONDITIONS**

DESCRIPTION

Glycol Dehydration Unit with maximum process capacity of 11.458 MMscf/hr of natural gas. The glycol dehydration unit includes a natural gas fired reboiler with a heat input capacity of 2.00 MMBTU/hr (EUEXDEHREB).

Flexible Group ID: FGMACTHHHSMALL

POLLUTION CONTROL EQUIPMENT

Thermal Oxidizer (1.00 MMBTU/hr) and Condenser

I. EMISSION LIMIT(S)

Pollutant	Limit	Time Period / Operating Scenario	Equipment	Monitoring / Testing Method	Underlying Applicable Requirements
1. VOC	108.0 pounds	Daily	EUEXGLYDEHY	SC VI.5	R 336.1205(1) R 336.1702(a) R 336.1901
2. VOC	18.3 tons	12 month rolling time period as determined at the end of each calendar month	EUEXGLYDEHY	SC VI.5	R 336.1205(1) R 336.1702(a) R 336.1901

II. MATERIAL LIMIT(S)

NA

III. PROCESS/OPERATIONAL RESTRICTION(S)

- The glycol dehydration unit shall not be operated unless it is equipped with a thermal oxidizer or a condenser. The condenser or thermal oxidizer, including any associated monitoring equipment, shall be operated properly. **(R 336.1702(a), R 336.1910)**
- The permittee shall not operate the glycol dehydration system during a thermal oxidizer malfunction event unless the condenser exhaust temperature is 48.9 °C (120 °F) or less. **(R 336.1205(1), R 336.1702(a), R 336.1901)**
- The glycol dehydration unit shall not be operated unless the glycol separator is installed and operating properly. A properly operating glycol separator will volatilize organic compounds out of the rich glycol stream and route them to the thermal oxidizer during normal operation. **(R 336.1205(1), R 336.1702(a), R 336.1901)**
- The permittee shall not operate the glycol dehydration system unless the thermal oxidizer is operating at a temperature of at least 760 °C (1400 °F), and the VOC destruction efficiency is at least 95 % by weight, except during a thermal oxidizer malfunction event. **(R 336.1205(1), R 336.1702(a), R 336.1901)**
- The natural gas used as fuel in the glycol dehydration unit shall not contain more than 20 grains of total sulfur per 100 cubic feet of natural gas. **(R 336.1301(1)(a), R 336.1702(a), R 336.1901)**

6. The glycol dehydration unit shall not be operated while the thermal oxidizer is malfunctioning for more than 4,500 hours per 12-month rolling time period as determined at the end of each calendar month. **(R 336.1205(1), R 336.1702(a), R 336.1910)**
7. The permittee shall not use stripping gas in the glycol dehydration unit. **(R 336.1702(a))**

IV. DESIGN/EQUIPMENT PARAMETER(S)

1. The glycol dehydration unit shall be equipped with any combination of glycol pump(s) that have a combined capacity no greater than 16 gpm. **(R 336.1205(1), R 336.1702(a), R 336.1901)**
2. The thermal oxidizer shall be designed and equipped with a temperature monitor to continuously monitor the operating temperature and also be designed and equipped with an alarm system that will alarm if the operating temperature is less than 1400°F. **(R 336.1702(a), R 336.1201(3))**
3. The glycol condenser shall be designed and equipped with an exhaust gas temperature monitor to continuously monitor the operating temperature and also be designed and equipped with an alarm system that will alarm if the operating temperature is greater than 120°F. **(R 336.1702(a), R 336.1201(3))**
4. If the glycol dehydration unit is controlled by the thermal oxidizer, then the thermal oxidizer shall maintain a minimum retention time of 0.5 seconds. **(R 336.1205(1), R 336.1702(a), R 336.1901)**
5. The permittee shall not operate the glycol dehydration system unless the glycol regenerator is equipped with a properly installed and operating thermal oxidizer except as specified in SC III.2. **(R 336.1205(1), R 336.1702(a), R 336.1901)**

V. TESTING/SAMPLING

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

1. The permittee shall determine the composition, including the VOC and benzene content, of the natural gas processed in the glycol dehydration system at least once every five calendar years. The natural gas composition shall be determined by a method or methods which are standard in the natural gas industry, subject to approval by the Air Quality Division. **(R 336.1205(1), R 336.1702(a), R 336.1901)**

VI. MONITORING/RECORDKEEPING

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

1. The permittee shall monitor the alarm events (alarm actuated because temperature of control equipment was outside the acceptable range) from the primary control device, either the thermal oxidizer or the condenser. The day and time of the alarm event shall be maintained in addition to the corrective action taken that resulted from the alarm event. If the primary control alarm system is not operating properly, then the permittee shall monitor and record the exhaust gas temperature from the control device once per day for all days the glycol dehydration unit is operating. If the alarm system is not operating properly, a written log of the daily control device operating temperatures shall be maintained. **(R 336.1702(a))**
2. The permittee shall retain calculations, for the thermal oxidizer when controlling the glycol dehydration unit, showing the VOC destruction efficiency is at least 95% by weight. The calculations shall be retained and performed in a manner acceptable to the Air Quality Division. **(R 336.1702(a),)**
3. The permittee shall record the hours of operation of the glycol dehydration unit for each calendar month and each 12-month rolling time period. **(R 336.1205(1), R 336.1702(a), R 336.1901)**
4. The permittee shall record the primary emission control device for the dehydration unit for each day the unit is in operation. The information shall be available to the AQD upon request no later than the 15th of the next calendar month. **(R 336.1910)**
5. The permittee shall calculate and record the daily VOC emissions from the glycol dehydration unit at the end of each calendar month, using the method specified in Appendix B of this permit. The permittee shall calculate

and record the VOC emissions for the calendar month by adding up emissions from the applicable days, and shall calculate and record the annual VOC emissions based on a 12-month rolling time period by summing emissions from the applicable months. The VOC emission records shall be available to the AQD upon request no later than the 15th of the next calendar month. **(R 336.1702(a))**

6. The permittee shall monitor and record the total hours of operation of the glycol dehydration system when the thermal oxidizer is malfunctioning for each calendar month and each 12-month rolling time period. **(R 336.1205(1), R 336.1702(a), R 336.1910)**
7. The permittee shall monitor and record the amount of natural gas processed by the glycol dehydration system on a daily basis and maintain records of the annual glycol natural gas throughput each year. **(R 336.1205(1), R 336.1702(a), R 336.1901)**
8. The permittee shall calculate and record VOC and benzene emissions for the glycol dehydration system on a monthly and 12 month rolling time period basis in tons and tons per year, respectively. Monthly and 12 month rolling time period records shall be made available to the AQD upon request no later than the 15th of the month for the previous calendar month. **(R 336.1205(1), R 336.1702(a))**
9. The permittee shall retain calculations, for the thermal oxidizer when controlling the glycol dehydration unit, showing the VOC destruction efficiency is at least 95 % by weight. The calculations shall be retained and performed in a manner acceptable to the Air Quality Division. **(R 336.1205(1), R 336.1702(a), R 336.1901)**
10. The permittee shall monitor and record the thermal oxidizer operating temperature on a daily basis when the glycol dehydration system is operating except during times of thermal oxidizer malfunction. **(R 336.1205(1), R 336.1702(a), R 336.1901)**
11. The permittee shall monitor and record the condenser exhaust gas temperature on a daily basis when the glycol dehydration system is operating during times of thermal oxidizer malfunction. **(R 336.1205(1), R 336.1702(a), R 336.1901)**

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:

Stack & Vent ID	Maximum Exhaust Diameter / Dimensions (inches)	Minimum Height Above Ground (feet)	Underlying Applicable Requirements
SVEX008 (condenser)	2 ¹	20 ¹	R 336.1901
SVEX009 (oxidizer)	NA	20 ¹	R 336.1901

