October 7, 2015

Assistant Director for Permitting
WV Department of Environmental Protection
Division of Air Quality
601 57th Street, SE
Charleston, WV 25304

Subject: Application for Modification of R13-3031

Re: Ball Station (Facility ID 095-00024; Permit Number R13-3031)

Dear Assistant Director:

Statoil Onshore Properties Inc. (Statoil) hereby submits the enclosed application for a modification of permit R13-3031.

This application is being submitted in order to replace the existing permitted compressor engine, vapor recovery unit, loading rack, and storage tanks with similar equipment that meets Statoil specifications. Statoil also proposes to add a natural gas-fueled generator engine to the site. Statoil will no longer own or operate a glycol dehydration system at its Ball Station. Williams Midstream will own, operate and obtain a separate air permit for a new glycol dehydration system that will dehydrate the gas stream supplied by Statoil's Ball Station.

Please note that we have included one original paper set of the application, one paper copy set of the application, and two electronic copy sets of the application on CD. Enclosed with the original paper set of the application is our application fee check in the amount of $2,000.00, made payable to WVDEP–Division of Air Quality.

We would appreciate the opportunity to review a pre-draft version of the modified permit R13-3031A.

Statoil thanks WVDEP-DAQ for its consideration of this matter. Should you require any additional information, please contact me at kbell@statoil.com or 713-485-2039.

Thank you,

Kristen Bellows
Environmental Lead- Marcellus

DPNA SSU UON
Statoil North America, Inc.

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WEST VIRGINIA DEPARTMENT OF
ENVIRONMENTAL PROTECTION
DIVISION OF AIR QUALITY
601 57th Street, SE
Charleston, WV 25304
(304) 926-0475
www.wvdep.org/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):* Statoil USA Onshore Properties Inc.

2. Federal Employer ID No. ***(FEIN):*** 26-3666667

3. Name of facility *(if different from above):* Ball Station

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

5A. Applicant's mailing address:
Statoil USA Onshore Properties Inc.
Attention: Kristen Bellows
Building 4, 8th Floor
2101 City West Boulevard
Houston, TX 77042

5B. Facility's present physical address:
Statoil USA Onshore Properties Inc.
9651 Elkfork Road
Middlebourne, WV 26149

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: N/A

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: The applicant owns the site.
- 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 Compressor Station

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

11A. DAQ Plant ID No. (for existing facilities only): 095-00024

11B. List all current 45CSR13 and 45CSR30 (Title V) permit numbers associated with this process (for existing facilities only): R13-3031

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**.

From the intersection of WV Route 18 and WV Route 180, travel north on WV Route 180 for approximately 0.2 mile, then turn right onto County Hwy 11/ Elk Ford Road. Travel approximately 7.7 miles, then turn right onto County Highway 42/Scales Run Road. Travel approximately 0. 7 miles to the Ball Station access gate which will be on your left. Follow the access road straight up the hill until you've reached the well site.

12.B. New site address (if applicable):	12C. Nearest city or town:	12D. County:
NA	Middlebourne	Tyler
12.E. UTM Northing (KM): 4,372.76	12F. UTM Easting (KM): 521.08	12G. UTM Zone: 17

13. Briefly describe the proposed change(s) at the facility:
Applicant proposes to replace the existing permitted compressor engine, vapor recovery unit, loading rack, and storage tanks with similar equipment that meets Statoil specifications. Applicant also proposes to add a natural gas-fueled generator engine to the site.

14A. Provide the date of anticipated installation or change: Upon issuance of permit (about 02/01/16) – 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: Soon after issuance of permit (about 02/15/16)

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: Natural Gas Engines Data Sheet, Vapor Recovery Unit Data Sheet, Heater Treater Data Sheet, Line Heaters Data Sheet.

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: Catalyst

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: _____

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

35B. Printed name of signee: Andrew Winkle		35C. Title: Vice President Onshore US
35D. E-mail: andwin@statoil.com	36E. Phone: 713-485-2039	36F. FAX: 713-918-8290
36A. Printed name of contact person (if different from above): Kristen Bellows		36B. Title: Environmental Lead-Marcellus
36C. E-mail: KBELL@statoil.com	36D. Phone: 713-485-2039	36E. FAX: 713-918-8290

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

Business Certificate

AC

State of West Virginia

Certificate

I, Betty Ireland, Secretary of State of the State of West Virginia, hereby certify that

STATOILHYDRO USA ONSHORE PROPERTIES INC.

Control Number: 99C67

a corporation formed under the laws of Delaware has filed its "Application for Certificate of Authority" to transact business in West Virginia as required by the provisions of the West Virginia Code. I hereby declare the organization to be registered as a foreign corporation from its effective date of November 25, 2008.

Therefore, I issue this

CERTIFICATE OF AUTHORITY

to the corporation authorizing it to transact business in West Virginia

Given under my hand and the Great Seal of the State of West Virginia on this day of November 25, 2008

Betty Ireland

Secretary of State

ATTACHMENT C – INSTALLATION & START UP SCHEDULE

Proposed Facility Construction	Begin Installation Date	Initial Startup Date
The existing natural gas compressor station will be modified and operated.	Upon issuance of permit (about 02/01/16)	Soon after issuance of permit (about 02/15/16)

ATTACHMENT D – REGULATORY DISCUSSION

The following table discusses the most significant Clean Air Act applicable regulatory requirements that Statoil believes to apply to as a result of this proposed permitting action.

Presumed Applicable CAA Requirements			
Regulatory Citation	**Emission Source Affected**	**Description of Applicability**	**Compliance Demonstration**
45CSR13-5.4	New or modified emission units	Modification of an existing stationary source that will continue to be a minor source of regulated air pollutant emissions.	Apply for a modification of permit R13-3031; comply with all Rule 13 permit requirements.
45CSR6	New Flare FL-1	Opacity limit and particulate matter emission limit.	In accordance with all Rule 6 applicable requirements.
40 CFR 60 Subpart JJJJ	New compressor engine CE-4 and new generator engine G-1	New compressor engine CE-4 will be a natural gas-fueled non-certified stationary spark ignition reciprocating internal combustion engine, that will be subject to Subpart JJJJ. New generator engine G-1 will be natural gas-fueled certified stationary spark ignition reciprocating internal combustion engine, that will be subject to Subpart JJJJ.	In accordance with any applicable requirements of 40CFR60 Subpart JJJJ. Note that Statoil believes that new engine CE-3 is exempt from Subpart JJJJ due to its manufacture date of 5/10/2005, which is prior to the Subpart JJJJ engine manufactured applicability dates listed in §60.4230(a)(4).
40CFR60 Subpart OOOO	New gas well affected facility	For each new well completion operation with hydraulic fracturing begun on or after January 1, 2015, the permittee must comply with the applicable requirements of 40CFR60 Subpart OOOO, as detailed in R13-3031A.	In accordance with modified permit R13-3031A requirements and 40CFR60 Subpart OOOO.

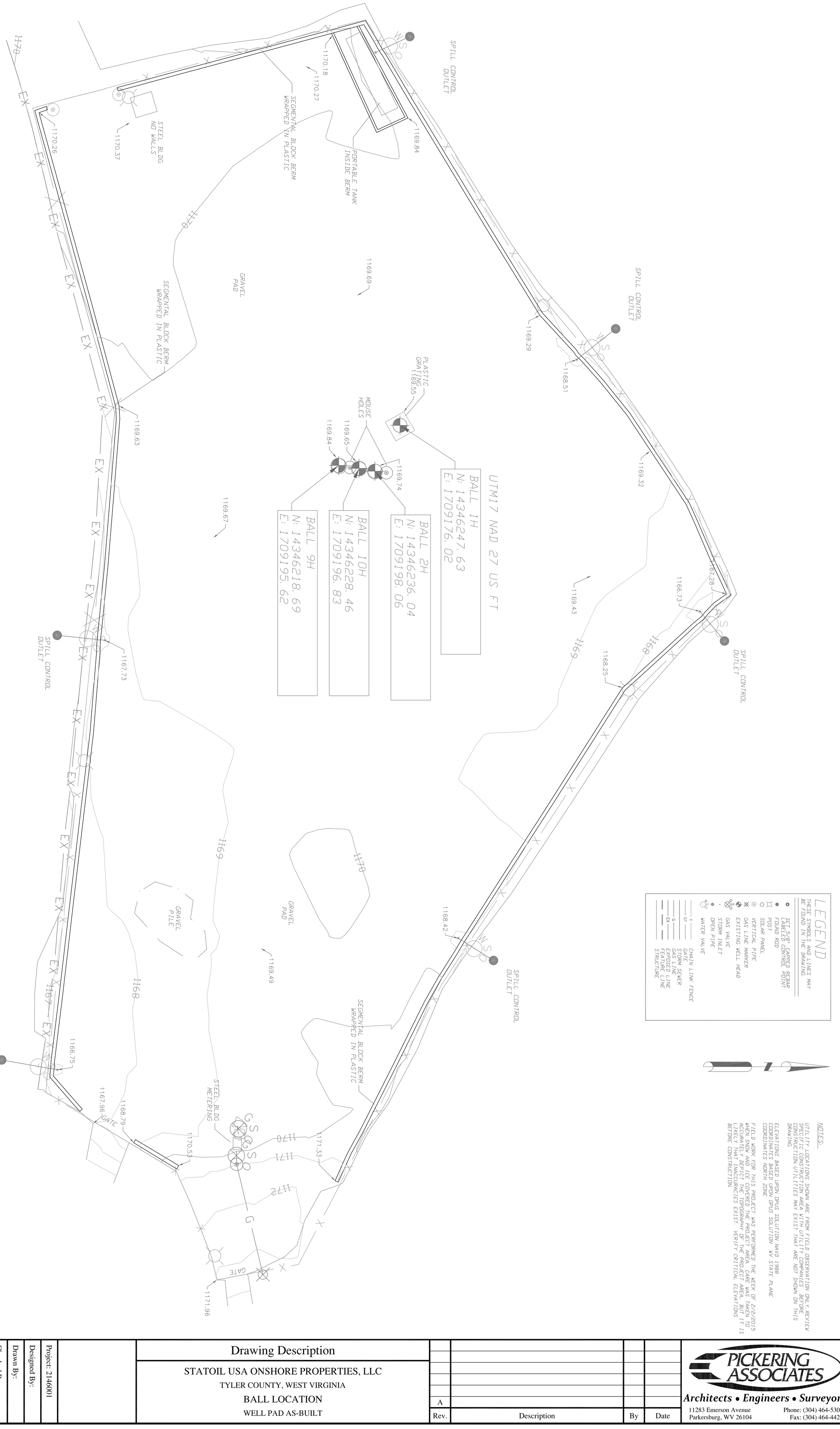
ATTACHMENT D – REGULATORY DISCUSSION

Presumed Applicable CAA Requirements			
Regulatory Citation	**Emission Source Affected**	**Description of Applicability**	**Compliance Demonstration**
40 CFR 63 Subpart ZZZZ	New compressor engines CE-3 & CE-4, and new generator engine G-1	Compressor engines CE-3 & CE-4 and generator engine G-1 will be new natural gas-fueled stationary spark ignition reciprocating internal combustion engines located at an area source. The only 40 CFR 63 Subpart ZZZZ requirement is to comply with any applicable requirements of 40 CFR 60 Subpart JJJJ.	In accordance with 40 CFR 63 Subpart ZZZZ, §63.6590(c)(1): *Stationary RICE subject to Regulations under 40 CFR Part 60.* An affected source that meets any of the criteria in paragraphs (c)(1) through (7) of this section must meet the requirements of this part by meeting the requirements of 40 CFR part 60 subpart IIII, for compression ignition engines or 40 CFR part 60 subpart JJJJ, for spark ignition engines. No further requirements apply for such engines under this part. (1) A new or reconstructed stationary RICE located at an area source;

Attachment E

Plot Plan

The Plot Plan is contained on the following two pages.



LEGEND

THESE SYMBOLS AND LINES MAY BE FOUND IN THE DRAWING.

- SET 5/8" CAPPED REBAR LABELED CONTROL POINT
- FOUND ROD
- POST
- SOLAR PANEL
- VERTICAL PIPE
- GAS LINE MARKER
- EXISTING WELL HEAD
- GAS VALVE
- STORM INLET
- OPEN PIPE
- WATER VALVE
- CHAIN LINK FENCE
- GATE
- STORM SEWER
- GAS LINE
- EXPOSED LINE
- FEATURE LINE
- STRUCTURE

NOTES:

UTILITY LOCATIONS SHOWN ARE FROM FIELD OBSERVATION ONLY. REVIEW SPECIFIC CONSTRUCTION AREA WITH UTILITY COMPANIES BEFORE CONSTRUCTION. UTILITIES MAY EXIST THAT ARE NOT SHOWN ON THIS DRAWING.

ELEVATIONS BASED UPON OPUS SOLUTION NAVD 1988
COORDINATES BASED UPON OPUS SOLUTION WV STATE PLANE COORDINATES NORTH ZONE

FIELD WORK FOR THIS PROJECT WAS PERFORMED THE WEEK OF 2/2/2015 WHEN SNOW AND ICE COVERED THE PROJECT AREA. CARE WAS TAKEN TO ACCURATELY DEPICT THE TOPOGRAPHY OF THE PROJECT AREA, BUT IT IS LIKELY THAT INACCURACIES EXIST. VERIFY CRITICAL ELEVATIONS BEFORE CONSTRUCTION.

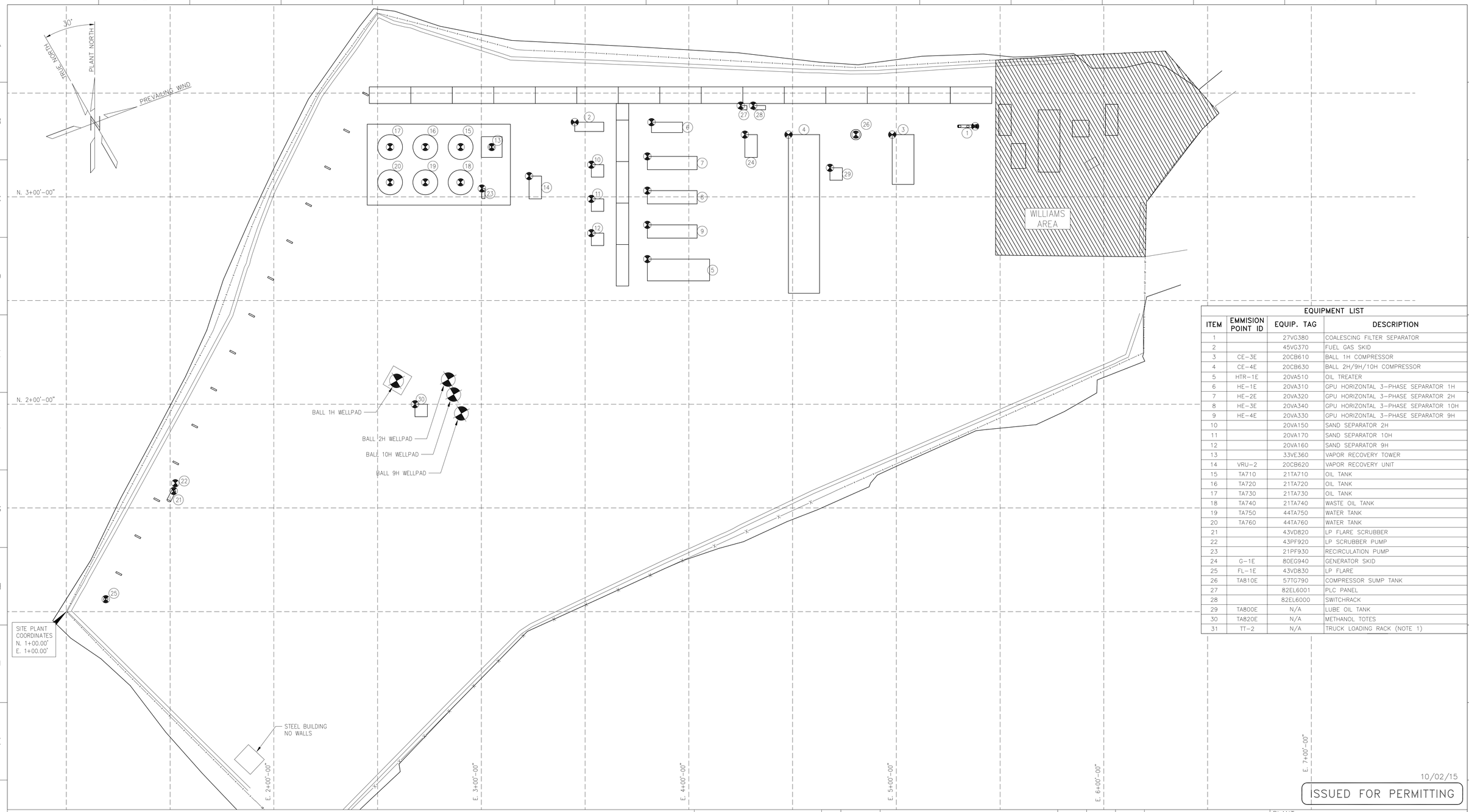
Drawing Description

STATOIL USA ONSHORE PROPERTIES, LLC
TYLER COUNTY, WEST VIRGINIA
BALL LOCATION
WELL PAD AS-BUILT

Rev.	Description	By	Date
A			

Project: 2146001
Designed By:
Drawn By:
Checked By:
Scale: AS SHOWN
Plot Date: 02/09/15
Revision: A
Drawing Number: C100

PICKERING ASSOCIATES
Architects • Engineers • Surveyors
11283 Emerson Avenue
Parkersburg, WV 26104
Phone: (304) 464-5305
Fax: (304) 464-4428



EQUIPMENT LIST			
ITEM	EMMISION POINT ID	EQUIP. TAG	DESCRIPTION
1		27VG380	COALESCING FILTER SEPARATOR
2		45VG370	FUEL GAS SKID
3	CE-3E	20CB610	BALL 1H COMPRESSOR
4	CE-4E	20CB630	BALL 2H/9H/10H COMPRESSOR
5	HTR-1E	20VA510	OIL TREATER
6	HE-1E	20VA310	GPU HORIZONTAL 3-PHASE SEPARATOR 1H
7	HE-2E	20VA320	GPU HORIZONTAL 3-PHASE SEPARATOR 2H
8	HE-3E	20VA340	GPU HORIZONTAL 3-PHASE SEPARATOR 10H
9	HE-4E	20VA330	GPU HORIZONTAL 3-PHASE SEPARATOR 9H
10		20VA150	SAND SEPARATOR 2H
11		20VA170	SAND SEPARATOR 10H
12		20VA160	SAND SEPARATOR 9H
13		33VE360	VAPOR RECOVERY TOWER
14	VRU-2	20CB620	VAPOR RECOVERY UNIT
15	TA710	21TA710	OIL TANK
16	TA720	21TA720	OIL TANK
17	TA730	21TA730	OIL TANK
18	TA740	21TA740	WASTE OIL TANK
19	TA750	44TA750	WATER TANK
20	TA760	44TA760	WATER TANK
21		43VD820	LP FLARE SCRUBBER
22		43PF920	LP SCRUBBER PUMP
23		21PF930	RECIRCULATION PUMP
24	G-1E	80EG940	GENERATOR SKID
25	FL-1E	43VD830	LP FLARE
26	TA810E	57TG790	COMPRESSOR SUMP TANK
27		82EL6001	PLC PANEL
28		82EL6000	SWITCHRACK
29	TA800E	N/A	LUBE OIL TANK
30	TA820E	N/A	METHANOL TOTES
31	TT-2	N/A	TRUCK LOADING RACK (NOTE 1)

10/02/15
ISSUED FOR PERMITTING

NOTES:
1. LOCATION FOR TRUCK LOADOUT RACK IS OFFSITE. FINAL LOCATION HAS NOT BEEN ESTABLISHED.

STRATEGY
Texas Registered Engineering Firm F-11658

REV.	DATE	REASON FOR ISSUE	PREPARED	CHECKED	APPROVED
A	10/02/15	ISSUED FOR AIR PERMIT	PWL	HDO	SPS

Statoil

PLANT
BALL WELLPAD

DRAWING TITLE:
AIR PERMIT PLOT PLAN

CONTR. NO 15237
20'=1" AT D | SCALE SIZE | TY | AREA | 13 | SYSTEM

C161-TY001-L-XE-0003 | DRAWING NUMBER | A | REV.

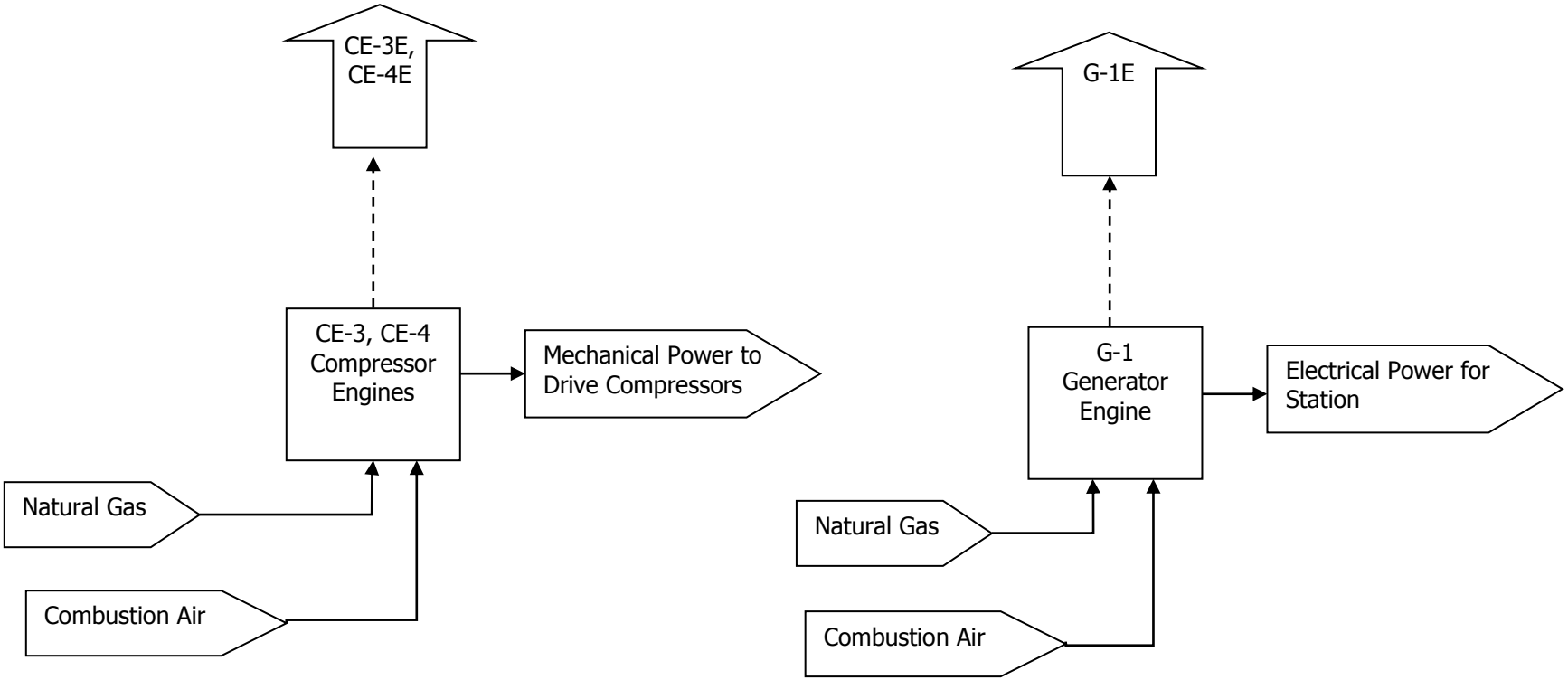
Oct 05, 2015 - 9:52am P:\Statoil\Ball Wellpad\DRFT\0500 - EQUIPMENT LAYOUTS\0003 AIR PERMIT PLOT PLAN.dwg

