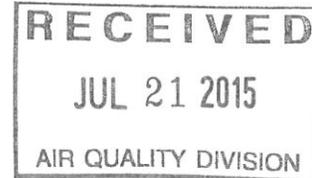


# RKI Exploration & Production LLC

210 Park Avenue, Suite 900, Oklahoma City, OK 73102  
405-949-2221 Fax 405-949-2223

July 17, 2015

Cole Anderson  
NSR Program Manager  
Department of Environmental Quality, Air Quality Division  
Herschler Building, 2-E  
122 West 25th Street  
Cheyenne, WY 82002



Re: *Air Permit Application*  
*RKI Exploration & Production LLC*  
*Stoddard 40-71-36 1FH (API#: 49-009-29955)*

Dear Mr. Anderson:

Pursuant to the requirements of the Wyoming Air Quality Standards and Regulations New Source Review permitting program and the associated Chapter 6 Section 2 (C6 S2) Oil and Gas Production Facilities Permitting Guidance document dated September 2013, RKI Exploration & Production LLC submits this *C6 S2 Application for an Air Quality Permit* for the subject well.

The site consists of one oil well, 4 oil and 2 produced water storage tanks, a 2-phase separator (unfired), a heater-treater, and a dual inlet production flare. Gas is going to a sales line. Produced liquids are loaded out by truck. First day of production was April 20, 2015.

Average daily production for the new well 30 days after FDOP was 430-bbl oil, 436-bbl water, and 665-mcf gas.

Should you have any questions concerning this application, please contact me at the phone number or email address listed in the application.

Sincerely,

  
Jeffrey L. Ingerson  
Senior Air Permitting Engineer

Reviewer HMB  
cc: \_\_\_\_\_  
Modeler \_\_\_\_\_  
D.E. \_\_\_\_\_  
File A0001350  
IMP FID 26964





Department of Environmental Quality Air Quality Division
Permit Application Form

Is this a revision to an existing application?

Yes No X

Date of Application: 7/17/2015

Previous Application #:

COMPANY INFORMATION:

Company Name: RKI Exploration & Production, LLC

Address: 210 Park Avenue, Suite 900

City: Oklahoma City State: Oklahoma Zip Code: 73102

Country: USA Phone Number: (405) 949-2221

FACILITY INFORMATION:

Facility Name: Stoddard 40-71-36 1FH

New Facility or Existing Facility: New

Facility Description: Oil Production Wellsite/Pad

Facility Class: Minor Operating Status: Operating

Facility Type: Production Site

For Oil & Gas Production Sites ONLY:

First Date of Production (FDOP)/Date of Modification: 4/20/2015

Does production at this facility contain H2S? No

\*If yes, contact the Division.

API Number(s): Stoddard 40-71-36 1FH (API# 49-009-29955)

NAICS Code: 211111 Crude Petroleum and Natural Gas Extraction

FACILITY LOCATION:

\*Enter the facility location in either the latitude/longitude area or section/township/range area. Both are not required.

Physical Address:

City: Zip Code:

State: WY County: Converse

OR

Latitude: 43.40623 Longitude: -105.33728

Quarter Quarter: nw nw Quarter:

Section: 36 Township: 40N Range: 71W

For longitude and latitude, use NAD 83/WGS84 datum and 5 digits after the decimal (i.e. 41.12345, -107.56789)

CONTACT INFORMATION:

\*Note that an Environmental AND NSR Permitting Contact is required for your application to be deemed complete by the agency.

Title: Mr. First Name: Jeffrey

Last Name: Ingerson

Company Name: RKI Exploration & Production, LLC

Job Title: Senior Air Permitting Engineer

Address: 210 Park Avenue, Suite 700

City: Oklahoma City State: Oklahoma

Zip Code: 73102

Primary Phone No.: (405) 987-2181

E-mail: jingerson@rkixp.com

Mobile Phone No.: (405) 820-1779

Fax No.: (405) 949-2223

Contact Type: NSR Permitting Contact

Start Date: March, 2014



Additional Contact Type (if needed):

Title:  First Name:   
 Last Name:   
 Company Name:   
 Job Title:   
 Address:   
 City:  State:   
 Zip Code:   
 Primary Phone No.:  E-mail:   
 Mobile Phone No.:  Fax No.:   
 Contact Type:  Start Date:

**FACILITY APPLICATION INFORMATION:**

**General Info:**

Has the facility changed location or is it a new/ greenfield facility?   
 Has a Land Use Planning document been included in this application?   
 Is the facility located in a sage grouse core area? \*   
 If the facility is in a sage grouse core area, what is the WER number? \_\_\_\_\_  
 \* For questions about sage grouse core area, contact WY Game & Fish Department.

**Federal Rules Applicability - Facility Level:**

Prevention of Significant Deterioration (PSD):   
 Non-Attainment New Source Review:

**Modeling Section:**

Has the Air Quality Division been contacted to determine if modeling is required?   
 Is a modeling analysis part of this application?   
 Is the proposed project subject to Prevention of Significant Deterioration (PSD) requirements?   
 Has the Air Quality Division been notified to schedule a pre-application meeting?   
 Has a modeling protocol been submitted to and approved by the Air Quality Division?   
 Has the Air Quality Division received a Q/D analysis to submit to the respective FLMS to determine the need for an AQRV analysis?

**Required Attachments:**

- Facility Map
- Process Flow Diagram
- Modeling Analysis (if applicable)
- Land Use Planning Document
- Detailed Project Description
- Emissions Calculations

I, Jeffrey L. Ingerson Senior Air Permitting Engineer  
 Responsible Official (Printed Name) Title

an Official Representative of the Company, state that I have knowledge of the facts herein set forth and that the same are true and correct to the best of my knowledge and belief. I further certify that the operational information provided and emission rates listed on this application reflect the anticipated emissions due to the operation of this facility. The facility will operate in compliance with all applicable Wyoming Air Quality Standards and Regulations.