IX. OTHER REQUIREMENT(S)

1. The permittee shall comply with all applicable requirements of 40 CFR Part 63, Subpart A and Subpart HHH, National Emission Standards for Hazardous Air Pollutants (NESHAP) from Natural Gas Transmission and Storage Facilities. **(40 CFR Part 63, Subpart HHH, 40 CFR 63.1274(d)(2))**

Footnotes:

¹ This 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
FGMACTHHHSMALL	Requirements for an existing small glycol dehydrator (<0.9 Mg/yr benzene emissions) at major sources of Hazardous Air Pollutants per 40 CFR Part 63, Subpart HHH.	EUEXGLYDEH
FG MACT DDDDD	(1) 2.51 MMBTU/hr Cleaver Brooks, Natural Gas Boiler, (2) 10 MMBTU/hr, Sivals withdrawal heaters, and (1) 2.0 MMBTU/hr glycol dehydration unit reboiler.	EUEXBOILER, EUEXHTR-A, EUEXHTR-B, EUEXDEHREB

**FGMACTHHHSMALL
 FLEXIBLE GROUP CONDITIONS**

DESCRIPTION

Requirements for an existing small glycol dehydrator (<0.9 Mg/yr benzene emissions) at major sources of Hazardous Air Pollutants per 40 CFR Part 63, Subpart HHH.

Emission Unit: EUEXGLYDEH

POLLUTION CONTROL EQUIPMENT

Thermal Oxidizer (1.00 MMBTU/hr) and Condenser

I. EMISSION LIMIT(S)

Pollutant	Limit	Time Period / Operating Scenario	Equipment	Monitoring / Testing Method	Underlying Applicable Requirements
1. BTEX	Calculated using Equation 1 of 40 CFR Part 63 Subpart HHH (Appendix A)	Annual	EUEXGLYDEHY	SC V.2, SC V.4, SC V.5	40 CFR 63.1275(b)(1)(iii)
2. Benzene	<0.9 Mg/yr	Annual	EUEXGLYDEHY	SC V.2	40 CFR 63.1275(b)(1)(iii)

II. MATERIAL LIMIT(S)

NA

III. PROCESS/OPERATIONAL RESTRICTION(S)

1. The process vent from each glycol dehydration unit shall be vented to a control device or a combination of control devices through a closed-vent system except when the permittee is following the requirements of 40 CFR 1275(c) (SC III.6). **(40 CFR 63.1275(b)(1)(iii)(A), 40 CFR 63.1275(c))**
2. The control device(s) used to meet the BTEX emission limit calculated in 40 CFR 63.1275(b)(1)(iii) (SC I.1), shall be one of those specified below and must be designed and operated in accordance with the following requirements: **(40 CFR 63.1281(f)(1))**
 - a) An enclosed combustion device (thermal oxidizer) that is designed and operated to meet the levels specified in paragraphs (f)(1)(i)(A) or (B) of §63.1281. If a boiler or process heater is used as the control device, then the vent stream shall be introduced into the flame zone of the boiler or process heater. **(40 CFR 63.1281(f)(1)(i))**
 - i. The mass content of BTEX in the gases vented to the device is reduced as determined in accordance with the requirements of § 63.1282(d).
 - ii. The concentration of either TOC or total HAP in the exhaust gases at the outlet of the device is reduced to a level equal to or less than 20 parts per million by volume on a dry basis corrected to 3 percent oxygen as determined in accordance with the requirements of § 63.1282(e).
 - b) A vapor recovery device (e.g., carbon adsorption system or condenser) or other non-destructive control device that is designed and operated to reduce the mass content of BTEX in the gases vented to the device as determined in accordance with the requirements of § 63.1282(d). **(40 CFR 63.1281(f)(1)(ii))**

3. The permittee shall operate each control device in accordance with the requirements specified below: **(40 CFR 63.1281(f)(2))**
 - a) Each control device used to comply with this subpart shall be operating at all times. More than one unit may be vented to a control device. **(40 CFR 63.1281(f)(2)(i))**
 - b) For each control device monitored in accordance with requirements of 40 CFR 63.1283(d) (SC IV.2, SC VI. 11-19), the permittee shall demonstrate compliance according to the requirements of 40 CFR 63.1282(e) or (h). **(40 CFR 63.1281(f)(2)(ii))**
4. At all times, the permittee must operate and maintain each glycol dehydrator, including associated air pollution control equipment and monitoring equipment, in a manner consistent with safety and good air pollution control practices for minimizing emissions. Determination of whether such operation and maintenance procedures are being used will be based on information available to the Administrator which may include, but is not limited to, monitoring results, review of operation and maintenance procedures, review of operation and maintenance records, and inspection of the source. **(40 CFR 63.1274(h))**
5. In all cases where the provisions of 40 CFR 63 Subpart HHH require the permittee to repair leaks by a specified time after the leak is detected, it is a violation of 40 CFR 63 Subpart HHH to fail to take action to repair the leak(s) within the specified time. If action is taken to repair the leak(s) within the specified time, failure of that action to successfully repair the leak(s) is not a violation of this standard. However, if the repairs are unsuccessful, and a leak is detected, the permittee shall take further action as required by the applicable provisions of this subpart. **(40 CFR 63.1274(g))**
6. As an alternative to the requirements of paragraph 40 CFR 63.1275(b), the permittee may comply with one of the following: **(40 CFR 63.1275(c))**
 - a) The permittee shall control air emissions by connecting the process vent to a process natural gas line. **(40 CFR 63.1275(c)(1))**
 - b) Control of HAP emissions from a GCG separator (flash tank) vent is not required if the permittee demonstrates, to the Administrator's satisfaction, that total emissions to the atmosphere from the glycol dehydration unit process vent are reduced by one of the levels specified in paragraph 40 CFR 63.1275(c)(3)(i) through (iv) through the installation and operation of controls as specified in paragraph 40 CFR 63.1275(b)(1). **(40 CFR 63.1275(c)(3))**For each existing small glycol dehydration unit, BTEX emissions are reduced to a level less than the limit calculated in Equation 1 of §63.1275

IV. DESIGN/EQUIPMENT PARAMETER(S)

1. A continuous parameter monitoring system (CPMS) shall be installed and operated to meet the following specifications and requirements: **(40 CFR 63.1283(d)(1))**
 - a) Each CPMS shall measure data values at least once every hour and record either:
 - i. Each measured data value.
 - ii. Each block average value for each one-hour period or shorter periods calculated from all measured data values during each period. If values are measured more frequently than once per minute, a single value for each minute may be used to calculate the hourly (or shorter period) block average instead of all measured values.
2. The permittee shall install, calibrate, operate, and maintain a device equipped with a continuous recorder to measure the values of operating parameters appropriate for the control device as specified below. **(40 CFR 63.1283(d)(3))**
 - a) For a thermal oxidizer, the temperature monitoring device shall have a minimum accuracy of ± 2 percent of the temperature being monitored in $^{\circ}\text{C}$, or $\pm 2.5^{\circ}\text{C}$, whichever value is greater. The temperature sensor shall be installed at a location representative of the combustion zone temperature.
 - b) For a condenser, a temperature monitoring device equipped with a continuous recorder. The temperature monitoring device shall have a minimum accuracy of ± 2 percent of the temperature being monitored in $^{\circ}\text{C}$, or $\pm 2.5^{\circ}\text{C}$, whichever value is greater. The temperature sensor shall be installed at a location in the exhaust vent stream from the condenser.
3. The permittee shall not operate the glycol dehydration unit unless each process vent is connected to a control device or combination of control devices through a closed-vent system. The closed vent system shall be

designed and operated in accordance with the following requirements: **(40 CFR 63.1274(c), 40 CFR 63.1275(b)(1)(iii)(A), 40 CFR 63.1275(c), 40 CFR 63.1281(c), 40 CFR 63.1283(c)(2)(iii))**

