West Virginia Department of Environmental Protection
Division of Air Quality

Fact Sheet

For Final Significant Modification Permitting Action Under 45CSR30 and Title V of the Clean Air Act

This Fact Sheet serves to address the changes specific to this Significant Modification, and shall be considered a supplement to the Fact Sheet corresponding with the Title V operating permit issued on March 29, 2007.

Permit Number: **R30-04100013-2007**
Application Received: **December 22, 2009**
Plant Identification Number: **03-54-041-00013**
Permittee: **Dominion Transmission, Inc.**
Facility Name: **Lightburn Compressor Station**
Mailing Address: **445 West Main Street, Clarksburg, West Virginia 26301**

Permit Action Number: *SM02* Revised: *July 12, 2010*

Physical Location:	Jane Lew, Lewis County, West Virginia
UTM Coordinates:	547.4259 km Easting • 4331.2792 km Northing • Zone 17
Directions:	From Charleston take I-79N to Jane Lew. Take Exit 105 (Jane Lew Exit) and make a left on County Road 7 (Berkin-Jane Lew Road). Stay on CR-7 until it intersects Route 19 (Main Avenue). Make a right on Route 19 and make the immediate left on Broad Run Road. Stay on Broad Run Road until it intersects County Road 1 (Old Mill Road/Fork River Road/Jacksons Mill Road) and make a right. Stay on CR 1 for about 500 yards and Lightburn Station is on the right.

Facility Description

The permittee has proposed to construct a new natural gas extraction plant, denoted as the Lightburn Extraction Plant (LEP). The proposed LEP will be located adjacent to the existing Lightburn Compressor Station (LCS). The proposed LEP and the existing LCS will be located on contiguous property and will be under control of the same person. However, the plants do not belong to the same industrial grouping (SIC). The LCS operates under SIC Code 4922 (Pipeline Transmission of Natural Gas), and the LEP operates under SIC Code 1321 (Natural Gas Liquid Extraction).

The natural gas capacity of the LEP is 44 MMSCFD, and the plant is estimated to produce 1,916 barrels/day of natural gas liquids. The LEP Plant will receive natural gas from the existing Kennedy Compressor Station and Wymer Junction. The proposed equipment at the LEP will include:

1. **Two (2) Caterpillar reciprocating internal combustion engines to power the compressors**. The engines will be Caterpillar G3612 rated at 3,550 hp. Each engine will be equipped with catalytic converters to reduce emissions of CO, VOC, and formaldehyde.

2. **A molecular sieve dehydration unit for water removal**. The molecular sieves are adsorbents made up of aluminosilicate crystalline polymers (zeolite), which remove polar components such as water, methanol, CO_2, and H_2S. The gas will enter an adsorption tower filled with adsorbents. The wet gas will pass from top to bottom through the tower, and the water in the gas will be retained on the adsorbent particles. Dry gas will exit at the bottom of tower to be sent to the next portion of the extraction process (Turbo Expander/De-ethanizer). There will be two (2) adsorption towers. One adsorption tower will be online removing water from the gas stream, while the other is being regenerated to remove the water from the adsorbents. The bed is regenerated be passing heated dry gas from the Regeneration Gas Heater through the molecular sieve, heating the sieve to around 450°F to 500°F in order to drive the water from the adsorbent. The hot regeneration gas is then cooled, compressed and injected back into the wet gas inlet. The Regeneration Gas Heater is a 4.0 MMBtu/hr natural gas fired heater. The molecular sieve dehydration unit is a closed system with no vents to the atmosphere, with the exception of the combustion gases from the Regeneration Gas Heater, which are negligible.

3. **Cryogenic Turbo Expander**. The dry gas from the Molecular Sieve Dehydration Unit will enter the Cryogenic Turbo Expander Process for recovery of the Natural Gas Liquids (NGL). The gas will be cooled in a heat exchanger, which partially condenses the gas. The gas/liquid mixture then enters a Gas/Liquid Separator, where it will be separated into a gas and liquid stream. The gas stream from the separator will enter the Turbo-Expander where it undergoes expansion from a pressure drop that rapidly lowers the temperature of the gas stream even further as it enters the De-ethanizer. The overhead gas product from the De-ethanizer will be routed through a heat exchanger, where it will be warmed, then compressed with new compressors powered by new natural gas fired engines, then sent to the LCS. The liquid stream from the Gas/Liquid Separator will undergo a throttling expansion to drop the pressure and temperature as it enters the De-ethanizer. The bottom liquid product from the De-ethanizer will be warmed in the heat exchanger, and is stored in NGL storage tanks. The components of the Cryogenic Turbo Expander Process are closed units with no vents to the atmosphere.

4. **Four (4) NGL Storage Tanks**. NGL will be stored in one of four NGL storage tanks. The storage tanks are horizontal pressure tanks that will operate at a pressure around 200 psig. Each tank has a diameter of 10.75 feet and a length of 80 feet, with a nominal capacity of 60,000 gallons. These tanks will be operated as closed systems and will not vent to the atmosphere under normal storage conditions or during routine loading and withdrawal. The tanks are equipped with pressure relief devices that will open only in the event of an emergency or during non-routine maintenance to relieve excess gas. The pressure relief devices will be vented to the Emergency and Maintenance Flare.

5. **Two (2) Truck Loading Stations**. From the storage tanks, the NGL's will be loaded into trucks via bottom fill at a maximum pump rate of 400 gallon per minute. The VOC vapors associated with the loading of NGL into the trucks will be returned back to the storage vessel and recovered as NGL. The only venting of these units will be during emergency situation or non-routine maintenance, where the emissions will be vented to the Emergency and Maintenance Flare. There may be negligible VOC losses from the loading operation during the disconnection of the unloading hoses to the trucks. These losses are assumed insignificant.

6. **Emergency and Maintenance Flare**. The permittee will install a flare to control VOC emissions from emergency venting of certain process equipment and during various non-routine maintenance activities. The flare pilot will be operated continuously. Worst case non-routine emissions would occur from the draining of Propane Absorber.

7. **Firewater Pump Diesel Engines**. The permittee will install two (2) firewater pumps to provide sufficient pressure to meet the hydraulic design requirements of the fire sprinkler system. Each pump has a rated capacity of 259 hp at 2,800 rpm. Each fire pump will have its own 290 gallon diesel fuel tank.

8. **Methanol Storage Tank**. The permittee will install a 500 gallon methanol storage tank for the de-icing of lines in the colder months.

Emissions Summary

The following table outlines the changes in potential emissions (tons per year) based upon prior permit modifications, as well as this modification (i.e., SM02). According to Attachment S of the application, the facility's potential emissions will change by the quantities given in the "ΔSM02" column. All other data was obtained from the Fact Sheets for each permitting action.

Pollutant	Renewal	ΔMM01	ΔSM01	PTE prior to SM02	ΔSM02	PTE Proposed SM02
$PM_{2.5}$	--- [(a)]	0	+0.01	≥ 0.01	+2.6	≥ 2.61
PM_{10}	9.42	0	+0.05	9.47	+2.8	12.27
TSP	9.42	0	+0.05 [(b)]	9.47	+4.1	13.57
SO_2	0.96	0	-0.01	0.95	+0.1	1.05
CO	1,067.69	0	+0.49	1,068.18	+15.9	1,084.08
NO_x	2,462.76	0	-3.72	2,459.04	+36.7	2,495.74
VOC (excluding fugitives)	513.46	0	---	513.46	+20.7	534.16
Formaldehyde	44.46	0	-1.48×10^{-3}	44.46	+7.01	51.47
Acrolein	---	0	---	0	+1.20	1.20
Acetaldehyde	6.26	0	---	6.26	+1.96	8.22

(a) The row entry "---" denotes that no information for that pollutant was given in the Fact Sheet.
(b) No information was given for TSP in the Fact Sheet for SM01. However, an increase of 0.05 tpy was mentioned for PM_{10} in that Fact Sheet. Since PM_{10} is a component of TSP, the TSP potential had to increase by at least the amount that PM_{10} increased.

Title V Program Applicability Basis

With the proposed changes associated with this modification, this facility maintains the potential to emit 1,084.08 tons per year of Carbon Monoxide; 2,495.74 tons per year of Nitrogen Oxides; 534.16 tons per year of Volatile Organic Compounds; 51.47 tons per year of Formaldehyde; and 69.94 tons per year of aggregate Hazardous Air Pollutants. Due to this facility's potential to emit over 100 tons per year of criteria pollutant, over 10 tons per year of a single HAP, and over 25 tons per year of aggregate HAPs, Dominion Tranmission's Lightburn Compressor Station is required to have an operating permit pursuant to Title V of the Federal Clean Air Act as amended and 45CSR30.

Legal and Factual Basis for Permit Conditions

The State and Federally-enforceable conditions of the Title V Operating Permits are based upon the requirements of the State of West Virginia Operating Permit Rule 45CSR30 for the purposes of Title V of the Federal Clean Air Act and the underlying applicable requirements in other state and federal rules.

The modification to this facility has been found to be subject to the following applicable rules:

Federal and State:	45CSR2	PM from Combustion of Fuel in Indirect Heat Exchangers

	45CSR6	Combustion of Refuse
	45CSR13	Construction permit requirements
	45CSR16	Standards of Performance for New Stationary Sources
	45CSR30	Operating permit requirements
	45CSR34	NESHAPs MACT
	45CSR42	Greenhouse Gas Emissions Inventory Program
	40 C.F.R. 60 Subpart KKK	NSPS for Equipment Leaks of VOC from Onshore Natural Gas Processing
	40 C.F.R. 60 Subpart IIII	NSPS for Stationary Compression Ignition IC Engines
	40 C.F.R. 60 Subpart JJJJ	NSPS for Stationary Spark Ignition IC Engines
	40 C.F.R. 63, Subpart ZZZZ	NESHAPs MACT for Stationary RICE
State Only:	45CSR4	Non objectionable odors.

Each State and Federally-enforceable condition of the draft Title V Operating Permit references the specific relevant requirements of 45CSR30 or the applicable requirement upon which it is based. Any condition of the draft Title V permit that is enforceable by the State but is not Federally-enforceable is identified in the draft Title V permit as such.

The Secretary's authority to require standards under 40 C.F.R. Part 60 (NSPS), 40 C.F.R. Part 61 (NESHAPs), and 40 C.F.R. Part 63 (NESHAPs MACT) is provided in West Virginia Code §§ 22-5-1 *et seq.*, 45CSR16, 45CSR34 and 45CSR30.

Active Permits/Consent Orders

Permit or Consent Order Number	Date of Issuance	Permit Determinations or Amendments That Affect the Permit *(if any)*
R13-2823	April 13, 2010	

Conditions from this facility's Rule 13 permit(s) governing construction-related specifications and timing requirements will not be included in the Title V Operating Permit but will remain independently enforceable under the applicable Rule 13 permit(s). All other conditions from this facility's Rule 13 permit(s) governing the source's operation and compliance have been incorporated into this Title V permit in accordance with the "General Requirement Comparison Table B," which may be downloaded from DAQ's website.

