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west virginia department of environmental protection

G70-C 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-C174A

FACILITY ID: 051-00221

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):
SWN Production Company, LLC

Federal Employer ID No. (FEIN): 26-4388727

Applicant's Mailing Address: 10000 Energy Drive

City: Spring

State: TX

ZIP Code: 77389

Facility Name: Betty Schafer Pad

Operating Site Physical Address: Big Wheeling Creek Road (CR 5)
If none available, list road, city or town and zip of facility.

City: Cedar Rocks

Zip Code: 26003

County: Marshall

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

Latitude: 39.992724

Longitude: -80.638936

SIC Code: 1311

NAICS Code: 211111

Date Application Received:

September 7, 2016

Fee Amount: \$1,500.00

Date Fee Received: September 12, 2016

Applicant Ad Date: September 2, 2016

Newspaper: *Intelligencer*

Date Application Complete: September 28, 2016

Due Date of Final Action: November 12, 2016

Engineer Assigned: Jerry Williams, P.E.

Description of Permitting Action: Register an unpermitted produced water storage vessel and condensate storage vessel.

PROCESS DESCRIPTION

The following process description was taken from Registration Application G70-C174A:

Condensate, gas and water come from two (2) production wellheads to the production units, where the first stage of separation occurs. Fluids (condensate and water) are sent to the heater treaters. Flash gases from the heater treaters are routed via hard piping to the inlet of the flash gas compressors to be compressed. Produced water from the heater treaters flows into the produced water storage tanks. Condensate flows into the low pressure towers. Flash gases from the low pressure towers are routed via hard piping to the inlet of the flash gas compressors to be compressed. The natural gas stream will exit the facility for transmission via pipeline. Condensate and produced water are transported offsite via truck. Loading emissions are controlled with vapor return and will be routed to the vapor combustor. Working, breathing and flashing vapors from the condensate and produced water storage tanks are routed to a vapor recovery unit. The vapor combustor has two (2) natural gas pilots to ensure a constant flame for combustion.

This permitting action adds one (1) 400 bbl condensate storage tank and one (1) 400 bbl produced water storage tank. The condensate throughput has been reduced from 1,000 bbl/day to 995 bbl/day. Furthermore, the fugitive component counts have been revised based on equipment changes and the haulroad estimates and vapor combustion emissions have been revised based on the change in condensate throughput.

SITE INSPECTION

Site Inspection Date: August 5, 2016

Site Inspection Conducted By: Greg Paetzold

Results of Site Inspection: Non-compliance. Unpermitted 400 bbl produced water storage tank and 400 bbl condensate storage tank.

Did Applicant meet Siting Requirements? Yes. John Money Penny (9/29/2015)

If applicable, was siting criteria waiver submitted? NA

Directions to Facility: From Exit 2 on I-470, travel south on CR 91/1, W. Bethlehem Blvd for 0.5 miles. Turn right on WV-88, Ridgecrest Road, and travel 8.2 miles. Turn left on US-250 and travel 1.5 miles. Turn left on McCreary's Ridge Rd CR 44 and travel 0.3 miles. Stay left on McCreary's Ridge Rd CR 7 and travel 3.7 miles. Turn left on Big Wheeling Creek Road and travel 1.6 miles. Turn right to stay on Big Wheeling Creek Road CR5 and travel 2 miles. Entrance is on 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.)
EU-TANKS-COND	Five (5) 400 bbl Condensate Storage Tanks	EPA Tanks 4.09d, ProMax
EU-TANKS-PW	Three (3) 400 bbl Produced Water Storage Tanks	EPA Tanks 4.09d, ProMax

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

Pollutant	G70-A174 PTE (tons/year)	G70-C174A PTE (tons/year)	PTE Change for Modification (tons/year)
Nitrogen Oxides	20.31	20.31	0
Carbon Monoxide	38.05	38.05	0
Volatile Organic Compounds	67.55	67.40	-0.15
Particulate Matter	4.43	4.43	0
Sulfur Dioxide	0.02	0.02	0
Formaldehyde	0.40	0.40	0
Total HAPs	5.61	5.59	-0.02
Carbon Dioxide Equivalent	14,526	14,528	2

