R13 CLASS I ADMIN APPLICATION

EQT Production Company > OXF-114 Pad

Doddridge County, West Virginia

Where energy meets innovation.

Prepared By:

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November 2017

EHS Solutions Delivered Uncommonly Well

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EQT Production Company (EQT) is submitting this Class I Administrative Update application to the West Virginia Department of Environmental Protection (WVDEP) for an existing natural gas production well pad (OXF-114 pad), located in Doddridge County, West Virginia. The OXF-114 wellpad is currently permitted under R13-3044. This application seeks to replace the eight (8) existing produced fluids tanks with eight (8) new produced fluids tanks.

1.1. FACILITY AND PROJECT DESCRIPTION

The OXF-114 pad is a natural gas production facility that consist of four (4) natural gas wells. Natural gas and liquids (including water and condensate) are extracted from deposits underneath the surface. Natural gas is transported from the well to a gas line for additional processing and compression, as necessary. The liquids produced are stored in storage vessels:

The OXF-114 wellpad is currently permitted for the following equipment:

- Eight (8) 210 bbl produced fluids storage tanks
- Two (2) thermoelectric generators, each rated at 0.013 MMBtu/hr (heat input);
- Produced fluid truck loading; and
- Associated piping and components

With this application, EQT is proposing to install the following equipment:

- Eight (8) 210 barrel (bbl) produced fluids storage tanks for condensate/water. The new storage tanks will replace the existing produced fluids storage tanks; and
- Associated piping and components

EQT will retain the existing permit limits for the storage tanks.[1] As the project will not increase emissions, the project will qualify for a Class I Administrative Update:

> *45 SCR 13 4.2.a.8: Change in a permit condition as necessary to allow changes in operating parameters, emission points, control equipment or any other aspect of a source which results in no increase in the emission of any existing regulated air pollutant or any new regulated air pollutant.*

WVDEP must make stationary source determinations on a case-by-case basis using the guidance under the Clean Air Act (CAA) and EPA's and WVDEP's implementing regulations. The definition of stationary source in 40 CFR 51.166(b) includes the following:

> *"(6) Building, structure, facility, or installation means all of the pollutant emitting activities which belong to the same industrial grouping, are located on or more contiguous or adjacent properties, and are under control of the same person (or persons under common control)."*

Other additional pollutant emitting facilities should be aggregated with the OXF-114 Pad for air permitting purposes if, and only if, all three elements of the "stationary source" definition above are fulfilled.

WVDEP had determined that the OXF-114 pad is a separate stationary source when the current permit was issued.

[1] Furthermore, EQT anticipates that emissions from the storage tanks will remain below 6 tons per year of VOC, each.

Since then, there have been no facilities installed within a quarter-mile radius of the OXF-114 Pad. The closest wellpad is EQT's OXF-115 Pad, located 0.34 miles from the OXF-114 Pad. As such, no wellpad is adjacent or contiguous to the OXF-114 Pad. Therefore, the OXF-114 pad should be considered a separate stationary source with respect to permitting programs, including Title V and Prevention of Significant Deterioration (PSD). As discussed in this application, the facility is a minor source of air emissions with respect to New Source Review (NSR) and Title V permitting.

1.2. R-13 APPLICATION ORGANIZATION

This R-13 permit application is organized as follows:

- Section 2: Sample Emission Source Calculations;
- Section 3: R-13 Application Form;
- Attachment A: Business Certificate;
- Attachment B: Map;
- Attachment C: Installation and Start Up Schedule;
- Attachment D: Regulatory Discussion;
- Attachment E: Plot Plan;
- Attachment F: Detailed Process Flow Diagram;
- Attachment G: Process Description;
- Attachment I: Emission Units Table;
- Attachment J: Emission Points Data Summary Sheet
- Attachment K: Fugitive Emissions Data Summary Sheet;
- Attachment L: Emissions Unit Data Sheets
- Attachment M: Air Pollution Control Device Sheet;
- Attachment N: Supporting Emission Calculations;
- Attachment O: Monitoring/Recordkeeping/Reporting/Testing Plans; and
- Application Fee

2. SAMPLE EMISSION SOURCE CALCULATIONS

The proposed changes are limited to volatile organic compound (VOC) and hazardous air pollutant (HAP) emissions from the operation of the storage tanks, loading of organic liquids in the storage tanks and tanker trucks, and fugitive emissions from the facility.

Emissions of VOC and HAPs from leaking equipment components have been estimated using facility estimated component counts and types along with emission factors from the *Protocol for Equipment Leak Emission Estimates, EPA 453/R-95-017, November 1995.* Emission factors are based on average measured TOC from component types indicated. Greenhouse gas emissions from component leaks are calculated according to the procedures in 40 CFR 98 Subpart W.[2] Pneumatic devices at the wellpad are intermittent bleed and are assumed to be in operation 1/3 of the year.

Potential emissions from the storage tanks remain unchanged from the current permit limits and EQT is not requesting an increase in throughput limits in the existing permit. Note that EQT will calculate potential emissions as required by New Source performance Standard Subpart OOOOa within the first 30 days from the start of production.

Uncontrolled emissions of VOC and HAPs from the loading of organic liquids from storage tanks to tank trucks are calculated using U.S. EPA's AP-42 Chapter 5 Section 2 factors.

[2] 40 CFR 98 Subpart W, *Petroleum and Natural Gas Systems*, Section 98.233(r), *Population Count and Emission Factors*.

3. R13 APPLICATION FORM

The WVDEP permit application forms contained in this application include all applicable R13 application forms including the required attachments.

WEST VIRGINIA DEPARTMENT OF ENVIRONMENTAL PROTECTION

DIVISION OF AIR QUALITY

601 57th Street, SE
Charleston, WV 25304
(304) 926-0475
www.dep.wv.gov/daq

APPLICATION FOR NSR PERMIT AND TITLE V PERMIT REVISION (OPTIONAL)

PLEASE CHECK ALL THAT APPLY TO **NSR (45CSR13)** (IF KNOWN):

☐ **CONSTRUCTION** ☐ **MODIFICATION** ☐ **RELOCATION**
☒ **CLASS I ADMINISTRATIVE UPDATE** ☐ **TEMPORARY**
☐ **CLASS II ADMINISTRATIVE UPDATE** ☐ **AFTER-THE-FACT**

PLEASE CHECK TYPE OF **45CSR30 (TITLE V)** REVISION (IF ANY):

☐ **ADMINISTRATIVE AMENDMENT** ☐ **MINOR MODIFICATION**
☐ **SIGNIFICANT MODIFICATION**

IF ANY BOX ABOVE IS CHECKED, INCLUDE TITLE V REVISION INFORMATION AS **ATTACHMENT S** TO THIS APPLICATION

FOR TITLE V FACILITIES ONLY: Please refer to "Title V Revision Guidance" in order to determine your Title V Revision options (Appendix A, "Title V Permit Revision Flowchart") and ability to operate with the changes requested in this Permit Application.

Section I. General

1. Name of applicant *(as registered with the WV Secretary of State's Office):*
EQT Production Company

2. Federal Employer ID No. ***(FEIN):***
25-0724685

3. Name of facility *(if different from above):*
OXF-114 Pad

4. The applicant is the:
☐ **OWNER** ☐ **OPERATOR** ☒ **BOTH**

5A. Applicant's mailing address:
625 Liberty Avenue, Suite 1700
Pittsburgh, PA 15222

5B. Facility's present physical address:

6. **West Virginia Business Registration.** Is the applicant a resident of the State of West Virginia? ☒ **YES** ☐ **NO**

- If **YES,** provide a copy of the **Certificate of Incorporation/Organization/Limited Partnership** (one page) including any name change amendments or other Business Registration Certificate as **Attachment A.**
- If **NO,** provide a copy of the **Certificate of Authority/Authority of L.L.C./Registration** (one page) including any name change amendments or other Business Certificate as **Attachment A.**

7. If applicant is a subsidiary corporation, please provide the name of parent corporation:

8. Does the applicant own, lease, have an option to buy or otherwise have control of the *proposed site?* ☒ **YES** ☐ **NO**

- If **YES,** please explain: Property is leased and held under production rights

- If **NO,** you are not eligible for a permit for this source.

9. Type of plant or facility (stationary source) to be **constructed, modified, relocated, administratively updated** or **temporarily permitted** (e.g., coal preparation plant, primary crusher, etc.): Natural gas production wellsite

10. North American Industry Classification System **(NAICS)** code for the facility:
211111

11A. DAQ Plant ID No. (for existing facilities only):
0 1 7 – 0 0 0 4 6

11B. List all current 45CSR13 and 45CSR30 (Title V) permit numbers associated with this process (for existing facilities only):
R13-3044

All of the required forms and additional information can be found under the Permitting Section of DAQ's website, or requested by phone.

12A.

- For **Modifications, Administrative Updates** or **Temporary permits** at an existing facility, please provide directions to the *present location* of the facility from the nearest state road;
- For **Construction** or **Relocation permits,** please provide directions to the *proposed new site location* from the nearest state road. Include a **MAP** as **Attachment B**.