Determinations and Justifications

Sections 6 through 12 of the proposed permit are new sections written for this significant modification. New requirements or revisions are typically underlined and written in blue font in a revised permit. However, in this case, considering that all requirements in these sections are new, and that these seven new sections account for over forty additional pages in the permit, these new sections 6 through 12 are written in black font without underlining. In other sections (e.g., subsection 1.1. and condition 3.1.3.) where new information is either added or revised, the normal practice of writing in blue underlined font is used.

I. **45CSR2 – *To Prevent and Control Particulate Air Pollution from Combustion of Fuel in Indirect Heat Exchangers***. The Regenerator Heater (Em. Unit ID: 010-01) is subject to the 10% opacity limit (6-minute block average) in 45CSR§2-3.1., which is set forth as permit condition 8.1.1. The associated test method from applicable requirement 45CSR§2-3.2. is given in condition 8.1.2., and specifies that either Method 9 or COMS may be employed to demonstrate compliance with the opacity limit. Note that 45CSR§2-3.2. prescribes only the *test method* and not the frequency of such testing. These two 45CSR2 requirements are also required by permit R13-2823, conditions 6.1.1. and 6.1.2.

There is an associated monitoring condition 8.2.1. required by R13-2823 (condition 6.2.1.), that does not stem from 45CSR2, and it specifies the *frequency* of Method 9 testing. That frequency is "At such reasonable times as the Secretary may designate…." So while there is an opacity limit, and it must be tested using prescribed means, the testing frequency is when the Secretary (practically, the Director) requires it.

The Regenerator Heater is 4.0 MMBtu/hr design heat input; therefore, it meets the criterion for the exemption at 45CSR§2-11.1. (i.e., less than 10 MMBtu/hr heat input). This exemption dispenses with the requirements of sections 4 (mass limit), 5 (fugitive), 6 (registration), 8 (testing & MRR), and 9 (SSM) of 45CSR2 for such emission units. In particular, the Method 9 testing in 45CSR§2-8.1.a. is specifically for demonstrating compliance with limits in 45CSR§2-3. Similarly, the monitoring in 45CSR§2-8.2.a. is for demonstrating compliance with section 3. Based solely upon these 45CSR2 testing/monitoring requirements and the afforded exemption, it could be determined that no Method 9 testing and monitoring are required to demonstrate compliance with the opacity limit. However, since permit R13-2823 (6.2.1.) independently specifies a frequency of Method 9 testing (i.e., "At such reasonable times as the Secretary may designate"), the testing/monitoring of this underlying requirement should not be deemed non-applicable regardless if 45CSR2 in itself would relieve the permittee of such testing/monitoring.

In summary, since the Regenerator Heater is relatively small MDHI, and combusts only natural gas, no additional language using authority of 45CSR30 will be added for prescribing monitoring frequency or to require a specific time when the permittee must perform the Method 9 testing. The underlying permit requirement "At such reasonable times as the Secretary may designate" is sufficient for this emission unit at this time.

II. **45CSR6 – *To Prevent and Control Air Pollution from Combustion of Refuse***.

a. **General**. Conditions 3.1.1. and 3.1.2. were revised to reflect the most recent language set forth in the rule.

b. **Emergency and Maintenance Flare (FLARE3)**.

<u>*Particulate Matter Mass Rate Limit*</u>
The permittee has proposed to install an emergency and maintenance flare (FLARE3). This rule defines "Incineration" as "the destruction of combustible refuse by burning in a furnace designed for that purpose. For the purposes of this rule, the destruction of any combustible liquid or gaseous material by burning in a flare or flare stack, thermal oxidizer or thermal catalytic oxidizer stack shall be considered incineration." The purpose of this flare is to destroy VOC emissions through incineration. Therefore, it meets this definition at 45CSR§6-2.7.

This flare is subject to the particulate matter mass rate limit set forth at 45CSR§6-4.1. The flare's proposed inlet flow is 9,137 lb/hr, according to Table 8 of Attachment N in the application. Thus, the factor F = 5.43, and the PM limit is computed as:

$$\text{Emissions (lb/hr)} = F \times \text{Incinerator Capacity (tons/hr)}$$
$$\text{Emissions (lb/hr)} = 5.43 \times [(9{,}137 \text{ lb/hr}) \times (1 \text{ ton}/2{,}000 \text{ lb})]$$
$$\text{Emissions (lb/hr)} = 24.81$$

According to application Attachment J "Emission Points Data Summary Sheet", the maximum potential controlled PM emission rate is 0.0001 lb/hr. This emission rate is significantly less than the allowable 24.81 lb/hr under 45CSR§6-4.1.; therefore, the permittee will meet this requirement and no monitoring is warranted. Refer to Title V condition 12.1.6.

Opacity Limit & Exceptions

The flare is subject to the 20% opacity limitation in 45CSR§6-4.3. Typically, the incineration of most gases produce minimal visible emissions. The flare is also subject to a "no visible emissions" requirement (except no more than 5 minutes during any 2 consecutive hours), which is condition 10.1.4.b. of R13-2823. The underlying permit requires Method 22 testing (10.3.1.) and recordkeeping (10.4.5.) to demonstrate compliance with the no VE requirement. Clearly, the 20% opacity limit of 45CSR6 is streamlined by the more stringent "no VE" requirement of R13-2823, 10.1.4.b. However, what must be scrutinized is the NSR permit language, "except for periods not to exceed a total of 5 minutes during any 2 consecutive hours". Here, the underlying permit requirement allows visible emissions for up to five minutes without an accompanying opacity percentage. The exception to the 20% opacity limit in 45CSR§6-4.3. must also be evaluated for a thorough analysis. To compare these requirements, it is needful to view them with their respective time periods and any other specific requirements.

Table 6A

Applicable Requirement for FLARE3	Opacity Limit	Exception to Opacity Limit
Permit R13-2823, 10.1.4.b. "Flare shall be designed for and operated with no visible emissions, except for periods not to exceed a total of 5 minutes during any 2 consecutive hours."	0%	Up to a total of 5 minutes during any 2 consecutive hours.
45CSR§6-4.3. "Emission of Visible Particulate Matter. -- No person shall cause or allow emission of smoke into the atmosphere from any incinerator which is twenty percent (20%) opacity or greater."	20%	None, except 45CSR§6-4.4. There is no total time or block average specified in the rule.
45CSR§6-4.4. "The provisions of subsection 4.3 shall not apply to smoke which is less than forty percent (40%) opacity, for a period or periods aggregating no more than eight (8) minutes per start-up, or six (6) minutes in any sixty (60)-minute period for stoking operations."	40%	The 20% limit may be exceeded, but only up to 40% for no more than a total of 8 minutes per start-up.

Since there is no block average or total time allowance specified in 45CSR§6-4.3. for the 20% opacity limit, any instantaneous exceedance of 20% opacity while under normal operation would violate 45CSR§6-4.3. There is, however, the increased limit of 40% under 45CSR§6-4.4. for a period or periods aggregating up to 8 minutes per start-up. Thus, the 40% limit does not apply during normal operations, but only during a start-up.

Thus, this becomes an uncommon case where the first requirement streamlines the second, but the second requirement serves as a limit to the first requirement. Then, there is a special case of a start-up, in which the opacity may range from 20-40%. But under this special case of start-up, the aggregate time limit of the NSR permit is more stringent (5-minutes vs. 8-minutes) than the exception of 45CSR§6-4.4. So for the majority of the time under normal operations, the no visible emissions requirement of R13-2823, 10.1.4.b., streamlines the less stringent 20% opacity limit of 45CSR§6-4.3. However, during the 5-minute periods that the NSR permit allows visible emissions, the opacity of such emissions is limited to 20% under normal operations, and 40% for a startup. Refer to conditions 12.1.7. and 12.1.8. Note that the rule language "or six (6) minutes in

any sixty (60)-minute period for stoking operations" is removed from condition 12.1.8. since this is not a stoking operation.

III. **45CSR13 – *Construction Permits* – Permit No. R13-2823.** This NSR permit was written for the construction of the proposed new natural gas extraction plant, denoted as the Lightburn Extraction Plant (LEP). The following table lists all of the source-specific and substantial requirements of the underlying permit; denotes a corresponding proposed Title V permit condition; and provides any required discussion to properly incorporate the requirement into the Title V permit. Note that there may be other requirements in the permit that are associated with these conditions (e.g., additional MRR). Such conditions are discussed in Section IV (i.e., 45CSR30 – *Title V Operating Permits*) of this Fact Sheet.

Throughout the table the section number of the NSR permit with a listing of affected emission units are given to clarify which equipment are subject to the conditions of that particular section. It should also be noted that the NSR permit contains two stand-alone sections for requirements of NSPS Subparts IIII and JJJJ. While this approach could have been taken in the proposed Title V modification, this writer incorporated the NSPS requirements into Title V Section 7.0 for the engines, and specified the applicability of each requirement by writing the appropriate emission units IDs with the citation of authority.

Table 13A

NSR Permit Condition	Title V Permit Condition	Discussion
NSR Permit Section 4.0 – General Source Specific Requirements		
4.1.1.	3.4.1.	The citation has been added.
4.1.2.	6.1.1.	Direct insertion into Title V.
4.1.3.	6.1.2.	Changed Section 1.0 to 1.1. Also, the language "(for Extraction Plant only)" was added to clarify that this condition only applies to equipment permitted under R13-2823, and does not apply to the compressor station equipment.
4.1.4.	6.4.1.	Changed Section 1.0 to 1.1. Also, the language "(for Extraction Plant only)" was added to clarify that this condition only applies to equipment permitted under R13-2823, and does not apply to the compressor station equipment.
NSR Permit Section 5.0 – Engines (Em. Unit IDs: 006-01, 006-02, 007-01, 007-02)		
5.1.1.	7.1.1.	Direct insertion into Title V.
5.1.2.	7.1.2.	Direct insertion into Title V.
5.1.3.	7.1.3.	Direct insertion into Title V.
5.1.4.	7.1.4.	Direct insertion into Title V.
5.2.	7.4.1.	Changed condition numbers in first sentence in order to work with Title V condition numbering.
NSR Permit Section 6.0 – Regenerator Heater (Em. Unit ID: 010-01)		
6.1.1.	8.1.1.	Direct insertion into Title V.
6.1.2.	8.1.2.	Direct insertion into Title V.
6.1.3.	8.1.3.	Direct insertion into Title V.
6.1.4.	8.1.4.	Direct insertion into Title V.
6.2.1.	8.2.1.	Changed condition numbers in first sentence in order to work with Title V condition numbering.
NSR Permit Section 7.0 – Tanks (Em. Unit IDs: 008-01, 008-02, 008-03, 008-04)		
7.1.1.	9.1.1.	Direct insertion into Title V.
7.2.1.	9.4.1.	Changed condition number in first sentence in order to work with Title V condition numbering.
NSR Permit Section 8.0 – Non-Fractionating Processing Plant		
8.1.1.	10.1.1.	Direct insertion into Title V.
8.1.2.	10.1.2.	The word "following" was removed from the last sentence because the