Attachment F

Process Flow Diagrams

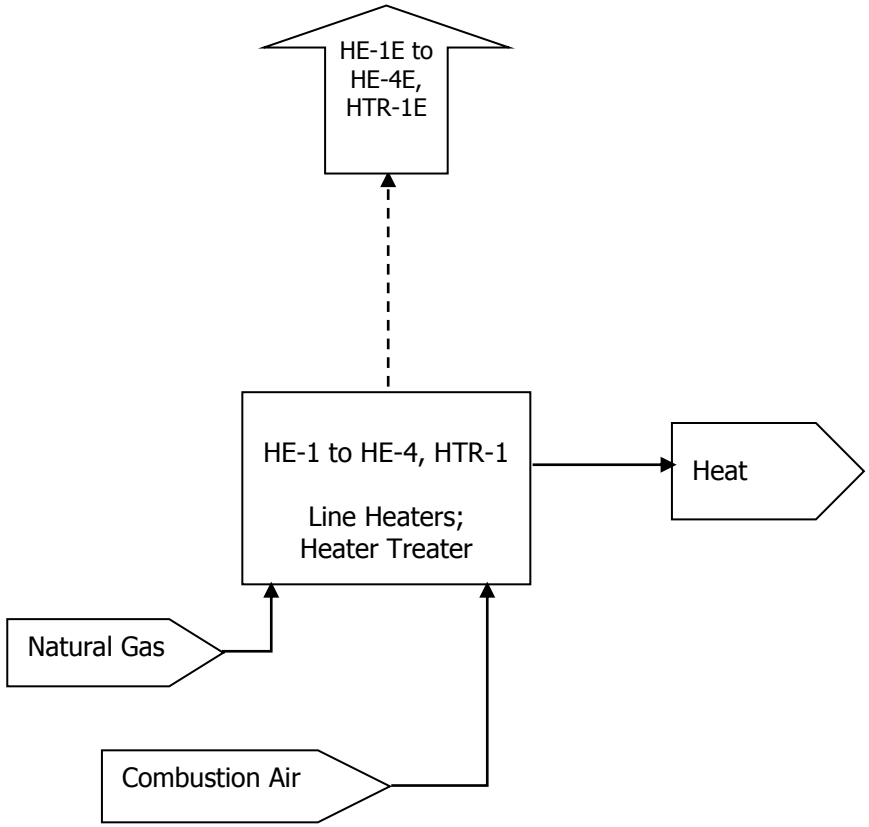
ATTACHMENT F – PROCESS FLOW DIAGRAM

Figure 1 – Compressor & Generator Engines



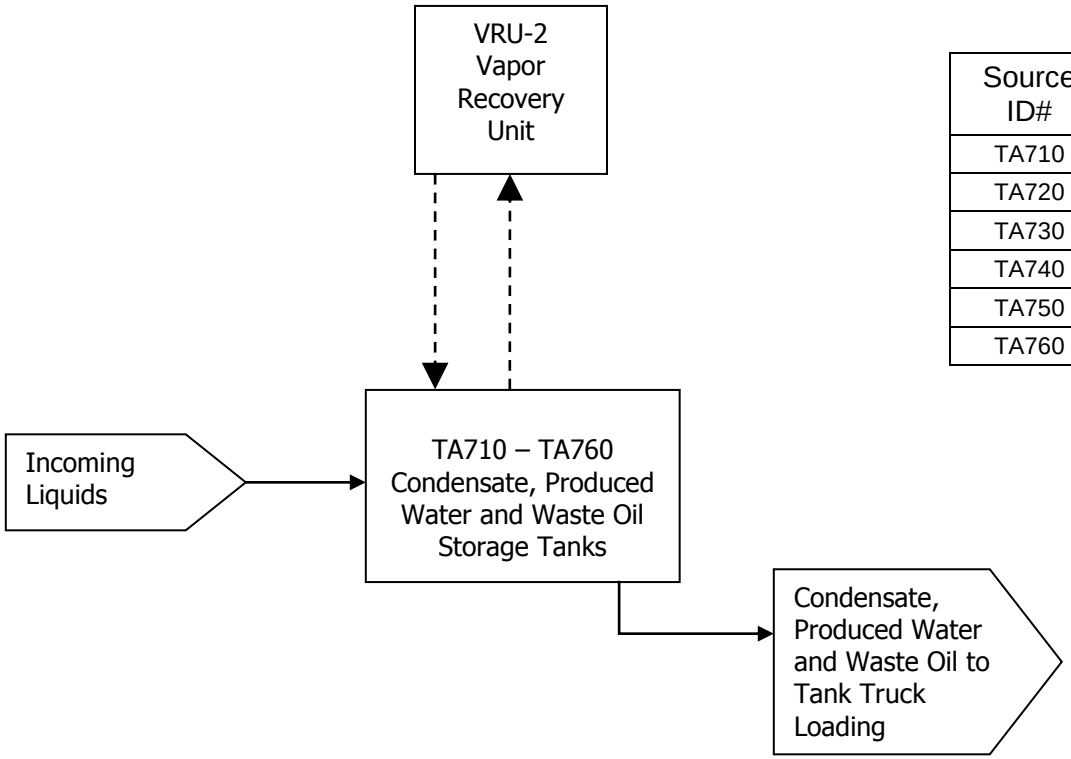
ATTACHMENT F – PROCESS FLOW DIAGRAM

Figure 2 – Heaters



ATTACHMENT F – PROCESS FLOW DIAGRAM

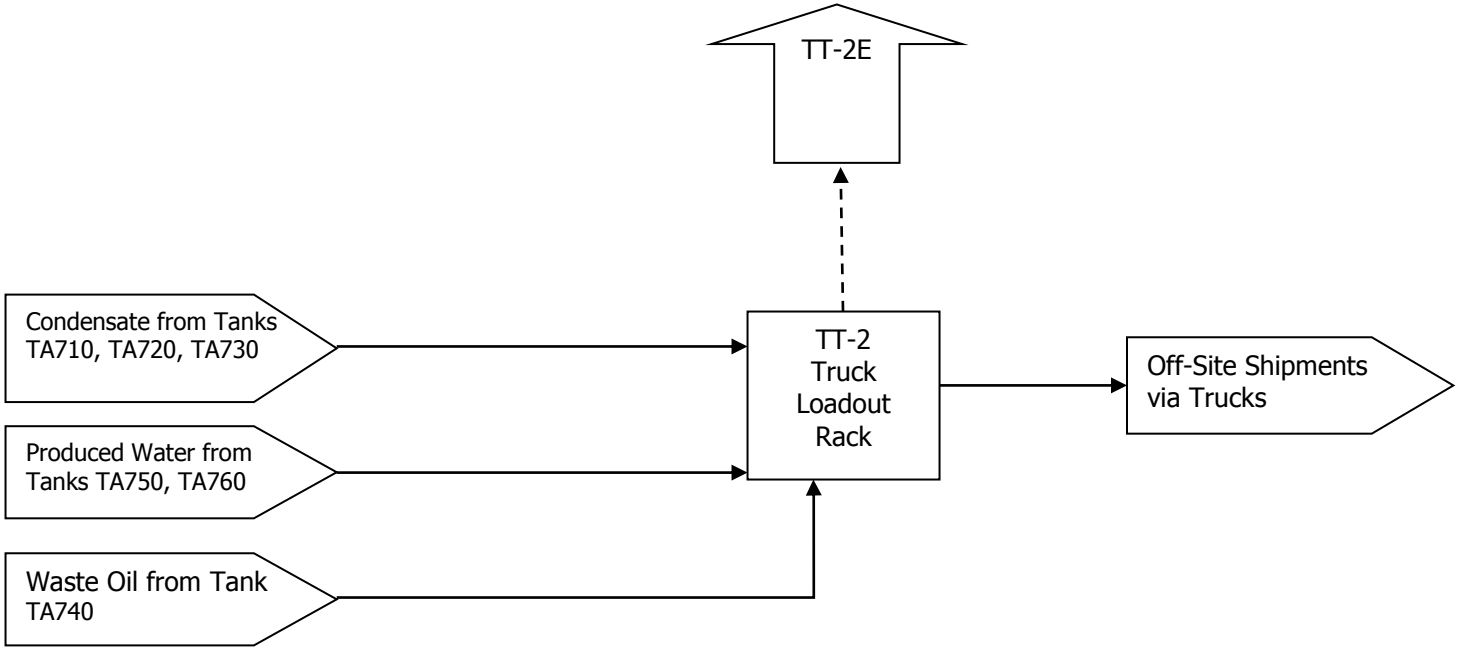
Figure 3 – Storage Tanks



Source ID#	Material Stored	Vent ID#
TA710	Condensate Tank #1	None
TA720	Condensate Tank #2	None
TA730	Condensate Tank #3	None
TA740	Waste Oil Tank	None
TA750	Produced Water Tank #1	None
TA760	Produced Water Tank #2	None

ATTACHMENT F – PROCESS FLOW DIAGRAM

Figure 4 – Truck Loading Rack



ATTACHMENT G – PROCESS DESCRIPTION

Statoil USA Onshore Properties Inc. (Statoil) is requesting that the Division of Air Quality (DAQ) grant a modification to Permit R13-3031 for the existing Ball Station (DAQ Plant ID# 095-00024), located on County Highway 42/Scales Run Road near Middlebourne, Tyler County, at UTM Zone 17 coordinates 4,372.76 km N, and 521.08 km E.

This facility is eligible for a Rule 13 Permit because it meets the definition criteria of a "Stationary source" per 45CSR13, Section 2.24., and will not be a "Major stationary source" per 45CSR14, Section 2.43.

The Ball Station provides gathering and compression of natural gas. The developed pad area is roughly 2.64 acres.

A drawing of the Ball Station can be found on the Plot Plan in Attachment E.

Directions to the site are as follows:

From the intersection of WV Route 18 and WV Route 180, travel north on WV Route 180 for approximately 0.2 mile, then turn right onto County Hwy 11/ Elk Ford Road. Travel approximately 7.7 miles, then turn right onto County Highway 42/Scales Run Road. Travel approximately 0. 7 miles to the Ball Station access gate which will be on your left. Follow the access road straight up the hill until you've reached the well site.

The purpose of this application is to revise Permit R13-3031 as follows:

1. Replace the permitted 945 HP natural gas compressor engine (CE-1) with two new compressor engines: 1,005 HP Caterpillar G3512 lean burn compressor engine (CE-3), and 2,370 HP Caterpillar G3608 lean burn compressor engine (CE-4). Compressor engine CE-4 will be equipped with a Selective Catalytic Reduction (SCR) control system to reduce emissions of CO. New engine CE-4 will be subject to 40CFR60 Subpart JJJJ, but will not be a Certified Stationary Spark Ignition Engine according to Subpart JJJJ. Statoil believes that new engine CE-3 is exempt from Subpart JJJJ due to its manufacture date of 5/10/2005, which is prior to the Subpart JJJJ engine manufactured applicability dates listed in §60.4230(a)(4). The only 40 CFR 63 Subpart ZZZZ applicable requirement for these new engines at an area source is to comply with any applicable requirements of 40 CFR 60 Subpart JJJJ.

2. Replace the permitted 71 HP natural gas VRU engine (CE-2) with an electric motor-driven VRU system (VRU-2).

3. Add a new 449 HP natural gas-fueled generator engine (G-1) to provide electricity to the Station. Generator engine G-1 will be a Certified Stationary Spark Ignition Engine according to 40CFR60 Subpart JJJJ. The only 40 CFR 63 Subpart ZZZZ requirement is to comply with any applicable requirements of 40 CFR 60 Subpart JJJJ.

4. Add the new LP Flare (FL-1) to control emergency venting emissions at the Station.

5. Add three new line heaters #2 to #4 (HE-2 to HE-4). Note that the existing line heater #1 (HE-1) will continue to be operated.

6. Add the new heater treater (HTR-1).

ATTACHMENT G – PROCESS DESCRIPTION

7. Replace the permitted truck loadout rack (TT-1) with the new truck loadout rack (TT -2).

8. Replace all of the currently permitted storage tanks with the following storage tanks:

BALL STATION – PROPOSED STORAGE TANKS					
Source ID #	**Status**	**Content**	**Design Volume (gallons)**	**Maximum Expected Throughput (gal/yr)**	**Emissions Control**
TA710	NEW	Condensate Tank #1	16,920	1,886,000	VRU-2
TA720	NEW	Condensate Tank #2	16,920	1,886,000	VRU-2
TA730	NEW	Condensate Tank #3	16,920	1,886,000	VRU-2
TA740	NEW	Waste Oil Tank	16,920	15,330	VRU-2
TA750	NEW	Produced Water Tank #1	16,920	1,586,500	VRU-2
TA760	NEW	Produced Water Tank #2	16,920	1,586,500	VRU-2
TA800	NEW	Lube Oil Tank	350	1,000	None
TA810	NEW	Sump Tank	500	250	None
TA820	NEW	Methanol Totes (4)	350 each tote	4,000	None

Statoil will no longer own or operate a glycol dehydration system at its Ball Station. Williams Midstream will own, operate and obtain a separate air permit for a new glycol dehydration system that will dehydrate the gas stream supplied by Statoil's Ball Station.

The emission units and vent points included at the facility are listed in Attachment I Emission Units Table. Process flow diagrams for the emission units contained at the Ball Station can be found in Attachment D.

Equipment installation at the Ball Station is planned to commence at issuance of the updated R13-3031 permit (about 02/01/16) and start-up of emission units is planned for about 02/15/16.

Source Aggregation Statement

Statoil believes that the proposed air emissions from the Ball Station should not be "aggregated" (for air permitting purposes) with any other separate air emission source facilities because:

- Statoil has included all emission sources within this permit application that will comprise its proposed modified Ball Station, and that are under the ownership or operational control of Statoil and that are within adjacent or contiguous proximity (within one mile) to the proposed new Ball Station and meet the common sense notion of a plant.

- The natural gas wells/wellpad that supplies the incoming natural gas stream to the Statoil Ball Station are under control of Statoil, and are co-located at the Ball Station.

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]
CE-1	CE-1	Natural Gas-Fueled Compressor RICE #1	2013	945 bhp nominal	Removal	Oxidation Catalyst
CE-2	CE-2	Natural Gas-Fueled Vapor Recovery Unit Engine	2013	71 bhp nominal	Removal	None
RSV-1	RSV-1	TEG Dehydrator Still Vent	2013	10 MMscf/day	Removal	None
RBV-1	RBV-1	TEG Dehydrator Reboiler	2013	0.375 MMBtu/hr	Removal	None
FT-1	FT-1	TEG Dehydrator Flash Tank	2013	10 MMscf/day	Removal	None
TT-1	TT-1	Produced Fluids Truck Loading	2013	165,000 gallons/day	Removal	None
VRU-1	None	Vapor Recovery Unit	2013	NA	Removal	NA
T-100	NA	Condensate Tank	2013	16,500 gallons	Removal	VRU-1
T-101	NA	Condensate Tank	2013	16,500 gallons	Removal	VRU-1
T-102	NA	Condensate Tank	2013	16,500 gallons	Removal	VRU-1
T-200	T-200	Produced Fluids Tank	2013	8,520 gallons	Removal	None
T-201	T-201	Produced Fluids Tank	2013	8,520 gallons	Removal	None
T-301	T-301	Motor Oil Tank	2013	502 gallons	Removal	None
T-302	T-302	TEG Tank	2013	502 gallons	Removal	None
HE-1	HE-1E	Line Heater #1	2013	1.0 MMBtu/hr	Existing	None
CE-3	CE-3E	Natural Gas-Fueled Compressor Engine #1	2016	1,005 bhp nominal	New 02/15/16	None
CE-4	CE-4E	Natural Gas-Fueled Compressor Engine #2	2016	2,370 bhp nominal	New 02/15/16	SCR-4
G-1	G-1E	Natural Gas-Fueled Generator Engine	2016	449 bhp nominal	New 02/15/16	None
HE-2	HE-2E	Line Heater #2	2016	1.5 MMBtu/hr	New 02/15/16	None

HE-3	HE-3E	Line Heater #3	2016	1.5 MMBtu/hr	New 02/15/16	None
HE-4	HE-4E	Line Heater #4	2016	1.5 MMBtu/hr	New 02/15/16	None
HTR-1	HTR-1E	Heater Treater	2016	1.5 MMBtu/hr	New 02/15/16	None
TT-2	Uncaptured Fugitives	Truck Loadout Rack	2016	25,000 gallons/day	New 02/15/16	None
FL-1	FL-1E	LP Flare	2016	11.9 MMBtu/hr	New 02/15/16	None
VRU-2	None	Vapor Recovery Unit	2016	115 MSCFD	New 02/15/16	NA
TA710	NA	Condensate Tank #1	2016	16,800 gallons	New 02/15/16	VRU-2
TA720	NA	Condensate Tank #2	2016	16,800 gallons	New 02/15/16	VRU-2
TA730	NA	Condensate Tank #3	2016	16,800 gallons	New 02/15/16	VRU-2
TA740	NA	Waste Oil Tank	2016	16,800 gallons	New 02/15/16	VRU-2
TA750	NA	Produced Water Tank #1	2016	16,800 gallons	New 02/15/16	VRU-2
TA760	NA	Produced Water Tank #2	2016	16,800 gallons	New 02/15/16	VRU-2
TA800	TA800E	Lube Oil Tank	2016	350 gallons	New 02/15/16	None
TA810	TA810E	Sump Tank	2016	500 gallons	New 02/15/16	None
TA820	TA820E	Methanol Totes (4)	2016	350 gallons each tote	New 02/15/16	None

[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

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^3)
		ID No.	Source	ID No.	Device Type	Short Term[2]	Max (hr/yr)		lb/hr	ton/yr	lb/hr	ton/yr			
CE-3E	Vent	CE-3	Engine #1	NA	None	NA	NA	CO	4.65	20.38	4.65	20.38	Gas/Vapor	EE	
CE-3E	Vent	CE-3	Engine #1	NA	None	NA	NA	NOx	3.32	14.56	3.32	14.56	Gas/Vapor	EE	
CE-3E	Vent	CE-3	Engine #1	NA	None	NA	NA	PM-10	0.08	0.36	0.08	0.36	Solid	EE	
CE-3E	Vent	CE-3	Engine #1	NA	None	NA	NA	SO2	0.005	0.02	0.005	0.02	Gas/Vapor	EE	
CE-3E	Vent	CE-3	Engine #1	NA	None	NA	NA	VOC	0.75	3.30	0.75	3.30	Gas/Vapor	EE	
CE-3E	Vent	CE-3	Engine #1	NA	None	NA	NA	Formaldehyde 50-00-0	0.55	2.43	0.55	2.43	Gas/Vapor	EE	
CE-3E	Vent	CE-3	Engine #1	NA	None	NA	NA	CO2e	1,224.1	5,361.6	1,224.1	5,361.6	Gas/Vapor	EE	
CE-4E	Vent	CE-4	Engine #2	NA	None	NA	NA	CO	14.32	62.70	10.09	44.21	Gas/Vapor	EE	
CE-4E	Vent	CE-4	Engine #2	NA	None	NA	NA	NOx	2.61	11.44	2.61	11.44	Gas/Vapor	EE	
CE-4E	Vent	CE-4	Engine #2	NA	None	NA	NA	PM-10	0.18	0.79	0.18	0.79	Solid	EE	
CE-4E	Vent	CE-4	Engine #2	NA	None	NA	NA	SO2	0.01	0.05	0.01	0.05	Gas/Vapor	EE	
CE-4E	Vent	CE-4	Engine #2	NA	None	NA	NA	VOC	3.29	14.42	3.29	14.42	Gas/Vapor	EE	
CE-4E	Vent	CE-4	Engine #2	NA	None	NA	NA	Formaldehyde 50-00-0	1.36	5.95	1.36	5.95	Gas/Vapor	EE	
CE-4E	Vent	CE-4	Engine #2	NA	None	NA	NA	CO2e	3,000.3	13,141.1	3,000.3	13,141.1	Gas/Vapor	EE	
G-1E	Vent	G-1	Generator Engine	NA	None	NA	NA	CO	1.98	8.67	1.98	8.67	Gas/Vapor	EE	
G-1E	Vent	G-1	Generator Engine	NA	None	NA	NA	NOx	0.99	4.34	0.99	4.34	Gas/Vapor	EE	
G-1E	Vent	G-1	Generator Engine	NA	None	NA	NA	PM-10	0.08	0.33	0.08	0.33	Solid	EE	
G-1E	Vent	G-1	Generator Engine	NA	None	NA	NA	SO2	0.002	0.01	0.002	0.01	Gas/Vapor	EE	
G-1E	Vent	G-1	Generator Engine	NA	None	NA	NA	VOC	0.69	3.03	0.69	3.03	Gas/Vapor	EE	
G-1E	Vent	G-1	Generator Engine	NA	None	NA	NA	Formaldehyde 50-00-0	0.08	0.35	0.08	0.35	Gas/Vapor	EE	
G-1E	Vent	G-1	Generator Engine	NA	None	NA	NA	CO2e	450.3	1,972.4	450.3	1,972.4	Gas/Vapor	EE	

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^3)
		ID No.	Source	ID No.	Device Type	Short Term[2]	Max (hr/yr)		lb/hr	ton/yr	lb/hr	ton/yr			
HE-2E to HE-4E	Vent	HE-2 to HE-4	Line Heaters #2 to #4	NA	None	NA	NA	CO	0.12 (each)	0.51 (each)	0.12 (each)	0.51 (each)	Gas/Vapor	EE	
HE-2E to HE-4E	Vent	HE-2 to HE-4	Line Heaters #2 to #4	NA	None	NA	NA	NOx	0.14 (each)	0.61 (each)	0.14 (each)	0.61 (each)	Gas/Vapor	EE	
HE-2E to HE-4E	Vent	HE-2 to HE-4	Line Heaters #2 to #4	NA	None	NA	NA	PM-10	0.01 (each)	0.05 (each)	0.01 (each)	0.05 (each)	Solid	EE	
HE-2E to HE-4E	Vent	HE-2 to HE-4	Line Heaters #2 to #4	NA	None	NA	NA	SO2	0.001 (each)	0.004 (each)	0.001 (each)	0.004 (each)	Gas/Vapor	EE	
HE-2E to HE-4E	Vent	HE-2 to HE-4	Line Heaters #2 to #4	NA	None	NA	NA	VOC	0.01 (each)	0.03 (each)	0.01 (each)	0.03 (each)	Gas/Vapor	EE	
HE-2E to HE-4E	Vent	HE-2 to HE-4	Line Heaters #2 to #4	NA	None	NA	NA	CO2e	167.5 (each)	733.7 (each)	167.5 (each)	733.7 (each)	Gas/Vapor	EE	
HTR-1E	Vent	HTR-1	Heater Treater	NA	None	NA	NA	CO	0.12	0.51	0.12	0.51	Gas/Vapor	EE	
HTR-1E	Vent	HTR-1	Heater Treater	NA	None	NA	NA	NOx	0.14	0.61	0.14	0.61	Gas/Vapor	EE	
HTR-1E	Vent	HTR-1	Heater Treater	NA	None	NA	NA	PM-10	0.01	0.05	0.01	0.05	Solid	EE	
HTR-1E	Vent	HTR-1	Heater Treater	NA	None	NA	NA	SO2	0.001	0.004	0.001	0.004	Gas/Vapor	EE	
HTR-1E	Vent	HTR-1	Heater Treater	NA	None	NA	NA	VOC	0.01	0.03	0.01	0.03	Gas/Vapor	EE	
HTR-1E	Vent	HTR-1	Heater Treater	NA	None	NA	NA	CO2e	167.5	733.7	167.5	733.7	Gas/Vapor	EE	

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^3)
		ID No.	Source	ID No.	Device Type	Short Term[2]	Max (hr/yr)		lb/hr	ton/yr	lb/hr	ton/yr			
FL-1E	Vent	FL-1	LP Flare	NA	NA	NA	NA	CO	3.69	1.62	3.69	1.62	Gas/Vapor	EE	
FL-1E	Vent	FL-1	LP Flare	NA	NA	NA	NA	NOx	0.81	0.35	0.81	0.35	Gas/Vapor	EE	
FL-1E	Vent	FL-1	LP Flare	NA	NA	NA	NA	PM-10	0.08	0.04	0.08	0.04	Solid	EE	
FL-1E	Vent	FL-1	LP Flare	NA	NA	NA	NA	SO2	0.01	0.003	0.01	0.003	Gas/Vapor	EE	
FL-1E	Vent	FL-1	LP Flare	NA	NA	NA	NA	VOC	6.78	2.97	6.78	2.97	Gas/Vapor	EE	
FL-1E	Vent	FL-1	LP Flare	NA	NA	NA	NA	CO2e	1,328.8	582.0	1,328.8	582.0	Gas/Vapor	EE	

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^3)
		ID No.	Source	ID No.	Device Type	Short Term[2]	Max (hr/yr)		lb/hr	ton/yr	lb/hr	ton/yr			
None	Uncap-tured Fugitive	TT-2	Loadout Rack	NA	NA	NA	NA	VOC	37.80	14.22	37.80	14.22	Gas/Vapor	EE	
None	Uncap-tured Fugitive	TT-2	Loadout Rack	NA	NA	NA	NA	Total HAP	0.42	0.16	0.42	0.16	Gas/Vapor	EE	
None	Uncap-tured by VRU	TA710 to TA730	Condensate Tanks	VRU-2	VRU	NA	NA	VOC	Varies	3.63 (each)	Varies	0.18 (each)	Gas/Vapor	EE	
None	Uncap-tured by VRU	TA710 to TA730	Condensate Tanks	VRU-2	VRU	NA	NA	Total HAP	Varies	0.36 (each)	Varies	0.02 (each)	Gas/Vapor	EE	
None	Uncap-tured by VRU	TA740	Waste Oil Tank	VRU-2	VRU	NA	NA	VOC	Varies	0.64	Varies	0.03	Gas/Vapor	EE	
None	Uncap-tured by VRU	TA740	Waste Oil Tank	VRU-2	VRU	NA	NA	Total HAP	Varies	0.06	Varies	0.01	Gas/Vapor	EE	
None	Uncap-tured by VRU	TA750 to TA760	Produced Water Tanks	VRU-2	VRU	NA	NA	VOC	Varies	0.01 (each)	Varies	0.01 (each)	Gas/Vapor	EE	
None	Uncap-tured by VRU	TA750 to TA760	Produced Water Tanks	VRU-2	VRU	NA	NA	Total HAP	Varies	0.01 (each)	Varies	0.01 (each)	Gas/Vapor	EE	
TA800E	Vent	TA800	Lube Oil Tank	NA	NA	NA	NA	VOC	Negligi-ble	Negligi-ble	Negligi-ble	Negligi-ble	Gas/Vapor	EE	
TA810E	Vent	TA810	Sump Tank	NA	NA	NA	NA	VOC	Negligi-ble	Negligi-ble	Negligi-ble	Negligi-ble	Gas/Vapor	EE	
TA820E	Vent	TA820	Methanol Totes (4)	NA	NA	NA	NA	VOC	Negligi-ble	Negligi-ble	Negligi-ble	Negligi-ble	Gas/Vapor	EE	

The EMISSION POINTS DATA SUMMARY SHEET provides a summation of emissions by emission unit. Note that uncaptured process emission unit 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). Please complete the FUGITIVE EMISSIONS DATA SUMMARY SHEET for fugitive emission activities.