North on I-79 to the Clarksburg exit 119. Turn onto Rt. 50 West and go 31.5 miles to Sunnyside Road. Turn left onto Sunnyside road and go 1.7 miles to Oxford Road (Rt.21).Turn left and continue for 5.3 miles and turn left onto Taylor Drain Road. Go 4.1 miles to a Y intersection and turn right. Go 1.2 miles and turn left through concrete bridge onto Straight Fork. Go 1.5 miles to lease road on the left. Go 9/10th mile to top of the hill and bear right past old pit road, continue approximately 2000 ft. to the pad.

12.B. New site address (if applicable):	12C. Nearest city or town: Auburn	12D. County: Doddridge
12.E. UTM Northing (KM): 4332769	12F. UTM Easting (KM): 517271	12G. UTM Zone: 17

13. Briefly describe the proposed change(s) at the facility:
Tank replacement.

14A. Provide the date of anticipated installation or change: – If this is an **After-The-Fact** permit application, provide the date upon which the proposed change did happen: :	14B. Date of anticipated Start-Up if a permit is granted:

14C. Provide a **Schedule** of the planned **Installation** of/**Change** to and **Start-Up** of each of the units proposed in this permit application as **Attachment C** (if more than one unit is involved).

15. Provide maximum projected **Operating Schedule** of activity/activities outlined in this application:
Hours Per Day 24 Days Per Week 7 Weeks Per Year 52

16. Is demolition or physical renovation at an existing facility involved? ☐ **YES** ☒ **NO**

17**. Risk Management Plans.** If this facility is subject to 112(r) of the 1990 CAAA, or will become subject due to proposed changes (for applicability help see www.epa.gov/ceppo), submit your **Risk Management Plan (RMP)** to U. S. EPA Region III.

18**. Regulatory Discussion.** List all Federal and State air pollution control regulations that you believe are applicable to the proposed process *(if known).* A list of possible applicable requirements is also included in Attachment S of this application (Title V Permit Revision Information). Discuss applicability and proposed demonstration(s) of compliance *(if known).* Provide this information as **Attachment D.**

Section II. Additional attachments and supporting documents.

19. Include a check payable to WVDEP – Division of Air Quality with the appropriate **application fee** (per 45CSR22 and 45CSR13).

20. Include a **Table of Contents** as the first page of your application package.

21. Provide a **Plot Plan,** e.g. scaled map(s) and/or sketch(es) showing the location of the property on which the stationary source(s) is or is to be located as **Attachment E** (Refer to ***Plot Plan Guidance***) **.**
– Indicate the location of the nearest occupied structure (e.g. church, school, business, residence).

22. Provide a **Detailed Process Flow Diagram(s)** showing each proposed or modified emissions unit, emission point and control device as **Attachment F.**

23. Provide a **Process Description** as **Attachment G.**
– Also describe and quantify to the extent possible all changes made to the facility since the last permit review (if applicable).

All of the required forms and additional information can be found under the Permitting Section of DAQ's website, or requested by phone.

24. Provide **Material Safety Data Sheets (MSDS)** for all materials processed, used or produced as **Attachment H.**

– For chemical processes, provide a MSDS for each compound emitted to the air.

25. Fill out the **Emission Units Table** and provide it as **Attachment I.**

26. Fill out the **Emission Points Data Summary Sheet (Table 1 and Table 2)** and provide it as **Attachment J.**

27. Fill out the **Fugitive Emissions Data Summary Sheet** and provide it as **Attachment K.**

28. Check all applicable **Emissions Unit Data Sheets** listed below:

☒ Bulk Liquid Transfer Operations	☐ Haul Road Emissions	☐ Quarry
☐ Chemical Processes	☐ Hot Mix Asphalt Plant	☐ Solid Materials Sizing, Handling and Storage Facilities
☐ Concrete Batch Plant	☐ Incinerator	☒ Storage Tanks
☐ Grey Iron and Steel Foundry	☐ Indirect Heat Exchanger	
☐ General Emission Unit, specify		

Fill out and provide the **Emissions Unit Data Sheet(s)** as **Attachment L.**

29. Check all applicable **Air Pollution Control Device Sheets** listed below:

☐ Absorption Systems	☐ Baghouse	☐ Flare
☐ Adsorption Systems	☐ Condenser	☐ Mechanical Collector
☐ Afterburner	☐ Electrostatic Precipitator	☐ Wet Collecting System

☐ Other Collectors, specify

Fill out and provide the **Air Pollution Control Device Sheet(s)** as **Attachment M.**

30. Provide all **Supporting Emissions Calculations** as **Attachment N,** or attach the calculations directly to the forms listed in Items 28 through 31.

31. **Monitoring, Recordkeeping, Reporting and Testing Plans.** Attach proposed monitoring, recordkeeping, reporting and testing plans in order to demonstrate compliance with the proposed emissions limits and operating parameters in this permit application. Provide this information as **Attachment O.**

➢ Please be aware that all permits must be practically enforceable whether or not the applicant chooses to propose such measures. Additionally, the DAQ may not be able to accept all measures proposed by the applicant. If none of these plans are proposed by the applicant, DAQ will develop such plans and include them in the permit.

32. **Public Notice.** At the time that the application is submitted, place a **Class I Legal Advertisement** in a newspaper of general circulation in the area where the source is or will be located (See 45CSR§13-8.3 through 45CSR§13-8.5 and ***Example Legal Advertisement*** for details). Please submit the **Affidavit of Publication** as **Attachment P** immediately upon receipt.

33**. Business Confidentiality Claims.** Does this application include confidential information (per 45CSR31)?

☐ **YES** ☒ **NO**

➢ If **YES,** identify each segment of information on each page that is submitted as confidential and provide justification for each segment claimed confidential, including the criteria under 45CSR§31-4.1, and in accordance with the DAQ's ***"Precautionary Notice – Claims of Confidentiality"*** guidance found in the ***General Instructions*** as **Attachment Q.**

Section III. Certification of Information

34. **Authority/Delegation of Authority.** Only required when someone other than the responsible official signs the application. Check applicable **Authority Form** below:

☐ Authority of Corporation or Other Business Entity	☐ Authority of Partnership
☐ Authority of Governmental Agency	☐ Authority of Limited Partnership

Submit completed and signed **Authority Form** as **Attachment R.**

All of the required forms and additional information can be found under the Permitting Section of DAQ's website, or requested by phone.

35A. **Certification of Information.** To certify this permit application, a Responsible Official (per 45CSR§13-2.22 and 45CSR§30-2.28) or Authorized Representative shall check the appropriate box and sign below.

Certification of Truth, Accuracy, and Completeness

I, the undersigned ☒ **Responsible Official** / ☐ **Authorized Representative,** hereby certify that all information contained in this application and any supporting documents appended hereto, is true, accurate, and complete based on information and belief after reasonable inquiry I further agree to assume responsibility for the construction, modification and/or relocation and operation of the stationary source described herein in accordance with this application and any amendments thereto, as well as the Department of Environmental Protection, Division of Air Quality permit issued in accordance with this application, along with all applicable rules and regulations of the West Virginia Division of Air Quality and W.Va. Code § 22-5-1 et seq. (State Air Pollution Control Act). If the business or agency changes its Responsible Official or Authorized Representative, the Director of the Division of Air Quality will be notified in writing within 30 days of the official change.

Compliance Certification

Except for requirements identified in the Title V Application for which compliance is not achieved, I, the undersigned hereby certify that, based on information and belief formed after reasonable inquiry, all air contaminant sources identified in this application are in compliance with all applicable requirements.

SIGNATURE _____ DATE: 11/27/17

(Please use blue ink) *(Please use blue ink)*

35B. Printed name of signee: Mike Gavin		35C. Title: Vice President
35D. E-mail: gavinm@eqt.com	36E. Phone:	36F. FAX:
36A. Printed name of contact person (if different from above): Alex Bosiljevac		36B. Title: Environmental Coord.
36C. E-mail: abosiljevac@eqt.com	36D. Phone: 412-395-3699	36E. FAX:

PLEASE CHECK ALL APPLICABLE ATTACHMENTS INCLUDED WITH THIS PERMIT APPLICATION:

☒ **Attachment A: Business Certificate**
☒ **Attachment B: Map(s)**
☒ **Attachment C: Installation and Start Up Schedule**
☒ **Attachment D: Regulatory Discussion**
☒ **Attachment E: Plot Plan**
☒ **Attachment F: Detailed Process Flow Diagram(s)**
☒ **Attachment G: Process Description**
☐ **Attachment H: Material Safety Data Sheets (MSDS)**
☒ **Attachment I: Emission Units Table**
☒ **Attachment J: Emission Points Data Summary Sheet**
☒ **Attachment K: Fugitive Emissions Data Summary Sheet**
☒ **Attachment L: Emissions Unit Data Sheet(s)**
☐ **Attachment M: Air Pollution Control Device Sheet(s)**
☒ **Attachment N: Supporting Emissions Calculations**
☒ **Attachment O: Monitoring/Recordkeeping/Reporting/Testing Plans**
☐ **Attachment P: Public Notice**
☐ **Attachment Q: Business Confidential Claims**
☐ **Attachment R: Authority Forms**
☐ **Attachment S: Title V Permit Revision Information**
☒ **Application Fee**

Please mail an original and three (3) copies of the complete permit application with the signature(s) to the DAQ, Permitting Section, at the address listed on the first page of this application. Please DO NOT fax permit applications.

