West Virginia Department of Environmental Protection

Earl Ray Tomblin
Governor

Division of Air Quality

Randy C. Huffman
Cabinet Secretary

Permit to Modify

R13-3007E

This permit is issued in accordance with the West Virginia Air Pollution Control Act (West Virginia Code §§22-5-1 et seq.) and 45 C.S.R. 13 – Permits for Construction, Modification, Relocation and Operation of Stationary Sources of Air Pollutants, Notification Requirements, Temporary Permits, General Permits and Procedures for Evaluation. The permittee identified at the above-referenced facility is authorized to construct the stationary sources of air pollutants identified herein in accordance with all terms and conditions of this permit.

Issued to:

Eureka Midstream, LLC
Carbide Site
103-00049

_____

William F. Durham
Director

Issued: Draft

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This permit will supersede and replace Permit R13-3007D issued on April 12, 2016.

Facility Location:	Hastings, Wetzel County, West Virginia
Mailing Address:	27710 State Route 7 Marietta, Ohio 45750
Facility Description:	Natural Gas Compression Station
NAICS Codes:	211111
UTM Coordinates:	528.737 km Easting • 4,376.709 km Northing • Zone 17
Permit Type:	Modification
Description of Change:	Replacement of control equipment and installation of smaller condensate tanks.

Any person whose interest may be affected, including, but not necessarily limited to, the applicant and any person who participated in the public comment process, by a permit issued, modified or denied by the Secretary may appeal such action of the Secretary to the Air Quality Board pursuant to article one [§§22B-1-1 et seq.], Chapter 22B of the Code of West Virginia. West Virginia Code §§22-5-14.

The source is not subject to 45CSR30.

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1.0. Emission Units

Emission Unit ID	Emission Point ID	Emission Unit Description	Year Installed	Design Capacity	Control Device
S1	E1	Caterpillar G3516B Engine	2012	1,380 bhp	C1/OxCat
S2	E2	Caterpillar G3516B Engine	2012	1,380 bhp	C2/OxCat
S3	E3	Caterpillar G3516B Engine	2012	1,380 bhp	C3/OxCat
S4	E4	Caterpillar G3516B Engine	2012	1,380 bhp	C4/OxCat
S5A	E5A	Caterpillar 3406 NA Engine	2012	215 bhp	C5A/NSCR
S7	E7	Reboiler Vent	2012	80 MMCF/day 1.5 MMBTU/hr	None
S8	E8	Caterpillar G3516B Engine	2013	1,380 bhp	C8/OxCat
S9	E9	Caterpillar G3516B Engine	2013	1,380 bhp	C9/OxCat
S10	E10	Caterpillar G3516B Engine	2013	1,380 bhp	C10/OxCat
S11	E11	Caterpillar G3516B Engine	2013	1,380 bhp	C11/OxCat
S14	E16	Truck Loading (uncaptured)	2014	4,600,00 gallons/year	VCU-1 (S15)
S15	E16	Truck Loading	2014	4,600,000 gallons/year	Vapor Combustor
S15-B	E16-A	Truck Loading VCU	2016	10 MMBTU/hr	NA
S15-C	E16-B	Truck Loading VCU Pilot	2016	8.0 MMBTU/hr	NA
S17	E17	Line Heater	2013	0.75 MMBTU/hr	None
S17-A	E17-A	Line Heater	2016	4 MMBTU/hr	None
S17-B	E17-B	Line Heater	2016	2 MMBTU/hr	None
S18	E18	Pigging and Blowdowns	2012	Not Applicable	None
S20	E20	Caterpillar G3608 Compressor Engine	2015	2,370 bhp	C20/OxCat
T33	E21	Condensate Tank	2016	500 bbl	VCU-2
T34	E21	Condensate Tank	2016	500 bbl	VCU-2
T35	E21	Condensate Tank	2016	500 bbl	VCU-2
T36	E21	Condensate Tank	2016	500 bbl	VCU-2
T37	E21	Condensate Tank	2016	500 bbl	VCU-2
T38	E21	Condensate Tank	2016	500 bbl	VCU-2
T39	E21	Condensate Tank	2016	500 bbl	VCU-2
T40	E21	Condensate Tank	2016	500 bbl	VCU-2
S21-A	E21-A	Enclosed Combustor	2016	10 MMBTU/hr	NA
S21-B	E21-B	Enclosed Combustor	2016	10 MMBTU/hr	NA
S21-C	E21-C	Enclosed Combustor	2016	10 MMBTU/hr	NA
S21-D	E21-D	Enclosed Combustor	2016	10 MMBTU/hr	NA

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Emission Unit ID	Emission Point ID	Emission Unit Description	Year Installed	Design Capacity	Control Device
S22-A	E21-A	Condensate Tank Combustor Pilot	2016	8 MMBTU/hr	NA
S22-B	E21-B	Condensate Tank Combustor Pilot	2016	8 MMBTU/hr	NA
S22-C	E21-C	Condensate Tank Combustor Pilot	2016	8 MMBTU/hr	NA
S22-D	E21-D	Condensate Tank Combustor Pilot	2016	8 MMBTU/hr	NA

1.1. Control Devices

Emission Unit	Pollutant	Control Device	Control Efficiency
S1 – S4 and S8 –S11 Caterpillar G3516B Compressor Engines	Carbon Monoxide	Oxidation Catalyst	93 %
	Volatile Organic Compounds		50 %
	Formaldehyde		86 %
S5A Three-way Separator Vapor Compressor Engine	Nitrogen Oxides	Non Selective Catalytic Reduction (NSCR)	94 %
	Carbon Monoxide		94 %
	Formaldehyde		50 %
S7 Regenerator Vapors	Volatile Organic Compounds	Reboiler	95 %
S15 and S15-A Truck Loading	Volatile Organic Compounds	Vapor Combustor (VCU-1)	98 %
S20 Caterpillar G3608 Compressor Engine	Carbon Monoxide	Oxidation Catalyst	92.7 %
	Volatile Organic Compounds		69.7 %
	Formaldehyde		76.9 %
T33 – T40 Condensate Tanks	Volatile Organic Compounds	Vapor Combustors (VCU-2)	98 %
	Hazardous Air Pollutants		98 %

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2.0. General Conditions

2.1. Definitions

2.1.1. All references to the "West Virginia Air Pollution Control Act" or the "Air Pollution Control Act" mean those provisions contained in W.Va. Code §§ 22-5-1 to 22-5-18.

2.1.2. The "Clean Air Act" means those provisions contained in 42 U.S.C. §§ 7401 to 7671q, and regulations promulgated thereunder.

2.1.3. "Secretary" means the Secretary of the Department of Environmental Protection or such other person to whom the Secretary has delegated authority or duties pursuant to W.Va. Code §§ 22-1-6 or 22-1-8 (45CSR§30-2.12.). The Director of the Division of Air Quality is the Secretary's designated representative for the purposes of this permit.

2.2. Acronyms

CAAA	Clean Air Act Amendments
CBI	Confidential Business Information
CEM	Continuous Emission Monitor
CES	Certified Emission Statement
C.F.R. *or* CFR	Code of Federal Regulations
CO	Carbon Monoxide
C.S.R. *or* CSR	Codes of State Rules
DAQ	Division of Air Quality
DEP	Department of Environmental Protection
dscm	Dry Standard Cubic Meter
FOIA	Freedom of Information Act
HAP	Hazardous Air Pollutant
HON	Hazardous Organic NESHAP
HP	Horsepower
lbs/hr	Pounds per Hour
LDAR	Leak Detection and Repair
M	Thousand
MACT	Maximum Achievable Control Technology
MDHI	Maximum Design Heat Input
MM	Million
MMBtu/hr *or* mmbtu/hr	Million British Thermal Units per Hour
MMCF/hr *or* mmcf/hr	Million Cubic Feet per Hour
NA	Not Applicable
NAAQS	National Ambient Air Quality Standards
NESHAPS	National Emissions Standards for Hazardous Air Pollutants
NO_X	Nitrogen Oxides
NSPS	New Source Performance Standards
PM	Particulate Matter
$PM_{2.5}$	Particulate Matter less than 2.5 µm in diameter
PM_{10}	Particulate Matter less than 10µm in diameter
Ppb	Pounds per Batch
Pph	Pounds per Hour
Ppm	Parts per Million
Ppm_V or ppmv	Parts per Million by Volume
PSD	Prevention of Significant Deterioration
Psi	Pounds per Square Inch
SIC	Standard Industrial Classification
SIP	State Implementation Plan
SO_2	Sulfur Dioxide
TAP	Toxic Air Pollutant
TPY	Tons per Year
TRS	Total Reduced Sulfur
TSP	Total Suspended Particulate
USEPA	United States Environmental Protection Agency
UTM	Universal Transverse Mercator
VEE	Visual Emissions Evaluation
VOC	Volatile Organic Compounds
VOL	Volatile Organic Liquids