Signature:  (ink) Date: 7/17/2015



Specific Emission Unit Attributes:

## Separator/Treater

Company Equipment ID: HTR01  
Company Equipment Description: Horizontal Heater Treater w/ 0.500 mmbtu burner

Operating Status: Operating  
Initial Construction Commencement Date: \_\_\_\_\_  
Initial Operation Commencement Date: 4/20/2015  
Most Recent Construction/ Modification Commencement Date: \_\_\_\_\_

Most Recent Operation Commencement Date: \_\_\_\_\_  
**Select reason(s) for this emissions unit being included in this application (must be completed regardless of date of installation or modification):**

Reason: Construction (Greenfield/New Facility)

If reason is **Reconstruction** or **Temporary Permit** or **Other**, please explain below:

Type of Vessel: Heater-Treater Is Vessel Heated? Yes  
Operating Temperature (F): 110  
Operating Pressure (psig): 50

**SCC Codes:** List all Source Classification Code(s) (SCC) that describe the process(es) performed by the emission source (e.g., 1-02-002-04).

1-00-111-00

**Potential Operating Schedule:** Provide the operating schedule for this emission unit.

Hours/day: 24  
Hours/year: 8760



Control Equipment:  Yes

If yes, please fill out and attach the appropriate Control Device and Release Point Information worksheets.

Best Available Control Technology (BACT): Was a BACT Analysis completed for this emission unit?

Yes  No

Pollutant: \_\_\_\_\_

Proposed BACT: \_\_\_\_\_

\*If yes, attach BACT Analysis with this application.

Lowest Achievable Emission Rate (LAER): Was a LAER Analysis completed for this emission unit?

Yes  No

Pollutant: \_\_\_\_\_

Proposed LAER: \_\_\_\_\_

\*If yes, attach LAER Analysis with this application.

**Federal and State Rule Applicability:**

New Source Performance Standards (NSPS):  Not Affected

*New Source Performance Standard are listed under 40 CFR 60- Standards of Performance for New Stationary Sources.*

NSPS Subpart: \_\_\_\_\_

National Emission Standards for Hazardous Air Pollutants (NESHAP Part 61):  Not Affected

*National Emissions Standards for Hazardous Air Pollutants (NESHAP Part 61) are listed under 40 CFR 61. (These include asbestos, benzene, beryllium, mercury, and vinyl chloride).*

Part 61 NESHAP Subpart: \_\_\_\_\_

National Emission Standards for Hazardous Air Pollutants (NESHAP Part 63):  Not Affected

*National Emission Standards for Hazardous Air Pollutants (NESHAP Part 63) standards are listed under 40 CFR 63*

Part 63 NESHAP Subpart: \_\_\_\_\_

Prevention of Significant Deterioration (PSD):  Not Affected

*These rules are found under WAQSR Chapter 6, Section 4.*

Non-Attainment New Source Review:  Not Affected

*These rules are found under WAQSR Chapter 6, Section 13.*



**Emissions Information-** The following tables request information needed to determine the applicable requirements and the compliance status of this emission unit with those requirements.

HTR01

Pre-Controlled Potential Emissions (tons/yr)	Efficiency Standards		Potential to Emit (lbs/hr)	Potential to Emit (tons/yr)	Basis for Determination
	Potential to Emit (PTE)	Units			

**Criteria Pollutants:**

1.)	Particulate emissions (PE/PM) (formerly particulate matter, PM)					
2.)	PM #10 microns in diameter (PE/PM10)	0.02		0.004	0.02	AP-42
3.)	PM #2.5 microns in diameter (PE/PM2.5)					
4.)	Sulfur dioxide (SO2)	0		0	0	AP-42
5.)	Nitrogen Oxides (NOx)	0.21		0.049	0.21	AP-42
6.)	Carbon monoxide (CO)	0.18		0.041	0.18	AP-42
7.)	Volatile organic compounds (VOC)	0.01		0.001	0.01	AP-42
8.)	Lead (Pb)					
9.)	Total Hazardous Air Pollutants (HAPs)	0		0	0	AP-42
10.)	Fluoride (F)					
11.)	Hydrogen Sulfide (H2S)	0		0	0	AP-42
12.)	Mercury (Hg)					
13.)	Total Reduced Sulfur (TRS)					
14.)	Sulfuric Acid Mist (SAM)					

*\*Provide your calculations as an attachment and explain how all process variables and emissions factors were selected.*



**Hazardous Air Pollutants (HAPs) and Toxic Air Contaminants**

Pre-Controlled Potential Emissions (tons/yr)	Efficiency Standards		Potential to Emit (lbs/hr)	Potential to Emit (tons/yr)	Basis for Determination
	Potential to Emit (PTE)	Units			

**Pollutants:**

1.)					
2.)					
3.)					
4.)					
5.)					
6.)					
7.)					
8.)					

**Greenhouse Gases (GHGs)**

Pre-Controlled Potential Emissions (tons/yr)	Efficiency Standards		Potential to Emit (lbs/hr)	Potential to Emit (tons/yr)	Basis for Determination
	Potential to Emit (PTE)	Units			

**Pollutants:**

1.)					
2.)					
3.)					
4.)					
5.)					
6.)					
7.)					
8.)					



Specific Emission Unit Attributes:

Storage Tank/Silo

Company Equipment ID: OILTNK 01-04
Company Equipment Description: 4 x 400 bbl Oil Storage Tanks

Operating Status: Operating
Initial Construction Commencement Date:
Initial Operation Commencement Date: 4/20/2015
Most Recent Construction/ Modification Commencement Date:

Most Recent Operation Commencement Date:
Select reason(s) for this emissions unit being included in this application (must be completed regardless of date of installation or modification):

Reason: Construction (Greenfield/New Facility)

If reason is Reconstruction or Temporary Permit or Other, please explain below:

Material Type: Liquid
Description of Material Stored: Crude Oil

Capacity: 400 Units: barrels
Maximum Throughput: 94170 Units: barrels/yr
Maximum Hourly Throughput: 10.75 Units: barrels/hr
Is Tank Heated?: No

SCC Codes: List all Source Classification Code(s) (SCC) that describe the process(es) performed by the emission source (e.g., 1-02-002-04).

1-00-110-20

Potential Operating Schedule: Provide the operating schedule for this emission unit.

Hours/day: 24
Hours/year: 8760



Control Equipment:  Yes  No

If yes, please fill out and attach the appropriate Control Device and Release Point Information worksheets.

Best Available Control Technology (BACT): Was a BACT Analysis completed for this emission unit?

Yes  No

Pollutant: \_\_\_\_\_

Proposed BACT: \_\_\_\_\_

\*If yes, attach BACT Analysis with this application.

