

*West Virginia Department of Environmental Protection  
Harold D. Ward  
Cabinet Secretary*

# Construction Permit



**R13- 3632**

*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, Permission to Commence Construction, 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:*

**Antero Midstream  
Torreys Peak Compressor Station  
095-00132**

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*Laura M. Crowder  
Director, Division of Air Quality*

*Issued: Pre-Draft*

Facility Location: Sistersville, Tyler County, West Virginia  
Mailing Address: 1615 Wynkoop Street, Denver, CO 80202  
Facility Description: Natural Gas Compressor Station  
NAICS Codes: 486210  
UTM Coordinates: 503.892 km Easting • 4,377.559 km Northing • Zone 17N  
Permit Type: Construction  
Description of Change: New Compressor Station.

*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.*

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*The source is not subject to 45CSR30.*

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**1.0. Emission Units**

<b>Emission Unit ID</b>	<b>Emission Point ID</b>	<b>Emission Unit Description</b>	<b>Year Installed</b>	<b>Design Capacity</b>	<b>Control Device</b>
C-100	1E	Waukesha L7044 GSI Compressor Engine #1	2024	1,680 hp	OxCat (1C)
C-200	2E	Waukesha L7044 GSI Compressor Engine #2	2024	1,680 hp	OxCat (2C)
C-300	3E	Waukesha L7044 GSI Compressor Engine #3	2024	1,680 hp	OxCat (3C)
C-400	4E	Waukesha L7044 GSI Compressor Engine #4	2024	1,680 hp	OxCat (4C)
C-500	5E	Waukesha L7044 GSI Compressor Engine #5	2024	1,680 hp	OxCat (5C)
C-600	6E	Waukesha L7044 GSI Compressor Engine #6	2024	1,680 hp	OxCat (6C)
C-700	7E	Waukesha L7044 GSI Compressor Engine #7	2024	1,680 hp	OxCat (7C)
C-800	8E	Waukesha L7044 GSI Compressor Engine #8	2024	1,680 hp	OxCat (8C)
C-900	9E	Waukesha L7044 GSI Compressor Engine #9	2024	1,680 hp	OxCat (9C)
C-1000	10E	Waukesha L7044 GSI Compressor Engine #10	2024	1,680 hp	OxCat (10C)
C-1100	11E	Waukesha L7044 GSI Compressor Engine #11	2024	1,680 hp	OxCat (11C)
C-1200	12E	Waukesha L7044 GSI Compressor Engine #12	2024	1,680 hp	OxCat (12C)
C-1300	13E	Waukesha L7044 GSI Compressor Engine #12	2024	1,680 hp	OxCat (13C)
GEN1	14E	Capstone C600 Natural Gas Microturbine Generator	2024	600kW	None
DEHY1	15E	Dehydrator Still Vent #1	2024	140 MMscfd	TO-1(16C)
DFLSH1	16E	Dehydrator Flash Tank #1	2024	140 MMscfd	DREB1 (17E) or TO-1 (16C)
DREB1	17E	Dehydrator Reboiler #1	2024	1.5 MMBtu/hr	None
DEHY2	18E	Dehydrator Still Vent #2	2024	140 MMscfd	TO-2 (17C)
DFLSH2	19E	Dehydrator Flash Tank #2	2024	140 MMscfd	DREB2 (20E) or TO-2 (17C)
DREB2	20E	Dehydrator Reboiler #2	2024	1.5 MMBtu/hr	None
T01	21E	Condensate Tank #1	2024	400 barrel	VRU-100 & VRU-200 (14C&15C)
T02	22E	Condensate Tank #2	2024	400 barrel	VRU-100 & VRU-200 (14C & 15C)
T03	23E	Condensate Tank #3	2024	400 barrel	VRU-100 & VRU-200 (14C & 15C)

Emission Unit ID	Emission Point ID	Emission Unit Description	Year Installed	Design Capacity	Control Device
T04	24E	Settling Tank	2024	500 barrel	VRU-100 & VRU-200 (14C & 15C)
T05	25E	Produced Water Tank #1	2024	400 barrel	VRU-100 & VRU-200 (14C & 15C)
T06	26E	Produced Water Tank #2	2024	400 barrel	VRU-100 & VRU-200 (14C & 15C)
T07	27E	Produced Water Tank #3	2024	400 barrel	VRU-100 & VRU-200 (14C & 15C)
FUEL1	28E	Fuel Conditioning Heater #1	2024	0.75 MMBtu/hr	None
CATHT1	29E	Catalytic Heater for Generator Fuel	2024	0.024 MMBtu/hr	None
-	-	NSCR Catalyst – Compressor #1	2024	-	1C
-	-	NSCR Catalyst – Compressor #2	2024	-	2C
-	-	NSCR Catalyst – Compressor #3	2024	-	3C
-	-	NSCR Catalyst – Compressor #4	2024	-	4C
-	-	NSCR Catalyst – Compressor #5	2024	-	5C
-	-	NSCR Catalyst – Compressor #6	2024	-	6C
-	-	NSCR Catalyst – Compressor #7	2024	-	7C
-	-	NSCR Catalyst – Compressor #8	2024	-	8C
-	-	NSCR Catalyst – Compressor #9	2024	-	9C
-	-	NSCR Catalyst – Compressor #10	2024	-	10C
-	-	NSCR Catalyst – Compressor #11	2024	-	11C
-	-	NSCR Catalyst – Compressor #12	2024	-	12C
-	-	NSCR Catalyst – Compressor #13	2024	-	13C
VRU-100	-	Vapor Recovery Unit #1	2024	TBD	14C
VRU-200	-	Vapor Recovery Unit #2	2024	TBD	15C
TO-1	30E	Thermal Oxidizer #1	2024	6.0 MMBtu/hr	16C
TO-2	31E	Thermal Oxidizer #2	2024	6.0 MMBtu/hr	17C
LDOUT1	32E	Production Liquids Truck Loadout	2024	195 bbl/day	TO-1 & TO-2 (16C & 17C)
VENT1	33E	Venting Episodes	202	Variable	None

**1.1 Control Devices**

Emission Unit	Pollutant	Control Device	Control Efficiency
Waukesha L7044 GSI Rich Burn 4 Stroke Compressor Engine	Nitrogen Oxides	NSCR Catalyst	97.5%
	Carbon Monoxide		97.5%
	Volatile Organic Compounds (including formaldehyde)		83%
Condensate Tanks (T01 – T03); Settling Tank (T04); Produced Water Tank (T05-T07)	Volatile Organic Compounds	Vapor Recovery Unit w/back-up Vapor Recovery Unit	98%
	Hazardous Air Pollutants		98%
Dehydrator Still Vent #1; Dehydrator Flash Tank #1; Dehydrator Still Vent #2; Dehydrator Flash Tank #2	Volatile Organic Compounds	Thermal Oxidizer	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

<b>CAAA</b>	Clean Air Act Amendments	<b>NO<sub>x</sub></b>	Nitrogen Oxides
<b>CBI</b>	Confidential Business Information	<b>NSPS</b>	New Source Performance Standards
<b>CEM</b>	Continuous Emission Monitor	<b>PM</b>	Particulate Matter
<b>CES</b>	Certified Emission Statement	<b>PM<sub>2.5</sub></b>	Particulate Matter less than 2.5 μm in diameter
<b>C.F.R. or CFR</b>	Code of Federal Regulations	<b>PM<sub>10</sub></b>	Particulate Matter less than 10μm in diameter
<b>CO</b>	Carbon Monoxide	<b>Ppb</b>	Pounds per Batch
<b>C.S.R. or CSR</b>	Codes of State Rules	<b>Pph</b>	Pounds per Hour
<b>DAQ</b>	Division of Air Quality	<b>Ppm</b>	Parts per Million
<b>DEP</b>	Department of Environmental Protection	<b>Ppmv or ppmv</b>	Parts per Million by Volume
<b>dscm</b>	Dry Standard Cubic Meter	<b>PSD</b>	Prevention of Significant Deterioration
<b>FOIA</b>	Freedom of Information Act	<b>Psi</b>	Pounds per Square Inch
<b>HAP</b>	Hazardous Air Pollutant	<b>SIC</b>	Standard Industrial Classification
<b>HON</b>	Hazardous Organic NESHAP	<b>SIP</b>	State Implementation Plan
<b>HP</b>	Horsepower	<b>SO<sub>2</sub></b>	Sulfur Dioxide
<b>lbs/hr</b>	Pounds per Hour	<b>TAP</b>	Toxic Air Pollutant
<b>LDAR</b>	Leak Detection and Repair	<b>TPY</b>	Tons per Year
<b>M</b>	Thousand	<b>TRS</b>	Total Reduced Sulfur
<b>MACT</b>	Maximum Achievable Control Technology	<b>TSP</b>	Total Suspended Particulate
<b>MDHI</b>	Maximum Design Heat Input	<b>USEPA</b>	United States Environmental Protection Agency
<b>MM</b>	Million	<b>UTM</b>	Universal Transverse Mercator
<b>MMBtu/hr or mmbtu/hr</b>	Million British Thermal Units per Hour	<b>VEE</b>	Visual Emissions Evaluation
<b>MMCF/hr or mmcf/hr</b>	Million Cubic Feet per Hour	<b>VOC</b>	Volatile Organic Compounds
<b>NA</b>	Not Applicable	<b>VOL</b>	Volatile Organic Liquids
<b>NAAQS</b>	National Ambient Air Quality Standards		
<b>NESHAPS</b>	National Emissions Standards for Hazardous Air Pollutants		

### **2.3. Authority**

This permit is issued in accordance with West Virginia Air Pollution Control Act 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 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 Applications R13-3632, 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§§13-5.10 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.