[1] Please add descriptors such as upward vertical stack, downward vertical stack, horizontal stack, relief vent, rain cap, etc.

[2] Indicate by "C" if venting is continuous. Otherwise, specify the average short-term venting rate with units, for intermittent venting (ie., 15 min/hr). Indicate as many rates as needed to clarify frequency of venting (e.g., 5 min/day, 2 days/wk).

[3] 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.

[4] Give maximum potential emission 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).

[5] Give maximum potential emission rate with proposed 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).

[6] Indicate method used to determine emission rate as follows: MB = material balance; ST = stack test (give date of test); EE = engineering estimate; O = other (specify).

[7] Provide for all pollutant emissions. Typically, the units of parts per million by volume (ppmv) are used. If the emission is a mineral acid (sulfuric, nitric, hydrochloric or phosphoric) use units of milligram per dry cubic meter (mg/m^3) at standard conditions (68 °F and 29.92 inches Hg) (see 45CSR7). If the pollutant is SO_2, use units of ppmv (See 45CSR10).

Attachment J
EMISSION POINTS DATA SUMMARY SHEET

Table 2: Release Parameter Data								
Emission Point ID No. *(Must match Emission Units Table)*	Inner Diameter (ft.)	Exit Gas			Emission Point Elevation (ft)		UTM Coordinates (km)	
		Temp. (°F)	Volumetric Flow [1] (acfm) *at operating conditions*	Velocity (fps)	Ground Level *(Height above mean sea level)*	Stack Height [2] *(Release height of emissions above ground level)*	Northing	Easting
CE-3E	TBD	TBD	TBD	TBD	1,170	TBD	4,372.76	521.08
CE-4E	TBD	TBD	TBD	TBD	1,170	TBD	4,372.76	521.08
G-1E	TBD	TBD	TBD	TBD	1,170	TBD	4,372.76	521.08
HE-2E to HE-4E	TBD	TBD	TBD	TBD	1,170	TBD	4,372.76	521.08
HTR-1E	TBD	TBD	TBD	TBD	1,170	TBD	4,372.76	521.08
FL-1E	TBD	TBD	TBD	TBD	1,170	TBD	4,372.76	521.08
TA800E	TBD	Ambient	TBD	TBD	1,170	TBD	4,372.76	521.08
TA810E	TBD	Ambient	TBD	TBD	1,170	TBD	4,372.76	521.08
TA820E	TBD	Ambient	TBD	TBD	1,170	TBD	4,372.76	521.08

[1] Give at operating conditions. Include inerts.
[2] Release height of emissions above ground level.

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 ☐ 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 ☒ 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 ☒ 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. →See Attachment N Emission Calculations worksheets for details concerning Compressor Rod Packing Fugitive Emissions and Venting Episodes Fugitive Emissions.
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	Not Applicable					
Unpaved Haul Roads	Not Applicable					
Storage Pile Emissions	Not Applicable					
Loading/Unloading Operations	VOC Total HAP	37.80 0.42	14.22 0.16	37.80 0.42	14.22 0.16	O [AP-42]
Wastewater Treatment Evaporation & Operations	Not Applicable					
Equipment Leaks	VOC CH4	Varies	3.95 11.40	Varies	3.95 11.40	O [EPA]
General Clean-up VOC Emissions	Not Applicable					
Other: Compressor Rod Packing Fugitive Emissions	VOC Total HAP CH4	Varies	0.04 0.001 0.34	Varies	0.04 0.001 0.34	EE
Other: Venting Episodes Fugitive Emissions	VOC Total HAP CH4	Varies	4.59 0.09 34.18	Varies	2.43 0.05 18.08	EE

[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).

[3] Give rate with proposed 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).

[4] Indicate method used to determine emission rate as follows: MB = material balance; ST = stack test (give date of test); EE = engineering estimate; O = other (specify).

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] [Light Oil]	4	TBD	Varies	803.4 lb VOC/yr [EPA O&G Production factor*: 0.013 kg TOC/hr/source = 0.0287 lb TOC/hr/source = 0.0229 lb VOC/hr/source @ 80% VOC content]
	heavy liquid VOC[8] [Water/Oil]	1	TBD	Varies	0.05 lb VOC/yr [EPA O&G Production factor*: 0.000024 kg TOC/hr/source = 0.0001 lb TOC/hr/source = 0.00001 lb VOC/hr/source @ 10% VOC content]
	Non-VOC[9]				
Valves[10]	Gas VOC	200	TBD	Varies	1,738.1 lb VOC/yr [EPA O&G Production factor*: 0.0045 kg TOC/hr/source = 0.00992 lb TOC/hr/source = 0.000992 lb VOC/hr/source @ 10% VOC content]
	Light Liquid VOC [Light Oil]	100	TBD	Varies	3,862.5 lb VOC/yr [EPA O&G Production factor*: 0.0025 kg TOC/hr/source = 0.00551 lb TOC/hr/source = 0.000441 lb VOC/hr/source @ 80% VOC content]
	Heavy liquid VOC [Water/Oil]	150	TBD	Varies	28.4 lb VOC/yr [EPA O&G Production factor*: 0.000098 kg TOC/hr/source = 0.0002 lb TOC/hr/source = 0.00002 lb VOC/hr/source @ 10% VOC content]
	Non-VOC	200	TBD	Varies	13,035.9 lb CH4/yr [EPA O&G Production factor*: 0.0045 kg TOC/hr/source = 0.00992 lb TOC/hr/source = 0.00744 lb CH4/hr/source @ 75% CH4 content]

Safety Relief Valves[11]	Gas VOC	35	TBD	Varies	594.8 lb VOC/yr [EPA O&G Production factor*: 0.0088 kg TOC/hr/source = 0.0194 lb TOC/hr/source = 0.0019 lb VOC/hr/source @ 10% VOC content]
	Non VOC	35	TBD	Varies	4,461.2 lb CH4/yr [EPA O&G Production factor*: 0.0088 kg TOC/hr/source = 0.0194 lb TOC/hr/source = 0.0146 lb CH4/hr/source @ 75% CH4 content]
Open-ended Lines[12]	VOC				
	Non-VOC				
Sampling Connections[13]	VOC				
	Non-VOC				
Compressors	VOC				
	Non-VOC				
Flanges	VOC	150	TBD	Varies	113.0 lb VOC/yr [EPA O&G Production factor*: 0.00039 kg TOC/hr/source = 0.00086 lb TOC/hr/source = 0.000086 lb VOC/hr/source @ 10% VOC content]
	Light Liquid VOC [Light Oil]	100	TBD	Varies	169.9 lb VOC/yr [EPA O&G Production factor*: 0.00011 kg TOC/hr/source = 0.000243 lb TOC/hr/source = 0.000194 lb VOC/hr/source @ 80% VOC content]
	Heavy liquid VOC [Water/Oil]	300	TBD	Varies	1.7 lb VOC/yr [EPA O&G Production factor*: 0.0000029 kg TOC/hr/source = 0.000006 lb TOC/hr/source = 0.0000006 lb VOC/hr/source @ 10% VOC content]

	Non-VOC	150	TBD	Varies	847.3 lb CH4/yr [EPA O&G Production factor*: 0.00039 kg TOC/hr/source = 0.00086 lb TOC/hr/source = 0.00064 lb CH4/hr/source @ 75% CH4 content]
Other (Instrumentation)	VOC	35	TBD	Varies	594.8 lb VOC/yr [EPA O&G Production factor*: 0.0088 kg TOC/hr/source = 0.0194 lb TOC/hr/source = 0.0019 lb VOC/hr/source @ 10% VOC content]
	Non-VOC	35	TBD	Varies	4,461.2 lb CH4/yr [EPA O&G Production factor*: 0.0088 kg TOC/hr/source = 0.0194 lb TOC/hr/source = 0.0146 lb CH4/hr/source @ 75% CH4 content]

* EPA O&G Production factor leak rate factor obtained from Table 2.4 OIL AND GAS PRODUCTION OPERATIONS AVERAGE EMISSION FACTORS (kg/hr/source), EPA-453/R-95-017 *Protocol for Equipment Leak Emission Estimates*, November 1995.

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

Notes for Leak Source Data Sheet

1. For VOC sources include components on streams and equipment that contain greater than 10% w/w VOC, including feed streams, reaction/separation facilities, and product/by-product delivery lines. Do not include certain leakless equipment as defined below by category.

2. By monitoring frequency, give the number of sources routinely monitored for leaks, using a portable detection device that measures concentration in ppm. Do not include monitoring by visual or soap-bubble leak detection methods. "M/Q(M)/Q/SA/A/O" means the time period between inspections as follows:

   Monthly/Quarterly, with Monthly follow-up of repaired leakers/Quarterly/Semi-annual/Annually/Other (specify time period)

   If source category is not monitored, a single zero in the space will suffice. For example, if 50 gas-service valves are monitored quarterly, with monthly follow-up of those repaired, 75 are monitored semi-annually, and 50 are checked bimonthly (alternate months), with non checked at any other frequency, you would put in the category “valves, gas service:” 0/50/0/75/0/50 (bimonthly).

3. Give the average number of days, after a leak is discovered, that an attempt will be made to repair the leak.

4. Note the method used: MB - material balance; EE - engineering estimate; EPA - emission factors established by EPA (cite document used); O - other method, such as in-house emission factor (specify).

5. Do not include in the equipment count sealless pumps (canned motor or diaphragm) or those with enclosed venting to a control device. (Emissions from vented equipment should be included in the estimates given in the Emission Points Data Sheet.)

6. Volatile organic compounds (VOC) means the term as defined in 40 CFR □51.100 (s).

7. A light liquid is defined as a fluid with vapor pressure equal to or greater than 0.04 psi (0.3 Kpa) at 20°C. For mixtures, if 20% w/w or more of the stream is composed of fluids with vapor pressures greater than 0.04 psi (0.3 Kpa) at 20 °C, then the fluid is defined as a light liquid.

8. A heavy liquid is defined as a fluid with a vapor pressure less than 0.04 psi (0.3 Kpa) at 20°C. For mixtures, if less than 20% w/w of the stream is composed of fluids with vapor pressures greater than 0.04 psi (0.3 Kpa) at 20 °C, then the fluid is defined as a heavy liquid.

9. LIST CO, H_2S, mineral acids, NO, NO_2, SO_3, etc. DO NOT LIST CO_2, H_2, H_2O, N_2, O_2, and Noble Gases.

10. Include all process valves whether in-line or on an open-ended line such as sample, drain and purge valves. Do not include safety-relief valves, or leakless valves such as check, diaphragm, and bellows seal valves.

11. Do not include a safety-relief valve if there is a rupture disk in place upstream of the valve, or if the valve vents to a control device.

12 Open-ended lines include purge, drain and vent lines. Do not include sampling connections, or lines sealed by plugs, caps, blinds or second valves.

13. Do not include closed-purge sampling connections.

Attachment L

Emission Unit Data Sheets

Natural Gas-Fired Engines: CE-3 Compressor Engine #1 CE-4 Compressor Engine #2 G-1 Generator Engine	
HE-2 to HE-4	Line Heaters #2 - #4
HTR-1	Heater Treater
TT-2	Truck Loadout Rack
VRU-2	Vapor Recovery Unit
TA710 to TA730	Condensate Tanks
TA740	Waste Oil Tank
TA750 to TA760	Produced Water Tanks
TA800	Lube Oil Tank
TA810	Sump Tank
TA820	Methanol Totes

Natural Gas Engines Data Sheet

Source Identification Number[1]		CE-3		CE-4		G-1	
Engine Manufacturer and Model		Caterpillar G3512 TALE		Caterpillar G3608 TALE		Power Solutions International, Inc. EPSIB14.6NGP	
Manufacturer's Rated bhp/rpm		1,005 bhp / 1,400 rpm		2,370 bhp / 1,000 rpm		449 bhp / 2,000 rpm	
Source Status[2]		NS		NS		NS	
Date Installed/Modified/Removed[3]		02/01/16 planned install		02/01/16 planned install		02/01/16 planned install	
Engine Manufactured/Reconstruction Date[4]		5/10/2005		4/18/2015		5/14/2014	
Is this a Certified Stationary Spark Ignition Engine according to 40CFR60 Subpart JJJJ? (Yes or No)[5]		No		No		Yes	
Engine, Fuel and Combustion Data	Engine Type[6]	LB4S		LB4S		RB4S	
	APCD Type[7]	None		SCR		None	
	Fuel Type[8]	PQ		PQ		PQ	
	H_2S (gr/100 scf)	0.2 (AP42)		0.2 (AP42)		0.2 (AP42)	
	Operating bhp/rpm	1,005 bhp / 1,400 rpm		2,370 bhp / 1,000 rpm		449 bhp / 2,000 rpm	
	BSFC (Btu/bhp-hr)	8,202		7,589		8,660	
	Fuel throughput (ft^3/hr)	8,330		17,267		3,535	
	Fuel throughput ($MMft^3$/yr)	73.0		151.3		31.0	
	Operation (hrs/yr)	8,760		8,760		8,760	
Reference[9]	Potential Emissions[10]	lbs/hr	tons/yr	lbs/hr	tons/yr	lbs/hr	tons/yr
MD	NO_X	3.32	14.56	2.61	11.44	0.99	4.34
MD	CO	4.65	20.38	10.09	44.21	1.98	8.67
MD	VOC	0.75	3.30	3.29	14.42	0.69	3.03
AP	SO_2	0.005	0.02	0.01	0.05	0.002	0.01
AP	PM_{10}	0.08	0.36	0.18	0.79	0.08	0.33
MD	Formaldehyde	0.55	2.43	1.36	5.95	0.08	0.35

1. Enter the appropriate Source Identification Number for each natural gas-fueled reciprocating internal combustion compressor/generator engine located at the compressor station. Multiple compressor engines should be designated CE-1, CE-2, CE-3 etc. Generator engines should be designated GE-1, GE-2, GE-3 etc. If more than three (3) engines exist, please use additional sheets.

2. Enter the Source Status using the following codes:

NS	Construction of New Source (installation)	ES	Existing Source
MS	Modification of Existing Source	RS	Removal of Source

3. Enter the date (or anticipated date) of the engine's installation (construction of source), modification or removal.

4. Enter the date that the engine was manufactured, modified or reconstructed.

5. Is the engine a certified stationary spark ignition internal combustion engine according to 40CFR60 Subpart JJJJ. If so, the engine and control device must be operated and maintained in accordance with the manufacturer's emission-related written instructions. You must keep records of conducted maintenance to demonstrate compliance, but no performance testing is required. If the certified engine is not operated and maintained in accordance with the manufacturer's emission-related written instructions, the engine will be considered a non-certified engine and you must demonstrate compliance according to 40CFR§60.4243a(2)(i) through (iii), as appropriate.

   Provide a manufacturer's data sheet for all engines being registered.

6. Enter the Engine Type designation(s) using the following codes:

LB2S	Lean Burn Two Stroke	RB4S	Rich Burn Four Stroke
LB4S	Lean Burn Four Stroke		

7. Enter the Air Pollution Control Device (APCD) type designation(s) using the following codes:

A/F	Air/Fuel Ratio	IR	Ignition Retard
HEIS	High Energy Ignition System	SIPC	Screw-in Precombustion Chambers
PSC	Prestratified Charge	LEC	Low Emission Combustion
NSCR	Rich Burn & Non-Selective Catalytic Reduction	SCR	Lean Burn & Selective Catalytic Reduction

8. Enter the Fuel Type using the following codes:

PQ	Pipeline Quality Natural Gas	RG	Raw Natural Gas

9. Enter the Potential Emissions Data Reference designation using the following codes. Attach all referenced data to this *Compressor/Generator Data Sheet(s)*.

MD	Manufacturer's Data	AP	AP-42	
GR	GRI-HAPCalc™	OT	Other _____	(please list)

10. Enter each engine's Potential to Emit (PTE) for the listed regulated pollutants in pounds per hour and tons per year. PTE shall be calculated at manufacturer's rated brake horsepower and may reflect reduction efficiencies of listed Air Pollution Control Devices. Emergency generator engines may use 500 hours of operation when calculating PTE. PTE data from this data sheet shall be incorporated in the *Emissions Summary Sheet*.

USA COMPRESSION

Emissions Report

09/23/2015

USA Compression Unit 1483 G3512TALE/JGT4

Engine Serial Number :	7NJ01259	Engine Manufactured Date :	05/10/2005
Max HP :	1005	Max RPM :	1400
Number of Engine Cylinders :	12	Total Displacement (in3) :	3158
Combustion Type & Setting :	4 Stroke Lean Burn	Fuel Delivery Method:	Carburetor
Compression Ratio :	8:1	Combustion Air Treatment :	Turbocharged and Aftercooled
Engine Modified/Reconstructed? :			
Compressor Frame Serial # :	F21754	Unit Packaged Date :	09/26/2005
Compressor Frame Max RPM :	1500	# of Compressor Throws :	4

AIR ENVIRONMENTAL REGULATIONS

County and State Selected for Quote: Tyler WV

NSPS JJJJ	NOx	g/hp-hr	CO	g/hp-hr	VOC	g/hp-hr		
Ozone Non-Attainment / General Permit	NOx	g/hp-hr	CO	g/hp-hr	VOC	g/hp-hr	CH2O	g/hp-hr

RAW ENGINE EMISSIONS

(based on assumption of burning 900-970 LHV BTU/SCF or 80-85 Fuel Methane # Fuel Gas with little to no H2S)

Fuel Consumption : 8,202 HHV BTU/bhp-hr

	g/bhp-hr	lb/MMBTU	lb/hr	TPY
Nitrogen Oxides (NOx) :	1.50		3.323	14.555
Carbon Monoxide (CO) :	2.10		4.653	20.380
Volatile Organic Compounds (NMNEHC excluding CH2O) :	0.34		0.753	3.298
Formaldehyde (CH2O) :	0.25		0.554	2.427
Particulate Matter (PM) Filterable+Condensable :		0.0100	0.082	0.361
Sulfur Dioxide (SO2) :		0.0006	0.005	0.021

	g/bhp-hr	lb/MMBTU	lb/hr	Metric Tonne/yr
Carbon Dioxide (CO2) :	480.00		1,063.49	4,225.03
Methane (CH4) :	2.89		6.40	25.44

CONTROLLED EMISSIONS

Catalytic Converter Make and Model:	ELH-4200Z-1616F-30CE0-36
Catalyst Element Type:	Oxidation
Number of Catalyst Elements currently in Housing:	0
Air/Fuel Ratio Control :	Yes
Other Engine Emissions Control Equipment :	

	% Reduction Required to Comply with JJJJ & Non-Attainment / General Permit Limits	lb/hr	TPY
Nitrogen Oxides (NOx) :	0	3.323	14.555
Carbon Monoxide (CO) :	0	4.653	20.380
Volatile Organic Compounds (NMNEHC excluding CH2O) :	0	0.753	3.298
Formaldehyde (CH2O) :	0	0.554	2.427
Particulate Matter (PM) Filterable+Condensable :	0	0.082	0.361
Sulfur Dioxide (SO2) :	0	0.005	0.021

	% Reduction Required to Comply with JJJJ & Non-Attainment / General Permit Limits	lb/hr	Metric Tonne/yr
Carbon Dioxide (CO2) :	0	1,063.49	4,225.03
Methane (CH4) :	0	6.40	25.44

1) g/bhp-hr are based on Engine Manufacturer Specifications assuming a "Pipeline Quality" fuel gas composition, 1200 ft elevation, and 100- 110 F Max Air Inlet. Note that g/bhp-hr values are based on 100% engine load operation and some g/hp-hr values are Nominal and are not representative of Not- To-Exceed values. It is recommended to apply safety factor (i.e. increase the value by a nominal percentage) to the g/hp- hr values for Air Permitting to allow for operational flexibility and variations in fuel gas composition .

2) lb/MMBTU emission Factors are based on EPA's AP-42, Fifth Edition, Volume I, Chapter 3: Stationary Internal Combution Sources (Section 3.2 Natural Gas-Fired Reciprocating Engines).

USA COMPRESSION

USA Unit 2678 Caterpillar G3608TALE Engine Emissions

Date of Manufacture	*April 18, 2015*	Engine Serial Number	BEN01152	Date Modified/Reconstructed	Not Any
Driver Rated HP	2370	Rated Speed in RPM	1000	Combustion Type	Spark Ignited 4 Stroke
Number of Cylinders	8	Compression Ratio	9:1	Combustion Setting	Ultra Lean Burn
Total Displacement, in^3	10350	Fuel Delivery Method	Fuel Injection	Combustion Air Treatment	T.C./Aftercooled

Raw Engine Emissions (pipeline quality fuel gas with little to no H2S)

Fuel Consumption *6840 LHV BTU/bhp-hr or 7589 HHV BTU/bhp-hr*
Altitude *1200 ft*
Maximum Air Inlet Temp *90 F*

	g/bhp-hr [1]	lb/MMBTU [2]	lb/hr	TPY
Nitrogen Oxides (NOx)	0.5		2.61	11.44
Carbon Monoxide (CO)	2.74		14.32	62.70
Volatile Organic Compounds (VOC or NMNEHC excluding CH2O)	0.63		3.29	14.42
Formaldehyde (CH2O)	0.26		1.36	5.95
Particulate Matter (PM) Filterable+Condensable		9.99E-03	1.80E-01	7.87E-01
Sulfur Dioxide (SO2)		5.88E-04	1.06E-02	4.63E-02

	g/bhp-hr [1]	lb/hr	Metric Tonne/yr
Carbon Dioxide (CO2)	440	2299	9133
Methane (CH4)	5.36	28.01	111.26

[1] g/bhp-hr are based on Caterpillar Specifications (GERP) with customer supplied fuel gas, 1200 ft elevation, and 90 F Max Air Inlet Temperature. Note that g/bhp-hr values are based on 100% Load Operation. For air permitting, it is recommended to use a 20% safety margin for CO, VOC and other organic compounds to allow for variation in operating parameters and fuel gas quality.

[2] Emission Factor obtained from EPA's AP-42, Fifth Edition, Volume I, Chapter 3: Stationary Internal Combution Sources (Section 3.2 Natural Gas-Fired Reciprocating Engines, Table 3.2-2).