NSR Permit Condition	Title V Permit Condition	Discussion
		condition number referenced does not follow this condition.
8.2.1.	10.4.1.	Changed condition number in first sentence in order to work with Title V condition numbering.
NSR Permit Section 9.0 – Natural Gas Liquid Loading Rack (Em. Unit IDs: 009-01, 009-02)		
9.1.1.	11.1.1.	Direct insertion into Title V.
9.1.2.	11.1.2.	Direct insertion into Title V.
9.2.1.	11.4.1.	Changed condition number in first sentence in order to work with Title V condition numbering.
NSR Permit Section 10.0 – Flare Control Device (Em. Pt. ID: FLARE3)		
10.1.1.	12.1.1.	Direct insertion into Title V.
10.1.2.	12.1.2.	Direct insertion into Title V.
10.1.3.	12.1.3.	Changed condition number in first sentence in order to work with Title V condition numbering.
10.1.4.	12.1.4.	Under 12.1.4.e., changed condition number in order to work with Title V condition numbering. The applicable requirements of 40 C.F.R. §60.18 were incorporated within this condition since it is the underlying federal requirements for control devices, and in particular, for flares. These general federal requirements are further discussed in Section VII of this Fact Sheet.
10.1.5.	12.1.5.	Changed condition numbers in order to work with Title V condition numbering.
10.2.1.	12.2.1.	Changed condition number in order to work with Title V condition numbering.
10.2.2.	12.2.2.	Direct insertion into Title V.
10.3.1.	12.3.1.	Changed condition numbers in order to work with Title V condition numbering. Added language "R13-2823" to specify that testing deadline is with reference to the issuance of the underlying permit – not the Title V also.
10.3.2.	12.3.2.	Changed condition number in order to work with Title V condition numbering.
10.3.3.	12.3.3.	Changed condition number in order to work with Title V condition numbering.
10.4.1.	12.4.1.	Changed condition numbers in order to work with Title V condition numbering.
10.4.2.	12.4.2.	Changed condition numbers in order to work with Title V condition numbering.
10.4.3.	12.4.3.	One condition number reference within the language was corrected. The underlying requirement states: "For the purpose of demonstrating compliance with the requirements set forth in sections 10.1.4 and 10.3.3., the permittee shall maintain records of testing conducted in accordance with 10.3.3." The reference to 10.1.4 is incorrect because the HAP testing requirement 10.3.3. states that its purpose is to demonstrate compliance with HAP-related condition 10.1.3. If the purpose of 10.4.3. is to demonstrate compliance with 10.3.3., and 10.3.3. serves to demonstrate compliance with 10.1.3., then 10.4.3. serves to demonstrate compliance with 10.1.3. The reference to 10.1.4. in the underlying permit should be changed to 10.1.3. The change is made in the Title V permit, and the numbers are revised to work with the Title V section number 12.
10.4.4.	12.4.4.	Changed condition numbers in order to work with Title V condition numbering.
10.4.5.	12.4.5.	Changed condition numbers in order to work with Title V condition numbering.
10.4.6.	12.4.6.	Changed condition number in order to work with Title V condition numbering.
10.4.8.	12.4.7.	Note that there is no condition 10.4.7. in the NSR permit. Changed subsection

NSR Permit Condition	Title V Permit Condition	Discussion
		number in order to work with Title V condition numbering.
10.5.1.	12.5.1.	Changed condition number in order to work with Title V condition numbering.
10.5.2.	12.5.2.	Direct insertion into Title V.
10.5.3.	12.5.3.	Changed condition number in order to work with Title V condition numbering.
NSR Permit Section 11.0 – 40 C.F.R. 60 Subpart IIII Requirements (Em. Unit IDs: 007-01, 007-02)		
11.1.1.	7.1.5.	Direct insertion into Title V.
11.1.2.	7.1.6.	In the first paragraph "a." removed the language "Class II General" and changed the word "Permit" to lower-case. These changes are required since the underlying permit is not a Class II General Permit and remaining language "Permit" is not a proper noun.
11.1.3.	7.1.7.	Added language "40 C.F.R. 60 Subpart IIII" in place of "this subpart". The underlying permit did not specify the limits from Table 4 of Subpart IIII. Since each engine is 259-hp (cf. R13-2823, 5.1.3.), the applicable range within the table is 175 to 300-hp. The applicable limits are set out in the proposed Title V condition. Note that there is no CO limit for the 2009+ engines, which explains why this cell is blank.
11.1.4.	7.1.8.	Direct insertion into Title V.
11.1.5.	7.1.9.	Added language "40 C.F.R. 60 Subpart IIII" in place of "this subpart".
11.1.6.	7.1.10.	Added language "40 C.F.R. 60 Subpart IIII" in place of "this subpart".
11.1.7.	7.1.11.	Added language "40 C.F.R. 60 Subpart IIII" in place of "this subpart". Replaced language "this section" with "40 C.F.R. §60.4207".
11.1.8.	7.1.12.	Replaced language "this section" with "40 C.F.R. §60.4207".
11.1.9.	7.1.13.	Replaced language "this section" with "40 C.F.R. §60.4208".
11.1.10.	7.1.14.	Direct insertion into Title V.
11.1.11.	7.1.15.	Replaced language "this section" with "40 C.F.R. §60.4209".
11.1.12.	7.1.16.	Direct insertion into Title V.
11.1.13.	7.1.17.	Direct insertion into Title V.
11.1.14.	7.1.18.	Replaced language "this subpart" with "40 C.F.R. 60 Subpart IIII".
11.1.15.	7.1.19.	Replaced language "this subpart" with "40 C.F.R. 60 Subpart IIII".
11.1.16.	7.1.20.	In first paragraph replaced language "this section" with "40 C.F.R. §60.4211". In 7.1.20.(2), replaced language "this section" with "40 C.F.R. §60.4211". The writer of the underlying permit did not include the language of 40 C.F.R. §60.4211(d)(3) since it applies to non-emergency engines, and engines 007-01 and 007-02 are fire pump engines (i.e., emergency engines). The language "paragraphs (d)(1) through (3)" has been changed to "paragraphs (d)(1) through (2)" in the opening paragraph of the condition to reflect the non-applicability of (d)(3).
11.1.17.	7.1.21.	Direct insertion into Title V.
11.2.1.	3.3.1.	This requirement is essentially covered by Title V facility-wide condition 3.3.1. It would be redundant to write this condition in permit subsection 7.3. Thus, the underlying requirement will be a separate citation for condition 3.3.1. with the applicability of the underlying requirement limited to emission units 007-01 and 007-02. The reason a second citation is added is because simply adding R13-2823, 11.2.1. with 007-01 and 007-02 in parenthesis to the existing citation could be misconstrued to limit the applicability of the entire condition to only these two engines.
11.2.2.	3.3.1.c.	Same rationale as for 11.2.1. (Title V 3.3.1.).
11.2.3.	7.3.1.	Direct insertion into Title V.

NSR Permit Condition	Title V Permit Condition	Discussion
11.2.4.	7.3.2.	Replaced language "this subpart" with "40 C.F.R. 60 Subpart IIII". Replaced language "this section" with "40 C.F.R. §60.4212".
11.2.5.	7.3.3.	Direct insertion into Title V.
11.2.6.	7.3.4.	Direct insertion into Title V.
11.2.7.	7.3.5.	Replaced language "this subpart" with "40 C.F.R. 60 Subpart IIII" in the last paragraph.
11.2.8.	7.3.6.	Replaced language "this subpart" with "40 C.F.R. 60 Subpart IIII".
11.2.9.	7.3.7.	Direct insertion into Title V.
11.2.10.	7.3.8.	Replaced language "this section" with "40 C.F.R. §60.4213".
11.3.1.	7.4.2.	This condition is in the NSPS Subpart IIII section 11.0 of the underlying permit, but its purpose is for demonstrating compliance with the maximum throughput limitation in Title V condition 7.1.5. Condition 7.1.5. applies to emission units 007-01 and 007-02 alone; thus, this recordkeeping applies only to these emission units and they are added to the citation of authority to specify its applicability. The language "(condition 7.1.5.)" is also added to 7.4.2.a. in order to refer to the limitation to which this recordkeeping corresponds.
11.3.2.	3.4.1.	This requirement is essentially covered by Title V facility-wide condition 3.4.1. It would be redundant to write this condition in permit subsection 7.4. Thus, the underlying requirement will be a separate citation for condition 3.4.1. with the applicability of the underlying requirement limited to emission units 007-01 and 007-02. The reason a second citation is added is because simply adding R13-2823, 11.3.2. with 007-01 and 007-02 in parenthesis to the existing citation could be misconstrued to limit the applicability of the entire condition to only these two engines.
11.3.3.	7.4.3.	Direct insertion into Title V.
11.3.4.	7.4.4.	Direct insertion into Title V.
11.3.5.	7.4.5.	Direct insertion into Title V. Changed section 11.2 (in underlying permit) to 7.3. (corresponding Title V section).
11.3.6.	3.5.1.	A separate citation of authority for this underlying permit requirement has been added to the existing Title V condition.
11.3.7.	7.4.6.	Replaced language "this subpart" with "40 C.F.R. 60 Subpart IIII".
11.3.8.	7.4.7.	Direct insertion into Title V.
NSR Permit Section 12.0 – 40 C.F.R. 60 Subpart JJJJ Requirements (Em. Unit IDs: 006-01, 006-02)		
12.1.1.	7.1.22.	The language "this subpart" is replaced with "40 C.F.R. 60 Subpart JJJJ" in both the first and second sentences of the condition.
12.1.2.	None	See Non-applicability Determination section of this Fact Sheet.
12.1.3.	7.1.23.	The language "this subpart" is replaced with "40 C.F.R. 60 Subpart JJJJ".
12.2.1.	7.1.24.	The language "this subpart" is replaced with "40 C.F.R. 60 Subpart JJJJ" twice. The underlying permit requirement did not specify the limits. These are added for clarification. Note that the language in the first column of the table does not refer to lean burn LPG since the engines 006-01 and 006-02 combust natural gas. Also, the exemption is up to 1,350-hp. Since the engines are 3,550-hp each, this exemption is not applicable.
12.2.2.	7.1.25.	Replaced language "this section" with "40 C.F.R. §60.4233".
12.2.3.	7.1.26.	Direct insertion into Title V.
12.3.1.	7.1.27.	Direct insertion into Title V.
12.3.2.	7.1.28.	Replaced language "this section" with "40 C.F.R. §60.4236".
12.4.1.	7.1.29.	Replaced "this section" with "40 C.F.R. §60.4243" in paragraphs a. and b. of the condition.

