

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



Jim Justice, Governor
Austin Caperton, Cabinet Secretary
www.dep.wv.gov

west virginia department of environmental protection

G70-D GENERAL PERMIT ENGINEERING EVALUATION

PREVENTION AND CONTROL OF AIR POLLUTION IN REGARD TO THE CONSTRUCTION, MODIFICATION, RELOCATION, ADMINISTRATIVE UPDATE AND OPERATION OF NATURAL GAS PRODUCTION FACILITIES LOCATED AT THE WELL SITE

APPLICATION NO.: G70-D001C

FACILITY ID: 017-00072

- CONSTRUCTION
 MODIFICATION
 RELOCATION

- CLASS I ADMINISTRATIVE UPDATE
 CLASS II ADMINISTRATIVE UPDATE

BACKGROUND INFORMATION

Name of Applicant (as registered with the WV Secretary of State's Office): CNX Gas Company LLC

Federal Employer ID No. (FEIN): 550738862

Applicant's Mailing Address: 1000 CONSOL Energy Drive

City: Canonsburg

State: PA

ZIP Code: 15317

Facility Name: Oxford 1

Operating Site Physical Address: 1285 Elliot Rd.

If none available, list road, city or town and zip of facility.

City: Oxford

Zip Code: 26456

County: Doddridge

Latitude & Longitude Coordinates (NAD83, Decimal Degrees to 5 digits):

Latitude: 39.24278°

Longitude: -80.82542°

SIC Code: 1311

NAICS Code: 211111

Date Application Received:

March 1, 2017

Fee Amount: \$500

Date Fee Received: March 2, 2017

Applicant Ad Date: February 28, 2017

Newspaper: The Herald Record

Date Application Complete: May 12, 2017

Due Date of Final Action: June 26, 2017

Engineer Assigned: David Keatley

This registration supersedes and replaces permit registration G70-A001B. Installation and operation of: one (1) 30-bbl drip tank, one (1) low-pressure tower, and modified heat rating of flare 10S-COMB. Removal of one (1) 225-bhp compressor engine and one (1) 46-bhp compressor engine. Removal of four (4) 400-bbl condensate tanks and seven (7) 400-bbl produced water tanks from the permit registration which were not installed.

PROCESS DESCRIPTION

Raw natural gas from six wells goes to six (6) 1.0-mmBtu/hr GPUs to be heated to encourage phase separation. The produced water goes to four (4) 400-bbl produced water tanks. The gas from the GPUs exits the facility via pipeline. The condensate from the GPUs goes to one (1) 0.5-mmBtu/hr LP Separator Heater to encourage gas to evaporate from the condensate. The liquids from the low-pressure separator go to four (4) 400-bbl condensate tanks. The vapors from the low-pressure separator go to a liquid knockout. The liquids from the knockout go to the proposed 30-bbl drip tank. The vapors from the knockout are controlled by one (1) 26.27-mmBtu/hr flare. The vapors from the drip tank and condensate tanks are controlled by one (1) 8.69-mmBtu/hr vapor destruction unit. The produced water is trucked off-site at a maximum rate of 38,325,000 gallons/year. The condensate is trucked off-site at a maximum rate of 21,462,000 gallons/year. This facility also has one (1) 0.03-mmBtu/hr thermoelectric generator to provide power.