Catalytic Converter Emissions

Catalytic Converter Make and Model: *DCL D106-01-4Q1T-36*
Element Type: *Oxidation*
Number of Elements in Housing: *3*
Air/Fuel Ratio Control *Caterpillar ADEM3*

	% Reduction	**lb/hr**	**TPY**
Nitrogen Oxides (NOx)	0	**2.61**	**11.44**
Carbon Monoxide (CO)	29.5	**10.09**	**44.21**
Volatile Organic Compounds (VOC or NMNEHC excluding CH2O)	0	**3.29**	**14.42**
Formaldehyde (CH2O)	0	**1.36**	**5.95**
Particulate Matter (PM)	0	**1.80E-01**	**7.87E-01**
Sulfur Dioxide (SO2)	0	**1.06E-02**	**4.63E-02**

	% Reduction	**lb/hr**	**Metric Tonne/yr**
Carbon Dioxide (CO2)	0	**2299**	**9133**
Methane (CH4)	0	**28.01**	**111.26**

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
2014 MODEL YEAR
CERTIFICATE OF CONFORMITY
WITH THE CLEAN AIR ACT OF 1990

OFFICE OF TRANSPORTATION AND AIR QUALITY
ANN ARBOR, MICHIGAN 48105

Certificate Issued To: **Power Solutions International, Inc.**
(U.S. Manufacturer or Importer)

Certificate Number: EPSIB14.6NGP-017

Effective Date: 10/30/2013

Expiration Date: 12/31/2014

Byron J. Bunker, Division Director
Compliance Division

Issue Date: 10/30/2013

Revision Date: N/A

Manufacturer: Power Solutions International, Inc.
Engine Family: EPSIB14.6NGP
Certificate Number: EPSIB14.6NGP-017
Certification Type: Mobile and Stationary
Fuel : Natural Gas (CNG/LNG)
LPG/Propane
Emission Standards : VOC (g/Hp-hr) : 0.7
NOx (g/Hp-hr) : 1
CO (g/Hp-hr) : 2HC + NOx (g/kW-hr) : 2.7
NMHC + NOx (g/kW-hr) : 2.7
CO (g/kW-hr) : 4.4
Emergency Use Only : N

Pursuant to Section 213 of the Clean Air Act (42 U.S.C. section 7547) and 40 CFR Part 1048, 40 CFR Part 60, 1065, 1068, and 60 (stationary only and combined stationary and mobile) and subject to the terms and conditions prescribed in those provisions, this certificate of conformity is hereby issued with respect to the test engines which have been found to conform to applicable requirements and which represent the following nonroad engines, by engine family, more fully described in the documentation required by 40 CFR Part 1048, 40 CFR Part 60 and produced in the stated model year.

This certificate of conformity covers only those new nonroad spark-ignition engines which conform in all material respects to the design specifications that applied to those engines described in the documentation required by 40 CFR Part 1048, 40 CFR Part 60 and which are produced during the model year stated on this certificate of the said manufacturer, as defined in 40 CFR Part 1048, 40 CFR Part 60. This certificate of conformity does not cover nonroad engines imported prior to the effective date of the certificate.

It is a term of this certificate that the manufacturer shall consent to all inspections described in 40 CFR 1068.20 and authorized in a warrant or court order. Failure to comply with the requirements of such a warrant or court order may lead to revocation or suspension of this certificate for reasons specified in 40 CFR Part 1048, 40 CFR Part 60. It is also a term of this certificate that this certificate may be revoked or suspended or rendered void *ab initio* for other reasons specified in 40 CFR Part 1048, 40 CFR Part 60.

This certificate does not cover large nonroad engines sold, offered for sale, or introduced, or delivered for introduction, into commerce in the U.S. prior to the effective date of the certificate.

Attachment L
EMISSIONS UNIT DATA SHEET
GENERAL

To be used for affected sources other than asphalt plants, foundries, incinerators, indirect heat exchangers, and quarries.

Identification Number (as assigned on *Equipment List Form*): HE-2 to HE-4

1. Name or type and model of proposed affected source:

Natural gas-fired Line Heaters #2 - #4 (three new heaters rated at 1.5 MMBTU/hr each); manufacturer is J.W. Williams.

Purpose of the line heaters is to maintain an optimal temperature in the well stream as pressures are rapidly reduced. They counteract the effect of abrupt temperature drop that occurs when the well stream passes through the pressure-reducing choke.

2. On a separate sheet(s), furnish a sketch(es) of this affected source. If a modification is to be made to this source, clearly indicated the change(s). Provide a narrative description of all features of the affected source which may affect the production of air pollutants.

3. Name(s) and maximum amount of proposed process material(s) charged per hour:

NA

4. Name(s) and maximum amount of proposed material(s) produced per hour:

NA

5. Give chemical reactions, if applicable, that will be involved in the generation of air pollutants:

NA

* The identification number which appears here must correspond to the air pollution control device identification number appearing on the *List Form*.

6. Combustion Data (if applicable):

(a) Type and amount in appropriate units of fuel(s) to be burned:

Natural gas-fired line heaters rated at 1.5 MMBTU/hr each.

(b) Chemical analysis of proposed fuel(s), excluding coal, including maximum percent sulfur and ash:

NA

(c) Theoretical combustion air requirement (ACF/unit of fuel):

@ °F and psia.

(d) Percent excess air: NA

(e) Type and BTU/hr of burners and all other firing equipment planned to be used:

Three heaters rated at 1.5 MMBTU/hr each.

(f) If coal is proposed as a source of fuel, identify supplier and seams and give sizing of the coal as it will be fired:

NA

(g) Proposed maximum design heat input: 0.0576 $\times 10^6$ BTU/hr.

7. Projected operating schedule:

Hours/Day	24	Days/Week	7	Weeks/Year	52

8. Projected amount of pollutants that would be emitted from this affected source if no control devices were used: **[per each Line Heater HE-2 to HE-4]**

@ °F and psia

a.	NO_X	0.14	lb/hr	grains/ACF
b.	SO_2	0.001	lb/hr	grains/ACF
c.	CO	0.12	lb/hr	grains/ACF
d.	PM_{10}	0.01	lb/hr	grains/ACF
e.	Hydrocarbons	---	lb/hr	grains/ACF
f.	VOCs	0.01	lb/hr	grains/ACF
g.	Pb	---	lb/hr	grains/ACF
h.	Specify other(s)			
	CO2e	167.5	lb/hr	grains/ACF
			lb/hr	grains/ACF
			lb/hr	grains/ACF
			lb/hr	grains/ACF

NOTE: (1) An Air Pollution Control Device Sheet must be completed for any air pollution device(s) used to control emissions from this affected source.

(2) Complete the Emission Points Data Sheet.

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 proposed.	None proposed.
REPORTING	**TESTING**
None proposed.	None proposed.

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

None.

Attachment L
EMISSIONS UNIT DATA SHEET
GENERAL

To be used for affected sources other than asphalt plants, foundries, incinerators, indirect heat exchangers, and quarries.

Identification Number (as assigned on *Equipment List Form*): HTR-1

1. Name or type and model of proposed affected source: Natural gas-fired heater treater rated at 1.5 MMBTU/hr. Purpose of the heater treater is to break up wellstream emulsions, separating the crude oil from water and other materials, allowing liquid and sediment separation.
2. On a separate sheet(s), furnish a sketch(es) of this affected source. If a modification is to be made to this source, clearly indicated the change(s). Provide a narrative description of all features of the affected source which may affect the production of air pollutants.
3. Name(s) and maximum amount of proposed process material(s) charged per hour: NA
4. Name(s) and maximum amount of proposed material(s) produced per hour: NA
5. Give chemical reactions, if applicable, that will be involved in the generation of air pollutants: NA

* The identification number which appears here must correspond to the air pollution control device identification number appearing on the *List Form*.

6. Combustion Data (if applicable):

(a) Type and amount in appropriate units of fuel(s) to be burned:

Natural gas-fired heater treater rated at 1.5 MMBTU/hr.

(b) Chemical analysis of proposed fuel(s), excluding coal, including maximum percent sulfur and ash:

NA

(c) Theoretical combustion air requirement (ACF/unit of fuel):

@ °F and psia.

(d) Percent excess air: NA

(e) Type and BTU/hr of burners and all other firing equipment planned to be used:

One heater treater rated at 1.5 MMBTU/hr.

(f) If coal is proposed as a source of fuel, identify supplier and seams and give sizing of the coal as it will be fired:

NA

(g) Proposed maximum design heat input: 1.5 $\times 10^6$ BTU/hr.

7. Projected operating schedule:

Hours/Day	24	Days/Week	7	Weeks/Year	52

8. Projected amount of pollutants that would be emitted from this affected source if no control devices were used:

@ °F and psia

a.	NO_X	0.14	lb/hr	grains/ACF
b.	SO_2	0.001	lb/hr	grains/ACF
c.	CO	0.12	lb/hr	grains/ACF
d.	PM_{10}	0.01	lb/hr	grains/ACF
e.	Hydrocarbons	---	lb/hr	grains/ACF
f.	VOCs	0.01	lb/hr	grains/ACF
g.	Pb	---	lb/hr	grains/ACF
h.	Specify other(s)			
	CO2e	167.5	lb/hr	grains/ACF
			lb/hr	grains/ACF
			lb/hr	grains/ACF
			lb/hr	grains/ACF

NOTE: (1) An Air Pollution Control Device Sheet must be completed for any air pollution device(s) used to control emissions from this affected source.

(2) Complete the Emission Points Data Sheet.

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 proposed.	None proposed.
REPORTING	**TESTING**
None proposed.	None proposed.

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

None.

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*): TT-2

1. Loading Area Name: Truck Loadout Rack

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	None (uses truck pumps)
Number of liquids loaded	2 (produced water; condensate)
Maximum number of marine vessels, tank trucks, tank cars, and/or drums loading at one time	Only one tank truck to be loaded at a time.

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: N/A

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	24	24	24	24
days/week	7	7	7	7
weeks/quarter	13	13	13	13

8. Bulk Liquid Data *(add pages as necessary):*

Pump ID No.		N/A	N/A				
Liquid Name		Produced Water	Condensate				
Max. daily throughput (1000 gal/day)		8.7	15.5				
Max. annual throughput (1000 gal/yr)		3,173	5,658				
Loading Method [1]		SUB	SUB				
Max. Fill Rate (gal/min)		300	252				
Average Fill Time (min/loading)		30	30				
Max. Bulk Liquid Temperature (°F)		106	106				
True Vapor Pressure (mmHg) [2]		708	558				
Cargo Vessel Condition [3]		U	U				
Control Equipment or Method [4]		None	None				
Minimum control efficiency (%)		NA	NA				
Maximum Emission Rate [Controlled]	Loading (lb VOC/hr)	0.38	37.80				
	Annual (tons VOC/yr)	0.08	14.15				
Estimation Method [5]		EPA	EPA				

[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 Adsorption CO = 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 (describe)

[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
Permittee will maintain loading throughput records.	Permittee will maintain loading throughput records.
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

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.

Permittee will perform all maintenance as required by loading rack equipment Manufacturer.

Attachment L
EMISSIONS UNIT DATA SHEET
GENERAL

To be used for affected sources other than asphalt plants, foundries, incinerators, indirect heat exchangers, and quarries.

Identification Number (as assigned on *Equipment List Form*): VRU-2

1. Name or type and model of proposed affected source:

Vapor Recovery Unit (VRU) to capture vapors from the six storage tanks containing condensate and/or produced water (TA710, TA720, TA730, TA740, TA750, TA760).
Capacity: 115 MSCFD
Collected materials get recycled back into gas system – 95% capture.
Powered by electric motor (size to be determined, in the range of 25 to 30 HP).

2. On a separate sheet(s), furnish a sketch(es) of this affected source. If a modification is to be made to this source, clearly indicated the change(s). Provide a narrative description of all features of the affected source which may affect the production of air pollutants.

3. Name(s) and maximum amount of proposed process material(s) charged per hour:

Volatile organic chemical (VOC) vapors, which may include organic hazardous air pollutants (HAP), from the six storage tanks containing condensate, produced water and waste oil.

4. Name(s) and maximum amount of proposed material(s) produced per hour:

VOC and HAP vapors; amount produced per hour varies.

5. Give chemical reactions, if applicable, that will be involved in the generation of air pollutants:

NA

* The identification number which appears here must correspond to the air pollution control device identification number appearing on the *List Form*.

6. Combustion Data (if applicable): NA

(a) Type and amount in appropriate units of fuel(s) to be burned:

(b) Chemical analysis of proposed fuel(s), excluding coal, including maximum percent sulfur and ash:

(c) Theoretical combustion air requirement (ACF/unit of fuel):

@ °F and psia.

(d) Percent excess air:

(e) Type and BTU/hr of burners and all other firing equipment planned to be used:

(f) If coal is proposed as a source of fuel, identify supplier and seams and give sizing of the coal as it will be fired:

(g) Proposed maximum design heat input: $\times 10^6$ BTU/hr.

7. Projected operating schedule:

Hours/Day	24	Days/Week	7	Weeks/Year	52

8. Projected amount of pollutants that would be emitted from this affected source if no control devices were used: →See emissions for Storage Tanks.

@ °F and psia

a.	NO_X	---	lb/hr	grains/ACF
b.	SO_2	---	lb/hr	grains/ACF
c.	CO	---	lb/hr	grains/ACF
d.	PM_{10}	---	lb/hr	grains/ACF
e.	Hydrocarbons	---	lb/hr	grains/ACF
f.	VOCs	---	lb/hr	grains/ACF
g.	Pb	---	lb/hr	grains/ACF
h.	Specify other(s)			
	Organic HAP	---	lb/hr	grains/ACF
			lb/hr	grains/ACF
			lb/hr	grains/ACF
			lb/hr	grains/ACF

NOTE: (1) An Air Pollution Control Device Sheet must be completed for any air pollution device(s) used to control emissions from this affected source.

(2) Complete the Emission Points Data Sheet.

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 proposed.	None proposed.
REPORTING	TESTING
None proposed.	None proposed.

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

None – system has automatic monitoring, shutdown and alert systems for malfunctions.

Storage Tank Data Summary Sheet

Source ID #[1]	Status[2]	Content[3]	Volume[4]	Dia[5]	Throughput[6]	Orientation[7]	Liquid Height[8]
TA710	NEW	Condensate Tank #1	16,800	12	1,886,000	VERT	15
TA720	NEW	Condensate Tank #2	16,800	12	1,886,000	VERT	15
TA730	NEW	Condensate Tank #3	16,800	12	1,886,000	VERT	15
TA740	NEW	Waste Oil Tank	16,800	12	15,330	VERT	15
TA750	NEW	Produced Water Tank #1	16,800	12	1,586,500	VERT	15
TA760	NEW	Produced Water Tank #2	16,800	12	1,586,500	VERT	15
TA800	NEW	Lube Oil Tank	350	4	1,000	VERT	3
TA810	NEW	Sump Tank	500	4.83	250	VERT	5.67
TA820	NEW	Methanol Totes (4)	350 (each tote)	4	4,000	VERT	2

1. Enter the appropriate Source Identification Numbers (Source ID #) for each storage tank located at the compressor station. Tanks should be designated T01, T02, T03, etc.
2. Enter storage tank Status using the following:

   EXIST Existing Equipment NEW Installation of New Equipment
   REM Equipment Removed
3. Enter storage tank content such as condensate, pipeline liquids, glycol (DEG or TEG), lube oil, etc.
4. Enter storage tank volume in gallons.
5. Enter storage tank diameter in feet.
6. Enter storage tank throughput in gallons per year.
7. Enter storage tank orientation using the following:

   VERT Vertical Tank HORZ Horizontal Tank
8. Enter storage tank average liquid height in feet.

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 Ball Station	2. Tank Name Condensate Tank #1
3. Tank Equipment Identification No. (as assigned on *Equipment List Form*) TA710	4. Emission Point Identification No. (as assigned on *Equipment List Form*) None (connected to VRU-2)
5. Date of Commencement of Construction (for existing tanks) N/A – new tank	
6. Type of change ☒ New Construction ☐ New Stored Material ☐ Other Tank Modification	
7. Description of Tank Modification (if applicable) New 400 bbl (16,800 gallons) condensate storage tank.	
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). N/A	
7C. Provide any limitations on source operation affecting emissions, any work practice standards (e.g. production variation, etc.): N/A	

II. TANK INFORMATION (required)

8. Design Capacity (specify barrels or gallons). Use the internal cross-sectional area multiplied by internal height. 400 barrels / 16,800 gallons	
9A. Tank Internal Diameter (ft) 12	9B. Tank Internal Height (or Length) (ft) 20
10A. Maximum Liquid Height (ft) 18	10B. Average Liquid Height (ft) 15
11A. Maximum Vapor Space Height (ft) 19	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. 15,372 gallons	

13A. Maximum annual throughput (gal/yr)	13B. Maximum daily throughput (gal/day)
1,886,000	5,168

14. Number of Turnovers per year (annual net throughput/maximum tank liquid volume): 122.7

15. Maximum tank fill rate (gal/min) 4.0

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 ___ 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)

20A. Shell Color Blue	20B. Roof Color Blue	20C. Year Last Painted N/A

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): to NA - ambient

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

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

24B. For cone roof, provide slope (ft/ft) 0.17 Height (ft): 1.0

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: N/A

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 ADDITION/AL 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. →**See TANKS Summary Sheets**
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: →**See TANKS Summary Sheets**	
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			
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 0.03 Pressure Setting 0.5
☐ 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): Vapor Recovery Unit (VRU-2); closed system, 95% of vapors recycled back into system.

[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.	Pre-Control Breathing Loss (lb/yr)	Pre-Control Working Loss Amount	Pre-Control Working Loss Units	Pre-Control Annual Loss (lb/yr)	Estimation Method[1]
VOC	1,148.72	6,103.18	lb/yr	7,251.91	TANKS 4.0.9d
Total HAP	114.87	610.32	lb/yr	725.19	TANKS 4.0.9d (assume Total HAPs = 10% of VOC emissions)

[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.

TANKS 4.0.9d
Emissions Report - Detail Format
Tank Identification and Physical Characteristics

Identification		
User Identification:	Statoil-Ball TA710	
City:	Middlebourne	
State:	West Virginia	
Company:	Statoil	
Type of Tank:	Vertical Fixed Roof Tank	
Description:	Statoil-Ball 400 BBL Condensate Tank #1	
Tank Dimensions		
Shell Height (ft):		20.00
Diameter (ft):		12.00
Liquid Height (ft) :		18.00
Avg. Liquid Height (ft):		15.00
Volume (gallons):		15,228.53
Turnovers:		123.85
Net Throughput(gal/yr):		1,886,000.00
Is Tank Heated (y/n):	N	
Paint Characteristics		
Shell Color/Shade:	Gray/Medium	
Shell Condition	Good	
Roof Color/Shade:	Gray/Medium	
Roof Condition:	Good	
Roof Characteristics		
Type:	Cone	
Height (ft)		1.00
Slope (ft/ft) (Cone Roof)		0.17
Breather Vent Settings		
Vacuum Settings (psig):		-0.03
Pressure Settings (psig)		0.50

Meteorological Data used in Emissions Calculations: Pittsburgh, Pennsylvania (Avg Atmospheric Pressure = 14.11 psia)

TANKS 4.0.9d
Emissions Report - Detail Format
Liquid Contents of Storage Tank

Statoil-Ball TA710 - Vertical Fixed Roof Tank
Middlebourne, West Virginia

Mixture/Component	Month	Daily Liquid Surf. Temperature (deg F) Avg.	Min.	Max.	Liquid Bulk Temp (deg F)	Vapor Pressure (psia) Avg.	Min.	Max.	Vapor Mol. Weight.	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight	Basis for Vapor Pressure Calculations
Gasoline (RVP 10)	All	58.50	49.32	67.67	53.39	5.0362	4.1975	6.0042	66.0000			92.00	Option 4: RVP=10, ASTM Slope=3

TANKS 4.0.9d
Emissions Report - Detail Format
Detail Calculations (AP-42)

Statoil-Ball TA710 - Vertical Fixed Roof Tank
Middlebourne, West Virginia

Annual Emission Calculations	
Standing Losses (lb):	1,148.7247
Vapor Space Volume (cu ft):	603.1858
Vapor Density (lb/cu ft):	0.0598
Vapor Space Expansion Factor:	0.2115
Vented Vapor Saturation Factor:	0.4126
Tank Vapor Space Volume:	
Vapor Space Volume (cu ft):	603.1858
Tank Diameter (ft):	12.0000
Vapor Space Outage (ft):	5.3333
Tank Shell Height (ft):	20.0000
Average Liquid Height (ft):	15.0000
Roof Outage (ft):	0.3333
Roof Outage (Cone Roof)	
Roof Outage (ft):	0.3333
Roof Height (ft):	1.0000
Roof Slope (ft/ft):	0.1700
Shell Radius (ft):	6.0000
Vapor Density	
Vapor Density (lb/cu ft):	0.0598
Vapor Molecular Weight (lb/lb-mole):	66.0000
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	5.0362
Daily Avg. Liquid Surface Temp. (deg. R):	518.1654
Daily Average Ambient Temp. (deg. F):	50.3083
Ideal Gas Constant R (psia cuft / (lb-mol-deg R)):	10.731
Liquid Bulk Temperature (deg. R):	513.0583
Tank Paint Solar Absorptance (Shell):	0.6800
Tank Paint Solar Absorptance (Roof):	0.6800
Daily Total Solar Insulation Factor (Btu/sqft day):	1,202.9556
Vapor Space Expansion Factor	
Vapor Space Expansion Factor:	0.2115
Daily Vapor Temperature Range (deg. R):	36.6923
Daily Vapor Pressure Range (psia):	1.8067
Breather Vent Press. Setting Range(psia):	0.5300
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	5.0362
Vapor Pressure at Daily Minimum Liquid Surface Temperature (psia):	4.1975
Vapor Pressure at Daily Maximum Liquid Surface Temperature (psia):	6.0042
Daily Avg. Liquid Surface Temp. (deg R):	518.1654
Daily Min. Liquid Surface Temp. (deg R):	508.9923

Daily Max. Liquid Surface Temp. (deg R):	527.3385
Daily Ambient Temp. Range (deg. R):	19.1500
Vented Vapor Saturation Factor	
Vented Vapor Saturation Factor:	0.4126
Vapor Pressure at Daily Average Liquid:	
Surface Temperature (psia):	5.0362
Vapor Space Outage (ft):	5.3333
Working Losses (lb):	6,103.1841
Vapor Molecular Weight (lb/lb-mole):	66.0000
Vapor Pressure at Daily Average Liquid	
Surface Temperature (psia):	5.0362
Annual Net Throughput (gal/yr.):	1,886,000.0000
Annual Turnovers:	123.8465
Turnover Factor:	0.4089
Maximum Liquid Volume (gal):	15,228.5332
Maximum Liquid Height (ft):	18.0000
Tank Diameter (ft):	12.0000
Working Loss Product Factor:	1.0000
Total Losses (lb):	7,251.9088

TANKS 4.0.9d
Emissions Report - Detail Format
Individual Tank Emission Totals

Emissions Report for: Annual

Statoil-Ball TA710 - Vertical Fixed Roof Tank
Middlebourne, West Virginia

	Losses(lbs)		
Components	Working Loss	Breathing Loss	Total Emissions
Gasoline (RVP 10)	6,103.18	1,148.72	7,251.91

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 Ball Station	2. Tank Name Condensate Tank #2
3. Tank Equipment Identification No. (as assigned on *Equipment List Form*) TA720	4. Emission Point Identification No. (as assigned on *Equipment List Form*) None (connected to VRU-2)
5. Date of Commencement of Construction (for existing tanks) N/A – new tank	
6. Type of change ☒ New Construction ☐ New Stored Material ☐ Other Tank Modification	
7. Description of Tank Modification (if applicable) New 400 bbl (16,800 gallons) condensate storage tank.	
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). N/A	
7C. Provide any limitations on source operation affecting emissions, any work practice standards (e.g. production variation, etc.): N/A	

II. TANK INFORMATION (required)

8. Design Capacity (specify barrels or gallons). Use the internal cross-sectional area multiplied by internal height. 400 barrels / 16,800 gallons	
9A. Tank Internal Diameter (ft) 12	9B. Tank Internal Height (or Length) (ft) 20
10A. Maximum Liquid Height (ft) 18	10B. Average Liquid Height (ft) 15
11A. Maximum Vapor Space Height (ft) 19	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. 15,372 gallons	

13A. Maximum annual throughput (gal/yr)	13B. Maximum daily throughput (gal/day)
1,886,000	5,168

14. Number of Turnovers per year (annual net throughput/maximum tank liquid volume): 122.7

15. Maximum tank fill rate (gal/min) 4.0

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 ___ 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)

20A. Shell Color Blue	20B. Roof Color Blue	20C. Year Last Painted N/A

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): to NA - ambient

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

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

24B. For cone roof, provide slope (ft/ft) 0.17 Height (ft): 1.0

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: N/A

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 ADDITION/AL 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. →**See TANKS Summary Sheets**
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: →**See TANKS Summary Sheets**	
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			
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 0.03 Pressure Setting 0.5
☐ 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): Vapor Recovery Unit (VRU-2); closed system, 95% of vapors recycled back into system.