**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**

[Reserved]

**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.

**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.

### 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 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]

### 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 or by private carrier with postage prepaid to the address(es), or submitted in electronic format by email as set forth below or to such other person or address as the Secretary of the Department of Environmental Protection may designate:

**DAQ:**

Director  
WVDEP  
Division of Air Quality  
601 57<sup>th</sup> Street  
Charleston, WV 25304-2345

**US EPA:**

Section Chief, USEPA, Region III  
Enforcement and Compliance Assurance Division  
Air Section (3ED21)  
Four Penn Center  
1600 John F Kennedy Blvd  
Philadelphia, PA 19103-2852

**DAQ Compliance and Enforcement<sup>1</sup>:**

[DEPAirQualityReports@wv.gov](mailto:DEPAirQualityReports@wv.gov)

<sup>1</sup>For all self-monitoring reports (MACT, GACT, NSPS, etc.), stack tests and protocols, Notice of Compliance Status Reports, Initial Notifications, etc.

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 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.

3.5.4.2. In accordance with 45CSR22 – Air Quality Management Fee Program, enclosed with this permit is an Application for a Certificate to Operate (CTO). The CTO will cover the time period beginning with the date of initial startup through the following June 30. Said application and the appropriate fee shall be submitted to this office prior to the date of initial startup. For any startup date other than July 1, the permittee shall pay a fee or prorated fee in accordance with Section 4.5 of 45CSR22. A copy of this schedule may be found on the reverse side of the CTO application.

- 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.



## 4.0. Source-Specific Requirements

### 4.1. Limitations and Standards

- 4.1.1. **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.
- 4.1.2. **Operation and Maintenance of Air Pollution Control Equipment.** The permittee shall, to the extent practicable, install, maintain, and operate all pollution control equipment 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§13-5.10.]**
- 4.1.3. The permittee shall install, maintain, and operate all above-ground piping, valves, pumps, etc. that service lines in the transport of potential sources of regulated air pollutants to prevent any substantive fugitive escape of regulated air pollutants. Any above-ground piping, valves, pumps, etc. that shows signs of excess wear and that have a reasonable potential for substantive fugitive emissions of regulated air pollutants shall be replaced.
- 4.1.4. Only those emission units/sources as identified in Table 1.0, with the exception of any *de minimis* sources as identified under Table 45-13B of 45CSR13, are authorized at the permitted facility.

### 4.2. Recordkeeping Requirements

- 4.2.1. **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.
- 4.2.2. **Record of Maintenance of Air Pollution Control Equipment.** For all pollution control equipment listed in Section 1.1, the permittee shall maintain accurate records of all required pollution control equipment inspection and/or preventative maintenance procedures.
- 4.2.3. **Record of Malfunctions of Air Pollution Control Equipment.** For all air pollution control equipment 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.

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## 5.0. Source-Specific Requirements (Compressor Engines, C-100 to C-1300)

### 5.1 Limitations and Standards

- 5.1.1 a. Maximum emissions from each of the 1,680 hp natural gas fired reciprocating engines equipped with NSCR catalysts, Waukesha L7044 GSI shall not exceed the following limits:

Pollutant	Maximum Hourly Emissions (lb/hr)	Maximum Annual Emissions (ton/year)
Nitrogen Oxides	1.27	5.56
Carbon Monoxide	1.18	5.15
Volatile Organic Compounds (includes formaldehyde)	0.32	1.40
Formaldehyde	0.02	0.08

5.1.2. Requirements for Use of Catalytic Reduction Devices (NSCR for C-100 – C-1300)

- a. Rich-burn natural gas compressor engines (C-100 – C-1300) equipped with non-selective catalytic reduction (NSCR) air pollution control device 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 deliver additional fuel when required to ensure a fuel-rich mixture and a resultant exhaust oxygen content of less than or equal to 0.5%. The automatic air/fuel ratio controller shall also incorporate dual-point exhaust gas temperature and oxygen sensors which provide temperature and exhaust oxygen content differential feedback. Such controls shall ensure proper and efficient operation of the engine and NSCR air pollution control device;
- b. 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
- c. 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.
- d. The permittee shall follow a written operation and maintenance plan that provides the periodic and annual maintenance requirements.

## **5.2. Monitoring Requirements**

### **5.2.1. Catalytic Oxidizer Control Devices (NSCR for C-100 – C-1300)**

- 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 operating and maintenance recommendations of the catalyst element manufacturer.

## **5.3. Testing Requirements**

- 5.3.1. See Facility-Wide Testing Requirements Section 3.3 and Testing Requirements of Section 11.5.

## **5.4. Recordkeeping Requirements**

- 5.4.1. The permittee shall maintain records of the hours of operation of each engine. Said records shall be kept in accordance with permit condition 3.4.1.
- 5.4.2. To demonstrate compliance with permit condition 5.1.2, the permittee shall maintain records of all catalytic reduction device maintenance. Said records shall be kept in accordance with permit condition 3.4.1.

## **5.5. Reporting Requirements**

- 5.5.1. See Facility-Wide Reporting Requirements Section 3.5 and Reporting Requirements of Sections 11.6 and 12.4.

## 6.0. Source-Specific Requirements (GEN 1)

### 6.1. Limitations and Standards

- 6.1.1. The GEN 1 unit shall be a Capstone C600 Standard 600 kWe (output) Microturbine consisting of three (3) 200 kWe units and shall only be fired by natural gas;
- 6.1.2. The maximum emissions from the Microturbine shall not exceed the limits given in the following table:

Pollutant	lb/hr	TPY
NO <sub>x</sub>	0.24	1.05
CO	0.66	2.89
VOC	0.06	0.26
PM <sub>10</sub>	0.04	0.18
Formaldehyde	0.00	0.02

- 6.1.3. As the annual emissions are based on 8,760 hours of operation, there are no annual limits on hours of operation or natural gas combusted on an annual basis.
- 6.1.4. Maintenance of the microturbine shall be performed in accordance with manufacturer recommendations or in accordance with a site specific maintenance plan.

### 6.2. Testing Requirements

- 6.2.1. See Facility-Wide Testing Requirements Section 3.3.

### 6.3. Recordkeeping Requirements

- 6.3.1. In order to demonstrate compliance with permit condition 6.1.4, the permittee shall maintain records of all maintenance performed on the microturbine. Said records shall be kept in accordance with permit condition 3.4.1.

### 6.4. Reporting Requirements

- 6.4.1. See Facility-Wide Reporting Requirements Section 3.5.

## 7.0. Source-Specific Hazardous Air Pollutant Requirements (Natural Gas Dehydration Unit Not Subject to MACT Standards and being controlled by a Thermal Oxidizer)

### 7.1. Limitations and Standards

- 7.1.1. **Maximum Throughput Limitation.** The maximum dry natural gas throughput to each TEG dehydration unit/still columns (DEHY1-DEHY2) shall not exceed 140 million standard cubic feet per day.
- 7.1.2. Each TEG dehydration unit/still column (DEHY1-DEHY2) shall be controlled by a dedicated thermal oxidizer device (TO1 – TO2) at all times. The TEG dehydration flash tank (DFLSH1-DFLSH2) emissions shall be controlled by recycling the flash tank emissions back to the flame zone of the reboiler or shall be controlled by routing the flash tank emissions to the thermal oxidizer. Maximum emissions from each thermal oxidizer (TO1 – TO2) shall not exceed the following limits:

Pollutant	Maximum Hourly Emissions (lb/hr)	Maximum Annual Emissions (ton/year)
Volatile Organic Compounds	2.10	9.19
Benzene	0.02	0.08

- 7.1.3. Vapors being controlled by the thermal oxidizer shall be routed to the thermal oxidizer at all times;
- 7.1.4. Each thermal oxidizer shall be operated with a flame present at all times that vapors are being routed to it as determined by the methods specified in section 7.2.1;
- 7.1.5. Each thermal oxidizer shall be operated according to the manufacturer’s specifications for residence time and minimum combustion chamber temperature;
- 7.1.6. Each thermal oxidizer shall be operated at all times when emissions are vented to them;
- 7.1.7. To ensure compliance with 7.1.5 of this general permit, the registrant shall monitor in accordance with section 7.2.1
- 7.1.8. Each thermal oxidizer shall be designed for and operated with no visible emissions as determined by the methods specified in permit section 7.3.1 of this general permit except for periods not to exceed a total of 5 minutes during any 2 consecutive hours;
- 7.1.9. The permittee shall monitor the thermal oxidizer(s) to ensure that they are operated and maintained in conformance with their designs.

### 7.2. Monitoring Requirements

- 7.2.1. In order to demonstrate compliance with the requirements of permit condition 7.1.4, the permittee shall monitor the presence or absence of a flame using a thermocouple or any other equivalent device, except during SSM events.
- 7.2.2. The permittee shall monitor the throughput of dry natural gas fed to the dehydration system on a monthly basis for each glycol dehydration unit.