FOR AGENCY USE ONLY – IF THIS IS A TITLE V SOURCE:

☐ *Forward 1 copy of the application to the Title V Permitting Group and:*
☐ *For Title V Administrative Amendments:*
  ☐ *NSR permit writer should notify Title V permit writer of draft permit,*
☐ *For Title V Minor Modifications:*
  ☐ *Title V permit writer should send appropriate notification to EPA and affected states within 5 days of receipt,*
  ☐ *NSR permit writer should notify Title V permit writer of draft permit.*
☐ *For Title V Significant Modifications processed in parallel with NSR Permit revision:*
  ☐ *NSR permit writer should notify a Title V permit writer of draft permit,*
  ☐ *Public notice should reference both 45CSR13 and Title V permits,*
  ☐ *EPA has 45 day review period of a draft permit.*

All of the required forms and additional information can be found under the Permitting Section of DAQ's website, or requested by phone.

ATTACHMENT A

Current Business Certificate

WEST VIRGINIA
STATE TAX DEPARTMENT
BUSINESS REGISTRATION CERTIFICATE

ISSUED TO:
EQT PRODUCTION COMPANY
625 LIBERTY AVE 1700
PITTSBURGH, PA 15222-3114

BUSINESS REGISTRATION ACCOUNT NUMBER: **1022-8081**

This certificate is issued on: 08/4/2010

This certificate is issued by
the West Virginia State Tax Commissioner
in accordance with Chapter 11, Article 12, of the West Virginia Code

The person or organization identified on this certificate is registered to conduct business in the State of West Virginia at the location above.

This certificate is not transferrable and must be displayed at the location for which issued.

This certificate shall be permanent until cessation of the business for which the certificate of registration was granted or until it is suspended, revoked or cancelled by the Tax Commissioner.

Change in name or change of location shall be considered a cessation of the business and a new certificate shall be required.

TRAVELING/STREET VENDORS: Must carry a copy of this certificate in every vehicle operated by them. CONTRACTORS, DRILLING OPERATORS, TIMBER/LOGGING OPERATIONS: Must have a copy of this certificate displayed at every job site within West Virginia.

atL006 v.3
L0553297664

ATTACHMENT B

Map

ATTACHMENT B: AREA MAP

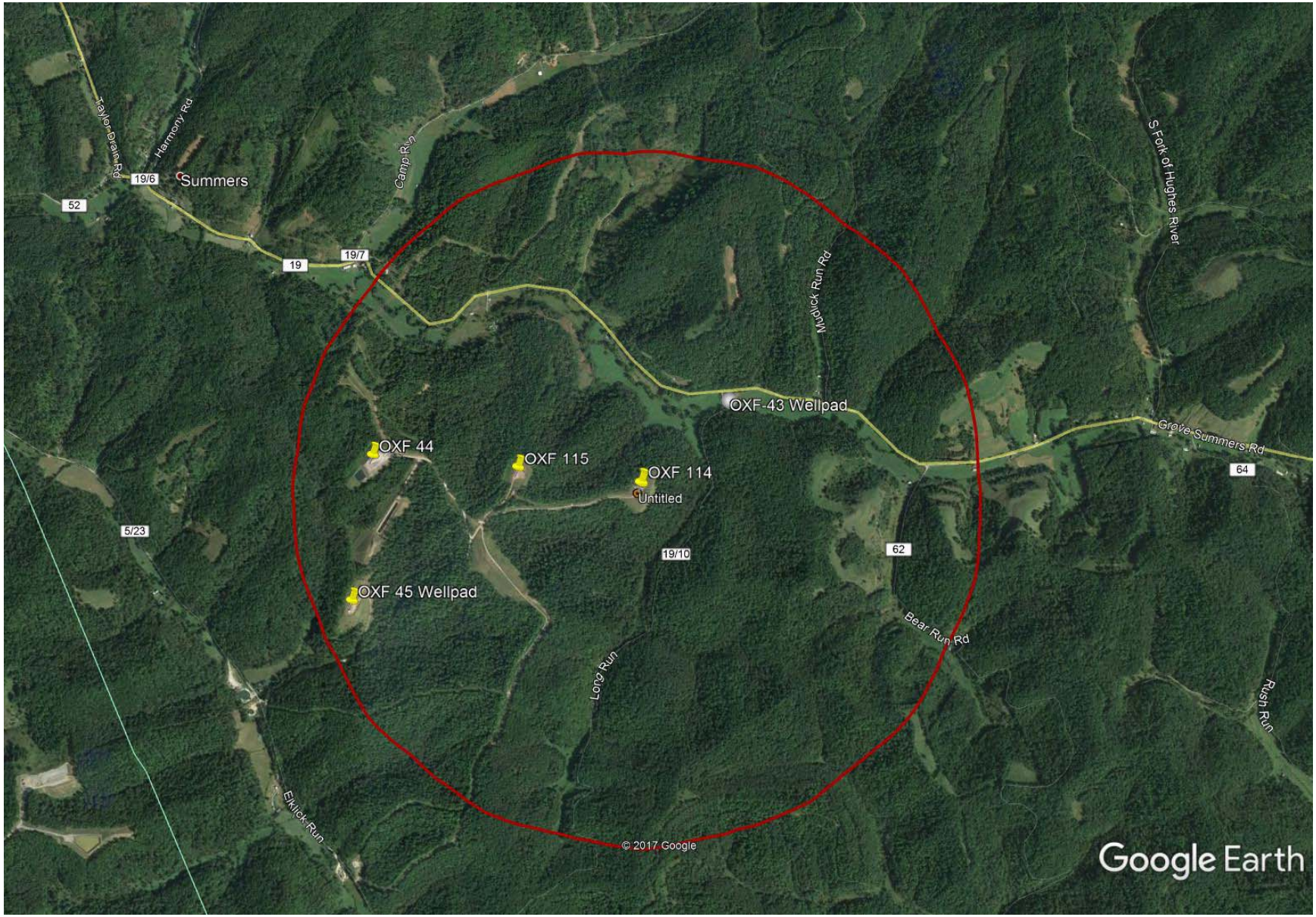


Figure 1 - Map of OXF 114 Location with 1 Mile Radius Circle

Coordinates:
Latitude: 39.144074°
Longitude: -80.79995°

ATTACHMENT B: AREA MAP

Figure 2 - Map of OXF-114 Location

Zone: 17
UTM Northing (KM): 4,332.783
UTM Easting (KM): 517.286
Elevation: ~2,913 ft

ATTACHMENT C

Startup and Installation Schedule

Schedule of Planned Installation and Start-Up

The proposed changes can be implemented upon submittal of the administrative update application.

ATTACHMENT D

Regulatory Discussion

Regulatory Applicability

This section documents the applicability determinations made for Federal and State air quality regulations. The monitoring, recordkeeping, reporting, and testing plan is presented in Attachment O. In this section, applicability or non-applicability of the following regulatory programs is addressed:

- Prevention of Significant Deterioration (PSD) permitting;
- Title V of the 1990 Clean Air Act Amendments;
- New Source Performance Standards (NSPS);
- National Emission Standards for Hazardous Air Pollutants (NESHAP); and
- West Virginia State Implementation Plan (SIP) regulations.

This review is presented to supplement and/or add clarification to the information provided in the WVDEP R13 permit application forms. In addition to providing a summary of applicable requirements, this section of the application also provides non-applicability determinations for certain regulations, allowing the WVDEP to confirm that identified regulations are not applicable to the wellpad. Note that explanations of non-applicability are limited to those regulations for which there may be some question of applicability specific to the operations at the wellpad. Regulations that are categorically non-applicable are not discussed (e.g., NSPS Subpart J, Standards of Performance for Petroleum Refineries).

Prevention of Significant Deterioration Source Classification

Federal construction permitting programs regulate new and modified sources of attainment pollutants under PSD and new and modified sources of non-attainment pollutants under Non-Attainment New Source Review (NNSR). PSD and NNSR regulations apply when a major source makes a change, such as installing new equipment or modifying existing equipment, and a significant increase in emissions results from the change. The wellpad is located in an attainment area. As such, PSD regulations are applicable. The wellpad will remain a minor source with respect to the PSD program after the project since its potential emissions are below all the PSD thresholds. As such, PSD permitting is not triggered by this construction activity. EQT will monitor future construction activities at the site closely and will compare any future increase in emissions with the PSD thresholds to ensure these activities will not trigger this program.

Title V Operating Permit Program

Title 40 of the Code of Federal Regulations Part 70 (40 CFR 70) establishes the federal Title V operating permit program. West Virginia has incorporated the provisions of this federal program in its Title V operating permit program in West Virginia Code of State Regulations (CSR) 45-30. The major source thresholds with respect to the West Virginia Title V operating permit program regulations are 10 tons per year (tpy) of a single HAP, 25 tpy of any combination of HAP, and 100 tpy of all other regulated pollutants. The potential emissions of all regulated pollutants are below the corresponding threshold(s) at this facility after the proposed project. Therefore, the wellpad is not a major source for Title V purposes.

