

Engineer	William T. Rothwell II, P.E.
Email Address	w.tracy.rothwell@wv.gov
Company Name	Williams Ohio Valley Midstream, LLC
Company ID	051-00195
Facility Name	Conner Compressor Station
Permit Number	R13-3168A
County	Marshall
Newspaper	<i>Moundsville Daily Echo</i> 845-2660
Company Email and "Attention To:"	Jack Hamel jack.hamel@williams.com
Environmental Contact Email Address	Danell Zawaski danell.zawaski@williams.com
Regional Office (if applicable)	NPRO
New or Modified Source?	new
Construction, Modification, or Relocation?	modification
Type of Facility	natural gas compressor station
"Located" or "To Be Located"?	Located
Place where I can find electronic versions of your notice, engineering evaluation, and draft permit	Q:\AIR_QUALITY\T_ROTHWAR13\3168A Williams Ohio Valley

publish Wed Oct 14
30 days Fri Nov 13
email ok to
publish
Mon Oct 12

INTERNAL PERMITTING DOCUMENT TRACKING MANIFEST

Company Name Williams Ohio Valley Midstream, LLC

Permitting Action Number R13-3168A Total Days _____ DAQ Days _____

Permitting Action:

- | | | |
|---|------------------------------------|---|
| <input type="radio"/> Permit Determination | <input type="radio"/> Temporary | <input checked="" type="radio"/> Modification |
| <input type="radio"/> General Permit | <input type="radio"/> Relocation | <input type="radio"/> PSD (Rule 14) |
| <input type="radio"/> Administrative Update | <input type="radio"/> Construction | <input type="radio"/> NNSR (Rule 19) |

Documents Attached:

- | | |
|--|--|
| <input checked="" type="radio"/> Engineering Evaluation/Memo | <input type="radio"/> Completed Database Sheet |
| <input checked="" type="radio"/> Draft Permit | <input type="radio"/> Withdrawal |
| <input type="radio"/> Notice | <input type="radio"/> Letter |
| <input type="radio"/> Denial | <input type="radio"/> Other (specify) _____ |
| <input type="radio"/> Final Permit/General Permit Registration | _____ |

Date	From	To	Action Requested
09/30/2015	Tra	Bev	Please review – Request to Go To Notice
10/9	Bev	Tra	Go to Notice

NOTE: Retain a copy of this manifest for your records when transmitting your document(s).

AIR QUALITY PERMIT NOTICE

Notice of Intent to Approve

On June 15, 2015, Williams Ohio Valley Midstream LLC applied to the WV Department of Environmental Protection, Division of Air Quality (DAQ) for a permit to modify and operate a natural gas compressor facility located on Kull Lane, Moundsville, Marshall County, WV at latitude 39.880375 and longitude -80.750669. A preliminary evaluation has determined that all State and Federal air quality requirements will be met by the proposed facility. The DAQ is providing notice to the public of its preliminary determination to issue the permit as R13-3168A.

The following potential emissions will be authorized by this permit action: Particulate Matter less than 10 microns, 1.89 tons per year (TPY); Sulfur Dioxide, 0.12 TPY; Oxides of Nitrogen, 24.22 TPY; Carbon Monoxide, 23.78 TPY; Volatile Organic Compounds, 89.52 TPY; Formaldehyde, 2.73 TPY; Total Hazardous Air Pollutants, 12.55 TPY; Carbon Dioxide Equivalents, 33,811 TPY.

Written comments or requests for a public meeting must be received by the DAQ before 5:00 p.m. on **(Day of Week, Month, Day, Year)**. A public meeting may be held if the Director of the DAQ determines that significant public interest has been expressed, in writing, or when the Director deems it appropriate.

The purpose of the DAQ's permitting process is to make a preliminary determination if the proposed construction will meet all state and federal air quality requirements. The purpose of the public review process is to accept public comments on air quality issues relevant to this determination. Only written comments received at the address noted below within the specified time frame, or comments presented orally at a scheduled public meeting, will be considered prior to final action on the permit. All such comments will become part of the public record.

William T. Rothwell II, P.E.
WV Department of Environmental Protection
Division of Air Quality
601 57th Street, SE
Charleston, WV 25304
Telephone: 304/926-0499, ext. 1211
FAX: 304/926-0478

Additional information, including copies of the draft permit, application and all other supporting materials relevant to the permit decision may be obtained by contacting the engineer listed above. The draft permit and engineering evaluation can be downloaded at:

www.dep.wv.gov/daq/Pages/NSRPermitsforReview.aspx



west virginia department of environmental protection

Division of Air Quality
601 57th Street SE
Charleston, WV 25304
Phone (304) 926-0475 • FAX: (304) 926-0479

Earl Ray Tomblin, Governor
Randy C. Huffman, Cabinet Secretary
www.dep.wv.gov

ENGINEERING EVALUATION / FACT SHEET

BACKGROUND INFORMATION

Application No.: R13-3168A
Plant ID No.: 051-00195
Applicant: Williams Ohio Valley Midstream LLC (Williams)
Facility Name: Conner Compressor Station
Location: Moundsville, Marshall County
SIC Code: 1389
NAICS Code: 213112
Application Type: Modification
Received Date: June 15, 2015
Engineer Assigned: William T. Rothwell II, P.E.
Fee Amount: \$2,000
Date Received: July 14, 2015
Complete Date: July 27, 2015
Due Date: September 15, 2015
Applicant Ad Date: June 16, 2015
Newspaper: *Moundsville Daily Echo*
UTM's: Easting: 521.32 km Northing: 4,414.51 km Zone: 17
Description: Application for a modification of a natural gas compressor station to include the increased design capacity of both dehydrator reboilers, the thermal oxidizer, and the condensate stabilizer heater along with adding a new station recycle line heater, a new condensate stabilizer heater, and an additional produced water tank.

Promoting a healthy environment.

PROJECT OVERVIEW

Williams is proposing to modify the Conner Compressor Station which is located approximately 2.5 miles southwest of Moundsville in Marshall County. The facility will receive natural gas from local production wells that compress and dehydrate the gas for delivery to a gathering pipeline. The following equipment will be present at the facility:

- Two (2) 1,380 hp Caterpillar G3516B compressor engines, each with Oxidation Catalysts (OxCat) (CE-01, CE02)
- One (1) 203 hp Caterpillar G3306B TA natural gas fired compressor engine (CE-03) controlled with Non Selective Catalytic Reduction (NSCR)
- Two (2) 60.0 million standard cubic feet per day (mmscfd) triethylene glycol (TEG) dehydrators (RSV-1, RSV-2)
- Two (1) 1.7 million British Thermal Units per hour (MMBTU/hr) natural gas fired reboilers (RBV-1, RBV-2)
- One (1) 6.4 MMBTU/hr Thermal Oxidizer (COMB-1)
- One (1) 1.55 MMBTU/hr Heater Treater (HTR-01)
- One (1) 2.55 MMBTU/hr Condensate Stabilizer Heater (HTR-02)
- One (1) 1.7 MMBTU/hr Station Recycle Line Heater (HTR-03)
- One (1) 9.7 MMBTU/hr Condensate Stabilizer Heater (HTR-04)
- One (1) 48 barrel (bbl) produced water storage tank (T01)
- One (1) 210 barrel (bbl) produced water storage tank (T02)
- Produced Water Truck Loadout (TLO-1)
- Condensate Truck Loadout (TLO-2)
- Fugitive emissions (FUG) from process piping and equipment
- Startup/Shutdown/Maintenance (SSM) emissions

DESCRIPTION OF PROCESS

The following process description was taken from Permit Application R13-3168A:

Compressor Engine

Two (2) natural gas fired Caterpillar G3516B compressor engines (CE-01, CE-02) will be utilized at the facility. Each lean burn engine will utilize an OxCat to control pollutant emissions. One (1) natural gas fired Caterpillar G3306B TA rich burn compressor engine (CE-03) will also be utilized at the facility and be equipped with NSCR to reduce pollutant emissions.

The rich burn engine is equipped with non-selective catalytic reduction (NSCR) to control pollutant emissions.

Dehydrator

Two (2) TEG dehydrators (RSV-1, RSV-2) and associated reboilers (RBV-1, RBV-2) will be utilized at the facility. The dehydrators are used to remove water vapor from the inlet wet gas stream to meet pipeline specifications. In the dehydration process, the wet inlet gas stream flows through a contactor tower where the gas is contacted with lean glycol. The lean glycol absorbs the water in the gas stream and becomes rich glycol laden with water and trace amounts of hydrocarbons. The rich glycol is then routed to a flash tank where the glycol pressure is reduced

to liberate the lighter end hydrocarbons. The rich glycol is then sent from the flash tank to the regenerator where the glycol is heated to drive off the water vapor and any remaining hydrocarbons. Once boiled, the glycol is returned to a lean state and used again in the process. The dehydrator's flash tank offgas and still vent vapors will be normally sent to a thermal oxidizer for destruction. There will be times, however, when the flash tank offgas will be used as fuel gas for various equipment at the site.

Thermal Oxidizer

One (1) 6.4 MMBTU/hr thermal oxidizer (COMB-1) with 99% VOC/HAPs destruction efficiency will be used to control the dehydrator's flash gas and still vent vapor streams.

Heaters

One (1) 1.55 MMBTU/hr heater treater (HTR-01), one (1) 2.55 MMBTU/hr condensate stabilizer heater (HTR-02), one (1) 1.66 MMBTU/hr station recycle line heater (HTR-03), and one (1) 9.7 MMBTU/hr condensate stabilizer heater (HTR-04) will be used at the site.

Produced Water Tank

One (1) 48 bbl produced water tank (T01) and one (1) 210 bbl produced water tank (T02) will receive liquids from the engine suction scrubbers. The suction scrubbers remove entrained fluids (primarily water) and these liquids are sent to the atmospheric storage tank. A ProMax simulation for the Conner Compressor Station was completed by Williams to predict minimal tank flash emissions.

Truck Loading

Produced water will be loaded into tanker trucks and produce small quantities of VOC emissions. Additionally, under normal operating conditions, stabilized condensate will be sent offsite via pipeline; however, during unforeseen periods of pipeline outage, the stabilized condensate will be offloaded into tanker trucks. The loading of stabilized condensate into tanker trucks will also create VOC emissions.

Startup, Shutdown and Maintenance (SSM)

During routine operation of the facility, the compressor engine will undergo periods of startup and shutdown. Often when the engine is shutdown, the natural gas contained within the compressor and associated piping is vented to the atmosphere. Additionally, there will be other infrequent emissions from various maintenance activities at the facility that are not necessarily associated with compressor blowdowns. These emissions are associated with SSM.

Fugitive Emissions

During routine operation of the facility there are occasional leaks from process piping components such as valves, flanges, connectors, etc. Leaks from the process piping components results in VOC and HAP emissions to the atmosphere. Miscellaneous equipment leaks include leaks from the sealed surfaces, such as packing and gaskets, resulting from the wear of mechanical joints, seals and rotating surfaces over time. These also include reciprocating compressor crankcase leaks.