### 7.3. Testing Requirements

- 7.3.1. In order to demonstrate compliance with the thermal oxidizer opacity requirements of permit condition 7.1.6, 7.1.7, and 7.1.8 the permittee shall conduct a Method 22 opacity test 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 180 days 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.
- 7.3.2. The Director may require the permittee to conduct a thermal oxidizer compliance assessment to demonstrate compliance with permit condition 7.1.2. This compliance assessment testing shall be conducted in accordance with Test Method 18 for organics and Test Method 2, 2A, 2C, or 2D in appendix A to 40 CFR part 60, as appropriate, or other equivalent testing approved in writing by the Director. Also, Test Method 18 may require the permittee to conduct Test Method 4 in conjunction with Test Method 18.
- 7.3.3. In order to demonstrate compliance with the minor source status of hazardous air pollutants required by permit condition 4.1.1, upon request of the Director, the permittee shall demonstrate compliance with the HAP emissions thresholds using GLYCalc Version 3.0 or higher. The permittee shall sample in accordance with GPA Method 2166 and analyze the samples utilizing the extended GPA Method 2286 as specified in the GRI-GLYCalc V4 Technical Reference User Manual and Handbook.
- 7.3.4. Determination of glycol dehydration benzene emissions. In order to demonstrate that the benzene emissions are less than 1 tpy, the permittee shall determine the actual average benzene emissions using the procedure in the paragraph below. Emissions shall be determined either uncontrolled, or with federally enforceable controls in place.

The owner or operator 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).  
**[40CFR§63.772 (b)(2)]**

- 7.3.5.. Use of the ProMax model, Version 5.0 or higher, as an alternative to the GLYCalc model is subject to the following caveats.

Inputs to the ProMax, Version 5.0 or above, software shall include the parameters listed below, which must be representative of the actual operating conditions of the glycol dehydration unit:

- Wet gas flowrate
- Wet gas composition (dry basis)
- Wet gas water content (if unknown, can assume a worst-case of 100% saturation)
- Wet gas (absorber) temperature
- Wet gas (absorber) pressure
- Glycol circulation rate (or dry gas water content or glycol circulation ratio)
- Dry gas water content
- Lean glycol water content

- Gas pump volume ratio (when gas injection pump is used)
- Reboiler temperature
- Flash tank parameters (when installed)
  - Temperature
  - Pressure
- Control device parameters (when installed)
  - Combustion device destruction efficiency
  - Condenser temperature and pressure
- Stripping gas (if used)
  - Type (dry gas, flash gas, nitrogen)
  - Flowrate

- 7.3.6. Affected facilities using this alternative (ProMax as an alternative to GLYCalc under Subpart HH) for their affected glycol dehydration units must notify the responsible agency before use of the alternative and notification should include a copy of this letter. Facilities must include a copy of this letter with each report presenting results using the ProMax software.
- 7.3.7. Once a facility chooses to use ProMax as an alternative to GLYCalc under one or more of the Subpart HH provisions listed above, the facility must continue to use ProMax in meeting the provision(s) until the owner/operator receives approval from this office for use of a new alternative method or the responsible agency for use of any other options in Subpart HH, including returning to the use of GLYCalc (see §63.7(f)(5)).

#### **7.4. Recordkeeping Requirements**

- 7.4.1. For the purpose of demonstrating compliance with permit conditions 7.1.4 and 7.2.1, the permittee shall maintain records of the times and duration of all periods which the pilot flame was absent.
- 7.4.2. For the purpose of demonstrating compliance with permit conditions 7.1.5 and 7.3.1, the permittee shall maintain a record of the thermal oxidizer design evaluation.
- 7.4.3. For the purpose of demonstrating compliance with the requirements set forth in permit conditions 7.1.8 and 7.3.1., the permittee shall maintain records of testing conducted in accordance with permit condition 7.3.1.
- 7.4.4. The permittee shall document and maintain the corresponding records specified by the on-going monitoring requirements of section 7.2.
- 7.4.5. For the purpose of demonstrating compliance with permit condition 7.1.8, the permittee shall maintain records of the visible emission opacity tests conducted per Section 7.3.1.
- 7.4.6. For the purpose of demonstrating compliance with the minor source status of hazardous air pollutants required by permit condition 4.1.1, the permittee shall maintain a record of all potential to emit (PTE) HAP calculations for the entire affected facility. These records shall include the natural gas compressor engines and ancillary equipment.
- 7.4.7. The permittee shall maintain a record of the dry natural gas throughput through the dehydration system to demonstrate compliance with permit condition 7.1.1 and 7.2.2.
- 7.4.8. To demonstrate that the permittee is exempt from the requirements of 40 CFR § 63.764 (d) if the actual average emissions of benzene from the glycol dehydration unit process vent to the atmosphere is less than 0.90 megagram per year (1 tpy), as determined by the procedures specified in 40 CFR § 63.772(b)(2) and section 7.3.3 of this permit, records of the actual average benzene emissions (in terms of benzene emissions per year) shall be maintained.  
**[40CFR§63.764(e)]**



7.4.9. All records required under Section 7.4 shall be kept in accordance with permit condition 3.4.1.

## **7.5. Reporting Requirements**

- 7.5.1. If permittee is required by the Director to demonstrate compliance with permit condition 7.3.2, then the permittee shall submit a testing protocol at least thirty (30) days prior to testing and shall submit a notification of the testing date at least fifteen (15) days prior to testing. The permittee shall submit the testing results within sixty (60) days of testing and provide all supporting calculations and testing data.
- 7.5.2. 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 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.
- 7.5.3. Any deviation(s) from the thermal oxidizer design and operation criteria in permit condition 7.1.5 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 discovery of such deviation.

## **8.0. Source-Specific Requirements (Reboilers, DREB1 – DREB2, Fuel Conditioning Heater, FUEL1, Catalytic Fuel Heater, CATHT1)**

### **8.1. Limitations and Standards**

- 8.1.1. Maximum Design Heat Input. The maximum design heat input for each of the TEG Dehydration Unit Reboilers (DREB1 – DREB2) shall not exceed 1.5 MMBtu/hr; The maximum design heat input for the Fuel Conditioning Heater (FUEL1) shall not exceed 0.75 MMBtu/hr; The maximum design heat input for the Catalytic Fuel Heater (CATHT1) shall not exceed 0.024 MMBtu/hr
- 8.1.2. 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.]

### **8.2. Monitoring Requirements**

- 8.2.1. At such reasonable times as the Secretary may designate, the permittee shall conduct Method 9 emission observations for the purpose of demonstrating compliance with permit condition 8.1.2. Method 9 shall be conducted in accordance with 40 CFR 60 Appendix A.

### **8.3. Testing Requirements**

- 8.3.1. Compliance with the visible emission requirements of permit condition 8.1.2 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 permit condition 8.1.2. Continuous opacity monitors shall not be required on fuel burning units which employ wet scrubbing systems for emission control.  
[45CSR§2-3.2.]

### **8.4. Recordkeeping Requirements**

- 8.4.1. All records required under Section 8.3 shall be kept in accordance with permit condition 3.4.1.
- 8.4.2. The permittee shall maintain records of all monitoring data required by permit condition 8.2.1 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.

### **8.5. Reporting Requirements**

- 8.5.1. 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 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.

**9.0. Source-Specific Requirements (Condensate Storage Tanks (T01-T03), Settling Tank (T04), Produced Water Storage Tank (T05-T07))**

**9.1. Limitations and Standards**

9.1.1. The permittee shall route all VOC and HAP emissions from the Condensate Storage Tanks (T01-T03), Settling Tank (T04), Produced Water Storage Tank (T05-T07) to the VRU-100 prior to release to the atmosphere. The vapor recovery system shall be designed to achieve a minimum guaranteed capture efficiency of 98% for volatile organic compound (VOC) and hazardous air pollutants (HAP) emissions. Emissions from the condensate storage tanks, settling tank, and produced water storage tanks will be collected and compressed by the vapor recovery unit whereby the vapors are sufficiently compressed to be introduced into the gas system right before the initial filter scrubber.

9.1.2. *Operation and Maintenance of Air Pollution Control Equipment.* The permittee shall, to the extent practicable, install, maintain, and operate the vapor recovery unit (VRU-100) with vapor recovery backup unit (VRU-200) 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§13-5.10.]**

9.1.3. The maximum annual throughput of product to the storage tanks shall not exceed the following:

Storage Tank ID	Product Stored	Maximum Annual Throughput (gal/yr)
T01, T02, T03	Condensate	2,299,500 (combined)
T04	Settling	2,989,350
T05, T06, T07	Produced Water	689,850 (combined)

**[45CSR§13-5.10]**

9.1.4. Maximum emissions from the tank battery (T01 through T07) shall not exceed the following limits:

Pollutant	Maximum Hourly Emissions (lb/hr)	Maximum Annual Emissions (ton/year)
Volatile Organic Compounds	0.55	2.43

9.1.5. In addition to the vapor recovery units (VRU-100 and VRU-200), the permittee shall utilize three (3) of the following requirements:

- a. Install additional sensing equipment to monitor the run status of the vapor recovery units (VRU-100 and VRU-200).
- b. Install a by-pass system which operates automatically whereby discharge is re-routed back to the inlet of the vapor recovery units (VRU-100 and VRU-200) until the appropriate pressure is built up for the compressor to turn on.
- c. Install a blanket gas and have automatic throttling valves to ensure oxygen does not enter the tanks.
- d. Install a compressor that has the ability to vary the drive.