[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.	Pre-Control Breathing Loss (lb/yr)	Pre-Control Working Loss Amount	Pre-Control Working Loss Units	Pre-Control Annual Loss (lb/yr)	Estimation Method[1]
VOC	1,148.72	6,103.18	lb/yr	7,251.91	TANKS 4.0.9d
Total HAP	114.87	610.32	lb/yr	725.19	TANKS 4.0.9d (assume Total HAPs = 10% of VOC emissions)

[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.

TANKS 4.0.9d
Emissions Report - Detail Format
Tank Identification and Physical Characteristics

Identification		
User Identification:	Statoil-Ball TA720	
City:	Middlebourne	
State:	West Virginia	
Company:	Statoil	
Type of Tank:	Vertical Fixed Roof Tank	
Description:	Statoil-Ball 400 BBL Condensate Tank #2	
Tank Dimensions		
Shell Height (ft):		20.00
Diameter (ft):		12.00
Liquid Height (ft) :		18.00
Avg. Liquid Height (ft):		15.00
Volume (gallons):		15,228.53
Turnovers:		123.85
Net Throughput(gal/yr):		1,886,000.00
Is Tank Heated (y/n):	N	
Paint Characteristics		
Shell Color/Shade:	Gray/Medium	
Shell Condition	Good	
Roof Color/Shade:	Gray/Medium	
Roof Condition:	Good	
Roof Characteristics		
Type:	Cone	
Height (ft)		1.00
Slope (ft/ft) (Cone Roof)		0.17
Breather Vent Settings		
Vacuum Settings (psig):		-0.03
Pressure Settings (psig)		0.50

Meteorological Data used in Emissions Calculations: Pittsburgh, Pennsylvania (Avg Atmospheric Pressure = 14.11 psia)

TANKS 4.0.9d
Emissions Report - Detail Format
Liquid Contents of Storage Tank

Statoil-Ball TA720 - Vertical Fixed Roof Tank
Middlebourne, West Virginia

Mixture/Component	Month	Daily Liquid Surf. Temperature (deg F) Avg.	Min.	Max.	Liquid Bulk Temp (deg F)	Vapor Pressure (psia) Avg.	Min.	Max.	Vapor Mol. Weight.	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight	Basis for Vapor Pressure Calculations
Gasoline (RVP 10)	All	58.50	49.32	67.67	53.39	5.0362	4.1975	6.0042	66.0000			92.00	Option 4: RVP=10, ASTM Slope=3

TANKS 4.0.9d
Emissions Report - Detail Format
Detail Calculations (AP-42)

Statoil-Ball TA720 - Vertical Fixed Roof Tank
Middlebourne, West Virginia

Annual Emission Calculations	
Standing Losses (lb):	1,148.7247
Vapor Space Volume (cu ft):	603.1858
Vapor Density (lb/cu ft):	0.0598
Vapor Space Expansion Factor:	0.2115
Vented Vapor Saturation Factor:	0.4126
Tank Vapor Space Volume:	
Vapor Space Volume (cu ft):	603.1858
Tank Diameter (ft):	12.0000
Vapor Space Outage (ft):	5.3333
Tank Shell Height (ft):	20.0000
Average Liquid Height (ft):	15.0000
Roof Outage (ft):	0.3333
Roof Outage (Cone Roof)	
Roof Outage (ft):	0.3333
Roof Height (ft):	1.0000
Roof Slope (ft/ft):	0.1700
Shell Radius (ft):	6.0000
Vapor Density	
Vapor Density (lb/cu ft):	0.0598
Vapor Molecular Weight (lb/lb-mole):	66.0000
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	5.0362
Daily Avg. Liquid Surface Temp. (deg. R):	518.1654
Daily Average Ambient Temp. (deg. F):	50.3083
Ideal Gas Constant R (psia cuft / (lb-mol-deg R)):	10.731
Liquid Bulk Temperature (deg. R):	513.0583
Tank Paint Solar Absorptance (Shell):	0.6800
Tank Paint Solar Absorptance (Roof):	0.6800
Daily Total Solar Insulation Factor (Btu/sqft day):	1,202.9556
Vapor Space Expansion Factor	
Vapor Space Expansion Factor:	0.2115
Daily Vapor Temperature Range (deg. R):	36.6923
Daily Vapor Pressure Range (psia):	1.8067
Breather Vent Press. Setting Range(psia):	0.5300
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	5.0362
Vapor Pressure at Daily Minimum Liquid Surface Temperature (psia):	4.1975
Vapor Pressure at Daily Maximum Liquid Surface Temperature (psia):	6.0042
Daily Avg. Liquid Surface Temp. (deg R):	518.1654
Daily Min. Liquid Surface Temp. (deg R):	508.9923

Daily Max. Liquid Surface Temp. (deg R):	527.3385
Daily Ambient Temp. Range (deg. R):	19.1500
Vented Vapor Saturation Factor	
Vented Vapor Saturation Factor:	0.4126
Vapor Pressure at Daily Average Liquid:	
Surface Temperature (psia):	5.0362
Vapor Space Outage (ft):	5.3333
Working Losses (lb):	6,103.1841
Vapor Molecular Weight (lb/lb-mole):	66.0000
Vapor Pressure at Daily Average Liquid	
Surface Temperature (psia):	5.0362
Annual Net Throughput (gal/yr.):	1,886,000.0000
Annual Turnovers:	123.8465
Turnover Factor:	0.4089
Maximum Liquid Volume (gal):	15,228.5332
Maximum Liquid Height (ft):	18.0000
Tank Diameter (ft):	12.0000
Working Loss Product Factor:	1.0000
Total Losses (lb):	7,251.9088

TANKS 4.0.9d
Emissions Report - Detail Format
Individual Tank Emission Totals

Emissions Report for: Annual

Statoil-Ball TA720 - Vertical Fixed Roof Tank
Middlebourne, West Virginia

	Losses(lbs)		
Components	Working Loss	Breathing Loss	Total Emissions
Gasoline (RVP 10)	6,103.18	1,148.72	7,251.91

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 Ball Station	2. Tank Name Condensate Tank #3
3. Tank Equipment Identification No. (as assigned on *Equipment List Form*) TA730	4. Emission Point Identification No. (as assigned on *Equipment List Form*) None (connected to VRU-2)
5. Date of Commencement of Construction (for existing tanks) N/A – new tank	
6. Type of change ☒ New Construction ☐ New Stored Material ☐ Other Tank Modification	
7. Description of Tank Modification (if applicable) New 400 bbl (16,800 gallons) condensate storage tank.	
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). N/A	
7C. Provide any limitations on source operation affecting emissions, any work practice standards (e.g. production variation, etc.): N/A	

II. TANK INFORMATION (required)

8. Design Capacity (specify barrels or gallons). Use the internal cross-sectional area multiplied by internal height. 400 barrels / 16,800 gallons	
9A. Tank Internal Diameter (ft) 12	9B. Tank Internal Height (or Length) (ft) 20
10A. Maximum Liquid Height (ft) 18	10B. Average Liquid Height (ft) 15
11A. Maximum Vapor Space Height (ft) 19	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. 15,372 gallons	

13A. Maximum annual throughput (gal/yr)	13B. Maximum daily throughput (gal/day)
1,886,000	5,168

14. Number of Turnovers per year (annual net throughput/maximum tank liquid volume): 122.7

15. Maximum tank fill rate (gal/min) 4.0

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 ___ 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)

20A. Shell Color Blue	20B. Roof Color Blue	20C. Year Last Painted N/A

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): to NA - ambient

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

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

24B. For cone roof, provide slope (ft/ft) 0.17 Height (ft): 1.0

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: N/A

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 ADDITION/AL 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. →**See TANKS Summary Sheets**
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: →**See TANKS Summary Sheets**	
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			
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 0.03 Pressure Setting 0.5
☐ 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): Vapor Recovery Unit (VRU-2); closed system, 95% of vapors recycled back into system.

[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.	Pre-Control Breathing Loss (lb/yr)	Pre-Control Working Loss Amount	Pre-Control Working Loss Units	Pre-Control Annual Loss (lb/yr)	Estimation Method[1]
VOC	1,148.72	6,103.18	lb/yr	7,251.91	TANKS 4.0.9d
Total HAP	114.87	610.32	lb/yr	725.19	TANKS 4.0.9d (assume Total HAPs = 10% of VOC emissions)

[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.

TANKS 4.0.9d
Emissions Report - Detail Format
Tank Identification and Physical Characteristics

Identification		
User Identification:	Statoil-Ball TA730	
City:	Middlebourne	
State:	West Virginia	
Company:	Statoil	
Type of Tank:	Vertical Fixed Roof Tank	
Description:	Statoil-Ball 400 BBL Condensate Tank #3	
Tank Dimensions		
Shell Height (ft):		20.00
Diameter (ft):		12.00
Liquid Height (ft) :		18.00
Avg. Liquid Height (ft):		15.00
Volume (gallons):		15,228.53
Turnovers:		123.85
Net Throughput(gal/yr):		1,886,000.00
Is Tank Heated (y/n):	N	
Paint Characteristics		
Shell Color/Shade:	Gray/Medium	
Shell Condition	Good	
Roof Color/Shade:	Gray/Medium	
Roof Condition:	Good	
Roof Characteristics		
Type:	Cone	
Height (ft)		1.00
Slope (ft/ft) (Cone Roof)		0.17
Breather Vent Settings		
Vacuum Settings (psig):		-0.03
Pressure Settings (psig)		0.50

Meteorological Data used in Emissions Calculations: Pittsburgh, Pennsylvania (Avg Atmospheric Pressure = 14.11 psia)

TANKS 4.0.9d
Emissions Report - Detail Format
Liquid Contents of Storage Tank

Statoil-Ball TA730 - Vertical Fixed Roof Tank
Middlebourne, West Virginia

Mixture/Component	Month	Daily Liquid Surf. Temperature (deg F) Avg.	Min.	Max.	Liquid Bulk Temp (deg F)	Vapor Pressure (psia) Avg.	Min.	Max.	Vapor Mol. Weight.	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight	Basis for Vapor Pressure Calculations
Gasoline (RVP 10)	All	58.50	49.32	67.67	53.39	5.0362	4.1975	6.0042	66.0000			92.00	Option 4: RVP=10, ASTM Slope=3

TANKS 4.0.9d
Emissions Report - Detail Format
Detail Calculations (AP-42)

Statoil-Ball TA730 - Vertical Fixed Roof Tank
Middlebourne, West Virginia

Annual Emission Calculations	
Standing Losses (lb):	1,148.7247
Vapor Space Volume (cu ft):	603.1858
Vapor Density (lb/cu ft):	0.0598
Vapor Space Expansion Factor:	0.2115
Vented Vapor Saturation Factor:	0.4126
Tank Vapor Space Volume:	
Vapor Space Volume (cu ft):	603.1858
Tank Diameter (ft):	12.0000
Vapor Space Outage (ft):	5.3333
Tank Shell Height (ft):	20.0000
Average Liquid Height (ft):	15.0000
Roof Outage (ft):	0.3333
Roof Outage (Cone Roof)	
Roof Outage (ft):	0.3333
Roof Height (ft):	1.0000
Roof Slope (ft/ft):	0.1700
Shell Radius (ft):	6.0000
Vapor Density	
Vapor Density (lb/cu ft):	0.0598
Vapor Molecular Weight (lb/lb-mole):	66.0000
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	5.0362
Daily Avg. Liquid Surface Temp. (deg. R):	518.1654
Daily Average Ambient Temp. (deg. F):	50.3083
Ideal Gas Constant R (psia cuft / (lb-mol-deg R)):	10.731
Liquid Bulk Temperature (deg. R):	513.0583
Tank Paint Solar Absorptance (Shell):	0.6800
Tank Paint Solar Absorptance (Roof):	0.6800
Daily Total Solar Insulation Factor (Btu/sqft day):	1,202.9556
Vapor Space Expansion Factor	
Vapor Space Expansion Factor:	0.2115
Daily Vapor Temperature Range (deg. R):	36.6923
Daily Vapor Pressure Range (psia):	1.8067
Breather Vent Press. Setting Range(psia):	0.5300
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	5.0362
Vapor Pressure at Daily Minimum Liquid Surface Temperature (psia):	4.1975
Vapor Pressure at Daily Maximum Liquid Surface Temperature (psia):	6.0042
Daily Avg. Liquid Surface Temp. (deg R):	518.1654
Daily Min. Liquid Surface Temp. (deg R):	508.9923

Daily Max. Liquid Surface Temp. (deg R):	527.3385
Daily Ambient Temp. Range (deg. R):	19.1500
Vented Vapor Saturation Factor	
Vented Vapor Saturation Factor:	0.4126
Vapor Pressure at Daily Average Liquid:	
Surface Temperature (psia):	5.0362
Vapor Space Outage (ft):	5.3333
Working Losses (lb):	6,103.1841
Vapor Molecular Weight (lb/lb-mole):	66.0000
Vapor Pressure at Daily Average Liquid	
Surface Temperature (psia):	5.0362
Annual Net Throughput (gal/yr.):	1,886,000.0000
Annual Turnovers:	123.8465
Turnover Factor:	0.4089
Maximum Liquid Volume (gal):	15,228.5332
Maximum Liquid Height (ft):	18.0000
Tank Diameter (ft):	12.0000
Working Loss Product Factor:	1.0000
Total Losses (lb):	7,251.9088

TANKS 4.0.9d
Emissions Report - Detail Format
Individual Tank Emission Totals

Emissions Report for: Annual

Statoil-Ball TA730 - Vertical Fixed Roof Tank
Middlebourne, West Virginia

	Losses(lbs)		
Components	Working Loss	Breathing Loss	Total Emissions
Gasoline (RVP 10)	6,103.18	1,148.72	7,251.91

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 Ball Station	2. Tank Name Waste Oil Tank
3. Tank Equipment Identification No. (as assigned on *Equipment List Form*) TA740	4. Emission Point Identification No. (as assigned on *Equipment List Form*) None (connected to VRU-2)
5. Date of Commencement of Construction (for existing tanks) N/A – new tank	
6. Type of change ☒ New Construction ☐ New Stored Material ☐ Other Tank Modification	
7. Description of Tank Modification (if applicable) New 400 bbl (16,800 gallons) condensate storage tank.	
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). N/A	
7C. Provide any limitations on source operation affecting emissions, any work practice standards (e.g. production variation, etc.): N/A	

II. TANK INFORMATION (required)

8. Design Capacity (specify barrels or gallons). Use the internal cross-sectional area multiplied by internal height. 400 barrels / 16,800 gallons	
9A. Tank Internal Diameter (ft) 12	9B. Tank Internal Height (or Length) (ft) 20
10A. Maximum Liquid Height (ft) 18	10B. Average Liquid Height (ft) 15
11A. Maximum Vapor Space Height (ft) 19	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. 15,372 gallons	

13A. Maximum annual throughput (gal/yr)	13B. Maximum daily throughput (gal/day)
15,330	42

14. Number of Turnovers per year (annual net throughput/maximum tank liquid volume): 1.0

15. Maximum tank fill rate (gal/min) 4.0

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 ___ 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)

20A. Shell Color Blue	20B. Roof Color Blue	20C. Year Last Painted N/A

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): to NA - ambient

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

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

24B. For cone roof, provide slope (ft/ft) 0.17 Height (ft): 1.0

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: N/A

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 ADDITION/AL 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. →**See TANKS Summary Sheets**
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: →**See TANKS Summary Sheets**	
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			
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 0.03 Pressure Setting 0.5

☐ 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): Vapor Recovery Unit (VRU-2); closed system, 95% of vapors recycled back into system.

[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.	Pre-Control Breathing Loss (lb/yr)	Pre-Control Working Loss		Pre-Control Annual Loss (lb/yr)	Estimation Method[1]
		Amount	Units		
VOC	1,148.72	121.32	lb/yr	1,270.05	TANKS 4.0.9d
Total HAP	114.87	12.13	lb/yr	127.00	TANKS 4.0.9d (assume Total HAPs = 10% of VOC emissions)

[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.

TANKS 4.0.9d
Emissions Report - Detail Format
Tank Identification and Physical Characteristics

Identification		
User Identification:	Statoil-Ball TA740	
City:	Middlebourne	
State:	West Virginia	
Company:	Statoil	
Type of Tank:	Vertical Fixed Roof Tank	
Description:	Statoil-Ball 400 BBL Waste Oil Tank	
Tank Dimensions		
Shell Height (ft):		20.00
Diameter (ft):		12.00
Liquid Height (ft) :		18.00
Avg. Liquid Height (ft):		15.00
Volume (gallons):		15,228.53
Turnovers:		1.01
Net Throughput(gal/yr):		15,330.00
Is Tank Heated (y/n):	N	
Paint Characteristics		
Shell Color/Shade:	Gray/Medium	
Shell Condition	Good	
Roof Color/Shade:	Gray/Medium	
Roof Condition:	Good	
Roof Characteristics		
Type:	Cone	
Height (ft)		1.00
Slope (ft/ft) (Cone Roof)		0.17
Breather Vent Settings		
Vacuum Settings (psig):		-0.03
Pressure Settings (psig)		0.50

Meteorological Data used in Emissions Calculations: Pittsburgh, Pennsylvania (Avg Atmospheric Pressure = 14.11 psia)

TANKS 4.0.9d
Emissions Report - Detail Format
Liquid Contents of Storage Tank

Statoil-Ball TA740 - Vertical Fixed Roof Tank
Middlebourne, West Virginia

Mixture/Component	Month	Daily Liquid Surf. Temperature (deg F) Avg.	Min.	Max.	Liquid Bulk Temp (deg F)	Vapor Pressure (psia) Avg.	Min.	Max.	Vapor Mol. Weight.	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight	Basis for Vapor Pressure Calculations
Gasoline (RVP 10)	All	58.50	49.32	67.67	53.39	5.0362	4.1975	6.0042	66.0000			92.00	Option 4: RVP=10, ASTM Slope=3

TANKS 4.0.9d
Emissions Report - Detail Format
Detail Calculations (AP-42)

Statoil-Ball TA740 - Vertical Fixed Roof Tank
Middlebourne, West Virginia

Annual Emission Calculations	
Standing Losses (lb):	1,148.7247
Vapor Space Volume (cu ft):	603.1858
Vapor Density (lb/cu ft):	0.0598
Vapor Space Expansion Factor:	0.2115
Vented Vapor Saturation Factor:	0.4126
Tank Vapor Space Volume:	
Vapor Space Volume (cu ft):	603.1858
Tank Diameter (ft):	12.0000
Vapor Space Outage (ft):	5.3333
Tank Shell Height (ft):	20.0000
Average Liquid Height (ft):	15.0000
Roof Outage (ft):	0.3333
Roof Outage (Cone Roof)	
Roof Outage (ft):	0.3333
Roof Height (ft):	1.0000
Roof Slope (ft/ft):	0.1700
Shell Radius (ft):	6.0000
Vapor Density	
Vapor Density (lb/cu ft):	0.0598
Vapor Molecular Weight (lb/lb-mole):	66.0000
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	5.0362
Daily Avg. Liquid Surface Temp. (deg. R):	518.1654
Daily Average Ambient Temp. (deg. F):	50.3083
Ideal Gas Constant R (psia cuft / (lb-mol-deg R)):	10.731
Liquid Bulk Temperature (deg. R):	513.0583
Tank Paint Solar Absorptance (Shell):	0.6800
Tank Paint Solar Absorptance (Roof):	0.6800
Daily Total Solar Insulation Factor (Btu/sqft day):	1,202.9556
Vapor Space Expansion Factor	
Vapor Space Expansion Factor:	0.2115
Daily Vapor Temperature Range (deg. R):	36.6923
Daily Vapor Pressure Range (psia):	1.8067
Breather Vent Press. Setting Range(psia):	0.5300
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	5.0362
Vapor Pressure at Daily Minimum Liquid Surface Temperature (psia):	4.1975
Vapor Pressure at Daily Maximum Liquid Surface Temperature (psia):	6.0042
Daily Avg. Liquid Surface Temp. (deg R):	518.1654
Daily Min. Liquid Surface Temp. (deg R):	508.9923
Daily Max. Liquid Surface Temp. (deg R):	527.3385
Daily Ambient Temp. Range (deg. R):	19.1500

Vented Vapor Saturation Factor	
Vented Vapor Saturation Factor:	0.4126
Vapor Pressure at Daily Average Liquid:	
Surface Temperature (psia):	5.0362
Vapor Space Outage (ft):	5.3333
Working Losses (lb):	121.3215
Vapor Molecular Weight (lb/lb-mole):	66.0000
Vapor Pressure at Daily Average Liquid	
Surface Temperature (psia):	5.0362
Annual Net Throughput (gal/yr.):	15,330.0000
Annual Turnovers:	1.0067
Turnover Factor:	1.0000
Maximum Liquid Volume (gal):	15,228.5332
Maximum Liquid Height (ft):	18.0000
Tank Diameter (ft):	12.0000
Working Loss Product Factor:	1.0000
Total Losses (lb):	1,270.0462

TANKS 4.0.9d
Emissions Report - Detail Format
Individual Tank Emission Totals

Emissions Report for: Annual

Statoil-Ball TA740 - Vertical Fixed Roof Tank
Middlebourne, West Virginia

	Losses(lbs)		
Components	Working Loss	Breathing Loss	Total Emissions
Gasoline (RVP 10)	121.32	1,148.72	1,270.05

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 Ball Station	2. Tank Name Produced Water Tank #1
3. Tank Equipment Identification No. (as assigned on *Equipment List Form*) TA750	4. Emission Point Identification No. (as assigned on *Equipment List Form*) None (connected to VRU-2)
5. Date of Commencement of Construction (for existing tanks) N/A – new tank	
6. Type of change ☒ New Construction ☐ New Stored Material ☐ Other Tank Modification	
7. Description of Tank Modification (if applicable) New 400 bbl (16,800 gallons) condensate storage tank.	
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). N/A	
7C. Provide any limitations on source operation affecting emissions, any work practice standards (e.g. production variation, etc.): N/A	

II. TANK INFORMATION (required)

8. Design Capacity (specify barrels or gallons). Use the internal cross-sectional area multiplied by internal height. 400 barrels / 16,800 gallons	
9A. Tank Internal Diameter (ft) 12	9B. Tank Internal Height (or Length) (ft) 20
10A. Maximum Liquid Height (ft) 18	10B. Average Liquid Height (ft) 15
11A. Maximum Vapor Space Height (ft) 19	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. 15,372 gallons	

13A. Maximum annual throughput (gal/yr)	13B. Maximum daily throughput (gal/day)
1,586,500	4,346

14. Number of Turnovers per year (annual net throughput/maximum tank liquid volume): 103.2

15. Maximum tank fill rate (gal/min) 4.0

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 ___ 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)

20A. Shell Color Blue	20B. Roof Color Blue	20C. Year Last Painted N/A

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): to NA - ambient

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

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

24B. For cone roof, provide slope (ft/ft) 0.17 Height (ft): 1.0

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: N/A

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 ADDITION/AL 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. →**See TANKS Summary Sheets**
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: →**See TANKS Summary Sheets**	
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			
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 0.03 Pressure Setting 0.5
☐ 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): Vapor Recovery Unit (VRU-2); closed system, 95% of vapors recycled back into system.

[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.	Pre-Control Breathing Loss (lb/yr)	Pre-Control Working Loss Amount	Pre-Control Working Loss Units	Pre-Control Annual Loss (lb/yr)	Estimation Method[1]
VOC	1.07	13.84	lb/yr	14.91	TANKS 4.0.9d
Total HAP	0.11	1.38	lb/yr	1.49	TANKS 4.0.9d (assume Total HAPs = 10% of VOC emissions)

[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.