SITE INSPECTION

A site inspection was conducted on February 18, 2014 by Michael Wade of the DAQ Enforcement Section. According to Mr. Wade, the site location is appropriate for the proposed facility.

Latitude: 39.880375
Longitude: -80.750669



ESTIMATE OF EMISSIONS BY REVIEWING ENGINEER

Emissions associated with this construction application consist of the combustion emissions from three (3) natural gas fired compressor engines (1E, 2E, 3E), two (2) TEG dehydrator reboilers (4E, 7E), two (2) TEG dehydrator still vents (5E, 8E), two (2) dehydrator flash tanks (6E, 9E), one (1) thermal oxidizer (10E), one (1) heater treater (11E), one (1) stabilizer heater (12E), one station recycle line heater (19E), one condensate stabilizer heater (20E), two (2) produced water storage tanks (13E & 21E), one (1) produced water truck loadout (14E), one (1) stabilized condensate truck loadout (15E), SSM emissions (16E), fugitive piping emissions (17E), and miscellaneous equipment leaks (18E). Fugitive emissions for the facility are based on calculation methodologies presented in EPA Protocol for Equipment Leak Emission Estimates. The following table indicates which methodology was used in the emissions determination:

Emission Point ID#	Process Equipment	Calculation Methodology
1E, 2E	1,380 hp Caterpillar G3516B Reciprocating Internal Combustion Engine (RICE) w/ OxCat	Manufacturer's Data, EPA AP-42 Emission Factors
3E	203 hp Caterpillar G3306B TA Reciprocating Internal Combustion Engine (RICE) w/ NSCR	Manufacturer's Data, EPA AP-42 Emission Factors
4E, 7E	1.66 MMBtu/hr TEG Dehydrator Reboiler	EPA AP-42 Emission Factors
5E, 8E	60 mmscfd TEG Dehydrator Still Vent controlled by Thermal Oxidizer	GRI-GlyCalc 4.0
6E, 9E	60 mmscfd TEG Flash Tank Vent controlled by Thermal Oxidizer	GRI-GlyCalc 4.0
10E	6.4 MMBTU/hr Thermal Oxidizer	EPA AP-42 Emission Factors
11E	1.55 MMBTU/hr Heater Treater	EPA AP-42 Emission Factors
12E	2.55 MMBTU/hr Stabilizer Heater	EPA AP-42 Emission Factors
19E	1.66 MMBTU/hr Station Recycle Line Heater	EPA AP-42 Emission Factors
20E	9.70 MMBTU/hr Condensate Stabilizer Heater	EPA AP-42 Emission Factors
13E	48 bbl (2,016 gal) Produced Water Storage Tank	ProMax Emission Estimation Software
21E	210 bbl (8,820 gal) Produced Water Storage Tank	ProMax Emission Estimation Software
14E, 15E	Truck Loadout Racks	EPA AP-42 Emission Factors
16E	SSM Emissions	Engineering Estimate
17E	Process Piping Fugitive Emissions	EPA AP-42 Emission Factors
18E	Miscellaneous Equipment Leaks	Engineering Estimate

The following table indicates the control device efficiencies that are required for this facility:

Emission Unit	Pollutant	Control Device	Control Efficiency
1,380 hp Caterpillar G3516B RICE (1E, 2E)	Carbon Monoxide	OxCat	94.6 %
	Volatile Organic Compounds		86.9 %
	Formaldehyde		75.7 %
203 hp Caterpillar G3306TA RICE (3E)	Nitrogen Oxides	NSCR	97 %
	Carbon Monoxide		87 %
60 mmscfd TEG Dehydrator Still Vent / Flash Tank (5E, 6E, 8E, 9E)	Volatile Organic Compounds	Thermal Oxidizer	99 %
	Hazardous Air Pollutants		

On January 1, 2014 (effective date of rule) there will be revisions to the Greenhouse Gas (GHG) Rule that will affect the Global Warming Potential (GWP) values of several pollutants. The GWP for methane will increase from 21 to 25 and nitrous oxide will decrease from 310 to 298. Crestwood utilized these revised factors in this permit application in the calculation of their GHG potential.

The total facility PTE (Existing and Proposed) for the Conner Compressor Station is shown in the following table:

Pollutant	Existing Facility Wide PTE (tons/year)	Proposed Facility Wide PTE (tons/year)	Proposed Change (tons/year)
Nitrogen Oxides	20.20	24.20	3.29
Carbon Monoxide	13.31	23.78	9.86
Volatile Organic Compounds	92.54	130.07	37.53
Particulate Matter-10	1.53	1.98	0.39
Sulfur Dioxide	0.10	0.13	0.02
Formaldehyde	2.82	2.82	0.00
Total HAPs	13.29	12.68	(1.41)
Carbon Dioxide Equivalent	26,854	33,808	6,789

Maximum detailed controlled point source emissions were calculated by Williams and checked for accuracy by the writer and are summarized in the table on the next page.

Williams Ohio Valley Midstream, LLC – Conner Compressor Station (R13-3168A)

Emission Point ID#	Source	NO _x		CO		VOC		PM _{10/2.5}		SO ₂		Formaldehyde		Total HAPs		CO ₂ e	
		lb/hr	ton/year	lb/hr	ton/year	lb/hr	ton/year	lb/hr	ton/year	lb/hr	ton/year	lb/hr	ton/year	lb/hr	ton/year	lb/hr	ton/year
1E	CAT G3516B RICE w/OxCat	1.52	6.66	0.5	2.2	0.56	2.47	0.11	0.5	0.01	0.03	0.27	1.17	0.29	1.25	1721	7536
2E	CAT G3516B RICE w/OxCat	1.52	6.66	0.5	2.2	0.56	2.47	0.11	0.5	0.01	0.03	0.27	1.17	0.29	1.25	1721	7536
3E	CAT G3306B TA RICE w/NSCR	0.20	0.90	0.89	3.89	0.20	0.86	0.02	0.08	<0.01	<0.01	0.09	0.39	0.13	0.55	259	1135
4E	Dehydrator Reboiler	0.16	0.72	0.14	0.60	<0.01	0.04	0.01	0.05	<0.01	<0.01	<0.01	<0.01	<0.01	0.01	197	862
5E	Dehydrator Still Vent	0	0	0	0	0.68	2.97	0	0	0	0	0	0	0.33	1.44	1	1
6E	Dehydrator Flash Tank	0	0	0	0	0.43	1.88	0	0	0	0	0	0	0.01	0.06	5	24
7E	Dehydrator Reboiler	0.16	0.72	0.14	0.60	<0.01	0.04	0.01	0.05	<0.01	<0.01	<0.01	<0.01	<0.01	0.01	197	862
8E	Dehydrator Still Vent	0	0	0	0	0.68	2.97	0	0	0	0	0	0	0.33	1.44	1	1
9E	Dehydrator Flash Tank	0	0	0	0	0.43	1.88	0	0	0	0	0	0	0.01	0.06	5	24
10E	Thermal Oxidizer	0.44	1.91	1.99	8.71	0	0	0.05	0.21	<0.01	0.02	<0.01	<0.01	<0.01	<0.01	758	3322
11E	Heater Treater	0.15	0.67	0.13	0.56	0.01	0.04	0.01	0.05	<0.01	<0.01	<0.01	<0.01	<0.01	0.01	184	805
12E	Stabilizer Heater	0.25	1.10	0.21	0.92	0.01	0.06	0.02	0.08	<0.01	0.01	<0.01	<0.01	<0.01	0.02	302	1322
13E	Produced Water Tank (02)	0	0	0	0	0.03	0.14	0	0	0	0	0	0	0.01	0.04	0	0
14E	Truck Loadout - Produced Water	0	0	0	0	NA	0.45	0	0	0	0	0	0	NA	0.13	0	0
15E	Truck Loadout-Condensate	0	0	0	0	NA	2.47	0	0	0	0	0	0	NA	0.21	0	0
16E	Startup, Shutdown, Maintenance	0	0	0	0	NA	42.84	0	0	0	0	0	0	NA	1.89	431	1886
17E	Process Piping Fugitives	0	0	0	0	9.12	39.93	0	0	0	0	0	0	0.65	2.86	198	866
18E	Miscellaneous Equipment Leaks	0	0	0	0	6.32	27.66	0	0	0	0	0	0	0.24	1.05	397	1738
19E	Station Recycle Line Heater	0.16	0.71	0.14	0.6	0.01	0.04	0.01	0.05	<0.01	<0.01	<0.01	<0.01	<0.01	0.01	197	862
20E	Condensate Stabilizer Heater	0.95	4.17	0.8	3.5	0.05	0.24	0.07	0.32	0.01	0.03	<0.01	<0.01	0.02	0.08	1148	5029
21E	Produced Water Tank (02)	0	0	0	0	0.14	0.62	0	0	0	0	0	0	0.04	0.18	0	0
Total	Total Facility PTE	5.51	24.22	5.44	23.78	19.23	130.07	0.42	1.89	0.03	0.12	0.63	2.73	2.35	12.55	7722.02	33811.0

REGULATORY APPLICABILITY

The following rules apply to the facility:

45CSR2 (Particulate Air Pollution from Combustion of Fuel in Indirect Heat Exchangers)

The purpose of 45CSR2 is to establish emission limitations for smoke and particulate matter which are discharged from fuel burning units. 45CSR2 states that any fuel burning unit that has a heat input under ten (10) million B.T.U.'s per hour is exempt from sections 4 (weight emission standard), 5 (control of fugitive particulate matter), 6 (registration), 8 (testing, monitoring, recordkeeping, reporting) and 9 (startups, shutdowns, malfunctions). However, failure to attain acceptable air quality in parts of some urban areas may require the mandatory control of these sources at a later date.

The individual heat inputs of the proposed reboilers (RBV-1, RBV-2) are below 10 MMBTU/hr. Therefore, these units are exempt from the aforementioned sections of 45CSR2.

Williams would also be subject to the opacity requirements in 45CSR2, which is 10% opacity based on a six minute block average.

45CSR4 (To Prevent and Control the Discharge of Air Pollutants into the Open Air which Causes or Contributes to an Objectionable Odor or Odors)

45CSR4 states that an objectionable odor is an odor that is deemed objectionable when in the opinion of a duly authorized representative of the Air Pollution Control Commission (Division of Air Quality), based upon their investigations and complaints, such odor is objectionable. No odors have been deemed objectionable.

45CSR6 (To Prevent and Control Air Pollution from the Combustion of Refuse)

The purpose of this rule is to prevent and control air pollution from combustion of refuse.

Williams has proposed to have one (1) thermal oxidizer at the facility. The thermal oxidizer is subject to section 4, emission standards for incinerators. The thermal oxidizer has an allowable emission rate of 283 pounds of particulate matter per hour (assuming a natural gas density of 0.044 lb/ft³). The thermal oxidizer has negligible hourly particulate matter emissions. Therefore, the thermal oxidizer should demonstrate compliance with this section. The facility will demonstrate compliance by maintaining records of the amount of natural gas consumed by the thermal oxidizer and the hours of operation. The facility will also monitor the flame of the thermal oxidizer and record any malfunctions that may cause no flame to be present during operation.