NSR Permit Condition	Title V Permit Condition	Discussion
		In the first paragraph, edited the language "you must demonstrate compliance according to one of the methods specified in paragraphs (b)(1) and (2) of this section" to read "you must demonstrate compliance according to one of the methods specified in paragraphs a. and b. of this permit condition." This was done after contrasting the outline numbering of the rule with that in the underlying permit. In paragraph b., edited the language "and according to paragraphs (b)(2)(i) and (ii) of 40 C.F.R. §60.4243" to read "and according to paragraphs b.1. and 2. of this permit condition." The editing described above does not alter any requirement, but serves only to make the condition outlining and internal referencing agree with the requirement outline and internal referencing within the rule.
12.4.2.	7.1.30.	Direct insertion into Title V.
12.4.3.	7.1.31.	Direct insertion into Title V.
12.5.1.	7.3.9.	In first paragraph replaced language "this section" with "this permit condition". In paragraph "a." replaced language "this subpart" with "40 C.F.R. 60 Subpart JJJJ". In paragraph "c." replaced language "this section" with "40 C.F.R. §60.4244". In paragraph "d." replaced language "this section" with "40 C.F.R. §60.4244". In paragraph "e." replaced language "this section" with "40 C.F.R. §60.4244". In paragraph "f." replaced language "this subpart" with "40 C.F.R. 60 Subpart JJJJ". In paragraph "f." replaced language "this section" with "40 C.F.R. §60.4244". Twice in paragraph "g." replaced language "this section" with "40 C.F.R. §60.4244".
12.6.1.	7.4.8.	In paragraph "a." replaced language "(a)(1) through (4) of this section" with "a.1. through 4. of this permit condition". In paragraph "c." replaced language "(c)(1) through (5) of this section" with "c.1. through 5. of this permit condition".

The emission units from this underlying permit are included in subsection 1.1. of the proposed permit. To differentiate between the emission units of the existing Lightburn Compressor Station, and the emission units of the proposed new Lightburn Extraction Plant, the names of the facilities have been added as headings within permit subsection 1.1.

IV. **45CSR30 – *Title V Operating Permits*.** Multiple limits and standards in the underlying NSR permit R13-2823 do not appear to have appropriate monitoring and/or recordkeeping specifically suited to demonstrate compliance and ensure practical enforceability. The following tables set out the condition numbers of the limits and standards from the underlying permit (R13-2823), and for convenience, specifies where this limit is located in the proposed Title V operating permit. The permit condition numbers of any associated testing, monitoring, recordkeeping, and reporting (MRR) are also specified by the respective condition numbers. In order to demonstrate compliance with the limits, the authority of 45CSR§30-5.1.c. is employed to require the permittee to monitor and maintain records as determined to be appropriate for the limits and standards.

Table 30A

R13-2823 Limit: 5.1.1.	Title V Limit: 7.1.1.	R13-2823 MRR: 5.2.	Title V MRR: 7.4.1.

The underlying requirement limits natural gas consumption in both cubic feet per hour (ft^3/hr) and cubic feet per year (ft^3/yr) in each of the 3,550 hp natural gas fired reciprocating engines, Caterpillar G3612 (006-01, 006-02).

The underlying permit's MRR states "To demonstrate compliance with sections 5.1.1 - 5.1.4 the permittee shall maintain records of the amount of fuel consumed in 006-01, 006-02, 007-01, 007-02."

Additional and/or specific testing & MRR:

a. In new condition 7.4.1.1.a., specify that records must be kept of volume of natural gas consumed per calendar month for each engine, and hours of operation per calendar month for each engine. These records will provide data to compute the fuel consumption in cubic feet per hour (ft^3/hr).
b. In new condition 7.4.1.1.b., specify that records must be kept of the rolling yearly total of volume of natural gas consumed. This record will simply be the sum of the past twelve calendar months' volumes already recorded in 7.4.1.1.a. This sum will be used to demonstrate compliance with the the cubic feet per year (ft^3/yr) limit.

Table 30B

R13-2823 Limit: 5.1.2.	Title V Limit: 7.1.2.	R13-2823 MRR: 5.2.	Title V MRR: 7.4.1.1.a. & 7.3.10.

The underlying requirement limits mass emissions of NOx, CO, VOC, and formaldehyde in both pounds per hour (lb/hr) and tons per year (ton/yr) for each of the 3,550 hp natural gas fired reciprocating engines, Caterpillar G3612 (006-01, 006-02).

The underlying permit's MRR states "To demonstrate compliance with sections 5.1.1 - 5.1.4 the permittee shall maintain records of the amount of fuel consumed in 006-01, 006-02, 007-01, 007-02."

Additional and/or specific testing & MRR:

Emissions are calculated using the (a) brake horsepower of the engine; and (b) engine manufacturer's emission factors. The following discussion deals with the monitoring, recordkeeping, and testing required to ensure that data of each variable are obtained in order to demonstrate compliance with the mass emission limits.

a. *Brake horsepower:* Emissions are calculated using the brake horsepower of the engine, which is (in this case) primarily a function of fuel consumption rate. Therefore, the recordkeeping established above in Table 30A (proposed conditions 7.4.1.1.a. and b.) are sufficient to demonstrate compliance with these mass emission limits when the emission factors are known.
b. *Emission Factors:* Emissions are also calculated using the manufacturer's emission factors, which account for the catalytic converter's control efficiency for CO, VOC, and formaldehyde. Note that the converter does not affect NOx in this case. According to Attachment M of the application, the expected frequency of catalyst replacement is 3-5 years. The permittee is already required under 40 C.F.R. §60.4243(b)(2)(ii) to perform initial performance testing within 180 days of start-up, and subsequent performance testing every 8,760 hours or 3 years, whichever comes first (see proposed Title V condition 7.1.29.b.2.). Since this NSPS Subpart JJJJ testing is specifically for demonstrating compliance with NSPS limits on pollutants NOx, CO, and VOC, it is sufficient to demonstrate compliance with the mass limits of the underlying permit requirement, and thereby confirm the emission factors for the controlled pollutants. Finally, the HAP formaldehyde is not covered by the NSPS testing, rather it falls under 40 C.F.R. 63 Subpart ZZZZ. Applicable MACT requirement §63.6610(a) requires testing within 180 days of start-up, and subsequent testing on either semi-annual or annual frequency (depending on margin of compliance). Specifically, this testing is for either CO reduction or formaldehyde concentration. Since the permittee does not have to perform testing for formaldehyde if the CO reduction is the chosen limit and test, then it is necessary to write an additional requirement for formaldehyde testing to ensure the emission factor for formaldehyde remains reliable and to ensure compliance with the underlying permit's mass limit on formaldehyde. Refer to condition 7.3.10.

Table 30C

R13-2823 Limit: 5.1.3.	Title V Limit: 7.1.3.	R13-2823 MRR: 5.2.	Title V MRR: 7.4.1.
The underlying requirement limits fuel consumption in both gallons per hour (gal/hr) and gallons per year (gal/yr) for each of the 259 hp diesel-fired reciprocating engines, John Deere Co. Model JU6H-UF84 (007-01, 007-02). The underlying permit's MRR states "To demonstrate compliance with sections 5.1.1 - 5.1.4 the permittee shall maintain records of the amount of fuel consumed in 006-01, 006-02, 007-01, 007-02." <u>Additional and/or specific testing & MRR:</u> a. In new condition 7.4.1.2.a., specify that records must be kept of volume of fuel consumed per calendar month for each engine, and hours of operation per calendar month for each engine. These records will provide data to compute the fuel consumption in gallons per hour (gal/hr). b. In new condition 7.4.1.2.b., specify that records must be kept of the rolling yearly total of volume of fuel consumed. This record will simply be the sum of the past twelve calendar months' volumes already recorded in 7.4.1.2.a. This sum will be used to demonstrate compliance with the gallons per year (gal/yr) limit.			

Table 30D

R13-2823 Limit: 5.1.4.	Title V Limit: 7.1.4.	R13-2823 MRR: 5.2.	Title V MRR: 7.4.1.
The underlying requirement limits mass emissions of NOx and CO in both pounds per hour (lb/hr) and tons per year (ton/yr) for each of the 259 hp diesel-fired reciprocating engines, John Deere Co. Model JU6H-UF84 (007-01, 007-02). The underlying permit's MRR states "To demonstrate compliance with sections 5.1.1 - 5.1.4 the permittee shall maintain records of the amount of fuel consumed in 006-01, 006-02, 007-01, 007-02." <u>Additional and/or specific testing & MRR:</u> Emissions are calculated using the (a) brake horsepower of the engine; and (b) engine manufacturer's emission factors. The following discussion deals with the monitoring, recordkeeping, and testing required to ensure that data are obtained in order to demonstrate compliance with the mass emission limits. a. *Brake horsepower:* Emissions are calculated using the brake horsepower of the engine, which is (in this case) primarily a function of fuel consumption rate. Therefore, the recordkeeping established above in Table 30C (proposed conditions 7.4.1.2.a. and b.) are sufficient to demonstrate compliance with these mass emission limits when the emission factors are known. b. *Emission Factors:* Emissions are also calculated using the manufacturer's emission factors, which for each engine are 2.75 g/hp-hr and 0.6 g/hp-hr for NOx and CO, respectively. These engines are characterized by the following: (1) they are fire pump engines (i.e., emergency use only); (2) they are limited to a 500 hr/yr limit (Title V condition 7.1.5.); (3) their potential emission may be considered relatively small (0.40 tpy of NOx, and 0.09 tpy of CO for each engine); and (4) both engines are subject to 40 C.F.R. 60 Subpart IIII, which also limits CO and NOx (though less stringently). For these reasons, no additional testing is warranted. However, should the emissions and emission factors ever become questionable, testing may be required under condition 3.3.1.			

Table 30E

R13-2823 Limit: 6.1.4.	Title V Limit: 8.1.4.	R13-2823 MRR: None	Title V MRR: 8.2.2.
The underlying requirement specifies hourly and annual NO_x and CO mass limits for the Regenerator Heater (Em. Unit ID 010-01). The underlying permit contained no monitoring or recordkeeping that would be employed to demonstrate compliance with the limits. The Engineering Evaluation for R13-2823 did, however, specify that the permittee must "Monitor and record quantity of natural gas consumed for all engines, and combustion sources."			

R13-2823 Limit: 6.1.4.	Title V Limit: 8.1.4.	R13-2823 MRR: None	Title V MRR: 8.2.2.

Additional and/or specific testing & MRR:
The permittee must monitor and maintain records of the amount of natural gas combusted by the Regenerator Heater. Specifically, the following must be performed:

a. The permittee must monitor and maintain records of the **amount of natural gas combusted** during each calendar month. Refer to new condition 8.2.2.1.
b. The permittee must monitor and maintain records of the **hours of operation** during each calendar month. Refer to new condition 8.2.2.2.
c. Using the data obtained under proposed conditions 8.2.2.1. and 8.2.2.2., and the AP-42 emission factors submitted in the application for SM02 (100 lb/mmscf for NOx; 84 lb/mmscf for CO), the permittee must monitor and maintain records of the monthly average **hourly emission rate** of NOx and CO emissions in units of pounds per hour (lb/hr). Refer to new condition 8.2.2.3. Considering there are no other underlying regulations that specify emission limits or emission factors for this equipment, and the underlying limits are based on maximum throughput, and that the unit could be considered relatively small (4 MMBtu/hr MDHI), there is not a high level of concern about using AP-42 emission factors.
d. The permittee must monitor and maintain records of the **rolling yearly total** of NOx and CO emissions in units of tons per year (ton/year). Refer to new condition 8.2.2.4.
e. The permittee must test once per year, and maintain records of test results, of the **natural gas heating value**. Note that the heating value must be used to compute the correct emission factor. The AP-42 emission factors (which are units of lb/mmcf) are adjusted based upon the actual heating value and its ratio to the standard 1,020 Btu/scf. The permittee employs factors from AP-42, Section 1.4, Natural Gas Combustion, July 1998. Refer to new condition 8.2.2.5.