TANKS 4.0.9d
Emissions Report - Detail Format
Tank Identification and Physical Characteristics

Identification		
User Identification:	Statoil-Ball TA750	
City:	Middlebourne	
State:	West Virginia	
Company:	Statoil	
Type of Tank:	Vertical Fixed Roof Tank	
Description:	Statoil-Ball 400 BBL Produced Water Tank #1	
Tank Dimensions		
Shell Height (ft):		20.00
Diameter (ft):		12.00
Liquid Height (ft) :		18.00
Avg. Liquid Height (ft):		15.00
Volume (gallons):		15,228.53
Turnovers:		104.18
Net Throughput(gal/yr):		1,586,500.00
Is Tank Heated (y/n):	N	
Paint Characteristics		
Shell Color/Shade:	Gray/Medium	
Shell Condition	Good	
Roof Color/Shade:	Gray/Medium	
Roof Condition:	Good	
Roof Characteristics		
Type:	Cone	
Height (ft)		1.00
Slope (ft/ft) (Cone Roof)		0.17
Breather Vent Settings		
Vacuum Settings (psig):		-0.03
Pressure Settings (psig)		0.50

Meteorological Data used in Emissions Calculations: Pittsburgh, Pennsylvania (Avg Atmospheric Pressure = 14.11 psia)

TANKS 4.0.9d
Emissions Report - Detail Format
Liquid Contents of Storage Tank

Statoil-Ball TA750 - Vertical Fixed Roof Tank
Middlebourne, West Virginia

Mixture/Component	Month	Daily Liquid Surf. Temperature (deg F) Avg.	Min.	Max.	Liquid Bulk Temp (deg F)	Vapor Pressure (psia) Avg.	Min.	Max.	Vapor Mol. Weight.	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight	Basis for Vapor Pressure Calculations
Distillate fuel oil no. 2	All	58.50	49.32	67.67	53.39	0.0062	0.0044	0.0084	130.0000			188.00	Option 1: VP50 = .0045 VP60 = .0065

TANKS 4.0.9d
Emissions Report - Detail Format
Detail Calculations (AP-42)

Statoil-Ball TA750 - Vertical Fixed Roof Tank
Middlebourne, West Virginia

Annual Emission Calculations	
Standing Losses (lb):	1.0675
Vapor Space Volume (cu ft):	603.1858
Vapor Density (lb/cu ft):	0.0001
Vapor Space Expansion Factor:	0.0335
Vented Vapor Saturation Factor:	0.9983
Tank Vapor Space Volume:	
Vapor Space Volume (cu ft):	603.1858
Tank Diameter (ft):	12.0000
Vapor Space Outage (ft):	5.3333
Tank Shell Height (ft):	20.0000
Average Liquid Height (ft):	15.0000
Roof Outage (ft):	0.3333
Roof Outage (Cone Roof)	
Roof Outage (ft):	0.3333
Roof Height (ft):	1.0000
Roof Slope (ft/ft):	0.1700
Shell Radius (ft):	6.0000
Vapor Density	
Vapor Density (lb/cu ft):	0.0001
Vapor Molecular Weight (lb/lb-mole):	130.0000
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	0.0062
Daily Avg. Liquid Surface Temp. (deg. R):	518.1654
Daily Average Ambient Temp. (deg. F):	50.3083
Ideal Gas Constant R (psia cuft / (lb-mol-deg R)):	10.731
Liquid Bulk Temperature (deg. R):	513.0583
Tank Paint Solar Absorptance (Shell):	0.6800
Tank Paint Solar Absorptance (Roof):	0.6800
Daily Total Solar Insulation Factor (Btu/sqft day):	1,202.9556
Vapor Space Expansion Factor	
Vapor Space Expansion Factor:	0.0335
Daily Vapor Temperature Range (deg. R):	36.6923
Daily Vapor Pressure Range (psia):	0.0040
Breather Vent Press. Setting Range(psia):	0.5300
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	0.0062
Vapor Pressure at Daily Minimum Liquid Surface Temperature (psia):	0.0044
Vapor Pressure at Daily Maximum Liquid Surface Temperature (psia):	0.0084

Daily Avg. Liquid Surface Temp. (deg R):	518.1654
Daily Min. Liquid Surface Temp. (deg R):	508.9923
Daily Max. Liquid Surface Temp. (deg R):	527.3385
Daily Ambient Temp. Range (deg. R):	19.1500
Vented Vapor Saturation Factor	
Vented Vapor Saturation Factor:	0.9983
Vapor Pressure at Daily Average Liquid:	
Surface Temperature (psia):	0.0062
Vapor Space Outage (ft):	5.3333
Working Losses (lb):	13.8395
Vapor Molecular Weight (lb/lb-mole):	130.0000
Vapor Pressure at Daily Average Liquid	
Surface Temperature (psia):	0.0062
Annual Net Throughput (gal/yr.):	1,586,500.0000
Annual Turnovers:	104.1794
Turnover Factor:	0.4546
Maximum Liquid Volume (gal):	15,228.5332
Maximum Liquid Height (ft):	18.0000
Tank Diameter (ft):	12.0000
Working Loss Product Factor:	1.0000
Total Losses (lb):	14.9070

TANKS 4.0.9d
Emissions Report - Detail Format
Individual Tank Emission Totals

Emissions Report for: Annual

Statoil-Ball TA750 - Vertical Fixed Roof Tank
Middlebourne, West Virginia

	Losses(lbs)		
Components	Working Loss	Breathing Loss	Total Emissions
Distillate fuel oil no. 2	13.84	1.07	14.91

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 Ball Station	2. Tank Name Produced Water Tank #2
3. Tank Equipment Identification No. (as assigned on *Equipment List Form*) TA760	4. Emission Point Identification No. (as assigned on *Equipment List Form*) None (connected to VRU-2)
5. Date of Commencement of Construction (for existing tanks) N/A – new tank	
6. Type of change ☒ New Construction ☐ New Stored Material ☐ Other Tank Modification	
7. Description of Tank Modification (if applicable) New 400 bbl (16,800 gallons) condensate storage tank.	
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). N/A	
7C. Provide any limitations on source operation affecting emissions, any work practice standards (e.g. production variation, etc.): N/A	

II. TANK INFORMATION (required)

8. Design Capacity (specify barrels or gallons). Use the internal cross-sectional area multiplied by internal height. 400 barrels / 16,800 gallons	
9A. Tank Internal Diameter (ft) 12	9B. Tank Internal Height (or Length) (ft) 20
10A. Maximum Liquid Height (ft) 18	10B. Average Liquid Height (ft) 15
11A. Maximum Vapor Space Height (ft) 19	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. 15,372 gallons	

13A. Maximum annual throughput (gal/yr)	13B. Maximum daily throughput (gal/day)
1,586,500	4,346

14. Number of Turnovers per year (annual net throughput/maximum tank liquid volume): 103.2

15. Maximum tank fill rate (gal/min) 4.0

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 ___ 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)

20A. Shell Color Blue	20B. Roof Color Blue	20C. Year Last Painted N/A

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): to NA - ambient

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

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

24B. For cone roof, provide slope (ft/ft) 0.17 Height (ft): 1.0

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: N/A

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 ADDITION/AL 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. →**See TANKS Summary Sheets**
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: →**See TANKS Summary Sheets**	
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			
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 0.03 Pressure Setting 0.5
☐ 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): Vapor Recovery Unit (VRU-2); closed system, 95% of vapors recycled back into system.

[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.	Pre-Control Breathing Loss (lb/yr)	Pre-Control Working Loss Amount	Pre-Control Working Loss Units	Pre-Control Annual Loss (lb/yr)	Estimation Method[1]
VOC	1.07	13.84	lb/yr	14.91	TANKS 4.0.9d
Total HAP	0.11	1.38	lb/yr	1.49	TANKS 4.0.9d (assume Total HAPs = 10% of VOC emissions)

[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.

TANKS 4.0.9d
Emissions Report - Detail Format
Tank Identification and Physical Characteristics

Identification		
User Identification:	Statoil-Ball TA760	
City:	Middlebourne	
State:	West Virginia	
Company:	Statoil	
Type of Tank:	Vertical Fixed Roof Tank	
Description:	Statoil-Ball 400 BBL Produced Water Tank #2	
Tank Dimensions		
Shell Height (ft):		20.00
Diameter (ft):		12.00
Liquid Height (ft) :		18.00
Avg. Liquid Height (ft):		15.00
Volume (gallons):		15,228.53
Turnovers:		104.18
Net Throughput(gal/yr):		1,586,500.00
Is Tank Heated (y/n):	N	
Paint Characteristics		
Shell Color/Shade:	Gray/Medium	
Shell Condition	Good	
Roof Color/Shade:	Gray/Medium	
Roof Condition:	Good	
Roof Characteristics		
Type:	Cone	
Height (ft)		1.00
Slope (ft/ft) (Cone Roof)		0.17
Breather Vent Settings		
Vacuum Settings (psig):		-0.03
Pressure Settings (psig)		0.50

Meteorological Data used in Emissions Calculations: Pittsburgh, Pennsylvania (Avg Atmospheric Pressure = 14.11 psia)

TANKS 4.0.9d
Emissions Report - Detail Format
Liquid Contents of Storage Tank

Statoil-Ball TA760 - Vertical Fixed Roof Tank
Middlebourne, West Virginia

Mixture/Component	Month	Daily Liquid Surf. Temperature (deg F) Avg.	Min.	Max.	Liquid Bulk Temp (deg F)	Vapor Pressure (psia) Avg.	Min.	Max.	Vapor Mol. Weight.	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight	Basis for Vapor Pressure Calculations
Distillate fuel oil no. 2	All	58.50	49.32	67.67	53.39	0.0062	0.0044	0.0084	130.0000			188.00	Option 1: VP50 = .0045 VP60 = .0065

TANKS 4.0.9d
Emissions Report - Detail Format
Detail Calculations (AP-42)

Statoil-Ball TA760 - Vertical Fixed Roof Tank
Middlebourne, West Virginia

Annual Emission Calculations	
Standing Losses (lb):	1.0675
Vapor Space Volume (cu ft):	603.1858
Vapor Density (lb/cu ft):	0.0001
Vapor Space Expansion Factor:	0.0335
Vented Vapor Saturation Factor:	0.9983
Tank Vapor Space Volume:	
Vapor Space Volume (cu ft):	603.1858
Tank Diameter (ft):	12.0000
Vapor Space Outage (ft):	5.3333
Tank Shell Height (ft):	20.0000
Average Liquid Height (ft):	15.0000
Roof Outage (ft):	0.3333
Roof Outage (Cone Roof)	
Roof Outage (ft):	0.3333
Roof Height (ft):	1.0000
Roof Slope (ft/ft):	0.1700
Shell Radius (ft):	6.0000
Vapor Density	
Vapor Density (lb/cu ft):	0.0001
Vapor Molecular Weight (lb/lb-mole):	130.0000
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	0.0062
Daily Avg. Liquid Surface Temp. (deg. R):	518.1654
Daily Average Ambient Temp. (deg. F):	50.3083
Ideal Gas Constant R (psia cuft / (lb-mol-deg R)):	10.731
Liquid Bulk Temperature (deg. R):	513.0583
Tank Paint Solar Absorptance (Shell):	0.6800
Tank Paint Solar Absorptance (Roof):	0.6800
Daily Total Solar Insulation Factor (Btu/sqft day):	1,202.9556
Vapor Space Expansion Factor	
Vapor Space Expansion Factor:	0.0335
Daily Vapor Temperature Range (deg. R):	36.6923
Daily Vapor Pressure Range (psia):	0.0040
Breather Vent Press. Setting Range(psia):	0.5300
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	0.0062
Vapor Pressure at Daily Minimum Liquid Surface Temperature (psia):	0.0044
Vapor Pressure at Daily Maximum Liquid Surface Temperature (psia):	0.0084

Daily Avg. Liquid Surface Temp. (deg R):	518.1654
Daily Min. Liquid Surface Temp. (deg R):	508.9923
Daily Max. Liquid Surface Temp. (deg R):	527.3385
Daily Ambient Temp. Range (deg. R):	19.1500
Vented Vapor Saturation Factor	
Vented Vapor Saturation Factor:	0.9983
Vapor Pressure at Daily Average Liquid:	
Surface Temperature (psia):	0.0062
Vapor Space Outage (ft):	5.3333
Working Losses (lb):	13.8395
Vapor Molecular Weight (lb/lb-mole):	130.0000
Vapor Pressure at Daily Average Liquid	
Surface Temperature (psia):	0.0062
Annual Net Throughput (gal/yr.):	1,586,500.0000
Annual Turnovers:	104.1794
Turnover Factor:	0.4546
Maximum Liquid Volume (gal):	15,228.5332
Maximum Liquid Height (ft):	18.0000
Tank Diameter (ft):	12.0000
Working Loss Product Factor:	1.0000
Total Losses (lb):	14.9070

TANKS 4.0.9d
Emissions Report - Detail Format
Individual Tank Emission Totals

Emissions Report for: Annual

Statoil-Ball TA760 - Vertical Fixed Roof Tank
Middlebourne, West Virginia

	Losses(lbs)		
Components	Working Loss	Breathing Loss	Total Emissions
Distillate fuel oil no. 2	13.84	1.07	14.91

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 Ball Station	2. Tank Name Lube Oil Tank
3. Tank Equipment Identification No. (as assigned on *Equipment List Form*) TA800	4. Emission Point Identification No. (as assigned on *Equipment List Form*) TA800E
5. Date of Commencement of Construction (for existing tanks) N/A – new tank	
6. Type of change ☒ New Construction ☐ New Stored Material ☐ Other Tank Modification	
7. Description of Tank Modification (if applicable) New 350 gallons lube oil storage tank.	
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). N/A	
7C. Provide any limitations on source operation affecting emissions, any work practice standards (e.g. production variation, etc.): N/A	

II. TANK INFORMATION (required)

8. Design Capacity (specify barrels or gallons). Use the internal cross-sectional area multiplied by internal height. 350 gallons	
9A. Tank Internal Diameter (ft) 4	9B. Tank Internal Height (or Length) (ft) 4.25
10A. Maximum Liquid Height (ft) 4	10B. Average Liquid Height (ft) 3
11A. Maximum Vapor Space Height (ft) 4	11B. Average Vapor Space Height (ft) 1.25
12. Nominal Capacity (specify barrels or gallons). This is also known as "working volume" and considers design liquid levels and overflow valve heights. 320 gallons	

13A. Maximum annual throughput (gal/yr)	13B. Maximum daily throughput (gal/day)
1,000	120

14. Number of Turnovers per year (annual net throughput/maximum tank liquid volume): 3.2

15. Maximum tank fill rate (gal/min) 1.0

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 ___ vertical ___ horizontal X flat roof ___ 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) Stainless Steel

20A. Shell Color Stainless Steel	20B. Roof Color Stainless Steel	20C. Year Last Painted N/A

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): to NA - ambient

24. Complete the following section for **Vertical Fixed Roof Tanks** ☒ Does Not Apply -- flat roof

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

24B. For cone roof, provide slope (ft/ft) Height (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: N/A

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 ADDITION/AL 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. **N/A – small tank with negligible emissions.**
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:	
34A. Minimum (°F) Ambient	34B. Maximum (°F) Ambient
35. Average operating pressure range of tank:	
35A. Minimum (psig) Ambient	35B. Maximum (psig) Ambient
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	Fresh lube oil		
39B.	CAS Number			
39C.	Liquid Density (lb/gal)	Varies		
39D.	Liquid Molecular Weight (lb/lb-mole)	Varies		
39E.	Vapor Molecular Weight (lb/lb-mole)	Varies		

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

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.	Pre-Control Breathing Loss (lb/yr)	Pre-Control Working Loss Amount	Pre-Control Working Loss Units	Pre-Control Annual Loss (lb/yr)	Estimation Method[1]
N/A – small tank with low annual throughput and negligible emissions.					

[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
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 Ball Station	2. Tank Name Sump Tank
3. Tank Equipment Identification No. (as assigned on *Equipment List Form*) TA810	4. Emission Point Identification No. (as assigned on *Equipment List Form*) TA810E
5. Date of Commencement of Construction (for existing tanks) N/A – new tank	
6. Type of change ☒ New Construction ☐ New Stored Material ☐ Other Tank Modification	
7. Description of Tank Modification (if applicable) New 500 gallons sump storage tank.	
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). N/A	
7C. Provide any limitations on source operation affecting emissions, any work practice standards (e.g. production variation, etc.): N/A	

II. TANK INFORMATION (required)

8. Design Capacity (specify barrels or gallons). Use the internal cross-sectional area multiplied by internal height. 500 gallons	
9A. Tank Internal Diameter (ft) 4.83	9B. Tank Internal Height (or Length) (ft) 6.67
10A. Maximum Liquid Height (ft) 6.33	10B. Average Liquid Height (ft) 5.67
11A. Maximum Vapor Space Height (ft) 6	11B. Average Vapor Space Height (ft) 1.0
12. Nominal Capacity (specify barrels or gallons). This is also known as "working volume" and considers design liquid levels and overflow valve heights. 400 gallons	

13A. Maximum annual throughput (gal/yr)	13B. Maximum daily throughput (gal/day)
250	50

14. Number of Turnovers per year (annual net throughput/maximum tank liquid volume)
0.63

15. Maximum tank fill rate (gal/min) 1.0

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 ___ vertical ___ horizontal X flat roof ___ 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)

20A. Shell Color Grey	20B. Roof Color Grey	20C. Year Last Painted New tank

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): to NA - ambient

24. Complete the following section for **Vertical Fixed Roof Tanks** ☒ Does Not Apply -- flat roof

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

24B. For cone roof, provide slope (ft/ft) Height (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: N/A

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 ADDITION/AL 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. **N/A – small tank with negligible emissions.**
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:	
34A. Minimum (°F) Ambient	34B. Maximum (°F) Ambient
35. Average operating pressure range of tank:	
35A. Minimum (psig) Ambient	35B. Maximum (psig) Ambient
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	Used lube oil		
39B.	CAS Number			
39C.	Liquid Density (lb/gal)	Varies		
39D.	Liquid Molecular Weight (lb/lb-mole)	Varies		
39E.	Vapor Molecular Weight (lb/lb-mole)	Varies		

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

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.	Pre-Control Breathing Loss (lb/yr)	Pre-Control Working Loss Amount	Pre-Control Working Loss Units	Pre-Control Annual Loss (lb/yr)	Estimation Method[1]
N/A – small tank with low annual throughput and negligible emissions.					

[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
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 Ball Station	2. Tank Name Methanol Totes
3. Tank Equipment Identification No. (as assigned on *Equipment List Form*) TA820	4. Emission Point Identification No. (as assigned on *Equipment List Form*) TA820E
5. Date of Commencement of Construction (for existing tanks) N/A – new tank	
6. Type of change ☒ New Construction ☐ New Stored Material ☐ Other Tank Modification	
7. Description of Tank Modification (if applicable) New 350 gallon totes; four totes will typically be on-site at the same time.	
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). N/A	
7C. Provide any limitations on source operation affecting emissions, any work practice standards (e.g. production variation, etc.): N/A	

II. TANK INFORMATION (required)

8. Design Capacity (specify barrels or gallons). Use the internal cross-sectional area multiplied by internal height. 350 gallons each tote; 1,400 gallons total for four totes	
9A. Tank Internal Diameter (ft) 4	9B. Tank Internal Height (or Length) (ft) 4.25
10A. Maximum Liquid Height (ft) 4	10B. Average Liquid Height (ft) 2
11A. Maximum Vapor Space Height (ft) 4	11B. Average Vapor Space Height (ft) 2.25
12. Nominal Capacity (specify barrels or gallons). This is also known as "working volume" and considers design liquid levels and overflow valve heights. 337.5 gallons each tote; 1,350 gallons total for four totes	

13A. Maximum annual throughput (gal/yr)	13B. Maximum daily throughput (gal/day)
4,000	24

14. Number of Turnovers per year (annual net throughput/maximum tank liquid volume)
11.9 (maximum totes used per year)

15. Maximum tank fill rate (gal/min) N/A (totes are emptied, not filled)

16. Tank fill method N/A ☐ 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 ___ vertical ___ horizontal X flat roof ___ 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) Stainless Steel

20A. Shell Color Stainless Steel	20B. Roof Color Stainless Steel	20C. Year Last Painted N/A

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): to NA - ambient

24. Complete the following section for **Vertical Fixed Roof Tanks** ☒ Does Not Apply -- flat roof

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

24B. For cone roof, provide slope (ft/ft) Height (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: N/A

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 ADDITION/AL 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. **N/A – small totes with negligible emissions.**
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:	
34A. Minimum (°F) Ambient	34B. Maximum (°F) Ambient
35. Average operating pressure range of tank:	
35A. Minimum (psig) Ambient	35B. Maximum (psig) Ambient
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	Methanol		
39B.	CAS Number	67-56-1		
39C.	Liquid Density (lb/gal)	6.603		
39D.	Liquid Molecular Weight (lb/lb-mole)	32.04		
39E.	Vapor Molecular Weight (lb/lb-mole)	32.04		

Maximum Vapor Pressure 39F. True (psia) 39G. Reid (psia)	1.856 psia (at 20 degC)		
Months Storage per Year 39H. From 39I. To	All year		

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.	Pre-Control Breathing Loss (lb/yr)	Pre-Control Working Loss Amount	Pre-Control Working Loss Units	Pre-Control Annual Loss (lb/yr)	Estimation Method[1]
N/A – small totes with low annual usage; totes are emptied, not filled; negligible emissions.					

[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 M

Control Device Sheets

SCR-4	Catalyst for Engine CE-4
FL-1	LP Flare

Attachment M
Air Pollution Control Device Sheet
(OTHER COLLECTORS)

Control Device ID No. (must match Emission Units Table): SCR-4

Equipment Information

1. Manufacturer: DCL Model No. 4QIT-3	2. Control Device Name: Catalyst for Engine CE-4 Type: SCR Catalyst
3. Provide diagram(s) of unit describing capture system with duct arrangement and size of duct, air volume, capacity, horsepower of movers. If applicable, state hood face velocity and hood collection efficiency.	
4. On a separate sheet(s) supply all data and calculations used in selecting or designing this collection device.	
5. Provide a scale diagram of the control device showing internal construction.	
6. Submit a schematic and diagram with dimensions and flow rates.	
7. Guaranteed minimum collection efficiency for each pollutant collected: 100%	
8. Attached efficiency curve and/or other efficiency information.	
9. Design inlet volume: 13,755 acfm	10. Capacity: 3 elements, cell density 300 cpsi
11. Indicate the liquid flow rate and describe equipment provided to measure pressure drop and flow rate, if any. N/A	
12. Attach any additional data including auxiliary equipment and operation details to thoroughly evaluate the control equipment. N/A	
13. Description of method of handling the collected material(s) for reuse of disposal. N/A	

Gas Stream Characteristics

14. Are halogenated organics present?	☐ Yes	☒ No
Are particulates present?	☒ Yes	☐ No
Are metals present?	☐ Yes	☒ No

15. Inlet Emission stream parameters:	**Maximum**	**Typical**
Pressure (mmHg):	Not specified	
Heat Content (BTU/scf):	1,400	1,330
Oxygen Content (%):	Not specified	
Moisture Content (%):	Not specified	
Relative Humidity (%):	Not specified	

16. Type of pollutant(s) controlled: ☐ SO_x ☐ Odor
☐ Particulate (type): ☒ Other: CO

17. Inlet gas velocity: 35 ft/sec

18. Pollutant specific gravity: N/A

19. Gas flow into the collector:
13,755 ACF @ 150°F and 30 PSIA

20. Gas stream temperature:
Inlet: 150 °F
Outlet: 752 °F

21. Gas flow rate:
Design Maximum: 13,755 ACFM
Average Expected: 13,755 ACFM

22. Particulate Grain Loading in grains/scf: N/A
Inlet:
Outlet:

23. Emission rate of each pollutant (specify) into and out of collector:

Pollutant	IN Pollutant		Emission Capture Efficiency %	OUT Pollutant		Control Efficiency %
	lb/hr	grains/acf		lb/hr	grains/acf	
A NOx	2.61		100	2.61		0
B CO	14.37		100	10.13		29.5
C VOC	3.29		100	3.29		0
D HCHO	1.36		100	1.36		0
E CH4	28.01		100	28.01		0

24. Dimensions of stack: Height TBD ft. Diameter TBD ft.

25. Supply a curve showing proposed collection efficiency versus gas volume from 25 to 130 percent of design rating of collector.

Particulate Distribution

26. Complete the table:	Particle Size Distribution at Inlet to Collector	Fraction Efficiency of Collector
Particulate Size Range (microns)	Weight % for Size Range	Weight % for Size Range
0 – 2	N/A	
2 – 4		
4 – 6		
6 – 8		
8 – 10		
10 – 12		
12 – 16		
16 – 20		
20 – 30		
30 – 40		
40 – 50		
50 – 60		
60 – 70		
70 – 80		
80 – 90		
90 – 100		
>100		

27. Describe any air pollution control device inlet and outlet gas conditioning processes (e.g., gas cooling, gas reheating, gas humidification): None

28. Describe the collection material disposal system: Catalyst elements can be cleaned and/or replaced; materials are not disposed on site.

29. Have you included ***Other Collectors Control Device*** in the Emissions Points Data Summary Sheet?

30. **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: Consistent with 40 CFR Part 60, Subpart JJJJ. Catalyst temperature will be monitored to maintain warranty. Engine load will be monitored to maintain catalyst warranty.	RECORDKEEPING: Consistent with 40 CFR Part 60, Subpart JJJJ.
REPORTING: Consistent with 40 CFR Part 60, Subpart JJJJ.	TESTING: Consistent with 40 CFR Part 60, Subpart JJJJ.