45CSR10 (To Prevent and Control Air Pollution from the Emissions of Sulfur Oxides)

The purpose of 45CSR10 is to establish emission limitations for sulfur dioxide which are discharged from fuel burning units. 45CSR10 states that any fuel burning unit that has a heat input under ten (10) million B.T.U.'s per hour is exempt from sections 3 (weight emission standard), 6 (registration), 7 (permits), and 8 (testing, monitoring, recordkeeping, reporting). However, failure to attain acceptable air quality in parts of some urban areas may require the mandatory control of these sources at a later date.

The individual heat inputs of the proposed reboilers (RBV-1, RBV-2) are below 10 MMBTU/hr. Therefore, these units are exempt from the aforementioned sections of 45CSR10.

45CSR13 (Permits for Construction, Modification, Relocation and Operation of Stationary Sources of Air Pollutants, Notification Requirements, Administrative Updates, Temporary Permits, General Permits, and Procedures for Evaluation)

45CSR13 applies to this source due to the fact that Williams exceeds the regulatory emission threshold for criteria pollutants of 6 lb/hr and 10 ton/year, and they are also subject to a substantive requirement of an emission control rule promulgated by the Secretary (40CFR60 Subparts JJJJ and OOOO, 40CFR63 Subparts HH and ZZZZ).

Williams paid the appropriate application fee and published the required legal advertisement for a construction permit application.

45CSR16 (Standards of Performance for New Stationary Sources Pursuant to 40 CFR Part 60)

45CSR16 applies to this source by reference of 40CFR60, Subparts JJJJ and OOOO. These requirements are discussed under that rule below.

45CSR22 (Air Quality Management Fee Program)

Williams is not subject to 45CSR30. The Conner Compressor Station is subject to 40CFR60 Subparts JJJJ and OOOO, however they are exempt from the obligation to obtain a permit under 40 CFR part 70 or 40 CFR part 71, provided they are not required to obtain a permit for a reason other than their status as an area source.

Williams is required to pay the appropriate annual fees and keep their Certificate to Operate current.

40CFR60 Subpart JJJJ (Standards of Performance for Stationary Spark Ignition Internal Combustion Engines (SI ICE))

40CFR60 Subpart JJJJ establishes emission standards for applicable SI ICE.

The 1,380 hp Caterpillar G3516B RICE (1E, 2E) and 203 hp Caterpillar G3306TA RICE (3E) were manufactured after July 1, 2010 and it is subject to emission standards, operating standards, performance testing, and notification and recordkeeping. The following emission standards must be met:

Pollutant	Emission Standard
Nitrogen Oxides	1 grams per HP-hour
Carbon Monoxide	2 grams per HP-hour
Volatile Organic Compounds	0.7 grams per HP-hour

According to the manufacturer's data, the engines will meet these standards.

Because these engines will not be certified by the manufacturer, Williams will be required to perform an initial performance test within 180 days from startup, and subsequent testing every 8,760 hours or 3 years, whichever comes first for CE-01 and CE-02. Williams will be required to perform a one time performance test within 180 days from startup for CE-03.

40CFR60 Subpart OOOO (Standards of Performance for Crude Oil and Natural Gas Production, Transmission and Distribution)

EPA published in the Federal Register new source performance standards (NSPS) and air toxics rules for the oil and gas sector on August 16, 2012. 40CFR60 Subpart OOOO establishes emission standards and compliance schedules for the control of volatile organic compounds (VOC) and sulfur dioxide (SO₂) emissions from affected facilities that commence construction, modification or reconstruction after August 23, 2011. The following affected sources which commence construction, modification or reconstruction after August 23, 2011 are subject to the applicable provisions of this subpart:

- a. Each gas well affected facility, which is a single natural gas well.

There are no gas wells at this facility. Therefore, all requirements regarding gas well affected facilities under 40 CFR 60 Subpart OOOO would not apply.

- b. Each centrifugal compressor affected facility, which is a single centrifugal compressor using wet seals that is located between the wellhead and the point of custody transfer to the natural gas transmission and storage segment. For the purposes of this subpart, your centrifugal compressor is considered to have commenced construction on the date the compressor is installed (excluding relocation) at the facility. A centrifugal compressor located at a well site, or an adjacent well site and servicing more than one well site, is not an affected facility under this subpart.

There are no centrifugal compressors at the Conner Compressor Station. Therefore, all requirements regarding centrifugal compressors under 40 CFR 60 Subpart OOOO would not apply.

- c. Each reciprocating compressor affected facility, which is a single reciprocating compressor located between the wellhead and the point of custody transfer to the natural gas transmission and storage segment. For the purposes of this subpart, your reciprocating compressor is considered to have commenced construction on the date the compressor is installed (excluding relocation) at the facility. A reciprocating compressor located at a well site, or an adjacent well site and servicing more than one well site, is not an affected facility under this subpart.

There are reciprocating internal combustion engines located at the Conner Compressor Station. However, they were constructed before the August 23, 2011 applicability date and operated at another location prior to August 23, 2011. Relocation to another facility does not constitute a modification. Therefore, the requirements regarding reciprocating compressors under 40 CFR 60 Subpart OOOO would not apply.

- d. Pneumatic Controllers

- Each pneumatic controller affected facility, which is a single continuous bleed natural gas-driven pneumatic controller operating at a natural gas bleed rate greater than 6 scfh which commenced construction after August 23, 2011, and is located between the wellhead and the point of custody transfer to the natural gas transmission and storage segment and not located at a natural gas processing plant.
- Each pneumatic controller affected facility, which is a single continuous bleed natural gas-driven pneumatic controller which commenced construction after August 23, 2011, and is located at a natural gas processing plant.

There are no applicable pneumatic controllers with natural gas bleed rates greater than 6 scfh which commenced construction after August 23, 2011. Therefore, all requirements regarding applicable pneumatic controllers under 40 CFR 60 Subpart OOOO would not apply.

- e. Each storage vessel affected facility, which is a single storage vessel, located in the oil and natural gas production segment, natural gas processing segment or natural gas transmission and storage segment.

40CFR60 Subpart OOOO defines a storage vessel as a unit that is constructed primarily of nonearthen materials (such as wood, concrete, steel, fiberglass, or plastic) which provides structural support and is designed to contain an accumulation of liquids or other materials. The following are not considered storage vessels:

- Vessels that are skid-mounted or permanently attached to something that is mobile (such as trucks, railcars, barges or ships), and are intended to be located at a site for less than 180 consecutive days. If the source does not keep or are not able to produce records, as required by §60.5420(c)(5)(iv), showing that the vessel has been located at a site for less than 180 consecutive days, the vessel described herein is considered to be a storage vessel since the original vessel was first located at the site.
- Process vessels such as surge control vessels, bottoms receivers or knockout vessels.
- Pressure vessels designed to operate in excess of 204.9 kilopascals and without emissions to the atmosphere.

This rule requires that the permittee determine the VOC emission rate for each storage vessel affected facility utilizing a generally accepted model or calculation methodology within 30 days of startup, and minimize emissions to the extent practicable during the 30 day period using good engineering practices. For each storage vessel affected facility that emits more than 6 tpy of VOC, the permittee must reduce VOC emissions by 95% or greater within 60 days of startup. The compliance date for applicable storage vessels is October 15, 2013.

The storage vessels located at the Conner Compressor Station have a potential to emit of less than 6 tpy of VOC. Therefore, Williams is not required by this section to reduce VOC emissions by 95%.

- f. The group of all equipment, except compressors, within a process unit is an affected facility.
- Addition or replacement of equipment for the purpose of process improvement that is accomplished without a capital expenditure shall not by itself be considered a modification under this subpart.
 - Equipment associated with a compressor station, dehydration unit, sweetening unit, underground storage vessel, field gas gathering system, or liquefied natural gas unit is covered by §§60.5400, 60.5401, 60.5402, 60.5421 and 60.5422 of this subpart if it is located at an onshore natural gas processing plant. Equipment not located at the onshore natural gas processing plant site is exempt from the provisions of §§60.5400, 60.5401, 60.5402, 60.5421 and 60.5422 of this subpart.
 - The equipment within a process unit of an affected facility located at onshore natural gas processing plants and described in paragraph (f) of this section are exempt from this subpart if they are subject to and controlled according to subparts VVa, GGG or GGGa of this part.

The Conner Compressor Station is not a natural gas processing plant. Therefore, Leak Detection and Repair (LDAR) requirements for onshore natural gas processing plants would not apply.

- g. Sweetening units located at onshore natural gas processing plants that process natural gas produced from either onshore or offshore wells.
- Each sweetening unit that processes natural gas is an affected facility; and
 - Each sweetening unit that processes natural gas followed by a sulfur recovery unit is an affected facility.
 - Facilities that have a design capacity less than 2 long tons per day (LT/D) of hydrogen sulfide (H₂S) in the acid gas (expressed as sulfur) are required to comply with recordkeeping and reporting requirements specified in §60.5423(c) but are not required to comply with §§60.5405 through 60.5407 and paragraphs 60.5410(g) and 60.5415(g) of this subpart.
 - Sweetening facilities producing acid gas that is completely reinjected into oil-or-gas-bearing geologic strata or that is otherwise not released to the atmosphere are not subject to §§60.5405 through 60.5407, 60.5410(g), 60.5415(g), and 60.5423 of this subpart.

There are no sweetening units at the Conner Compressor Station. Therefore, all requirements regarding sweetening units under 40 CFR 60 Subpart OOOO would not apply.

40CFR63 Subpart HH (National Emission Standards for Hazardous Air Pollutants for Oil and Natural Gas Production Facilities)

Subpart HH establishes national emission limitations and operating limitations for HAPs emitted from oil and natural gas production facilities located at major and area sources of HAP emissions. The glycol dehydration unit at the Conner Compressor Station is subject to the area source requirements for glycol dehydration units. However, because the facility is an area source of HAP emissions and the actual average benzene emissions from the glycol dehydration unit is below 0.90 megagram per year (1.0 tons/year) it is exempt from all requirements of Subpart HH except to maintain records of actual average flowrate of natural gas to demonstrate a continuous exemption status.

40CFR63 Subpart ZZZZ (National Emission Standards for Hazardous Air Pollutants for Reciprocating Internal Combustion Engines)

Subpart *ZZZZ* establishes national emission limitations and operating limitations for HAPs emitted from stationary RICE located at major and area sources of HAP emissions. This subpart also establishes requirements to demonstrate initial and continuous compliance with the emission limitations and operating limitations. The engine (1E) at the Conner Compressor Station is subject to the area source requirements for non-emergency spark ignition engines.

The applicability requirements for new stationary RICE located at an area source of HAPs, is the requirement to meet the standards of 40CFR60 Subpart JJJJ. These requirements were outlined above. The proposed engine meets these standards.

Because these engines will not be certified by the manufacturer, Williams will be required to perform an initial performance test within 180 days from startup, and subsequent testing every 8,760 hours or 3 years, whichever comes first.