- a) The closed-vent system shall route all gases, vapors, and fumes emitted from the material in an emission unit to a control device that meets the requirements specified in 40 CFR 63.1281(f). **(40 CFR 63.1281(c)(1))**
- b) The closed-vent system shall be designed and operated with no detectable emissions. **(40 CFR 63.1281(c)(2))**
- c) For each bypass device in the closed-vent system that could divert all or a portion of the gases, vapors, or fumes from entering the control device, the permittee shall either: **(40 CFR 63.1281(c)(3)(i))**
 - i. At the inlet to the bypass device that could divert the stream away from the control device to the atmosphere, properly install, calibrate, maintain, and operate a flow indicator that is capable of taking periodic readings and sounding an alarm when the bypass device is open such that the stream is being, or could be, diverted away from the control device to the atmosphere; or
 - ii. Secure the bypass device valve installed at the inlet to the bypass device in the non-diverting position using a car-seal or lock-and-key type configuration.
- d) Low leg drains, high point bleeds, analyzer vents, open-ended valves or lines, and safety devices are not subject to the requirements of 40 CFR 63.1281(c)(3)(i), SC IV.3(c). **(40 CFR 63.1281(c)(3)(ii))**

V. TESTING/SAMPLING

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

1. Determination of the actual flow rate of natural gas to each glycol dehydration unit shall be made using either of the following procedures: **(40 CFR 63.1282(a)(1))**
 - a) Install and operate a monitoring instrument that directly measures natural gas flowrate to each glycol dehydration unit with an accuracy of plus or minus 2 percent or better. The permittee shall convert the annual natural gas flowrate to a daily average by dividing the annual flowrate by the number of days per year the glycol dehydration unit processed natural gas; or
 - b) Document to the AQD's satisfaction, the actual annual average natural gas flow rate to each glycol dehydration unit.
2. Determination of actual average benzene or BTEX emissions from each glycol dehydration unit shall be made using the procedures of either 40 CFR 63.1282(a)(2) (i) or (ii) below. Emissions shall be determined either uncontrolled or with federally enforceable controls in place. **(40 CFR 63.1282(a)(2))**
 - a) The permittee shall determine actual average benzene or BTEX emissions using the model GRI-GLYCalc™, Version 3.0 or higher, and the procedures presented in the associated GRI-GLYCalc™ Technical Reference Manual. Inputs to the model shall be representative of actual operating conditions of the glycol dehydration unit and may be determined using the procedures documented in the Gas Research Institute (GRI) report entitled "Atmospheric Rich/Lean Method for Determining Glycol Dehydrator Emissions" (GRI-95/0368.1). **(40 CFR 63.1282(a)(2)(i))**
 - b) The permittee shall determine an average mass rate of benzene or BTEX emissions in kilograms per hour through direct measurement by performing three runs of Method 18 in 40 CFR part 60, appendix A; or ASTM D6420-99 (Reapproved 2004) (incorporated by reference as specified in §63.14), as specified in §63.772(a)(1)(ii); or an equivalent method; and averaging the results of the three runs. Annual emissions in kilograms per year shall be determined by multiplying the mass rate by the number of hours the unit is operated per year. This result shall be converted to megagrams per year. **(40 CFR 63.1282(a)(2)(ii))**
3. The permittee shall perform "no detectable emissions" testing for closed vent systems using the test methods and procedures specified in 40 CFR 63.1282(b). **(40 CFR 63.1282(b))**
4. The permittee shall demonstrate that the thermal oxidizers meet the requirements of 40 CFR 1281(f)(1) (SC IV.2) by conducting a performance test in accordance with the following test methods and procedures: **(40 CFR 63.1282(c)(1), 40 CFR 63.1282(d)(3))**
 - a) Method 1 or 1A, 40 CFR, Part 60, Appendix A, as appropriate, shall be used for selection of the sampling sites. The sampling site shall be located at the outlet of the combustion device. **(40 CFR 63.1282(d)(3)(i))**
 - b) The gas volumetric flowrate shall be determined using Method 2, 2A, 2C, or 2D, 40 CFR, Part 60, Appendix A, as appropriate. **(40 CFR 63.1282(d)(3)(ii))**
 - c) To determine compliance with the BTEX emission limit in SC I.1, the permittee shall use one of the following methods: Method 18, 40 CFR part 60, appendix A; ASTM D6420-99 (Reapproved 2004)

(incorporated by reference as specified in 40 CFR 63.14), as specified in 40 CFR 63.772(a)(1)(ii); or any other method or data that have been validated according to the applicable procedures in Method 301, 40 CFR part 63, appendix A. The BTEX emissions shall be calculated using the procedures in 40 CFR 63.1282(d)(3)(v). **(40 CFR 63.1282(d)(3)(v))**

- d) The permittee shall conduct performance tests according to the following schedule: **(40 CFR 63.1282(d)(3)(vi))**
- i. An initial performance test shall be conducted no later than 180 days after startup.
 - ii. Except as specified in 40 CFR 63.1282(e)(3)(vi)(B)(1) and (2) below, periodic performance tests shall be conducted for all control devices required to conduct initial performance tests. The first periodic performance test shall be conducted no later than 60 months after the initial performance test required in 40 CFR 63.1282(d)(3)(vi)(A) (SC V.4(d)(i)). Subsequent periodic performance tests shall be conducted at intervals no longer than 60 months following the previous periodic performance test or whenever a source desires to establish a new operating limit. Combustion control devices meeting the criteria in either 40 CFR 63.1282(d)(3)(vi)(B)(1) and (2) below are not required to conduct periodic performance tests:
 - A. A combustion control device whose model is tested under, and meets the criteria of, the manufacturers performance testing in 40 CFR 63.1282(g).
 - B. A combustion control device demonstrating during the performance test under 40 CFR 63.1282(d) that combustion zone temperature is an indicator of destruction efficiency and operates at a minimum temperature of 1400 degrees Fahrenheit.
5. As an alternative to conducting a performance test under 40 CFR 63.1282(d)(3), the permittee may use a control device that can be demonstrated to meet the performance requirements of 40 CFR 63.1281(f)(1) through a performance test conducted by the manufacturer, as specified in 40 CFR 63.1282(g). **(40 CFR 63.1282(d))**

VI. MONITORING/RECORDKEEPING

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

1. The permittee shall maintain records of the annual facility natural gas throughput each year. **(40 CFR 63.1270(a)(3))**
2. The permittee shall comply with the requirements below in order to show compliance with 40 CFR 63.1281(f)(1)(i)(B): **(40 CFR 63.1281(f)(1)(i)(B), 40 CFR 63.1282(e))**
 - a) Establish a site-specific minimum monitoring parameter value according to the requirements of §63.1283(d)(5)(i) (SC VI.16).
 - b) Calculate the daily average of the applicable monitored parameter in accordance with §63.1283(d)(4) (SC VI.15) except that the inlet gas flowrate to the control device shall not be averaged.
 - c) Compliance is achieved when the daily average of the monitoring parameter value calculated under paragraph 40 CFR 63.1282(e)(2) of this section is equal to or greater than the minimum monitoring value established under paragraph 40 CFR 63.1282(e)(1) of this section. For inlet gas flowrate, compliance with the operating parameter limit is achieved when the value is equal to or less than the value established under the performance test conducted under 40 CFR 63.1282(d) (SC V.4), as applicable.
3. The permittee shall operate the CPMS at all times when the glycol dehydration system is operating except for periods of monitoring system malfunctions, repairs associated with monitoring system malfunctions, and required monitoring system quality assurance or quality control activities (including, as applicable, system accuracy audits and required zero and span adjustments). A monitoring system malfunction is any sudden, infrequent, not reasonably preventable failure of the monitoring system to provide valid data. Monitoring system failures that are caused in part by poor maintenance or careless operation are not malfunctions. Monitoring system repairs are required to be completed in response to monitoring system malfunctions and to return the monitoring system to operation as expeditiously as practicable. **(40 CFR 63.1282(e)(4))**
4. Data recorded during monitoring system malfunctions, repairs associated with monitoring system malfunctions, or required monitoring system quality assurance or control activities may not be used in calculations used to report emissions or operating levels. All the data collected during all other required data collection periods must be used in assessing the operation of the control device and associated control system. **(40 CFR 63.1282(e)(5))**

