west virginia department of environmental protection

Division of Air Quality
601 57th Street SE
Charleston, WV 25304
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Earl Ray Tomblin, Governor
Randy C. Huffman, Cabinet Secretary
www.dep.wv.gov

August 28, 2015

CERTIFIED MAIL
91 7199 9991 7034 1380 3397

Mr. Craig Neal, Vice President Gas Operations
CNX Gas Company, LLC
PO Box 1248
Jane Lew, WV 26378

RE: **Permit Issuance**
CNX Gas Company, LLC
Oxford 13 Well Pad
Permit No. R13-3248
Plant ID No. 017-00153

Dear Mr. Neal:

Your application for a permit as required by Section 5 of 45CSR13 - "Permits for Construction, Modification, Relocation and Operation of Stationary Sources of Air Pollutants, Notification Requirements, Temporary Permit, General Permit, and Procedures for Evaluation" has been approved. The enclosed permit R13-3248 is hereby issued pursuant to Subsection 5.7 of 45CSR13. Please be aware of the notification requirements in the permit which pertain to commencement of construction, modification, or relocation activities; startup of operations; and suspension of operations. Note that the source, however, is not subject to 45CSR30.

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.

Should you have any questions or comments, please contact me at (304) 926-0499, extension 1219.

Sincerely,

Joe Kessler, PE
Engineer

Enclosures

West Virginia Department of Environmental Protection
Division of Air Quality

Earl Ray Tomblin
Governor

Randy C. Huffman
Cabinet Secretary

Permit to Construct

R13-3248

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

Issued to:

CNX Gas Company, LLC
Oxford 13
017-00153

William F. Durham
Director

Issued: August 28, 2015

Facility Location:	Near New Milton, Doddridge County, West Virginia
Mailing Address:	PO Box 1248, Jane Lew, WV 26378
Facility Description:	Well Pad
NAICS Codes:	212111
UTM Coordinates:	521.787 km Easting • 4,335.535 km Northing • Zone 17
Latitude/Longitude:	39.16876/-80.74779
Permit Type:	Construction
Description:	Permit for construction and operation of a natural gas production facility at the Oxford 13 Well Pad.

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

The source is not subject to 45CSR30.

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1.0 Emission Units

Emission Unit ID	Emission Point ID	Emission Unit Description	Year Installed	Design Capacity	Control Device
LH-1	1E	Line Heater	2015	2.5 mmBtu/hr	None
LH-2	2E	Line Heater	2015	1.0 mmBtu/hr	None
LH-3	3E	Line Heater	2015	1.0 mmBtu/hr	None
LH-4	4E	Line Heater	2015	1.0 mmBtu/hr	None
LH-5	5E	Line Heater	2015	1.0 mmBtu/hr	None
LH-6	6E	Line Heater	2015	1.0 mmBtu/hr	None
LH-7	7E	Line Heater	2015	1.0 mmBtu/hr	None
LH-8	8E	Line Heater	2015	1.0 mmBtu/hr	None
LPS-1	9E	Low Pressure Separator Combustion Exhaust	2015	0.5 mmBtu/hr	None
	n/a	Low Pressure Separator Flash Gas Tank		n/a	Flare-1
CE-1	10E	Arrow VRG 330 4SRB VRU Compressor Engine *Manufactured Date: 6/01/98*	2015	68 horsepower	None
CE-2	11E	Waukesha F3524GSI 4SRB Flash Gas Compressor Engine *Manufactured Date: 11/27/06, "Commence Construction"*(1) *Date: 1/04/07*	2015	840 horsepower	Catalytic Converter
TG-1	12E	Thermoelectric Generator	2015	0.013 mmBtu/hr	None
TG-2	13E	Thermoelectric Generator	2015	0.013 mmBtu/hr	None
VDU-1	14E	National Oilwell Varco Model No. MEVC 200DT Enclosed Vapor Destruction Unit	2015	18.34 mmBtu/hr	None
Flare-1	15E	National Oilwell Varco Model No. PGF 3000 Elevated Flare	2015	3 mmscf/day	None
TL-1	n/a	Truck Loading	2015	59,940,300 gallons/year	VDU-1
T01 - T06	n/a	Produced Water Tanks	2015	16,800 gallons	VDU-1
T07 - T12	n/a	Condensate Tanks	2015	16,800 gallons	VDU-1

(1) As defined under §63.18 for 40 CFR 63, Subpart ZZZZ applicability purposes.

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 (45 CSR § 30-2.12.). The Director of the Division of Air Quality is the Secretary's designated representative for the purposes of this permit.

2.2. Acronyms

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

2.3. Authority

This permit is issued in accordance with West Virginia Air Pollution Control Law W.Va. Code §§22-5-1 et seq. and the following Legislative Rules promulgated thereunder:

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

2.4. Term and Renewal

2.4.1. This permit shall remain valid, continuous and in effect unless it is revised, suspended, revoked or otherwise changed under an applicable provision of 45CSR13 or any applicable legislative rule.