The following rules do not apply to the facility:

45CSR30 (Requirements for Operating Permits)

Williams is not subject to 45CSR30. The Conner Compressor Station is subject to 40CFR60 Subparts JJJJ and OOOO, however they are exempt from the obligation to obtain a permit under 40 CFR part 70 or 40 CFR part 71, provided they are not required to obtain a permit for a reason other than their status as an area source.

40CFR60 Subpart Dc (Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units)

This rule applies to steam generating units with a heat input capacity of 100 MMBTU/hr or less, but greater than or equal to 10 MMBTU/hr for which construction commenced after June 9, 1989. Williams does not have an applicable unit, therefore, Williams would not be subject to this rule.

40CFR60 Subpart Kb (Standards of Performance for Volatile Organic Liquid Storage Vessels)

40CFR60 Subpart Kb does not apply to storage vessels with a capacity less than 75 cubic meters. The largest tanks that Williams has proposed to install are 33.39 cubic meters each. Therefore, Williams would not be subject to this rule.

40CFR60 Subpart KKK (Standards of Performance for Equipment Leaks of VOC from Onshore Natural Gas Processing Plants)

40CFR60 Subpart KKK applies to onshore natural gas processing plants that commenced construction after January 20, 1984, and on or before August 23, 2011. The Conner Compressor Station is not a natural gas processing facility, therefore, Williams is not subject to this rule.

45CSR14 (Permits for Construction and Major Modification of Major Stationary Sources of Air Pollutants)

45CSR19 (Permits for Construction and Major Modification of Major Stationary Sources of Air Pollution which Cause or Contribute to Nonattainment)

On September 30, 2013, EPA approved a redesignation request and State Implementation Plan (SIP) revision submitted by the State of West Virginia. The West Virginia Department of Environmental Protection (WVDEP) requested that the West Virginia portion of the Wheeling, WV–OH fine particulate matter (PM_{2.5}) nonattainment area (“Wheeling Area” or “Area”) be redesignated as attainment for the 1997 annual PM_{2.5} national ambient air quality standard (NAAQS).

The Conner Compressor Station is located in Marshall County, which is located in this metropolitan statistical area and is an attainment county for all pollutants. Therefore the Pinecone Compressor Station is not subject to 45CSR19.

As shown in the following table, Williams is not subject to 45CSR14 or 45CSR19 review. According to 45CSR14 Section 2.43.e, fugitive emissions are not included in the major source determination because it is not listed as one of the source categories in Table 1. Therefore, the fugitive emissions are not included in the PTE below.

Pollutant	PSD (45CSR14) Threshold (tpy)	NANSR (45CSR19) Threshold (tpy)	Conner PTE (tpy)	45CSR14 or 45CSR19 Review Required?
Carbon Monoxide	250	NA	23.78	No
Nitrogen Oxides	250	NA	24.20	No
Sulfur Dioxide	250	NA	0.13	No
Particulate Matter 10	250	NA	1.98	No
Ozone (VOC)	250	NA	89.52	No
Greenhouse Gas	100,000	NA	33,808	No

TOXICITY OF NON-CRITERIA REGULATED POLLUTANTS

There will be small amounts of various non-criteria regulated pollutants emitted from the combustion of natural gas. However, due to the concentrations emitted, detailed toxicological information is not included in this evaluation.

AIR QUALITY IMPACT ANALYSIS

Modeling was not required of this source due to the fact that the facility is not subject to 45CSR14 (Permits for Construction and Major Modification of Major Stationary Sources of Air Pollutants) or 45CSR19 (Permits for Construction and Major Modification of Major Stationary Sources of Air Pollution which Cause or Contribute to Nonattainment) as seen in the table listed in the Regulatory Discussion section under 45CSR14/45CSR19.

SOURCE AGGREGATION DETERMINATION

“Building, structure, facility, or installation” is defined as all the pollutant emitting activities which belong to the same industrial grouping, are located on one or more contiguous and adjacent properties, and are under the control of the same person.

- The Conner Compressor Station will operate under SIC code 1389 (Oil and Gas Field Services, Not Classified Elsewhere). The upstream gas production wells will operate under SIC code 1311 (Crude Petroleum and Natural Gas). Therefore, both share the same two-digit major SIC code of 13. Therefore, the two (2) entities do belong to the same industrial grouping.
- Williams operates under their parent company, The Williams Companies, Inc. and is the sole operator of the Conner Compressor Station. The production wells that send natural gas to the Conner Compressor Station are not owned or operated by Williams. Williams has no ownership stake in any production well that may send natural gas to the Conner Compressor Station. Williams has no operational control over any equipment owned or operated by any natural gas producer upstream of the Conner Compressor Station. All employees at the Conner Compressor Station are under the exclusive direction of Williams and have no reporting authority to any other entity. In addition, no work forces are shared between the Conner Compressor Station and the production wells. Contracts are in place for the Conner Compressor Station to handle gas from the aforementioned wells. Futuristically, Williams will not have ownership or control of future wellhead activities. The producers are and will be responsible for any decisions to produce or shut-in wellhead facilities and no control over the equipment installed, owned, and operated by Williams. Therefore, these facilities are not under common control.
- There are no other Williams facilities located within 0.5 miles of the Conner Compressor Station. The closest Williams facility is the Oak Grove Gas Plant which is approximately 2.9 miles from the Conner Compressor Station. The land between these sites is not owned or managed by Williams. Operations separated by these distances do not meet the common sense notion of a plant. Therefore, the properties in question are not considered to be on contiguous or adjacent property.

The Conner Compressor Station and production wells share the same industrial grouping. However, the two (2) facilities are not under common control and the facilities are not contiguous or adjacent. Therefore, the emissions from these two (2) facilities should not be aggregated in determining major source or PSD status.

MONITORING OF OPERATIONS

Williams will be required to perform the following monitoring:

- Monitor and record quantity of natural gas consumed for all engines and combustion sources.
- Monitor all applicable requirements of 40CFR60 Subparts JJJJ and OOOO.
- Monitor the presence of the flare pilot flame with a thermocouple or equivalent.

Williams will be required to perform the following recordkeeping:

- Maintain records of the amount of natural gas consumed and hours of operation for all engines and combustion sources.
- Maintain records of testing conducted in accordance with the permit. Said records shall be maintained on-site or in a readily accessible off-site location
- Maintain the corresponding records specified by the on-going monitoring requirements of and testing requirements of the permit.
- Maintain records of the visible emission opacity tests conducted per the permit.
- Maintain a record of all potential to emit (PTE) HAP calculations for the entire facility. These records shall include the natural gas compressor engines and ancillary equipment.
- Maintain records of all applicable requirements of 40CFR60 Subparts JJJJ and OOOO.
- Maintain records of the flare design evaluation.
- The records shall be maintained on site or in a readily available off-site location maintained by Williams for a period of five (5) years.

RECOMMENDATION TO DIRECTOR

The information provided in the permit application indicates that Williams meets all the requirements of applicable regulations. Therefore, impact on the surrounding area should be minimized and it is recommended that the Conner Compressor Station should be granted a 45CSR13 construction permit for their facility.



William T. Rothwell II, P.E.
Engineer

09/30/2015

Date

West Virginia Department of Environmental Protection
Earl Ray Tomblin
Governor

Division of Air Quality

Randy C. Huffman
Cabinet Secretary

Permit to Modify



R13- 3168A

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

Issued to:

**Williams Ohio Valley Midstream LLC
Conner Compressor Station
051-00195**

*William F. Durham
Director*

Issued: Draft • Effective: Draft

Facility Location: Moundsville, Marshall County, West Virginia
Mailing Address: Park Place Corporate Center 2, 2000 Commerce Drive, Pittsburgh, PA 15275
Facility Description: Natural gas compressor station
NAICS Codes: 213112
UTM Coordinates: 521.32 km Easting • 4,414.51 km Northing • Zone 17
Permit Type: Modification
Description of Change: Modification of a natural gas compressor station to include the increased design capacity of both dehydrator reboilers, the thermal oxidizer, and the condensate stabilizer heater along with adding a new station recycle line heater, a new condensate stabilizer heater, and an additional produced water tank.

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
CE-01	1E	Caterpillar G3516B RICE	2014	1,380 hp	OxCat
CE-02	2E	Caterpillar G3516B RICE	2014	1,380 hp	OxCat
CE-03	3E	Caterpillar G3306B TA Engine	2014	203 hp	NSCR
RBV-1	4E	Glycol Dehydrator Reboiler	2014	1.66 MMBTU/hr	None
RSV-1	5E	Glycol Dehydrator Still Vent	2014	60 mmscfd	Thermal Oxidizer
RSV-1	6E	Glycol Dehydrator Flash Tank	2014	60 mmscfd	Thermal Oxidizer
RBV-2	7E	Glycol Dehydrator Reboiler	2014	1.66 MMBTU/hr	None
RSV-2	8E	Glycol Dehydrator Still Vent	2014	60 mmscfd	Thermal Oxidizer
RSV-2	9E	Glycol Dehydrator Flash Tank	2014	60 mmscfd	Thermal Oxidizer
COMB-1	10E	Thermal Oxidizer	2014	6.4 MMBTU/hr	None
HTR-01	11E	Heater Treater	2014	1.55 MMBTU/hr	None
HTR-02	12E	Stabilizer Heater	2014	2.55 MMBTU/hr	None
T01	13E	Produced Water Storage Tank	2014	48 bbl (2,016 gal)	None
TLO-1	14E	Truck Loadout – Produced Water	2014	104,000 gal/yr	None
TLO-2	15E	Truck Loadout – Condensate	2014	250,000 gal/yr	None
HTR-03	19E	Station Recycle Line Heater	2015	1.66 MMBTU/hr	None
HTR-04	20E	Condensate Stabilizer Heater	2015	9.70 MMBTU/hr	None
T02	21E	Produced Water Storage Tank	2015	210 bbl (8,820 gal)	None

1.1. Control Devices

Emission Unit	Pollutant	Control Device	Control Efficiency
1,380 hp Caterpillar G3516B RICE (1E, 2E)	Carbon Monoxide	OxCat	94.6 %
	Volatile Organic Compounds		86.9 %
	Formaldehyde		75.7 %
203 hp Caterpillar G3306TA RICE (3E)	Nitrogen Oxides	NSCR	97 %
	Carbon Monoxide		87 %
60 mmscfd TEG Dehydrator Still Vent / Flash Tank (5E, 6E, 8E, 9E)	Volatile Organic Compounds	Thermal Oxidizer	99 %

2.0. General Conditions

2.1. Definitions

- 2.1.1. All references to the “West Virginia Air Pollution Control Act” or the “Air Pollution Control Act” mean those provisions contained in W.Va. Code §§ 22-5-1 to 22-5-18.
- 2.1.2. The “Clean Air Act” means those provisions contained in 42 U.S.C. §§ 7401 to 7671q, and regulations promulgated thereunder.
- 2.1.3. “Secretary” means the Secretary of the Department of Environmental Protection or such other person to whom the Secretary has delegated authority or duties pursuant to W.Va. Code §§ 22-1-6 or 22-1-8 (45CSR§30-2.12.). The Director of the Division of Air Quality is the Secretary’s designated representative for the purposes of this permit.