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 or air control device.
RECORDKEEPING:	Please describe the proposed recordkeeping that will accompany the monitoring.
REPORTING:	Please describe any proposed emissions testing for this process equipment on air pollution control device.
TESTING:	Please describe any proposed emissions testing for this process equipment on air pollution control device.

31. Manufacturer's Guaranteed Control Efficiency for each air pollutant.
CO: 29.5%

32. Manufacturer's Guaranteed Control Efficiency for each air pollutant.
See above.

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

The max input temperature is 1250 F and the USAC maintenance procedure for catalyst elements is to pull out every 6 months, blow out with clean, dry compressed air and reinstall with new gaskets.

DCL America Inc.

1610 Woodstead Ct, Suite 245, The Woodlands, Texas 77380 USA
Tel: 877-965-8989 *Fax:* 281-605-5858 info@dcl-inc.com www.dcl-inc.com

GLOBAL LEADER IN EMISSION CONTROL SOLUTIONS

To:	Chris Magee	**Phone:**	
Company:	USA Compression	**Email**	
Date:	October 5th, 2015	**No. Pages:**	1

Dear Chris,

We hereby guarantee that our Model 4QIT-3 specified below with two (3) elements installed as described below, and sized for the following engine:

Engine Data	
Engine Model	Caterpillar G3608
Power	2370HP
Fuel	PQNG
Exhaust Flow Rate	13,755 acfm
Exhaust Temperature	752°F

Catalyst Data	
Catalyst Model	4QIT-3
Type	Oxidation- Q
# of Elements	3
Cell Density	300 cpsi
Approx Dimensions	See attached drawing
Approx Pressure Drop	2.4" w.c

will perform as follows:

Exhaust Component	Converter Output % reduction
CO	29.5%

for a period of 1 year or 8000 hours, whichever comes first, subject to all terms and conditions contained in the attached warranty document being respected and met.

Best Regards,

On behalf of DCL America Inc.

Lisa Barber

416-788-8021
lbarber@dcl-inc.com

Attachment M
Air Pollution Control Device Sheet
(FLARE SYSTEM)

Control Device ID No. (must match Emission Units Table): FL-1

Equipment Information

1. Manufacturer: Zeeco, Inc.
   Model No. AFDS- 3/12-20
   Description: LP Flare (11.9 MMBtu/hr)

2. Method: ☒ Elevated flare ☐ Ground flare ☐ Other
   Describe:

3. Provide diagram(s) of unit describing capture system with duct arrangement and size of duct, air volume, capacity, horsepower of movers. If applicable, state hood face velocity and hood collection efficiency.

4. Method of system used:
   ☐ Steam-assisted ☒ Air-assisted ☐ Pressure-assisted ☐ Non-assisted

5. Maximum capacity of flare:
   69.4 scf/min 4,167 scf/hr
   0.1 MMscf/day

6. Dimensions of stack:
   Diameter 20” base 3” top
   Height 20 ft

7. Estimated combustion efficiency:
   (Waste gas destruction efficiency)
   Estimated: 98 %
   Minimum guaranteed: 98 %

8. Fuel used in burners: N/A, no burner
   ☐ Natural Gas
   ☐ Fuel Oil, Number
   ☐ Other, Specify:

9. Number of burners: N/A, no burner
   Rating: BTU/hr

10. Will preheat be used? ☐ Yes ☒ No

11. Describe method of controlling flame: N/A

12. Flare height: 20 ft (OAH)

13. Flare tip inside diameter: 3”

14. Natural gas flow rate to flare pilot flame per pilot light: 1.08 scf/min at 1,330 Btu/cf
    65 scf/hr at 1,330 Btu/cf

15. Number of pilot lights: 1
    Total 86,450 BTU/hr at 1,330 Btu/cf

16. Will automatic re-ignition be used?
    ☒ Yes ☐ No

17. If automatic re-ignition will be used, describe the method:

The automatic pilot ignition and monitoring panel will continuously monitor the pilot and attempt to relight if a pilot failure signal is received.

18. Is pilot flame equipped with a monitor? ☒ Yes ☐ No
    If yes, what type? ☒ Thermocouple ☐ Infra-Red
    ☐ Ultra Violet ☐ Camera with monitoring control room
    ☐ Other, Describe:

19. Hours of unit operation per year: Flare: 876 hr/yr Pilot: 8,760 hr/yr

Steam Injection

20. Will steam injection be used? ☐ Yes ☒ No	21. Steam pressure N/A Minimum Expected: PSIG Design Maximum: PSIG
22. Total Steam flow rate: N/A LB/hr	23. Temperature: N/A °F
24. Velocity N/A ft/sec	25. Number of jet streams N/A
26. Diameter of steam jets: N/A in	27. Design basis for steam injected: N/A LB steam/LB hydrocarbon
28. How will steam flow be controlled if steam injection is used? N/A	

Characteristics of the Waste Gas Stream to be Burned

29.

Name	Quantity Grains of H_2S/100 ft^3	Quantity (LB/hr, ft^3/hr, etc)	Source of Material
Pilot light gas	N/A	65 scf/hr, 8,760 hr/yr	
Emergency venting	N/A	4,167 scf/hr, 876 hr/yr	

30. Estimate total combustible to flare: 4,167 scf/hr (Maximum mass flow rate of waste gas) 69.45 scfm	
31. Estimated total flow rate to flare including materials to be burned, carrier gases, auxiliary fuel, etc.: 4232 scf/hr	
32. Give composition of carrier gases: N/A	
33. Temperature of emission stream: 130 °F Heating value of emission stream: 2,844 BTU/ft^3 Mean molecular weight of emission stream: MW = 55.23 lb/lb-mole	34. Identify and describe all auxiliary fuels to be burned. Natural gas 1,330 BTU/scf
35. Temperature of flare gas: 130 °F	36. Flare gas flow rate:0.16 scf/min for purge operation
37. Flare gas heat content: 2,844 BTU/ft^3	38. Flare gas exit velocity: 57 ft/sec
39. Maximum rate during emergency for one major piece of equipment or process unit: 69.45 scf/min	
40. Maximum rate during emergency for one major piece of equipment or process unit: 197,500 BTU/min	
41. Describe any air pollution control device inlet and outlet gas conditioning processes (e.g., gas cooling, gas reheating, gas humidification): N/A	
42. Describe the collection material disposal system: N/A	
43. Have you included ***Flare Control Device*** in the Emissions Points Data Summary Sheet? Yes	

44. **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: Continuous thermocouple monitoring of pilot light.	RECORDKEEPING: Maintain a record of an emergency flaring episodes.
REPORTING: None.	TESTING: No compliance testing is proposed. Initial operational assurance test by the flare vendor when the flare is installed.

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 or air control device.
RECORDKEEPING:	Please describe the proposed recordkeeping that will accompany the monitoring.
REPORTING:	Please describe any proposed emissions testing for this process equipment on air pollution control device.
TESTING:	Please describe any proposed emissions testing for this process equipment on air pollution control device.

45. Manufacturer's Guaranteed Capture Efficiency for each air pollutant.
100%

46. Manufacturer's Guaranteed Control Efficiency for each air pollutant.
98% hydrocarbon destruction

47. Describe all operating ranges and maintenance procedures required by Manufacturer to maintain warranty.
Permittee will follow Manufacturer's guidance on proper operating ranges and maintenance procedures.

Attachment N

Supporting Emissions Calculations

Statoil USA Onshore Properties Inc. - Ball Station
Application for Modification of Permit R13-3031 - Attachment N Emission Calculations

Rev. 5 OCT 2015

Compressor Engine (Source ID# CE-3) Calculations Summary & Rationale

Caterpillar G3512 TALE @ 1,400 rpm
[4-Stroke Lean-Burn Engine]

Max. Annual Operating Hours = 8,760

Pollutant	Emission Factor	Emission Factor Units	Emission Factor Basis / Source	Claimed Control Efficiency (%)	Equation Used to Calc. Hourly Emis.	Engine BSFC - Nominal (Btu/bhp-hr)	Engine Power (bhp)	Max. Hourly Emis. (lb/hr)	Max. Annual Emis. (tpy)
NOx	1.50	gm/bhp-hr	Engine Vendor	0.00%	[1]	8,202	1,005	3.32	14.56
CO	2.10	gm/bhp-hr	Engine Vendor	0.00%	[1]	8,202	1,005	4.65	20.38
VOC	0.34	gm/bhp-hr	Engine Vendor	0.00%	[1]	8,202	1,005	0.75	3.30
PM10	0.010	lb/MMBtu	AP-42, Table 3.2-2 [PM10 Filterable + PM Condensable]	---	[2]	8,202	1,005	0.08	0.36
SO2	5.88E-04	lb/MMBtu	AP-42, Table 3.2-2	---	[2]	8,202	1,005	0.005	0.02
Benzene	4.40E-04	lb/MMBtu	AP-42, Table 3.2-2	---	[2]	8,202	1,005	0.004	0.016
Ethylbenzene	3.97E-05	lb/MMBtu	AP-42, Table 3.2-2	---	[2]	8,202	1,005	0.000	0.001
Formaldehyde	0.25	gm/bhp-hr	Engine Vendor	0.00%	[1]	8,202	1,005	0.55	2.43
n-Hexane	1.11E-03	lb/MMBtu	AP-42, Table 3.2-2	---	[2]	8,202	1,005	0.009	0.040
Toluene	4.08E-04	lb/MMBtu	AP-42, Table 3.2-2	---	[2]	8,202	1,005	0.003	0.015
Xylenes	1.84E-04	lb/MMBtu	AP-42, Table 3.2-2	---	[2]	8,202	1,005	0.002	0.007
Other Organic HAP	1.92E-02	lb/MMBtu	AP-42, Table 3.2-2	---	[2]	8,202	1,005	0.16	0.693
GHGs:									
CO2	480.0	gm/bhp-hr	Engine Vendor	---	[1]	8,202	1,005	1,063.5	4,658.1
CH4	2.89	gm/bhp-hr	Engine Vendor	0.0%	[1]	8,202	1,005	6.40	28.05
N2O	2.21E-04	lb/MMBtu	40 CFR Part 98, Subpart C, Table C-2	---	[2]	8,202	1,005	0.002	0.008
CO2e	---	---	---		---	---	---	1,224.1	5,361.6

NOTES:
NA = Not Applicable
NF = No Emission Factor
>>>AP-42, Chapter 3.2 references are from the July 2000 revision.
>>>Max. Annual Emissions based upon Max. Hourly Emissions @ 8,760 hr/yr.
>>>Other Organic HAP species includes all organic HAPs in AP-42 Table 3.2-2 except for benzene, ethylbenzene, formaldehyde, n-hexane, toluene and xylenes, which have been individually calculated above.
>>>CO2 Equivalent is based upon global warming potential values of 298 x tons N2O and 25 x tons CH4.

EXAMPLE EQUATIONS:

[1] Max. Hourly Emis. Rate (lb/hr) = Emission Factor (gm/bhp-hr) x Engine Power (bhp) x Conversion Factor (lb/453.6 gm)

[2] Max. Hourly Emis. Rate (lb/hr) = Emission Factor (lb/MMBtu) x Engine BSFC (Btu/bhp-hr) x Engine Power (bhp) x Conversion Factor (MMBtu/1000000 Btu)

Statoil USA Onshore Properties Inc. - Ball Station
Application for Modification of Permit R13-3031 - Attachment N Emission Calculations

Rev. 5 OCT 2015

Compressor Engine (Source ID# CE-4) Calculations Summary & Rationale

Caterpillar G3608 TALE @ 1,000 rpm
[4-Stroke Lean-Burn Engine]

Max. Annual Operating Hours = 8,760

Pollutant	Emission Factor (Post Catalyst)	Emission Factor Units	Emission Factor Basis / Source	Claimed Control Efficiency (%)	Equation Used to Calc. Hourly Emis.	Engine BSFC - Nominal (Btu/bhp-hr)	Engine Power (bhp)	Max. Hourly Emis. (lb/hr)	Max. Annual Emis. (tpy)
NOx	0.50	gm/bhp-hr	Engine Vendor	0.00%	[1]	7,589	2,370	2.61	11.44
CO	1.93	gm/bhp-hr	Engine Vendor	29.50%	[1]	7,589	2,370	10.09	44.21
VOC	0.63	gm/bhp-hr	Engine Vendor	0.00%	[1]	7,589	2,370	3.29	14.42
PM10	0.010	lb/MMBtu	AP-42, Table 3.2-2 [PM10 Filterable + PM Condensable]	---	[2]	7,589	2,370	0.18	0.79
SO2	5.88E-04	lb/MMBtu	AP-42, Table 3.2-2	---	[2]	7,589	2,370	0.01	0.05
Benzene	4.40E-04	lb/MMBtu	AP-42, Table 3.2-2	---	[2]	7,589	2,370	0.008	0.035
Ethylbenzene	3.97E-05	lb/MMBtu	AP-42, Table 3.2-2	---	[2]	7,589	2,370	0.001	0.003
Formaldehyde	0.26	gm/bhp-hr	Engine Vendor	0.00%	[1]	7,589	2,370	1.36	5.95
n-Hexane	1.11E-03	lb/MMBtu	AP-42, Table 3.2-2	---	[2]	7,589	2,370	0.020	0.087
Toluene	4.08E-04	lb/MMBtu	AP-42, Table 3.2-2	---	[2]	7,589	2,370	0.007	0.032
Xylenes	1.84E-04	lb/MMBtu	AP-42, Table 3.2-2	---	[2]	7,589	2,370	0.003	0.014
Other Organic HAP	1.92E-02	lb/MMBtu	AP-42, Table 3.2-2	---	[2]	7,589	2,370	0.35	1.513
GHGs:									
CO2	440.0	gm/bhp-hr	Engine Vendor	---	[1]	7,589	2,370	2,298.9	10,069.4
CH4	5.36	gm/bhp-hr	Engine Vendor	0.0%	[1]	7,589	2,370	28.01	122.66
N2O	2.21E-04	lb/MMBtu	40 CFR Part 98, Subpart C, Table C-2	---	[2]	7,589	2,370	0.004	0.017
CO2e	---	---	---		---	---	---	3,000.3	13,141.1

NOTES:
NA = Not Applicable
NF = No Emission Factor
>>>AP-42, Chapter 3.2 references are from the July 2000 revision.
>>>Catalyst Claimed Control Efficiency: CO: 29.5%.
>>>Max. Annual Emissions based upon Max. Hourly Emissions @ 8,760 hr/yr.
>>>Other Organic HAP species includes all organic HAPs in AP-42 Table 3.2-2 except for benzene, ethylbenzene, formaldehyde, n-hexane, toluene and xylenes, which have been individually calculated above.
>>>CO2 Equivalent is based upon global warming potential values of 298 x tons N2O and 25 x tons CH4.

EXAMPLE EQUATIONS:

[1] Max. Hourly Emis. Rate (lb/hr) = Emission Factor (gm/bhp-hr) x Engine Power (bhp) x Conversion Factor (lb/453.6 gm)

[2] Max. Hourly Emis. Rate (lb/hr) = Emission Factor (lb/MMBtu) x Engine BSFC (Btu/bhp-hr) x Engine Power (bhp) x Conversion Factor (MMBtu/1000000 Btu)

Statoil USA Onshore Properties Inc. - Ball Station
Application for Modification of Permit R13-3031 - Attachment N Emission Calculations
Typical Compressor Rod Packing Venting Emissions Per Engine

Rev. 5 OCT 2015

Estimated Methane Vented per Year [1] = 9,630 scf/year
Maximum Annual Operation = 8,760 hours/year

Compound	Assumed Gas Composition (Mole %)	Molecular Weight (lb/lb-mol)	Maximum Hourly Emissions [3] (lb/hr)	Maximum Annual Emissions [4] (tpy)
Nitrogen	0.668	28.0130	5.34E-04	2.34E-03
Carbon Dioxide	0.086	44.0100	1.08E-04	4.73E-04
Methane [2]	86.410	16.0430	3.96E-02	1.73E-01
Ethane	9.638	30.0700	8.28E-03	3.62E-02
Propane	2.257	44.0970	2.84E-03	1.24E-02
Iso-Butane	0.232	58.1230	3.85E-04	1.69E-03
n-Butane	0.418	58.1230	6.94E-04	3.04E-03
Iso-Pentane	0.096	72.1500	1.98E-04	8.66E-04
n-Pentane	0.077	72.1500	1.59E-04	6.95E-04
Iso-Hexane	0.027	86.1800	6.64E-05	2.91E-04
n-Hexane	0.023	86.1800	5.66E-05	2.48E-04
Benzene	0.001	78.1100	2.23E-06	9.77E-06
Cyclohexane	0.003	84.1600	7.21E-06	3.16E-05
Iso-Heptane	0.016	100.2100	4.58E-05	2.01E-04
n-Heptane	0.008	100.2100	2.29E-05	1.00E-04
Toluene	0.002	92.1400	5.26E-06	2.30E-05
Iso-Octane	0.016	114.2285	5.22E-05	2.29E-04
n-Octane	0.005	114.2285	1.63E-05	7.14E-05
Ethylbenzene	0.001	106.1670	3.03E-06	1.33E-05
m, o, & p-Xylene	0.002	106.1600	6.06E-06	2.66E-05
Iso-Nonane	0.005	128.2000	1.83E-05	8.02E-05
n-Nonane	0.003	128.2000	1.10E-05	4.81E-05
Iso-Decane	0.003	142.2900	1.22E-05	5.34E-05
n-Decane	0.002	142.2900	8.13E-06	3.56E-05
Iso-Undecanes +	0.001	156.3100	4.46E-06	1.95E-05
Total Gas	**100.000**			
Total CO2	**0.09**		**1.08E-04**	**4.73E-04**
Total Methane	**86.41**		**0.04**	**0.17**
Total CO2e	**---**		**0.99**	**4.33**
Total VOC	**3.20**		**4.62E-03**	**0.02**
Total HAP	**0.03**		**7.32E-05**	**3.21E-04**

[1] Per 40 CFR 98.233(p)(9), the default emission factor for onshore natural gas production for methane is 9.63 Mscf/yr at 68 °F and 14.7 psia.

[2] Methane vented per year (tpy) = Gas vented (scf/yr) x Mole Percent (%) / 100 x Molecular Weight (lb/lb-mole) / 385 (scf/lb-mole) / 2,000 (lb/ton)

[3] Maximum hourly compound emissions (lb/hr) = Compound vented per year (tpy) x 2,000 (lb/ton) / Maximum Annual Operation (hrs/yr)

[4] Maximum annual compound emissions (tpy) =
Annual CH_4 Emissions (tpy) / CH_4 Molecular Weight (lb/lb-mole) / CH_4 Mole % x Compound Molecular Weight (lb/lb-mole) x Compound Mole %

Statoil USA Onshore Properties Inc. - Ball Station
Application for Modification of Permit R13-3031 - Attachment N Emission Calculations

Rev. 5 OCT 2015

Generator Engine (Source ID# G-1) Calculations Summary & Rationale

Doosan/D146L @ 2,000 rpm
[4-Stroke Rich-Burn Engine]

Max. Annual Operating Hours = 8,760

Pollutant	Emission Factor	Emission Factor Units	Emission Factor Basis / Source	Equation Used to Calc. Hourly Emis.	Engine BSFC - Nominal (Btu/bhp-hr)	Engine Power (bhp)	Max. Hourly Emis. (lb/hr)	Max. Annual Emis. (tpy)
NOx	1.00	gm/bhp-hr	USEPA Certificate of Conformity (2014 Model Year)	[1]	8,660	449	0.99	4.34
CO	2.00	gm/bhp-hr	USEPA Certificate of Conformity (2014 Model Year)	[1]	8,660	449	1.98	8.67
VOC	0.70	gm/bhp-hr	USEPA Certificate of Conformity (2014 Model Year)	[1]	8,660	449	0.69	3.03
PM10	0.019	lb/MMBtu	AP-42, Table 3.2-3 [PM10 Filterable + PM Condensable]	[2]	8,660	449	0.08	0.33
SO2	5.88E-04	lb/MMBtu	AP-42, Table 3.2-3	[2]	8,660	449	0.002	0.01
Benzene	1.58E-03	lb/MMBtu	AP-42, Table 3.2-3	[2]	8,660	449	0.01	0.027
Ethylbenzene	2.48E-05	lb/MMBtu	AP-42, Table 3.2-3	[2]	8,660	449	0.0001	0.0004
Formaldehyde	2.05E-02	lb/MMBtu	AP-42, Table 3.2-3	[2]	8,660	449	0.08	0.35
n-Hexane	NF	lb/MMBtu	AP-42, Table 3.2-3	[2]	8,660	449	NF	NF
Toluene	5.58E-04	lb/MMBtu	AP-42, Table 3.2-3	[2]	8,660	449	0.002	0.010
Xylenes	1.95E-04	lb/MMBtu	AP-42, Table 3.2-3	[2]	8,660	449	0.001	0.003
Other Organic HAP	9.56E-03	lb/MMBtu	AP-42, Table 3.2-3	[2]	8,660	449	0.037	0.163
GHGs:								
CO2	1.10E+02	lb/MMBtu	AP-42, Table 3.2-3	[2]	8,660	449	427.72	1873.40
CH4	2.30E-01	lb/MMBtu	AP-42, Table 3.2-3	[2]	8,660	449	0.89	3.917
N2O	2.21E-04	lb/MMBtu	40 CFR Part 98, Subpart C, Table C-2	[2]	8,660	449	0.001	0.0038
CO2e	---	---	---	---	---	---	450.3	1,972.4

NOTES:

NA = Not Applicable
NF = No Emission Factor
>>>AP-42, Chapter 3.2 references are from the July 2000 revision.
>>>Other Organic HAP species includes all organic HAPs in AP-42 Table 3.2-3 except for benzene, ethylbenzene, formaldehyde, n-hexane, toluene and xylenes, which have been individually calculated above.
>>>Max. Annual Emissions based upon Max. Hourly Emissions @ Max. Annual Operating Hours.
>>>CO2 Equivalent is based upon global warming potential values of 298 x tons N2O and 25 x tons CH4.
EXAMPLE EQUATIONS:

[1] Max. Hourly Emis. Rate (lb/hr) = Emission Factor (gm/bhp-hr) x Engine Power (bhp) x Conversion Factor (lb/453.6 gm)

[2] Max. Hourly Emis. Rate (lb/hr) = Emission Factor (lb/MMBtu) x Engine BSFC (Btu/bhp-hr) x Engine Power (bhp) x Conversion Factor (MMBtu/1000000 Btu)

Statoil USA Onshore Properties Inc. - Ball Station
Application for Modification of Permit R13-3031 - Attachment N Emission Calculations

Rev. 5 OCT 2015

Line Heaters (Source ID# HE-2, HE-3, HE-4) Calculations Summary & Rationale

			Max. Annual Operating Hours = 8,760			Per Heater	
Pollutant	**Emission Factor**	**Emission Factor Units**	**Emission Factor Basis / Source**	**Equation Used to Calc. Hourly Emis.**	**Design Heat Input (MMBtu/hr)**	**Max. Hourly Emis. (lb/hr)**	**Max. Annual Emis. (tpy)**
Combustion Emission Estimates for each Reboiler							
NOx	100	lb/MMscf	AP-42, Table 1.4-1	[4]	1.50	0.14	0.61
CO	84	lb/MMscf	AP-42, Table 1.4-1	[4]	1.50	0.12	0.51
VOC	5.5	lb/MMscf	AP-42, Table 1.4-2	[4]	1.50	0.01	0.03
PM10	7.6	lb/MMscf	AP-42, Table 1.4-2	[4]	1.50	0.01	0.05
SO2	0.6	lb/MMscf	AP-42, Table 1.4-2	[4]	1.50	0.001	0.004
GHGs:							
CO2	120,000	lb/MMscf	AP-42, Table 1.4-2	[4]	1.50	166.512	729.325
CH4	2.3	lb/MMscf	AP-42, Table 1.4-2	[4]	1.50	0.003	0.014
N2O	2.2	lb/MMscf	AP-42, Table 1.4-2	[4]	1.50	0.003	0.013
CO2e	---	---	---	---	---	167.5	733.7

NOTES:

NA = Not Applicable
NF = No Emission Factor

1. NATURAL GAS COMBUSTION EMISSIONS

a. Natural gas combustion emission factors (lb/mmcf) are based upon AP-42 Natural Gas Combustion Table 1.4-1 [Small Boilers (<100)-Uncontrolled] (Rev. 2/98) for NOx and CO, and Table 1.4-2 for PM(Total), SO2, and VOC.
b. Natural gas combustion emissions are based upon maximum natural gas firing rate of the proposed boilers.
c. Assumed natural gas heating value of 1,081 Btu/scf.