5. Except for periods of monitoring system malfunctions, repairs associated with monitoring system malfunctions, and required quality monitoring system quality assurance or quality control activities (including, as applicable, system accuracy audits and required zero and span adjustments), failure to collect required data is a deviation of the monitoring requirements. **(40 CFR 63.1282(e)(6))**
6. Except as provided in paragraphs 40 CFR 63.1283(c)(5) and (6), stated in SC VI.9 and SC VI.10, the permittee shall inspect each closed-vent system and each bypass device according to the procedures and schedule specified below: **(40 CFR 63.1274(c), 40 CFR 63.1283(c)(2))**
 - a) For each closed-vent system joints, seams, or other connections that are permanently or semi-permanently sealed (e.g., a welded joint between two sections of hard piping or a bolted or gasketed ducting flange) the permittee shall: **(40 CFR 63.1283(c)(2)(i))**
 - i. Conduct an initial inspection according to 40 CFR 63.1282(b) to demonstrate that the closed-vent system operates with no detectable emissions.
 - ii. Conduct annual visual inspections for defects that could result in air emissions. Defects include, but are not limited to, visible cracks, holes, or gaps in piping; loose connections; or broken or missing caps or other closure devices.
 - b) For closed-vent system components other than those specified in 40 CFR 63.1283(c)(2)(i) (SC VI.6(a)), the permittee shall: **(40 CFR 63.1283(c)(2)(ii))**
 - i. Conduct an initial inspection to demonstrate that the closed-vent system operates with no detectable emissions.
 - ii. Conduct annual inspections to demonstrate that the components or connections operate with no detectable emissions.
 - iii. Conduct annual visual inspections for defects that could result in air emissions. Defects include, but are not limited to, visible cracks, holes, or gaps in ductwork; loose connections; or broken or missing caps or other closure devices.
 - c) For each bypass device, except low leg drains, high point bleeds, analyzer vents, open-ended valves or lines, and safety devices, the permittee shall either: **(40 CFR 63.1283(c)(2)(iii))**
 - i. At the inlet to the bypass device that could divert the steam away from the control device to the atmosphere, set the flow indicator to take a reading at least once every 15 minutes; or
 - ii. If the bypass device valve installed at the inlet to the bypass device is secured in the non-diverting position using a car-seal or a lock-and-key type configuration, visually inspect the seal or closure mechanism at least once every month to verify that the valve is maintained in the non-diverting position and the vent stream is not diverted through the bypass device.
7. In the event that a leak or defect is detected, the permittee shall repair the leak or defect as soon as practicable, except as provided in 40 CFR 63.1283(c)(4) (SC VI.8): **(40 CFR 63.1274(c), 40 CFR 63.1283(c)(3))**
 - a) A first attempt at repair shall be made no later than 5 calendar days after the leak is detected.
 - b) Repair shall be completed no later than 15 calendar days after the leak is detected.
8. Delay of repair of a closed-vent system for which leaks or defects have been detected is allowed if the repair is technically infeasible without a shutdown, as defined in 40 CFR 63.1271, or if the permittee determines that emissions resulting from immediate repair would be greater than the fugitive emissions likely to result from delay of repair. Repair of such equipment shall be completed by the end of the next shutdown. **(40 CFR 63.1274(c), 40 CFR 63.1283(c)(4))**
9. Any parts of the closed-vent system that are designated, as described below, as unsafe to inspect are exempt from the inspection requirements of 40 CFR 63.1283(c)(2)(i) and (ii) (SC VI.6(a) and (b)): **(40 CFR 63.1274(c), 40 CFR 63.1283(c)(5))**
 - a) The permittee determines that the equipment is unsafe to inspect because inspecting personnel would be exposed to an imminent or potential danger as a consequence of complying with 40 CFR 63.1283(c)(2)(i) and (ii) (SC VI.6(a) and (b)).
 - b) The permittee has a written plan that requires inspection of the equipment as frequently as practicable during safe-to-inspect times.

10. Any parts of the closed-vent system that are designated, as described below, as difficult to inspect are exempt from the inspection requirements of 40 CFR 63.1283(c)(2)(i) and (ii) (SC VI.6(a) and (b)):
(40 CFR 63.1274(c), 40 CFR 63.1283(c)(6))
 - a) The permittee determines that the equipment cannot be inspected without elevating the inspecting personnel more than 2 meters above a support surface; and
 - b) The permittee has a written plan that requires inspection of the equipment at least once every 5 years.
11. A site-specific monitoring plan must be prepared that addresses the monitoring system design, data collection, and the quality assurance and quality control elements below. Each CPMS must be installed, calibrated, operated, and maintained in accordance with the procedures in the site-specific monitoring plan:
(40 CFR 63.1274(c), 40 CFR 63.1283(d)(1)(ii))
 - a) The performance criteria and design specifications for the monitoring system equipment, including the sample interface, detector signal analyzer, and data acquisition and calculations.
 - b) Sampling interface (e.g., thermocouple) location such that the monitoring system will provide representative measurements.
 - c) Equipment performance checks, system accuracy audits, or other audit procedures.
 - d) Ongoing operation and maintenance procedures in accordance with provisions in 40 CFR 63.8(c)(1) and (c)(3).
 - e) Ongoing reporting and recordkeeping procedures in accordance with provisions in 40 CFR 63.10(c), (e)(1), and (e)(2)(i).
12. Using the process described in 40 CFR 63.8(f)(4), the permittee may request approval of monitoring system quality assurance and quality control procedures alternative to those specified in 40 CFR 63.1283(d)(1)(ii)(A)-(E), SC VI.11(a)-(e), in the site-specific monitoring plan.
(40 CFR 63.1274(c), 40 CFR 63.1283(d)(1)(ii))
13. The permittee shall conduct the CPMS equipment performance checks, system accuracy audits, or other audit procedures specified in the site-specific monitoring plan at least once every 12 months.
(40 CFR 63.1274(c), 40 CFR 63.1283(d)(1)(iii))
14. The permittee shall conduct a performance evaluation of each CPMS in accordance with the site-specific monitoring plan. **(40 CFR 63.1274(c), 40 CFR 63.1283(d)(1)(iv))**
15. Using the data recorded by the monitoring system, except for inlet gas flowrate, the permittee shall calculate the daily average value for each monitored operating parameter for each operating day. If the emissions unit operation is continuous, the operating day is a 24-hour period. If the emissions unit operation is not continuous, the operating day is the total number of hours of control device operation per 24-hour period. Valid data points must be available for 75 percent of the operating hours in an operating day to compute the daily average. **(40 CFR 63.1283(d)(4))**
16. For the control devices used to comply with 40 CFR, Part 63, Subpart HHH, the permittee shall establish a minimum operating parameter value or a maximum operating parameter value, as appropriate for the control device, to define the conditions at which the control device must be operated to continuously achieve the applicable performance requirements specified in 40 CFR 63.1281(f)(1) (SC III.2). Each minimum or maximum operating parameter value shall be established as follows: **(40 CFR 63.1282(e)(1), 40 CFR 63.1283(d)(5)(i))**
 - a) If the permittee operates a control device where the performance test requirement was met under §63.1282(g) to demonstrate that the control device achieves the applicable performance requirements specified in 40 CFR 63.1281(f)(1) (SC III.2)), then the maximum inlet gas flowrate shall be established based on the performance test and supplemented, as necessary, by the manufacturer recommendations.
 - b) If the permittee uses a condenser design analysis in accordance with the requirements of 40 CFR 63.1282(d)(4) to demonstrate that the control device achieves the applicable performance requirements specified in 40 CFR 63.1281(f)(1), then the minimum operating parameter value or the maximum operating parameter value shall be established based on the condenser design analysis and may be supplemented by the condenser manufacturer's recommendations.
 - c) If the permittee operates a control device where the performance test requirement was met under 40 CFR 63.1282(g) to demonstrate that the control device achieves the applicable performance requirements

specified in 40 CFR 63.1281(f)(1), then the maximum inlet gas flowrate shall be established based on the performance test and supplemented, as necessary, by the manufacturer recommendations.