2.2. Acronyms

CAAA	Clean Air Act Amendments	NO_x	Nitrogen Oxides
CBI	Confidential Business Information	NSPS	New Source Performance Standards
CEM	Continuous Emission Monitor	PM	Particulate Matter
CES	Certified Emission Statement	PM_{2.5}	Particulate Matter less than 2.5 μm in diameter
C.F.R. or CFR	Code of Federal Regulations	PM₁₀	Particulate Matter less than 10μm in diameter
CO	Carbon Monoxide	Ppb	Pounds per Batch
C.S.R. or CSR	Codes of State Rules	Pph	Pounds per Hour
DAQ	Division of Air Quality	Ppm	Parts per Million
DEP	Department of Environmental Protection	Ppm_v or ppmv	Parts per Million by Volume
dscm	Dry Standard Cubic Meter	PSD	Prevention of Significant Deterioration
FOIA	Freedom of Information Act	Psi	Pounds per Square Inch
HAP	Hazardous Air Pollutant	SIC	Standard Industrial Classification
HON	Hazardous Organic NESHAP	SIP	State Implementation Plan
HP	Horsepower	SO₂	Sulfur Dioxide
lbs/hr	Pounds per Hour	TAP	Toxic Air Pollutant
LDAR	Leak Detection and Repair		Tons per Year
M	Thousand		
MACT	Maximum Achievable Control Technology		
	Maximum Design Heat Input		

MDHI	Million	TPY	Total Reduced Sulfur
MM	Million British Thermal Units	TRS	Total Suspended Particulate
MMBtu/hr or	per Hour	TSP	United States Environmental
mmbtu/hr	Million Cubic Feet per Hour	USEPA	Protection Agency
MMCF/hr or			Universal Transverse Mercator
mmcf/hr	Not Applicable	UTM	Visual Emissions Evaluation
NA	National Ambient Air Quality	VEE	Volatile Organic Compounds
NAAQS	Standards	VOC	Volatile Organic Liquids
	National Emissions Standards	VOL	
NESHAPS	for Hazardous Air Pollutants		

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 other applicable legislative rule;

2.5. Duty to Comply

- 2.5.1. The permitted facility shall be constructed and operated in accordance with the plans and specifications filed in Permit Application R13-3168A and any modifications, administrative updates, or amendments thereto. The Secretary may suspend or revoke a permit if the plans and specifications upon which the approval was based are not adhered to; [45CSR§§13-5.11 and -10.3.]
- 2.5.2. The permittee must comply with all conditions of this permit. Any permit noncompliance constitutes a violation of the West Virginia Code and the Clean Air Act and is grounds for enforcement action by the Secretary or USEPA;
- 2.5.3. Violations of any of the conditions contained in this permit, or incorporated herein by reference, may subject the permittee to civil and/or criminal penalties for each violation and further action or remedies as provided by West Virginia Code 22-5-6 and 22-5-7;
- 2.5.4. Approval of this permit does not relieve the permittee herein of the responsibility to apply for and obtain all other permits, licenses, and/or approvals from other agencies; i.e., local, state, and federal, which may have jurisdiction over the construction and/or operation of the source(s) and/or facility herein permitted.

2.6. Duty to Provide Information

The permittee shall furnish to the Secretary within a reasonable time any information the Secretary may request in writing to determine whether cause exists for administratively updating, modifying,

revoking, or terminating the permit or to determine compliance with the permit. Upon request, the permittee shall also furnish to the Secretary copies of records to be kept by the permittee. For information claimed to be confidential, the permittee shall furnish such records to the Secretary along with a claim of confidentiality in accordance with 45CSR31. If confidential information is to be sent to USEPA, the permittee shall directly provide such information to USEPA along with a claim of confidentiality in accordance with 40 C.F.R. Part 2.

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 emissions, and corrective actions taken
- 2.12.4. In any enforcement proceeding, the permittee seeking to establish the occurrence of an emergency has the burden of proof.
- 2.12.5 The provisions of this section are in addition to any emergency or upset provision contained in any applicable requirement.

2.13. Need to Halt or Reduce Activity Not a Defense

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

2.14. Suspension of Activities

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

2.15. Property Rights

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

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.
- 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:
Director
WVDEP
Division of Air Quality
601 57th Street
Charleston, WV 25304-2345

If to the US EPA:
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 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.

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4.0. Source-Specific Requirements

4.1. Limitations and Standards

- 4.1.1. **Record of Monitoring.** The permittee shall keep records of monitoring information that include the following:
- The date, place as defined in this permit, and time of sampling or measurements;
 - The date(s) analyses were performed;
 - The company or entity that performed the analyses;
 - The analytical techniques or methods used;
 - The results of the analyses; and
 - The operating conditions existing at the time of sampling or measurement.
- 4.1.2. **Minor Source of Hazardous Air Pollutants (HAP).** HAP emissions from the facility shall be less than 10 tons/year of any single HAP or 25 tons/year of any combination of HAPs. Compliance with this Section shall ensure that the facility is a minor HAP source.
- 4.1.3. **Operation and Maintenance of Air Pollution Control Equipment.** The permittee shall, to the extent practicable, install, maintain, and operate 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.]
- 4.1.4. **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:
- The equipment involved
 - Steps taken to minimize emissions during the event.
 - The duration of the event.
 - The estimated increase in emissions during the event.
- For each such case associated with an equipment malfunction, the additional information shall also be recorded:
- The cause of the malfunction.
 - Steps taken to correct the malfunction.
 - Any changes or modifications to equipment or procedures that would help prevent future recurrences of the malfunction.
- 4.1.5. The permittee shall not exceed 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 R13-3168A.
- 4.1.6. 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.

5.0. Source-Specific Requirements (RICE (CE-01, CE-02, CE-03))

5.1. Limitations and Standards

- 5.1.1. The quantity of natural gas that shall be consumed in each of the 1,380 hp natural gas fired reciprocating engines equipped with oxidation catalyst (OxCat), Caterpillar 3516B (CE-01, CE-02) shall not exceed 11,163 cubic feet per hour or 97.79×10^6 cubic feet per year.
- 5.1.2. Maximum emissions from each of the 1,380 hp natural gas fired reciprocating engines equipped with oxidation catalyst (OxCat), Caterpillar 3516B (CE-01, CE-02) shall not exceed the following limits:

Pollutant	Maximum Hourly Emissions (lb/hr)	Maximum Annual Emissions (ton/year)
Nitrogen Oxides	1.52	6.66
Carbon Monoxide	0.50	2.20
Volatile Organic Compounds	0.56	2.47
Formaldehyde	0.27	1.17

- 5.1.3. The quantity of natural gas that shall be consumed in the 203 hp natural gas fired reciprocating engine equipped with NSCR, Caterpillar 3306B TA (CE-03) shall not exceed 1,818 cubic feet per hour or 15.93×10^6 cubic feet per year.
- 5.1.4. Maximum emissions from the 203 hp natural gas fired reciprocating engine equipped with NSCR, Caterpillar 3306B TA (CE-03) shall not exceed the following limits:

Pollutant	Maximum Hourly Emissions (lb/hr)	Maximum Annual Emissions (ton/year)
Nitrogen Oxides	0.20	0.90
Carbon Monoxide	0.89	3.89
Volatile Organic Compounds	0.20	0.86
Formaldehyde	0.09	0.39

- 5.1.5. Requirements for Use of Catalytic Reduction Devices
 - a. Lean-burn natural gas compressor engines (CE-01, CE-02) equipped with oxidation catalysts (OxCat) air pollution control devices shall be fitted with a closed-loop automatic feedback controller to ensure emissions of regulated pollutants do not exceed the potential to emit for any engine/OxCat combination under varying load.;
 - b. Rich-burn natural gas compressor engine (CE-03) equipped with non-selective catalytic reduction (NSCR) air pollution control devices shall be fitted with a closed-loop, automatic air/fuel ratio controller to ensure emissions of regulated pollutants do not exceed the potential to emit for any engine/NSCR combination under varying load. The closed-loop, automatic air/fuel ratio controller shall control a fuel metering valve to 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;

- c. 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
- d. No person shall knowingly:
 1. Remove or render inoperative any air pollution or auxiliary air pollution control device installed subject to the requirements of this permit;
 2. Install any part or component when the principal effect of the part or component is to bypass, defeat or render inoperative any air pollution control device or auxiliary air pollution control device installed subject to the requirements of this permit; or
 3. Cause or allow engine exhaust gases to bypass any catalytic reduction device.

5.2. Monitoring Requirements

5.2.1. Catalytic Oxidizer Control Devices

- a. The permittee shall regularly inspect, properly maintain and/or replace catalytic reduction devices and auxiliary air pollution control devices to ensure functional and effective operation of the engine's physical and operational design. The permittee shall ensure proper operation, maintenance and performance of catalytic reduction devices and auxiliary air pollution control devices by:
 1. Maintaining proper operation of the automatic air/fuel ratio controller or automatic feedback controller.
 2. Following 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 Sections 10.5, 11.2, and 11.3.

5.4. Recordkeeping Requirements

- 5.4.1. To demonstrate compliance with sections 5.1.1 – 5.1.4, the permittee shall maintain records of the amount of natural gas consumed and the hours of operation of each engine. Said records shall be maintained on site or in a readily accessible off-site location maintained by the permittee for a period of five (5) years. Said records shall be readily available to the Director of the Division of Air Quality or his/her duly authorized representative for expeditious inspection and review. Any records submitted to the agency pursuant to a requirement of this permit or upon request by the Director shall be certified by a responsible official.
- 5.4.2. To demonstrate compliance with section 5.1.5, the permittee shall maintain records of all catalytic reduction device maintenance. Said records shall be maintained on site or in a readily accessible off-site location maintained by the permittee for a period of five (5) years. Said records shall be readily available to the Director of the Division of Air Quality or his/her duly authorized representative for expeditious inspection and review. Any records submitted to the agency pursuant to a requirement of this permit or upon request by the Director shall be certified by a responsible official.

5.5. Reporting Requirements

- 5.5.1. See Facility-Wide Reporting Requirements Section 3.5 and Reporting Requirements of Sections 10.6 and 11.4.

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6.0. Source-Specific Requirements (Reboilers (RBV-1, RBV-2), Heater Treater (HTR-01), Stabilizer Heater (HTR-02), Station Recycle Line Heater (HTR-03), Condensate Stabilizer Heater (HTR-04))

6.1. Limitations and Standards

- 6.1.1. Maximum Design Heat Input. The maximum design heat input for each of the Reboilers (RBV-1, RBV-2) shall not exceed 1.66 MMBTU/hr.
- 6.1.2. Maximum Design Heat Input. The maximum design heat input the Heater Treater (HTR-01) shall not exceed 1.55 MMBTU/hr.
- 6.1.3. Maximum Design Heat Input. The maximum design heat input for the Stabilizer Heater (HTR-02) shall not exceed 2.55 MMBTU/hr.
- 6.1.4. Maximum Design Heat Input. The maximum design heat input for the Station Recycle Line Heater (HTR-03) shall not exceed 1.66 MMBTU/hr.
- 6.1.5. Maximum Design Heat Input. The maximum design heat input for the Condensate Stabilizer Heater (HTR-04) shall not exceed 9.70 MMBTU/hr.
- 6.1.6. 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.]