Lowest Achievable Emission Rate (LAER): Was a LAER Analysis completed for this emission unit?

Yes  No

Pollutant: \_\_\_\_\_

Proposed LAER: \_\_\_\_\_

\*If yes, attach LAER Analysis with this application.

**Federal and State Rule Applicability:**

New Source Performance Standards (NSPS):  Subject, but exempt

*New Source Performance Standard are listed under 40 CFR 60- Standards of Performance for New Stationary Sources.*

NSPS Subpart: \_\_\_\_\_ 0000

National Emission Standards for Hazardous Air Pollutants (NESHAP Part 61):  Not Effected

*National Emissions Standards for Hazardous Air Pollutants (NESHAP Part 61) are listed under 40 CFR 61. (These include asbestos, benzene, beryllium, mercury, and vinyl chloride).*

Part 61 NESHAP Subpart: \_\_\_\_\_

National Emission Standards for Hazardous Air Pollutants (NESHAP Part 63):  Not Effected

*National Emission Standards for Hazardous Air Pollutants (NESHAP Part 63) standards are listed under 40 CFR 63*

Part 63 NESHAP Subpart: \_\_\_\_\_

Prevention of Significant Deterioration (PSD):  Not Affected

*These rules are found under WAQSR Chapter 6, Section 4.*

Non-Attainment New Source Review:  Not Affected

*These rules are found under WAQSR Chapter 6, Section 13.*



**Emissions Information-** The following tables request information needed to determine the applicable requirements and the compliance status of this emission unit with those requirements.

OILTNK 01-04

		Efficiency Standards				
Pre-Controlled Potential Emissions (tons/yr)	Potential to Emit (PTE)	Units	Potential to Emit (lbs/hr)	Potential to Emit (tons/yr)	Basis for Determination	

**Criteria Pollutants:**

1.)	Particulate emissions (PE/PM) (formerly particulate matter, PM)					
2.)	PM #10 microns in diameter (PE/PM10)					
3.)	PM #2.5 microns in diameter (PE/PM2.5)					
4.)	Sulfur dioxide (SO2)					
5.)	Nitrogen Oxides (NOx)					
6.)	Carbon monoxide (CO)					
7.)	Volatile organic compounds (VOC)	<b>254.7</b>			<b>1.163</b>	<b>5.095</b> <b>Tanks Program</b>
8.)	Lead (Pb)					
9.)	Total Hazardous Air Pollutants (HAPs)	<b>3.16</b>			<b>0.014</b>	<b>0.063</b> <b>Tanks Program</b>
10.)	Fluoride (F)					
11.)	Hydrogen Sulfide (H2S)					
12.)	Mercury (Hg)					
13.)	Total Reduced Sulfur (TRS)					
14.)	Sulfuric Acid Mist (SAM)					

*\*Provide your calculations as an attachment and explain how all process variables and emissions factors were selected.*



**Hazardous Air Pollutants (HAPs) and Toxic Air Contaminants**

		Efficiency Standards			
Pre-Controlled Potential Emissions (tons/yr)	Potential to Emit (PTE)	Units	Potential to Emit (lbs/hr)	Potential to Emit (tons/yr)	Basis for Determination

**Pollutants:**

1.)					
2.)					
3.)					
4.)					
5.)					
6.)					
7.)					
8.)					

**Greenhouse Gases (GHGs)**

		Efficiency Standards			
Pre-Controlled Potential Emissions (tons/yr)	Potential to Emit (PTE)	Units	Potential to Emit (lbs/hr)	Potential to Emit (tons/yr)	Basis for Determination

**Pollutants:**

1.)					
2.)					
3.)					
4.)					
5.)					
6.)					
7.)					
8.)					



Specific Emission Unit Attributes:

### Storage Tank/Silo

Company Equipment ID: WTRNK 01-02  
Company Equipment Description: 2 x 400 bbl Water Storage Tank

Operating Status:   
Initial Construction Commencement Date: \_\_\_\_\_  
Initial Operation Commencement Date: 4/20/2015  
Most Recent Construction/ Modification Commencement Date: \_\_\_\_\_

Most Recent Operation Commencement Date: \_\_\_\_\_  
**Select reason(s) for this emissions unit being included in this application (must be completed regardless of date of installation or modification):**

Reason:

If reason is **Reconstruction** or **Temporary Permit** or **Other**, please explain below:

Material Type:   
Description of Material Stored: Produced Water (1% Oil Carryover)

Capacity: 400 Units:   
Maximum Throughput: 949 Units:   
Maximum Hourly Throughput: 1 Units:   
Is Tank Heated?:

**SCC Codes:** List all Source Classification Code(s) (SCC) that describe the process(es) performed by the emission source (e.g., 1-02-002-04).

1-00-110-20

**Potential Operating Schedule:** Provide the operating schedule for this emission unit.

Hours/day: 24  
Hours/year: 8760



Control Equipment:  Yes

If yes, please fill out and attach the appropriate Control Device and Release Point Information worksheets.

Best Available Control Technology (BACT): Was a BACT Analysis completed for this emission unit?

Yes  No

Pollutant: \_\_\_\_\_

Proposed BACT: \_\_\_\_\_

\*If yes, attach BACT Analysis with this application.

Lowest Achievable Emission Rate (LAER): Was a LAER Analysis completed for this emission unit?

Yes  No

Pollutant: \_\_\_\_\_

Proposed LAER: \_\_\_\_\_

\*If yes, attach LAER Analysis with this application.

**Federal and State Rule Applicability:**

New Source Performance Standards (NSPS):  Subject, but exempt

*New Source Performance Standard are listed under 40 CFR 60- Standards of Performance for New Stationary Sources.*

NSPS Subpart: \_\_\_\_\_ 0000

National Emission Standards for Hazardous Air Pollutants (NESHAP Part 61):  Not Effected

*National Emissions Standards for Hazardous Air Pollutants (NESHAP Part 61) are listed under 40 CFR 61. (These include asbestos, benzene, beryllium, mercury, and vinyl chloride).*

Part 61 NESHAP Subpart: \_\_\_\_\_

National Emission Standards for Hazardous Air Pollutants (NESHAP Part 63):  Not Effected

*National Emission Standards for Hazardous Air Pollutants (NESHAP Part 63) standards are listed under 40 CFR 63*

Part 63 NESHAP Subpart: \_\_\_\_\_

Prevention of Significant Deterioration (PSD):  Not Affected

*These rules are found under WAQSR Chapter 6, Section 4.*

Non-Attainment New Source Review:  Not Affected

*These rules are found under WAQSR Chapter 6, Section 13.*



**Emissions Information-** The following tables request information needed to determine the applicable requirements and the compliance status of this emission unit with those requirements.

