



**west virginia** department of environmental protection

Division of Air Quality  
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**GENERAL PERMIT REGISTRATION APPLICATION  
ENGINEERING EVALUATION / FACT SHEET**

BACKGROUND INFORMATION

Registration No.: G35-A103A  
Plant ID No.: 047-00089  
Applicant: Cranberry Pipeline Corporation (Cranberry)  
Facility Name: Walen Compressor Station  
Location: Gary, McDowell County  
SIC Code: 1311  
Application Type: Modification  
Received Date: July 28, 2014  
Engineer Assigned: David Keatley  
Fee Amount: \$3,000  
Date Fee Received: July 31, 2014  
Complete Date: October 28, 2014  
Due Date: December 12, 2014  
Applicant Ad Date: August 27, 2014  
Newspaper: *The Welch News*  
UTM's: Easting: 448.581 km      Northing: 4133.217 km      Zone: 17  
Description: An increase in the dehydration unit's still vent emissions due to an updated gas composition analysis. Installation and operation of produced water tank T03.

TYPE OF PROCESS

Natural gas will be sent to the facility via pipeline. The natural gas will be compressed to a higher pressure. The compressor will be powered by a 825-bhp Superior 6GTLB natural gas fired compressor engine. After compression the natural gas is sent to a TEG dehydration unit to reduce the water content of the natural gas stream. The natural gas at a maximum rate of 10 MMscf/day will flow countercurrent to circulating TEG in a contactor. After dehydration the natural gas will exit the facility via pipeline. The rich TEG will be sent to the regenerator to remove the water. The water and other constituents will exit the still vent RSV-2. The regenerator is heated by a 0.2 MMBTU/hr reboiler. The combustion products of the reboiler will be emitted at emission point RBV-2.

## SITE INSPECTION

Andy Grimm of DEP DAQ's Compliance and Enforcement Section performed a site inspection on December 18, 2015 and the facility was deemed in compliance.

*From US 50 near Welch turn onto CR 103 south. Travel to Gary. In Gary take CR 13 south. Turn right on CR 13/2. Travel on CR 13/2 (Ream #6) for approximately 7 miles to the top of the ridge. Take a right at the T in the road, stay on the main road to the right for approximately 0.75 miles. Turn right onto the access road the facility is approximately 0.75 miles at the end of the road.*

## ESTIMATE OF EMISSIONS BY REVIEWING ENGINEER

The dehydration units still vent emissions were calculated using a gas analysis from the facility in GLYCalc 4.0. The flashing, working, and breathing emissions from the produced water tanks were estimated with a pressurized liquid sample from the facility used in E&P Tanks. Emissions of VOC and HAPs from the loading of the produced water was calculated using U.S. EPA's AP-42 Chapter 5 submerged loading dedicated normal service.

Table 1: Maximum Estimated Summarized Modified/New PTE

Source ID	Emission Source	Pollutant	Maximum Hourly Emissions (lb/hr)	Maximum Annual Emissions (tpy)
RSV-2	Exterran Still Vent 10 mmscf/day	Volatile Organic Compounds	1.25	5.49
		Benzene	0.08	0.78
		Ethylbenzene	0.37	1.64
		Toluene	0.18	0.78
		Xylenes	<0.01	0.01
		CO2e	63	272
T02	Produced Water Tank	Volatile Organic Compounds	0.08	0.32
T03	Produced Water Tank	Volatile Organic Compounds	0.08	0.32
Fugitive	Fugitive Emissions	Volatile Organic Compounds	0.06	0.24
		CO2e	2	6

Table 2: Estimated Maximum Controlled Facility Wide Air Emissions

Pollutant	Current Annual Facility Wide Emissions (tons/year)	Proposed Annual Facility Wide Emissions (tons/year)	Increase (tons/year)
Nitrogen Oxides	15.99	15.99	-
Carbon Monoxide	27.97	27.97	-
Volatile Organic Compounds	7.74	12.65	4.91
Total Particulate Matter	0.26	0.26	-
Formaldehyde	1.37	1.37	-
Benzene	0.12	0.38	0.26
n-Hexane	0	0.01	0.01
Ethylbenzene	0.47	1.64	1.17
Toluene	0.23	0.79	0.56
Xylenes	0.73	2.28	1.55
Total HAPs	2.91	6.45	3.54

**REGULATORY APPLICABILITY AND GENERAL PERMIT ELIGIBILITY**

Due to this modification this facility is subject to the following rules and regulations:

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

This facility shall not cause the discharge of air pollutants which cause or contribute to an objectionable odor at any location occupied by the public. 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.