6.2. Monitoring Requirements

- 6.2.1. At such reasonable times as the Secretary may designate, the permittee shall conduct Method 9 emission observations for the purpose of demonstrating compliance with Section 6.1. Method 9 shall be conducted in accordance with 40 CFR 60 Appendix A.

6.3. Testing Requirements

- 6.3.1. Compliance with the visible emission requirements of section 6.1.4 shall be determined in accordance with 40 CFR Part 60, Appendix A, Method 9, Method 22, or by using measurements from continuous opacity monitoring systems approved by the Director. The Director may require the installation, calibration, maintenance and operation of continuous opacity monitoring systems and may establish policies for the evaluation of continuous opacity monitoring results and the determination of compliance with the visible emission requirements of section 6.1.4. Continuous opacity monitors shall not be required on fuel burning units which employ wet scrubbing systems for emission control.

6.4. Recordkeeping Requirements

- 6.4.1. The permittee shall maintain records of all monitoring data required by Section 6.2.1 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.

6.5. Reporting Requirements

- 6.5.1. 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.

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7.0. Source-Specific Hazardous Air Pollutant Requirements (Natural Gas Dehydration Units (RSV-1, RSV-2) being controlled by a Thermal Oxidizer (COMB-1))

7.1. Limitations and Standards

7.1.1. **Maximum Throughput Limitation.** The maximum wet natural gas throughput to each of the glycol dehydration units/still columns (RSV-1, RSV-2) shall not exceed 60 million standard cubic feet per day (mmscfd). Compliance with the Maximum Throughput Limitation shall be determined using a twelve month rolling total. A twelve month rolling total shall mean the sum of the monthly throughput at any given time during the previous twelve consecutive calendar months.

7.1.2. **Maximum emissions from each of the glycol dehydration units/still columns (RSV-1, RSV-2) shall not exceed the following limits:**

Pollutant	Maximum Hourly Emissions (lb/hr)	Maximum Annual Emissions (ton/year)
Volatile Organic Compounds	1.11	4.85
n-Hexane	0.02	0.10
Benzene	0.02	0.09
Toluene	0.09	0.39
Ethylbenzene	0.02	0.09
Xylenes	0.19	0.83

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

7.1.4. *Operation and Maintenance of Thermal Oxidizer (COMB-1).* The permittee shall, to the extent practicable, install, maintain, and operate the thermal oxidizer 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.]

7.1.5. The permittee shall install a 6.41 MMBTU/hr thermal oxidizer to control VOC and HAP emissions from the glycol dehydration units/still columns and dehydrator flash tanks. This thermal oxidizer shall be designed to achieve a minimum guaranteed control efficiency of 99% for volatile organic compound (VOC) and hazardous air pollutants (HAP) emissions.

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

7.1.7. The thermal oxidizer shall be operated, with a flame present at all times whenever emissions may be vented to them, except during SSM (Startup, Shutdown, Malfunctions) events.

7.1.8. The presence of a pilot flame shall be monitored using an infrared monitor or any other equivalent device to detect the presence of a flame.

7.1.9. The thermal oxidizer is subject to 45CSR6. The requirements of 45CSR6 include but are not limited to the following:

- i. No person shall cause, suffer, allow or permit particulate matter to be discharged from any incinerator into the open air in excess of the quantity determined by use of the following formula:

$$\text{Emissions (lb/hr)} = F \times \text{Incinerator Capacity (tons/hr)}$$

Where, the factor, F, is either 5.43 for an incinerator with a capacity of less than 15,000 lbs/hr or 2.72 for an incinerator with a capacity of 15,000 lbs/hr or greater. [45CSR6 §4.1]

- ii. 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]
- iii. 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]
- iv. 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]
- v. 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]
- vi. 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]

7.1.10. The quantity of waste gas that shall be consumed in the thermal oxidizer shall not exceed 6,286 cubic feet per hour. Compliance with the gas throughput limit shall be demonstrated using a rolling 12-month total.

7.1.11. The Thermal Oxidizer shall be designed and operated in accordance with the following:

- a. The thermal oxidizer shall be operated at all times when emissions/overheads from the glycol dehydration unit still vent / flash tank may be vented to it;
- b. The thermal oxidizer shall be operated with a minimum residence time of 0.5 seconds at a minimum combustion chamber temperature of 1,400° F or establish during testing in accordance with 12.3.2. The combustion chamber temperature shall be monitored using a system to continuously measure and record the temperature of the combustion chamber;

- c. Emissions from the thermal oxidizer shall not exceed the following maximum hourly and annual emission limits:

Pollutant	Maximum Hourly Emissions (lb/hr)	Maximum Annual Emissions (ton/year)
Nitrogen Oxides	0.44	1.91
Carbon Monoxide	1.99	8.71

- d. The vapors/overheads from the still column and flash tank shall be routed through a closed vent system to the thermal oxidizer at all times when there is a potential that vapors (emissions) can be generated from the still column and/or flash tank.

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

[40CFR§63.760(c)]

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

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

[40CFR§63.764(e)]

7.2. Monitoring Requirements

- 7.2.1. The permittee shall conduct visible emission checks and/or opacity monitoring for the thermal oxidizer.

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 40CFR Part 60, Appendix A, Method 22 or from the lecture portion of the 40CFR Part 60, Appendix A, Method 9 certification course.

Visible emission checks shall be conducted at least once per calendar month with a maximum of forty-five (45) days between consecutive readings. These checks shall be performed at the thermal oxidizer unit for a sufficient time interval, but no less than one (1) minute, to determine if any visible emissions are present. Visible emission checks shall be performed during periods of normal affected facility operation and appropriate weather conditions.

If visible emissions are present for three (3) consecutive monthly checks, the permittee shall conduct an opacity reading at that source(s) using the procedures and requirements of Method 9 as soon as practicable, but within seventy-two (72) hours of the final visual emission check. A Method 9 observation at a source(s) restarts the count of the number of consecutive readings with the presence of visible emissions.

- 7.2.2. The permittee shall monitor the throughput of wet natural gas fed to the dehydration system on a

monthly basis for each of the glycol dehydration units (RSV-1, RSV-2).

7.2.3. In order to demonstrate compliance with the area source status, claimed within sections 7.1.2 and 7.1.3, as well as the benzene exemption provided under section 7.1.13, the following parameters shall be measured at least once quarterly, with the exception of natural gas flowrate annual daily average, natural gas flowrate maximum design capacity, and wet gas composition, in order to define annual average values or, if monitoring is not practical, some parameters may be assigned default values as listed below.

- a. Natural Gas Flowrate
 - i. Operating hours per quarter
 - ii. Quarterly throughput (MMscf/quarter)
 - iii. Annual daily average (MMscf/day), and
 - iv. Maximum design capacity (MMscf/day)
- b. Absorber temperature and pressure
- c. Lean glycol circulation rate
- d. Glycol pump type and maximum design capacity (gpm)
- e. Flash tank temperature and pressure, if applicable
- f. Stripping Gas flow rate, if applicable
- g. Wet gas composition (upstream of the absorber – dehydration column) sampled in accordance with GPA method 2166 and analyzed consistent with GPA extended method 2286 as well as the procedures presented in the GRI-GLYCalc™ Technical Reference User Manual and Handbook V4
- h. Wet gas water content (lbs H₂O/MMscf)
- i. Dry gas water content (lbs H₂O/MMscf) at a point directly after exiting the dehydration column and before any additional separation points

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

- a. Dry gas water content can be assumed to be equivalent to pipeline quality at 7 lb H₂O / MMscf
- b. Wet gas water content can be assumed to be saturated
- c. Lean glycol water content if not directly measured may use the default value of 1.5 % water as established by GRI
- d. Lean glycol circulation rate may be estimated using the TEG recirculation ratio of 3 gal TEG / lb H₂O removed

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

7.2.4. In order to demonstrate compliance with the temperature requirements of 7.1.11.b the permittee shall monitor and record the combustion chamber temperature in four equally spaced periods per each hour the thermal oxidizer is operated.

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

7.3. Testing Requirements

- 7.3.1. In order to demonstrate compliance with the thermal oxidizer opacity requirements of 7.1.11.d, 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 five (5) minutes during any two consecutive hour period using Method 22 in Appendix A of 40 CFR Part 60. The permittee shall conduct this test within thirty (30) days of start-up of the thermal oxidizer. 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 60, Appendix A, Method 22 or from the lecture portion of 40 CFR 60, Appendix A, Method 9 certification course.

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

7.3.2. For the purposes of establishing a different minimum combustion chamber temperature for the thermal oxidizer, the permittee shall conduct performance testing to show compliance with the VOC and total HAPs limits set forth in 7.1.2 and determine that the destruction efficiency of the thermal oxidizer is at or greater than 99% for total organic compounds. Such testing shall be conducted in accordance with the procedure and methods testing outlined 40 CFR §§63.772(e)(3) and (e)(4). Such testing shall establish a new minimum operating temperature for the thermal oxidizer if such testing demonstration compliance with the above mentioned conditions and requirements. The new temperature shall be established by taking the sum of all of the measured temperature readings taken in 15 minute blocks during the test and dividing them by the number of readings taken. Such testing shall be conducted in accordance with 3.4.1 of this permit.

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

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

[45CSR§13-5.11]

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

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

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

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

(i) The owner or operator shall determine actual average benzene emissions using the model GRI-GLYCalc™, Version 3.0 or higher, and the procedures presented in the associated GRI-GLYCalc™ Technical Reference Manual. Inputs to the model shall be representative of actual operating conditions of the glycol dehydration unit and may be determined using the procedures documented in Gas Research Institute (GRI) report entitled "Atmospheric Rich/Lean Method for Determining Glycol Dehydrator Emissions" (GRI-95/0368.1).

[§63.772(b)(2)(i)]

7.4. Recordkeeping Requirements

7.4.1. The permittee shall maintain a record of the wet natural gas throughput through the glycol dehydration units/still columns (RSV-1, RSV-2) to demonstrate compliance with section 7.1.1 of this permit. Said records shall be maintained for a period of five (5) years on site or in a readily accessible off-site location maintained by the permittee. Said records shall be readily available to the Director of the Division of Air Quality or his/her duly authorized representative for expeditious inspection and review. Any records submitted to the agency pursuant to a requirement of this permit or upon request by the Director shall be certified by a responsible official.