SITE INSPECTION

Site Inspection Date: March 2, 2017

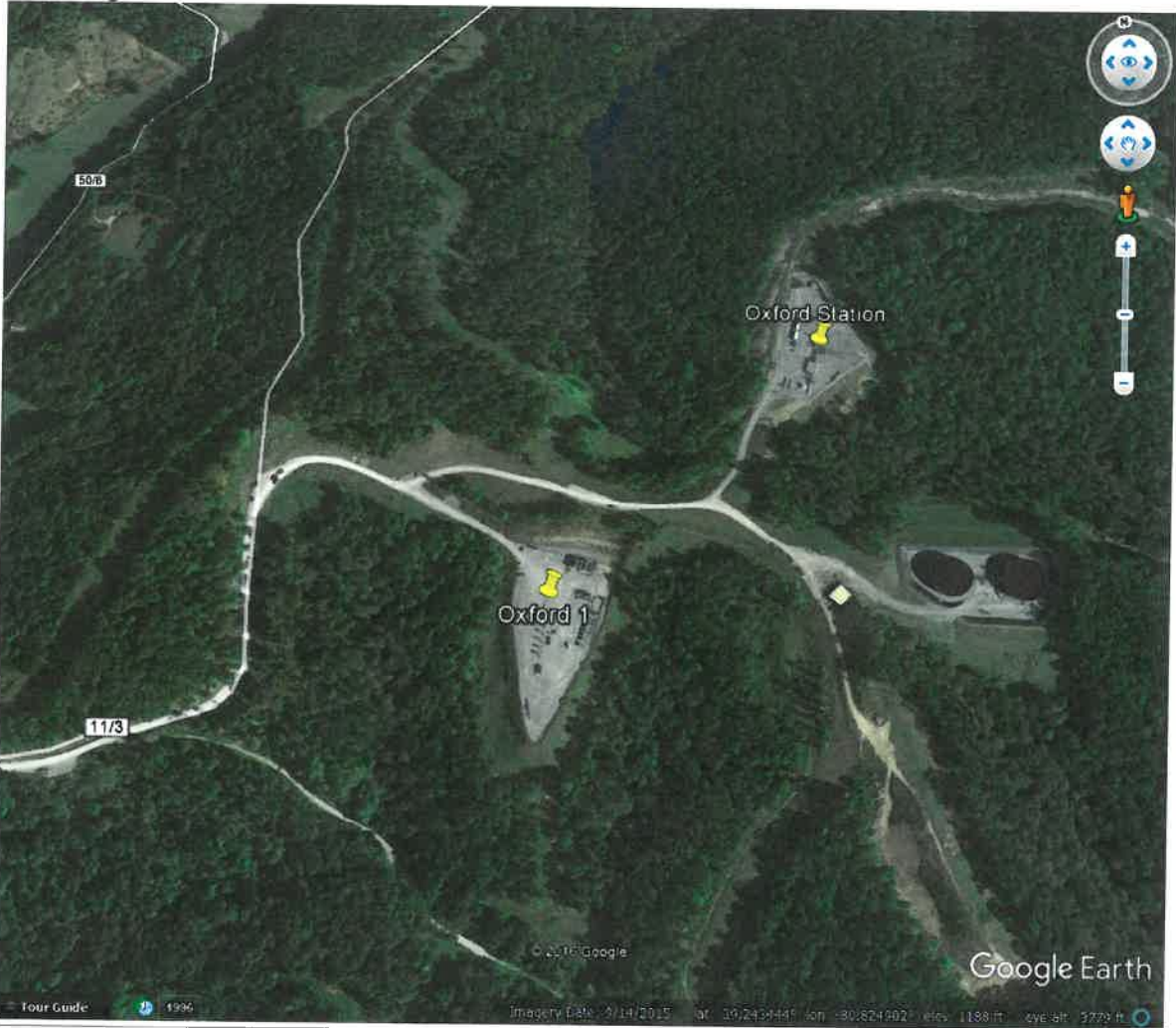
Site Inspection Conducted By: James Robertson

Results of Site Inspection: The site was not in compliance.

Did Applicant meet Siting Requirements? Yes

If applicable, was siting criteria waiver submitted? Not Applicable

Directions to Facility: From US-50 turn onto CR 50/30 (Old US 50) and travel approximately 1.87 miles to CR 21 (Oxford Rd.). Turn left onto CR 21 and travel approximately 2.9 miles to CR 11/3 (Elliot Road). Turn left onto CR11/3 and travel for approximately 1.18 miles and the access road is on the right.