WTRTNK 01-02

		Efficiency Standards				
Pre-Controlled Potential Emissions (tons/yr)	Potential to Emit (PTE)	Units	Potential to Emit (lbs/hr)	Potential to Emit (tons/yr)	Basis for Determination	

**Criteria Pollutants:**

1.)	Particulate emissions (PE/PM) (formerly particulate matter, PM)					
2.)	PM #10 microns in diameter (PE/PM10)					
3.)	PM #2.5 microns in diameter (PE/PM2.5)					
4.)	Sulfur dioxide (SO2)					
5.)	Nitrogen Oxides (NOx)					
6.)	Carbon monoxide (CO)					
7.)	Volatile organic compounds (VOC)	<b>2.567</b>			<b>0.012</b>	<b>0.051</b> Tanks Program
8.)	Lead (Pb)					
9.)	Total Hazardous Air Pollutants (HAPs)	<b>0.03</b>			<b>0</b>	<b>0.001</b> Tanks Program
10.)	Fluoride (F)					
11.)	Hydrogen Sulfide (H2S)					
12.)	Mercury (Hg)					
13.)	Total Reduced Sulfur (TRS)					
14.)	Sulfuric Acid Mist (SAM)					

*\*Provide your calculations as an attachment and explain how all process variables and emissions factors were selected.*



**Hazardous Air Pollutants (HAPs) and Toxic Air Contaminants**

		Efficiency Standards			
Pre-Controlled Potential Emissions (tons/yr)	Potential to Emit (PTE)	Units	Potential to Emit (lbs/hr)	Potential to Emit (tons/yr)	Basis for Determination

**Pollutants:**

1.)					
2.)					
3.)					
4.)					
5.)					
6.)					
7.)					
8.)					

**Greenhouse Gases (GHGs)**

		Efficiency Standards			
Pre-Controlled Potential Emissions (tons/yr)	Potential to Emit (PTE)	Units	Potential to Emit (lbs/hr)	Potential to Emit (tons/yr)	Basis for Determination

**Pollutants:**

1.)					
2.)					
3.)					
4.)					
5.)					
6.)					
7.)					
8.)					



Specific Emission Unit Attributes:

### Loading/Unloading/Dump

Company Equipment ID: 1FH OIL LOAD  
Company Equipment Description: Oil Loadout Facility

Operating Status: Operating  
Initial Construction Commencement Date: \_\_\_\_\_  
Initial Operation Commencement Date: 4/20/2015  
Most Recent Construction/ Modification Commencement Date: \_\_\_\_\_

Most Recent Operation Commencement Date: \_\_\_\_\_  
**Select reason(s) for this emissions unit being included in this application (must be completed regardless of date of installation or modification):**

Reason: Construction (Greenfield/New Facility)

If reason is *Reconstruction* or *Temporary Permit* or *Other*, please explain below:

Type of Material: Liquid  
Material Description: Crude Oil

Maximum Annual Throughput: 94170 Units: barrels/yr  
Maximum Hourly Throughput: 240 Units: barrels/hr  
Detailed Description of Loading/Unloading/Dump Source: Crude oil is loaded from storage tanks into tanker trucks for transport to market. Tanker truck vapors are returned to storage tanks for destruction in the vapor combustor (FLR2).

**SCC Codes:** List all Source Classification Code(s) (SCC) that describe the process(es) performed by the emission source (e.g., 1-02-002-04).

1-00-112-01

**Potential Operating Schedule:** Provide the operating schedule for this emission unit.

Hours/day: 24  
Hours/year: 8760



Control Equipment:  Yes

If yes, please fill out and attach the appropriate Control Device and Release Point Information worksheets.

Best Available Control Technology (BACT): Was a BACT Analysis completed for this emission unit?

Yes  No

Pollutant: \_\_\_\_\_

Proposed BACT: \_\_\_\_\_

\*If yes, attach BACT Analysis with this application.

Lowest Achievable Emission Rate (LAER): Was a LAER Analysis completed for this emission unit?

Yes  No

Pollutant: \_\_\_\_\_

Proposed LAER: \_\_\_\_\_

\*If yes, attach LAER Analysis with this application.

**Federal and State Rule Applicability:**

New Source Performance Standards (NSPS):  Not Affected  Not Effectuated

*New Source Performance Standard are listed under 40 CFR 60- Standards of Performance for New Stationary Sources.*

NSPS Subpart: \_\_\_\_\_

National Emission Standards for Hazardous Air Pollutants (NESHAP Part 61):  Not Affected  Not Effectuated

*National Emissions Standards for Hazardous Air Pollutants (NESHAP Part 61) are listed under 40 CFR 61. (These include asbestos, benzene, beryllium, mercury, and vinyl chloride).*

Part 61 NESHAP Subpart: \_\_\_\_\_

National Emission Standards for Hazardous Air Pollutants (NESHAP Part 63):  Not Affected  Not Effectuated

*National Emission Standards for Hazardous Air Pollutants (NESHAP Part 63) standards are listed under 40 CFR 63*

Part 63 NESHAP Subpart: \_\_\_\_\_

Prevention of Significant Deterioration (PSD):  Not Affected  Not Effectuated

*These rules are found under WAQSR Chapter 6, Section 4.*

Non-Attainment New Source Review:  Not Affected  Not Effectuated

*These rules are found under WAQSR Chapter 6, Section 13.*



**Emissions Information-** The following tables request information needed to determine the applicable requirements and the compliance status of this emission unit with those requirements.