2.5. Duty to Comply

2.5.1. The permitted facility shall be constructed and operated in accordance with the plans and specifications filed in Permit Application R13-3248 and any modifications, administrative updates, or amendments thereto. The Secretary may suspend or revoke a permit if the plans and specifications upon which the approval was based are not adhered to;
[45CSR§§13-5.11 and 13-10.3]

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;

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

2.12. Emergency

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

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

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

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

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

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

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

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

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

2.13. Need to Halt or Reduce Activity Not a Defense

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

2.14. Suspension of Activities

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

2.15. Property Rights

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

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 45 C.S.R. 11.
[45CSR§11-5.2.]

3.2. Monitoring Requirements

3.2.1. **Emission Limit Averaging Time.** Unless otherwise specified, compliance with all annual limits shall be based on a rolling twelve month total. A rolling twelve month total shall be the sum of the measured parameter of the previous twelve calendar months. Compliance with all hourly emission limits shall be based on the applicable NAAQS averaging times or, where applicable, as given in any approved performance test method.

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 with postage prepaid to the address(es) set forth below or to such other person or address as the Secretary of the Department of Environmental Protection may designate:

If to the DAQ:	**If to the USEPA:**
Director WVDEP Division of Air Quality 601 57th Street, SE Charleston, WV 25304-2345	Associate Director Office of Air Enforcement and Compliance Assistance (3AP20) U. S. Environmental Protection Agency Region III 1650 Arch Street Philadelphia, PA 19103-2029

3.5.4. **Operating Fee.**

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

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 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. 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. In accordance with the information filed in Permit Application R13-3248, the emission units/sources identified under Table 1.0 of this permit shall be installed, maintained, and operated so as to minimize any fugitive escape of pollutants, shall not exceed the listed maximum design capacities, and shall use the specified control devices.

4.1.2. The Line Heaters (LH-1 through LH-8) and Low Pressure Separator (LPS-1) shall operate according to the following requirements:

a. The maximum emissions from Line Heater LH-1 shall not exceed the limits given in the following table;

Table 4.1.2(a): Line Heater LH-1 Emission Limits

Pollutant	Hourly (lb/hr)	Annual (ton/yr)
CO	0.21	0.90
NO_x	0.25	1.07

b. The maximum emissions from each Line Heater LH-2 through LH-8 shall not exceed the limits given in the following table;

Table 4.1.2(b): Line Heater LH-2 through LH-8 Emission Limits

Pollutant	Hourly (lb/hr)	Annual (ton/yr)
CO	0.08	0.36
NO_x	0.10	0.43

c. The maximum emissions from the Low Pressure Separator shall not exceed the limits given in the following table;

Table 4.1.2(c): Low Pressure Separator Emission Limits

Pollutant	Hourly (lb/hr)	Annual (ton/yr)
CO	0.04	0.18
NO_x	0.05	0.22

d. The MDHI of Line Heater LH-1 shall not exceed 2.50 mmBtu/hr, the MDHI of each Line Heater LH-2 through LH-8 shall not exceed 1.00 mmBtu/hr, and the MDHI of Low Pressure Separator shall not exceed 0.50 mmBtu/hr. All units shall only be fired by pipeline-quality natural gas;

e. As the annual emission limits given in Table 4.1.2(a), (b), and (c) are based on operating 8,760 hours/year at MDHI, there are no limits on the annual hours of operation or fuel usage of the Gas Processing Units, Line Heaters, or Low Pressure Separator; and

f. 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.]

4.1.3. The compressor engines, identified as CE-1 and CE-2, shall meet the following requirements:

a. The VRU Compressor Engine shall be an Arrow VRG 330 4-Stroke Rich Burn 68 hp compressor engine (CE-1) and shall only be fired by pipeline-quality natural gas;

b. The Flash Gas Compressor Engine shall be a Waukesha F3524GSI 4-Stroke Rich Burn 840 hp compressor engine (CE-2) and shall utilize a Miratech RCS2-3024-10-EC2 catalytic converter (2C) for emission control. The unit shall only be fired by pipeline-quality natural gas;

c. At all times CE-2 is in operation, a DCL DC64L2 catalytic converter shall be used for emissions control;

d. The maximum emissions from CE-1 shall not exceed the limits given in the following table:

Table 4.1.3(d): Compressor Engine CE-1 Emission Limits

Pollutant	Hourly (lb/hr)	Annual (ton/yr)
CO	2.28	9.98
NO_x	1.39	6.09
Formaldehyde	0.02	0.06

e. The maximum emissions from CE-2 shall not exceed the limits given in the following table:

Table 4.1.3(e): Compressor Engine CE-2 Emission Limits

Pollutant	Hourly (lb/hr)	Annual (ton/yr)
CO	0.56	2.43
NO_x	0.38	1.64
$PM_{2.5}/PM_{10}/PM$	0.15	0.62
VOC	0.35	1.54
Formaldehyde	0.09	0.41

f. As the annual emission limits given in Table 4.1.3(d) and (e) are based on operating 8,760 hours/year at MDHI, there are no limits on the annual hours of operation or fuel usage of the compressor engines; and

g. The use of the catalytic converter shall be in accordance with the following requirements:

(1) 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;

(2) The permittee shall monitor the temperature to the inlet of the catalyst and in accordance with manufacturer's specifications. The permittee shall maintain these records for five (5) years;