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

[45CSR§13-5.11]

7.5. Reporting Requirements

- 7.5.1. Any deviation(s) of the allowable visible emission requirement for any emission source discovered during observations using 40CFR Part 60, Appendix A, Method 9 must be reported in writing to the Director of the Division of Air Quality as soon as practicable, but within ten (10) calendar days, of the occurrence and shall include, at a minimum, the following information: the results of the visible determination of opacity of emissions, the cause or suspected cause of the violation(s), and any corrective measures taken or planned.
- 7.5.2. Any deviation(s) from the thermal oxidizer design and/or operation criteria in Section 7.1.11 shall be reported in writing to the Director as soon as practicable, but within ten (10) calendar days.

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8.0. Source-Specific Requirements (Truck Loading (TLO-1, TLO-2))

8.1. Limitations and Standards

- 8.1.1. The maximum quantity of stabilized condensate that shall be loaded shall not exceed 250,000 gallons per year. Compliance with this limit shall be demonstrated using a twelve month rolling total. A twelve month rolling total shall mean the sum of the monthly throughput at any given time during the previous twelve consecutive calendar months.
- 8.1.2. The maximum quantity of produced water that shall be loaded shall not exceed 563,000 gallons per year. Compliance with this limit shall be demonstrated using a twelve month rolling total. A twelve month rolling total shall mean the sum of the monthly throughput at any given time during the previous twelve consecutive calendar months.
- 8.1.3. The Produced Water Truck (TLO-1) and Stabilized Condensate Truck Loading (TLO-2) shall be operated in accordance with the plans and specifications filed in Permit Application R13-3168A.

8.2. Recordkeeping Requirements

- 8.2.1. For the purpose of demonstrating compliance with section 8.1.1 and 8.1.2, the permittee shall maintain records of the amount of stabilized condensate and produced water loaded.
- 8.2.2. All records required under Section 8.2 shall be maintained on site or in a readily accessible off-site location maintained by the permittee for a period of five (5) years. Said records shall be readily available to the Director of the Division of Air Quality or his/her duly authorized representative for expeditious inspection and review. Any records submitted to the agency pursuant to a requirement of this permit or upon request by the Director shall be certified by a responsible official.

9.0. Source-Specific Requirements (Storage Tanks (13E) & (21E))

9.1. Limitations and Standards

- 9.1.1. The maximum produced water throughput to the storage tank (13E) shall not exceed 104,000 gallons per year.
- 9.1.2. The maximum produced water throughput to the storage tank (21E) shall not exceed 458,640 gallons per year.

9.2. Recordkeeping Requirements

- 9.2.1. For the purpose of demonstrating compliance with section 9.1.1 and 9.1.2, the permittee shall maintain records of the maximum tank throughput of produced water to the storage tanks (13E) & (21E).
- 9.2.2. All records required under Section 9.2 shall be maintained on site or in a readily accessible off-site location maintained by the permittee for a period of five (5) years. Said records shall be readily available to the Director of the Division of Air Quality or his/her duly authorized representative for expeditious inspection and review. Any records submitted to the agency pursuant to a requirement of this permit or upon request by the Director shall be certified by a responsible official.

10.0. Source-Specific Requirements (40CFR60 Subpart JJJJ Requirements (CE-01, CE-02, CE-03))

10.1. Limitations and Standards

10.1.1. The provisions of this subpart are applicable to owners, and operators of stationary spark ignition (SI) internal combustion engines (ICE) as specified below. For the purposes of this subpart, the date that construction commences is the date the engine is ordered by the owner or operator.

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);
2. *Reserved*;
3. on or after July 1, 2008, for engines with a maximum engine power less than 500 HP; or
4. *Reserved*.

b. Owners and operators of stationary SI ICE that commence modification or reconstruction after June 12, 2006.

[40CFR§60.4230(a)]

10.1.2. The provisions of this subpart are not applicable to stationary SI ICE being tested at an engine test cell/stand. [40CFR§60.4230(b)]

10.1.3. If you are an owner or operator of an area source subject to this subpart, you are exempt from the obligation to obtain a permit under 40 CFR part 70 or 40 CFR part 71, provided you are not required to obtain a permit under 40 CFR 70.3(a) or 40 CFR 71.3(a) for a reason other than your status as an area source under this subpart. Notwithstanding the previous sentence, you must continue to comply with the provisions of this subpart as applicable. [40CFR§60.4230(c)]

10.1.4. Stationary SI ICE may be eligible for exemption from the requirements of this subpart as described in 40 CFR part 1068, subpart C (or the exemptions described in 40 CFR parts 90 and 1048, for engines that would need to be certified to standards in those parts), except that owners and operators, as well as manufacturers, may be eligible to request an exemption for national security. [40CFR§60.4230(e)]

10.1.5. Owners and operators of facilities with internal combustion engines that are acting as temporary replacement units and that are located at a stationary source for less than 1 year and that have been properly certified as meeting the standards that would be applicable to such engine under the appropriate nonroad engine provisions, are not required to meet any other provisions under this subpart with regard to such engines. [40CFR§60.4230(f)]

10.2. Emission Standards for Owners and Operators

10.2.1. Owners and operators of stationary SI ICE with a maximum engine power greater than or equal to 75 KW (100 HP) (except gasoline and rich burn engines that use LPG) must comply with the emission standards in Table 1 to this subpart for their stationary SI ICE. For owners and operators of stationary SI ICE with a maximum engine power greater than or equal to 100 HP (except gasoline and rich burn engines that use LPG) manufactured prior to January 1, 2011 that were certified to the certification emission standards in 40 CFR part 1048 applicable to engines that are not severe duty engines, if such stationary SI ICE was certified to a carbon monoxide (CO)

standard above the standard in Table 1 to this subpart, then the owners and operators may meet the CO certification (not field testing) standard for which the engine was certified.
[40CFR§60.4233(e)]

- 10.2.2. Owners and operators of stationary SI ICE must operate and maintain stationary SI ICE that achieve the emission standards as required in §60.4233 over the entire life of the engine.
[40CFR§60.4234]

10.3. Other Requirements for Owners and Operators

- 10.3.1. After July 1, 2010, owners and operators may not install stationary SI ICE with a maximum engine power of less than 500 HP that do not meet the applicable requirements in §60.4233.
[40CFR§60.4236(a)]
- 10.3.2. After July 1, 2009, owners and operators 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)]
- 10.3.3. For emergency stationary SI ICE with a maximum engine power of greater than 19 KW (25 HP), owners and operators may not install engines that do not meet the applicable requirements in §60.4233 after January 1, 2011. [40CFR§60.4236(c)]
- 10.3.4. In addition to the requirements specified in §§60.4231 and 60.4233, it is prohibited to import stationary SI ICE less than or equal to 19 KW (25 HP), stationary rich burn LPG SI ICE, and stationary gasoline SI ICE that do not meet the applicable requirements specified in paragraphs (a), (b), and (c) of this section, after the date specified in paragraph (a), (b), and (c) of this section.
[40CFR§60.4236(d)]
- 10.3.5. 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)]
- 10.3.6. Starting on January 1, 2011, if the emergency stationary SI internal combustion engine that is greater than or equal to 130 HP and less than 500 HP that was built on or after January 1, 2011, does not meet the standards applicable to non-emergency engines, the owner or operator must install a non-resettable hour meter. [40CFR§60.4237(b)]

10.4. Compliance Requirements for Owners and Operators

- 10.4.1. If you are an owner or operator of a stationary SI internal combustion engine and must comply with the emission standards specified in §60.4233(d) or (e), you must 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 paragraphs (b)(2)(i) and (ii) of this section.

1. If you are an owner or operator of a stationary SI internal combustion engine greater than 25 HP and less than or equal to 500 HP, you 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, you must conduct an initial performance test to demonstrate compliance.
2. If you are an owner or operator of a stationary SI internal combustion engine greater than 500 HP, you 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, you 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)]

- 10.4.2. Owners and operators of stationary SI natural gas fired engines may operate their 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 owners and operators are required to conduct a performance test to demonstrate compliance with the emission standards of §60.4233. **[40CFR§60.4243(e)]**
- 10.4.3. If you are an owner or operator of a stationary SI internal combustion engine that is less than or equal to 500 HP and you purchase a non-certified engine or you do not operate and maintain your certified stationary SI internal combustion engine and control device according to the manufacturer's written emission-related instructions, you are required to perform initial performance testing as indicated in this section, but you are not required to conduct subsequent performance testing unless the stationary engine is rebuilt or undergoes major repair or maintenance. A rebuilt stationary SI ICE means an engine that has been rebuilt as that term is defined in 40 CFR 94.11(a). **[40CFR§60.4243(f)]**
- 10.4.4. 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)]**
- 10.4.5. If you are an owner or operator of a stationary SI internal combustion engine and must comply with the emission standards specified in §60.4233(d) or (e), you must demonstrate compliance according to one of the methods specified below:
 - (1) 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.
 - (2) 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 below:
 - (i) If you are an owner or operator of a stationary SI internal combustion engine greater than 25 HP and less than or equal to 500 HP, you 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, you must conduct an initial performance test to demonstrate compliance.

- (ii) If you are an owner or operator of a stationary SI internal combustion engine greater than 500 HP, you 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, you 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)]

10.5. Testing Requirements for Owners and Operators

10.5.1. Owners and operators of stationary SI ICE who conduct performance tests must follow 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. You may not conduct performance tests during periods of startup, shutdown, or malfunction, as specified in §60.8(c). If your stationary SI internal combustion engine is non-operational, you do not need to startup the engine solely to conduct a performance test; however, you must conduct the performance test immediately upon startup of the engine. [40CFR§60.4244(b)]
- c. You 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_x mass per unit output emission limitation, convert the concentration of NO_x in the engine exhaust using Equation 1 of this section:

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

Where:

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

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

1.912×10⁻³ = Conversion constant for ppm NO_x to grams per standard cubic meter at 20 degrees Celsius

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

T = Time of test run, in hours.

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

[40CFR§60.4244(d)]

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

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

Where:

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

C_d = Measured CO concentration in ppmv.

1.164×10^{-3} = Conversion constant for ppm CO to grams per standard cubic meter at 20 degrees Celsius.

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

T = Time of test run, in hours.

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

[40CFR§60.4244(e)]

- 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:

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

Where:

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

C_d = VOC concentration measured as propane in ppmv.

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

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

T = Time of test run, in hours.

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

[40CFR§60.4244(f)]

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

$$RF_i = \frac{C}{C_{A_i}} \quad (Eq. 4)$$

Where:

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

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

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

$$C_{i_{corr}} = RF_i \times C_{i_{meas}} \quad (\text{Eq. 5})$$

Where:

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

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

$$C_{P_{eq}} = 0.6098 \times C_{i_{corr}} \quad (\text{Eq. 6})$$

Where:

$C_{P_{eq}}$ = Concentration of compound i in mg of propane equivalent per DSCM.