- 9.1.6. Emissions from the Storage Tanks (T01-T07) that are recovered and routed to the vapor recovery units (VRU-100 and VRU-200) shall be designed and operated as specified in the paragraphs (a) through (c).
- a. The cover and all openings on the cover (e.g., access hatches, sampling ports, pressure relief valves and gauge wells) shall form a continuous impermeable barrier over the entire surface area of the liquid in the storage vessel.
  - b. Each cover opening shall be secured in a closed, sealed position (e.g., covered by a gasketed lid or cap) whenever material is in the unit on which the cover is installed except during those times when it is necessary to use an opening as follows:
    - (i) To add material to, or remove material from the unit (this includes openings necessary to equalize or balance the internal pressure of the unit following changes in the level of the material in the unit);
    - (ii) To inspect or sample the material in the unit;
    - (iii) To inspect, maintain, repair, or replace equipment located inside the unit; or
    - (iv) To vent liquids, gases, or fumes from the unit through a closed-vent system designed and operated in accordance with the requirements 8.1.7 of this section to a control device.
  - c. Each Storage Tank (T01-T07) thief hatch shall be weighted and properly seated. The permittee must select gasket material for the hatch based on composition of the fluid in the storage vessel and weather conditions.  
**[45CSR§13-5.10]**
- 9.1.7. The facility shall comply with the closed vent system requirements for the Storage Tanks (T01-T07) as noted below.
- a. The permittee must design the closed vent system to route all gases, vapors, and fumes emitted from the material in the Storage Tanks (T01-T07) to the vapor recovery units (VRU-100 and VRU-200).
  - b. The permittee must design and operate a closed vent system with no detectable emissions, as determined using olfactory, visual and auditory inspections.
  - c. The permittee must meet the requirements specified in paragraphs (i) and (ii) of this section if the closed vent system contains 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 or to a process.
    - (i) Except as provided in paragraph (ii) of this section, the permittee must comply with either paragraph (A) or (B) of this section for each bypass device.
      - A. The permittee must properly install, calibrate, maintain, and operate a flow indicator at the inlet to the bypass device that could divert the stream away from the control device or process to the atmosphere that sounds an alarm, or initiates notification via remote alarm to the nearest field office, when the bypass device is open such that the stream is being, or could be diverted away from the control device or process to the atmosphere.
      - B. The permittee must secure the bypass device valve installed at the inlet to the bypass device in the non-diverting position using a car-seal or a lock-and-key type configuration.

- (ii) Low leg drains, high point bleeds, analyzer vents, open-ended valves or lines, and safety devices are not subject to the requirements of paragraph (i) of this section.  
[45CSR§13-5.10]

## 9.2. Monitoring Requirements

- 9.2.1. The permittee shall monitor the throughput to the storage tanks (T01-T07) on a monthly basis.
- 9.2.2. To demonstrate compliance with permit condition 9.1.1, the permittee shall monitor the vapor recovery unit in accordance with the plans and specifications and manufacturer's recommendations.
- 9.2.3. To demonstrate compliance with the closed vent system requirements of Sections 9.1.6 and 9.1.7, the permittee shall:
  - a. Initial requirements. Conduct an initial visual, olfactory, and auditory inspection for defects that could result in air emissions within 180 days of start-up. Defects include, but are not limited to, visible cracks, holes, or gaps in piping; loose connections; liquid leaks; or broken or missing caps or other closure devices.
    - i. The annual inspection shall include the bypass inspection, conducted according to paragraph (c) of this section.
    - ii. In the event that a leak or defect is detected, you must repair the leak or defect as soon as practicable. Grease or another applicable substance must be applied to deteriorating or cracked gaskets to improve the seal while awaiting repair.
    - iii. 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, or if you determine that emissions resulting from immediate repair would be greater than the fugitive emission likely to result from delay of repair. You must complete repair of such equipment by the end of the next shutdown.
  - b. Continuous requirements. Conduct an annual visual, olfactory, and auditory inspection for defects that could result in air emissions. Defect include, but are not limited to, visible cracks, holes, or gaps in piping, loose connections; liquid leaks; or broken or missing caps or other closure devices.
    - i. The annual inspection shall be conducted within 365 calendar days from the date of the previous inspection or earlier.
    - ii. The annual inspection shall include the bypass inspection, conducted according to paragraph (c) of this section.
  - c. Bypass inspection. Visually inspect the bypass valve during the initial and annual inspection for the presence of the car seal or lock-and-key type configuration to verify that the valve is maintained in the non-diverting position to ensure that the vent stream is not diverted through the bypass device. If an alternative method is used, conduct the inspection of the bypass as described in the operating procedures.
  - d. Unsafe to inspect requirements. The permittee may designate any parts of the closed vent system as unsafe to inspect if the requirements in paragraphs (i) and (ii) of this section are met. Unsafe to inspect parts are exempt from the inspection requirements of paragraphs (a) and (b) of this section.

- i. 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 the requirements.
  - ii. The permittee has a written plan that requires inspection of the equipment as frequently as practicable during safe-to-inspect times.
- e. Difficult to inspect requirements. The permittee may designate any parts of the closed vent system as difficult to inspect, if the requirements in paragraphs (i) and (ii) of this section are met. Difficult to inspect parts are exempt from the inspection requirements of paragraphs (a) and (b) of this section.
- i. The permittee determines that the equipment cannot be inspected without elevating the inspecting personnel more than 2 meters above a support surface.
  - ii. The permittee has a written plan that requires inspection of the equipment at least once every 5 years.
- [45CSR§13-5.10]

### 9.3. Recordkeeping Requirements

- 9.3.1. All records required under Section 9.3 shall be kept in accordance with permit condition 3.4.1.
- 9.3.2. *Record of Maintenance of VRUs.* The permittee shall maintain accurate records of the vapor recovery unit equipment inspection and/or preventative maintenance procedures.
- 9.3.3. *Record of Malfunctions of VRU.* The permittee shall maintain records of the occurrence and duration of any malfunction or operational shutdown of the vapor recovery unit during which excess emissions occur. For each malfunction, the permittee shall record the information as required in in condition 4.2.3.
- 9.3.4. To demonstrate compliance with permit condition 9.1.3 and 9.1.4, the permittee shall maintain a record of the aggregate throughput for the storage tanks on a monthly and rolling twelve month total.
- 9.3.5. The permittee shall maintain a copy all design records of the process, maintenance records of equipment and any downtime hours associated with the vapor recovery units.
- i. The initial compliance requirements;
  - ii. Each annual visual inspection conducted to demonstrate continuous compliance, including records of any repairs that were made as results of the inspection;
  - iii. Bypass requirements.
    - a. Each inspection or each time the key is checked out or a record each time the alarm is sounded;
    - b. Each occurrence that the control device was bypassed. If the device was bypassed, the records shall include the date, time, and duration of the event and shall provide the reason the event occurred. The record shall also include the estimate of emissions that were released to the environment as a result of the bypass.

- iv. Any part of the system that has been designated as “unsafe to inspect” in accordance with permit condition 9.2.3.d or “difficult to inspect” in accordance with permit condition 9.2.3.e. **[45CSR§13-5.10]**

#### **9.4. Reporting Requirements**

- 9.4.1. Upon request by the Director, the permittee shall report deviations within a requested time from of any occurrences when the control device was operated outside of the parameters defined in the monitoring plan.
- 9.4.2. The permittee shall notify the Director of any downtime of the VRUs in excess of 2%, based on the 12 month rolling total, in writing to the Director of the Division of Air Quality as soon as practicable, but within ten (10) calendar days of the discovery and shall include, at a minimum, the following information: the dates and durations of each downtime event, the cause or suspected causes for each downtime event, any corrective measures taken or planned for each downtime event.

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## 10.0. Source-Specific Requirements (Truck Loading, LDOUT1)

### 10.1. Limitations and Standards

- 10.1.1. The permittee shall install, maintain, and operate all above-ground piping, valves, pumps, etc. that service lines in the transport of potential sources of regulated air pollutants to prevent any substantive fugitive escape of regulated air pollutants. Any above-ground piping, valves, pumps, etc. that shows signs of excess wear and that have a reasonable potential for substantive fugitive emissions of regulated air pollutants shall be replaced.
- 10.1.2. The maximum quantity of produced water from truck loading (LDOUT1) that shall be loaded shall not exceed 690,000 gallons per year. Compliance with the Maximum Yearly Operation Limitation shall be determined using a twelve month rolling total. A twelve month rolling total shall mean the sum of the throughput at any given time during the previous twelve consecutive calendar months.
- 10.1.3. The maximum quantity of condensate from truck loading (LDOUT1) that shall be loaded shall not exceed 2,300,000 gallons per year. Compliance with the Maximum Yearly Operation Limitation shall be determined using a twelve month rolling total. A twelve month rolling total shall mean the sum of the throughput at any given time during the previous twelve consecutive calendar months.
- 10.1.4. The Produced Water and Condensate Truck Loading (LDOUT1) shall be operated in accordance with the plans and specifications filed in Permit Application R13-3632.
- 10.1.5. Maximum emissions from Truck Loading (LDOUT1) shall not exceed the following limits:

Pollutant	Maximum Hourly Emissions (lb/hr)	Maximum Annual Emissions (ton/year)
Volatile Organic Compounds	72.91	7.63
Total Hazardous Air Pollutants	0.94	0.10

### 10.2. Monitoring Requirements

- 10.2.1. See Facility-Wide Monitoring Requirements Section 3.2.