ESTIMATE OF EMISSIONS BY REVIEWING ENGINEER

The following table indicates which methodology was used in the emissions determination:

Emission Unit ID#	Process Equipment	Calculation Methodology (e.g. ProMax, GlyCalc, mfg. data, AP-42, etc.)
1S-TK1 through 1S-TK4	Condensate Tanks	ProMax using liquid sample from Majorsville and gas sample from Shirley 3.
2S-TK5 through 2S-TK8	Produced Water Tanks	ProMax using liquid sample from Majorsville and gas sample from Shirley 3.
4S-GPU1 through 4S-GPU6	Gas Processing Units	EPA AP-42
5S-LP	Low Pressure Separator	EPA AP-42
6S-TL1, 7S-TL2, and 14S-TL3	Condensate Truck Loading, Produced Water Loading, and Drip Tank Liquid Loading	EPA AP-42 equation assuming submerged loading, dedicated, normal service. Assuming 70% capture efficiency and 98% destruction efficiency.
8S-COMB, 9S- PILOT, 10S- COMB, 6S-LP, and 11S-PILOT	Vapor Combustor and Flare	EPA AP-42 using 98% control efficiency
12S-TEGEN	Thermoelectric Generator	EPA AP-42
13S-TK9	Drip Tank	ProMax using liquid sample from Majorsville and gas sample from Shirley 3.

The total facility PTE for the facility (excluding fugitive emissions) is shown in the following table:

Pollutant	Facility Wide PTE (tons/year)
Nitrogen Oxides	13.88
Carbon Monoxide	40.75
Volatile Organic Compounds	71.33
Particulate Matter	0.46
Particulate Matter-10/2.5	0.46
Sulfur Dioxide	0.04
Benzene	0.04
Toluene	0.06
Xylenes	0.04
n-Hexane	2.50
Total HAPs	2.66
Carbon Dioxide Equivalent	21,448

Emission Point ID	Emission Unit ID	Emission Source	Pollutant	Maximum Hourly Emissions (lb/hr)	Maximum Annual Emissions (tpy)
8E-COMB	1S-TK1 through 1S-TK8	Vapor Destruction Unit (Controlling Condensate Tanks, Produced Water Tanks, Pilot, and Liquid Loading)	Nitrogen Oxides	0.86	3.75
			Carbon Monoxide	0.72	3.15
			Volatile Organic Compounds	15.00	50.62
			Total Particulate Matter	0.07	0.29
			Sulfur Dioxide	0.01	0.02
			n-Hexane	0.16	0.21
			CO _{2e}	1,056	4,624
			Nitrogen Oxides	1.79	7.85
			Carbon Monoxide	8.17	35.68
			Volatile Organic Compounds	0.05	0.22
10E-COMB	10S-COMB, 11S-PILOT, and 6S-LP	Flare (Controlling Low-Pressure Separator)	CO _{2e}	3,076	13,472
			Nitrogen Oxides	0.08	0.35
			Carbon Monoxide	0.07	0.29
			Volatile Organic Compounds	0.01	0.02
			Total Particulate Matter	0.01	0.03
			CO _{2e}	117	513
			Nitrogen Oxides	0.04	0.18
			Carbon Monoxide	0.03	0.15
			Volatile Organic Compounds	<0.01	0.01
			Total Particulate Matter	<0.01	0.01
4E-GPU1 through 4E-GPU6	4S-GPU1 through 4S-GPU6	Gas Production Unit 1.0 mmBtu/hr (emissions per each)	Nitrogen Oxides	0.08	0.35
			Carbon Monoxide	0.07	0.29
			Volatile Organic Compounds	0.01	0.02
			Total Particulate Matter	0.01	0.03
			CO _{2e}	117	513
			Nitrogen Oxides	0.04	0.18
			Carbon Monoxide	0.03	0.15
			Volatile Organic Compounds	<0.01	0.01
			Total Particulate Matter	<0.01	0.01
			5E-LP	5S-LP	Low-Pressure Separator Heater 0.5 mmBtu/hr
Carbon Monoxide	0.03	0.15			
Volatile Organic Compounds	<0.01	0.01			
Total Particulate Matter	<0.01	0.01			
CO _{2e}	117	513			
Nitrogen Oxides	0.04	0.18			
Carbon Monoxide	0.03	0.15			
Volatile Organic Compounds	<0.01	0.01			
Total Particulate Matter	<0.01	0.01			

14E-TL	14S-TL	Uncaptured Drip Tank Liquid Loading 112,216 gallons/year	CO ₂ e	59	257
6E-TL1 and 7E-TL2	6S-TL1 and 7S-TL2	Uncaptured Liquid Loading 21,462,000 gallons/year And 38,325,000 gallons/year	Volatiles Organic Compounds	0.45	0.12
			Volatiles Organic Compounds	77.90	20.25
			Toluene	0.04	0.01
			n-Hexane	2.57	0.67