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2.3. Authority

This permit is issued in accordance with West Virginia air pollution control law W.Va. Code §§ 22-5-1. et seq. and the following Legislative Rules promulgated thereunder:

2.3.1. 45CSR13 – *Permits for Construction, Modification, Relocation and Operation of Stationary Sources of Air Pollutants, Notification Requirements, Temporary Permits, General Permits and Procedures for Evaluation*;

2.4. Term and Renewal

2.4.1. This permit supersedes and replaces previously issued Permit R13-3007D. This Permit shall remain valid, continuous and in effect unless it is revised, suspended, revoked or otherwise changed under an applicable provision of 45CSR13 or any other applicable legislative rule;

2.5. Duty to Comply

2.5.1. The permitted facility shall be constructed and operated in accordance with the plans and specifications filed in Permit Application R13-3007 – R13-3007E, and any modifications, administrative updates, or amendments thereto. The Secretary may suspend or revoke a permit if the plans and specifications upon which the approval was based are not adhered to;
[45CSR§§13-5.11 and 10.3.]

2.5.2. The permittee must comply with all conditions of this permit. Any permit noncompliance constitutes a violation of the West Virginia Code and the Clean Air Act and is grounds for enforcement action by the Secretary or USEPA;

2.5.3. Violations of any of the conditions contained in this permit, or incorporated herein by reference, may subject the permittee to civil and/or criminal penalties for each violation and further action or remedies as provided by West Virginia Code 22-5-6 and 22-5-7;

2.5.4. Approval of this permit does not relieve the permittee herein of the responsibility to apply for and obtain all other permits, licenses, and/or approvals from other agencies; i.e., local, state, and federal, which may have jurisdiction over the construction and/or operation of the source(s) and/or facility herein permitted.

2.6. Duty to Provide Information

The permittee shall furnish to the Secretary within a reasonable time any information the Secretary may request in writing to determine whether cause exists for administratively updating, modifying, revoking, or terminating the permit or to determine compliance with the permit. Upon request, the permittee shall also furnish to the Secretary copies of records to be kept by the permittee. For information claimed to be confidential, the permittee shall furnish such records to the Secretary along with a claim of confidentiality in accordance with 45CSR31. If confidential information is to be sent to USEPA, the permittee shall directly provide such information to USEPA along with a claim of confidentiality in accordance with 40 C.F.R. Part 2.

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2.7. Duty to Supplement and Correct Information

Upon becoming aware of a failure to submit any relevant facts or a submittal of incorrect information in any permit application, the permittee shall promptly submit to the Secretary such supplemental facts or corrected information.

2.8. Administrative Update

The permittee may request an administrative update to this permit as defined in and according to the procedures specified in 45CSR13.
[45CSR§13-4.]

2.9. Permit Modification

The permittee may request a minor modification to this permit as defined in and according to the procedures specified in 45CSR13.
[45CSR§13-5.4.]

2.10 Major Permit Modification

The permittee may request a major modification as defined in and according to the procedures specified in 45CSR14 or 45CSR19, as appropriate.
[45CSR§13-5.1]

2.11. Inspection and Entry

The permittee shall allow any authorized representative of the Secretary, upon the presentation of credentials and other documents as may be required by law, to perform the following:

a. At all reasonable times (including all times in which the facility is in operation) enter upon the permittee's premises where a source is located or emissions related activity is conducted, or where records must be kept under the conditions of this permit;

b. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit;

c. Inspect at reasonable times (including all times in which the facility is in operation) any facilities, equipment (including monitoring and air pollution control equipment), practices, or operations regulated or required under the permit; and

d. Sample or monitor at reasonable times substances or parameters to determine compliance with the permit or applicable requirements or ascertain the amounts and types of air pollutants discharged.

2.12. Emergency

2.12.1. An "emergency" means any situation arising from sudden and reasonable unforeseeable events beyond the control of the source, including acts of God, which situation requires immediate corrective action to restore normal operation, and that causes the source to exceed a technology-based emission limitation under the permit, due to unavoidable increases in emissions attributable to the emergency. An emergency shall not include noncompliance to the extent caused by

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improperly designed equipment, lack of preventative maintenance, careless or improper operation, or operator error.

2.12.2. Effect of any emergency. An emergency constitutes an affirmative defense to an action brought for noncompliance with such technology-based emission limitations if the conditions of Section 2.12.3 are met.

2.12.3. The affirmative defense of emergency shall be demonstrated through properly signed, contemporaneous operating logs, or other relevant evidence that:

a. An emergency occurred and that the permittee can identify the cause(s) of the emergency;

b. The permitted facility was at the time being properly operated;

c. During the period of the emergency the permittee took all reasonable steps to minimize levels of emissions that exceeded the emission standards, or other requirements in the permit; and

d. The permittee submitted notice of the emergency to the Secretary within one (1) working day of the time when emission limitations were exceeded due to the emergency and made a request for variance, and as applicable rules provide. This notice must contain a detailed description of the emergency, any steps taken to mitigate emissions, and corrective actions taken.

2.12.4. In any enforcement proceeding, the permittee seeking to establish the occurrence of an emergency has the burden of proof.

2.12.5 The provisions of this section are in addition to any emergency or upset provision contained in any applicable requirement.

2.13. Need to Halt or Reduce Activity Not a Defense

It shall not be a defense for a permittee in an enforcement action that it should have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit. However, nothing in this paragraph shall be construed as precluding consideration of a need to halt or reduce activity as a mitigating factor in determining penalties for noncompliance if the health, safety, or environmental impacts of halting or reducing operations would be more serious than the impacts of continued operations.

2.14. Suspension of Activities

In the event the permittee should deem it necessary to suspend, for a period in excess of sixty (60) consecutive calendar days, the operations authorized by this permit, the permittee shall notify the Secretary, in writing, within two (2) calendar weeks of the passing of the sixtieth (60) day of the suspension period.

2.15. Property Rights

This permit does not convey any property rights of any sort or any exclusive privilege.

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2.16. Severability

The provisions of this permit are severable and should any provision(s) be declared by a court of competent jurisdiction to be invalid or unenforceable, all other provisions shall remain in full force and effect.

2.17. Transferability

This permit is transferable in accordance with the requirements outlined in Section 10.1 of 45CSR13. **[45CSR§13-10.1.]**

2.18. Notification Requirements

The permittee shall notify the Secretary, in writing, no later than thirty (30) calendar days after the actual startup of the operations authorized under this permit.

2.19. Credible Evidence

Nothing in this permit shall alter or affect the ability of any person to establish compliance with, or a violation of, any applicable requirement through the use of credible evidence to the extent authorized by law. Nothing in this permit shall be construed to waive any defense otherwise available to the permittee including, but not limited to, any challenge to the credible evidence rule in the context of any future proceeding.

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3.0. Facility-Wide Requirements

3.1. Limitations and Standards

3.1.1. **Open burning.** The open burning of refuse by any person, firm, corporation, association or public agency is prohibited except as noted in 45CSR§6-3.1.
[45CSR§6-3.1.]

3.1.2. **Open burning exemptions.** The exemptions listed in 45CSR§6-3.1 are subject to the following stipulation: Upon notification by the Secretary, no person shall cause, suffer, allow or permit any form of open burning during existing or predicted periods of atmospheric stagnation. Notification shall be made by such means as the Secretary may deem necessary and feasible.
[45CSR§6-3.2.]