### 10.3. Recordkeeping Requirements

- 10.3.1. All records required under Section 10.3 shall be kept in accordance with permit condition 3.4.1.
- 10.3.2. To demonstrate compliance with permit conditions 10.1.2 and 10.1.3, the permittee shall maintain a record of the aggregate throughput for the truck loading (LDOUT1) on a monthly and rolling twelve month total.

### 10.4. Reporting Requirements

- 10.4.1. See Facility-Wide Reporting Requirements Section 3.5.



## **11.0. Source-Specific Requirements (40CFR60 Subpart JJJJ Requirements, C-100 to C-1300)**

### **11.1. Limitations and Standards**

11.1.1. The provisions of this subpart are applicable to stationary spark ignition (SI) internal combustion engines (ICE) (C-001 to C-1300) as specified below. For the purposes of this subpart, the date that construction commences is the date the engine is ordered by the permittee.

a. Owners and operators of stationary SI ICE that commence construction after June 12, 2006, where the stationary SI ICE are manufactured:

1. On or after July 1, 2007, for engines with a maximum engine power greater than or equal to 500 HP (except lean burn engines with a maximum engine power greater than or equal to 500 HP and less than 1,350 HP);

**[40CFR§60.4230(a)]**

11.1.2. Compressor engines (C-001 to C-1300) shall comply with the emission standards in Table 1 to this subpart.

**[40CFR§60.4233(e)]**

11.1.3. The permittee shall operate and maintain stationary compressor engines CE-100-CE-1300 so that each engine achieves the emission standards as required in §60.4233 over the entire life of the engine. **[40CFR§60.4234]**

### **11.2. Other Requirements**

11.2.1. After July 1, 2009, the permittee may not install stationary SI ICE with a maximum engine power of greater than or equal to 500 HP that do not meet the applicable requirements in §60.4233, except that lean burn engines with a maximum engine power greater than or equal to 500 HP and less than 1,350 HP that do not meet the applicable requirements in §60.4233 may not be installed after January 1, 2010.

**[40CFR§60.4236(b)]**

11.2.2. The requirements of this section do not apply to owners and operators of stationary SI ICE that have been modified or reconstructed, and they do not apply to engines that were removed from one existing location and reinstalled at a new location.

**[40CFR§60.4236(e)]**

### **11.3. Compliance Requirements**

11.3.1. The permittee shall comply with the emission standards specified in §60.4233(e). The permittee shall demonstrate compliance according to one of the methods specified in paragraphs (b)(1) and (2) of this section.

a. Purchasing an engine certified according to procedures specified in this subpart, for the same model year and demonstrating compliance according to one of the methods specified in paragraph (a) of this section.

b. Purchasing a non-certified engine and demonstrating compliance with the emission standards specified in §60.4233(d) or (e) and according to the requirements specified in §60.4244, as applicable, and according to paragraph 1 below:

1. For stationary SI internal combustion engine greater than 500 HP, the permittee must 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 or 3 years, whichever comes first, thereafter to demonstrate compliance.

[40CFR§60.4243(b)]

- 11.3.2. The permittee may operate engines using propane for a maximum of 100 hours per year as an alternative fuel solely during emergency operations, but must keep records of such use. If propane is used for more than 100 hours per year in an engine that is not certified to the emission standards when using propane, the permittee is required to conduct a performance test to demonstrate compliance with the emission standards of §60.4233. [40CFR§60.4243(e)]

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

#### 11.4. Testing Requirements

- 11.4.1. In order to demonstrate compliance with section 11.3.1.b.i., the permittee shall conduct performance tests following the procedures in paragraphs (a) through (f) of this section.

- a. Each performance test must 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)]

- b. The permittee may not conduct performance tests during periods of startup, shutdown, or malfunction, as specified in §60.8(c). If the permittee's stationary SI internal combustion engine is non-operational, the permittee does not need to startup the engine solely to conduct a performance test; however, the permittee must conduct the performance test immediately upon startup of the engine.

[40CFR§60.4244(b)]

- c. The permittee must conduct three separate test runs for each performance test required in this section, as specified in §60.8(f). Each test run must 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<sub>x</sub> mass per unit output emission limitation, convert the concentration of NO<sub>x</sub> in the engine exhaust using Equation 1 of this section:

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

Where:

ER = Emission rate of NO<sub>x</sub> in g/HP-hr.

C<sub>d</sub> = Measured NO<sub>x</sub> concentration in parts per million by volume (ppmv).

1.912×10<sup>-3</sup> = Conversion constant for ppm NO<sub>x</sub> 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:

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

Where:

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

C<sub>d</sub> = Measured CO concentration in ppmv.

1.164×10<sup>-3</sup> = 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)]**

- 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:

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

Where:

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

C<sub>d</sub> = VOC concentration measured as propane in ppmv.

1.833×10<sup>-3</sup> = 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 permittee chooses to measure VOC emissions using either Method 18 of 40 CFR part 60, appendix A, or Method 320 of 40 CFR part 63, appendix A, then the permittee 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.

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

Where:

RF<sub>i</sub>= Response factor of compound i when measured with EPA Method 25A.

C<sub>Mi</sub>= Measured concentration of compound i in ppmv as carbon.

C<sub>Ai</sub>= True concentration of compound i in ppmv as carbon.

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

Where:

C<sub>icorr</sub>= Concentration of compound i corrected to the value that would have been measured by EPA Method 25A, ppmv as carbon.

C<sub>imeas</sub>= Concentration of compound i measured by EPA Method 320, ppmv as carbon.

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

Where:

C<sub>peq</sub>= Concentration of compound i in mg of propane equivalent per DSCM.

[40CFR§60.4244(g)]

## 11.5. Notification, Reports, and Records

11.5.1. The permittee must meet the following notification, reporting and recordkeeping requirements.

- a. The permittee shall keep records of the information in paragraphs (a)(1) through (4) of this section.
1. All notifications submitted to comply with this subpart and all documentation supporting any notification.
  2. Maintenance conducted on the engine.
  3. If the stationary SI internal combustion engine is a certified engine, documentation from the manufacturer that the engine is certified to meet the emission standards and information as required in 40 CFR parts 90 and 1048.
  4. If the stationary SI internal combustion engine is not a certified engine or is a certified engine operating in a non-certified manner and subject to §60.4243(a)(2), documentation that the engine meets the emission standards.

[40CFR§60.4245(a)]

- b. For SI ICE greater than or equal to 500 HP that have not been certified by an engine manufacturer to meet the emission standards in §60.4231, the permittee must submit an initial notification as required in §60.7(a)(1). The notification must include the information in paragraphs (b)(1) through (5) of this section.
  1. Name and address of the owner or operator;
  2. The address of the affected source;
  3. Engine information including make, model, engine family, serial number, model year, maximum engine power, and engine displacement;
  4. Emission control equipment; and
  5. Fuel used.

**[40CFR§60.4245(c)]**
- c. The results of performance tests as conducted in §60.4244 shall be submitted to the Secretary within 60 days after the test has been completed.

**[40CFR§60.4245(d)]**

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## **12.0. Source-Specific Requirements (40CFR60 Subpart OOOOa Requirements, Reciprocating Compressor Engines (C-100 to C-1300))**

### **12.1. Limitations and Standards**

12.1.1. The permittee must comply with the standards in paragraphs (a) through (d) of this section for each reciprocating compressor affected facility.

- a. The permittee must replace the reciprocating compressor rod packing according to either paragraph (a)(1) or (2) of this section, or the permittee must comply with paragraph (a)(3) of this section.
  1. On or before the compressor has operated for 26,000 hours. The number of hours of operation must be continuously monitored beginning upon initial startup of the permittee's reciprocating compressor affected facility, or the date of the most recent reciprocating compressor rod packing replacement, whichever is later.
  2. Prior to 36 months from the date of the most recent rod packing replacement, or 36 months from the date of startup for a new reciprocating compressor for which the rod packing has not yet been replaced.
  3. Collect the methane and VOC emissions from the rod packing using a rod packing emissions collection system that operates under negative pressure and route the rod packing emissions to a process through a closed vent system that meets the requirements of §60.5411a(a) and (d).
- b. The permittee must demonstrate initial compliance with standards that apply to reciprocating compressor affected facilities as required by §60.5410a(c).
- c. The permittee must demonstrate continuous compliance with standards that apply to reciprocating compressor affected facilities as required by §60.5415a(c).
- d. The permittee must perform the reporting as required by §60.5420a(b)(1) and (4) and the recordkeeping as required by §60.5420a(c)(3), (6) through (9), and (17), as applicable.

[40CFR§60.5385a]

### **12.2. Initial Compliance Demonstration**

12.2.1. The permittee must determine initial compliance with the standards for each affected facility using the requirements in paragraph (c) of this section. The initial compliance period begins on August 2, 2016 or upon initial startup, whichever is later, and ends no later than one year after the initial startup date for the permittee's affected facility or no later than one year after August 2, 2016. The initial compliance period may be less than one full year.