REGULATORY APPLICABILITY

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

The purpose of 45CSR2 (Particulate Air Pollution from Combustion of Fuel in Indirect Heat Exchangers) 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) MMBTU/hr 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. If the individual heat input of all of the proposed fuel burning units are below 10 MMBTU/hr, these units are exempt from the aforementioned sections of 45CSR2. However, the registrant would be subject to the opacity requirements in 45CSR2, which is 10% opacity based on a six minute block average. Fuel burning units greater than 10 MMBTU/hr are ineligible for registration under General Permit G70-D

Emission Unit ID#	Emission Unit Description	Maximum Design Heat Input (MDHI) (MMBTU/hr)
4S-GPU1 through 4S-GPU6	Gas Processing Unit	1.0 (each)
5S-LP	Low-Pressure Separator Heater	0.5
12S-TEGEN	Thermoelectric Generator	0.03

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

45CSR6 prohibits open burning, establishes emission limitations for particulate matter, and establishes opacity requirements. Sources subject to 45CSR6 include completion combustion devices, enclosed combustion devices, and flares.

The facility-wide requirements of the general permit include the open burning limitations §§45-6-3.1 and 3.2.

All completion combustion devices, enclosed combustion devices, and flares are subject to the particulate matter weight emission standard set forth in §45-6-4.1; the opacity requirements in §§45-6-4-3 and 4-4; the visible emission standard in §45-6-4.5; the odor standard in §45-6-4.6; and, the testing standard in §§45-6-7.1 and 7.2.

Enclosed combustion control devices and flares that are used to comply with emission standards of NSPS, Subpart OOOO are subject to design, operational, performance, recordkeeping and reporting requirements of the NSPS regulation that meet or exceed the requirements of 45CSR6.

Emission Unit ID#	Maximum Design Heat Input (MDHI) (MMBTU/hr)	Subject to Weight Emission Standard?	Control Efficiency Claimed by Registrant	Provide Justification how 45CSR6 is met.
8S-COMB	8.69	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	98%	With a maximum capacity of 315.3 lb/hr the allowable emission rate for total particulate matter is 0.86. The estimated total particulate matter from this vapor combustor is 0.07 which is less than the allowable, so this rule should be met.
10S-COMB	26.67	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	98%	With a maximum capacity of 887.31 lb/hr the allowable emission rate for total particulate matter is 2.41. The estimated total particulate matter

				from this flare is negligible which is less than the allowable, so this rule should be met.
--	--	--	--	---

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

45CSR10 establishes emission limitations for SO₂ emissions which are discharged from stacks of fuel burning units. A “fuel burning unit” means and includes any furnace, boiler apparatus, device, mechanism, stack or structure used in the process of burning fuel or other combustible material for the primary purpose of producing heat or power by indirect heat transfer. Sources that meet the definition of “Fuel Burning Units” per 45CSR10-2.8 include GPUs, in-line heaters, heater treaters, and glycol dehydration unit reboilers.

Fuel burning units less than 10 MMBtu/hr are exempt. The sulfur dioxide emission standard set forth in 45CSR10 is generally less stringent than the potential emissions from a fuel burning unit for natural gas. The SO₂ emissions from a fuel burning unit will be listed in the G70-D permit registration at the discretion of the permit engineer on a case-by-case basis. Issues such as non-attainment designation, fuel use, and amount of sulfur dioxide emissions will be factors used in this determination. Fuel burning units greater than 10 MMBTU/hr are ineligible for registration under General Permit G70-D

Fuel burning units burning natural gas are exempt from Section 8 (Monitoring, Recording and Reporting) as well as interpretive rule 10A. The G70-D eligibility requirements exclude from eligibility any fuel burning unit that does not use natural gas as the fuel; therefore, there are no permit conditions for 45CSR10.