Table 30F

R13-2823 Limit: 6.1.3.	Title V Limit: 8.1.3.	R13-2823 MRR: None	Title V MRR: 8.2.2.

The underlying requirement limits the maximum design heat input (MDHI) for the Regenerator Heater (Em. Unit ID 010-01) at 4.0 MMBtu/hr.

The underlying permit contains no monitoring or recordkeeping that would be employed to demonstrate compliance with the limit. The Engineering Evaluation for R13-2823 did, however, specify that the permittee must "Monitor and record quantity of natural gas consumed for all engines, and combustion sources."

Additional and/or specific testing & MRR:
The permittee must monitor and maintain records of the amount of natural gas combusted by the Regenerator Heater. Specifically, the following must be performed:

a. The permittee must monitor and maintain records of the **amount of natural gas combusted** during each calendar month. This is already covered by new condition 8.2.2.1., discussed in Table 30E.
b. The permittee must monitor and maintain records of the **hours of operation** during each calendar month. This is already covered by new condition 8.2.2.2., discussed in Table 30E.
c. The permittee must monitor and maintain records of the **natural gas heating value** for each calendar month. This is already covered by new condition 8.2.2.5., discussed in Table 30E.

Table 30G

R13-2823 Limit: 7.1.1.	Title V Limit: 9.1.1.	R13-2823 MRR: 7.2.1.	Title V MRR: 9.4.1.

The underlying requirement limits the throughput for the tanks (008-01, 008-02, 008-03, 008-04) to 29,372,280 gallons per year.

The underlying permit states that the permittee must maintain a record of the total throughput for the tanks. However, the underlying MRR does not directly state a frequency for recording the throughput. The limit implies a frequency by specifying that compliance will be demonstrated using a 12-month rolling total. But the frequency should be included in the recordkeeping requirement.

R13-2823 Limit: 7.1.1.	Title V Limit: 9.1.1.	R13-2823 MRR: 7.2.1.	Title V MRR: 9.4.1.

Additional and/or specific testing & MRR:

a. In proposed Title V condition 9.4.1., the word "monthly" has been added in the first sentence before the word "record".
b. In proposed Title V condition 9.1.1., the word "aggregated" has been added in the first sentence before the word "throughput" to clarify that the 29,372,280 gallons per year limit is an aggregate throughput limit for all four tanks. This is determined from the Emissions Unit Data Sheet for the storage tanks that was included in Attachment L of the application. This sheet indicates that the maximum natural gas liquids (NGL) produced is 1,916 barrels/day, which is equivalent to 80,472 gal/day and 29,372,280 gal/yr, assuming 365 days/yr operation. The sheet goes on to state that this throughput can be directed to one tank, or allocated in any ratio to any of the four tanks. Considering that this is the maximum NGL produced, and the permittee may divide it in any ratio among the four tanks, the underlying throughput limit must be an aggregate limit. This means of operating the tanks was proposed by the permittee; therefore, the authority of 45CSR§30-12.7. is employed to make such operation an enforceable requirement.

Table 30H

R13-2823 Limit: 8.1.1.	Title V Limit: 10.1.1.	R13-2823 MRR: 8.2.1.	Title V MRR: 10.4.1.

The underlying requirement limits the wet natural gas throughput to the Non-fractionating Processing Plant to 44 mmscf/day.

The underlying permit states that the permittee must maintain records of the amount of natural gas processed in the Non-fractionating Processing Plant. However, the underlying MRR does not directly state a frequency of monitoring. Also, since the limit is on a "per day" rate, the monthly recordkeeping implied in underlying requirement 8.1.1. does not match well. There must be a mechanism specified in the permit to demonstrate compliance with the volume "per day" limit.

Additional and/or specific testing & MRR:

a. In proposed condition 10.4.1., the word "monthly" has been added in the first sentence before the word "records". While it would not necessarily have to be, this approach is consistent with the monthly records of wet natural gas throughput required to demonstrate compliance with a throughput limit at the permittee's Camden Compressor Station (c.f., Permit No. R30-04100010-2006, condition 5.2.6.).
b. New condition 10.4.4. has been created for recording the number of operating days during each calendar month. With this data, and the monthly throughput recorded under 10.4.1., an average volume of natural gas per day can be computed, which can be used to demonstrate compliance with the 44 mmscf/day wet natural gas throughput limit.

Table 30I

R13-2823 Limit: 9.1.1.	Title V Limit: 11.1.1.	R13-2823 MRR: 9.2.1.	Title V MRR: 11.4.1.

The underlying requirement limits the natural gas liquids throughput for the Natural Gas Liquid Loading Racks (009-01, 009-02) to 80,472 gal/day and 29,372,280 gal/yr.

The underlying permit states that the permittee must maintain records of the total amount of natural gas liquids loaded by the Natural Gas Liquid Loading Racks. However, the underlying MRR does not directly state a frequency of monitoring. Also, the "per day" limit does not correspond well the monthly recordkeeping implied in underlying requirement 9.1.1. There must be a mechanism specified in the permit to demonstrate compliance with the volume "per day" limit.

Additional and/or specific testing & MRR:

In proposed condition 11.4.1., the words "daily and monthly" have been added in the first sentence before the word "records".

R13-2823 Limit: 9.1.1.	Title V Limit: 11.1.1.	R13-2823 MRR: 9.2.1.	Title V MRR: 11.4.1.
a. *Daily Records*: The word "daily" is added because one of the limits is a volume per day. Of course, the recordkeeping could have been monthly volume and monthly operating days to arrive at an average volume per day. However, in the case of these loading racks, when the liquids are transferred into a truck someone has to physically connect and disconnect the hoses to the truck. Therefore, it is not excessively burdensome to require a record of the volume transferred per day. b. *Monthly Records*: The word "monthly" is added because it is implied by underlying condition 9.1.1. which states a twelve month rolling total is required. And more importantly there is the annual volume limit specified by the underlying requirement. The monthly record is simply the sum of all daily volumes for that calendar month, and these monthly volumes are used to compute the 12-month rolling total to demonstrate compliance with the annual volume limit.			

Table 30J

R13-2823 Limit: 10.1.2.	Title V Limit: 12.1.2.	R13-2823 MRR: 10.2.2.	Title V MRR: 12.2.2.
The underlying requirement limits annual emissions of VOC, NOx, and CO from FLARE3. There is no clear compliance determination method established by the underlying permit. There is a requirement to monitor throughput to the flare on a monthly basis. However, there is no throughput limit. The underlying monitoring will be modified to specify the throughputs to be monitored. <u>Additional and/or specific testing & MRR:</u> a. The language "and record" is added after the word "monitor" in the first sentence of 12.2.2. b. Language specifying throughput volume from NGL Tanks (008-01, 008-02, 008-03, 008-04) has been added in new condition 12.2.2.1. c. Language specifying throughput volume from NGL Loading Racks (009-01, 009-02) has been added in new condition 12.2.2.1. d. Language specifying throughput volume from Absorber Vessel Draining has been added in new condition 12.2.2.1. e. New condition 12.2.2.2. has been created to require recordkeeping of the 12-month rolling total of emissions to demonstrate compliance with the annual limits in condition 12.1.2.			

Table 30K

R13-2823 Limit: 10.1.4.c.	Title V Limit: 12.1.4.c.	R13-2823 MRR: 10.2.1.	Title V MRR: 12.2.1.
The underlying requirement prescribes operation of FLARE3 when emissions may be vented. The underlying MRR requires the permittee to monitor the presence or absence of a flare pilot flame. However, there is no frequency specified for the monitoring. Continuous monitoring is appropriate in this case because, according to the application, the flare pilot will run continuously during all times. If the intention is that the pilot flame be present at all times, then it is reasonable to monitor it at all times. <u>Additional and/or specific testing & MRR:</u> a. Add the word "continuously" before the word "monitor" in condition 12.2.1.			

V. **45CSR34 - *Emission Standards for Hazardous Air Pollutants*.** This rule now adopts 40 C.F.R. Part 61 in addition to Part 63 since rule 45CSR15 that formerly adopted 40 C.F.R. Part 61 was repealed in the 2008 legislative session. Therefore, the citation in permit condition 3.1.3. has been changed from 45CSR15 to 45CSR34.

VI. **45CSR42 – *Greenhouse Gas Emissions Inventory Program*.** This rule applies to all facilities whose greenhouse gas emissions exceed the *de minimis* amount on an annual basis given at 45CSR§42-3.1., and which are required to report emissions of regulated air pollutants pursuant to W.Va. Code §22-5-4(a)(14). The permittee is required to report emissions pursuant to this section of W. Va. Code since it is cited for

current permit condition 3.1.6. The permittee's facility is subject to reporting of greenhouse gases emitted above the *de minimis* amount in the years specified by the Secretary. The Director is the designated representative of the Secretary for the Title V permit (*cf.* permit definition 2.1.3.) and implementation of this rule. For informational purposes, and to demonstrate potential applicability, the following table sets forth the greenhouse gas compounds and the respective *de minimis* amounts specified by the rule, as well as which compounds may be subject to reporting of emissions over the *de minimis* amount based upon past actual emissions.

Greenhouse Gas Compound	***de minimis* amount (tons/year)**	**Emissions**[1]
Carbon Dioxide	10,000	Carbon Dioxide is not required to be reported in the 2009 CES.
Methane	476	Not mentioned in the 2009 CES.
Nitrous Oxide	32.6	The 2009 CES specifies only Oxides of Nitrogen (NO_x), which is not the same as Nitrous Oxide (N_2O).
Hydrofluorocarbons	0.855	Not mentioned in the 2009 CES.
Perfluorocarbons	1.09	Not mentioned in the 2009 CES.
Sulfur Hexafluoride	0.42	Not mentioned in the 2009 CES.

1 –The 2009 Certified Emissions Statement (CES) Invoice was reviewed to determine if any Greenhouse Gas Compounds are emitted.

Refer to permit condition 3.5.10. for the reporting requirements pursuant to this rule. The language of the condition is substantially that which is at 45CSR§42-4, with only revisions to referencing language and the word "Secretary" changed to "Director".

VII. **40 C.F.R. Part 60 Subpart A, §60.18 – *General Control Device and Work Practice Requirements*.**

The application set out applicable requirements of §60.18 in Subpart A. After a cursory inspection of §60.18, it becomes apparent that these requirements are foundational to condition 10.1.4. of NSR permit R13-2823 (discussed above). In fact, most of the applicable requirements are already set forth by the NSR permit requirement. It should be recognized that while §60.18 is apparently a model for this NSR permit language, this does not mean in this case that only the NSR permit language applies. 40 C.F.R. §60.18 applies to the proposed flare FLARE3 because this control device is used to comply with applicable NSPS Subpart KKK requirements that incorporate by reference NSPS Subpart VV. Further, the application states that (i) certain pressure relief valves will vent to the flare under emergency situations and non-routine maintenance activities; and (ii) Subpart VV requires compliance with §60.18 for flares. Conversely, §60.18 would only be non-applicable if the flare was not being used to comply with an applicable 40 C.F.R. part 60 or part 61 requirement. The preceding determinations are based upon the introductory language at §60.18(a).