New Source Performance Standards

New Source Performance Standards, located in 40 CFR 60, require new, modified, or reconstructed sources to control emissions to the level achievable by the best demonstrated technology as specified in the applicable provisions. Moreover, any source subject to an NSPS is also subject to the general provisions of NSPS Subpart A, except where expressly noted. The following is a summary of applicability and non-applicability determinations for NSPS regulations of relevance to the wellpad. The following NSPS could potentially apply to the wellpad:

- 40 CFR Part 60 Subparts D/Da/Db/Dc – Steam Generating Units,
- 40 CFR Part 60 Subpart K/Ka/Kb – Storage Vessels for Petroleum Liquids/Volatile Organic Liquids, and
- 40 CFR Part 60 Subpart OOOOa – Crude Oil and Natural Gas Facilities.

NSPS Subparts D, Da, Db, and Dc – Steam Generating Units

These subparts apply to steam generating units of various sizes, all greater than 10 MMBtu/hr. The proposed project does not include any steam generating units with a heat input greater than 10 MMbtu/hr, therefore the requirements of these subparts do not apply.

NSPS Subparts K, Ka, and Kb – Storage Vessels for Petroleum Liquids/Volatile Organic Liquids

These subparts apply to storage tanks of certain sizes constructed, reconstructed, or modified during various time periods. Subpart K applies to storage tanks constructed, reconstructed, or modified prior to 1978, and Subpart Ka applies to those constructed, reconstructed, or modified prior to 1984. Both Subparts K and Ka apply to storage tanks with a capacity greater than 40,000 gallons. Subpart Kb applies to volatile organic liquid (VOL) storage tanks constructed, reconstructed, or modified after July 23, 1984 with a capacity equal to or greater than 75 m^3 (~19,813 gallons). All of the tanks at the wellpad have a capacity of 19,813 gallons or less. As such, Subparts K, Ka, and Kb do not apply to the storage tanks at the wellpad.

NSPS Subpart OOOOa—Crude Oil and Natural Gas Facilities

Subpart OOOOa, Standards of Standards of Performance for Crude Oil and Natural Gas Facilities, applies to affected facilities that commenced construction, reconstruction, or modification after September 18, 2015. The regulation was published final in the Federal Register on June 3, 2016. The rule includes provisions for the following facilities:

- Hydraulically fractured wells;
- Centrifugal compressors located between the wellhead and the point of custody transfer to the natural gas distribution segment;
- Reciprocating compressors located between the wellhead and the point of custody transfer to the natural gas distribution segment;
- Continuous bleed natural gas-driven pneumatic controllers with a bleed rate of > 6 scfh located in the production, gathering, processing, or transmission and storage segments (excluding natural gas processing plants);
- Continuous bleed natural gas-driven pneumatic controllers located at natural gas processing plants;
- Pneumatic pumps located in the production and processing segments;
- Storage vessels located in the production, gathering, processing, or transmission and storage segments;
- The collection of fugitive emissions components at a well site;
- The collection of fugitive emissions components at a compressor station; and
- Sweetening units located onshore that process natural gas produced from either onshore or offshore wells.

The proposed project does not include any source categories that is an affected source under NSPS Subpart OOOOa, with the exception of the produced fluids tanks. There are eight (8) produced fluids storage vessels proposed for the wellpad. EQT anticipates that the storage vessels will each have potential VOC emissions less than 6 tpy. As such, per 60.5365a(e), the tanks will not be storage vessel affected facilities under the rule.

Non-Applicability of All Other NSPS

NSPS are developed for particular industrial source categories. Other than NSPS developed for natural gas production (Subpart OOOOa) and associated equipment (Subparts D-Dc and K-Kb), the applicability of a particular NSPS to the wellpad can be readily ascertained based on the industrial source category covered. All other NSPS are categorically not applicable to the proposed project.

National Emission Standards for Hazardous Air Pollutants

Part 63 NESHAP allowable emission limits are established on the basis of a maximum achievable control technology (MACT) determination for a particular major source. A HAP major source is defined as having potential emissions in excess of 25 tpy for total HAP and/or potential emissions in excess of 10 tpy for any individual HAP. Note that Subpart HH has specific major source applicability criteria (i.e., excluding engine emissions from the major source determination). The OXF-114 Wellpad will be an Area (minor) source of HAP since its potential emissions of HAP are

less than the 10/25 major source thresholds. NESHAP apply to sources in specifically regulated industrial source categories (Clean Air Act Section 112(d)) or on a case-by-case basis (Section 112(g)) for facilities not regulated as a specific industrial source type:

- 40 CFR Part 63 Subpart HH – Oil and Natural Gas Production Facilities
- 40 CFR Part 63 Subpart JJJJJJ – Industrial, Commercial, and Institutional Boilers

40 CFR 63 Subpart HH – Oil and Natural Gas Production Facilities

This standard contains requirements for both major and area sources of HAP. At area sources, the only affected source is a triethylene glycol dehydration unit (§63.760(b)(2)). The wellpad does not include a triethylene glycol dehydration unit; therefore the requirements of this subpart do not apply.

40 CFR 63 Subpart JJJJJJ – Industrial, Commercial, and Institutional Boilers

This MACT standard applies to industrial, commercial, and institutional boilers of various sizes and fuel types at area sources. The wellpad does not include sources in the source category of the rule. Therefore, no sources at the wellpad are subject to any requirements under 40 CFR 63 Subpart JJJJJJ.

West Virginia SIP Regulations

The OXF-114 Wellpad is potentially subject to regulations contained in the West Virginia Code of State Regulations, Chapter 45 (Code of State Regulations). The Code of State Regulations fall under two main categories, those regulations that are generally applicable (e.g., permitting requirements), and those that have specific applicability (e.g., PM standards for manufacturing equipment).

45 CSR 4: To Prevent and Control the Discharge of Air Pollutants into the Air Which Causes or Contributes to an Objectionable Odor

According to 45 CSR 4-3:

No person shall cause, suffer, allow or permit the discharge of air pollutants which cause or contribute to an objectionable odor at any location occupied by the public.

The OXF-114 Wellpad is generally subject to this requirement. However, due to the nature of the process at the station, production of objectionable odor from the wellpad during normal operation is unlikely.

45 CSR 16: Standards of Performance for New Stationary Sources

45 CSR 16-1 incorporates the federal Clean Air Act (CAA) standards of performance for new stationary sources set forth in 40 CPR Part 60 by reference. As such, by complying with all applicable requirements of 40 CFR Part 60 at the wellpad, EQT will be complying with 45 CSR 16.

45 CSR 17: To Prevent and Control Particulate Matter Air Pollution from Materials Handling, Preparation, Storage and Other Sources of Fugitive Particulate Matter

According to 45 CSR 17-3.1:

No person shall cause, suffer, allow or permit fugitive particulate matter to be discharged beyond the boundary lines of the property lines of the property on which the discharge originates or at any public or residential location, which causes or contributes to statutory air pollution.

Due to the nature of the activities at the wellpad, it is unlikely that fugitive particulate matter emissions will be emitted under normal operating conditions. However, EQT will take measures to ensure any fugitive particulate matter emissions will not cross the property boundary should any such emissions occur.

45 CSR 21-28: Petroleum Liquid Storage in Fixed Roof Tanks

45 CSR 21-28 applies to any fixed roof petroleum liquid storage tank with a capacity greater than 40,000 gallons. The capacity of each storage tank at the wellpad is less than 40,000 gallons; therefore, 45 CSR 21-28 will not apply to the petroleum liquid storage tanks at this wellpad.

45 CSR 34: Emissions Standards for Hazardous Air Pollutants

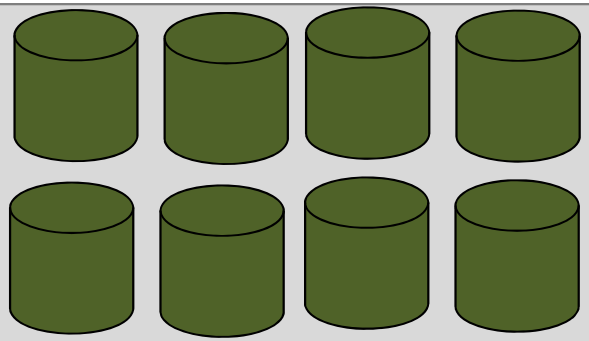
45 CSR 34-1 incorporates the federal Clean Air Act (CAA) national emissions standards for hazardous air pollutants (NESHAPs) as set forth in 40 CPR Parts 61 and 63 by reference. As such, by complying with all applicable requirements of 40 CFR Parts 61 and 63 at the wellpad, EQT will be complying with 45 CSR 34. Note that there are no applicable requirements under 40 CFR Parts 61 and 63 for the wellpad.

Non-Applicability of Other SIP Rules

A thorough examination of the West Virginia SIP rules with respect to applicability at the wellpad reveals many SIP regulations that do not apply or impose additional requirements on operations. Such SIP rules include those specific to a particular type of industrial operation that is categorically not applicable to the wellpad

ATTACHMENT E

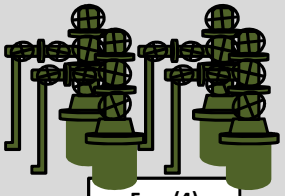
Plot Plan



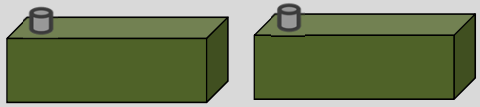
Eight(8) Produced Fluid
Storage Tanks
210 bbl (each)
S011-S018

NOTE: This diagram is not to scale.
Locations and distances between surface equipment are not known at this time.