- a. NA.
- b. NA.
- c. To achieve initial compliance with the standards for each reciprocating compressor affected facility the permittee must comply with paragraphs (c)(1) through (4) of this section.
  1. If complying with §60.5385a(a)(1) or (2), during the initial compliance period, the permittee must continuously monitor the number of hours of operation or track the number of months since the last rod packing replacement.

2. If complying with §60.5385a(a)(3), the permittee must operate the rod packing emissions collection system under negative pressure and route emissions to a process through a closed vent system that meets the requirements of §60.5411a(a) and (d).
3. The permittee must submit the initial annual report for the permittee's reciprocating compressor as required in §60.5420a(b)(1) and (4).
4. The permittee must maintain the records as specified in §60.5420a(c)(3) for each reciprocating compressor affected facility.

**[40CFR§60.5410a]**

### **12.3. Continuous Compliance Demonstration**

12.3.1. For each reciprocating compressor affected facility complying with §60.5385a(a)(1) or (2), the permittee must demonstrate continuous compliance according to paragraphs (1) through (3) of this section. For each reciprocating compressor affected facility complying with §60.5385a(a)(3), the permittee must demonstrate continuous compliance according to paragraph (4) of this section.

1. The permittee must continuously monitor the number of hours of operation for each reciprocating compressor affected facility or track the number of months since initial startup or the date of the most recent reciprocating compressor rod packing replacement, whichever is later.
2. The permittee must submit the annual reports as required in §60.5420a(b)(1) and (4) and maintain records as required in §60.5420a(c)(3).
3. The permittee must replace the reciprocating compressor rod packing on or before the total number of hours of operation reaches 26,000 hours or the number of months since the most recent rod packing replacement reaches 36 months.
4. The permittee must operate the rod packing emissions collection system under negative pressure and continuously comply with the cover and closed vent requirements in §60.5416a(a) and (b).

**[40CFR §60.5415a]**

### **12.4. Notification, Recordkeeping and Reporting Requirements**

12.4.1. The permittee must submit the notifications according to paragraphs (a)(1) and (2) of this section if the permittee owns or operate one or more of the affected facilities specified in §60.5365a that was constructed, modified or reconstructed during the reporting period.

**[40CFR§60.5420a(a)]**

12.4.2. Reporting requirements. The permittee must submit annual reports containing the information specified in paragraphs (b)(1) and (4) of this section to the Administrator and performance test reports as specified in paragraph (b)(9) of this section. The permittee must submit annual reports following the procedure specified in paragraph (b)(11) of this section. The initial annual report is due no later than 90 days after the end of the initial compliance period as determined according to §60.5410a. Subsequent annual reports are due no later than same date each year as the initial annual report. If the permittee own or operate more than one affected facility, the permittee may submit one report for multiple affected facilities provided the report contains all of the information required as specified in paragraphs (b)(1) and (4) of this section. Annual reports may coincide with title V reports as long as all the required elements of the annual report are included. The permittee may arrange with the Administrator a common schedule on which reports required by this part may be submitted as long as the schedule does not extend the reporting period.

- (1) The general information specified in paragraphs (1)(i) through (iv) of this section.
  - (i) The company name, facility site name associated with the affected facility, US Well ID or US Well ID associated with the affected facility, if applicable, and address of the affected facility. If an address is not available for the site, include a description of the site location and provide the latitude and longitude coordinates of the site in decimal degrees to an accuracy and precision of five (5) decimals of a degree using the North American Datum of 1983.
  - (ii) An identification of each affected facility being included in the annual report.
  - (iii) Beginning and ending dates of the reporting period.
  - (iv) A certification by a certifying 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.
- (4) For each reciprocating compressor affected facility, the information specified in paragraphs (i) through (ii) of this section.
  - (i) The cumulative number of hours of operation or the number of months since initial startup or since the previous reciprocating compressor rod packing replacement, whichever is later. Alternatively, a statement that emissions from the rod packing are being routed to a process through a closed vent system under negative pressure.
  - (ii) Records of deviations specified in paragraph (c)(3)(iii) of this section that occurred during the reporting period.

**[40CFR§60.5420a]**

12.4.3. To demonstrate compliance with permit condition 11.1.1.d, the permittee shall maintain the reporting as required by §60.5420a(b)(1) and (4) and the recordkeeping as required by §60.5420a(c)(3), (6) through (9), and (17), as applicable.



### **13.0. Source-Specific Requirements (40CFR60 Subpart OOOOa Requirements, Fugitive Emission Components)**

#### **13.1. Limitations and Standards**

13.1.1. For each affected facility under §60.5365a(j), the permittee 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 this section. These requirements are independent of the closed vent system and cover requirements in §60.5411a.

- (a) The permittee must monitor all fugitive emission components, as defined in §60.5430a, in accordance with paragraphs (b) through (g) of this section. The permittee must repair all sources of fugitive emissions in accordance with paragraph (h) of this section. The permittee must keep records in accordance with paragraph (i) of this section and report in accordance with paragraph (j) of this section. For purposes of this section, fugitive emissions are defined as: Any visible emission from a fugitive emissions component observed using optical gas imaging or an instrument reading of 500 ppm or greater using Method 21.
- (b) The permittee must develop an emissions monitoring plan that covers the collection of fugitive emissions components at compressor stations within each company-defined area in accordance with paragraphs (c) and (d) of this section.
- (c) Fugitive emissions monitoring plans must include the elements specified in paragraphs (c)(1) through (8) of this section, at a minimum.
  - (1) Frequency for conducting surveys. Surveys must be conducted at least as frequently as required by paragraphs (f) and (g) of this section.
  - (2) Technique for determining fugitive emissions (i.e., Method 21 at 40 CFR part 60, appendix A-7, or optical gas imaging).
  - (3) Manufacturer and model number of fugitive emissions detection equipment to be used.
  - (4) Procedures and timeframes for identifying and repairing fugitive emissions components from which fugitive emissions are detected, including timeframes for fugitive emission components that are unsafe to repair. The permittee's repair schedule must meet the requirements of paragraph (h) of this section at a minimum.
  - (5) Procedures and timeframes for verifying fugitive emission component repairs.
  - (6) Records that will be kept and the length of time records will be kept.
  - (7) If the permittee is using optical gas imaging, the permittee's plan must also include the elements specified in paragraphs (c)(7)(i) through (vii) of this section.
    - (i) Verification that the permittee's optical gas imaging equipment meets the specifications of paragraphs (c)(7)(i)(A) and (B) of this section. This verification is an initial verification and may either be performed by the facility, by the manufacturer, or by a third party. For the purposes of complying with the fugitives emissions monitoring program with optical gas imaging, a fugitive emission is defined as any visible emissions observed using optical gas imaging.
      - (A) The permittee's optical gas imaging equipment must be capable of imaging gases in the spectral range for the compound of highest concentration in the potential fugitive emissions.

- (B) The permittee's optical gas imaging equipment must be capable of imaging a gas that is half methane, half propane at a concentration of 10,000 ppm at a flow rate of  $\leq 60$ g/hr from a quarter inch diameter orifice.
- (ii) Procedure for a daily verification check.
- (iii) Procedure for determining the operator's maximum viewing distance from the equipment and how the operator will ensure that this distance is maintained.
- (iv) Procedure for determining maximum wind speed during which monitoring can be performed and how the operator will ensure monitoring occurs only at wind speeds below this threshold.
- (v) Procedures for conducting surveys, including the items specified in paragraphs (c)(7)(v)(A) through (C) of this section.
  - (A) How the operator will ensure an adequate thermal background is present in order to view potential fugitive emissions.
  - (B) How the operator will deal with adverse monitoring conditions, such as wind.
  - (C) How the operator will deal with interferences (e.g., steam).
- (vi) Training and experience needed prior to performing surveys.
- (vii) Procedures for calibration and maintenance. At a minimum, procedures must comply with those recommended by the manufacturer.
- (8) If the permittee is using Method 21 of appendix A-7 of this part, the permittee's plan must also include the elements specified in paragraphs (c)(8)(i) and (ii) of this section. For the purposes of complying with the fugitive emissions monitoring program using Method 21 a fugitive emission is defined as an instrument reading of 500 ppm or greater.
  - (i) Verification that the permittee's monitoring equipment meets the requirements specified in Section 6.0 of Method 21 at 40 CFR part 60, appendix A-7. For purposes of instrument capability, the fugitive emissions definition shall be 500 ppm or greater methane using a FID-based instrument. If the permittee wishes to use an analyzer other than a FID-based instrument, the permittee must develop a site-specific fugitive emission definition that would be equivalent to 500 ppm methane using a FID-based instrument (e.g., 10.6 eV PID with a specified isobutylene concentration as the fugitive emission definition would provide equivalent response to the permittee's compound of interest).
  - (ii) Procedures for conducting surveys. At a minimum, the procedures shall ensure that the surveys comply with the relevant sections of Method 21 at 40 CFR part 60, appendix A-7, including Section 8.3.1.
- (d) Each fugitive emissions monitoring plan must include the elements specified in paragraphs (d)(1) through (4) of this section, at a minimum, as applicable.
  - (1) Sitemap.
  - (2) A defined observation path that ensures that all fugitive emissions components are within sight of the path. The observation path must account for interferences.