Emission Unit ID#	Emission Unit Description	Maximum Design Heat Input (MDHI) (MMBTU/hr)
4S-GPU1 through 4S-GPU6	Gas Processing Unit	1.0 (each)
5S-LP	Low-Pressure Separator Heater	0.5
12S-TEGEN	Thermoelectric Generator	0.03

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 the applicant is defined as a “stationary source” under 45CSR13 Section 2.24.b. *Stationary source* means, for the purpose of this rule, any building, structure, facility, installation, or emission unit or combination thereof, excluding any emission unit which meets or falls below the criteria delineated in Table 45-13B which: (a) is subject to any substantive requirement of an emission control rule promulgated by the Secretary; (b) discharges or has the potential to discharge more than six (6) pounds per hour and ten (10) tons per year, or has the potential to discharge more than 144 pounds per calendar day, of any regulated air pollutant; (c) discharges or has the potential to discharge more than two (2) pounds per hour or five (5) tons per year of hazardous air pollutants considered on an aggregated basis; (d) discharges or has the potential to discharge any air pollutant(s) listed in Table 45-13A in the amounts shown in Table 45-13A or greater; or, (e) an owner or operator voluntarily chooses to be subject to a construction or modification permit pursuant to this rule, even though not otherwise required to do so. 45CSR13 has an original effective date of June 1, 1974.

The applicant meets the definition of a stationary source because (check all that apply):

- Subject to a substantive requirement of an emission control rule promulgated by the Secretary.
- Discharges or has the potential to discharge more than six (6) pounds per hour and ten (10) tons per year, or has the potential to discharge more than 144 pounds per calendar day, of any regulated air pollutant.
- Discharges or has the potential to discharge more than two (2) pounds per hour or five (5) tons per year of hazardous air pollutants considered on an aggregated basis.
- Discharges or has the potential to discharge any air pollutant(s) listed in Table 45-13A in the amounts shown in Table 45-13A or greater.

- Voluntarily chooses to be subject to a construction or modification permit pursuant to this rule, even though not otherwise required to do so.

General Permit G70-D Registration satisfies the construction, modification, relocation and operating permit requirements of 45CSR13. General Permit G70-D sets forth reasonable conditions that enable eligible registrants to establish enforceable permit limits.

Section 5 of 45CSR13 provides the permit application and reporting requirements for construction of and modifications to stationary sources. No person shall cause, suffer, allow or permit the construction, modification, relocation and operation of any stationary source to be commenced without notifying the Secretary of such intent and obtaining a permit to construct, modify, relocate and operate the stationary source as required in the rule or any other applicable rule promulgated by the Secretary.

If applicable, the applicant meets the following (check all that apply):

- Construction
 Modification
 Class I Administrative Update (45CSR13 Section 4.2.a)
 Class II Administrative Update (45CSR13 Section 4.2.b)

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

45CSR16 applies to all registrants that are subject to any of the NSPS requirements described in more detail in the Federal Regulations section. Applicable requirements of NSPS, Subparts IIII, JJJJ, OOOO and OOOOa are included in General Permit G70-D.

The applicant is subject to:

- 40CFR60 Subpart IIII
 40CFR60 Subpart JJJJ
 40CFR60 Subpart OOOO
 40CFR60 Subpart OOOOa

45CSR22 (Air Quality Management Fee Program)

45CSR22 is the program to collect fees for certificates to operate and for permits to construct or modify sources of air pollution. 45CSR22 applies to all registrants. The general permit fee of \$500 is defined in 45CSR13. In addition to the application fee, all applicants subject to NSPS requirements or NESHAP requirements shall pay additional fees of \$1,000 and \$2,500, respectively.

Registrants are also required to obtain and have in effect a valid certificate to operate in accordance with 45CSR22 §4.1. The fee group for General Permit G70-D is 9M (all other sources) with an annual operating fee of \$200.

40CFR60, Subpart OOOO (Standards of Performance for Crude Oil and Natural Gas Production, Transmission and Distribution for which Construction, Modification or Reconstruction Commenced after August 23, 2011, and on or before September 18, 2015)

EPA published its New Source Performance Standards (NSPS) and air toxics rules for the oil and gas sector on August 16, 2012. EPA published amendments to the Subpart on September 23, 2013 and June 3, 2016.

