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ENGINEERING EVALUATION / FACT SHEET

BACKGROUND INFORMATION

Application No.:	R13-3181A
Plant ID No.:	107-00175
Applicant:	Concord Appalachian Transload Services, LLC (Concord)
Facility Name:	Parkersburg NGL Loading Facility
Location:	Parkersburg, Wood County
NAICS Code:	482111
Application Type:	Modification
Received Date:	September 3, 2015
Engineer Assigned:	Jerry Williams, P.E.
Fee Amount:	$1,000.00
Date Received:	September 3, 2015
Complete Date:	September 28, 2015
Due Date:	December 27, 2015
Applicant Ad Date:	September 22, 2015
Newspaper:	*The Parkersburg News and Sentinel*
UTM's:	Easting: 453.428 km Northing: 4,345.392 km Zone: 17
Description:	This permitting action proposes a change in truck loading RACT from NSPS annual leak testing to DOT leak testing protocol.

DESCRIPTION OF PROCESS

The following modification process description was taken from Permit Application R13-3181A:

The Concord Energy LLC Natural Gas Liquid Trans-loading Facility transfers natural gas liquids (NGL) and condensate from tanker trucks to awaiting rail cars via a portable rail car tower. There will be a maximum of 21 trans-loading operations per day. There is a portable emergency flare used to evacuate any residual NGL prior to repair on any damaged rail cars.

The NGL and condensate tanker trucks are connected to the rail cars via a 20 foot, two (2) inch diameter load line and a 20 foot, two (2) inch vapor recovery line. The transfer of the NGL and condensate from the tanker truck to the rail car is powered by hydraulic or mechanical pumps on the tanker trucks. Each tanker truck has the maximum volume of 9,200 gallons of NGL and/or condensate and requires one (1) hour for the complete transfer of the entire contents. Each rail car has a capacity of 30,000 gallons and is filled to a maximum of 90% of its total capacity each time it is loaded. It takes roughly three (3) NGL/condensate tanker trucks to fill the rail car to its 90% fill line. After each rail car is loaded to its 90% fill line, the operation is shut down, the tanker trailer valves are closed, the truck connection is broken, and the tank product line and vapor line are capped and sealed. A maximum of seven (7) rail cars will be filled with NGL/condensate each day, with three (3) tanker truck volume per rail car, for a maximum of 21 trans-loading operations per day.

The trans-loading operations are controlled by a vapor balance system. Each of the trucks and railcars are inspected per DOT leak test protocol. The overall reduction efficiency of the NGL trans-loading operation is 70%.

All rail cars are inspected prior to transfer of NGL/condensate. If a rail car is determined to be damaged or unfit for transfer of NGL/condensate, it is required to remove all residual NGL/condensate from the rail car prior to conducting repairs. It is assumed that there will be no more than five (5) residual NGL/condensate rail cars pending repairs. In order to facilitate the removal of the residual NGL/condensate, the rail car is connected to a portable flare. It will take a maximum of one (1) hour to remove residual NGL/condensate from the rail car. The quantity of vapors combusted by the flare is based on the assumption that the empty rail cars will contain no more than 5% residual NGL/condensate. It is also assumed that the flare will operate no more than six (6) hours per year. The portable flare has 98% destruction efficiency.

SITE INSPECTION

A site inspection was conducted by Douglas Hammell of the DAQ Enforcement Section on July 30, 2015. The facility was operating in compliance at that time.

Latitude: 39.2566
Longitude: -81.5398

Directions are as follows:

I-77 North to exit 173. Turn left onto Point Drive. Take the first left onto Camden Avenue. Travel 2.2 miles and turn right onto Buckeye Street. Proceed to 400 Buckeye Street.

ESTIMATE OF EMISSIONS BY REVIEWING ENGINEER

Emissions associated with this modification application consist of the emissions from a natural gas liquids loading rack and a portable flare used to facilitate the removal of residual NGL during rail car maintenance activities. During the loading of natural gas liquids, Concord will use tanker trucks with a vapor balance system that meet the DOT leak testing protocol which results in a 70% capture efficiency of VOC and HAP emissions.