17. An excursion for a control device is determined to have occurred when the monitoring data or lack of monitoring data result in any one of the criteria specified below being met. When multiple operating parameters are monitored for the same control device and during the same operating day, and more than one of these operating parameters meets an excursion criterion specified below, then a single excursion is determined to have occurred for the control device for that operating day. **(40 CFR 63.1274(c), 40 CFR 63.1283(d)(6))**
 - a) When the daily average value of a monitored operating parameter is less than the minimum operating parameter limit (or, if applicable, greater than the maximum operating parameter limit) established for the operating parameter; **(40 CFR 63.1283(d)(6)(i))**
 - b) When the monitoring data are not available for at least 75 percent of the operating hours in a day; **(40 CFR 63.1283(d)(6)(iii))**
 - c) For control device whose model is tested under 40 CFR 63.1282(g) an excursion occurs when:
 - i. The inlet gas flowrate exceeds the maximum established during the test conducted under 40 CFR 63.1282(g).
 - ii. Failure of the quarterly visible emissions test conducted under 40 CFR 63.1282(h)(3) occurs.
 - d) An excursion occurs for a closed-vent system containing one or more bypass devices that could be used to divert all or a portion of the gases, vapors, or fumes from entering the control device when: **(40 CFR 63.1283(d)(6)(iv))**
 - i. The flow indicator indicates that flow has been detected and that the stream has been diverted away from the control device to the atmosphere; **(40 CFR 63.1283(d)(6)(iv)(A))**
 - ii. If the seal or closure mechanism has been broken, the bypass line valve position has a changed, the key for the lock-and-key type lock has been checked out, or the car-seal has broken. **(40 CFR 63.1283(d)(6)(iv)(B))**
18. For each excursion, the permittee shall be deemed to have failed to have applied control in a manner that achieves the required operating parameter limits. Failure to achieve the required operating parameter limits is a violation of this standard. **(40 CFR 63.1274(c), 40 CFR 63.1283(d)(7))**
19. Nothing in 40 CFR 63.1283(d)(1) through (d)(8) shall be construed to allow or excuse a monitoring parameter deviation caused by any activity that violates other applicable provisions of this subpart. **(40 CFR 63.1274(c), 40 CFR 63.1283(d)(9))**
20. The permittee shall maintain files of all information (including all reports and notifications) required by this 40 CFR 63 Subpart HHH. The files shall be retained for at least 5 years following the date of each occurrence, measurement, maintenance, corrective action, report or period. **(40 CFR 63.1284(b)(1))**
 - a) All applicable records shall be maintained in such a manner that they can be readily accessed.
 - b) The most recent 12 months of records shall be retained on site or shall be accessible from a central location by computer or other means that provides access within 2 hours after a request.
 - c) The remaining 4 years of records may be retained offsite.
 - d) Records may be maintained in hard copy or computer-readable form including, but not limited to, on paper, microfilm, computer, floppy disk, magnetic tape, or microfiche.
21. The permittee shall maintain the records specified in 40 CFR 63.10(b)(2). **(40 CFR 63.1284(b)(2))**
22. The permittee shall maintain records specified in 40 CFR 63.10(c) for each monitoring system in accordance with the requirements of 40 CFR 63.1283(d) (SC IV.2, SC VI. 11-19). Notwithstanding the previous sentence, monitoring data recorded during periods identified in paragraphs 40 CFR 63.1284(b)(3)(i) through (iv) below, shall not be included in any average or percent leak rate computed under this subpart. Records shall be kept of the times and durations of all such periods and any other periods during process or control device operation when monitors are not operating or failed to collect required data. **(40 CFR 63.1284(b)(3))**
 - a) Monitoring system breakdowns, repairs, calibration checks, and zero (low-level) and high-level adjustments.
 - b) Periods of non-operation resulting in cessation of the emissions to which the monitoring applies.
 - c) Excursions due to invalid data as defined in §63.1283(d)(6)(iii) (SC VI.17(c)).

23. The permittee shall keep the following records up-to-date and readily accessible: **(40 CFR 63.1284(b)(4), 40 CFR 63.1284(g), 40 CFR 63.1284(h))**
- a) Continuous records of the equipment operating parameters specified to be monitored under §63.1283(d) or specified by the Administrator in accordance with §63.1283(d)(3)(iii). **(40 CFR 63.1284(b)(4)(i))**
 - b) Records of the daily average value of each continuously monitored parameter for each operating day determined according to the procedures specified in §63.1283(d)(4) except as specified in paragraphs 40 CFR 63.1284(b)(4)(ii)(A) through (C).
 - c) Hourly records of the times and durations of all periods when the vent stream is diverted from the control device or the device is not operating. **(40 CFR 63.1284(b)(4)(iii))**
 - d) Where a seal or closure mechanism is used to comply with §63.1281(c)(3)(i)(B), hourly records of flow are not required. In such cases, the owner or operator shall record that the monthly visual inspection of the seals or closure mechanism has been done, and shall record the duration of all periods when the seal mechanism is broken, the bypass line valve position has changed, or the key for a lock-and-key type lock has been checked out, and records of any car-seal that has broken. **(40 CFR 63.1284(b)(4)(iv))**
24. The permittee shall maintain records identifying all parts of the closed-vent system that are designated as unsafe to inspect in accordance with §63.1283(c)(5) (SC VI.9), an explanation of why the equipment is unsafe to inspect, and the plan for inspecting the equipment. **(40 CFR 63.1283(c)(7), 40 CFR 63.1284(b)(5))**
25. The permittee shall maintain records identifying all parts of the closed-vent system that are designated as difficult to inspect in accordance with §63.1283(c)(6) (SC VI.10), an explanation of why the equipment is difficult to inspect, and the plan for inspecting the equipment. **(40 CFR 63.1283(c)(7), 40 CFR 63.1284(b)(6))**
26. The permittee shall maintain the following records for each inspection conducted during which a leak or defect is detected: **(40 CFR 63.1283(c)(7), 40 CFR 63.1284(b)(7))**
- a) The instrument identification numbers, operator name or initials, and identification of the equipment.
 - b) The date the leak or defect was detected and the date of the first attempt to repair the leak or defect.
 - c) Maximum instrument reading measured by the method specified in §63.1282(b) after the leak or defect is successfully repaired or determined to be nonrepairable.
 - d) "Repair delayed" and the reason for the delay if a leak or defect is not repaired within 15 calendar days after discovery of the leak or defect.
 - e) The name, initials, or other form of identification of the owner or operator (or designee) whose decision it was that repair could not be effected without a shutdown.
 - f) The expected date of successful repair of the leak or defect if a leak or defect is not repaired within 15 calendar days.
 - g) Dates of shutdowns that occur while the equipment is unrepaired.
 - h) The date of successful repair of the leak or defect.
27. For each inspection conducted in accordance with §63.1283(c) (SC VI.6-10) during which no leaks or defects are detected, the permittee shall maintain a record that the inspection was performed, the date of the inspection, and a statement that no leaks or defects were detected. **(40 CFR 63.1283(c)(7), 40 CFR 63.1284(b)(8))**
28. The permittee shall maintain records of the occurrence and duration of each malfunction of operation (*i.e.*, process equipment) or the air pollution control equipment and monitoring equipment. The owner or operator shall maintain records of actions taken during periods of malfunction to minimize emissions in accordance with §63.1274(h) (SC III.4), including corrective actions to restore malfunctioning process and air pollution control and monitoring equipment to its normal or usual manner of operation. **(40 CFR 63.1274(c), 40 CFR 63.1284(f))**