- (3) If the permittee is using Method 21, the permittee's plan must also include a list of fugitive emissions components to be monitored and method for determining location of fugitive emissions components to be monitored in the field (e.g. tagging, identification on a process and instrumentation diagram, etc.).
- (4) The permittee's plan must also include the written plan developed for all of the fugitive emission components designated as difficult-to-monitor in accordance with paragraph (g)(3)(i) of this section, and the written plan for fugitive emission components designated as unsafe-to-monitor in accordance with paragraph (g)(3)(ii) of this section.
- (e) Each monitoring survey shall observe each fugitive emissions component, as defined in §60.5430a, for fugitive emissions.
- (f) The permittee must conduct an initial monitoring survey within 90 days of the startup of a new compressor station for each new collection of fugitive emissions components at the new compressor station or by June 3, 2017, whichever is later. For a modified collection of fugitive components at a compressor station, the initial monitoring survey must be conducted within 90 days of the modification or by June 3, 2017, whichever is later.
- (g) A monitoring survey of each collection of fugitive emissions components at a compressor station must be performed at the frequencies specified in paragraphs (g)(1) and (2) of this section, with the exceptions noted in paragraphs (g)(3) and (4) of this section.
  - (1) A monitoring survey of the collection of fugitive emissions components at a compressor station within a company-defined area must be conducted at least semiannually after the initial survey. Consecutive quarterly monitoring surveys must be conducted at least 4 months apart and no more than 7 months apart.
  - (2) Fugitive emissions components that cannot be monitored without elevating the monitoring personnel more than 2 meters above the surface may be designated as difficult-to-monitor. Fugitive emissions components that are designated difficult-to-monitor must meet the specifications of paragraphs (g)(3)(i) through (iv) of this section.
    - (i) A written plan must be developed for all of the fugitive emissions components designated difficult-to-monitor. This written plan must be incorporated into the fugitive emissions monitoring plan required by paragraphs (b), (c), and (d) of this section.
    - (ii) The plan must include the identification and location of each fugitive emissions component designated as difficult-to-monitor.
    - (iii) The plan must include an explanation of why each fugitive emissions component designated as difficult-to-monitor is difficult-to-monitor.
    - (iv) The plan must include a schedule for monitoring the difficult-to-monitor fugitive emissions components at least once per calendar year.
- (3) Fugitive emissions components that cannot be monitored because monitoring personnel would be exposed to immediate danger while conducting a monitoring survey may be designated as unsafe-to-monitor. Fugitive emissions components that are designated unsafe-to-monitor must meet the specifications of paragraphs (g)(4)(i) through (iv) of this section.
  - (i) A written plan must be developed for all of the fugitive emissions components designated unsafe-to-monitor. This written plan must be incorporated into the

- fugitive emissions monitoring plan required by paragraphs (b), (c), and (d) of this section.
- (ii) The plan must include the identification and location of each fugitive emissions component designated as unsafe-to-monitor.
  - (iii) The plan must include an explanation of why each fugitive emissions component designated as unsafe-to-monitor is unsafe-to-monitor.
  - (iv) The plan must include a schedule for monitoring the fugitive emissions components designated as unsafe-to-monitor.
- (4) The requirements of paragraph (g)(2) of this section are waived for any collection of fugitive emissions components at a compressor station located within an area that has an average calendar month temperature below 0°Fahrenheit for two of three consecutive calendar months of a quarterly monitoring period. The calendar month temperature average for each month within the quarterly monitoring period must be determined using historical monthly average temperatures over the previous three years as reported by a National Oceanic and Atmospheric Administration source or other source approved by the Administrator. The requirements of paragraph (g)(2) of this section shall not be waived for two consecutive quarterly monitoring periods.
- (h) Each identified source of fugitive emissions shall be repaired, as defined in 40CFR§ 60.5430a., in accordance with paragraphs (h)(1) and (2) of this section.
- (1) A first attempt of each identified source of fugitive emissions shall be made as soon as practicable, but no later than 30 calendar days after detection of the fugitive emissions.
  - (2) Repair of each identified source of fugitive emissions shall be made as soon as practicable, but no later than 30 calendar days after the first attempt at repair as required in paragraph (h)(1) of this section.
  - (3) If the repair is technically infeasible, would require a vent blowdown, a compressor station shutdown, or would be unsafe to repair during operation of the unit, the repair or replacement must be completed during the next compressor station shutdown, after an unscheduled, planned or emergency vent blowdown or within 2 years, whichever is earlier.
  - (4) Each identified source of fugitive emissions must be resurveyed to complete repair according to the requirements in paragraphs (h)(4)(i) through (iv) of this section, to ensure that there are no fugitive emissions.
    - (i) The operator may resurvey the repaired fugitive emissions components using either Method 21 or optical gas imaging.
    - (ii) For each repair that cannot be made during the monitoring survey when the fugitive emissions are initially found, a digital photograph must be taken of that component or the component must be tagged for identification purposes and subsequent repair. The digital photograph must include the date that the photograph was taken and must clearly identify the component by location within the site (e.g., the latitude and longitude of the component or by other descriptive landmarks visible in the picture).
    - (iii) Operators that use Method 21 to resurvey the repaired fugitive emissions components are subject to the resurvey provisions specified in paragraphs (h)(4)(iii)(A) and (B) of this section.

- (A) A fugitive emissions component is repaired when the Method 21 instrument indicates a concentration of less than 500 ppm above background or when no soap bubbles are observed when the alternative screening procedures specified in section 8.3.3 of Method 21 of Appendix A-7 of this part are used.
- (B) Operators must use the Method 21 monitoring requirements specified in paragraph (c)(8)(ii) of this section or the alternative screening procedures specified in section 8.3.3 of Method 21 Appendix A-7 of this part.
- (iv) Operators that use optical gas imaging to resurvey the repaired fugitive emissions components, are subject to the resurvey provisions specified in paragraphs (h)(4)(iv)(A) and (B) of this section.
  - (A) A fugitive emissions component is repaired when the optical gas imaging instrument shows no indication of visible emissions.
  - (B) Operators must use the optical gas imaging monitoring requirements specified in paragraph (c)(7) of this section.
- (i) Records for each monitoring survey shall be maintained as specified §60.5420a(c)(15).
- (j) Annual reports shall be submitted for each collection of fugitive emissions components at a compressor station that include the information specified in §60.5420a(b)(7). Multiple collection of fugitive emissions components at a compressor station may be included in a single annual report.

### **13.2. Initial Compliance Demonstration**

- 13.2.1. The permittee must determine initial compliance with the standards for each affected facility using the requirements in paragraphs (a) through (j) of this section. The initial compliance period begins on August 2, 2016, or upon initial startup, whichever is later, and ends no later than 1 year after the initial startup date for the permittee's affected facility or no later than 1 year after August 2, 2016. The initial compliance period may be less than one full year.  
**[40CFR§60.5410a]**
- 13.2.2. To achieve initial compliance with the fugitive emission standards for each collection of fugitive emissions components at a compressor station, the permittee must comply with paragraphs (j)(1) through (5) of this section.
  - (1) The permittee must develop a fugitive emissions monitoring plan as required in §60.5397a(b)(c), and (d).
  - (2) The permittee must conduct an initial monitoring survey as required in §60.5397a(f).
  - (3) The permittee must maintain the records specified in §60.5420a(c)(15).
  - (4) The permittee must repair each identified source of fugitive emissions for each affected facility as required in §60.5397a(h).
  - (5) The permittee must submit the initial annual report for each collection of fugitive emissions components at a compressor station as required in §60.5420a(b)(1) and (7).  
**[40CFR§60.5410a(j)]**

### 13.3. Continuous Compliance Demonstration

13.3.1. For each collection of fugitive emissions components at a compressor station, the permittee must demonstrate continuous compliance with the fugitive emission standards specified in §60.5397a according to paragraphs (h)(1) through (4) of this section.

- (1) The permittee must conduct periodic monitoring surveys as required in §60.5397a(g).
- (2) The permittee must repair or replace each identified source of fugitive emissions as required in §60.5397a(h).
- (3) The permittee must maintain records as specified in §60.5420a(c)(15).
- (4) The permittee must submit annual reports for collection of fugitive emissions components at a well site and each collection of fugitive emissions components at a compressor station as required in §60.5420a(b)(1) and (7).

[40CFR§60.5415a(h)]

### 13.4. Notification, Recordkeeping and Reporting Requirements

13.4.1. The permittee must submit the notifications according to paragraphs (a)(1) and (2) of this section if the permittee owns or operates one or more of the affected facilities specified in §60.5365a that was constructed, modified or reconstructed during the reporting period.

- (1) If the permittee owns or operates an affected facility that is the group of all equipment within a process unit at an onshore natural gas processing plant, or a sweetening unit at an onshore natural gas processing plant, the permittee must submit the notifications required in §60.7(a)(1), (3), and (4). If the permittee owns or operates a well, centrifugal compressor, reciprocating compressor, pneumatic controller, pneumatic pump, storage vessel, or collection of fugitive emissions components at a well site or collection of fugitive emissions components at a compressor station, the permittee are not required to submit the notifications required in §60.7(a)(1), (3), and (4).