Rather than creating a stand-alone condition for the §60.18 requirements, they have been cited along with the NSR permit requirements in Title V conditions 12.1.4.a. through e.

It was necessary to add streamlining language to 12.1.4.a. because the underlying NSR permit requirement is more particular (and therefore more stringent) than §60.18(c)(6) by specifically requiring that the permittee's flare be air-assisted. The requirement of Subpart A allows a flare to be steam-assisted, air-assisted, or nonassisted.

The permittee wrote in the regulatory discussion Table 1 of the application that §60.18(c)(4) is applicable. However, these requirements apply only to steam-assisted and nonassisted flares. Since condition 10.1.4.a. of R13-2823 requires this flare to be air-assisted, §60.18(c)(4) does not apply. Rather, §60.18(c)(5) applies to air-assisted flares, and the language of this section reflects that already in condition 10.1.4.e. of R13-2823.

The permittee also wrote in the regulatory discussion that the use of a thermocouple or equivalent device is required to monitor the flare pilot flame, which comes from §60.18(f)(2). This has been cited with Title V condition 12.2.1.

Condition 10.3.1. of R13-2823 corresponds to §60.18(f)(1). The permittee wrote in the regulatory discussion Table 1 of the application that it was requesting a waiver from this VE testing. Apparently the waiver was not granted since the NSR permit requires the Method 22 testing described at §60.18(f)(1). This applicable section has been cited in Title V condition 12.3.1.

VIII. **40 C.F.R. Part 60 Subpart KKK – *Equipment Leaks of VOC from Onshore Natural Gas Processing Plants*.** This rule is applicable since the facility is an onshore natural gas processing plant that commenced construction after January 20, 1984, and the facility will operate compressors and equipment in VOC or wet gas service. These applicability criteria are set forth in §§60.630(a) and (b).

Standards

The following standards are essentially monitoring, as opposed to emission limits or work practice standards. There are no testing requirements under this subpart. Thus, most (if not all) of the following requirements are in the appropriate monitoring subsection(s) of the permit.

Rule Section	Title V Condition	Discussion of Requirement & Applicability
§60.632(a)	10.1.3.	Refers to requirements in Subpart VV, namely, §§60.482-1(a), (b), and (d) and 60.482-2 through 60.482-10, except as provided in §60.633. This requirement does specify that compliance with the referenced standards must occur no later than 180 days after initial startup. Reference to "this subpart" is replaced with "40 C.F.R. 60 Subpart KKK". The language "40 C.F.R." is added before the sections of Subpart VV mentioned in the condition.
§60.632(b)	10.1.4.	Allows the permittee to elect to comply with Subpart VV requirements §§60.483-1 and 60.483-2. The language "40 C.F.R." is added before the sections of Subpart VV mentioned in the condition.
§60.632(c)	10.1.5.	Allows the permittee to apply to the Administrator for permission to use alternative means of emission limitation. Reference to "this subpart" is replaced with "40 C.F.R. 60 Subpart KKK".
§60.632(d)	10.1.6.	Requires compliance with §60.485 except as provided in §60.633(f), which exempts reciprocating compressors in wet gas service from the compressor control requirements of §60.482-3. References to "this subpart" are replaced with "40 C.F.R. 60 Subpart KKK". The language "40 C.F.R." is added before the sections of Subpart VV mentioned in the condition. The language "(permit condition 10.3.1.)" is added in the condition to refer the reader to the requirements of 40 C.F.R. §60.485 set forth in the permit.
§60.632(e)	10.1.7.	Requires compliance with §§60.486 and 60.487 except as provided in §§60.633, 60.635, and 60.636. References to "this subpart" are replaced with "40 C.F.R. 60 Subpart KKK". The language "40 C.F.R." is added before the sections of Subpart VV mentioned in the condition.
§60.632(f)	10.1.8.	Prescribes the means to determine if equipment is considered in VOC service, and if equipment is considered in wet gas service. For this facility, the permittee will make this determination and it will not change for each piece of equipment. There is no need to write this requirement as a permit condition. The language "40 C.F.R." is added before the section of Subpart VV mentioned in the condition.

Exceptions

The entire exceptions section §60.633 is included in the modified permit as permit condition 10.1.9. References to "this subpart" are replaced with "40 C.F.R. 60 Subpart KKK".

Alternative means of emission limitation

There is no mention in the application of implementing any of the alternative means of emission limitation in §60.634. Therefore, none of the language from §60.634 is included in the modified Title V permit. This does not, however, prevent the permittee from implementing any of the applicable alternative means of emission limitation in this section of the rule.

Recordkeeping Requirements

Rule Section	Title V Condition	Discussion of Requirement & Applicability
§60.635(a)	10.4.2.(a)	Makes the permittee subject to the requirements of paragraphs (b) and (c) of §60.635 in addition to the requirements of §60.486. Reference to "this subpart" is replaced with "40 C.F.R. 60 Subpart KKK". The language "section" is replaced with "permit condition". The language "40 C.F.R." is added before the section of Subpart VV mentioned in the condition. The language "(permit condition 10.4.3.)" is added at the end of this condition to refer the reader to the requirements of 40 C.F.R. §60.486 set forth in the permit.
§60.635(b)(1)	10.4.2.(b)(1)	Recordkeeping applies to pressure relief devices subject to §60.633(b)(1), which is an exception. Reference to "this subpart" is replaced with "40 C.F.R. 60 Subpart KKK". The language "40 C.F.R." is added before the sections of Subpart KKK and Subpart VV mentioned in the condition.
§60.635(b)(2)	10.4.2.(b)(2)	Details the recordkeeping applicable to pressure relief devices. The language "40 C.F.R." is added before the sections Subpart VV mentioned in the condition.
§60.635(c)	10.4.2.(c)	These recordkeeping requirements are in addition to §60.486(j) to demonstrate that a reciprocating compressor is in wet gas service to apply for the exemption in §60.633(f). The language "40 C.F.R." is added before the sections Subpart KKK mentioned in the condition. The language "(permit condition 10.4.3.(j))" is added within this condition to refer the reader to the requirements of 40 C.F.R. §60.486(j) set forth in the permit.

Reporting Requirements

Rule Section	Title V Condition	Discussion of Requirement & Applicability
§60.636(a)	10.5.1.(a)	These reporting requirements in §60.636 are in addition to those in §60.487. The language "this subpart" is replaced with "40 C.F.R. 60 Subpart KKK". The language "section" is replaced with "permit condition". The language "(permit condition 10.5.2.)" is added at the end of the condition to refer the reader to the requirements of 40 C.F.R. §60.487.
§60.636(b)	10.5.1.(b)	Semi-annual reporting in addition to §60.487(b)(1)-(4).
§60.636(c)	10.5.1.(c)	These contents of semi-annual reports in addition to the information required in §60.487(c)(2)(i) through (vi).

IX. **40 C.F.R. Part 60 Subpart VV – *Equipment Leaks of VOC in the Synthetic Organic Chemicals Manufacturing Industry for Which Construction, Reconstruction, or Modification Commenced After January 5, 1981, and on or before November 7, 2006.*** 40 C.F.R. 60 Subpart KKK in multiple instances incorporates by reference, and thereby makes applicable, certain requirements of 40 C.F.R. 60 Subpart VV. It should be recognized that, in the case of the Lightburn Extraction Plant, Subpart VV does not independently apply to the facility. Requirements of Subpart VV apply insofar as they are employed by Subpart KKK. That is, the only Subpart VV requirements that apply are those specified by applicable

requirements of 40 C.F.R. 60 Subpart KKK. Therefore, only those Subpart VV requirements prescribed by Subpart KKK are discussed below. This determination is also upheld by an exclusion specified in Subpart KKK; that is, §60.630(d) states: "Facilities covered by subpart VV or subpart GGG of 40 CFR part 60 are excluded from this subpart." Therefore, a facility cannot be subject to Subpart VV and also subject to Subpart KKK. This determination affects the citations of authority for permit conditions that set forth the Subpart VV requirements that are specified by Subpart KKK applicable requirements. Such conditions' citations of authority do not cite any Subpart VV section; rather, the Subpart KKK section that specifies the Subpart VV requirement is cited. Since Subpart VV does not apply based strictly upon its own applicability criteria, it cannot be an authority for requiring compliance with itself.

Standards

The following standards are prescribed by §60.632(a) of Subpart KKK.

Rule Section	Title V Condition	Discussion of Requirement & Applicability
§60.482-1(a)	10.1.10.(a)	Sets general requirements for compliance with this subpart. Replaced language "this subpart" with "40 C.F.R. 60 Subpart VV". Added language "40 C.F.R." preceding each of the NSPS sections mentioned.
§60.482-1(b)	10.1.10.(b)	States that compliance with requirements will be determined by review of records and reports, review of test results, and inspections using the methods and procedures specified in §60.485. Added language "40 C.F.R." preceding each of the NSPS sections mentioned.
§60.482-1(d)	10.1.10.(d)	Equipment in vacuum service is exempt from §§60.482-2 to 60.482-10 if identified as required by §60.486(e)(5). Added language "40 C.F.R." preceding each of the NSPS sections mentioned.
§60.482-2	10.1.11.	*Pumps in light liquid service*. Monthly Method 21 monitoring, weekly visual inspections for liquid dripping from pump seal, or be equipped with a dual mechanical seal meeting requirements in §60.482-2, or operate with no detectable emissions (§60.482-2). Added language "40 C.F.R." before multiple NSPS sections specified throughout the condition. Replaced language "this section" with "this permit condition".
§60.482-3	10.1.12.	*Compressors*. Must be equipped with a seal system that includes a barrier fluid system meeting the requirements of §60.482-3, or be equipped with a closed vent system to control device, or operate with no detectable emissions. Reciprocating compressors in wet gas service are exempt, in accordance with §60.633(g). Added language "40 C.F.R." before multiple NSPS sections specified throughout the condition. Replaced language "this section" with "this permit condition".
§60.482-4	10.1.13.	*Pressure relief devices in gas/vapor service.* Quarterly Method 21 monitoring and within 5 days after each pressure release or route emissions to a closed vent system to control device. Added language "40 C.F.R." before multiple NSPS sections specified throughout the condition. Replaced language "this section" with "this permit condition".
§60.482-5	10.1.14.	*Sampling connection systems*. Added language "40 C.F.R." before multiple NSPS sections specified throughout the condition. Replaced language "this section" with "this permit condition".
§60.482-6	10.1.15.	*Open-ended valves or lines*. Added language "40 C.F.R." before NSPS sections specified in 10.1.15.(a)(1). Replaced language "this section" with "this permit condition".
§60.482-7	10.1.16.	*Valves in gas/vapor service and in light liquid service*. Added language "40 C.F.R." before multiple NSPS sections specified throughout the condition.