VII. REPORTING

1. The permittee shall submit the notification of the planned date of a performance test and site-specific test plan at least 60 days before the test. **(40 CFR 63.1285(b)(3))**

2. The permittee shall submit a Notification of Compliance Status Report as required under 40 CFR 63.9(h) within 180 days after startup. In addition to the information required under 40 CFR 63.9(h) the Notification of Compliance Status Report shall include the information specified below. If an owner or operator submits the required information at different times, and/or different submittals, subsequent submittals may refer to previous submittals instead of duplicating and resubmitting the previously submitted information. **(40 CFR 63.1285(b)(4), 40 CFR 63.1285(d))**
- a) If a closed-vent system and a control device other than a flare are used to comply with 40 CFR 63.1274, the owner or operator shall submit the information in 40 CFR 63.1285(d)(1)(iii), SC VII.2(a)(iii), and the information in either 40 CFR 63.1285(d)(1)(i) or (ii), SC VII.2(a)(i) or (ii). **(40 CFR 63.1285(d)(1))**
 - i. If the owner or operator is required to conduct a performance test, the performance test results including the information specified in 40 CFR 63.1285(d)(1)(ii)(A) and (B) below. Results of a performance test conducted prior to the compliance date of this subpart can be used provided that the test was conducted using the methods specified in 40 CFR 63.1282(d)(3) (SC V.4), and that the test conditions are representative of current operating conditions. If the owner or operator operates a combustion control device model tested under 40 CFR 63.1282(g), an electronic copy of the performance test results shall be submitted via email to Oil_and_Gas_PT@EPA.GOV unless the test results for that model of combustion control device are posted at the following Web site: epa.gov/airquality/oilandgas/. **(40 CFR 63.1285(d)(1)(ii))**
 - A. The percent reduction of HAP or TOC, or the outlet concentration of HAP or TOC (parts per million by volume on a dry basis), determined as specified in 40 CFR 63.1282(d)(3) (SC V.4).
 - B. The value of the monitored parameters specified in 40 CFR 63.1283(d), or a site-specific parameter approved by the permitting agency, averaged over the full period of the performance test.
 - ii. The results of the closed-vent system initial inspections performed according to the requirements in 40 CFR 63.1283(c)(2)(i) and (ii) (SC VI.6(a) and (b)). **(40 CFR 63.1285(d)(1)(iii))**
 - b) The permittee shall submit one complete test report for each test method used for a particular source. **(40 CFR 63.1285(d)(3))**
 - i. For additional tests performed using the same test method, the results specified in 40 CFR 63.1285(d)(3)(ii), SC VII.2(a)(ii), shall be submitted, but a complete test report is not required. **(40 CFR 63.1285(d)(3)(i))**
 - ii. A complete test report shall include a sampling site description, description of sampling and analysis procedures and any modifications to standard procedures, quality assurance procedures, record of operating conditions during the test, record of preparation of standards, record of calibrations, raw data sheets for field sampling, raw data sheets for field and laboratory analyses, documentation of calculations, and any other information required by the test method. **(40 CFR 63.1285(d)(3)(ii))**
 - c) For each control device other than a flare used to meet the requirements of 40 CFR 63.1274, the permittee shall submit the information specified in 40 CFR 63.1285(d)(4)(i)-(iv), as applicable, below for each operating parameter required to be monitored in accordance with the requirements of 40 CFR 63.1283(d). **(40 CFR 63.1285(d)(4))**
 - i. The minimum operating parameter value or maximum operating parameter value, as appropriate for the control device, established by the owner or operator to define the conditions at which the control device must be operated to continuously achieve the applicable performance requirements of 40 CFR 63.1281(e)(3)(ii). **(40 CFR 63.1285(d)(4)(i))**
 - ii. An explanation of the rationale for why the permittee selected each of the operating parameter values established in 40 CFR 63.1283(d)(5) (SC VI.16). This explanation shall include any data and calculations used to develop the value, and a description of why the chosen value indicates that the control device is operating in accordance with the applicable requirements of 40 CFR 63.1281(e)(3)(ii) or (f)(1). **(40 CFR 63.1285(d)(4)(ii))**
 - iii. A definition of the source's operating day for purposes of determining daily average values of monitored parameters. The definition shall specify the times at which an operating day begins and ends. **(40 CFR 63.1285(d)(4)(iii))**
 - d) Results of any continuous monitoring system performance evaluations shall be included in the Notification of Compliance Status Report. **(40 CFR 63.1285(d)(5))**
 - e) The permittee shall comply with all requirements for compliance status reports contained in the source's title V permit, including reports required under 40 CFR, Part 63, Subpart HHH. Each time a notification of compliance status is required under this subpart, the owner or operator of such source shall submit the notification of compliance status to the appropriate permitting authority following completion of the relevant compliance demonstration activity specified in this subpart. **(40 CFR 63.1285(d)(6))**

- f) The permittee shall submit an analysis demonstrating whether an affected source is a major source using the maximum throughput calculated according to 40 CFR 63.1270(a). **(40 CFR 63.1285(d)(8))**
 - g) The permittee shall submit a statement as to whether the source has complied with the requirements of this subpart. **(40 CFR 63.1285(d)(9))**
 - h) If the permittee installs a combustion control device model tested under the manufacturer's performance test procedures in 40 CFR 63.1282(g), the Notification of Compliance Status Report shall include the data listed under 40 CFR 63.1282(g)(8). **(40 CFR 63.1285(d)(11))**
 - i) For each combustion control device model tested under 40 CFR 63.1282(g), the information listed in 40 CFR 63.1285(d)(12)(i)-(vi) below: **(40 CFR 63.1285(d)(12))**
 - i. Name, address, and telephone number of the control device manufacturer.
 - ii. Control device model number.
 - iii. Control device serial number.
 - iv. Date the model of control device was tested by the manufacturer.
 - v. Manufacturer's HAP destruction efficiency rating.
 - vi. Control device operating parameters, maximum allowable inlet gas flowrate.
3. The permittee shall prepare Periodic Reports in accordance with 40 CFR 63.1285(e)(1) and (2) below and submit them to the Administrator. **(40 CFR 63.1285(e))**
- a) An owner or operator shall submit Periodic Reports semiannually beginning 60 calendar days after the end of the applicable reporting period. The first report shall be submitted no later than 240 days after the date the Notification of Compliance Status Report is due and shall cover the 6-month period beginning on the date the Notification of Compliance Status Report is due. **(40 CFR 63.1285(e)(1))**
 - b) The permittee shall include the following information and any other information as applicable in 40 CFR 63.1285(e)(2). **(40 CFR 63.1285(e)(2))**
 - i. The information required under 40 CFR 63.10(e)(3). For the purposes of this subpart and the information required under 40 CFR 63.10(e)(3), excursions (as defined in 40 CFR 63.1283(d)(6)) shall be considered excess emissions. **(40 CFR 63.1285(e)(2)(i))**
 - ii. A description of all excursions as defined in 40 CFR 63.1283(d)(6) (SC VI.17) that have occurred during the 6-month reporting period, and the information described below. **(40 CFR 63.1285(e)(2)(ii))**
 - A. For each excursion caused when the daily average value of a monitored operating parameter is less than the minimum operating parameter limit (or, if applicable, greater than the maximum operating parameter limit), as specified in §63.1283(d)(6)(i), the report must include the daily average values of the monitored parameter, the applicable operating parameter limit, and the date and duration of the period that the excursion occurred.
 - B. For each excursion caused by lack of monitoring data, as specified in §63.1283(d)(6)(iii), the report must include the date and duration of period when the monitoring data were not collected and the reason why the data were not collected.
 - C. For each excursion caused when the maximum inlet gas flowrate identified under §63.1282(g) is exceeded, the report must include the values of the inlet gas identified and the date and duration of the period that the excursion occurred.
 - D. For each excursion caused when visible emissions determined under §63.1282(h) exceed the maximum allowable duration, the report must include the date and duration of the period that the excursion occurred, repairs affected to the unit, and date the unit was returned to service.
 - iii. For each inspection conducted in accordance with 40 CFR 63.1283(c) during which a leak or defect is detected, the records described in condition 40 CFR 63.1284(b)(7) must be included in the next Periodic Report. **(40 CFR 63.1285(e)(2)(iii))**
 - iv. For each closed-vent system with a bypass line subject to 40 CFR 63.1281(c)(3)(i)(A) or (B), records required under 40 CFR 63.1284(b)(4)(iii) or (iv) respectively. **(40 CFR 63.1285(e)(2)(iv))**
 - v. The information below section shall be stated in the Periodic Report, when applicable. **(40 CFR 63.1285(e)(2)(v))**
 - A. A statement identifying there were no excursions during the reporting period if applicable. **(40 CFR 63.1285(e)(2)(v)(A))**
 - B. A statement identifying no continuous monitoring system has been inoperative, out of control, repaired, or adjusted if applicable. **(40 CFR 63.1285(e)(2)(v)(B))**
 - vi. Any change in compliance methods as described in 40 CFR 63.1282(e). **(40 CFR 63.1285(e)(2)(vii))**
 - vii. The results of any periodic test as required in 40 CFR 63.1282(d)(3) conducted during the reporting period. **(40 CFR 63.1285(e)(2)(x))**