3.1.3. **Asbestos.** The permittee is responsible for thoroughly inspecting the facility, or part of the facility, prior to commencement of demolition or renovation for the presence of asbestos and complying with 40 C.F.R. § 61.145, 40 C.F.R. § 61.148, and 40 C.F.R. § 61.150. The permittee, owner, or operator must notify the Secretary at least ten (10) working days prior to the commencement of any asbestos removal on the forms prescribed by the Secretary if the permittee is subject to the notification requirements of 40 C.F.R. § 61.145(b)(3)(i). The USEPA, the Division of Waste Management, and the Bureau for Public Health - Environmental Health require a copy of this notice to be sent to them.
[40CFR§61.145(b) and 45CSR§34]

3.1.4. **Odor.** No person shall cause, suffer, allow or permit the discharge of air pollutants which cause or contribute to an objectionable odor at any location occupied by the public.
[45CSR§4-3.1] ***[State Enforceable Only]***

3.1.5. **Permanent shutdown.** A source which has not operated at least 500 hours in one 12-month period within the previous five (5) year time period may be considered permanently shutdown, unless such source can provide to the Secretary, with reasonable specificity, information to the contrary. All permits may be modified or revoked and/or reapplication or application for new permits may be required for any source determined to be permanently shutdown.
[45CSR§13-10.5.]

3.1.6. **Standby plan for reducing emissions.** When requested by the Secretary, the permittee shall prepare standby plans for reducing the emissions of air pollutants in accordance with the objectives set forth in Tables I, II, and III of 45CSR11.
[45CSR§11-5.2.]

3.2. Monitoring Requirements

[Reserved]

3.3. Testing Requirements

3.3.1. **Stack testing.** As per provisions set forth in this permit or as otherwise required by the Secretary, in accordance with the West Virginia Code, underlying regulations, permits and orders, the permittee shall conduct test(s) to determine compliance with the emission limitations set forth in this permit and/or established or set forth in underlying documents. The Secretary, or his duly authorized representative, may at his option witness or conduct such test(s). Should the Secretary

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exercise his option to conduct such test(s), the operator shall provide all necessary sampling connections and sampling ports to be located in such manner as the Secretary may require, power for test equipment and the required safety equipment, such as scaffolding, railings and ladders, to comply with generally accepted good safety practices. Such tests shall be conducted in accordance with the methods and procedures set forth in this permit or as otherwise approved or specified by the Secretary in accordance with the following:

a. The Secretary may on a source-specific basis approve or specify additional testing or alternative testing to the test methods specified in the permit for demonstrating compliance with 40 C.F.R. Parts 60, 61, and 63 in accordance with the Secretary's delegated authority and any established equivalency determination methods which are applicable. If a testing method is specified or approved which effectively replaces a test method specified in the permit, the permit may be revised in accordance with 45CSR§13-4. or 45CSR§13-5.4 as applicable.

b. The Secretary may on a source-specific basis approve or specify additional testing or alternative testing to the test methods specified in the permit for demonstrating compliance with applicable requirements which do not involve federal delegation. In specifying or approving such alternative testing to the test methods, the Secretary, to the extent possible, shall utilize the same equivalency criteria as would be used in approving such changes under Section 3.3.1.a. of this permit. If a testing method is specified or approved which effectively replaces a test method specified in the permit, the permit may be revised in accordance with 45CSR§13-4. or 45CSR§13-5.4 as applicable.

c. All periodic tests to determine mass emission limits from or air pollutant concentrations in discharge stacks and such other tests as specified in this permit shall be conducted in accordance with an approved test protocol. Unless previously approved, such protocols shall be submitted to the Secretary in writing at least thirty (30) days prior to any testing and shall contain the information set forth by the Secretary. In addition, the permittee shall notify the Secretary at least fifteen (15) days prior to any testing so the Secretary may have the opportunity to observe such tests. This notification shall include the actual date and time during which the test will be conducted and, if appropriate, verification that the tests will fully conform to a referenced protocol previously approved by the Secretary.

d. The permittee shall submit a report of the results of the stack test within sixty (60) days of completion of the test. The test report shall provide the information necessary to document the objectives of the test and to determine whether proper procedures were used to accomplish these objectives. The report shall include the following: the certification described in paragraph 3.5.1.; a statement of compliance status, also signed by a responsible official; and, a summary of conditions which form the basis for the compliance status evaluation. The summary of conditions shall include the following:

    1. The permit or rule evaluated, with the citation number and language;
    2. The result of the test for each permit or rule condition; and,
    3. A statement of compliance or noncompliance with each permit or rule condition.

[WV Code § 22-5-4(a)(14-15) and 45CSR13]

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3.4. Recordkeeping Requirements

3.4.1. **Retention of records.** The permittee shall maintain records of all information (including monitoring data, support information, reports, and notifications) required by this permit recorded in a form suitable and readily available for expeditious inspection and review. Support information includes all calibration and maintenance records and all original strip-chart recordings for continuous monitoring instrumentation. The files shall be maintained for at least five (5) years following the date of each occurrence, measurement, maintenance, corrective action, report, or record. At a minimum, the most recent two (2) years of data shall be maintained on site. The remaining three (3) years of data may be maintained off site, but must remain accessible within a reasonable time. Where appropriate, the permittee may maintain records electronically (on a computer, on computer floppy disks, CDs, DVDs, or magnetic tape disks), on microfilm, or on microfiche.

3.4.2. **Odors.** For the purposes of 45CSR4, the permittee shall maintain a record of all odor complaints received, any investigation performed in response to such a complaint, and any responsive action(s) taken.
[45CSR§4. *State Enforceable Only.*]

3.5. Reporting Requirements

3.5.1. **Responsible official.** Any application form, report, or compliance certification required by this permit to be submitted to the DAQ and/or USEPA shall contain a certification by the responsible official that states that, based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate, and complete.

3.5.2. **Confidential information.** A permittee may request confidential treatment for the submission of reporting required by this permit pursuant to the limitations and procedures of W.Va. Code § 22-5-10 and 45CSR31.

3.5.3. **Correspondence.** All notices, requests, demands, submissions and other communications required or permitted to be made to the Secretary of DEP and/or USEPA shall be made in writing and shall be deemed to have been duly given when delivered by hand, or mailed first class with postage prepaid to the address(es) set forth below or to such other person or address as the Secretary of the Department of Environmental Protection may designate:

If to the DAQ:
Director
WVDEP
Division of Air Quality
601 57th Street
Charleston, WV 25304-2345

If to the US EPA:
Associate Director
Office of Enforcement and Compliance Assistance
(3AP20)
U.S. Environmental Protection Agency
Region III
1650 Arch Street
Philadelphia, PA 19103-2029

3.5.4. Operating Fee

3.5.4.1. In accordance with 45CSR22 – Air Quality Management Fee Program, the permittee shall not operate nor cause to operate the permitted facility or other associated facilities on the same or contiguous sites comprising the plant without first obtaining and having in current effect a

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Certificate to Operate (CTO). Such Certificate to Operate (CTO) shall be renewed annually, shall be maintained on the premises for which the certificate has been issued, and shall be made immediately available for inspection by the Secretary or his/her duly authorized representative.

3.5.5. **Emission inventory.** At such time(s) as the Secretary may designate, the permittee herein shall prepare and submit an emission inventory for the previous year, addressing the emissions from the facility and/or process(es) authorized herein, in accordance with the emission inventory submittal requirements of the Division of Air Quality. After the initial submittal, the Secretary may, based upon the type and quantity of the pollutants emitted, establish a frequency other than on an annual basis.

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4.0. Source-Specific Requirements

4.1. Limitations and Standards

4.1.1. **Record of Monitoring.** The permittee shall keep records of monitoring information that include the following:

a. The date, place as defined in this permit, and time of sampling or measurements;
b. The date(s) analyses were performed;
c. The company or entity that performed the analyses;
d. The analytical techniques or methods used;
e. The results of the analyses; and
f. The operating conditions existing at the time of sampling or measurement.

4.1.2. **Minor Source of Hazardous Air Pollutants (HAP).** HAP emissions from the facility shall be less than 10 tons/year of any single HAP and 25 tons/year of any combination of HAPs. Compliance with this Section shall ensure that the facility is a minor HAP source.

4.1.3. **Operation and Maintenance of Air Pollution Control Equipment.** The permittee shall, to the extent practicable, install, maintain, and operate the control devices listed in Section 1.1 and associated monitoring equipment in a manner consistent with safety and good air pollution control practices for minimizing emissions, or comply with any more stringent limits set forth in this permit or as set forth by any State rule, Federal regulation, or alternative control plan approved by the Secretary.
[45CSR§13-5.11.]