Entrance to OXF-114 Pad



Four(4)
Wellheads



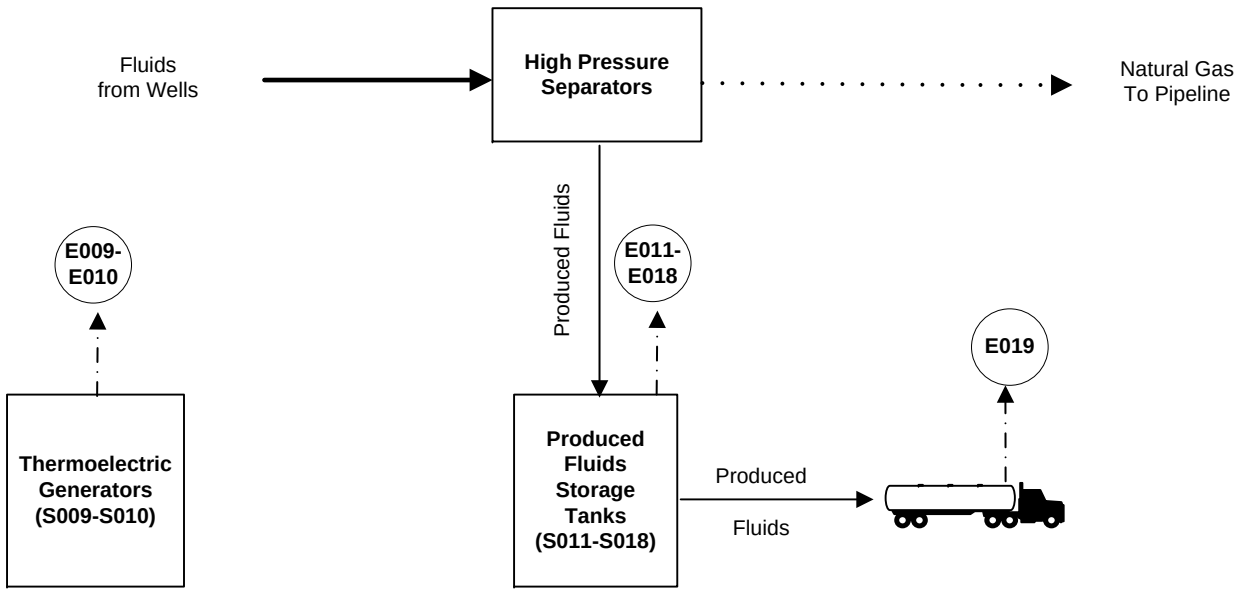
Two (2)
Thermoelectric Generators
0.013 MMBtu/hr (each)
S009-S010

Attachment F

OXF-114 Well Pad Plot Plan

ATTACHMENT F

Detailed Process Flow Diagram



Flow Legend

- Gas/Water/Condensate Flow
- Water/Condensate Flow
- Gas/Vapor Flow
- Stack Emissions
- Emission Point

EQT Where energy meets innovation.

EQT Production Company

Process Flow Diagram

OXF 114 Wellpad

Trinity Consultants

November 2017

ATTACHMENT G

Process Description

Process Description

EQT is submitting this R13 Class I Administrative Update application to modify the permit for an existing natural gas production wellpad (OXF-114). Specifically, EQT is proposing to install eight (8) produced fluid storage tanks at the OXF-114 wellpad.

The incoming gas/liquid stream from the underground wells will pass through a high pressure separator, which will separate gas (natural gas from the separator is sent to the sales line) from produced fluids (produced water and condensate). The produced fluids are transferred to the storage tanks. Once the tanks are filled, the contents are loaded into trucks for transport. Facility electricity is provided by thermoelectric generators.

A process flow diagram is included as Attachment F.

ATTACHMENT I

Emission Units Table

Attachment I

Emission Units Table

(includes all emission units and air pollution control devices that will be part of this permit application review, regardless of permitting status)

Emission Unit ID[1]	Emission Point ID[2]	Emission Unit Description	Year Installed/ Modified	Design Capacity	Type[3] and Date of Change	Control Device[4]
S001-S008	E001-E008	Eight (8) Condensate Tanks	2009	210 bbl	Removed	N/A
S009	E009	Thermoelectric Generator	2010	0.013 MMBtu/hr	Existing	N/A
S010	E010	Thermoelectric Generator	2010	0.013 MMBtu/hr	Existing	N/A
S011	E011	Produced Fluids Tank	2017	210 bbl	New	N/A
S012	E012	Produced Fluids Tank	2017	210 bbl	New	N/A
S013	E013	Produced Fluids Tank	2017	210 bbl	New	N/A
S014	E014	Produced Fluids Tank	2017	210 bbl	New	N/A
S015	E015	Produced Fluids Tank	2017	210 bbl	New	N/A
S016	E016	Produced Fluids Tank	2017	210 bbl	New	N/A
S017	E017	Produced Fluids Tank	2017	210 bbl	New	N/A
S018	E018	Produced Fluids Tank	2017	210 bbl	New	N/A

[1] For Emission Units (or Sources) use the following numbering system:1S, 2S, 3S,... or other appropriate designation.
[2] For Emission Points use the following numbering system:1E, 2E, 3E, ... or other appropriate designation.
[3] New, modification, removal
[4] For Control Devices use the following numbering system: 1C, 2C, 3C,... or other appropriate designation.

ATTACHMENT J

Emission Points Data Summary Sheet

Attachment J
EMISSION POINTS DATA SUMMARY SHEET

Table 1: Emissions Data

Emission Point ID No. *(Must match Emission Units Table & Plot Plan)*	Emission Point Type[1]	Emission Unit Vented Through This Point *(Must match Emission Units Table & Plot Plan)*		Air Pollution Control Device *(Must match Emission Units Table & Plot Plan)*		Vent Time for Emission Unit *(chemical processes only)*		All Regulated Pollutants - Chemical Name/CAS[3] *(Speciate VOCs & HAPS)*	Maximum Potential Uncontrolled Emissions [4]		Maximum Potential Controlled Emissions [5]		Emission Form or Phase *(At exit conditions, Solid, Liquid or Gas/Vapor)*	Est. Method Used [6]	Emission Concentration [7] (ppmv or mg/m^4)
		ID No.	Source	ID No.	Device Type	Short Term[2]	Max (hr/yr)		lb/hr	ton/yr	lb/hr	ton/yr			
E009	Upward Vertical stack	S009	Thermoelectric Generator	NA	NA	NA	NA	NOx CO VOC SO_2 $PM/PM_{10}/PM_{2.5}$ CO_2e	1.2E-03 1.0E-03 6.8E-05 7.4E-06 9.4E-05 1.52	0.01 4.6E-03 3.0E-04 3.3E-05 4.1E-04 6.67	1.2E-03 1.0E-03 6.8E-05 7.4E-06 9.4E-05 1.52	0.01 4.6E-03 3.0E-04 3.3E-05 4.1E-04 6.67	Gas/Vapor	O[A,C]	
E010	Upward Vertical stack	S010	Thermoelectric Generator	NA	NA	NA	NA	NOx CO VOC SO_2 $PM/PM_{10}/PM_{2.5}$ CO_2e	1.2E-03 1.0E-03 6.8E-05 7.4E-06 9.4E-05 1.52	0.01 4.6E-03 3.0E-04 3.3E-05 4.1E-04 6.67	1.2E-03 1.0E-03 6.8E-05 7.4E-06 9.4E-05 1.52	0.01 4.6E-03 3.0E-04 3.3E-05 4.1E-04 6.67	Gas/Vapor	O[A,C]	
E011-E018	Upward Vertical Stack	S011-S018	Produced Fluids Storage Tanks	NA	NA	NA	NA	VOC HAP CO_2e n-hexane toluene xylene benzene	20.05 0.76 80.98 0.71 0.02 0.01 0.01	87.84 3.31 354.67 3.11 0.09 0.04 0.06	20.05 0.76 80.98 0.71 0.02 0.01 0.01	87.84 3.31 354.67 3.11 0.09 0.04 0.06	Gas/Vapor	O[B]	
E019	Fugitive	S019	Liquid Loading (Uncaptured)	NA	NA	NA	NA	VOC HAP n-hexane	1.34 0.04 0.04	0.67 0.02 0.02	1.34 0.04 0.04	0.67 0.02 0.02	Gas/Vapor	O[B]	

A- AP-42 Section 1.4 Tables 1.4-1, 1.4-2 and 1.4-3, July 1998.
B- Current permit limits
C- 40 CFR 98, Subpart C for natural gas fired combustion.