(3) No person shall knowingly:

(i) Remove or render inoperative any air pollution or auxiliary air pollution control device installed subject to the requirements of this permit;

(ii) 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

(iii) Cause or allow engine exhaust gases to bypass any catalytic reduction device; and

(4) 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:

(i) Maintaining proper operation of the automatic air/fuel ratio controller or automatic feedback controller;

(ii) Following operating and maintenance recommendations of the catalyst element manufacturer.

h. **40 CFR 63, Subpart ZZZZ (CE-1)**
The Arrow VRG 330 4-Stroke Rich Burn 68 hp compressor engine (CE-1) is defined as an "existing" non-emergency stationary engine ≤500 hp under 40 CFR 63, Subpart ZZZZ and is subject to all applicable requirements under the rule including the following:

(1) If you own or operate an existing stationary RICE located at an area source of HAP emissions, you must comply with the requirements in Table 2d to this subpart and the operating limitations in Table 2b to this subpart that apply to you.
[40 CFR §63.6603(a)]

(2) As stated in §§ 63.6603 and 63.6640, you must comply with the following requirements for existing stationary RICE located at area sources of HAP emissions:

(i) Non-emergency, non-black start 4SRB stationary RICE ≤500 HP

A. Change oil and filter every 1,440 hours of operation or annually, whichever comes first;

B. Inspect spark plugs every 1,440 hours of operation or annually, whichever comes first, and replace as necessary; and

C. Inspect all hoses and belts every 1,440 hours of operation or annually, whichever comes first, and replace as necessary.
[Table 2d to Subpart ZZZZ of Part 63: Number 7]

(3) If you own or operate any of the following stationary RICE, you must operate and maintain the stationary RICE and after-treatment control device (if any) according to the manufacturer's emission-related written instructions or develop your own maintenance plan which must provide to the extent practicable for the maintenance and operation of the engine in a manner consistent with good air pollution control practice for minimizing emissions:
[40 CFR §63.6625(e)]

(i) An existing non-emergency, non-black start 4SRB stationary RICE with a site rating less than or equal to 500 HP located at an area source of HAP emissions;
[40 CFR §63.6625(e)(8)]

(4) If you operate a new, reconstructed, or existing stationary engine, you must minimize the engine's time spent at idle during startup and minimize the engine's startup time to a period needed for appropriate and safe loading of the engine, not to exceed 30 minutes, after which time the emission standards applicable to all times other than startup in Tables 1a, 2a, 2c, and 2d to this subpart apply.
[40 CFR §63.6625(h)]

(5) If you own or operate a stationary SI engine that is subject to the work, operation or management practices in items 6, 7, or 8 of Table 2c to this subpart or in items 5, 6, 7, 9, or 11 of Table 2d to this subpart, you have the option of utilizing an oil analysis program in order to extend the specified oil change requirement in Tables 2c and 2d to this subpart. The oil analysis must be performed at the same frequency specified for changing the oil in Table 2c or 2d to this subpart. The analysis program must at a minimum analyze the following three parameters: Total Acid Number, viscosity, and percent water content. The condemning limits for these parameters are as follows: Total Acid Number increases by more than 3.0 milligrams of potassium hydroxide (KOH) per gram from Total Acid Number of the oil when new; viscosity of the oil has changed by more than 20 percent from the viscosity of the oil when new; or percent water content (by volume) is greater than 0.5. If all of these condemning limits are not exceeded, the engine owner or operator is not required to change the oil. If any of the limits are exceeded, the engine owner or operator must change the oil within 2 business days of receiving the results of the analysis; if the engine is not in operation when the results of the analysis are received, the engine owner or operator must change the oil within 2 business days or before commencing operation, whichever is later. The owner or operator must keep records of the parameters that are analyzed as part of the program, the results of the analysis, and the oil changes for the engine. The analysis program must be part of the maintenance plan for the engine.
[40 CFR §63.6625(j)]

(6) You must demonstrate continuous compliance with each emission limitation and operating limitation in Tables 1a and 1b, Tables 2a and 2b, Table 2c, and Table 2d to this subpart that apply to you according to methods specified in Table 6 to this subpart.
[40 CFR §63.6640(a)]

(7) As stated in §63.6640, you must continuously comply with the emissions and operating limitations and work or management practices as required by the following:

(i) Existing emergency and black start stationary RICE ≤500 HP located at a major source of HAP, existing non-emergency stationary RICE <100 HP located at a major source of HAP, existing emergency and black start stationary RICE located at an area source of HAP, existing non-emergency stationary CI RICE ≤300 HP located at an area source of HAP, existing non-emergency 2SLB stationary RICE located at an area source of HAP,

existing non-emergency stationary SI RICE located at an area source of HAP which combusts landfill or digester gas equivalent to 10 percent or more of the gross heat input on an annual basis, existing non-emergency 4SLB and 4SRB stationary RICE ≤500 HP located at an area source of HAP, existing non-emergency 4SLB and 4SRB stationary RICE >500 HP located at an area source of HAP that operate 24 hours or less per calendar year, and existing non-emergency 4SLB and 4SRB stationary RICE >500 HP located at an area source of HAP that are remote stationary RICE