2. MAX. HOURS OF OPERATION

a. Based upon 24 hr/day, 7 days/wk, and 52 wk/yr, unless otherwise noted.

>>>CO2 Equivalent is based upon global warming potential values of 298 x tons N2O and 25 x tons CH4.

EXAMPLE EQUATIONS:

[4] Max. Hourly Emis. Rate (lb/hr) = Emission Factor (lb/MMscf) x Design Heat Input (MMBtu/hr) x Conversion Factor (scf/1081 Btu)

Statoil USA Onshore Properties Inc. - Ball Station
Application for Modification of Permit R13-3031 - Attachment N Emission Calculations

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Heater Treater (Source ID# HTR-1) Calculations Summary & Rationale

Max. Annual Operating Hours = 8,760

Pollutant	Emission Factor	Emission Factor Units	Emission Factor Basis / Source	Equation Used to Calc. Hourly Emis.	Design Heat Input (MMBtu/hr)	Max. Hourly Emis. (lb/hr)	Max. Annual Emis. (tpy)
Combustion Emission Estimates for each Reboiler							
NOx	100	lb/MMscf	AP-42, Table 1.4-1	[4]	1.50	0.14	0.61
CO	84	lb/MMscf	AP-42, Table 1.4-1	[4]	1.50	0.12	0.51
VOC	5.5	lb/MMscf	AP-42, Table 1.4-2	[4]	1.50	0.01	0.03
PM10	7.6	lb/MMscf	AP-42, Table 1.4-2	[4]	1.50	0.01	0.05
SO2	0.6	lb/MMscf	AP-42, Table 1.4-2	[4]	1.50	0.001	0.004
GHGs:							
CO2	120,000	lb/MMscf	AP-42, Table 1.4-2	[4]	1.50	166.512	729.325
CH4	2.3	lb/MMscf	AP-42, Table 1.4-2	[4]	1.50	0.003	0.014
N2O	2.2	lb/MMscf	AP-42, Table 1.4-2	[4]	1.50	0.003	0.013
CO2e	---	---	---	---	---	167.5	733.7

NOTES:

NA = Not Applicable
NF = No Emission Factor

1. NATURAL GAS COMBUSTION EMISSIONS

a. Natural gas combustion emission factors (lb/mmcf) are based upon AP-42 Natural Gas Combustion Table 1.4-1 [Small Boilers (<100)-Uncontrolled] (Rev. 2/98) for NOx and CO, and Table 1.4-2 for PM(Total), SO2, and VOC.
b. Natural gas combustion emissions are based upon maximum natural gas firing rate of the proposed boilers.
c. Assumed natural gas heating value of 1,081 Btu/scf.

2. MAX. HOURS OF OPERATION

a. Based upon 24 hr/day, 7 days/wk, and 52 wk/yr, unless otherwise noted.

>>>CO2 Equivalent is based upon global warming potential values of 298 x tons N2O and 25 x tons CH4.

EXAMPLE EQUATIONS:

[4] Max. Hourly Emis. Rate (lb/hr) = Emission Factor (lb/MMscf) x Design Heat Input (MMBtu/hr) x Conversion Factor (scf/1081 Btu)

Statoil USA Onshore Properties Inc. - Ball Station
Application for Modification of Permit R13-3031 - Attachment N Emission Calculations

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LP Flare (Source ID# FL-1) Calculations Summary & Rationale

					Max. Annual Operating Hours =		876
Pollutant	**Emission Factor**	**Emission Factor Units**	**Emission Factor Basis / Source**	**Equation Used to Calc. Hourly Emis.**	**Design Heat Input (MMBtu/hr)**	**Max. Hourly Emis. (lb/hr)**	**Max. Annual Emis. (tpy)**
Combustion Emission Estimates for Flare							
NOx	0.068	lb/MMBtu	AP-42, Table 13.5-1	[3]	11.9	0.81	0.35
CO	0.31	lb/MMBtu	AP-42, Table 13.5-2	[3]	11.9	3.69	1.62
VOC	0.57	lb/MMBtu	AP-42, Table 13.5-2	[3]	11.9	6.78	2.97
PM10	7.6	lb/MMscf	AP-42, Table 1.4-2	[4]	11.9	0.08	0.04
SO2	0.6	lb/MMscf	AP-42, Table 1.4-2	[4]	11.9	0.01	0.003
GHGs:							
CO2	120,000	lb/MMscf	AP-42, Table 1.4-2	[4]	11.9	1321.00	578.6
CH4	2.3	lb/MMscf	AP-42, Table 1.4-2	[4]	11.9	0.03	0.011
N2O	2.2	lb/MMscf	AP-42, Table 1.4-2	[4]	11.9	0.02	0.011
CO2e	---	---	---	---	---	1,328.8	582.0

NOTES:

NA = Not Applicable
NF = No Emission Factor

1. NATURAL GAS COMBUSTION EMISSIONS
a. Flare emission factors (lb/MMBtu) are based upon AP-42 Industrial Flares Table 13.5-2 (Rev. 4/15) for NOx, CO and VOC.

b. Flare emission factors (lb/MMscf) are based upon AP-42 Natural Gas Combustion Table 1.4-2 [Uncontrolled] (Rev. 2/98) for PM/PM10, SO2 and GHGs because the AP-42 Industrial Flares Chapter 13.5 did not have usable emission factors for PM/PM10, SO2 and GHGs.
c. Assumes operating time equals 876 hr/yr (10% of 8,760 hr/yr).
>>>CO2 Equivalent is based upon global warming potential values of 298 x tons N2O and 25 x tons CH4.
EXAMPLE EQUATIONS:

[3] Max. Hourly Emis. Rate (lb/hr) = Emission Factor (lb/MMBtu) x Design Heat Input (MMBtu/hr)

[4] Max. Hourly Emis. Rate (lb/hr) = Emission Factor (lb/MMscf) x Design Heat Input (MMBtu/hr) x Conversion Factor (scf/1,081 Btu)

Storage Tanks (Source ID# TA710 - TA760) Calculations Summary & Rationale

Max. Annual Operating Hours = 8,760

Storage Tank ID#	Pollutant	Pre-Control Working Loss (lb/yr)	Pre-Control Breathing Loss (lb/yr)	Pre-Control Annual Loss (lb/yr)	VRU Capture/ Control (%)	Max. Annual Emissions (tpy)
TA710	VOC	6,103.18	1,148.72	7,251.90	95.0	0.18
TA710	Total HAP	610.32	114.87	725.19	95.0	0.02
TA720	VOC	6,103.18	1,148.72	7,251.90	95.0	0.18
TA720	Total HAP	610.32	114.87	725.19	95.0	0.02
TA730	VOC	6,103.18	1,148.72	7,251.90	95.0	0.18
TA730	Total HAP	610.32	114.87	725.19	95.0	0.02
TA740	VOC	121.32	1,148.72	1,270.04	95.0	0.03
TA740	Total HAP	12.13	114.87	127.00	95.0	0.003
TA750	VOC	13.84	1.07	14.91	95.0	0.0004
TA750	Total HAP	1.38	0.11	1.49	95.0	0.00004
TA760	VOC	13.84	1.07	14.91	95.0	0.0004
TA760	Total HAP	1.38	0.11	1.49	95.0	0.00004

NOTES:

NA = Not Applicable
NF = No Emission Factor

1. STORAGE TANK EMISSIONS

a. Based upon EPA TANKS 4.0 emissions estimation software. See TANKS 4.0 emissions reports provided within Attachment L of this permit application.
b. Assumed Gasoline (RVP10) as a TANKS 4.0 modelling surrogate for condensate and waste oil tanks (TA710-TA740).
c. Assumed Distillate Oil No. 2 as a TANKS 4.0 modelling surrogate for produced water tanks (TA750-TA760).
d. Assumed Total HAP emissions equal 10% of VOC emissions.

2. MAX. HOURS OF OPERATION

a. Based upon 24 hr/day, 7 days/wk, and 52 wk/yr, unless otherwise noted.

Statoil USA Onshore Properties Inc. - Ball Station
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Loadout Rack (Source ID# TT-2) Calculations Summary & Rationale

Expected Annual Operating Hours = 8,760

Maximum Average Expected Condensate Throughput (gal/yr) = 5,658,000

Pollutant	Estimated Weight fraction of HAP chemical species	Uncontrolled Hourly Emis. (lb/hr)	Uncontrolled Annual Emis. (tpy)	Capture Efficiency (%)	Control Efficiency (%)	Total Max. Hourly Emis. (lb/hr)	Total Max. Annual Emis. (tpy)
VOC	---	37.80	14.15	0.00	0.00	37.80	14.15
Benzene	0.001	0.038	0.014	---	---	0.038	0.014
Ethylbenzene	0.001	0.038	0.014	---	---	0.038	0.014
n-Hexane	0.007	0.265	0.099	---	---	0.265	0.099
Toluene	0.001	0.038	0.014	---	---	0.038	0.014
Xylenes	0.001	0.038	0.014	---	---	0.038	0.014
Total HAPs						0.42	0.156

Maximum Average Expected Produced Water Throughput (gal/yr) = 3,173,000

Pollutant	Estimated Weight fraction of HAP chemical species	Uncontrolled Hourly Emis. (lb/hr)	Uncontrolled Annual Emis. (tpy)	Capture Efficiency (%)	Control Efficiency (%)	Total Max. Hourly Emis. (lb/hr)	Total Max. Annual Emis. (tpy)
VOC	---	0.378	0.079	0.00	0.00	0.378	0.079
Benzene	0.001	0.0004	0.0001	---	---	0.0004	0.0001
Ethylbenzene	0.001	0.0004	0.0001	---	---	0.0004	0.0001
n-Hexane	0.007	0.0026	0.0006	---	---	0.003	0.0006
Toluene	0.001	0.0004	0.0001	---	---	0.00038	0.00008
Xylenes	0.001	0.0004	0.0001	---	---	0.00038	0.00008
Total HAPs						0.004	0.0009

NOTES:
NA = Not Applicable
NF = No Emission Factor

1. LOADOUT RACK EMISSIONS
a. Based upon uncontrolled emission factor for Condensate of 5.0 lb VOC emitted/1,000 gal gasoline loaded, submerged loading, no vapor balance, per Table 5.2-5 AP-42, Chapter 5.2 rev. June 2008.
b. Assumes Produced Water has a 1% organics content, per guidance of Texas Commission on Environmental Quality (TCEQ) [http://www.tceq.texas.gov/assets/public/permitting/air/NewSourceReview/oilgas/spreadsheet-revisions.pdf]. Therefore, used an uncontrolled emission factor for Produced Water of 0.05 lb VOC emitted/1,000 gal loaded.
c. Maximum hourly emissions based upon 180 bbls (7,560 gal) loaded in a one hour time period.
d. Weight fraction of HAP chemical species per engineering estimate.

2. EXPECTED HOURS OF OPERATION
a. Based upon 24 hr/day, 7 days/wk, and 52 wk/yr, unless otherwise noted.

Statoil USA Onshore Properties Inc. - Ball Station
Application for Modification of Permit R13-3031 - Attachment N Emission Calculations

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Component Leaks Fugitive Emissions Calculations Summary & Rationale

Expected Annual Operating Hours = 8,760

Component Source Category	Service	Estimated Number of Source Components	EPA O&G Production factor (kg TOC/hr/source) [Note 1.]	EPA O&G Production factor (lb TOC/hr/source)	Assumed average VOC content (%)	EPA O&G Production factor (lb VOC/hr/source)	Assumed average CH4 content (%)	EPA O&G Production factor (lb CH4/hr/source)	Estimated Annual VOC Emissions (lb/yr)	Estimated Annual VOC Emissions (tpy)	Estimated Annual Total HAP Emissions (tpy)	Estimated Annual CH4 Emissions (lb/yr)	Estimated Annual CH4 Emissions (tpy)	Estimated Annual CO2e Emissions (tpy)
Pumps	Light Oil	4	1.30E-02	0.0287	80	0.0229	---	---	803.4	0.402	0.040	---	---	---
	Water/Oil	1	2.40E-05	0.0001	10	0.00001	---	---	0.05	0.00002	0.000002	---	---	---
Valves	Gas VOC	200	4.50E-03	0.0099	10	0.0010	---	---	1,738.1	0.869	0.087	---	---	---
	Light Oil	100	2.50E-03	0.0055	80	0.0044	---	---	3,862.5	1.931	0.193	---	---	---
	Water/Oil	150	9.80E-05	0.0002	10	0.00002	---	---	28.4	0.014	0.001	---	---	---
	Gas Non-VOC	200	4.50E-03	0.0099	---	---	75	0.0074	---	---	---	13,035.9	6.518	162.95
Safety Relief Valves	Gas VOC	35	8.80E-03	0.0194	10	0.0019	---	---	594.8	0.297	0.030	---	---	---
	Gas Non-VOC	35	8.80E-03	0.0194	---	---	75	0.0146	---	---	---	4,461.2	2.231	55.76
Open-ended Lines	Gas VOC	0												
	Gas Non-VOC	0												
Sampling Connections	Gas VOC	0												
	Gas Non-VOC	0												
Compressors	Gas VOC	0												
	Gas Non-VOC	0												
Flanges	Gas VOC	150	3.90E-04	0.00086	10	0.000086	---	---	113.0	0.056	0.006	---	---	---
	Light Oil	100	1.10E-04	0.00024	80	0.00019	---	---	169.9	0.085	0.008	---	---	---
	Water/Oil	300	2.90E-06	0.000006	10	0.0000006	---	---	1.7	0.001	0.0001	---	---	---
	Gas Non-VOC	150	3.90E-04	0.00086	---	---	75	0.00064	---	---	---	847.3	0.424	10.59
Instrumentation	Gas VOC	35	8.80E-03	0.0194	10	0.0019	---	---	594.8	0.297	0.030	---	---	---
	Gas Non-VOC	35	8.80E-03	0.0194	---	---	75	0.0146	---	---	---	4,461.2	2.231	55.76
Totals										**3.95**	**0.40**			**285.07**

NOTES:
1. EPA O&G Production factor leak rate factor obtained from Table 2.4 OIL AND GAS PRODUCTION OPERATIONS AVERAGE EMISSIONFACTORS (kg TOC/hr/source), EPA-453/R-95-017 Protocol for Equipment Leak Emission Estimates, November 1995.
2. Total HAP emissions are estimated to be 10% of VOC emissions.

>>>CO2 Equivalent is based upon global warming potential values of 25 x tons CH4.

Statoil USA Onshore Properties Inc. - Ball Station
Application for Modification of Permit R13-3031 - Attachment N Emission Calculations

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Venting Episodes Fugitive Emissions Calculations Summary & Rationale

Expected Annual Operating Hours = 8,760

Event	#Events/yr	Vented Gas Volume (scf/event)	Gas Vented to Flare? (Yes or No)	Flare Control Efficiency (%)	Density of Air at 60 degF (lb/cf)	Specific Gravity of Natural Gas	Total Gas Vented (lb/yr)	Total Gas Vented (tpy)	VOC Weight Fraction	VOC Emissions (tpy)	HAP Weight Fraction	HAP Emissions (tpy)	CO2 Weight Fraction	CO2 Emissions (tpy)	CH4 Weight Fraction	CH4 Emissions (tpy)	CO2e Emissions (tpy)
Compressor #1 Restart	48	10,000	No	---	7.64E-02	0.65	23,824.3	11.91	0.10	1.19	0.002	0.02	0.0021	0.03	0.7452	8.88	221.95
Compressor #2 Restart	24	20,000	No	---	7.64E-02	0.65	23,824.3	11.91	0.10	1.19	0.002	0.02	0.0021	0.03	0.7452	8.88	221.95
VRU Upset	24	37,000	Yes	0	7.64E-02	0.65	44,075.0	22.04	0.10	2.20	0.002	0.044	0.0021	0.046	0.7452	16.42	410.60
Totals										**4.59**		**0.09**		**0.10**		**34.18**	**854.5**

NOTES:

1. Estimated number of events and venting per event are engineering estimates:
   a. Total number of Compressor #1 maintanance activities and other shutdowns/restarts is estimated to be 4 events per month.
   b. Total number of Compressor #2 maintanance activities, other facility maintenance, and other shutdowns/restarts is estimated to be 2 events per month.
   c. Total number of VRU upset events is estimated to be 2 events per month. Vapors from the Vapor Recovery Tower and all storage tanks will flow through the LP flare header to the LP Flare.
2. Estimated density of air and specific gravity of natural gas were obtained at www.engineeringtoolbox.com.
3. Assumed weight fractions for typical gas analysis.

>>>CO2 Equivalent is based upon global warming potential values of 25 x tons CH4.

Statoil USA Onshore Properties Inc. - Ball Station
Application for Modification of Permit R13-3031 - Attachment N Emission Calculations

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Controlled Sitewide Emissions Summary Totals

Emission Source	Existing, New or Modified?	Method of Calculations	NOx tpy	CO tpy	VOC tpy	PM tpy	SO2 tpy	Formal-dehyde tpy	Benzene tpy	Ethyl-benzene tpy	n-Hexane tpy	Toluene tpy	Xylenes tpy	Total HAP tpy	CO2e tpy
R13-3031 PERMITTED POINT SOURCE POTENTIAL EMISSIONS [Note 1.]			**29.09**	**2.59**	**52.59**	**0.04**	**0.02**	**0.88**	**0.30**	**0.03**	**1.48**	**1.46**	**2.30**	**6.44**	**5,630.4**
PROPOSED R13-3031A SITEWIDE POTENTIAL EMISSIONS:															
Engine CE-3	New	MEF, AP-42	14.56	20.38	3.30	0.36	0.02	2.43	0.02	0.001	0.040	0.01	0.01	3.20	5,361.6
Engine CE-4	New	MEF, AP-42	11.44	44.21	14.42	0.79	0.05	5.95	0.03	0.003	0.09	0.03	0.01	7.63	13,141.1
Generator G-1	New	MEF, AP-42	4.34	8.67	3.03	0.33	0.01	0.35	0.027	0.0004	---	0.0095	0.0033	0.55	1,972.4
Line Heater HE-1	Existing	AP-42	0.44	0.35	0.02	0.03	0.001	0.001	0.001	0.001	0.01	0.001	0.001	0.01	3.4
Line Heater HE-2	New	AP-42	0.61	0.51	0.03	0.05	0.004	---	---	---	---	---	---	---	733.7
Line Heater HE-3	New	AP-42	0.61	0.51	0.03	0.05	0.004	---	---	---	---	---	---	---	733.7
Line Heater HE-4	New	AP-42	0.61	0.51	0.03	0.05	0.004	---	---	---	---	---	---	---	733.7
Heater Treater HTR-1	New	AP-42	0.61	0.51	0.03	0.05	0.004	---	---	---	---	---	---	---	733.7
Flare FL-1	New	AP-42	0.35	1.62	2.97	0.04	0.003	---	---	---	---	---	---	---	582.0
Tank TA710	New	TANKS 4.0.9d	---	---	0.18	---	---	---	---	---	---	---	---	0.02	---
Tank TA720	New	TANKS 4.0.9d	---	---	0.18	---	---	---	---	---	---	---	---	0.02	---
Tank TA730	New	TANKS 4.0.9d	---	---	0.18	---	---	---	---	---	---	---	---	0.02	---
Tank TA740 [Note 2.]	New	TANKS 4.0.9d	---	---	0.03	---	---	---	---	---	---	---	---	0.01	---
Tank TA750 [Note 2.]	New	TANKS 4.0.9d	---	---	0.01	---	---	---	---	---	---	---	---	0.01	---
Tank TA760 [Note 2.]	New	TANKS 4.0.9d	---	---	0.01	---	---	---	---	---	---	---	---	0.01	---
PROPOSED TOTAL POINT SOURCE EMISSIONS			**33.56**	**77.27**	**24.47**	**1.73**	**0.10**	**8.73**	**0.08**	**0.01**	**0.14**	**0.06**	**0.03**	**11.48**	**23,995.2**
Rod Packing Fugitives from Engines CE-3 & CE-4	New	40 CFR 98	---	---	0.04	---	---	---	0.00002	0.00003	0.0005	0.00005	0.0001	0.001	8.67
Loadout Rack TT-2 Uncaptured Fugitives	New	AP-42	---	---	14.22	---	---	---	0.014	0.014	0.100	0.014	0.014	0.156	---
Component Leak Fugitives	New	EPA O&G Production leak rate factor	---	---	3.95	---	---	---	---	---	---	---	---	0.40	285.1
Venting Episode Fugitives	New	EE	---	---	4.59	---	---	---	---	---	---	---	---	0.09	854.5
PROPOSED TOTAL FUGITIVE EMISSIONS			**0.00**	**0.00**	**22.80**	**0.00**	**0.00**	**0.00**	**0.0142**	**0.0143**	**0.10**	**0.014**	**0.014**	**0.64**	**1,148.2**
R13-3031A PROPOSED SITEWIDE TOTAL EMISSIONS			**33.56**	**77.27**	**47.28**	**1.73**	**0.10**	**8.73**	**0.09**	**0.02**	**0.24**	**0.07**	**0.04**	**12.13**	**25,143.5**
R13-3031A PROPOSED CHANGE IN SITEWIDE POINT SOURCE EMISSIONS [Note 4.]			**4.47**	**74.68**	**(28.12)**	**1.69**	**0.07**	**7.85**	**(0.22)**	**(0.03)**	**(1.34)**	**(1.40)**	**(2.27)**	**5.04**	**18,364.9**

NOTES:

1. R13-3031 SITEWIDEPOINT SOURCE POTENTIAL EMISSIONS obtained from permit R13-3031 and from the permit application for R13-3031. Fugitive emissions were not calculated by the original owner/permit applicant for R13-3031.
2. Storage tank VOC or total HAP emissions calculated to be less than 0.01 tpy are conservatively represented as 0.01 tpy.
3. CO2 Equivalent is based upon global warming potential values of 298 x tons N2O and 25 x tons CH4.
4. R13-3031A PROPOSED CHANGE IN SITEWIDE POINT SOURCE EMISSIONS equals the net change in regulated air pollutants due to the proposed changes to point sources at the facility.

NA = Not Applicable
MEF = Manufacturer Emission Factor
EE = Engineering Estimate

ATTACHMENT P – Public Notice Class I Legal Advertisement

Statoil USA Onshore Properties Inc. will submit the required Class I legal advertisement to a local newspaper and will forward the original affidavit of publication to DAQ. The notice will be published no earlier than five (5) working days of receipt by DAQ of this application. The original affidavit of publication will be received by DAQ no later than the last day of the public comment period. The anticipated text of the legal ad to be published in the *Tyler Star News* (Sistersville, WV) is as follows:

AIR QUALITY PERMIT NOTICE
Notice of Application

Notice is given that Statoil USA Onshore Properties Inc. has applied to the West Virginia Department of Environmental Protection, Division of Air Quality, for a Rule 13 Modification Permit for its existing Ball Station located on County Highway 42/Scales Run Road, near Middlebourne in Tyler County, West Virginia at latitude 39.504206 and longitude -80.754809.

The applicant estimates, as a result of the proposed Modification, the facility's potential to discharge Regulated Air Pollutants will be increased as follows:

Regulated Pollutant	Increased Potential Annual Emissions in tons per year (tpy)
Carbon Monoxide	74.68
Nitrogen Oxides	4.47
Particulate Matter (PM)	1.69
PM-10	1.69
Sulfur Dioxide	0.07
Formaldehyde	7.85
Total Regulated Hazardous Air Pollutants	5.04
Total Carbon Dioxide Equivalent	18,364.9

The applicant estimates, as a result of the proposed Modification, the facility's potential to discharge Regulated Air Pollutants will be decreased as follows:

Regulated Pollutant	Decreased Potential Annual Emissions in tons per year (tpy)
Total Volatile Organic Compounds	(28.12)
Benzene	(0.22)
Ethylbenzene	(0.03)
n-Hexane	(1.34)
Toluene	(1.40)
Xylenes	(2.27)

Operations at the existing facility are on-going. Written comments will be received by the West Virginia Department of Environmental Protection, Division of Air Quality, 601 57th Street, SE, Charleston, WV 25304, for at least 30 calendar days from the date of publication of this notice.

Any questions regarding this permit application should be directed to the DAQ at (304) 926-0499, extension 1250, during normal business hours.

Dated this the 7th day of October, 2015.

By: Statoil USA Onshore Properties Inc.
Building 4, 8th Floor
2101 City West Boulevard
Houston, TX 77042