- viii. For combustion control device inspections conducted in accordance with 63.1283(b) for control devices complying with the manufacturer's performance testing, the records specified in 40 CFR 63.1284(h). **(40 CFR 63.1285(e)(2)(xii))**
 - ix. Certification by a responsible official of truth, accuracy, and completeness. This certification shall state that, based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate, and complete. **(40 CFR 63.1285(e)(2)(xiii))**
4. Whenever a process change is made, or a change in any of the information submitted in the Notification of Compliance Status Report, the permittee shall submit a report within 180 days after the process change is made or as a part of the next Periodic Report, whichever is sooner. The report shall include: **(40 CFR 63.1285(f))**
- a) A brief description of the process change.
 - b) A description of any modification to standard procedures or quality assurance procedures.
 - c) Revisions to any of the information reported in the original Notification of Compliance Status Report under 40 CFR 63.1285(d) (SC VII.6).
 - d) Information required by the Notification of Compliance Status Report under 40 CFR 63.1285(d) (SC VII.6) for changes involving the addition of processes or equipment.
5. Within 60 days after the date of completing a performance test (defined in 40 CFR 63.2) you must submit the results of the performance tests to EPA's WebFIRE database by using the Compliance and Emissions Data Reporting Interface (CEDRI) that is accessed through EPA's Central Data Exchange (CDX) (www.epa.gov/cdx). Performance test data must be submitted in the file format generated through use of EPA's Electronic Reporting Tool (ERT) (see <http://www.epa.gov/ttn/chief/ert/index.html>). Only data collected using test methods on the ERT Web site are subject to this requirement for submitting reports electronically to WebFIRE. All reports required by this subpart not subject to the above electronic reporting requirements must be sent to the Administrator at the appropriate address. The Administrator may request a report in any form suitable for the specific case (e.g., by commonly used electronic media such as Excel spreadsheet, on CD or hard copy). The Administrator retains the right to require submittal of reports in paper format. **(40 CFR 63.1285(g))**

VIII. STACK/VENT RESTRICTION(S)

NA

IX. OTHER REQUIREMENT(S)

- 1. The permittee shall comply with all applicable provisions of the National Emission Standards for Hazardous Air Pollutants, as specified in 40 CFR, Part 63, Subpart A and Subpart HHH: Natural Gas Transmission and Storage Facilities. **(40 CFR Part 63 Subpart HHH)**

Footnotes:

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

**FG MACT DDDDD
FLEXIBLE GROUP CONDITIONS**

DESCRIPTION

Requirements for existing Gas 1, (Natural Gas only) for existing Boilers and Process Heaters at major sources of Hazardous Air Pollutants per 40 CFR Part 63, Subpart DDDDD. These existing boilers or process heaters must comply with this subpart no later than January 31, 2016, except as provided in 40 CFR 63.6(i).

Emission Units: EUEXBOILER, EUEXHTR-A, EUEXHTR-B, EUEXDEHREB

The collection at a major source of all existing industrial, commercial, and institutional boilers and process heaters within the units designed to burn gas 1 fuel subcategory as defined in 40 CFR 63.7575.

Less than 5 MMBtu/hr	(1) Cleaver Brooks natural gas boiler, 2.51 MMBTU/hr (1) Glycol Dehydration Unit reboiler, 2.00 MMBTU/hr
Equal to or greater than 5 MMBtu/hr and less than 10 MMBtu/hr	NA
Equal to or greater than 10 MMBtu/hr	(2) Sivalls natural gas fired withdrawal heaters, 10 MMBTU/hr each.

POLLUTION CONTROL EQUIPMENT

NA

I. EMISSION LIMIT(S)

NA

II. MATERIAL LIMIT(S)

1. The permittee shall only burn natural gas. **(40 CFR 63.7499(I))**

III. PROCESS/OPERATIONAL RESTRICTION(S)

1. The permittee must meet the tune-up and Energy Assessment work practice standards for each applicable boiler or process heater at the source. **(40 CFR 63.7500(a)(1), 40 CFR Part 63, Subpart DDDDD, Table 3, 1-4)**
2. The permittee must operate and maintain affected sources, including associated air pollution control equipment and monitoring equipment, in a manner consistent with safety and good air pollution control practices for minimizing emissions. Determination of whether such operation and maintenance procedures are being used will be based on information available to the Administrator that may include, but is not limited to, monitoring results, review of operation and maintenance procedures, review of operation and maintenance records, and inspection of the source. **(40 CFR 63.7500(a)(3))**
3. The permittee may obtain approval from the Administrator to use an alternative to the work practice standards noted in SC III.1 and SC III.2. **(40 CFR 63.7500(b))**