ATTACHMENT K

Fugitive Emissions Data Summary Sheet

Attachment K

FUGITIVE EMISSIONS DATA SUMMARY SHEET

The FUGITIVE EMISSIONS SUMMARY SHEET provides a summation of fugitive emissions. Fugitive emissions are those emissions which could not reasonably pass through a stack, chimney, vent or other functionally equivalent opening. Note that uncaptured process emissions are not typically considered to be fugitive, and must be accounted for on the appropriate EMISSIONS UNIT DATA SHEET and on the EMISSION POINTS DATA SUMMARY SHEET.

Please note that total emissions from the source are equal to all vented emissions, all fugitive emissions, plus all other emissions (e.g. uncaptured emissions).

APPLICATION FORMS CHECKLIST - FUGITIVE EMISSIONS
1.) Will there be haul road activities? ☐ Yes ☒ No (No change to existing) ☐ If YES, then complete the HAUL ROAD EMISSIONS UNIT DATA SHEET.
2.) Will there be Storage Piles? ☐ Yes ☒ No ☐ If YES, complete Table 1 of the NONMETALLIC MINERALS PROCESSING EMISSIONS UNIT DATA SHEET.
3.) Will there be Liquid Loading/Unloading Operations? ☒ Yes ☐ No (No change to existing) ☐ If YES, complete the BULK LIQUID TRANSFER OPERATIONS EMISSIONS UNIT DATA SHEET.
4.) Will there be emissions of air pollutants from Wastewater Treatment Evaporation? ☐ Yes ☒ No ☐ If YES, complete the GENERAL EMISSIONS UNIT DATA SHEET.
5.) Will there be Equipment Leaks (e.g. leaks from pumps, compressors, in-line process valves, pressure relief devices, open-ended valves, sampling connections, flanges, agitators, cooling towers, etc.)? ☒ Yes ☐ No (No change to existing) ☐ If YES, complete the LEAK SOURCE DATA SHEET section of the CHEMICAL PROCESSES EMISSIONS UNIT DATA SHEET.
6.) Will there be General Clean-up VOC Operations? ☐ Yes ☒ No ☐ If YES, complete the GENERAL EMISSIONS UNIT DATA SHEET.
7.) Will there be any other activities that generate fugitive emissions? ☐ Yes ☒ No ☐ If YES, complete the GENERAL EMISSIONS UNIT DATA SHEET or the most appropriate form.
If you answered "NO" to all of the items above, it is not necessary to complete the following table, "Fugitive Emissions Summary."

FUGITIVE EMISSIONS SUMMARY	All Regulated Pollutants - Chemical Name/CAS [1]	Maximum Potential Uncontrolled Emissions [2]		Maximum Potential Controlled Emissions [3]		Est. Method Used [4]
		lb/hr	ton/yr	lb/hr	ton/yr	
Haul Road/Road Dust Emissions Paved Haul Roads	NA	---	---	---	---	---
Unpaved Haul Roads	PM PM_{10} $PM_{2.5}$	0.714 0.182 0.018	3.13 0.80 0.080	0.714 0.182 0.018	3.13 0.80 0.080	O[A]
Storage Pile Emissions	NA	---	---	---	---	---
Loading/Unloading Operations	VOC HAP (n-hexane)	1.34 0.04	0.67 0.02	1.34 0.04	0.67 0.02	O[B]
Wastewater Treatment Evaporation & Operations	NA	---	---	---	---	---
Equipment Leaks	VOC HAP CO_2e n-hexane 2,2,4-trimethylpentane benzene	N/A	2.39 0.09 446.36 0.04 0.04 0.01	N/A	2.39 0.09 446.36 0.04 0.04 0.01	O[C]
General Clean-up VOC Emissions	NA	---	---	---	---	---
Other	NA	---	---	---	---	---

A – AP-42 Section 13.2.2

B – AP-42 Section 5.2

C –*Protocol for Equipment Leak Emission Estimates*, EPA 453/R-95-017, Table 2-1, November 1995. 40 CFR Subpart 98.

[1] List all regulated air pollutants. Speciate VOCs, including all HAPs. Follow chemical name with Chemical Abstracts Service (CAS) number. LIST Acids, CO, CS_2, VOCs, H_2S, Inorganics, Lead, Organics, O_3, NO, NO_2, SO_2, SO_3, all applicable Greenhouse Gases (including CO_2 and methane), etc. DO NOT LIST H_2, H_2O, N_2, O_2, and Noble Gases.

[2] Give rate with no control equipment operating. If emissions occur for less than 1 hr, then record emissions per batch in minutes (e.g. 5 lb VOC/20 minute batch).

LEAK-SOURCE DATA SHEET

Source Category	Pollutant	Number of Source Components[1]	Number of Components Monitored by Frequency[2]	Average Time to Repair (days)[3]	Estimated Annual Emission Rate (lb/yr)[4]
Pumps[5]	light liquid VOC[6,7]	1	0		384
	heavy liquid VOC[8]				
	Non-VOC[9]				
Valves[10]	Gas VOC	88	0		10,145
	Light Liquid VOC				
	Heavy Liquid VOC				
	Non-VOC				
Safety Relief Valves[11]	Gas VOC				
	Non VOC				
Open-ended Lines[12]	VOC	2	0		66
	Non-VOC				
Sampling Connections[13]	VOC				
	Non-VOC				
Compressors	VOC				
	Non-VOC				
Flanges	VOC	380	0		13,430
	Non-VOC				
Other	VOC				
	Non-VOC				

[1 - 13] See notes on the following page.

ATTACHMENT L

Emissions Unit Data Sheet

Attachment L
EMISSIONS UNIT DATA SHEET
STORAGE TANKS

Provide the following information for each new or modified bulk liquid storage tank as shown on the *Equipment List Form* and other parts of this application. A tank is considered modified if the material to be stored in the tank is different from the existing stored liquid.

IF USING US EPA'S TANKS EMISSION ESTIMATION PROGRAM (AVAILABLE AT **www.epa.gov/tnn/tanks.html**), APPLICANT MAY ATTACH THE SUMMARY SHEETS IN LIEU OF COMPLETING SECTIONS III, IV, & V OF THIS FORM. HOWEVER, SECTIONS I, II, AND VI OF THIS FORM MUST BE COMPLETED. US EPA'S AP-42, SECTION 7.1, "ORGANIC LIQUID STORAGE TANKS," MAY ALSO BE USED TO ESTIMATE VOC AND HAP EMISSIONS (**http://www.epa.gov/tnn/chief/**).

I. GENERAL INFORMATION (required)

1. Bulk Storage Area Name OXF-114 Pad	2. Tank Name Produced Fluid Storage Tanks
3. Tank Equipment Identification No. (as assigned on *Equipment List Form*) S011 through S018	4. Emission Point Identification No. (as assigned on *Equipment List Form*) E011 through E018
5. Date of Commencement of Construction (for existing tanks) 2017	
6. Type of change ☒ New Construction ☐ New Stored Material ☐ Other Tank Modification	
7. Description of Tank Modification (if applicable) Not applicable	
7A. Does the tank have more than one mode of operation? ☐ Yes ☒ No (e.g. Is there more than one product stored in the tank?)	
7B. If YES, explain and identify which mode is covered by this application (Note: A separate form must be completed for each mode).	
7C. Provide any limitations on source operation affecting emissions, any work practice standards (e.g. production variation, etc.): None	

II. TANK INFORMATION (required)

8. Design Capacity (specify barrels or gallons). Use the internal cross-sectional area multiplied by internal height. 210 bbl	
9A. Tank Internal Diameter (ft) 10	9B. Tank Internal Height (or Length) (ft) 15
10A. Maximum Liquid Height (ft) 15	10B. Average Liquid Height (ft) 10
11A. Maximum Vapor Space Height (ft) 15	11B. Average Vapor Space Height (ft) 5
12. Nominal Capacity (specify barrels or gallons). This is also known as "working volume" and considers design liquid levels and overflow valve heights. 210 bbl	

13A. Maximum annual throughput (gal/yr)	13B. Maximum daily throughput (gal/day)
1,194,060	~3271

14. Number of Turnovers per year (annual net throughput/maximum tank liquid volume): ~135

15. Maximum tank fill rate (gal/min): TBD

16. Tank fill method: ☐ Submerged ☒ Splash ☐ Bottom Loading

17. Complete 17A and 17B for Variable Vapor Space Tank Systems ☐ Does Not Apply

17A. Volume Expansion Capacity of System (gal)	17B. Number of transfers into system per year

18. Type of tank (check all that apply):
- ☒ Fixed Roof _x_ vertical ___ horizontal ___ flat roof _x_ cone roof ___ dome roof
  ___ other (describe)
- ☐ External Floating Roof ___ pontoon roof ___ double deck roof
- ☐ Domed External (or Covered) Floating Roof
- ☐ Internal Floating Roof ___ vertical column support ___ self-supporting
- ☐ Variable Vapor Space ___ lifter roof ___ diaphragm
- ☐ Pressurized ___ spherical ___ cylindrical
- ☐ Underground
- ☐ Other (describe)

III. TANK CONSTRUCTION & OPERATION INFORMATION (optional if providing TANKS Summary Sheets)

19. Tank Shell Construction:
☐ Riveted ☐ Gunite lined ☐ Epoxy-coated rivets ☒ Other (describe) welded

20A. Shell Color	20B. Roof Color	20C. Year Last Painted

21. Shell Condition (if metal and unlined):
☒ No Rust ☐ Light Rust ☐ Dense Rust ☐ Not applicable

22A. Is the tank heated? ☐ YES ☒ NO

22B. If YES, provide the operating temperature (°F)

22C. If YES, please describe how heat is provided to tank.