[40CFR§60.5420a(a)]

13.4.2. *Reporting requirements.* The permittee must submit annual reports containing the information specified in paragraphs (b)(1) through (8) and (12) of this section and performance test reports as specified in paragraph (b)(9) or (10) of this section, if applicable. The permittee must submit annual reports following the procedure specified in paragraph (b)(11) of this section. The initial annual report is due no later than 90 days after the end of the initial compliance period as determined according to §60.5410a. Subsequent annual reports are due no later than same date each year as the initial annual report. If the permittee owns or operates more than one affected facility, the permittee may submit one report for multiple affected facilities provided the report contains all of the information required as specified in paragraphs (b)(1) through (8) of this section. Annual reports may coincide with title V reports as long as all the required elements of the annual report are included. The permittee may arrange with the Administrator a common schedule on which reports required by this part may be submitted as long as the schedule does not extend the reporting period.

- (1) The general information specified in paragraphs (b)(1)(i) through (iv) of this section for all reports.

- (i) The company name, facility site name associated with the affected facility, US Well ID or US Well ID associated with the affected facility, if applicable, and address of the affected facility. If an address is not available for the site, include a description of the site location and provide the latitude and longitude coordinates of the site in decimal degrees to an accuracy and precision of five (5) decimals of a degree using the North American Datum of 1983.
  - (ii) An identification of each affected facility being included in the annual report.
  - (iii) Beginning and ending dates of the reporting period.
  - (iv) A certification by a certifying 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.
- (7) For the collection of fugitive emissions components at a compressor station, report the information specified in paragraphs (b)(7)(i) through (iii) of this section, as applicable..
- i) (A) Designation of the type of site (*i.e.*, well site or compressor station) at which the collection of fugitive emissions components is located.
    - (B) For each collection of fugitive emissions components at a compressor station that became an affected facility during the reporting period, you must include the date of startup or the date of modification.
  - (ii) For each fugitive emissions monitoring survey performed during the annual reporting period, the information specified in paragraphs (b)(7)(ii)(A) through (G) of this section.
    - (A) Date of the survey.
    - (B) Monitoring instrument used.
    - (C) Any deviations from the monitoring plan elements under §60.5397a(c)(1), (2), and (7) and (c)(8)(i) or a statement that there were no deviations from these elements of the monitoring plan.
    - (D) Number and type of components for which fugitive emissions were detected.
    - (E) Number and type of fugitive emissions components that were not repaired as required in §60.5397a(h).
    - (F) Number and type of fugitive emission components (including designation as difficult-to-monitor or unsafe-to-monitor, if applicable) on delay of repair and explanation for each delay of repair.
    - (G) Date of planned shutdown(s) that occurred during the reporting period if there are any components that have been placed on delay of repair.
  - (iii) For each collection of fugitive emissions components at a compressor station complying with an alternative fugitive emissions standard under §60.5399a, in lieu of the information specified in paragraphs (b)(7)(i) and (ii) of this section, you must provide the information specified in paragraphs (b)(7)(iii)(A) through (C) of this section.
    - (A) The alternative standard with which you are complying.

(B) The site-specific reports specified by the specific alternative fugitive emissions standard, submitted in the format in which they were submitted to the state, local, or tribal authority. If the report is in hard copy, you must scan the document and submit it as an electronic attachment to the annual report required in paragraph (b) of this section.

(C) If the report specified by the specific alternative fugitive emissions standard is not site-specific, you must submit the information specified in paragraphs (b)(7)(i) and (ii) of this section for each individual site complying with the alternative standard.

**[40CFR§60.5420a(b)]**

13.4.3. *Recordkeeping requirements.* The permittee must maintain the records identified as specified in §60.7(f) and in paragraphs (c)(1) through (16) of this section. All records required by this subpart must be maintained either onsite or at the nearest local field office for at least 5 years. Any records required to be maintained by this subpart that are submitted electronically via the EPA's CDX may be maintained in electronic format.

(15) For each collection of fugitive emissions components at a compressor station, the records identified in paragraphs (c)(15)(i) through (iii) of this section.

(i) The fugitive emissions monitoring plan as required in §60.5397a(b), (c), and (d).

(ii) The records of each monitoring survey as specified in paragraphs (c)(15)(ii)(A) through of this section.

(A) Date of the survey.

(B) Beginning and end time of the survey.

(C) Name of operator(s) performing survey. The permittee must note the training and experience of the operator.

(D) Monitoring instrument used.

(E) Fugitive emissions component identification when Method 21 is used to perform the monitoring survey.

(F) Ambient temperature, sky conditions, and maximum wind speed at the time of the survey and operating mode of each compressor at the station at the time of the survey..

(G) Any deviations from the monitoring plan or a statement that there were no deviations from the monitoring plan.

(H) Records of calibrations for the instrument used during the monitoring survey.

(I) Documentation of each fugitive emission detected during the monitoring survey, including the information specified in paragraphs (c)(15)(ii)(I)(1) through (8) of this section.

(1) Location of each fugitive emission identified.

(2) Type of fugitive emissions component, including designation as difficult-to monitor or unsafe-to-monitor, if applicable.



- (3) If Method 21 of appendix A-7 of this part is used for detection, record the component ID and instrument reading.
  - (4) For each repair that cannot be made during the monitoring survey when the fugitive emissions are initially found, a digital photograph or video must be taken of that component or the component must be tagged for identification purposes. The digital photograph must include the date that the photograph was taken and must clearly identify the component by location within the site (*e.g.*, the latitude and longitude of the component or by other descriptive landmarks visible in the picture). The digital photograph or identification (*e.g.*, tag) may be removed after the repair is completed, including verification of repair with the resurvey.
  - (5) The date of first attempt at repair of the fugitive emissions component(s).
  - (6) The date of successful repair of the fugitive emissions component, including the resurvey to verify repair and instrument used for the resurvey.
  - (7) Identification of each fugitive emission component placed on delay of repair and explanation for each delay of repair
  - (8) Date of planned shutdowns that occur while there are any components that have been placed on delay of repair.
- (iii) For the collection of fugitive emissions components at a compressor station, if a monitoring survey is waived under §60.5397a(g)(5), the permittee must maintain records of the average calendar month temperature, including the source of the information, for each calendar month of the quarterly monitoring period for which the monitoring survey was waived.
- [40CFR§60.5420a(c)]**

## **14.0. Source-Specific Requirements (40CFR63 Subpart ZZZZ Requirements, C-100 to C-1300)**

### **14.1. Limitations and Standards**

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

14.1.2. *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.  
**[40CFR§63.6590(c)]**

## **15.0. Source-Specific Requirements (Compressor Blowdowns, Compressor Startups, Pigging Operations, and Plant Shutdowns)**

### **15.1. Limitations and Standards**

- 15.1.1 The maximum number of compressor blowdown events per year shall not exceed 936 events, with an estimated 2,137 scf per event. Compliance shall be determined using a twelve month rolling total. A twelve month rolling total shall mean the sum of the compressor blowdown events at any given time during the previous twelve consecutive calendar months.
- 15.1.2 The maximum number of compressor startup events per year shall not exceed 936 events, with an estimated 1,050 scf per event. Compliance shall be determined using a twelve month rolling total. A twelve month rolling total shall mean the sum of the compressor startup events at any given time during the previous twelve consecutive calendar months.
- 15.1.3. The maximum number of pigging events per year shall not exceed 260 low pressure events, with an estimated 516 scf per event and 198 high pressure events, with an estimated 2,801 scf/event. Compliance shall be determined using a twelve month rolling total. A twelve month rolling total shall mean the sum of the low pressure and high pressure pigging events at any given time during the previous twelve consecutive calendar months.
- 15.1.4 The maximum number of vessel cleaning/maintenance events per year shall not exceed an annual total of 50,000 scf. Compliance shall be determined using a twelve month rolling total. A twelve month rolling total shall mean the sum of the vessel cleaning/maintenance events at any given time during the previous twelve consecutive calendar months.

### **15.2. Recordkeeping Requirements**

- 15.2.1. All records required under section 15.2 of this permit shall be kept in accordance with permit condition 3.4.1.
- 15.2.2. To demonstrate compliance with permit condition 15.1.1 of this permit, the permittee shall maintain a record of the compressor blowdown events and estimated volume per event (scf) on a monthly and rolling twelve month total.
- 15.2.3. To demonstrate compliance with permit condition 15.1.2 of this permit, the permittee shall maintain a record of the compressor startup events and estimated volume per event (scf) on a monthly and rolling twelve month total.
- 15.2.4. To demonstrate compliance with permit condition 15.1.3 of this permit, the permittee shall maintain a record of the low pressure and high pressure pigging events and estimated volume per event (scf) on a monthly and rolling twelve month total.
- 15.2.5. To demonstrate compliance with permit condition 15.1.4 of this permit, the permittee shall maintain a record of the vessel cleaning/maintenance events and estimated monthly and rolling twelve month total volume.

### 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<sup>1</sup> \_\_\_\_\_  
(please use blue ink) Responsible Official or Authorized Representative Date

Name & Title \_\_\_\_\_  
(please print or type) Name Title

Telephone No. \_\_\_\_\_ Fax No. \_\_\_\_\_

<sup>1</sup> 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.