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

Emission Point ID#	Source	NO _x		CO		VOC		PM		SO ₂		Formaldehyde		Total HAPs		CO ₂ c 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	
EP-ENG1	Cat G3306 Engine	0.32	1.40	0.64	2.80	0.24	1.05	0.01	0.04	<0.01	<0.01	0.02	0.09	0.03	0.15	680
EP-ENG2	Cat G3406 Engine	0.32	1.40	0.64	2.80	0.24	1.05	0.01	0.04	<0.01	<0.01	0.02	0.09	0.03	0.15	680
EP-ENG3	77kW Zenith Engine	0.46	2.01	0.75	3.29	0.46	2.01	0.01	0.05	<0.01	<0.01	0.01	0.06	0.02	0.09	328
EP-ENG4	146.2 kW Bucks GM Engine	0.43	1.88	0.86	3.77	0.34	1.48	0.03	0.13	<0.01	<0.01	0.04	0.16	0.06	0.24	905
EP-GPU1-2	2 GPU Burners	0.22	0.96	0.18	0.78	0.01	0.06	0.02	0.07	<0.01	<0.01	<0.01	<0.01	<0.01	0.02	1026
EP-HT1-2	2 Heater Treaters	0.12	0.52	0.10	0.44	0.01	0.02	0.01	0.04	<0.01	<0.01	<0.01	<0.01	<0.01	0.01	513
EP-TANKS-COND	5 Condensate Tanks to VRU	0	0	0	0	10.22	44.76	0	0	0	0	0	0	0.83	3.62	0
EP-TANKS-PW	3 PW Tanks to VRU	0	0	0	0	0.03	0.12	0	0	0	0	0	0	<0.01	0.01	24
APC-COMB-TKLD	Vapor Combustor	2.76	12.09	5.51	24.13	0.14	0.61	0.06	0.26	<0.01	<0.01	<0.01	<0.01	0.01	0.06	10258
EP-PILOT	Vapor Combustor Pilot	0.01	0.04	0.01	0.04	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	46
EP-LOAD-COND	Cond. Truck Loading w/VR & Comb	0	0	0	0	2.91	12.74	0	0	0	0	0	0	0.24	1.03	0
EP-LOAD-PW	PW Truck Loading w/VR & Comb	0	0	0	0	0.03	0.11	0	0	0	0	0	0	<0.01	0.01	0
Total Point Source		4.64	20.31	8.69	38.05	14.62	64.02	0.17	0.74	<0.01	0.02	0.09	0.40	1.22	5.39	14459
Fugitive	Venting	0	0	0	0	0.77	3.38	0	0	0	0	0	0	0.05	0.20	69
Fugitive	Dust	0	0	0	0	0	0	1	4	0	0	0	0	0	0	0
Total Fugitive		0	0	0	0	0.77	3.38	1.12	3.69	0	0	0	0	0.05	0.20	69
Total Sitewide		4.64	20.31	8.69	38.05	15.39	67.40	1.29	4.43	<0.01	0.02	0.09	0.40	1.27	5.59	14528

The total facility PTE for the facility (excluding fugitive emissions for VOC and PM) is shown in the following table: The fugitive emissions of a stationary source shall not be considered in determining whether it is a major stationary source for the purposes of 45CSR30-2.26.b or for eligibility of this General Permit:

Pollutant	G70-C Annual Emission Limits (tons/year)	Facility Wide PTE (tons/year)
Nitrogen Oxides	50	20.31
Carbon Monoxide	80	38.05
Volatile Organic Compounds	80	64.02
Particulate Matter-10/2.5	20	0.74
Sulfur Dioxide	20	0.02
Total HAPs	20	5.39

REGULATORY APPLICABILITY

The following rules apply to this modification:

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.
APC-COMB-TKLD	20	Yes	98 %	The combustor has minimal particulate matter emissions. Therefore, the combustor should demonstrate compliance with this section. The facility will demonstrate compliance by maintaining records of the amount of natural gas consumed by the combustor and the hours of operation. The facility will also monitor the flame of the combustor and record any malfunctions that may cause no flame to be present during operation.

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-C Registration satisfies the construction, modification, relocation and operating permit requirements of 45CSR13. General Permit G70-C 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):

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

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-C 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)

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.

There were no changes from previous regulatory analysis.

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.

Are there surrounding wells or compressor stations under “common control” of the applicant?

Yes No

Are the properties in question located on “contiguous or adjacent” properties?

Yes No

Are there surrounding facilities that share the same two (2) digit SIC code?

Yes No

Final Source Aggregation Decision.

Source not aggregated with any other source.

Source aggregated with another source. List Company/Facility Name:

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-C. Therefore, impact on the surrounding area should be minimized and it is recommended that the facility should be granted registration under General Permit G70-C.

Permit Engineer Signature

Name and Title: Jerry Williams, P.E. - Engineer

Date: October 21, 2016