**Oil Loadout**

Pre-Controlled Potential Emissions (tons/yr)	Efficiency Standards		Potential to Emit (lbs/hr)	Potential to Emit (tons/yr)	Basis for Determination
	Potential to Emit (PTE)	Units			

**Criteria Pollutants:**

1.)	Particulate emissions (PE/PM) (formerly particulate matter, PM)					
2.)	PM #10 microns in diameter (PE/PM10)					
3.)	PM #2.5 microns in diameter (PE/PM2.5)					
4.)	Sulfur dioxide (SO2)					
5.)	Nitrogen Oxides (NOx)					
6.)	Carbon monoxide (CO)					
7.)	Volatile organic compounds (VOC)	<b>4.23</b>		<b>0.019</b>	<b>0.08</b>	<b>AP-42</b>
8.)	Lead (Pb)					
9.)	Total Hazardous Air Pollutants (HAPs)					
10.)	Fluoride (F)					
11.)	Hydrogen Sulfide (H2S)					
12.)	Mercury (Hg)					
13.)	Total Reduced Sulfur (TRS)					
14.)	Sulfuric Acid Mist (SAM)					

*\*Provide your calculations as an attachment and explain how all process variables and emissions factors were selected.*



**Hazardous Air Pollutants (HAPs) and Toxic Air Contaminants**

Pre-Controlled Potential Emissions (tons/yr)	Efficiency Standards		Potential to Emit (lbs/hr)	Potential to Emit (tons/yr)	Basis for Determination
	Potential to Emit (PTE)	Units			

**Pollutants:**

1.)					
2.)					
3.)					
4.)					
5.)					
6.)					
7.)					
8.)					

**Greenhouse Gases (GHGs)**

Pre-Controlled Potential Emissions (tons/yr)	Efficiency Standards		Potential to Emit (lbs/hr)	Potential to Emit (tons/yr)	Basis for Determination
	Potential to Emit (PTE)	Units			

**Pollutants:**

1.)					
2.)					
3.)					
4.)					
5.)					
6.)					
7.)					
8.)					



Specific Emission Unit Attributes:

### Loading/Unloading/Dump

Company Equipment ID: 1FH WTR LOAD  
Company Equipment Description: Produced Water Loadout Facility

Operating Status: Operating  
Initial Construction Commencement Date: \_\_\_\_\_  
Initial Operation Commencement Date: 4/20/2015  
Most Recent Construction/ Modification Commencement Date: \_\_\_\_\_

Most Recent Operation Commencement Date: \_\_\_\_\_  
**Select reason(s) for this emissions unit being included in this application (must be completed regardless of date of installation or modification):**

Reason: Construction (Greenfield/New Facility)

If reason is **Reconstruction** or **Temporary Permit** or **Other**, please explain below:

Type of Material: Liquid  
Material Description: Produced Water w/ 1% Crude Oil

Maximum Annual Throughput:	<u>956</u>	Units:	<u>barrels/yr</u>
Maximum Hourly Throughput:	<u>240</u>	Units:	<u>barrels/hr</u>

Detailed Description of Loading/Unloading/Dump Source: Crude oil is loaded from storage tanks into tanker trucks for transport to market. Tanker truck vapors are returned to storage tanks for destruction in the vapor combustor (FLR2).

**SCC Codes:** List all Source Classification Code(s) (SCC) that describe the process(es) performed by the emission source (e.g., 1-02-002-04).

1-00-112-01

**Potential Operating Schedule:** Provide the operating schedule for this emission unit.

Hours/day: 24  
Hours/year: 8760



Control Equipment:  Yes

If yes, please fill out and attach the appropriate Control Device and Release Point Information worksheets.

Best Available Control Technology (BACT): Was a BACT Analysis completed for this emission unit?

Yes  No

Pollutant: \_\_\_\_\_

Proposed BACT: \_\_\_\_\_

\*If yes, attach BACT Analysis with this application.

Lowest Achievable Emission Rate (LAER): Was a LAER Analysis completed for this emission unit?

Yes  No

Pollutant: \_\_\_\_\_

Proposed LAER: \_\_\_\_\_

\*If yes, attach LAER Analysis with this application.

**Federal and State Rule Applicability:**

New Source Performance Standards (NSPS):  Not Affected  Not Effectuated

*New Source Performance Standard are listed under 40 CFR 60- Standards of Performance for New Stationary Sources.*

NSPS Subpart: \_\_\_\_\_

National Emission Standards for Hazardous Air Pollutants (NESHAP Part 61):  Not Affected  Not Effectuated

*National Emissions Standards for Hazardous Air Pollutants (NESHAP Part 61) are listed under 40 CFR 61. (These include asbestos, benzene, beryllium, mercury, and vinyl chloride).*

Part 61 NESHAP Subpart: \_\_\_\_\_

National Emission Standards for Hazardous Air Pollutants (NESHAP Part 63):  Not Affected  Not Effectuated

*National Emission Standards for Hazardous Air Pollutants (NESHAP Part 63) standards are listed under 40 CFR 63*

Part 63 NESHAP Subpart: \_\_\_\_\_

Prevention of Significant Deterioration (PSD):  Not Affected  Not Affected

*These rules are found under WAQSR Chapter 6, Section 4.*

Non-Attainment New Source Review:  Not Affected  Not Affected

*These rules are found under WAQSR Chapter 6, Section 13.*



**Emissions Information-** The following tables request information needed to determine the applicable requirements and the compliance status of this emission unit with those requirements.

**Water Loadout**

Pre-Controlled Potential Emissions (tons/yr)	Efficiency Standards		Potential to Emit (lbs/hr)	Potential to Emit (tons/yr)	Basis for Determination
	Potential to Emit (PTE)	Units			

**Criteria Pollutants:**

1.)	Particulate emissions (PE/PM) (formerly particulate matter, PM)					
2.)	PM #10 microns in diameter (PE/PM10)					
3.)	PM #2.5 microns in diameter (PE/PM2.5)					
4.)	Sulfur dioxide (SO2)					
5.)	Nitrogen Oxides (NOx)					
6.)	Carbon monoxide (CO)					
7.)	Volatile organic compounds (VOC)	<b>0.04</b>		<b>0.0002</b>	<b>0</b>	<b>AP-42</b>
8.)	Lead (Pb)					
9.)	Total Hazardous Air Pollutants (HAPs)					
10.)	Fluoride (F)					
11.)	Hydrogen Sulfide (H2S)					
12.)	Mercury (Hg)					
13.)	Total Reduced Sulfur (TRS)					
14.)	Sulfuric Acid Mist (SAM)					

*\*Provide your calculations as an attachment and explain how all process variables and emissions factors were selected.*



**Hazardous Air Pollutants (HAPs) and Toxic Air Contaminants**

Pre-Controlled Potential Emissions (tons/yr)	Efficiency Standards		Potential to Emit (lbs/hr)	Potential to Emit (tons/yr)	Basis for Determination
	Potential to Emit (PTE)	Units			

**Pollutants:**

1.)					
2.)					
3.)					
4.)					
5.)					
6.)					
7.)					
8.)					