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 and on or before September 18, 2015. The affected sources which commence construction, modification or reconstruction after August 23, 2011 and on or before September 18, 2015 are subject to the applicable provisions of this Subpart as described below:

Gas well affected facilities are included in General Permit G70-D in Section 5.0.

Are there any applicable gas well affected facilities? Yes No

If Yes, list.

API Number	Date of Flowback	Date of Well Completion	Green Completion and/or Combustion Device
47-17-06000	6/12/2014	2/20/2014	Green
47-17-06001	7/1/2014	2/21/2014	Green
47-17-06002	6/11/2014	2/5/2014	Green
47-17-06003	6/11/2014	1/27/2014	Green
47-17-06004	6/11/2014	1/12/2014	Green
47-17-06005	6/12/2014	1/13/2014	Green

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. 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.

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. 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.

Pneumatic controllers affected facilities are included in General Permit G70-D, Section 10.0.

Are there any applicable pneumatic controller affected facilities? Yes No

For the natural gas production segment (between the wellhead and the point of custody transfer to the natural gas transmission and storage segment and not including natural gas processing plants), 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.

Requirements for storage vessel affected facilities are included in General Permit G70-D, Section 7.0.

Determination of storage vessel affected facility status is included in Section 6.0 of General Permit G70-D.

Are there any applicable storage vessel affected facilities? Yes No

If No, list any emission reduction devices and control efficiencies used to avoid 40CFR60 Subpart OOOO.

Vapor Destruction Unit 8E-COMB and Flare 10E-COMB control emissions by 98%.

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, and has the potential for VOC emissions equal to or greater than 6 tpy as determined according to this section by October 15, 2013 for Group 1 storage vessels and by April 15, 2014, or 30 days after startup (whichever is later) for Group 2 storage vessels. A storage vessel affected facility that subsequently has its potential for VOC emissions decrease to less than 6 tpy shall remain an affected facility under this subpart.

40CFR60, Subpart OOOOa (Standards of Performance for Crude Oil and Natural Gas Production, Transmission and Distribution for which Construction, Modification or Reconstruction Commenced after September 18, 2015)

EPA published its New Source Performance Standards (NSPS) and air toxics rules for the oil and gas sector on August 16, 2012. EPA published amendments to the Subpart on September 23, 2013 and June 3, 2016.

40CFR60 Subpart OOOOa establishes emission standards and compliance schedules for the control of the pollutant greenhouse gases (GHG). The greenhouse gas standard in this subpart is in the form of a limitation on emissions of methane from affected facilities in the crude oil and natural gas source category that commence construction, modification or reconstruction after September 18, 2015. This subpart also 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 September 18, 2015. The effective date of this rule is August 2, 2016.

For each well site, the registrant must reduce GHG (in the form of a limitation on emissions of methane) and VOC emissions by complying with fugitive emissions monitoring as required in §60.5397a and the alternative means of emission limitations in §60.5398a.

Gas well affected facilities are included in General Permit G70-D in Section 5.0.

Are there any applicable gas well affected facilities? Yes No

SOURCE AGGREGATION DETERMINATION
<p>“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.</p>
<p>Is there equipment and/or activities used for onshore oil and natural gas production that are located on the same site, or on sites that share equipment and are within ¼ mile of each other?</p>
<p><input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p>
<p>Is this equipment and/or activities under “common control”?</p>
<p><input checked="" type="checkbox"/> Yes <input checked="" type="checkbox"/> No</p>
<p>Do these facilities share the same two (2) digit SIC code?</p>
<p><input type="checkbox"/> Yes <input checked="" type="checkbox"/> No</p>
<p><i>Final Source Aggregation Decision.</i></p>
<p><input checked="" type="checkbox"/> Source not aggregated with any other source.</p>
<p><input type="checkbox"/> Source aggregated with another source. List Company/Facility Name:</p>

RECOMMENDATION TO DIRECTOR

The information provided in the permit application, including all supplemental information received, indicates the applicant meets all the requirements of applicable regulations and the applicant has shown they meet the eligibility requirements of General Permit G70-D. Therefore, impact on the surrounding area should be minimized and it is recommended that the facility should be granted registration under General Permit G70-D.

Permit Engineer Signature: _____

Name and Title: David Keatley - NSR Permitting

Date: May 12, 2017