Rule Section	Title V Condition	Discussion of Requirement & Applicability
§60.482-8	10.1.17.	*Pumps and valves in heavy liquid service, pressure relief devices in light liquid or heavy liquid service, and connectors*. Added language "40 C.F.R." before multiple NSPS sections specified throughout the condition. Replaced language "this section" with "this permit condition" in 10.1.17.(a)(1).
§60.482-9	10.1.18.	*Delay of repair*. Added language "40 C.F.R." before NSPS sections specified in 10.1.18.(c)(2).
§60.482-10	10.1.19.	*Closed vent systems and control devices*. Replaced language "this section" with "this permit condition". Replaced language "this subpart" with "40 C.F.R. 60 Subpart VV".

Alternative standards

The permittee neither listed §§60.483-1 and 60.483-2 (alternative standards for valves), nor §60.484 (equivalence of means of emission limitation) as being applicable for the facility; therefore, the permittee is not employing these alternatives and none of these rule sections are included in the Title V permit.

Test Methods and Procedures

Rule Section	Title V Condition	Discussion of Requirement & Applicability
§60.485(a)	10.3.1.	Sets forth testing procedures that are required by NSPS Subpart KKK. Added language "40 C.F.R." before multiple NSPS sections specified throughout the condition.

Recordkeeping Requirements

Rule Section	Title V Condition	Discussion of Requirement & Applicability
§60.486	10.4.3.	All requirements of this section are set forth in the Title V condition. References to "this subpart" are replaced with "40 C.F.R. 60 Subpart VV". The language "40 C.F.R." is added before the sections of Subpart VV mentioned throughout the condition. The language "section" was replaced with "permit condition" in condition 10.4.3.(a)(1). The language "**40 C.F.R. §60.635(a)**" appears in the citation of authority since this applicable requirement is the authority to require compliance with §60.486 of Subpart VV.

Reporting Requirements

Rule Section	Title V Condition	Discussion of Requirement & Applicability
§60.487	10.5.2.	All requirements of this section are set forth in the Title V condition. References to "this subpart" are replaced with "40 C.F.R. 60 Subpart VV". The language "40 C.F.R." is added before the sections of Subpart VV mentioned throughout the condition. Under 10.5.2.(c)(4), the language "paragraph (b)" is replaced with "permit condition 10.5.2.(b)". Under 10.5.2.(f) the language "section" is replaced with "permit condition" in the frist and last sentences of the condition. The language "**40 C.F.R. §60.636(a)**" appears in the citation of authority since this applicable requirement is the authority to require compliance with §60.487 of Subpart VV.

X. **40 C.F.R. Part 60 Subpart IIII - *Standards of Performance for Stationary Compression Ignition Internal Combustion Engines*.** The permittee's fire pump engines are subject to 40CFR60 Subpart IIII. §60.4205c details the emission standards for emergency engines with a displacement less than 30 liters per cylinder that are fire pump engines. They must meet the emission standards for fire pump engines in Table 4 of this subpart. Table 4 provides the allowable emission standards from stationary fire pump engines. For a 2009 model year 259 hp rated power engine, the allowable emission standards are 7.8 g/hp-hr for NMHC+NOx, 2.6 g/hp-hr for CO, and 0.40 g/hp-hr for PM. Converting these values to allowable hourly emissions, results in the following: 4.45 lb/hr of NMHC+NOx, 1.49 lb/hr of CO, and 0.23 lb/hr of PM for each engine. The permittee's engine meets the requirements that are applicable, which have been discussed in the section above regarding permit R13-2823. Refer to permit condition 7.1.7.

XI. **40 C.F.R. Part 60 Subpart JJJJ - *Standards of Performance for Stationary Spark Ignition Internal Combustion Engines*.** The permittee's compressor engines are subject to 40CFR60 Subpart JJJJ, which sets forth emission limits, fuel requirements, installation requirements, and monitoring requirements based on the year of installation of the subject internal combustion engine. 40CFR60 Subpart JJJJ is applicable to owners and operators of new stationary spark ignition internal combustion engines manufactured after July 1, 2007, for engines with a maximum rated power capacity greater than 500 hp. The two (2) new proposed 3,550 hp engines will be subject to this rule. The emission limits for these engines are the following: NOx – 2.0 g/hp-hr (14.76 lb/hr); CO – 4.0 g/hp-hr (31.28 lb/hr); and VOC – 1.0 g/hp-hr (7.82 lb/hr). Based on the manufacturer's specifications for these engines, the emission standards will be met. Because the engines will not be certified by the manufacturer, the permittee will be required to perform an initial performance test within 180 days from startup, and subsequent testing every 8,760 hours or 3 years, whichever comes first. All applicable requirements from this regulation are discussed in the previous section regarding permit R13-2823.

XII. **40 C.F.R. 63 Subpart *ZZZZ* – *National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines*.** The following paragraph is from the Engineering Evaluation for permit R13-2823. Key determinations have been emphasized in bold font by this writer.

> The permittee's **fire pump engines and compressor engines are subject to the area source provisions of 40CFR63 Subpart *ZZZZ***. Unless otherwise stated WVDEP DAQ did not determine whether the permittee is subject to an area source air toxics standard requiring Generally Achievable Control Technology (GACT) promulgated after January 1, 2007 pursuant to 40 CFR 63, including the area source air toxics provisions of 40 CFR 63, Subpart HH and 40 CFR 63, Subpart ZZZZ. 40 CFR 63 Subpart ZZZZ (National Emission Standards for Reciprocating Ignition Internal Combustion Engines) applies to engines located at major sources of hazardous air pollutants (HAPs). The term "major source" is defined in 40 CFR 63.2 as a source that has the potential to emit 10 tons per year or more of any individual HAP or 25 tons per year or more of all combined HAPs. However, 40 C.F.R. §63.6675 expands on that definition as it applies to oil and gas production operations. It says specifically "Emissions from any oil or gas exploration or production well (with its associated equipment) and emissions from any pipeline compressor or pump station shall not be aggregated with emissions from other similar units, to determine whether such emission points or stations are major sources, even when emission points are in a contiguous area or under common control. For oil and gas production facilities, emission from processes, operations, or equipment that are not part of the same oil and gas production facility, as defined in §63.1271 of subpart HHH of this part, shall not be aggregated." §63.1271 defines a "natural gas transmission and storage facility" as "any grouping of equipment where natural gas is processed, compressed or stored prior to entering a pipeline to a local distribution company or (if there is no local distribution company) to a final end user." §63.6675 defines an "oil and gas production facility" as any grouping of equipment where hydrocarbon liquids are process, upgraded or stored prior to the point of custody transfer; or where natural gas is processed, upgraded, or stored prior to entering the natural gas transmission and storage source category."

Because emissions from different facilities are not to be aggregated to determine major source thresholds, **the permittee's LEP would not be subject to the major source provisions of 40CFR63 Subpart ZZZZ**.

DAQ is not taking delegation of the minor source provisions of 40 C.F.R. 63, Subpart ZZZZ. However, Title V permits are to include the Subpart ZZZZ requirements for affected emission units. Such requirements will be included as a permit condition that states which emission units are subject to Subpart ZZZZ, and the effective date. The following table specifies the affected emission units and their effective dates.

Emission Unit ID	Description	Manufacturer Model	Subpart ZZZZ Effective Date
006-01, 006-02	3,550 hp natural gas-fired reciprocating compressor engines	Caterpillar G3612	Upon Startup
007-01, 007-02	259 hp diesel-fired reciprocating fire pump engines	John Deere Co. Model JU6H-UF84	Upon Startup

The applicable requirement for the four (4) engines mentioned above is found at 40 C.F.R. §63.6595(a)(7). Permit condition 7.1.32. has been created for the applicable Subpart ZZZZ language. The language "this subpart" has been replaced with "40 C.F.R. 63 Subpart ZZZZ". Finally, in keeping with 45CSR§34-4.1.c., the state rule is not cited for this condition since the area source provisions of Subpart ZZZZ are excluded from 45CSR34.

XIII. **Miscellaneous Revisions**

a. **Permit Structure.** The format of permit section 1.0 was revised to include new subsection 1.2 to list current underlying permits. This explains why the alphabetic suffix for the underlying permit R14-0009E is stricken in the citations of authority throughout the permit. Proposed subsection 1.1 is previous section 1.0. These changes were made to reflect the most recent version of the Title V permit structure.

b. Permit R13-2823 was issued by the Director on April 13, 2010. This date has been inserted into Title V permit condition 12.3.1.

Non-Applicability Determinations

The following requirements have been determined not to be applicable to the subject facility due to the following:

1. **40 C.F.R. Part 60 Subpart Kb -** ***Standards of Performance for Volatile Organic Liquid Storage Vessels (Including Petroleum Liquid Storage Vessels) for Which Construction, Reconstruction, or Modification Commenced After July 23, 1984.*** 40 C.F.R. §60.110b(d)(2) states that this subpart does not apply to pressure vessels designed to operate in excess of 204.9 kPa (29.7 psi) and without emissions to the atmosphere. The Horizontal Natural Gas Liquid Storage Tanks proposed for the Lightburn Extraction Plant (Em. Unit IDs: 008-01, 008-02, 008-03, 008-04) will be operated at 225 psi and do not vent to atmosphere since their emissions are controlled by FLARE3. Since these tanks do not meet the applicability criteria they are not subject to this rule. The Diesel Fuel Storage Tanks (Em. Unit IDs: 014-01, 014-02, 014-03) are all of design capacity less than 75 cubic meters. Since these tanks do not meet the applicability criteria of §60.110b(a), they are not subject to this rule.

2. **40 C.F.R. Part 60 Subpart LLL –** ***Standards of Performance for Onshore Natural Gas Processing: SO_2 Emissions.*** According to 40 C.F.R. §60.640(a), this rule applies to the following affected facilities: each sweetening unit, and each sweetening unit followed by a sulfur recovery unit. According to the application, there will be no sweetening units at the proposed Lightburn Extraction

Plant (LEP). The remaining applicability criteria §§60.640(b) through (e) all apply to affected facilities (i.e., sweetening units). Since there are no sweetening units, none of these criteria make the rule applicable. Since the facility does not meet the applicability criteria, this rule does not apply to the proposed Lightburn Extraction Plant (LEP).

3. **40 C.F.R. Part 63 Subpart HH –** ***National Emission Standards for Hazardous Air Pollutants From Oil and Natural Gas Production Facilities.*** Under the definition of "Facility" in 40 C.F.R. §63.761 and in accordance with U.S. EPA Applicability Determination Index (ADI) # M050022, HAP emissions from the proposed Lightburn Extraction Plant (LEP) are not to be aggregated with the Lightburn Compressor Station (LCS) to determine HAP status (major/minor) under Subpart HH. Based upon the proposed potential HAP emissions for the LEP, the LEP is an area source of HAPs. According to 40 C.F.R. §63.760(b)(2), the affected source for area sources includes each triethylene glycol (TEG) dehydration unit, of which there are none at LEP. In accordance with 40 C.F.R. §63.760(d), if there are no affected sources at the facility, then the facility is not subject to Subpart HH.