23. Operating Pressure Range (psig): -0.30 to 0.75 psig

24. Complete the following section for **Vertical Fixed Roof Tanks** ☐ Does Not Apply

24A. For dome roof, provide roof radius (ft): 10

24B. For cone roof, provide slope (ft/ft)

25. Complete the following section for **Floating Roof Tanks** ☒ Does Not Apply

25A. Year Internal Floaters Installed:

25B. Primary Seal Type: (check one)
☐ Metallic (Mechanical) Shoe Seal ☐ Liquid Mounted Resilient Seal
☐ Vapor Mounted Resilient Seal ☐ Other (describe):

25C. Is the Floating Roof equipped with a Secondary Seal? ☐ YES ☐ NO

25D. If YES, how is the secondary seal mounted? (check one) ☐ Shoe ☐ Rim ☐ Other (describe):

25E. Is the Floating Roof equipped with a weather shield? ☐ YES ☐ NO

25F. Describe deck fittings; indicate the number of each type of fitting:

ACCESS HATCH		
BOLT COVER, GASKETED:	UNBOLTED COVER, GASKETED:	UNBOLTED COVER, UNGASKETED:

AUTOMATIC GAUGE FLOAT WELL		
BOLT COVER, GASKETED:	UNBOLTED COVER, GASKETED:	UNBOLTED COVER, UNGASKETED:

COLUMN WELL		
BUILT-UP COLUMN – SLIDING COVER, GASKETED:	BUILT-UP COLUMN – SLIDING COVER, UNGASKETED:	PIPE COLUMN – FLEXIBLE FABRIC SLEEVE SEAL:

LADDER WELL	
PIP COLUMN – SLIDING COVER, GASKETED:	PIPE COLUMN – SLIDING COVER, UNGASKETED:

GAUGE-HATCH/SAMPLE PORT	
SLIDING COVER, GASKETED:	SLIDING COVER, UNGASKETED:

ROOF LEG OR HANGER WELL		
WEIGHTED MECHANICAL ACTUATION, GASKETED:	WEIGHTED MECHANICAL ACTUATION, UNGASKETED:	SAMPLE WELL-SLIT FABRIC SEAL (10% OPEN AREA)

VACUUM BREAKER	
WEIGHTED MECHANICAL ACTUATION, GASKETED:	WEIGHTED MECHANICAL ACTUATION, UNGASKETED:

RIM VENT	
WEIGHTED MECHANICAL ACTUATION GASKETED:	WEIGHTED MECHANICAL ACTUATION, UNGASKETED:

DECK DRAIN (3-INCH DIAMETER)	
OPEN:	90% CLOSED:

STUB DRAIN
1-INCH DIAMETER:

OTHER (DESCRIBE, ATTACH ADDITIONAL PAGES IF NECESSARY)

26. Complete the following section for Internal Floating Roof Tanks ☒ Does Not Apply	
26A. Deck Type: ☐ Bolted ☐ Welded	
26B. For Bolted decks, provide deck construction:	
26C. Deck seam: ☐ Continuous sheet construction 5 feet wide ☐ Continuous sheet construction 6 feet wide ☐ Continuous sheet construction 7 feet wide ☐ Continuous sheet construction 5 × 7.5 feet wide ☐ Continuous sheet construction 5 × 12 feet wide ☐ Other (describe)	
26D. Deck seam length (ft)	26E. Area of deck (ft^2)
For column supported tanks: 26F. Number of columns:	26G. Diameter of each column:

IV. SITE INFORMANTION (optional if providing TANKS Summary Sheets)

27. Provide the city and state on which the data in this section are based. Charleston, WV
28. Daily Average Ambient Temperature (°F)
29. Annual Average Maximum Temperature (°F)
30. Annual Average Minimum Temperature (°F)
31. Average Wind Speed (miles/hr)
32. Annual Average Solar Insulation Factor (BTU/(ft^2·day))
33. Atmospheric Pressure (psia)

V. LIQUID INFORMATION (optional if providing TANKS Summary Sheets)

34. Average daily temperature range of bulk liquid: Ambient	
34A. Minimum (°F)	34B. Maximum (°F)
35. Average operating pressure range of tank:	
35A. Minimum (psig)	35B. Maximum (psig)
36A. Minimum Liquid Surface Temperature (°F)	36B. Corresponding Vapor Pressure (psia)
37A. Average Liquid Surface Temperature (°F)	37B. Corresponding Vapor Pressure (psia)
38A. Maximum Liquid Surface Temperature (°F)	38B. Corresponding Vapor Pressure (psia)

39. Provide the following for <u>each</u> liquid or gas to be stored in tank. Add additional pages if necessary.

39A. Material Name or Composition	Produced Fluids		
39B. CAS Number			
39C. Liquid Density (lb/gal)			
39D. Liquid Molecular Weight (lb/lb-mole)			
39E. Vapor Molecular Weight (lb/lb-mole)			

Maximum Vapor Pressure 39F. True (psia) 39G. Reid (psia)			
Months Storage per Year 39H. From 39I. To			

VI. EMISSIONS AND CONTROL DEVICE DATA (required)

40. Emission Control Devices (check as many as apply): ☒ Does Not Apply

- ☐ Carbon Adsorption[1]
- ☐ Condenser[1]
- ☐ Conservation Vent (psig)
  - Vacuum Setting Pressure Setting
- ☐ Emergency Relief Valve (psig)
- ☐ Inert Gas Blanket of
- ☐ Insulation of Tank with
- ☐ Liquid Absorption (scrubber)[1]
- ☐ Refrigeration of Tank
- ☐ Rupture Disc (psig)
- ☐ Vent to Incinerator[1]
- ☐ Other[1] (describe):

[1] Complete appropriate Air Pollution Control Device Sheet.

41. Expected Emission Rate (submit Test Data or Calculations here or elsewhere in the application).

Material Name & CAS No.	Breathing Loss (lb/hr)	Working Loss		Annual Loss (lb/yr)	Estimation Method[1]
		Amount	Units		

[1] EPA = EPA Emission Factor, MB = Material Balance, SS = Similar Source, ST = Similar Source Test, Throughput Data, O = Other (specify)

☒ Remember to attach emissions calculations, including TANKS Summary Sheets if applicable.

Attachment L
EMISSIONS UNIT DATA SHEET
BULK LIQUID TRANSFER OPERATIONS

Furnish the following information for each new or modified bulk liquid transfer area or loading rack, as shown on the *Equipment List Form* and other parts of this application. This form is to be used for bulk liquid transfer operations such as to and from drums, marine vessels, rail tank cars, and tank trucks.

Identification Number (as assigned on *Equipment List Form*):	
1. Loading Area Name: Liquid Loading	
2. Type of cargo vessels accommodated at this rack or transfer point (check as many as apply): ☐ Drums ☐ Marine Vessels ☐ Rail Tank Cars ☒ Tank Trucks	
3. Loading Rack or Transfer Point Data:	
Number of pumps	1
Number of liquids loaded	1
Maximum number of marine vessels, tank trucks, tank cars, and/or drums loading at one time	1
4. Does ballasting of marine vessels occur at this loading area? ☐ Yes ☐ No ☒ Does not apply	
5. Describe cleaning location, compounds and procedure for cargo vessels using this transfer point:	
6. Are cargo vessels pressure tested for leaks at this or any other location? ☐ Yes ☒ No If YES, describe:	

7. Projected Maximum Operating Schedule (for rack or transfer point as a whole):

Maximum	Jan. - Mar.	Apr. - June	July - Sept.	Oct. - Dec.
hours/day	Varies	Varies	Varies	Varies
days/week	7	7	7	7

weeks/quarter	13	13	13	13

8. Bulk Liquid Data *(add pages as necessary):*							
Pump ID No.		NA					
Liquid Name		Produced Fluids					
Max. daily throughput (1000 gal/day)							
Max. annual throughput (1000 gal/yr)		1,194					
Loading Method [1]							
Max. Fill Rate (gal/min)							
Average Fill Time (min/loading)							
Max. Bulk Liquid Temperature (^{o}F)							
True Vapor Pressure [2]							
Cargo Vessel Condition [3]		U					
Control Equipment or Method [4]		SUB					
Minimum control efficiency (%)							
Maximum Emission Rate	Loading (lb/hr)						
	Annual (lb/yr)						
Estimation Method [5]		AP.42	Section 5.2				

[1] BF = Bottom Fill SP = Splash Fill SUB = Submerged Fill

[2] At maximum bulk liquid temperature

[3] B = Ballasted Vessel, C = Cleaned, U = Uncleaned (dedicated service), O = other (describe)

[4] List as many as apply (complete and submit appropriate *Air Pollution Control Device Sheets*):CA = Carbon Adsorption LOA = Lean Oil AdsorptionCO = Condensation SC = Scrubber (Absorption)CRA = Compressor-Refrigeration-Absorption TO = Thermal Oxidation or Incineration
CRC = Compression-Refrigeration-Condensation VB = Dedicated Vapor Balance (closed system)
O = other (descibe)

[5] EPA = EPA Emission Factor as stated in AP-42
MB = Material Balance

TM = Test Measurement based upon test data submittal
O = other (describe)

9. **Proposed Monitoring, Recordkeeping, Reporting, and Testing**
Please propose monitoring, recordkeeping, and reporting in order to demonstrate compliance with the proposed operating parameters. Please propose testing in order to demonstrate compliance with the proposed emissions limits.