A. Operating and maintaining the stationary RICE according to the manufacturer's emission-related operation and maintenance instructions; or

B. Develop and follow your own maintenance plan which must provide to the extent practicable for the maintenance and operation of the engine in a manner consistent with good air pollution control practice for minimizing emissions.
[Table 6 to Subpart ZZZZ of Part 63: Number 9]

4.1.4. The permittee shall operate the Low Pressure Separator (LPS-1) according to the following requirements:

a. Flash gas from the low pressure separator shall be captured by the Flash Gas Compressor Engine (CE-2) and recycled back into the sales gas pipeline. When the Flash Gas Compressor Engine is offline, the flash gas shall be routed to the Flare (Flare-1) for destruction. All piping used to recycle or vent the flash gas shall consist of a closed vent system;

b. Controlled flash gas emissions from the Low Pressure Separator, according to the requirements of 4.1.4(a), shall not exceed the limits given in the following table:

Table 4.1.4(b): Low Pressure Flash Gas Tank Emissions

Pollutant	Hourly (lb/hr)	Annual (ton/yr)
VOCs	176.17	66.07
n-Hexane	7.93	2.98
Benzene	0.23	0.09
Toluene	0.43	0.16
Total HAPs	8.71	3.27

c. The permittee shall provide notification to DAQ in accordance with 4.5.4 if the low pressure separator is removed from service.

4.1.5. The permittee shall operate the Storage Tanks (TO1 - T12) according to the following requirements:

a. Working, Breathing, and Flashing emissions from the storage tanks shall be captured by the VRU Compressor Engine (CE-1) and recycled back into the process prior to the low pressure separator (LPS-1) for further processing on its way to the sales gas line. When the VRU Compressor Engine is offline, the flash gas shall be routed to the Vapor Destruction Unit (VDU-1) for destruction. All piping used to recycle or vent the storage tank emissions shall consist of a closed vent system.

b. Controlled storage tank emissions, according to the requirements of 4.1.5(a), shall not exceed the limits given in the following table:

Table 4.1.5(b): Storage Tank Emissions

Pollutant	Hourly (lb/hr)	Annual (ton/yr)
VOCs	2.90	9.54
n-Hexane	0.14	0.46
Total HAPs	0.15	0.50

c. **Cover Requirements**
The permittee shall comply with the following storage tank cover requirements:

(1) 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.

(2) 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 of 4.1.9 to a control device or to a process.

(3) Each storage vessel thief hatch shall be weighted and properly seated. You must select gasket material for the hatch based on composition of the fluid in the storage vessel and weather conditions.

4.1.6. Truck Loading operations shall be in accordance with the following:

a. All condensate and produced-water trucks shall be loaded using the submerged-fill method. The "submerged-fill method" shall, for the purposes of this permit, mean either bottom-filling or filling by extending the pipe to near the bottom of the tank, and as soon as is practicable, below the level of liquid;

b. The permittee shall not load out more than 42,310,800 gallons of produced water and 17,629,500 gallons of condensate per year; and

c. Loading of condensate trucks shall be controlled by using a vapor return system that captures an estimated minimum 70% of the uncontrolled vapors during loading and either recycles the vapors back into the system or routes them to the VDU for destruction. All piping used to move the vapors shall consist of a closed vent system designed and operated in accordance with 4.1.9.

4.1.7. The permittee shall operate the Flare (Flare-1) according to the following requirements:

a. The combustion exhaust emissions from the Flare shall not exceed the following limits:

Table 4.1.7(a): Flaring Emission Limits

Pollutant	Hourly (lb/hr)	Annual (ton/yr)
CO	92.51	46.28
NO_X	17.00	8.51
SO_2	5.11	2.56
PM	23.50(1)	n/a

(1) As calculated under 45CSR§6-4.1 and based on a flare design capacity of 8.64 tons/hour.

b. The Flare shall not combust more than 0.125 mmscf/hr of gases and shall not combust more than 250,000 mmBtu of waste gases per year.

c. The Flare shall be operated with a flame present at all times, as determined by the methods specified in 4.2.7;

d. The Flare shall be designed according to the requirements specified in 40 CFR §60.18;

e. The Flare shall be operated at all times when emissions may be vented to it. To ensure compliance with 4.1.7(e), the permittee shall monitor in accordance with 4.2.7;

f. The Flare shall be designed for and operated with no visible emissions as determined by the methods specified in 4.2.10 except for periods not to exceed a total of 5 minutes during any 2 consecutive hours;

g. The permittee shall monitor the Flare to ensure that it is operated and maintained in conformance with its design;

h. The Flare shall be designed, operated, and maintained according to good engineering practices or manufacturing recommendations so as to achieve, at a minimum, a hydrocarbon combustion rate of 98.0%;

i. The Flare is subject to 45CSR6. The requirements of 45CSR6 include but are not limited to the following:

(1) The permittee shall not cause, suffer, allow or permit particulate matter to be discharged from the flares into the open air in excess of the quantity determined by use of the following formula:

Emissions (lb/hr) = F x Incinerator Capacity (tons/hr)

Where, the factor, F, is as indicated in Table I below:

Table I: Factor, F, for Determining Maximum Allowable Particulate Emissions

Incinerator Capacity	Factor F
A. Less than 15,000 lbs/hr	5.43

B. 15,000 lbs/hr or greater 2.72
[45CSR§6-4.1]

(2) No person shall cause, suffer, allow or permit emission of smoke into the atmosphere from any incinerator which is twenty (20%) percent opacity or greater.
[45CSR6 §4.3]

(3) The provisions of paragraph (i) shall not apply to smoke which is less than forty (40%) percent opacity, for a period or periods aggregating no more than eight (8) minutes per start-up.
[45CSR6 §4.4]

(4) No person shall cause or allow the emission of particles of unburned or partially burned refuse or ash from any incinerator which are large enough to be individually distinguished in the open air.
[45CSR6 §4.5]

(5) Incinerators, including all associated equipment and grounds, shall be designed, operated and maintained so as to prevent the emission of objectionable odors.
[45CSR6 §4.6]

(6) Due to unavoidable malfunction of equipment, emissions exceeding those provided for in this rule may be permitted by the Director for periods not to exceed five (5) days upon specific application to the Director. Such application shall be made within twenty-four (24) hours of the malfunction. In cases of major equipment failure, additional time periods may be granted by the Director provided a corrective program has been submitted by the owner or operator and approved by the Director.
[45CSR6 §8.2]

4.1.8. The permittee shall operate the Vapor Destruction Unit (VDU-1) according to the following requirements:

a. The combustion exhaust emissions from the VDU shall not exceed the following limits:

Table 4.1.8(a): VDU Emission Limits

Pollutant	Hourly (lb/hr)	Annual (ton/yr)
CO	6.80	29.79
NO_X	1.25	5.46
SO_2	0.34	1.50
PM	0.77(1)	n/a

(1) As calculated under 45CSR§6-4.1 and based on a flare design capacity of 0.1416 tons/hour.

b. The VDU shall have an MDHI not to exceed18.33 mmBtu/hr and shall not combust more than 160,600 mmBtu of waste gases per year.

c. The VDU shall be operated with a flame present at all times, as determined by the methods specified in section 4.2.8.;

d. The VDU shall be designed for and operated with no visible emissions as determined by the methods specified in permit section 4.2.10. except for either (1) or (2):

(1) periods not to exceed a total of one minute during any 15 minute period, determined on monthly basis; or

(2) periods not to exceed a total of 2 minutes during any hour, determined on a quarterly basis if the enclosed combustion device installed was a model tested under §60.5413(d) which meets the criteria in §60.5413(d)(11).

e. The VDU shall be operated at all times when emissions may be vented to it. To ensure compliance with 4.1.8(e), the permittee shall monitor in accordance with 4.2.8.;

f. The VDU shall be designed, operated, and maintained according to good engineering practices or manufacturing recommendations so as to achieve, at a minimum, a hydrocarbon combustion rate of 98.0%; and

g. The permittee shall operate and maintain the VDU according to the manufacturer's specifications for operating and maintenance requirements to maintain the guaranteed control efficiency given under 4.1.8(f). To demonstrate compliance with section 4.1.8(g), the permittee shall maintain records of the manufacturer's specifications for operating and maintenance requirements to maintain the control efficiency; and

h. The VDU is subject to 45CSR6. The requirements of 45CSR6 include but are not limited to those given under 4.1.7.(i).

4.1.9. **Closed Vent Requirements**

The permittee shall meet the following requirements for each closed vent system recycling vapors back into the process or delivering vapors to the Flare and the VDU:

a. The closed vent system shall be designed and operated: (a) with no detectable emissions as determined using olfactory, visual, and auditory inspections; and (b) to route all gases, vapors, and fumes emitted from the system to the applicable control device in order to be in compliance with minimum control efficiency requirements for each control device; or (c) route all gases, vapors, and fumes emitted from the system to a process as required;

b. If a bypass line exists, the permittee shall either: (a) secure the bypass valve with a car-seal or a lock-and-key type configuration in the non-diverting position to prevent inadvertent bypass; or (b) 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; and

c. Low leg drains, high point bleeds, analyzer vents, open-ended valves or lines, and safety devices are not subject to requirement (b).

4.1.10. **40 CFR 60, Subpart OOOO**

You must comply with paragraphs (a) through (f) of this section.

a. Except as provided in paragraph (f) of this section, for each well completion operation with hydraulic fracturing begun prior to January 1, 2015, you must comply with the requirements of

paragraphs (a)(3) and (4) of this section unless a more stringent state or local emission control requirement is applicable; optionally, you may comply with the requirements of paragraphs (a)(1) through (4) of this section. For each new well completion operation with hydraulic fracturing begun on or after January 1, 2015, you must comply with the requirements in paragraphs (a)(1) through (4) of this section.

(1) For the duration of flowback, route the recovered liquids into one or more storage vessels or re-inject the recovered liquids into the well or another well, and route the recovered gas into a gas flow line or collection system, re-inject the recovered gas into the well or another well, use the recovered gas as an on-site fuel source, or use the recovered gas for another useful purpose that a purchased fuel or raw material would serve, with no direct release to the atmosphere. If this is infeasible, follow the requirements in paragraph (a)(3) of this section.