4. **40 C.F.R. Part 63 Subpart HHH -** ***National Emission Standards for Hazardous Air Pollutants From Natural Gas Transmission and Storage Facilities***. According to §63.1270(a) "This subpart applies to owners and operators of natural gas transmission and storage facilities that transport or store natural gas prior to entering the pipeline to a local distribution company or to a final end user (if there is no local distribution company), and that are major sources of hazardous air pollutants (HAP) emissions as defined in §63.1271." The definition of *major source* in §63.1271 specifies that "Emissions from any pipeline compressor station or pump station shall not be aggregated with emissions from other similar units, whether or not such units are in a contiguous area or under common control." Based upon the proposed potential HAP emissions for the Lightburn Extraction Plant (LEP), the LEP is not a major source of HAPs for Subpart HHH applicability determination. Thus, the LEP does not meet applicability criteria of §63.1270(a). Furthermore, an affected source is a glycol dehydration unit (cf. §63.1270(b)). Since the proposed LEP will have no glycol dehydration unit, the LEP is not subject to this subpart in accordance with the exemption under §63.1270(c).

5. **40 C.F.R. Part 63 Subpart EEEE -** ***National Emission Standards for Hazardous Air Pollutants: Organic Liquids Distribution (Non-Gasoline)***. The proposed Lightburn Extraction Plant (LEP) is a natural gas production facility, as the term "facility" is defined in §63.761 of 40 C.F.R. 63 Subpart HH. Therefore, LEP is not subject to Subpart EEEE since it meets the criteria of 40 C.F.R. §63.2334(c)(1).

6. **40 C.F.R. Part 64 –** ***Compliance Assurance Monitoring*** **(CAM).** The table below sets forth the non-applicability determinations for multiple emission units integral to the proposed Lightburn Extraction Plant (LEP).

Em. Unit ID	Pollutant	Rationale
006-01, 006-02	CO, VOC	For each of the **Caterpillar G3612 engines** (Em. Unit IDs: 006-01, 006-02) uncontrolled potential emissions of CO and VOC are 94.18 tpy and 22.26 tpy, respectively. These pre-control device PTEs are less than the major source threshold of 100 tpy. Since the applicability criterion at 40 C.F.R. §64.2(a)(3) is not met, CAM does not apply to the engines on a pollutant-specific basis for pollutants CO and VOC.
	NOx	A control device is not employed to control NOx emissions from the **Caterpillar G3612 engines** (Em. Unit IDs: 006-01, 006-02). According to the manufacturer's data supplied in Attachment M of the application, NOx emissions are unaffected by the oxidation catalyst employed to reduce CO and VOC emissions. The applicability criterion at 40 C.F.R. §64.2(a)(2) is not met, and thus CAM does not apply on a pollutant-specific basis for NOx emitted

Em. Unit ID	Pollutant	Rationale
		from the engines. Furthermore, potential NOx emissions from each engine are 17.124 tpy, which is less than the major source threshold. Thus, even if a NOx control device were used, the engines would still not meet applicability criterion at 40 C.F.R. §64.2(a)(3) for NOx.
	HCHO	The **Caterpillar G3612 engines** (Em. Unit IDs: 006-01, 006-02) are subject to an emission limitation for formaldehyde, which meets applicability criterion §64.2(a)(1). An oxidation catalyst controls formaldehyde emissions to meet the limitation, which meets applicability criterion §64.2(a)(2). According to the application, the uncontrolled potential emissions of formaldehyde from each of the Caterpillar G3612 engines are 13.70 tpy, which exceeds the major source threshold of 10 tpy of a single HAP. Thus all applicability criteria §§64.2(a)(1) through (3) are met. However, emissions of formaldehyde from the engines are subject to 40 C.F.R. 63 Subpart ZZZZ. Therefore, the criterion at §64.2(b)(1)(i) for an exemption is met and CAM does not apply to the Caterpillar G3612 engines (Em. Unit IDs: 006-01, 006-02) for formaldehyde.
007-01, 007-02	Various	The **John Deere Co. Fire Pump engines** (Em. Unit IDs: 007-01, 007-02) are subject to emission limitations for various pollutants; however no air pollution control device is employed to achieve compliance with such limitations. Therefore, CAM does not apply to these engines since they do not meet the applicability criterion at 40 C.F.R. §64.2(a)(2).
010-01	Various	**Regenerator Heater** (Em. Unit ID: 010-01) pre-control device potential emissions are less than the respective major source threshold. Also, there is no control device used to achieve compliance with an emission limitation. Since applicability criteria §§64.2(a)(2) and (3) are not met, CAM does not apply to the Regenerator Heater (010-01) for any regulated pollutant.
008-01, 008-02, 008-03, 008-04	VOC	The **Horizontal Natural Gas Liquids Storage Tanks** (Em. Unit IDs: 008-01, 008-02, 008-03, 008-04) are subject to an emission limitation or standard. The standard is the maximum throughput limitation of permit R13-2823, 7.1.1. This is determined since part of the definition of *Emission limitation or standard* at §64.1 is that "An emission limitation or standard may also be expressed either as a work practice, process or control device parameter, or other form of specific design, equipment, operational, or operation and maintenance requirement." The throughput limitation is considered an operational standard; therefore, the applicability criterion at §64.2(a)(1) is met. The tanks are pressurized vessels under normal operations, and the tanks are only vented to control device FLARE3 during emergency situations or non-routine maintenance activities. Thus, the control device is not employed during normal operations. More importantly, the FLARE3 is not employed to achieve compliance with the throughput limitation. Therefore, applicability criterion §64.2(a)(2) is not met and CAM does not apply to the tanks.
FLARE3	Various	The **Emergency and Maintenance Flare** (Control Device ID: FLARE3) controls VOC emissions from (i) absorber draining; and (ii) emergency episodes of venting the Horizontal Natural Gas Liquids Storage Tanks. The flare pilot runs continuously through all

Em. Unit ID	Pollutant	Rationale
		times. None of the PTEs of any pollutant emitted from the flare exceed the major source threshold. Therefore, applicability criterion §64.2(a)(3) is not met and CAM does not apply to the FLARE3.

7. **45CSR10 – *To Prevent and Control Air Pollution from the Emission of Sulfur Oxides*.**
   Internal Combustion Engines (Em. Unit IDs: 006-01, 006-02, 007-01, 007-02)
   All limits and standards of 45CSR§10-3 apply to fuel burning units. None of the compressor engines (006-01, 006-02) and fire pump engines (007-01, 007-02) are a "Fuel burning unit" as defined in 45CSR§10-2.8. Therefore, none of the engines are subject to 45CSR§10-3 limits or standards. Similarly, all limits and standards of 45CSR§10-4 apply to manufacturing process source operations. None of the engines are a "manufacturing process" "source operation" according to the definitions in 45CSR§§10-2.11. and 2.19. Therefore, none of the engines are subject to 45CSR§10-4 limits or standards. As a final point, internal combustion engines, including gas turbines and emergency generators, are not subject to 45CSR10 according to the Director's verbal guidance.

   Regenerator Heater (Em. Unit ID: 010-01)
   The regenerator heater has a MDHI of 4.0 MMBtu/hr. Since it is less than 10 MMBtu/hr, the regenerator heater is exempt from the requirements of 45CSR§10-3 and 45CSR§§10-6 through 8 in accordance with the exemption granted under 45CSR§10-10.1. It may be arguable whether the regenerator heater meets the definition of a "source operation" in 45CSR§10-2.19.a. However, such a determination is a moot point in light of the PTE of SO_2 from the regenerator heater. According to the application, the regenerator heater has potential SO_2 emissions of 0.0025 lb/hr and may operate 24 hr/day, 7 days/week, and 52 weeks/year. Thus, potential SO_2 emissions are (0.0025 lb/hr)×(24 hr/day)×(365 day/yr) = 21.9 lb/yr. Since the PTE is less than 500 lb/yr, the regenerator heater meets the criteria of the exemption under 45CSR§10-4.1.e. and is therefore not subject to the requirements of 45CSR§10-4 for manufacturing process source operations. The regenerator heater does not combust any refinery process gas stream or any other process gas stream; therefore, the provisions of 45CSR§10-5 are not applicable.

8. **45CSR14 – *Prevention of Significant Deterioration*.** The proposed emissions increases are as follows: CO, 16.2 TPY (PSD threshold is 100 TPY); NO_x, 36.9 TPY (PSD threshold is 40 TPY); VOC, 30.2 TPY (PSD threshold is 40 TPY). Regardless of the current PTEs of these pollutants, none of the changes in emissions for this permitting action are a "significant emissions increase" as defined by 45CSR§14-2.75 since none of the significant levels in 45CSR§14-2.74 will be met or exceeded. Therefore, a major modification will not occur as part of this permitting action and thus PSD permitting requirements are not applicable for this action (i.e., SM02).

9. **Condition 12.1.2. of Permit R13-2823**. This NSPS Subpart JJJJ condition exempts an area source from obtaining a 40 C.F.R. part 70 permit, provided the source is not required to obtain a permit under 40 C.F.R. §70.3(a) for a reason other than being an area source. The facility is already required to obtain a Title V permit; therefore, this exemption cannot apply to the facility.

10. **Condition 11.3.1.b. of Permit R13-2823**. This underlying condition applies to the compressor engines 006-01 and 006-02, and the fire pump engines 007-01 and 007-02. The condition states, "For the purpose of determining compliance with the Regulated Pollutant Limitation for SO2, a person designated by a Responsible Official or Authorized Representative shall maintain records of the maximum sulfur content on a per-shipment basis for fuel oil, recycled or used oil or annual certification of the sulfur content from the supplier for pipeline quality natural gas." These engines are not subject to an SO_2 emission limitation. Therefore, this underlying recordkeeping is unnecessary for Title V permitting purposes. This requirement will not be included as a Title V condition, but rather will be included in the permit shield at section 3.7.2.10.

Request for Variances or Alternatives

None.

Insignificant Activities

Insignificant emission unit(s) and activities are identified in the Title V application.

Comment Period

Beginning Date: May 19, 2010
Ending Date: June 18, 2010

All written comments should be addressed to the following individual and office:

Denton B. McDerment, PE
Title V Permit Writer
West Virginia Department of Environmental Protection
Division of Air Quality
601 57th Street SE
Charleston, WV 25304

Procedure for Requesting Public Hearing

During the public comment period, any interested person may submit written comments on the draft permit and may request a public hearing, if no public hearing has already been scheduled. A request for public hearing shall be in writing and shall state the nature of the issues proposed to be raised in the hearing. The Secretary shall grant such a request for a hearing if he/she concludes that a public hearing is appropriate. Any public hearing shall be held in the general area in which the facility is located.

Point of Contact

Denton B. McDerment, PE
West Virginia Department of Environmental Protection
Division of Air Quality
601 57th Street SE
Charleston, WV 25304
Phone: 304/926-0499 ext. 1221 • Fax: 304/926-0478

Response to Comments (Statement of Basis)

Public Comments

None.

U.S. EPA Comments

None.

Description of Changes to Final Permit

U.S. EPA has instructed DAQ that permittee's are to submit their annual compliance certification to U.S. EPA via e-mail only (*i.e.*, no paper "hard copies" to U.S. EPA). This requirement was inadvertently not included in the draft/proposed permit. The language of final permit conditions 3.5.3. and 3.5.5. has been modified to provide for this new stipulation.