**Greenhouse Gases (GHGs)**

Pre-Controlled Potential Emissions (tons/yr)	Efficiency Standards		Potential to Emit (lbs/hr)	Potential to Emit (tons/yr)	Basis for Determination
	Potential to Emit (PTE)	Units			

**Pollutants:**

1.)					
2.)					
3.)					
4.)					
5.)					
6.)					
7.)					
8.)					



**Control Equipment:**

**Flare/Combustor**

Manufacturer: Steffes Date Installed: 4/20/2015  
Model Name and Number: LP Flare Company Control:  
SVG-3 Equipment ID: FLR01  
Company Control Equipment Description: 3" diameter x 24' high LP Flare Stack

Pollutant(s) Controlled:		<input type="checkbox"/> CO	<input type="checkbox"/> NOx	<input type="checkbox"/> Pb	<input type="checkbox"/> SO2	<input checked="" type="checkbox"/> VOC	<input type="checkbox"/> PM
<input type="checkbox"/> PM (FIL)	<input type="checkbox"/> PM Condensable	<input type="checkbox"/> PM 10 (FIL)	<input type="checkbox"/> PM 2.5 (FIL)	<input type="checkbox"/> PM 10	<input type="checkbox"/> PM 2.5		
<input checked="" type="checkbox"/> Other: <b>HAPs</b>							

Design Control Efficiency (%): 98 Capture Efficiency (%): 100  
Operating Control Efficiency (%): 98  
Flare Type: Elevated- Open Elevated Flare Type: Non-Assisted  
Ignition Device: Yes Flame Presence Sensor: Yes  
Inlet Gas Temp (F): 100 Flame Presence Type: Thermocouple  
Gas Flow Rate (acfm): 8.8 Outlet Gas Temp (F): 1850

This is the only control equipment on this air contaminant source

If not, this control equipment is:  Primary  Secondary  Parallel

List all other emission units that are also vented to this control equipment: Oil & Water Tanks, Loadout Facilities

List all release point IDs associated with this control equipment: Flare Stack 01



**Emissions Information-** The following tables request information needed to determine the applicable requirements and the compliance status of this emission unit with those requirements.

FLR01

		Efficiency Standards				
Pre-Controlled Potential Emissions (tons/yr)	Potential to Emit (PTE)	Units	Potential to Emit (lbs/hr)	Potential to Emit (tons/yr)	Basis for Determination	

**Criteria Pollutants:**

1.)	Particulate emissions (PE/PM) (formerly particulate matter, PM)					
2.)	PM #10 microns in diameter (PE/PM10)					
3.)	PM #2.5 microns in diameter (PE/PM2.5)					
4.)	Sulfur dioxide (SO <sub>2</sub> )	0		0	0	Other
5.)	Nitrogen Oxides (NO <sub>x</sub> )	0.75		0.17	0.75	Other
6.)	Carbon monoxide (CO)	0.19		0.04	0.19	Other
7.)	Volatile organic compounds (VOC)	3.78		0.86	3.78	Other
8.)	Lead (Pb)					
9.)	Total Hazardous Air Pollutants (HAPs)	0.06		0.01	0.06	Other
10.)	Fluoride (F)					
11.)	Hydrogen Sulfide (H <sub>2</sub> S)	0		0	0	Other
12.)	Mercury (Hg)					
13.)	Total Reduced Sulfur (TRS)					
14.)	Sulfuric Acid Mist (SAM)					

*\*Provide your calculations as an attachment and explain how all process variables and emissions factors were selected.*



**Hazardous Air Pollutants (HAPs) and Toxic Air Contaminants**

Pre-Controlled Potential Emissions (tons/yr)	Efficiency Standards		Potential to Emit (lbs/hr)	Potential to Emit (tons/yr)	Basis for Determination
	Potential to Emit (PTE)	Units			

**Pollutants:**

1.)					
2.)					
3.)					
4.)					
5.)					
6.)					
7.)					
8.)					

**Greenhouse Gases (GHGs)**

Pre-Controlled Potential Emissions (tons/yr)	Efficiency Standards		Potential to Emit (lbs/hr)	Potential to Emit (tons/yr)	Basis for Determination
	Potential to Emit (PTE)	Units			

**Pollutants:**

1.)					
2.)					
3.)					
4.)					
5.)					
6.)					
7.)					
8.)					



**Control Equipment:**

**Flare/Combustor**

Manufacturer: Steffes Date Installed: 4/20/2015  
Model Name and Number: HP Flare Company Control  
Number: SHP-6 Equipment ID: FLR02  
Company Control Equipment  
Description: 6" diameter x 24' high HP Flare Stack (Emergency Use)

Pollutant(s) Controlled:		<input type="checkbox"/> CO	<input type="checkbox"/> NOx	<input type="checkbox"/> Pb	<input type="checkbox"/> SO2	<input checked="" type="checkbox"/> VOC	<input type="checkbox"/> PM
<input type="checkbox"/> PM (FIL)	<input type="checkbox"/> PM Condensible	<input type="checkbox"/> PM 10 (FIL)	<input type="checkbox"/> PM 2.5 (FIL)	<input type="checkbox"/> PM 10	<input type="checkbox"/> PM 2.5		
<input checked="" type="checkbox"/> Other: <b>HAPs</b>							

Design Control Efficiency (%): 98 Capture Efficiency (%): 100

Operating Control Efficiency (%): 98

Flare Type: Elevated- Open Elevated Flare Type: Non-Assisted  
Ignition Device: Yes Flame Presence Sensor: Yes  
Inlet Gas Temp (F): 100 Flame Presence Type: Thermocouple  
Gas Flow Rate (acfm): 277 Outlet Gas Temp (F): 1850

This is the only control equipment on this air contaminant source

If not, this control equipment is:  Primary  Secondary  Parallel

List all other emission units that are also vented to this control equipment: Heater Treater for 1FH during emergency

List all release point IDs associated with this control equipment: Flare Stack 02



**Emissions Information-** The following tables request information needed to determine the applicable requirements and the compliance status of this emission unit with those requirements.