4. The permittee must:
 - a. Complete a tune-up every 5 years (61 months) for boilers/process heaters less than or equal to 5 MMBTU/hr (Cleaver Brooks boiler). **(40 CFR 63.7500(e), 40 CFR 63.7515(d))**
 - b. Complete a tune-up annually (13 months) for boilers/process heaters greater than 10 MMBTU/hr (Sivalls withdrawal heaters). **(40 CFR 63.7540(a)(10), 40 CFR 63.7515(d))**
 - c. Conduct the tune-up within 30 calendar days of startup, if the unit is not operating on the required date for a tune-up. **(40 CFR 63.7540(a)(13))**
 - d. Follow the procedures described in SC III 6.a-f for all initial and subsequent tune ups. **(40 CFR 63.7540(a)(10), 40 CFR Part 63, Subpart DDDDD, Table 3)**
5. For affected sources (as defined in 40 CFR 63.7490) that have not operated since the previous compliance demonstration and more than one year has passed since the previous compliance demonstration, the permittee must complete a subsequent tune-up within 30 days of startup by following the procedures described in SC III 6.a-f. **(40 CFR 63.7515(g))**
6. The permittee must demonstrate continuous compliance with the tune-up requirement by completing the following: **(40 CFR 63.7540(a))**
 - a) Inspect the burner, and clean or replace any components of the burner as necessary (the permittee may delay the burner inspection until the next scheduled unit shutdown). At units where entry into a piece of process equipment or into a storage vessel is required to complete the tune-up inspections, inspections are required only during planned entries into the storage vessel or process equipment. **(40 CFR 63.7540(a)(10)(i))**
 - b) Inspect the flame pattern, as applicable, and adjust the burner as necessary to optimize the flame pattern. The adjustment should be consistent with the manufacturer's specifications, if available. **(40 CFR 63.7540(a)(10)(ii))**
 - c) Inspect the system controlling the air-to-fuel ratio, as applicable, and ensure that it is correctly calibrated and functioning properly (the permittee may delay the inspection until the next scheduled unit shutdown). Units that produce electricity for sale may delay the inspection until the first outage, not to exceed 36 months from the previous inspection. **(40 CFR 63.7540(a)(10)(iii))**
 - d) Optimize total emissions of CO. This optimization should be consistent with the manufacturer's specifications, if available, and with any NO_x requirement to which the unit is subject. **(40 CFR 63.7540(a)(10)(iv))**
 - e) Measure the concentrations in the effluent stream of CO in ppm by volume, and oxygen in volume percent, before and after the adjustments are made (measurements may be either on a dry or wet basis, as long as it is the same basis before and after the adjustments are made). Measurements may be taken using a portable CO analyzer. **(40 CFR 63.7540(a)(10)(v))**
 - f) Maintain on-site and submit, if requested by the Administrator, the most recent periodic report containing the information as listed below. **(40 CFR 63.7540(a)(10)(vi))**
 - i. The concentrations of CO in the effluent stream in ppm by volume, and oxygen in volume percent, measured at high fire or typical operating load, before and after the tune-up of the boiler or process heater. **(40 CFR 63.7540(a)(10)(vi)(A))**
 - ii. A description of any corrective actions taken as a part of the tune-up. **(40 CFR 63.7540(a)(10)(vi)(B))**
 - iii. The type and amount of fuel used over the 12 months prior to the tune-up, but only if the unit was physically and legally capable of using more than one type of fuel during that period. Units sharing a fuel meter may estimate the fuel used by each unit. **(40 CFR 63.7540(a)(10)(vi)(C))**
7. For the Cleaver Brooks boiler that has a heat input capacity of less than or equal to 5 MMBTU/hr, the permittee may delay the burner inspection specified in SC III 6.a. (40 CFR 63.7540(a)(10)(i)) until the next scheduled or unscheduled unit shutdown, but the permittee must inspect each burner at least once every 72 months. **(40 CFR 63.7540(a)(12))**

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)(b)(ii))**

1. The permittee must keep a copy of each notification and report submitted to comply with 40 CFR Part 63, Subpart DDDDD, including all documentation supporting any Initial Notification or Notification of Compliance Status or semiannual compliance report that the permittee submitted, according to the requirements in 40 CFR 63.10(b)(2)(xiv). **(40 CFR 63.7555(a)(1))**
2. The permittee must keep each record on site, or they must be accessible from on-site (for example, through a computer network), for at least 2 years after the date of each occurrence, measurement, maintenance, corrective action, report, or record. The permittee can keep the records off site for the remaining 3 years. **(40 CFR 63.7560(a-c))**

VII. REPORTING

1. The permittee must submit boiler tune-up compliance reports. The first compliance report for EUEXHTR-A and EUEXHTR-B shall cover the period January 31, 2016 thru December 31, 2016 and must be postmarked or submitted no later than March 15th of 2017. The first compliance report for EUXBOILER shall cover the period January 31, 2016 thru December 31, 2020 and must be postmarked or submitted no later than March 15th of 2021. Subsequent compliance reports must be postmarked or submitted by March 15th of the year following the tune-up and must cover the applicable 1 or 5 year period starting from January 1 of the year following the previous tune-up to December 31 (of the latest tune-up year). Compliance reports must be submitted using the Compliance and Emissions Data Reporting Interface (CEDRI) which is accessed through the EPA's Central Data Exchange (CDX) (www.epa.gov/cdx). If the reporting form is not available in CEDRI at the time the compliance report is due, a hardcopy of the compliance report shall be submitted to the state and EPA Region 5. At the discretion of the Administrator, the permittee must submit these reports, in the format specified by the Administrator. **(40 CFR 63.7550(b), 40 CFR 63.10(a)(5), 40 CFR 63.7550(h)(3))**
2. The permittee must include the following information in the compliance report. **(40 CFR 63.7550(c), 40 CFR 63.7550(c)(1))**
 - a) Company and Facility name and address. **(40 CFR 63.7550(c)(5)(i))**
 - b) Process unit information, emissions limitations, and operating parameter limitations. **(40 CFR 63.7550(c)(5)(ii))**
 - c) Date of report and beginning and ending dates of the reporting period. **(40 CFR 63.7550(c)(5)(iii))**
 - d) The total operating time during the reporting period. **(40 CFR 63.7550(c)(5)(iv))**
 - e) Include the date of the most recent tune-up for each unit. Include the date of the most recent burner inspection if it was not done annually, biennially, or on a 5 year period and was delayed until the next scheduled or unscheduled unit shutdown. **(40 CFR 63.7550(c)(5)(xiv))**

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 Diameter / Dimensions (inches)	Minimum Height Above Ground (feet)	Underlying Applicable Requirements
SVEXDEHREB (reboiler)	1 ¹	26 ¹	R 336.1225, R 336.1901

IX. OTHER REQUIREMENT(S)

1. The permittee must comply with all applicable requirements of 40 CFR Part 63, Subpart DDDDD, for existing boilers and process heaters, unless an extension has been granted per 40 CFR 63.6(i). **(40 CFR 63.7495(b))**
2. The permittee must be in compliance with the applicable work practice standards. **(40 CFR 63.7505(a))**

Footnotes:

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

APPENDIX A

Emission Calculations

The permittee shall use the following equation, or alternate equation approved by the AQD, in conjunction with monitoring, testing or recordkeeping data to determine compliance with the emission limit of BTEX referenced in FGMACTHHHSMALL, SC I.1, BTEX emissions (40 CFR 63.1275 equation 1):

$$EL_{BTEX} = 3.10 \times 10^{-4} \cdot \text{Throughput} \cdot C_{i,BTEX} \cdot 365 \frac{\text{days}}{\text{yr}} \cdot \frac{1 \text{ Mg}}{1 \times 10^6 \text{ grams}} \quad \text{Equation 1}$$

Where:

EL_{BTEX} = Unit-specific BTEX emission limit, megagrams per year.

3.10×10^{-4} = BTEX emission limit, grams BTEX/standard cubic meter-ppmv.

Throughput = Annual average daily natural gas throughput, standard cubic meters per day.

$C_{i,BTEX}$ = Annual average BTEX concentration of the natural gas at the inlet to the glycol dehydration unit, ppmv.

APPENDIX B

Emission Calculations

The permittee shall use the following calculations in conjunction with monitoring, testing or recordkeeping data to determine compliance with the applicable requirements referenced in EUEXGLYDEH. Alternative calculations shall be approved by the AQD District Supervisor.

Glycol Dehydration Unit

Using an emission factor:

Daily VOC emissions =(Volume of natural gas processed through the system in that day X EF)

Where EF is an emission factor expressed as pounds of VOC emitted per volume of gas processed; so long as it is mathematically correct it may be expressed in any convenient unit of volume.

The emission factor may be determined using the model GRI-GLY Calc™ Version 3.0 or higher. The EF shall be periodically recalculated, using GlyCalc™, as more current data becomes available. The recalculated EF is subject to approval by the District Supervisor of the AQD.

Alternatively, the EF could be based on results of a stack test approved by the AQD.

Monthly and 12 Month Emissions:

VOC emissions per calendar month shall be calculated by summing the emissions from each day of that month. Emissions per 12 month rolling time period shall be calculated by summing the emissions from each month of that time period.

VOC Destruction Efficiency for the glycol dehydration unit

$[1-(\text{outlet}/\text{inlet})] * 100\% = \% \text{ destruction efficiency}$

inlet = VOC concentration entering the thermal oxidizer

outlet = VOC concentration exiting the thermal oxidizer