west virginia department of environmental protection

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ENGINEERING EVALUATION / FACT SHEET

BACKGROUND INFORMATION

Application No.:	R13-3295
Plant ID No.:	109-00106
Applicant:	Cranberry Pipeline Corporation
Facility Name:	Tanner Station
Location:	Near Pineville, Wyoming County, West Virginia
NAICS Code:	211111
Application Type:	Modification
Received Date:	February 1, 2016
Engineer Assigned:	David Keatley
Fee Amount:	$3,500
Date Received:	February 2, 2016
Complete Date:	April 27, 2016
Due Date:	July 26, 2016
Applicant Ad Date:	February 24, 2016 and April 20, 2016
Newspaper:	Independent Herald
UTM's:	Easting: 459.406 Northing: 4,155.989 Zone: 17
Description:	Permit R13-3295 will supersede and replace permit registration G35-A105. The dehydration unit's emission have been estimated with an updated gas analysis. Additional de minimus tanks will be included in this permit.

DESCRIPTION OF PROCESS

This facility compresses and dehydrates natural gas. Natural gas enters the facility via pipeline. The natural gas flows through an inlet separator. The liquids from the inlet separators flow to one (1) 1,000-gallon pipeline liquids tank (T01). The gas from the inlet separator will be compressed to a higher pressure by three compressors. The compressors are powered by three (3) natural gas fired lean-burn four-stroke 825-bhp White Superior 6GTLB reciprocating internal combustion engines (RICE) CE-1, CE-2, and CE-3. The compressed gas will go to a separator. The liquids from the separator will flow to tank T01. The gas from the separator goes to a dehydration unit to reduce water vapor content. The compressed natural gas at a maximum rate of 13 mmscfd will flow

countercurrent to circulating triethylene glycol (TEG) in a contactor column. The natural gas from the contactor will exit the facility via gas sales pipeline. The rich TEG flows to the regenerator. The regenerator will be heated by one (1) 0.75-mmBtu/hr reboiler (RBV-1). The vapors from the regenerator will be emitted through the still vent (RSV-1). Liquids from the still vent flow to one (1) 1,000-gallon pipeline liquids tank.

The pipeline liquids will be trucked off site at a maximum rate of 153,300 gallons/year.

SITE INSPECTION

The permit writer performed a site visit on April 27, 2016 and the equipment listed in the application seemed to match what was at the facility. John Moneypenny from DAQ's Compliance and Enforcement Section performed a site visit on June 10, 2014 and the facility was deemed in compliance.

From Pineville travel on SR 16 until you reach CR 12/3 (Pinnacle Creek Road). Turn left onto CR 12/3 and travel for approximately 2.7 miles until your reach an unmarked gravel road on the left. Travel on the gravel road for approximately 3.5 miles and the facility will on the right.

ESTIMATE OF EMISSIONS BY REVIEWING ENGINEER

Emissions from the still vent be estimated using GRI-GLYCalc 4.0 using a gas analysis from this facility and a 20% buffer due to variability in the gas composition.

Table 1: Estimated Maximum Controlled New/Modified Emission Units PTE

Point ID	Unit ID	Emission Source	Pollutant	Maximum Hourly Emissions (lb/hr)	Maximum Annual Emissions (tpy)
5E	RSV-1	Still Vent	Volatile Organic Compounds	9.06	39.66
			Benzene	0.44	1.94
			Ethylbenzene	1.04	4.55
			Toluene	0.74	3.23
			Xylenes	1.23	5.37
			n-Hexane	0.04	0.18

Table 2: Proposed Estimated Maximum Controlled Facility Wide PTE

Pollutant	Facility Wide PTE (tons/year)
Nitrogen Oxides	48.20
Carbon Monoxide	84.26
Volatile Organic Compounds	59.03
Particulate Matter-10	0.80
Sulfur Dioxide	0.05
n-Hexane	0.27
Benzene	1.98
Toluene	3.26
Ethylbenzene	4.55
Xylenes	5.38
Total HAPs	20.88

REGULATORY APPLICABILITY

The following rules and regulations apply to the facility:

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)

The VOC PTE exceed the thresholds of 6 lb/hr and 10 tons/year and therefore this facility requires a permit. This permitting action required a modification because the facility had an increase of VOC above 6 lb/hr and 10 tons/year.

45CSR22 (Air Quality Management Fee Program)

This facility is a minor source as can be seen in Table 2 and not subject to 45CSR30 since the regulations this facility is subject to are exempt from the obligation to obtain a permit under 40 CFR part 70 or 40 CFR part 71. This facility has a maximum horsepower capacity

greater than 1,000 hp (2,503 hp) and is a 8D source and is required to pay a $500 annual fee. 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 vents is 1.94 TPY. Therefore, Cranberry will have to record important parameters to demonstrate the actual benzene is less than 1 tpy to demonstrate their GDU is exempt from the Subpart HH requirements given under §63.764(d).

TOXICITY OF NON-CRITERIA REGULATED POLLUTANTS

This section provides an analysis for those regulated pollutants that may be emitted from this facility and that are not classified as "criteria pollutants." Criteria pollutants are defined as Carbon Monoxide (CO), Lead (Pb), Oxides of Nitrogen (NO_x), Ozone, Particulate Matter (PM), Particulate Matter less than 10 microns (PM_{10}), Particulate Matter less than 2.5 microns ($PM_{2.5}$), and Sulfur Dioxide (SO_2). These pollutants have National Ambient Air Quality Standards (NAAQS) set for each that are designed to protect the public health and welfare. Other pollutants of concern, although designated as non-criteria and without national concentration standards, are regulated through various federal programs designed to limit their emissions and public exposure. These programs include federal source-specific Hazardous Air Pollutants (HAPs) standards promulgated under 40 CFR 61 (NESHAPS) and 40 CFR 63 (MACT). Any potential applicability to these programs were discussed above under REGULATORY APPLICABILITY.

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. Antero included the following HAPs as emitted in substantive amounts in their emissions estimate: Benzene, n-Hexane, Toluene, Xylene, and Ethylbenzene. The following table lists each HAP's carcinogenic risk (as based on analysis provided in the Integrated Risk Information System (IRIS)):

Potential HAPs - Carcinogenic Risk

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

All HAPs have other non-carcinogenic chronic and acute effects. These adverse health affects 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*.

RECOMMENDATION TO DIRECTOR

The information provided in this facility's permit application indicates that compliance with all state and federal air quality requirements will be achieved. It is recommended that Cranberry Pipeline Corporation should be granted a Rule 13 Modification permit for Tanner Station.

David Keatley

David Keatley
Permit Writer - NSR Permitting

April 27, 2016

Date