4.1.4. **Record of Malfunctions of Air Pollution Control Equipment.** For the control devices listed in Section 1.1, the permittee shall maintain records of the occurrence and duration of any malfunction or operational shutdown of the air pollution control equipment during which excess emissions occur. For each such case, the following information shall be recorded:

a. The equipment involved.
b. Steps taken to minimize emissions during the event.
c. The duration of the event.
d. The estimated increase in emissions during the event.

For each such case associated with an equipment malfunction, the additional information shall also be recorded:

e. The cause of the malfunction.
f. Steps taken to correct the malfunction.
g. Any changes or modifications to equipment or procedures that would help prevent future recurrences of the malfunction.

4.1.5. For each affected facility under §60.5365a(j), you must reduce GHG (in the form of a limitation on emissions of methane) and VOC emissions by complying with the requirements of paragraphs (a) through (j) of §60.5397a. These requirements are independent of the closed vent system and cover requirements in §60.5411a.

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5.0. Source-Specific Requirements (RICE, S1-S4, S8-S11, S5A, S20)

5.1. Limitations and Standards

5.1.1. Maximum controlled emissions from each of the 1,380 bhp Caterpillar G3616 LE natural gas fired reciprocating engines, Caterpillar G3516B (S1 – S4 and S8 – S11) shall not exceed the following limits:

Pollutant	Maximum Hourly Emissions (lbs/hr)	Maximum Annual Emissions (TPY)
Nitrogen Oxides	1.52	6.66
Carbon Monoxide	0.61	2.67
Volatile Organic Compounds	1.00	4.40
Formaldehyde	0.18	0.80

5.1.2. Maximum controlled emissions from each of the 215 bhp natural gas fired reciprocating engine, Caterpillar 3406 NA (S5A) shall not exceed the following limits:

Pollutant	Maximum Hourly Emissions (lbs/hr)	Maximum Annual Emissions (TPY)
Nitrogen Oxides	0.46	2.02
Carbon Monoxide	0.46	2.02

5.1.3. Maximum controlled emissions from the 2,370 bhp natural gas fired reciprocating engine, Caterpillar 3608 (S20) shall not exceed the following limits:

Pollutant	Maximum Hourly Emissions (lbs/hr)	Maximum Annual Emissions (TPY)
Nitrogen Oxides	2.61	11.44
Carbon Monoxide	1.04	4.58
Volatile Organic Compounds	1.72	7.55

5.1.4. Requirements for Use of Catalytic Reduction Devices

a. The rich burn natural gas compressor engine (S5A) equipped with non-selective catalytic reduction (NSCR) air pollution control devices shall be fitted with a closed-loop, automatic air/fuel ratio controller to ensure emissions of regulated pollutants do not exceed the potential to emit for any engine/NSCR combination under varying load. The closed-loop, automatic air/fuel ratio controller shall control a fuel metering valve to ensure a fuel-rich mixture and a resultant exhaust oxygen content of less than or equal to 0.5%.

b. The lean burn natural gas compressor engine (S1-S4, S8-S11, S20), the permittee shall monitor the temperature to the inlet of the catalyst and in accordance with manufacturer's specifications, a high temperature alarm shall shut off the engine before thermal deactivation of the catalyst occurs. If the engine shuts off due to high temperature, the permittee shall also check for thermal deactivation of the catalyst before normal operations are resumed.

c. The permittee shall follow the written operation and maintenance plan submitted with Permit Applications R13-3007 – R13-3007E, which details the periodic and annual maintenance requirements.

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d. The automatic air/fuel ratio controller or closed-loop automatic feedback controller shall provide a warning or indication to the operator and/or be interlocked with the engine ignition system to cease engine operation in case of a masking, poisoning or overrich air/fuel ratio situation which results in performance degradation or failure of the catalyst element; and

e. No person shall knowingly:

1. Remove or render inoperative any air pollution or auxiliary air pollution control device installed subject to the requirements of this permit;

2. Install any part or component when the principal effect of the part or component is to bypass, defeat or render inoperative any air pollution control device or auxiliary air pollution control device installed subject to the requirements of this permit; or

3. Cause or allow engine exhaust gases to bypass any catalytic reduction device.

5.2. Monitoring Requirements

5.2.1. Catalytic Oxidizer Control Devices

a. The permittee shall regularly inspect, properly maintain and/or replace catalytic reduction devices and auxiliary air pollution control devices to ensure functional and effective operation of the engine's physical and operational design. The permittee shall ensure proper operation, maintenance and performance of catalytic reduction devices and auxiliary air pollution control devices by:

1. Maintaining proper operation of the automatic air/fuel ratio controller or automatic feedback controller.

2. Following a written operating and maintenance plan.

5.3. Testing Requirements

5.3.1. See Facility-Wide Testing Requirements Section 3.3 and Testing Requirements of Sections 6.3.

5.4. Recordkeeping Requirements

5.4.1. To demonstrate compliance with sections 5.1.1 – 5.1.3, the permittee shall maintain records of the hours of operation of each engine. Said records shall be maintained on site or in a readily accessible off-site location maintained by the permittee for a period of five (5) years. Said records shall be readily available to the Director of the Division of Air Quality or his/her duly authorized representative for expeditious inspection and review. Any records submitted to the agency pursuant to a requirement of this permit or upon request by the Director shall be certified by a responsible official.

5.4.2. To demonstrate compliance with section 5.1.4 the permittee shall maintain records of all catalytic reduction device maintenance. Said records shall be maintained on site or in a readily accessible off-site location maintained by the permittee for a period of five (5) years. Said records shall be readily available to the Director of the Division of Air Quality or his/her duly authorized representative for expeditious inspection and review. Any records submitted to the agency pursuant to a requirement of this permit or upon request by the Director shall be certified by a responsible official.

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5.5. Reporting Requirements

5.5.1. See Facility-Wide Reporting Requirements Section 3.5 and Reporting Requirements of Sections 6.5 and 7.3.

6.0. Source-Specific Requirements (40CFR60 Subpart JJJJ Requirements)

6.1. Limitations and Standards

6.1.1. Each 1,380 bhp engine (S1 – S4 and S8 – S11) is required to meet the following emission standards: NOx 1.0 g/bhp-hr, CO 2.0 g/bhp-hr, and VOC 0.7 g/bhp-hr.
[40CFR§60.4233(e)]

6.1.2. This facility must operate and maintain each 1,380 bhp engine (S1 – S4 and S8 – S11) over the entire life of the engine.
[40CFR§60.4234]

6.1.3. Engine S20 Caterpillar G3608 is required to meet the following emission standards: NOx 1.0 g/bhp-hr, CO 2.0 g/bhp-hr, and VOC 0.7 g/bhp-hr.
[40CFR§60.4233(e)]

6.1.4. This facility must operate and maintain engine S20 Caterpillar G3608 over the entire life of the engine.
[40CFR§60.4234]

6.2. Compliance Requirements

6.2.1. The permittee shall keep a maintenance plan and records of conducted maintenance and must, to the extent practicable, maintain and operate the engine in a manner consistent with good air pollution control practice for minimizing emissions. In addition, the permittee must conduct an initial performance test and conduct subsequent performance testing every 8,760 hours of operation or 3 years, whichever comes first, thereafter to demonstrate compliance.
[40CFR§60.4243(b)(2)(ii)]

6.2.2. It is expected that the air-to-fuel ratio (AFR) controllers will be used with the operation of three-way catalysts/non-selective catalytic reduction. The AFR controller must be maintained and operated in a manner to ensure proper operation of the engine and control device to minimize emissions at all times.
[40CFR§60.4243(g)]

6.3. Testing Requirements

To demonstrate compliance with section 6.1.1. and 6.1.3., the permittee shall conduct the following testing.