(2) All salable quality gas must be routed to the gas flow line as soon as practicable. In cases where flowback emissions cannot be directed to the flow line, you must follow the requirements in paragraph (a)(3) of this section.

(3) You must capture and direct flowback emissions to a completion combustion device, except in conditions that may result in a fire hazard or explosion, or where high heat emissions from a completion combustion device may negatively impact tundra, permafrost or waterways. Completion combustion devices must be equipped with a reliable continuous ignition source over the duration of flowback.

(4) You have a general duty to safely maximize resource recovery and minimize releases to the atmosphere during flowback and subsequent recovery.
[40CFR§60.5375(a)]

b. You must maintain a log for each well completion operation at each gas well affected facility. The log must be completed on a daily basis for the duration of the well completion operation and must contain the records specified in §60.5420(c)(1)(iii).
[40CFR§60.5375(b)]

c. You must demonstrate initial compliance with the standards that apply to gas well affected facilities as required by §60.5410.
[40CFR§60.5375(c)]

d. You must demonstrate continuous compliance with the standards that apply to gas well affected facilities as required by §60.5415.
[40CFR§60.5375(d)]

e. You must perform the required notification, recordkeeping and reporting as required by §60.5420.
40CFR§60.5375(e)

f. (1) For each gas well affected facility specified in paragraphs (f)(1)(i) and (ii) of this section, you must comply with the requirements of paragraphs (f)(2) and (3) of this section.

(i) Each well completion operation with hydraulic fracturing at a gas well affected facility meeting the criteria for a wildcat or delineation well.

(ii) Each well completion operation with hydraulic fracturing at a gas well affected facility meeting the criteria for a non-wildcat low pressure gas well or non-delineation low pressure gas well.

(2) You must capture and direct flowback emissions to a completion combustion device, except in conditions that may result in a fire hazard or explosion, or where high heat emissions from a completion combustion device may negatively impact tundra, permafrost or waterways. Completion combustion devices must be equipped with a reliable continuous ignition source over the duration of flowback. You must also comply with paragraphs (a)(4) and (b) through (e) of this section.

(3) You must maintain records specified in § 60.5420(c)(1)(iii) for wildcat, delineation and low pressure gas wells.
[40CFR§60.5375(f)]

4.1.11. The permittee shall, within 180 days of facility startup, submit a modification or Class II Administrative Update, as applicable pursuant 45CSR13, to revise the number and type of components (valves, pump seals, connectors, etc.) in gas/vapor or light liquid (as applicable) listed in Attachment N of Permit Application R13-3248 or any amendments or revisions submitted thereto if the as-built number of components results in calculated VOC or HAP emissions in excess of those given under Attachment N.

4.1.12. 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.

4.1.13. **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 1.0 and associated monitoring equipment in a manner consistent with safety and good air pollution control practices for minimizing emissions, or comply with any more stringent limits set forth in this permit or as set forth by any State rule, Federal regulation, or alternative control plan approved by the Secretary.
[45CSR§13-5.11.]

4.1.14. The permittee shall meet all applicable requirements, including those not specified above, as given under 45CSR2, 45CSR6, 40 CFR 60, Subpart OOOO, and 40 CFR 63, Subpart ZZZZ.

4.2. Monitoring, Compliance Demonstration, Recording and Reporting Requirements

4.2.1. **Fuel Burning Units Visibility Compliance**
For the purposes of demonstrating compliance with the visible emission standard set forth in 4.1.2(f), the permittee shall do the following:

a. At such reasonable times as the Secretary may designate, the permittee shall conduct Method 9 emission observations for the purpose of demonstrating compliance with 4.1.2(f) of this permit. Method 9 shall be conducted in accordance with 40 CFR 60 Appendix A.

b. The permittee shall maintain records of all monitoring data required by section 7.2.1 of this permit 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 80EF, 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.

c. Any deviation(s) from the allowable visible emission requirement for any emission source discovered during observations using 40CFR Part 60, Appendix A, Method 9 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.

4.2.2. **VDU and Flare Waste Gas Flow Rate Monitoring**
The permittee shall continuously monitor the volume of waste gases (does not include pilot gas) that are sent to the Flare and VDU for destruction (on an individual basis).

4.2.3. **LPS and Storage Tank VOC/HAP Emissions Compliance**
For the purposes of demonstrating compliance with the maximum VOC and speciated HAP limits set forth in 4.1.4(b) and 4.1.5(b), the permittee shall calculate and record the monthly and rolling twelve month amount of VOC and speciated HAP emissions from the LPS and the Storage Tanks. This calculation shall be based on the volume of gases sent to the flare (for calculating emissions from the LPS Flash Gases) and the VDU (for calculating emissions from the Storage Tanks) and on a site-specific analysis of the waste gas to determine the by-weight percentages of VOCs and speciated HAPs. The site specific gas analysis shall be performed at least once per quarter or, after approval by the Director, a less frequent rate if it is determined that the by-weight percentages of VOCs and speciated HAPs of the waste gases are stable and that a reasonably conservative value can be used in lieu of quarterly testing. During each sampling event, two samples shall be taken at appropriate locations: after the applicable emission units (storage tank vent header and low pressure separator gas stream) and prior to the control devices. In the calculation of actual emissions, a control efficiency of 98% may be used for the flare and the VDU. At all times the waste gases from the LPS and the storage tanks are captured by plant suction and recycled back into the process (according to 4.1.4(a) and 4.1.5(a)), emissions from the LPS and storage tanks can be estimated at zero.