[40CFR§60.4244(g)]

10.6. Notification, Reports, and Records for Owners and Operators

10.6.1. Owners or operators of stationary SI ICE must meet the following notification, reporting and recordkeeping requirements.

a. Owners and operators of all stationary SI ICE must 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 all stationary SI emergency ICE greater than or equal to 500 HP manufactured on or after July 1, 2010, that do not meet the standards applicable to non-emergency engines, the owner or operator of must keep records of the hours of operation of the engine that is recorded through the non-resettable hour meter. For all stationary SI emergency ICE greater than or equal to 130 HP and less than 500 HP manufactured on or after July 1, 2011 that do not meet the standards applicable to non-emergency engines, the owner or operator of must keep records of the hours of operation of the engine that is recorded through the non-resettable hour meter. For all stationary SI emergency ICE greater than 25 HP and less than 130 HP manufactured on or after July 1, 2008, that do not meet the standards applicable to non-emergency engines, the owner or operator of must keep records of the hours of operation of the engine that is recorded through the non-resettable hour meter. The owner or operator must document how many hours are spent for emergency operation, including what classified the operation as emergency and how many hours are spent for non-emergency operation.
[40CFR§60.4245(b)]

- c. Owners and operators of stationary 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 must submit an initial notification as required in §60.7(a)(1). The notification must include the information in paragraphs (c)(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)]
- d. Owners and operators of stationary SI ICE that are subject to performance testing must submit a copy of each performance test as conducted in §60.4244 within 60 days after the test has been completed. [40CFR§60.4245(d)]

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11.0. Source-Specific Requirements (40CFR60 Subpart OOOO Requirements, Reciprocating Compressor Engines (CE-01, CE-02, CE-03))

11.1. Limitations and Standards

- 11.1.1. You must comply with the standards in paragraphs (a) through (d) of this section for each reciprocating compressor affected facility.
- a. You must replace the reciprocating compressor rod packing according to either paragraph (a)(1) or (2) of this section.
 1. Before the compressor has operated for 26,000 hours. The number of hours of operation must be continuously monitored beginning upon initial startup of your reciprocating compressor affected facility, or October 15, 2012, 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.
 - b. You must demonstrate initial compliance with standards that apply to reciprocating compressor affected facilities as required by § 60.5410.
 - c. You must demonstrate continuous compliance with standards that apply to reciprocating compressor affected facilities as required by § 60.5415.
 - d. You must perform the required notification, recordkeeping, and reporting as required by § 60.5420.

[40CFR§60.5385, Reciprocating Compressor Engines]

11.2. Initial Compliance Demonstration

- 11.2.1. You 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 October 15, 2012 or upon initial startup, whichever is later, and ends no later than one year after the initial startup date for your affected facility or no later than one year after October 15, 2012. The initial compliance period may be less than one full year.
- c. To achieve initial compliance with the standards for each reciprocating compressor affected facility you must comply with paragraphs (c)(1) through (4) of this section.
 1. During the initial compliance period, you must continuously monitor the number of hours of operation or track the number of months since the last rod packing replacement.
 2. Reserved.
 3. You must submit the initial annual report for your reciprocating compressor as required in § 60.5420(b).
 4. You must maintain the records as specified in § 60.5420(c)(3) for each reciprocating compressor affected facility.

[40CFR§60.5410]

11.3. Continuous Compliance Demonstration

11.3.1. For each reciprocating compressor affected facility, you must demonstrate continuous compliance according to paragraphs (1) through (3) of this section.

1. You 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 October 15, 2012, or the date of the most recent reciprocating compressor rod packing replacement, whichever is later.
2. You must submit the annual report as required in § 60.5420(b) and maintain records as required in § 60.5420(c)(3).
3. You must replace the reciprocating compressor rod packing 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.
[40CFR§60.5415]

11.3.2. Affirmative defense for violations of emission standards during malfunction. In response to an action to enforce the standards set forth in §§ 60.5375, you may assert an affirmative defense to a claim for civil penalties for violations of such standards that are caused by malfunction, as defined at § 60.2. Appropriate penalties may be assessed, however, if you fail to meet your burden of proving all of the requirements in the affirmative defense. The affirmative defense shall not be available for claims for injunctive relief.

(1) To establish the affirmative defense in any action to enforce such a standard, you must timely meet the reporting requirements in § 60.5415(h)(2), and must prove by a preponderance of evidence that:

(i) The violation:

(A) Was caused by a sudden, infrequent, and unavoidable failure of air pollution control equipment, process equipment, or a process to operate in a normal or usual manner; and

(B) Could not have been prevented through careful planning, proper design or better operation and maintenance practices; and

(C) Did not stem from any activity or event that could have been foreseen and avoided, or planned for; and

(D) Was not part of a recurring pattern indicative of inadequate design, operation, or maintenance; and

(ii) Repairs were made as expeditiously as possible when a violation occurred. Off-shift and overtime labor were used, to the extent practicable to make these repairs; and

(iii) The frequency, amount and duration of the violation (including any bypass) were minimized to the maximum extent practicable; and

(iv) If the violation resulted from a bypass of control equipment or a process, then the bypass was unavoidable to prevent loss of life, personal injury, or severe property damage; and

(v) All possible steps were taken to minimize the impact of the violation on ambient air quality, the environment and human health; and

(vi) All emissions monitoring and control systems were kept in operation if at all possible, consistent with safety and good air pollution control practices; and

(vii) All of the actions in response to the violation were documented by properly signed, contemporaneous operating logs; and

(viii) At all times, the affected source was operated in a manner consistent with good practices for minimizing emissions; and

(ix) A written root cause analysis has been prepared, the purpose of which is to determine, correct, and eliminate the primary causes of the malfunction and the violation resulting from the malfunction event at issue. The analysis shall also specify, using best monitoring methods and engineering judgment, the amount of any emissions that were the result of the malfunction.

(2) Report. The owner or operator seeking to assert an affirmative defense shall submit a written report to the Administrator with all necessary supporting documentation, that it has met the requirements set forth in paragraph (h)(1) of this section. This affirmative defense report shall be included in the first periodic compliance, deviation report or excess emission report otherwise required after the initial occurrence of the violation of the relevant standard (which may be the end of any applicable averaging period). If such compliance, deviation report or excess emission report is due less than 45 days after the initial occurrence of the violation, the affirmative defense report may be included in the second compliance, deviation report or excess emission report due after the initial occurrence of the violation of the relevant standard
[40CFR§60.5415]

11.4. Notification, Recordkeeping and Reporting Requirements

11.4.1. You must submit the notifications according to paragraphs (a)(1) and (2) of this section if you own or operate one or more of the affected facilities specified in § 60.5365 that was constructed, modified, or reconstructed during the reporting period.
[40CFR§60.5420(a)]

11.4.2. Reporting requirements. You 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)(7) 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 § 60.5410. Subsequent annual reports are due no later than same date each year as the initial annual report. If you own or operate more than one affected facility, you 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. You 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.

(i) The company name and address of the affected facility.

(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 responsible official of truth, accuracy, and completeness. This certification shall state that, based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate, and complete.

(4) For each reciprocating compressor affected facility, the information specified in paragraphs (b)(4)(i) through (ii) of this section.

(i) The cumulative number of hours of operation or the number of months since initial startup, since October 15, 2012, or since the previous reciprocating compressor rod packing replacement, whichever is later.

(ii) Records of deviations specified in paragraph (c)(3)(iii) of this section that occurred during the reporting period.

(7)(i) Within 60 days after the date of completing each performance test (see § 60.8 of this part) as required by this subpart you must submit the results of the performance tests required by this subpart to EPA's WebFIRE database by using the Compliance and Emissions Data Reporting Interface (CEDRI) that is accessed through EPA's Central Data Exchange (CDX) (www.epa.gov/cdx). Performance test data must be submitted in the file format generated through use of EPA's Electronic Reporting Tool (ERT) (see <http://www.epa.gov/ttn/chief/ert/index.html>). Only data collected using test methods on the ERT Web site are subject to this requirement for submitting reports electronically to WebFIRE. Owners or operators who claim that some of the information being submitted for performance tests is confidential business information (CBI) must submit a complete ERT file including information claimed to be CBI on a compact disk or other commonly used electronic storage media (including, but not limited to, flash drives) to EPA. The electronic media must be clearly marked as CBI and mailed to U.S. EPA/OAQPS/CORE CBI Office, Attention: WebFIRE Administrator, MD C404-02, 4930 Old Page Rd., Durham, NC 27703. The same ERT file with the CBI omitted must be submitted to EPA via CDX as described earlier in this paragraph. At the discretion of the delegated authority, you must also submit these reports, including the confidential business information, to the delegated authority in the format specified by the delegated authority.

(ii) All reports required by this subpart not subject to the requirements in paragraph (a)(2)(i) of this section must be sent to the Administrator at the appropriate address listed in § 63.13 of this part. The Administrator or the delegated authority may request a report in any form suitable for the specific case (e.g., by commonly used electronic media such as Excel spreadsheet, on CD or hard copy). The Administrator retains the right to require submittal of reports subject to paragraph (a)(2)(i) and (ii) of this section in paper format.

[40CFR§60.5420]

11.4.3. Recordkeeping requirements. You must maintain the records identified as specified in § 60.7(f) and in paragraph (c)(1) of this section. All records must be maintained for at least 5 years.

(3) For each reciprocating compressors affected facility, you must maintain the records in paragraphs (c)(3)(i) through (iii) of this section.

(i) Records of the cumulative number of hours of operation or number of months since initial startup or October 15, 2012, or the previous replacement of the reciprocating compressor rod packing, whichever is later.

(ii) Records of the date and time of each reciprocating compressor rod packing replacement.

(iii) Records of deviations in cases where the reciprocating compressor was not operated in compliance with the requirements specified in § 60.5385.

[40CFR§60.5420]

12.0. Source-Specific Requirements (40CFR63 Subpart ZZZZ Requirements (CE-01, CE-02, CE-03))

12.1. Limitations and Standards

- 12.1.1. The permittee must comply with the applicable operating limitations in this section no later than October 19, 2013.
[40 C.F.R. § 63.6595(a)]
- 12.1.2. *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 IIII, for compression ignition engines or 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.
[40 C.F.R. § 63.6590(c)]

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

Signature¹
(please use blue ink) _____
Responsible Official or Authorized Representative _____ Date _____

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

Telephone No. _____ **Fax No.** _____

- ¹ This form shall be signed by a "Responsible Official." "Responsible Official" means one of the following:
- a. For a corporation: The president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy or decision-making functions for the corporation, or a duly authorized representative of such person if the representative is responsible for the overall operation of one or more manufacturing, production, or operating facilities applying for or subject to a permit and either:
 - (i) the facilities employ more than 250 persons or have a gross annual sales or expenditures exceeding \$25 million (in second quarter 1980 dollars), or
 - (ii) the delegation of authority to such representative is approved in advance by the Director;
 - b. For a partnership or sole proprietorship: a general partner or the proprietor, respectively;
 - c. For a municipality, State, Federal, or other public entity: either a principal executive officer or ranking elected official. For the purposes of this part, a principal executive officer of a Federal agency includes the chief executive officer having responsibility for the overall operations of a principal geographic unit of the agency (e.g., a Regional Administrator of U.S. EPA); or
 - d. The designated representative delegated with such authority and approved in advance by the Director.