6.3.1. The permittee shall conduct performance tests following the procedures in paragraphs (a) through (g) of this section.

a. Each performance test shall be conducted within 10 percent of 100 percent peak (or the highest achievable) load and according to the requirements in §60.8 and under the specific conditions that are specified by Table 2 to this subpart. [40CFR§60.4244(a)]

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b. The permittee may not conduct performance tests during periods of startup, shutdown, or malfunction, as specified in §60.8(c). If the stationary SI internal combustion engine is non-operational, it is not necessary to start up the engine solely to conduct a performance test; however, the performance test must be conducted immediately upon startup of the engine. [40CFR§60.4244(b)]

c. The permittee shall conduct three separate test runs for each performance test required in this section, as specified in §60.8(f). Each test run shall be conducted within 10 percent of 100 percent peak (or the highest achievable) load and last at least 1 hour. [40CFR§60.4244(c)]

d. To determine compliance with the NO_X mass per unit output emission limitation, convert the concentration of NO_X in the engine exhaust using Equation 1 of this section:

$$ER = \frac{C_d \times 1.912 \times 10^{-3} \times Q \times T}{HP - hr} \qquad \text{(Eq. 1)}$$

Where:
ER = Emission rate of NO_X in g/HP-hr.

C_d= Measured NO_X concentration in parts per million by volume (ppmv).

1.912×10^{-3} = Conversion constant for ppm NO_X to grams per standard cubic meter at 20 degrees Celsius.

Q = Stack gas volumetric flow rate, in standard cubic meter per hour, dry basis.

T = Time of test run, in hours.

HP-hr = Brake work of the engine, horsepower-hour (HP-hr).

[40CFR§60.4244(d)]

e. To determine compliance with the CO mass per unit output emission limitation, convert the concentration of CO in the engine exhaust using Equation 2 of this section:

$$ER = \frac{C_d \times 1.164 \times 10^{-3} \times Q \times T}{HP - hr} \qquad \text{(Eq. 2)}$$

Where:
ER = Emission rate of CO in g/HP-hr.

C_d= Measured CO concentration in ppmv.

$1.164\times10-3$ = Conversion constant for ppm CO to grams per standard cubic meter at 20 degrees Celsius.

Q = Stack gas volumetric flow rate, in standard cubic meters per hour, dry basis.

T = Time of test run, in hours.

HP-hr = Brake work of the engine, in HP-hr.

[40CFR§60.4244(e)]

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f. For purposes of this subpart, when calculating emissions of VOC, emissions of formaldehyde should not be included. To determine compliance with the VOC mass per unit output emission limitation, convert the concentration of VOC in the engine exhaust using Equation 3 of this section:

$$ER = \frac{C_d \times 1.833 \times 10^{-3} \times Q \times T}{HP - hr} \qquad \text{(Eq. 3)}$$

Where:
ER = Emission rate of VOC in g/HP-hr.

C_d= VOC concentration measured as propane in ppmv.

1.833×10^{-3} = Conversion constant for ppm VOC measured as propane, to grams per standard cubic meter at 20 degrees Celsius.

Q = Stack gas volumetric flow rate, in standard cubic meters per hour, dry basis.

T = Time of test run, in hours.

HP-hr = Brake work of the engine, in HP-hr.

[40CFR§60.4244(f)]

g. If the owner/operator chooses to measure VOC emissions using Method 18 of 40 CFR part 60, appendix A, or Method 320 of 40 CFR part 63, appendix A, then it has the option of correcting the measured VOC emissions to account for the potential differences in measured values between these methods and Method 25A. The results from Method 18 and Method 320 can be corrected for response factor differences using Equations 4 and 5 of this section. The corrected VOC concentration can then be placed on a propane basis using Equation 6 of this section.

$$RF_i = \frac{C_{Mi}}{C_{Ai}} \qquad \text{(Eq. 4)}$$

Where:
RF_i= Response factor of compound i when measured with EPA Method 25A.

C_{Mi}= Measured concentration of compound i in ppmv as carbon.

C_{Ai}= True concentration of compound i in ppmv as carbon.

$$C_{icorr} = RF_i \times C_{imeas} \qquad \text{(Eq. 5)}$$

Where:
C_{icorr}= Concentration of compound i corrected to the value that would have been measured by EPA Method 25A, ppmv as carbon.

C_{imeas}= Concentration of compound i measured by EPA Method 320, ppmv as carbon.

$$C_{Eq} = 0.6098 \times C_{icorr} \qquad \text{(Eq. 6)}$$

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Where:
C_{Peq}= Concentration of compound i in mg of propane equivalent per DSCM.

[40CFR§60.4244(g)]

6.4. Recordkeeping Requirements

The permittee shall keep the following records pursuant to section 3.4.1.
[40CFR§60.4245(a)]

6.4.1. All notifications to comply with 40CFR60 Subpart JJJJ and all documentation supporting any notification.

6.4.2. Maintenance conducted on each 1,380 bhp engine (S1 – S4 and S8 – S11) and on engine S20.

6.4.3. Documentation that each 1,380 bhp engine (S1 – S4 and S8 – S11) meets the emission standards set forth in 6.1.1. and that engine S20 meets emission standards set forth in 6.1.3.

6.5. Reporting Requirements

6.5.1 The permittee shall submit an initial notification to the Director of the Division of Air Quality as required by §60.7(a)(1) and include the following.
[40CFR§60.4245(c)]

6.5.1.1. Name and address of the owner or operator,

6.5.1.2. The address of the affected source,

6.5.1.3. Make, model, engine family, serial number, model year, maximum engine power, and engine displacement.

6.5.1.4. Emission control equipment.

6.5.1.5. Fuel used.

6.5.2. The permittee shall submit a copy of each performance test as conducted in accordance with §60.4244 to the Director of the Division of Air Quality within 60 days after the test has been completed.

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7.0. Source-Specific Requirements (40CFR60 Subpart OOOO; S1 – S11, S20)

7.1. Limitations and Standards

7.1.1. The compressors associated with engines S1 – S11 and S20 must replace the compressor rod packing before the compressor has operated 26,000 hours from installation or repacking; or 36 months from the date of installation or repacking whichever one comes first.

7.2. Recordkeeping Requirements

7.2.1. From the date the compressors are installed the hours of operation and months of service shall be recorded continuously.

7.2.2. Records of the date and time of each reciprocating compressor rod packing replacement.

7.3. Reporting

7.3.1. **Annual Report**. The initial annual report is due 30 days after the initial compliance period and the subsequent reports are due on the same date as the initial report. The information needed in the annual report is the following: The hours of operation from installation or from the previous repacking and records of deviations.

8.0. Source-Specific Requirements (40CFR63 Subpart ZZZZ Requirements, S1-S4, S8-S11, S20, S5A)

8.1. Limitations and Standards

8.1.1. The permittee must comply with the applicable operating limitations in this section no later than October 19, 2013.
[40 C.F.R. § 63.6595(a)]

8.1.2. *Stationary RICE subject to Regulation under 40 CFR Part 60*. An affected source that meets any of the criteria in paragraphs (c)(1) through (7) of this section must meet the requirements of this part by meeting the requirements of 40 CFR part 60 subpart JJJJ, for spark ignition engines. No further requirements apply for such engines under this part.

The permittee meets the criteria of paragraph (c)(1), which is for a new or reconstructed stationary RICE located at an area source. The permittee must meet the requirements of this part by meeting the requirements of 40 CFR part 60 subpart JJJJ.

8.1.3. **Engine S5A.** Change oil and filter every 1,440 hours of operation or annually, whichever comes first.

8.1.4. **Engine S5A.** Inspect spark plugs every 1,440 hours of operation or annually, whichever comes first, and replace as necessary.

8.1.5. **Engine S5A.** Inspect all hoses and belts every 1,440 hours of operation or annually, whichever comes first, and replace as necessary.

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9.0. Source-Specific Requirements (TEG Dehydration Unit; S7)

9.1. Limitations and Standards

9.1.1. Maximum Throughput Limitation. The maximum wet natural gas throughput to the glycol dehydration unit/still column shall not exceed 80.0 million standard cubic feet per day (MMscf/day). Compliance with the Maximum Throughput Limitation shall be determined using a twelve month rolling total. A twelve month rolling total shall mean the sum of the monthly throughput at any given time during the previous twelve consecutive calendar months.