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

Emission Unit	Pollutant	Control Device	Control Efficiency
Railcar Maintenance	Volatile Organic Compounds	Flare (1C)	98 %
	Total HAPs		98 %

The total facility PTE for the Parkersburg NGL Loading Facility is shown in the following table:

Pollutant	Maximum Pre-Modification Annual Facility Wide Emissions (tons/year)	Maximum Post-Modification Annual Facility Wide Emissions (tons/year)	Net Facility Wide Emissions Changes (tons/year)
Nitrogen Oxides	<0.01	<0.01	0
Carbon Monoxide	0.01	0.01	0
Volatile Organic Compounds	3.55	53.04	49.49
Particulate Matter-10/2.5	<0.01	<0.01	0
Sulfur Dioxide	<0.01	<0.01	0
Total HAPs	0.04	0.69	0.65

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

Concord Appalachian Transload Services, LLC – Parkersburg Facility (R13-3181A)

Emission Point ID#	Source	NO_x		CO		VOC		PM-10/2.5		SO_2		Formaldehyde		Total HAPs	
		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
1S	Truck Loading	0.00	0.00	0.00	0.00	13.80	51.74	0.00	0.00	0.00	0.00	0.00	0.00	0.18	0.68
1E	Portable Emergency Flare	0.52	0.01	2.85	0.01	149.70	0.45	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Total Point Source		**0.52**	**0.01**	**2.85**	**0.01**	**163.50**	**52.19**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.18**	**0.68**
Fugitive	Component Leaks	0.00	0.00	0.00	0.00	NA	0.85	0.00	0.00	0.00	0.00	0.00	0.00	NA	0.01
Total Fugitive		**0.00**	**0.00**	**0.00**	**0.00**	**0.19**	**0.85**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**<0.01**	**0.01**
Total Sitewide		**0.52**	**0.01**	**2.85**	**0.01**	**163.69**	**53.04**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.18**	**0.69**

REGULATORY APPLICABILITY

The following rules apply to this permitting action:

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.

Concord has one (1) flare associated with this application. The flare is subject to section 4, emission standards for incinerators. The facility will demonstrate compliance by maintaining records of the amount of natural gas consumed by the flare and the hours of operation. The facility will also monitor the flame of the flare 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 Concord's proposed modification results in an emissions increase of volatile organic compounds above the emissions threshold. In addition, the flare is subject to a substantive requirement under 45CSR6. Concord has published the required Class I legal advertisement notifying the public of their permit application, and paid the appropriate application fee.

45CSR21 (Regulation to Prevent and Control Air Pollution from the Emission of Volatile Organic Compounds)

It is the intent of this rule all facilities engaged in the manufacture, mixing, storage, use or application of VOCs control the emission of VOCs through the application of reasonably available control technology (RACT). This regulation applies to sources located in Putnam County, Kanawha County, Cabell County, Wayne County, and Wood County.

This facility is located in Wood County. Furthermore, 45CSR21 Section 40 applies to any facility that has aggregate maximum theoretical emissions of 90.7 megagrams (mg) (100 tons) or more of volatile organic compounds (VOCs) per calendar year in the absence of control devices; provided that this section 40 applies to any source or sources within such facility other than those sources subject to regulation under sections 11. through 39. VOC emissions from sources regulated under sections 11. through 39., but which fall below the applicability thresholds of these sections, and thus are not subject to the emissions control standards of these sections, shall be included in the determination of maximum theoretical emissions for a facility but shall not be subject to the requirements of this section 40. Emissions from sources listed in section 40.1.d. shall not be included in the determination of maximum theoretical emissions for a facility.

Because the uncontrolled emissions from the proposed facility exceed 100 tons/year of VOC emissions, Concord is subject to this section. Therefore, Concord is subject to all applicable requirements under Section 40, part of which is submitting a RACT (Reasonably Available Control Technology) plan.

Concord examined four (4) options as part of their RACT Plan submittal, which are outlined below:

Plan A – No controls
Without controls, potential VOC emissions would exceed major source thresholds. This is not a reasonable option since there would be no emission reduction at the facility

Plan B – Vapor Balance System
This option involves the installation of a vapor balance system but does not include leak testing. The vapor balance system is used to transfer or balance displaced vapors during the loading or unloading of NGLs. Loading lines will be equipped with fittings that are vapor tight and that automatically and immediately close upon disconnection therefore limiting VOC emissions Section 5.2 of the EPA AP-42 regulation states a collection efficiency of 70 percent should be assumed for trucks using a vapor balance system but not passing an annual leak test.

Plan C - Vapor balance system with annual leak testing
This option involves the installation of a vapor balance system and includes annual leak testing. While similar to Plan B, an increased collection efficiency of 98.7 percent can be assumed for railcars using a vapor balance system that passes the New Source Performance Standard (NSPS) level annual leak test cited under EPA AP-42 Section 5.2 (not more than a 3-inch water column pressure change in 5 minutes after pressurizing to 18 inches water followed by pulling a vacuum of 6 inches water).