**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*

This facility is subject to 40CFR63 subpart HH which will be considered a substantive requirement and this permit action will be considered a modification.

**45CSR22** - *Air Quality Management Fee Program*

The facility is a minor source of air pollution as can be seen from Table 2, not subject to 45CSR30, but subject to 45CSR22. This station has a total reciprocating engine capacity of 825 hp which is less than 1,000 hp and this facility therefore is a 9M source and shall pay an annual fee of \$200. Cranberry is required to keep their Certificate to Operate current.

**40 CFR 63 Subpart HH - National Emission Standards for Hazardous Air Pollutants From Oil and Natural Gas Production Facilities**

On June 1, 2013 the DAQ took delegation of the area source provisions of 40 CFR 63, Subpart HH. This facility is a natural gas production facility that processes, upgrades, or stores natural gas prior to transmission. This facility is an area source of HAPs refer to the previous facility wide emissions table.

Pursuant to §63.760(b)(2), each glycol dehydration unit (GDU) located at an area source that meets the requirements under §63.760(a)(3) is defined as an affected facility under Subpart HH. The requirements for affected sources at area sources are given under §63.764(d). However, for a GDU, exemptions to these requirements are given under §63.764(e)(2) “actual average emissions of benzene from the glycol dehydration unit process vent to the atmosphere are less than 0.90 megagram [1 TPY] per year.”

As can be seen above in Table 1, the maximum PTE of benzene emissions from the GDU process vent (RSV-1) is 0.38 TPY. Therefore, the GDU is exempt from the Subpart HH requirements given under §63.764(d).

**TOXICITY OF NON-CRITERIA REGULATED POLLUTANTS**

The majority of non-criteria regulated pollutants fall under the definition of HAPs which, with some revision since, were 188 compounds identified under Section 112(b) of the Clean Air Act (CAA) as pollutants or groups of pollutants that EPA knows or suspects may cause cancer or other serious human health effects. HAPs are those pollutants that are specifically identified in section 112(b) of the Clean Air Act. To be listed as a HAP, EPA must find that the chemical in question may present a threat to human health and cause adverse environmental effects. If the facility has the potential to emit 10 tons per year of any pollutant on the HAP list, or any combination of pollutants on that list for a total of 25 tons per year, the facility is considered a major source of HAPs. Otherwise, it is considered an area source.

The following table lists each HAP’s carcinogenic risk (as based on analysis provided in the Integrated Risk Information System (IRIS)):

HAPs	Type	Known/Suspected Carcinogen	Classification
n-Hexane	VOC	No	Inadequate Data
Benzene	VOC	Yes	Category A - Known Human Carcinogen
Toluene	VOC	No	Inadequate Data
Xylene	VOC	No	Inadequate Data
Ethylbenzene	VOC	No	Category D - Not classifiable as to human carcinogenicity

All HAPs have other non-carcinogenic chronic and acute effects. These adverse health effects may be associated with a wide range of ambient concentrations and exposure times and are influenced by source-specific characteristics such as emission rates and local meteorological conditions. Health impacts are also dependent on multiple factors that affect variability in humans such as genetics, age, health status (e.g., the presence of pre-existing disease) and lifestyle. As stated previously, *there are no federal or state ambient air quality standards for these specific chemicals*. For a complete discussion of the known health effects of each compound refer to the IRIS database located at [www.epa.gov/iris](http://www.epa.gov/iris).

RECOMMENDATION TO DIRECTOR

The information provided in the permit application indicates compliance with all state and federal air quality requirements will be satisfied and this facility is expected to meet the requirements of General Permit G35-A. Therefore Cranberry's request to modify and operate Walen Compressor facility is recommended to the Director of Air Quality.



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David Keatley  
Permit Writer – NSR Permitting

January 19, 2016

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Date