9.1.2. Maximum emissions from the glycol dehydration unit/still column (S7) shall not exceed the following limits:

Pollutant	**Maximum Hourly Emissions (lb/hr)**	**Maximum Annual Emissions (ton/year)**
Nitrogen Oxides	0.16	0.67
Carbon Monoxide	0.13	0.56
Volatile Organic Compounds	0.24	1.11
n-Hexane	0.02	0.06
Benzene	0.01	0.03
Ethyl benzene	0.01	0.02
Toluene	0.01	0.03
Xylenes	0.01	0.03

9.1.3. For purposes of determining potential HAP emissions at production-related facilities, the methods specified in 40 CFR 63, Subpart HH (i.e. excluding compressor engines from HAP PTE) shall be used.

9.1.4. Any source that determines it is not a major source but has actual emissions of 5 tons per year or more of a single HAP, or 12.5 tons per year or more of a combination of HAP (i.e., 50 percent of the major source thresholds), shall update its major source determination within 1 year of the prior determination or October 15, 2012, whichever is later, and each year thereafter, using gas composition data measured during the preceding 12 months.
[40CFR§63.760(c)]

9.1.5. The permittee is exempt from the requirements of 40CFR§63.760(b)(2) if the criteria below is met, except that the records of the determination of these criteria must be maintained as required in 40CFR§63.774(d)(1).

a. The actual average emissions of benzene from the glycol dehydration unit process vent to the atmosphere are less than 0.90 megagram per year (1 ton/yr), as determined by the procedures specified in §63.772(b)(2) of this subpart.

[40CFR§63.764(e)]

9.1.6. All vapors from the regenerator will be sent to a condenser and then to reboiler S7 to be used as fuel and operated to achieve minimum 95% control efficiency.

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9.2. Monitoring Requirements

9.2.1. The permittee shall monitor the throughput of wet natural gas process stream which flows through the contactor of the TEG dehydration unit on a monthly basis.

9.2.2. In order to demonstrate compliance with the area source status, claimed within sections 9.1.2 and 9.1.3, as well as the benzene exemption provided under section 9.1.7, the following parameters shall be measured at least once quarterly, with the exception of the natural gas flowrate annual daily average, natural gas flowrate maximum design capacity, and wet gas composition, in order to define annual average values or, if monitoring is not practical, some parameters may be assigned default values as listed below.

a. Natural Gas Flowrate
   i. Number of hours operated per quarter
   ii. Quarterly throughput (MMscf/quarter)
   iii. Annual daily average (MMscf/day), and
   iv. Maximum design capacity (MMscf/day)
b. Absorber temperature and pressure
c. Lean glycol circulation rate
d. Glycol pump type and maximum design capacity (gpm)
e. Flash tank temperature and pressure, if applicable
f. Stripping Gas flow rate, if applicable
g. Wet gas composition (upstream of the absorber – dehydration column) sampled in accordance with GPA method 2166 and analyzed consistent with GPA extended method 2286 as well as the procedures presented in the GRI-GLYCalc™ Technical Reference User Manual and Handbook V4
h. Wet gas water content (lbs H_2O/MMscf)
i. Dry gas water content (lbs H_2O/MMscf) at a point directly after exiting the dehydration column and before any additional separation points

The following operating parameter(s) may be assigned default values when using GRI-GLYCalc:

a. Dry gas water content can be assumed to be equivalent to pipeline quality at 7 lb H_2O / MMscf
b. Wet gas water content can be assumed to be saturated
c. Lean glycol water content if not directly measured may use the default value of 1.5 % water as established by GRI
d. Lean glycol circulation rate may be estimated using the TEG recirculation ratio of 3 gal TEG / lb H_2O removed.

Note: If you are measuring and using actual wet or dry gas water content, then you should also measure the glycol recirculation rate rather than using the default TEG recirculation ratio.
[45CSR§13-5.11, §63.772(b)(2)(i)]

9.3. Testing Requirements

9.3.1. The permittee shall determine the composition of the wet natural gas by sampling in accordance with GPA Method 2166 and analyzing according to extended GPA Method 2286 analysis as specified in the GRI-GLYCalc™ V4 Technical Reference User Manual and Handbook. As specified in the handbook, the permittee shall sample the wet gas stream at a location prior to the glycol dehydration contactor column, but after any type of separation device, in accordance with GPA method 2166. The permittee may utilize other equivalent methods provided they are approved in advance by DAQ as part of a testing protocol. If alternative methods are proposed, a test protocol shall be submitted for approval no later than 60 days before the scheduled test date. The initial compliance test must be conducted within 180 days of permit issuance or within 180 days of startup of the glycol dehydration unit, whichever is later.

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Note: The DAQ defines a representative wet gas sample to be one that is characteristic of the average gas composition dehydrated throughout a calendar year. If an isolated sample is not indicative of the annual average composition, the permittee may opt to produce a weighted average based on throughput between multiple sampling events, which can be used to define a more representative average annual gas composition profile.
[45CSR§13-5.11]

9.3.2. The following testing and compliance provisions of Part 63 Subpart HH National Emission Standards for Hazardous Air Pollutants From Oil and Natural Gas Production Facilities are applicable to the facility:

§ 63.772 Test methods, compliance procedures, and compliance demonstrations.

(b) Determination of glycol dehydration unit flowrate, benzene emissions, or BTEX emissions. The procedures of this paragraph shall be used by an owner or operator to determine glycol dehydration unit natural gas flowrate, benzene emissions, or BTEX emissions.

(2) The determination of actual average benzene emissions or BTEX emissions from a glycol dehydration unit shall be made using the procedures of paragraph (b)(2)(i) of this requirement. Emissions shall be determined either uncontrolled, or with federally enforceable controls in place.

(i) The owner or operator shall determine actual average benzene 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 Gas Research Institute (GRI) report entitled "Atmospheric Rich/Lean Method for Determining Glycol Dehydrator Emissions " (GRI-95/0368.1).
[§63.772(b)(2)(i)]

9.4. Recordkeeping Requirements

9.4.1. The permittee shall maintain a record of the wet natural gas throughput through the TEG dehydration contactor to demonstrate compliance with section 9.1.1 of this permit. Said records shall be maintained for a period of five (5) years on site or in a readily accessible off-site location maintained by the permittee. Said records shall be readily available to the Director of the Division of Air Quality or his/her duly authorized representative for expeditious inspection and review. Any records submitted to the agency pursuant to a requirement of this permit or upon request by the Director shall be certified by a responsible official.

9.4.2. For the purpose of documenting compliance with the emission limitations, HAP major source thresholds, as well as the benzene exemption, the permittee shall maintain records of all monitoring data, wet gas sampling, and annual GRI-GLYCalc™ emission estimates. Said records shall be maintained for a period of five (5) years on site or in a readily accessible off-site location maintained by the permittee. Said records shall be readily available to the Director of the Division of Air Quality or his/her duly authorized representative for expeditious inspection and review. Any records submitted to the agency pursuant to a requirement of this permit or upon request by the Director shall be certified by a responsible official.
[45CSR§13-5.11]

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10.0. Source-Specific Requirements (Reboiler, Line Heaters)

10.1. Limitations and Standards

10.1.1. Maximum Design Heat Input. The maximum design heat input shall not exceed the following:

Emission Point ID#	Emission Unit Description	MDHI (MMBTU/hr)
E7	Dehy Reboiler	1.5
E17	Line Heater	0.75
E17-A	Line Heater	4.0
E17-B	Line Heater	2.0

10.1.2. No person shall cause, suffer, allow or permit emission of smoke and/or particulate matter into the open air from any fuel burning unit which is greater than ten (10) percent opacity based on a six minute block average.
[45CSR§2-3.1.]

10.2. Monitoring Requirements

10.2.1. At such reasonable times as the Secretary may designate, the permittee shall conduct Method 9 emission observations for the purpose of demonstrating compliance with Section 10.1.2. Method 9 shall be conducted in accordance with 40 CFR 60 Appendix A.

10.3. Testing Requirements

10.3.1. Compliance with the visible emission requirements of section 10.1.2 shall be determined in accordance with 40 CFR Part 60, Appendix A, Method 9 or by using measurements from continuous opacity monitoring systems approved by the Director. The Director may require the installation, calibration, maintenance and operation of continuous opacity monitoring systems and may establish policies for the evaluation of continuous opacity monitoring results and the determination of compliance with the visible emission requirements of section 10.1.2. Continuous opacity monitors shall not be required on fuel burning units which employ wet scrubbing systems for emission control.
[45CSR§2-3.2.]