MONITORING	RECORDKEEPING
None	Throughput of liquid loaded at site (gal/yr)
REPORTING	**TESTING**
None	None

MONITORING. PLEASE LIST AND DESCRIBE THE PROCESS PARAMETERS AND RANGES THAT ARE PROPOSED TO BE MONITORED IN ORDER TO DEMONSTRATE COMPLIANCE WITH THE OPERATION OF THIS PROCESS EQUIPMENT OPERATION/AIR POLLUTION CONTROL DEVICE.

RECORDKEEPING. PLEASE DESCRIBE THE PROPOSED RECORDKEEPING THAT WILL ACCOMPANY THE MONITORING.

REPORTING. PLEASE DESCRIBE THE PROPOSED FREQUENCY OF REPORTING OF THE RECORDKEEPING.

TESTING. PLEASE DESCRIBE ANY PROPOSED EMISSIONS TESTING FOR THIS PROCESS EQUIPMENT/AIR POLLUTION CONTROL DEVICE.

10. Describe all operating ranges and maintenance procedures required by Manufacturer to maintain warranty

ATTACHMENT N

Supporting Emission Calculations

Plant-wide Emission Summary

Wells	4	per pad
Storage Tanks (210 bbl capacity)	8	per pad
Line Heaters	0	per pad
TEGs	1	per pad
Length of lease road	2,405	feet

Component	Storage Tanks (tpy)	Line Heaters (tpy)	TEG (tpy)	Fugitive Components (tpy)	Liquid Loading (tpy)	Haul Roads (tpy)	**Total Emissions (tpy)**
Criteria Pollutants							
NO_X	---	0.000	5.41E-03	---	---	---	**0.01**
CO	---	0.000	4.54E-03	---	---	---	**0.00**
PM Total	---	0.000	4.11E-04	---	---	3.13	**3.13**
PM_{10} Total	---	0.000	4.11E-04	---	---	0.80	**0.80**
$PM_{2.5}$ Total	---	0.000	4.11E-04	---	---	0.08	**0.08**
SO_2	---	0.000	3.24E-05	---	---	---	**0.00**
VOCs	87.84	0.000	2.97E-04	2.39	0.67	---	**90.90**
Greenhouse Gases							
CO_2	---	0.00	6.64	0.05	---	---	**6.68**
CH_4	14.187	0.000	0.00	17.85	---	---	**32.04**
N_2O	---	0.000	0.00		---	---	**0.00**
CO_2e	354.67	0.00	6.64	446.36	---	---	**807.67**
Hazardous Air Pollutants							
Methylnaphthalene (2-	---	0.00E+00	1.30E-09	---	---	---	1.30E-09
Methylchloranthrene (3-	---	0.00E+00	9.73E-11	---	---	---	9.73E-11
Dimethybenz(a)anthracene (7,12-	---	0.00E+00	8.65E-10	---	---	---	8.65E-10
Acenaphthene	---	0.00E+00	9.73E-11	---	---	---	9.73E-11
Acenaphthylene	---	0.00E+00	9.73E-11	---	---	---	9.73E-11
Anthracene	---	0.00E+00	1.30E-10	---	---	---	1.30E-10
Benz(a)anthracene	---	0.00E+00	9.73E-11	---	---	---	9.73E-11
Benzene	0.06	0.00E+00	1.14E-07	0.01	0.00	---	6.68E-02
Benzo(a)pyrene	---	0.00E+00	6.49E-11	---	---	---	6.49E-11
Benzo(b)fluoranthene	---	0.00E+00	9.73E-11	---	---	---	9.73E-11
Benzo(g,h,i)perylene	---	0.00E+00	6.49E-11	---	---	---	6.49E-11
Benzo(k)fluoranthene	---	0.00E+00	9.73E-11	---	---	---	9.73E-11
Chrysene	---	0.00E+00	9.73E-11	---	---	---	9.73E-11
Dibenzo(a,h)anthracene	---	0.00E+00	6.49E-11	---	---	---	6.49E-11
Dichlorobenzene	---	0.00E+00	6.49E-08	---	---	---	6.49E-08
Fluoranthene	---	0.00E+00	1.62E-10	---	---	---	1.62E-10
Fluorene	---	0.00E+00	1.51E-10	---	---	---	1.51E-10
Formaldehyde	---	0.00E+00	4.05E-06	---	---	---	4.05E-06
Hexane, n-	3.11	0.00E+00	9.73E-05	0.04	0.02	---	3.17E+00
Indeno(1,2,3-cd)pyrene	---	0.00E+00	9.73E-11	---	---	---	9.73E-11
Naphthalene	---	0.00E+00	3.30E-08	---	---	---	3.30E-08
Phenanthrene	---	0.00E+00	9.19E-10	---	---	---	9.19E-10
Pyrene	---	0.00E+00	2.70E-10	---	---	---	2.70E-10
Toluene	0.09	0.00E+00	1.84E-07	0.00	0.00	---	9.44E-02
Arsenic	---	0.00E+00	1.08E-08	---	---	---	1.08E-08
Beryllium	---	0.00E+00	6.49E-10	---	---	---	6.49E-10
Cadmium	---	0.00E+00	5.95E-08	---	---	---	5.95E-08
Chromium	---	0.00E+00	7.57E-08	---	---	---	7.57E-08
Cobalt	---	0.00E+00	4.54E-09	---	---	---	4.54E-09
Manganese	---	0.00E+00	2.05E-08	---	---	---	2.05E-08
Mercury	---	0.00E+00	1.41E-08	---	---	---	1.41E-08
Nickel	---	0.00E+00	1.14E-07	---	---	---	1.14E-07
Selenium	---	0.00E+00	1.30E-09	---	---	---	1.30E-09
Ethylebenzene	0.00	---	---	0.00	0.00	---	2.75E-03
Trimethylpentane (2,2,4-)	0.01	---	---	0.04	0.00	---	4.31E-02
Xylene	0.04	---	---	0.00	0.00	---	4.12E-02
Total HAP:	3.31	0.00E+00	1.02E-04	0.09	0.02	0.00	**3.42**

OXF-114
Storage Vessels

Estimated Potential Throughput

Operational Hours 8760 hrs/yr

Description	Potential Throughput[1] (gal/yr)	Potential Throughput (gal/hr)
210 bbl	1,194,060	136.31

[1] The maximum 12-month rolling throughput permit limits for for OXF114.

S011-S018 Storage Tanks (210 bbl) - Uncontrolled

	Working and Breathing		Flashing		Total Emissions[1]	
	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy
Methane	0.000	0	3.239	14.187	3.239	14.187
Ethane	0.000	0	5.4654	23.938	5.465	23.938
Propane	0.000	0	7.0652	30.946	7.065	30.946
Isobutane	0.000	0	2.0642	9.041	2.064	9.041
n-Butane	0.014	0.0618	4.6729	20.467	4.687	20.529
Isopentane	0.000	0	1.9049	8.343	1.905	8.343
n-Pentane	0.257	1.12746	1.7946	7.860	2.052	8.988
n-Hexane	0.083	0.36438	0.5438	2.382	0.627	2.746
Cyclohexane	0.000	0	0.4969	2.176	0.497	2.176
Other Hexanes	0.000	0	0	0.000	0.000	0.000
Heptanes	0.036	0.15704	0.4789	2.098	0.515	2.255
Benzene	0.001	0.00252	0.0126	0.055	0.013	0.058
Toluene	0.001	0.00404	0.0188	0.082	0.020	0.086
Ethylbenzene	0.000	0.0001	0.0005	0.002	0.001	0.002
Xylenes	0.000	0.00156	0.0078	0.034	0.008	0.036
2,2,4-Trimethylpentane	0.000	0.00044	0.0014	0.006	0.002	0.007
C8+ Heavies	0.013	0.0587	0.1802	0.789	0.194	0.848
Total Emissions:	0.406	1.778	27.947	122.408	28.353	124.186
Total VOC Emissions:	0.406	1.778	19.243	84.283	19.649	86.061
Total HAP Emissions:	0.085	0.373	0.585	2.562	0.670	2.935

[1] Emissions from the combined tanks are equal to to the permit limits. Note that VOC emissions will remain below 6 tpy to avoid applibcaility of NSPS OOOOa

ATTACHMENT O

Monitoring/Recordkeeping/Reporting/Testing Plans

Monitoring, Recording, Reporting, and Testing Plan

Plan Type	Emission Unit	Pollutant	Requirements	Frequency	Method of Measurement	Regulatory Reference
Monitoring	Produced Fluid Throughput	VOC/HAP	Record produced fluids throughput	Monthly	12 Month Rolling Total	Condition 4.2.1 of Permit