4.2.4. **Truck Loadout Throughput Compliance**
For the purposes of demonstrating compliance with the maximum truck loadout limits set forth in 4.1.6(b), the permittee shall monitor and record the monthly and rolling twelve month amount of produced water and condensate loaded into trucks.

4.2.5. **VDU and Flare Annual Heat Input Combustion Compliance**
For the purposes of demonstrating compliance with the maximum combustion limits set forth in 4.1.7(b) and 4.1.8(b), the permittee shall calculate and record the monthly (in mmBtu/month) and rolling twelve month (in mmBtu/year) waste gases combustion rate (not including pilot gas) that are sent to the Flare and VDU for destruction (on an individual basis). The combustion rate (in mmBtu/month) shall be calculated by multiplying the heat content of the waste gases (Btu/scf) as based on a site-specific analysis of the gas streams by the continuous volumetric flow measurement (scf/month) as specified by 4.2.2 and 4.2.3.

4.2.6. **Flare Design Evaluation**
For the purpose of demonstrating compliance with the design requirements in section 4.1.7 of this permit, the permittee shall maintain a record of the flare design evaluation. The flare design evaluation shall include, net heat value calculations, exit (tip) velocity calculations, and all supporting concentration calculations.

4.2.7. **Flare Pilot Flame Monitoring**
To demonstrate compliance with the pilot flame requirements of 4.1.7(c), the presence of a pilot flame shall be continuously monitored using a thermocouple or any other equivalent device to detect the presence of a flame when emissions are vented to it.

4.2.8. **VDU Pilot Flame Monitoring**
To demonstrate compliance with the pilot flame requirements of sections 4.1.8(c) of this permit, the permittee shall follow (a) and (b), or (c):

a. At a minimum frequency of once per calendar month, conduct visual inspections to confirm that the pilot is lit when vapors are being routed to the enclosed combustion device and that the continuous burning pilot flame is operating properly;

b. For any absence of pilot flame, or other indication of smoking or improper equipment operation, you must ensure the equipment is returned to proper operation as soon as practicable after the event occurs. At a minimum, you must: (1) Check the air vent for obstruction. If an obstruction is observed, you must clear the obstruction as soon as practicable. (2) Check for liquid reaching the combustor;

c. As an alternative, the permittee may meet the monitoring requirements of 4.2.7.; and

d. The permittee is exempt from the pilot flame requirements of paragraphs (a) and (b) of this section if the permittee installed an enclosed combustion device model that was tested under § 60.5413(d) which meets the criteria in § 60.5413(d)(11). To demonstrate compliance with section 4.2.8(d), the permittee shall maintain a record of the performance test results conducted by the manufacturer.

4.2.9. **Flare and VDU Pilot Flame Record-keeping**
For the purpose of demonstrating compliance with the continuous pilot flame requirements in 4.1.7(c) and 4.1.8(c), the permittee shall maintain records of the times and duration of all periods when the pilot flame was not present and that vapors were vented to the device:

a. If the permittee is demonstrating compliance to 4.2.8. with visual inspections, the permittee shall maintain records of the inspections and

b. If the permittee is demonstrating compliance to 4.2.8 with an enclosed combustion device model that was tested under the conditions of § 60.5413(d), a record shall be maintained of the performance test results.

4.2.10. **Flare and VDU Visibility Monitoring**
To demonstrate compliance with the visible emissions requirements of section 4.1.7(f), and 4.1.8(d) of this permit, the permittee shall conduct the following checks and / or opacity monitoring and recordkeeping:

a. The visible emission check shall determine the presence or absence of visible emissions. The observations shall be conducted according to Section 11 of EPA Method 22. 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 40CFR Part 60, Appendix A, Method 22 or from the lecture portion of the 40CFR Part 60, Appendix A, Method 9 certification course. The observation period shall be:

(1) a minimum of 2 hours if demonstrating compliance with 4.1.7(f).
(2) a minimum of 15 minutes if demonstrating compliance with 4.1.8(d)(1); or
(3) a minimum of 1 hour if demonstrating compliance with 4.1.8(d)(2)

b. The visible emission check shall be conducted initially within 180 days of start-up to demonstrate compliance;

c. If during this visible emission check or at any other time visible emissions are observed, compliance with section 4.1.6(k) shall be determined by conducting opacity tests in accordance with Method 9 or 40 CFR 60, Appendix A; and

d. For the purpose of demonstrating compliance with the visible emissions and opacity requirements, the permittee shall maintain records of the visible emission opacity tests and checks. The permittee shall maintain records of all monitoring data required by section 4.2.10 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. For an emission unit out of service during the evaluation, the record of observation may note "out of service" (O/S) or equivalent.