10.4. Recordkeeping Requirements

10.4.1. The permittee shall maintain records of all monitoring data required by Section 10.2.1 documenting the date and time of each visible emission check, the emission point or equipment/source identification number, the name or means of identification of the observer, the results of the check(s), whether the visible emissions are normal for the process, and, if applicable, all corrective measures taken or planned. The permittee shall also record the general weather conditions (i.e. sunny, approximately 80°F, 6 - 10 mph NE wind) during the visual emission check(s). Should a visible emission observation be required to be performed per the requirements specified in Method 9, the data records of each observation shall be maintained per the requirements of Method 9.

10.5. Reporting Requirements

10.5.1. Any deviation(s) from the allowable visible emission requirement for any emission source discovered during observations using 40CFR Part 60, Appendix A, Method 9 or 22 shall be reported in writing to the Director of the Division of Air Quality as soon as practicable, but in any case within ten (10) calendar days of the occurrence and shall include at least the following

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information: the results of the visible determination of opacity of emissions, the cause or suspected cause of the violation(s), and any corrective measures taken or planned.

11.0. Source-Specific Requirements (Condensate Tanks (T33-T40) and Condensate Truck Loading (S14) controlled by Vapor Combustion Units (VCU-1, VCU-2))

11.1. Limitations and Standards

11.1.1. *Operation and Maintenance of Air Pollution Control Equipment.* The permittee shall, to the extent practicable, install, maintain, and operate the vapor combustion units (VCU-1, VCU-2) and associated monitoring equipment in a manner consistent with safety and good air pollution control practices for minimizing emissions, or comply with any more stringent limits set forth in this permit or as set forth by any State rule, Federal regulation, or alternative control plan approved by the Secretary.
[45CSR§13-5.11.]

11.1.2. **Truck Loading Limitations**. A vapor balance line from the truck back to the condensate tank is required any time condensate is being loaded by a truck. Condensate Loading shall be limited to 12 hours of any day.

11.1.3. The permittee shall use the vapor combustor at all times truck loading occurs, have a constant pilot flame during all times of truck loading, and follow manufacturer's recommendations in operation of the vapor combustor.

11.1.4. The vapor combustor shall be designed for and operated with no visible emissions, except for periods not to exceed a total of 5 minutes during any 2 consecutive hours.

11.1.3. The permittee shall route all VOC and HAP emissions from the Condensate Truck Loading to a vapor combustion unit (VCU-1) and the Condensate Storage Tanks (T33-T40) to a vapor combustion unit (VCU-2) This vapor combustion units (VCU-1, VCU-2) shall be designed to achieve a minimum guaranteed control efficiency of 98% for volatile organic compound (VOC) and hazardous air pollutants (HAP) emissions.

11.1.5. The maximum quantity of condensate that shall be loaded shall not exceed 4,600,000 gallons per year. Compliance with this limit shall be demonstrated using a twelve month rolling total. A twelve month rolling total shall mean the sum of the monthly throughput at any given time during the previous twelve consecutive calendar months.

11.1.6. To demonstrate compliance with Section 11.1.7., the quantity of waste gas that shall be consumed in the vapor combustor (VCU-1) shall not exceed 456,300 cubic feet per year. Compliance with the gas throughput limit shall be demonstrated using a rolling 12-month total.

11.1.7. **Vapor Combustor (VCU-1) Emission Limitations.** Maximum emissions from the vapor combustor (VCU-1) or emission point E16 shall not exceed the following limits:

Pollutant	**Maximum Hourly Emissions (lb/hr)**	**Maximum Annual Emissions (ton/year)**
Volatile Organic Compounds	3.00	0.82
Nitrogen Oxides	0.21	0.06
Carbon Monoxide	1.13	0.31

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11.1.8. **Annual Storage Tank Throughput Limitation.** The permittee shall not exceed 4,600,000 gallons per year of condensate. Compliance with these annual throughput limitations shall be determined using a twelve month rolling total. A twelve month rolling total shall mean the sum of the tank throughputs at any given time during the previous twelve consecutive months.

11.1.9. To demonstrate compliance with Section 11.1.10., the quantity of waste gas that shall be consumed in the vapor combustor (VCU-2) shall not exceed 27.17 mmscf/yr. Compliance with the gas throughput limit shall be demonstrated using a rolling 12-month total.

11.1.10. **Vapor Combustor (VCU-2) Emission Limitations.** Maximum emissions from the vapor combustors (VCU-2) or emission point E16 shall not exceed the following limits:

Pollutant	**Maximum Hourly Emissions (lb/hr)**	**Maximum Annual Emissions (ton/year)**
Volatile Organic Compounds	27.57	40.23
Nitrogen Oxides	1.96	2.86
Carbon Monoxide	10.66	15.57

11.2. Monitoring Requirements

11.2.1. The pilot flames shall be continuously monitored by a thermocouple or an infrared monitor. Each monitoring device shall be accurate to, and shall be calibrated at a frequency in accordance with manufacturer's specifications.

11.2.2. The permittee shall monitor the throughput to the vapor combustor units (VCU-1, VCU-2) on a monthly basis.

11.3. Testing Requirements

11.3.1. The permittee shall conduct a Method 22 opacity test on the vapor combustor for at least two hours. This test shall demonstrate no visible emissions are observed for more than a total of 5 minutes during any 2 consecutive hour period using 40CFR60 Appendix A Method 22. The permittee shall conduct this test within one (1) year of permit issuance or initial startup whichever is later. The visible emission checks shall determine the presence or absence of visible emissions. At a minimum, the observer must be trained and knowledgeable regarding the effects of background contrast, ambient lighting, observer position relative to lighting, wind, and the presence of uncombined water (condensing water vapor) on the visibility of emissions. This training may be obtained from written materials found in the References 1 and 2 from 40 CFR part 60, appendix A, Method 22 or from the lecture portion of 40 CFR part 60, appendix A, Method 9 certification course.

11.4. Recordkeeping Requirements

11.4.1. For the purpose of demonstrating compliance with section 11.2.1., the permittee shall maintain records of the times and duration of all periods which the pilot flame was absent.

11.4.2. For the purpose of demonstrating compliance with section 11.3.1., the permittee shall maintain records of the visible emission opacity tests.

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11.4.3. For the purpose of demonstrating compliance with section 11.1.5 and 11.18., the permittee shall maintain records of the throughputs of condensate loaded into tank trucks and condensate tank throughput. The permittee shall calculate the monthly throughput to the vapor combustor by ratio of the recorded condensate and tank truck loading volumes against the process modeling and throughput information within the plans and specifications filed in Permit Application R13-3007E.

11.4.4. All records required under Section 11.4 shall be maintained on site or in a readily accessible off-site location maintained by the permittee for a period of five (5) years. Said records shall be readily available to the Director of the Division of Air Quality or his/her duly authorized representative for expeditious inspection and review. Any records submitted to the agency pursuant to a requirement of this permit or upon request by the Director shall be certified by a responsible official.

11.5. Reporting Requirements

11.5.1 Any deviation(s) of the allowable visible emission requirement for any emission source discovered during observations using 40CFR Part 60, Appendix A, Method 9 must be reported in writing to the Director of the Division of Air Quality as soon as practicable, but within ten (10) calendar days, of the occurrence and shall include, at a minimum, the following information: the results of the visible determination of opacity of emissions, the cause or suspected cause of the violation(s), and any corrective measures taken or planned.

12.0. Source-Specific Requirements (40CFR60 Subpart Kb Requirements, Condensate Storage Tanks (T01-T03))

12.1. Limitations and Standards

12.1.1. The affected facility to which this subpart applies is each storage vessel with a capacity greater than or equal to 75 cubic meters (m^3) that is used to store volatile organic liquids (VOL) for which construction, reconstruction, or modification is commenced after July 23, 1984.
[40CFR§60.110b, Condensate Storage Tanks (T33-T40)]

12.1.2. The owner or operator of each storage vessel with a design capacity greater than or equal to 75 m^3 which contains a VOL that, as stored, has a maximum true vapor pressure greater than or equal to 76.6 kPa shall equip each storage vessel with the following:

(1) A closed vent system and control device as specified in § 60.112b(a)(3).
[40CFR§60.112b(b)(1), Condensate Storage Tanks (T33-T40)]

12.1.3. The permittee shall install a closed vent system and control device meeting the following specifications:

(1) The closed vent system shall be designed to collect all VOC vapors and gases discharged from the storage vessel and operated with no detectable emissions as indicated by an instrument reading of less than 500 ppm above background and visual inspections, as determined in part 60, subpart VV, § 60.485(b).