Plan D – Full-time flare operation
This option involves the installation and operation of a full-time flare at the facility. In this option all vapors would be routed to the flare in lieu of the vapor balance system. This option would cause NOx and CO emissions, which are byproducts of the combustion process, to increase. Therefore, Concord is not pursuing Plan D.

The current permit requires Plan C. However, Concord does not have access to any railcars that pass NSPS level annual leak testing. Concord is dependent on the railcar operators. The railcars that are used pass leak testing per DOT standards. Therefore, Concord considers this DOT leak testing standard as RACT for this facility. There is no available scientific data on collection efficiencies for loading systems utilizing vapor balance and DOT leak testing. Due to the lack of data, a conservative collection efficiency of vapor balance (70%) will be utilized.

45CSR22 (Air Quality Management Fee Program)

This facility is a minor source and not subject to 45CSR30. Concord is required to keep their Certificate to Operate current.

The following rules do not apply to this permitting action:

40CFR60 Subpart 60.18 (General Control Device and Work Practice Requirements)

40CFR60 Subpart 60.18 contains requirements for control devices when they are used to comply with applicable subparts of 40CFR60 and 40CFR61. The flare that Concord has proposed is not used to comply with one of these rules. The purpose of the flare is to control emissions from the rail car maintenance activities that are routed to it. However, 40CFR60.18 regulates flares that are assisted, non-assisted, and steam assisted. The flare that Concord has proposed is a pressure assisted flare, therefore, they are not subject to this standard.

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 Parkersburg NGL Loading Station is located in Wood County, which is located in this metropolitan statistical area and is an attainment county for all pollutants. Therefore the Parkersburg NGL Loading Station is not subject to 45CSR19.

As shown in the following table, Concord is not a major source 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)**	**Parkersburg NGL Loading PTE (tpy)**	**45CSR14 or 45CSR19 Review Required?**
Carbon Monoxide	250	NA	0.01	No
Nitrogen Oxides	250	NA	<0.01	No
Sulfur Dioxide	250	NA	<0.01	No
Particulate Matter 2.5	250	NA	<0.01	No
Ozone (VOC)	250	NA	52.19	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) as seen in the table listed in the Regulatory Discussion Section.

SOURCE AGGREGATION

"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 Parkersburg NGL Loading Station is located in Wood County and will be operated by Concord.

1. The Parkersburg NGL Loading Station will operate under SIC code 4011 (Line Haul Railways). There are no surrounding operations owned by Concord that share the same two-digit major SIC code of 40. Therefore, the Parkersburg NGL Loading Station does not share the same SIC code as other operations.

2. "Contiguous or Adjacent" determinations are made on a case by case basis. These determinations are proximity based, and it is important to focus on this and whether or not it meets the common sense notion of a plant. The terms "contiguous" or "adjacent" are not defined by USEPA. Contiguous has a dictionary definition of being in actual contact; touching along a boundary or at a point. Adjacent has a dictionary definition of not distant; nearby; having a common endpoint or border.

   There are no Concord emission units located on contiguous or adjacent properties with the Parkersburg NGL Loading Station.

3. According to Concord they are not operating any other emission units, so there would be no 'common control' established.

Because the facilities do not share the same SIC code, are not considered to be on contiguous or adjacent properties, and are not under 'common control', the emissions from the Parkersburg NGL Loading Station should not be aggregated with other facilities in determining major source or PSD status.

MONITORING OF OPERATIONS

Concord will be required to perform the following monitoring:

- Monitor and record quantity of residual NGL/condensate consumed in the flare.
- Monitor the flare that is operated per manufacturer's specifications.
- Monitor opacity from the flare.
- Monitor the natural gas liquids truck loading to ensure that vapor return is used.
- Monitor the presence of the flare pilot flame with a thermocouple or equivalent.

Concord will be required to perform the following recordkeeping:

- Maintain records of the hours of operation for the flare.
- Maintain records of the flare design evaluation.
- 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.
- The records shall be maintained on site or in a readily available off-site location maintained by Concord for a period of five (5) years.

RECOMMENDATION TO DIRECTOR

The information provided in the modification permit application indicates Concord's Parkersburg NGL Loading Station meets all the requirements of applicable regulations. Therefore, impact on the surrounding area should be minimized and it is recommended that the Wood County location should be granted a 45CSR13 modification permit for this proposed permitting action.

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Jerry Williams, P.E.
Engineer

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Date