4.2.11. **Closed Vent Monitoring**

To demonstrate compliance with the closed vent system requirements of section 4.1.9, 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 initial 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 emissions 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. 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 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
You 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. You determine 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. You have a written plan that requires inspection of the equipment as frequently as practicable during safe-to-inspect times.

e. Difficult to inspect requirements
You 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. You determine that the equipment cannot be inspected without elevating the inspecting personnel more than 2 meters above a support surface.

ii. You have a written plan that requires inspection of the equipment at least once every 5 years.

4.2.12. **Closed Vent Recordkeeping**
To demonstrate compliance with the closed vent monitoring requirements in 4.2.11, records shall be maintained of:

a. The initial compliance requirements;

b. Each annual visual inspection conducted to demonstrate continuous compliance, including records of any repairs that were made as a result of the inspection;

c. If you are subject to the bypass requirements, the following records shall also be maintained:

(i) Each inspection or each time the key is checked out or a record each time the alarm is sounded; and

(ii) 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

that the event occurred. The record shall also include the estimate of emissions that were released to the environment as a result of the bypass.

d. Any part of the system that has been designated as "unsafe to inspect" in accordance with 4.2.11(d) or "difficult to inspect" in accordance with 4.2.11(e).

4.3. Testing Requirements

4.3.1. At such reasonable time(s) as the Secretary may designate, in accordance with the provisions of 3.3 of this permit, the permittee shall conduct or have conducted test(s) to determine compliance with the emission limitations or minimum control device efficiencies established in this permit and/or applicable regulations.

4.3.2. *[Reserved]*

4.3.3. A control device that is certified through a performance test conducted by the manufacturer and operated in accordance with the parameter ranges covered under the performance test shall not require additional testing, unless at the request of the Director. Additionally, A flare that is designed and operated in accordance with §60.18(b) shall not require performance testing, unless at the request of the Director.

4.3.4. **45CSR6 Testing**
At such reasonable times as the Secretary may designate, the operator of any incinerator shall be required to conduct or have conducted stack tests to determine the particulate matter loading, by using 40 CFR Part 60, Appendix A, Method 5 or other equivalent U.S. EPA approved method approved by the Secretary, in exhaust gases. Such tests shall be conducted in such manner as the Secretary may specify and be filed on forms and in a manner acceptable to the Secretary. The Secretary may, at the Secretary's option, witness or conduct such stack tests. Should the Secretary exercise his or her option to conduct such tests, the operator will provide all the 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. The Secretary may conduct such other tests as the Secretary may deem necessary to evaluate air pollution emissions other than those noted above.
[45CSR6 §§7.1 and 7.2]

4.3.5. The permittee shall meet all applicable Testing Requirements as given under 40 CFR 60, Subpart OOOO.

4.4. General Recordkeeping Requirements

4.4.1. **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.

4.4.2. **Record of Maintenance of Air Pollution Control Equipment.**
For all pollution control equipment listed in Section 1.0, the permittee shall maintain accurate records of all required pollution control equipment inspection and/or preventative maintenance procedures.

4.4.3. **Record of Malfunctions of Air Pollution Control Equipment.**
For all air pollution control equipment listed in Section 1.0, the permittee shall maintain records of the occurrence and duration of any malfunction or operational shutdown of the air pollution control equipment during which excess emissions occur. For each such case, the following information shall be recorded:

a. The equipment involved.

b. Steps taken to minimize emissions during the event.

c. The duration of the event.

d. The estimated increase in emissions during the event.

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

e. The cause of the malfunction.

f. Steps taken to correct the malfunction.

g. Any changes or modifications to equipment or procedures that would help prevent future recurrences of the malfunction.

4.5. General Reporting Requirements

4.5.1. Any deviation of the allowable visible emission requirement for any emission source discovered during observation using 40CFR Part 60, Appendix A, Method 9 per section 4.2.10(c) must be reported in writing to the Director of the Division of Air Quality as soon as practicable, but within ten (10) calendar days, of the occurrence and shall include, at a minimum, the following information: the results of the visible determination of opacity of emissions, the cause or suspected cause of the violation(s), and any corrective measures taken or planned.

4.5.2. Any bypass event of the registered control device must be reported in writing to the Director of the Division of Air Quality as soon as practicable, but within ten (10) calendar days, of the occurrence and shall include, at a minimum, the following information: the date of the bypass, the estimate of VOC emissions released to the atmosphere as a result of the bypass, the cause or suspected cause of the bypass, and any corrective measures taken or planned.

4.5.3. Any time the air pollution control device is not operating when emissions are vented to it, shall be reported in writing to the Direction of the Division of Air Quality as soon as practicable, but within ten (10) calendar days of the discovery.

4.5.4. To demonstrate compliance with requirement 4.1.4(d), the permittee shall notify the Director of the Division of Air Quality in writing if the low pressure separator is removed from service. The notification shall:

a. Include revised flash emission calculations for any storage tank with emission limits based on a site specific sample in accordance with 4.3.2 to demonstrate that the emission limits will not be exceeded as a result of the change in operating conditions;

b. Include the date that the low pressure tower was (or will be) removed from service; and

c. Be submitted no later than 30 days from the date that the low pressure separator was removed from service.

CERTIFICATION OF DATA ACCURACY

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

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

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

Telephone No. _____ Fax No. _____

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

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

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

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

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

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

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