(2) The control device shall be designed and operated to reduce inlet VOC emissions by 95 percent or greater. If a flare is used as the control device, it shall meet the specifications described in the general control device requirements (§ 60.18) of the General Provisions.
[40CFR§60.112b(a)(3), Condensate Storage Tanks (T33-T40)]

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12.2. Testing and Procedures

12.2.1. The owner or operator of each storage vessel as specified in § 60.112b(a) shall meet the requirements of paragraph (a), (b), or (c) of this section. The applicable paragraph for a particular storage vessel depends on the control equipment installed to meet the requirements of § 60.112b.

(a) *Reserved;*

(b) *Reserved;*

(c) The owner or operator of each source that is equipped with a closed vent system and control device as required in § 60.112b (a)(3) or (b)(2) (other than a flare) is exempt from § 60.8 of the General Provisions and shall meet the following requirements.

(1) Submit for approval by the Administrator as an attachment to the notification required by § 60.7(a)(1) or, if the facility is exempt from § 60.7(a)(1), as an attachment to the notification required by § 60.7(a)(2), an operating plan containing the information listed below.

(i) Documentation demonstrating that the control device will achieve the required control efficiency during maximum loading conditions. This documentation is to include a description of the gas stream which enters the control device, including flow and VOC content under varying liquid level conditions (dynamic and static) and manufacturer's design specifications for the control device. If the control device or the closed vent capture system receives vapors, gases, or liquids other than fuels from sources that are not designated sources under this subpart, the efficiency demonstration is to include consideration of all vapors, gases, and liquids received by the closed vent capture system and control device. If an enclosed combustion device with a minimum residence time of 0.75 seconds and a minimum temperature of 816 °C is used to meet the 95 percent requirement, documentation that those conditions will exist is sufficient to meet the requirements of this paragraph.

(ii) A description of the parameter or parameters to be monitored to ensure that the control device will be operated in conformance with its design and an explanation of the criteria used for selection of that parameter (or parameters).

12.2.2. Operate the closed vent system and control device and monitor the parameters of the closed vent system and control device in accordance with the operating plan submitted to the Administrator in accordance with section 13.2.1 (c)(1), unless the plan was modified by the Administrator during the review process. In this case, the modified plan applies.
[40CFR§60.113b, Condensate Storage Tanks (T33-T40)]

12.3. Reporting and Recordkeeping Requirements

12.3.1. The owner or operator of each storage vessel as specified in § 60.112b(a) shall keep records and furnish reports as required by paragraphs (a), (b), or (c) of this section depending upon the control equipment installed to meet the requirements of § 60.112b. The owner or operator shall keep copies of all reports and records required by this section, except for the record required by (c)(1), for at least 2 years. The record required by (c)(1) will be kept for the life of the control equipment.

(a) *Reserved;*

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(b) *Reserved;*

(c) After installing control equipment in accordance with § 60.112b (a)(3) or (b)(1) (closed vent system and control device other than a flare), the owner or operator shall keep the following records.

(1) A copy of the operating plan.

(2) A record of the measured values of the parameters monitored in accordance with §60.113b(c)(2).

(d) *Reserved.*
[40CFR§60.115b, Condensate Storage Tanks (T33-T40)]

12.4. Monitoring of Operations

12.4.1. The owner or operator shall keep copies of all records required by this section, except for the record required by section 13.4.2, for at least 2 years. The record required by section 13.4.2 will be kept for the life of the source.

12.4.2. The owner or operator of each storage vessel as specified in § 60.110b(a) shall keep readily accessible records showing the dimension of the storage vessel and an analysis showing the capacity of the storage vessel.

12.4.3. Except as provided in sections 13.4.5 and 13.4.6, the owner or operator of each storage vessel either with a design capacity greater than or equal to 151 m^3 storing a liquid with a maximum true vapor pressure greater than or equal to 3.5 kPa or with a design capacity greater than or equal to 75 m^3 but less than 151 m^3 storing a liquid with a maximum true vapor pressure greater than or equal to 15.0 kPa shall maintain a record of the VOL stored, the period of storage, and the maximum true vapor pressure of that VOL during the respective storage period.

12.4.4 Available data on the storage temperature may be used to determine the maximum true vapor pressure as determined below.

(1) For vessels operated above or below ambient temperatures, the maximum true vapor pressure is calculated based upon the highest expected calendar-month average of the storage temperature. For vessels operated at ambient temperatures, the maximum true vapor pressure is calculated based upon the maximum local monthly average ambient temperature as reported by the National Weather Service.

(2) For crude oil or refined petroleum products the vapor pressure may be obtained by the following:

(i) Available data on the Reid vapor pressure and the maximum expected storage temperature based on the highest expected calendar-month average temperature of the stored product may be used to determine the maximum true vapor pressure from nomographs contained in API Bulletin 2517 (incorporated by reference—see § 60.17), unless the Administrator specifically requests that the liquid be sampled, the actual storage temperature determined, and the Reid vapor pressure determined from the sample(s).

(ii) The true vapor pressure of each type of crude oil with a Reid vapor pressure less than 13.8 kPa or with physical properties that preclude determination by the recommended

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method is to be determined from available data and recorded if the estimated maximum true vapor pressure is greater than 3.5 kPa.

(3) For other liquids, the vapor pressure:

(i) May be obtained from standard reference texts, or

(ii) Determined by ASTM D2879-83, 96, or 97 (incorporated by reference—see § 60.17); or

(iii) Measured by an appropriate method approved by the Administrator; or

(iv) Calculated by an appropriate method approved by the Administrator.

12.4.5. The owner or operator of each vessel storing a waste mixture of indeterminate or variable composition shall be subject to the following requirements.

(1) Prior to the initial filling of the vessel, the highest maximum true vapor pressure for the range of anticipated liquid compositions to be stored will be determined using the methods described in section 13.4.4.

(2) For vessels in which the vapor pressure of the anticipated liquid composition is above the cutoff for monitoring but below the cutoff for controls as defined in § 60.112b(a), an initial physical test of the vapor pressure is required; and a physical test at least once every 6 months thereafter is required as determined by the following methods:

(i) ASTM D2879-83, 96, or 97 (incorporated by reference—see § 60.17); or

(ii) ASTM D323-82 or 94 (incorporated by reference—see § 60.17); or

(iii) As measured by an appropriate method as approved by the Administrator.

12.4.6. The owner or operator of each vessel equipped with a closed vent system and control device meeting the specification of § 60.112b or with emissions reductions equipment as specified in 40 CFR 65.42(b)(4), (b)(5), (b)(6), or (c) is exempt from the requirements of section 13.4.3.
[40CFR§60.116b, Condensate Storage Tanks (T33-T40)]

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CERTIFICATION OF DATA ACCURACY

I, the undersigned, hereby certify that, based on information and belief formed after reasonable inquiry, all information contained in the attached _____, representing the period beginning _____ and ending _____, and any supporting documents appended hereto, is true, accurate, and complete.

Signature[1] _____ _____
(please use blue ink) Responsible Official or Authorized Representative Date

Name & Title _____ _____
(please print or type) Name Title

Telephone No. _____ Fax No. _____

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[1] This form shall be signed by a "Responsible Official." "Responsible Official" means one of the following:

a. For a corporation: The president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy or decision-making functions for the corporation, or a duly authorized representative of such person if the representative is responsible for the overall operation of one or more manufacturing, production, or operating facilities applying for or subject to a permit and either:

   (i) the facilities employ more than 250 persons or have a gross annual sales or expenditures exceeding $25 million (in second quarter 1980 dollars), or

   (ii) the delegation of authority to such representative is approved in advance by the Director;

b. For a partnership or sole proprietorship: a general partner or the proprietor, respectively;

c. For a municipality, State, Federal, or other public entity: either a principal executive officer or ranking elected official. For the purposes of this part, a principal executive officer of a Federal agency includes the chief executive officer having responsibility for the overall operations of a principal geographic unit of the agency (e.g., a Regional Administrator of U.S. EPA); or

d. The designated representative delegated with such authority and approved in advance by the Director.

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