**1FH FLR02**  
Used 876 hr/yr

		Efficiency Standards			
Pre-Controlled Potential Emissions (tons/yr)	Potential to Emit (PTE)	Units	Potential to Emit (lbs/hr)	Potential to Emit (tons/yr)	Basis for Determination

**Criteria Pollutants:**

1.)	Particulate emissions (PE/PM) (formerly particulate matter, PM)					
2.)	PM #10 microns in diameter (PE/PM10)					
3.)	PM #2.5 microns in diameter (PE/PM2.5)					
4.)	Sulfur dioxide (SO2)	0		0	0	Other
5.)	Nitrogen Oxides (NOx)	1.56		0.36	1.56	Other
6.)	Carbon monoxide (CO)	0.39		0.09	0.39	Other
7.)	Volatile organic compounds (VOC)	4.3		0.98	4.3	Other
8.)	Lead (Pb)					
9.)	Total Hazardous Air Pollutants (HAPs)	0.17		0.4	0.17	Other
10.)	Fluoride (F)					
11.)	Hydrogen Sulfide (H2S)	0		0	0	Other
12.)	Mercury (Hg)					
13.)	Total Reduced Sulfur (TRS)					
14.)	Sulfuric Acid Mist (SAM)					

*\*Provide your calculations as an attachment and explain how all process variables and emissions factors were selected.*



**Hazardous Air Pollutants (HAPs) and Toxic Air Contaminants**

Pre-Controlled Potential Emissions (tons/yr)	Efficiency Standards		Potential to Emit (lbs/hr)	Potential to Emit (tons/yr)	Basis for Determination
	Potential to Emit (PTE)	Units			

**Pollutants:**

1.)					
2.)					
3.)					
4.)					
5.)					
6.)					
7.)					
8.)					

**Greenhouse Gases (GHGs)**

Pre-Controlled Potential Emissions (tons/yr)	Efficiency Standards		Potential to Emit (lbs/hr)	Potential to Emit (tons/yr)	Basis for Determination
	Potential to Emit (PTE)	Units			

**Pollutants:**

1.)					
2.)					
3.)					
4.)					
5.)					
6.)					
7.)					
8.)					



Specific Emission Unit Attributes:

### Fugitives

Company Equipment ID: FUG01  
Company Equipment Description: Fugitive Emissions: Well 1FH

Operating Status: Operating  
Initial Construction Commencement Date: \_\_\_\_\_  
Initial Operation Commencement Date: 4/20/2015  
Most Recent Construction/ Modification Commencement Date: \_\_\_\_\_

Most Recent Operation Commencement Date: \_\_\_\_\_  
**Select reason(s) for this emissions unit being included in this application (must be completed regardless of date of installation or modification):**

Reason: Construction (Greenfield/New Facility)

If reason is *Reconstruction* or *Temporary Permit* or *Other*, please explain below:

Type of Fugitive Emission: Fugitive Leaks at O&G

**SCC Codes:** List all Source Classification Code(s) (SCC) that describe the process(es) performed by the emission source (e.g., 1-02-002-04).

1-00-115-00

**Potential Operating Schedule:** Provide the operating schedule for this emission unit.  
Hours/day: 24  
Hours/year: 8760



Control Equipment:  Yes  No

If yes, please fill out and attach the appropriate Control Device and Release Point Information worksheets.

**Best Available Control Technology (BACT):** Was a BACT Analysis completed for this emission unit?

Yes  No

Pollutant: \_\_\_\_\_

Proposed BACT: \_\_\_\_\_

\*If yes, attach BACT Analysis with this application.

**Lowest Achievable Emission Rate (LAER):** Was a LAER Analysis completed for this emission unit?

Yes  No

Pollutant: \_\_\_\_\_

Proposed LAER: \_\_\_\_\_

\*If yes, attach LAER Analysis with this application.

**Federal and State Rule Applicability:**

New Source Performance Standards (NSPS):  Yes  No

*New Source Performance Standard are listed under 40 CFR 60- Standards of Performance for New Stationary Sources.*

NSPS Subpart: \_\_\_\_\_

National Emission Standards for Hazardous Air Pollutants (NESHAP Part 61):  Yes  No

*National Emissions Standards for Hazardous Air Pollutants (NESHAP Part 61) are listed under 40 CFR 61. (These include asbestos, benzene, beryllium, mercury, and vinyl chloride).*

Part 61 NESHAP Subpart: \_\_\_\_\_

National Emission Standards for Hazardous Air Pollutants (NESHAP Part 63):  Yes  No

*National Emission Standards for Hazardous Air Pollutants (NESHAP Part 63) standards are listed under 40 CFR 63*

Part 63 NESHAP Subpart: \_\_\_\_\_

Prevention of Significant Deterioration (PSD):  Yes  No

*These rules are found under WAQSR Chapter 6, Section 4.*

Non-Attainment New Source Review:  Yes  No

*These rules are found under WAQSR Chapter 6, Section 13.*



**Emissions Information-** The following tables request information needed to determine the applicable requirements and the compliance status of this emission unit with those requirements.

**FUG01**

		Efficiency Standards				
Pre-Controlled Potential Emissions (tons/yr)	Potential to Emit (PTE)	Units	Potential to Emit (lbs/hr)	Potential to Emit (tons/yr)	Basis for Determination	

**Criteria Pollutants:**

1.)	Particulate emissions (PE/PM) (formerly particulate matter, PM)					
2.)	PM #10 microns in diameter (PE/PM10)					
3.)	PM #2.5 microns in diameter (PE/PM2.5)					
4.)	Sulfur dioxide (SO2)					
5.)	Nitrogen Oxides (NOx)					
6.)	Carbon monoxide (CO)					
7.)	Volatile organic compounds (VOC)	<b>1.393</b>		<b>0.318</b>	<b>1.393</b>	<b>AP-42</b>
8.)	Lead (Pb)					
9.)	Total Hazardous Air Pollutants (HAPs)	<b>0.004</b>		<b>0.001</b>	<b>0.004</b>	<b>AP-42</b>
10.)	Fluoride (F)					
11.)	Hydrogen Sulfide (H2S)					
12.)	Mercury (Hg)					
13.)	Total Reduced Sulfur (TRS)					
14.)	Sulfuric Acid Mist (SAM)					

*\*Provide your calculations as an attachment and explain how all process variables and emissions factors were selected.*



**Hazardous Air Pollutants (HAPs) and Toxic Air Contaminants**

Pre-Controlled Potential Emissions (tons/yr)	Efficiency Standards		Potential to Emit (lbs/hr)	Potential to Emit (tons/yr)	Basis for Determination
	Potential to Emit (PTE)	Units			

**Pollutants:**

1.)					
2.)					
3.)					
4.)					
5.)					
6.)					
7.)					
8.)					

**Greenhouse Gases (GHGs)**

Pre-Controlled Potential Emissions (tons/yr)	Efficiency Standards		Potential to Emit (lbs/hr)	Potential to Emit (tons/yr)	Basis for Determination
	Potential to Emit (PTE)	Units			

**Pollutants:**

1.)					
2.)					
3.)					
4.)					
5.)					
6.)					
7.)					
8.)					



**Release Point Information:**

Complete the table below for *each* release point. Please include release point information for each emission unit. Multiple attachments may be necessary. A release point is a point at which emissions from an emission unit are released into the ambient (outside)air. List each individual release point on a separate pair of lines (release point ID and description). *For longitude and latitude, use NAD 83/WGS84 datum and 5 digits after the decimal (i.e. 41.12345, -107.56789)*

Stack Release Point Information	
Company Release Point ID: <b>FLR02</b>	Release Point Type: <input type="text" value="Vertical"/> Release Point Latitude: <u>43.40623</u> Release Point Longitude: <u>-105.33728</u>
Company Release Point Description: <b>HP Heater Treater Emergency Flare</b> (used 10% ... 876 hrs/yr)	Base Elevation (ft): <u>4919</u> Stack Height (ft): <u>24</u> Stack Diameter (ft): <u>0.5</u> Exit Gas Velocity (ft/s): _____ Exit Gas Temp (F): <u>1850</u> Exit Gas Flow Rate (acfm): _____
Company Release Point ID: <b>FLR01</b>	Release Point Type: <input type="text" value="Vertical"/> Release Point Latitude: <u>43.40623</u> Release Point Longitude: <u>-105.33728</u>
Company Release Point Description: <b>LP Oil &amp; Water Tank Flare</b> 1PH 1-4 Oil Tank Vents 1PH 1-2 Water Tank Vents	Base Elevation (ft): <u>4919</u> Stack Height (ft): <u>24</u> Stack Diameter (ft): <u>0.25</u> Exit Gas Velocity (ft/s): _____ Exit Gas Temp (F): <u>1850</u> Exit Gas Flow Rate (acfm): _____
Company Release Point ID:	Release Point Type: <input type="text"/> Release Point Latitude: _____ Release Point Longitude: _____
Company Release Point Description:	Base Elevation (ft): _____ Stack Height (ft): _____ Stack Diameter (ft): _____ Exit Gas Velocity (ft/s): _____ Exit Gas Temp (F): _____ Exit Gas Flow Rate (acfm): _____
Company Release Point ID:	Release Point Type: <input type="text"/> Release Point Latitude: _____ Release Point Longitude: _____
Company Release Point Description:	Base Elevation (ft): _____ Stack Height (ft): _____ Stack Diameter (ft): _____ Exit Gas Velocity (ft/s): _____ Exit Gas Temp (F): _____ Exit Gas Flow Rate (acfm): _____



Complete the table below for each fugitive (area, volume, line) release point. List each individual release point on a separate line.

Fugitive Release Point Information	
Company Release Point ID: <b>FUG01</b>	Release Point Latitude: <u>43.40623</u> Release Point Longitude: <u>-105.33728</u> Release Height (ft): <u>4919</u>
Company Release Point Description:	
Company Release Point ID:	Release Point Latitude: _____ Release Point Longitude: _____ Release Height (ft): _____
Company Release Point Description:	
Company Release Point ID:	Release Point Latitude: _____ Release Point Longitude: _____ Release Height (ft): _____
Company Release Point Description:	
Company Release Point ID:	Release Point Latitude: _____ Release Point Longitude: _____ Release Height (ft): _____
Company Release Point Description:	



**Stoddard 40-71-36 1FH**

**WDEQ Documents**







29. Disposition of Gas ( <i>Sold, used for fuel, vented, etc.</i> ) <p style="text-align: center;">Sold</p>			Test Witness:		
30. Summary of Porous Zones (include Aquifers): <small>Show all important zones of porosity and contents thereof: Cored intervals and all drill-stem tests, including depth interval tested, cushion used, time tool open, flowing and shut-in pressures and recoveries.</small>				31. Formation (Log) Markers: <p style="text-align: center;">Frontier</p>	
Formation	Top	Bottom	Descriptions Contents, Etc.	Name	TVD
Frontier	10560'	14560'	Oil, Gas, Water	Fox Hills Lewis Tecka Teapot Parkman Pierre Niobrara Frontier	5761' 5832' 6395' 6922' 7221' 7757' 9639' 10161'
32. Additional remarks; include plugging procedure (Req. prior approval): <p style="text-align: center;">Flowback Disposal Totals = 12,225 with 4,319 into Riehle 37-70 3-1SWD, 3,464 into Riehle 37-70 3-2SWD, 4,442 into Riehle 37-70 3-3SWD</p>					
33. Indicate which items have been attached by placing a check in the appropriate boxes:					
<input checked="" type="checkbox"/> Electrical/ Mechanical Logs (1 full set) Cased & Open hole.		<input type="checkbox"/> Geologic Report		<input type="checkbox"/> DST Report	
<input type="checkbox"/> Sundry Notice for plugging and cementing		<input type="checkbox"/> Core Analysis		<input checked="" type="checkbox"/> Directional Survey w/ Certification	
				<input checked="" type="checkbox"/> Other: <u>Plat, Form 10, Cement, BHL</u>	
34. I hereby certify that the foregoing and attached information is complete and correct as determined from all available records (see attached instructions)*					
Name (please print) <u>Gwyn Smith</u>			Title <u>Sr. Regulatory Analyst</u>		
Signature _____			Date <u>5/20/2015</u>		

### INSTRUCTIONS

If not filed prior to the time this summary record is submitted, copies of all currently available logs ( drillers, geologists, sample and core analysis, all types electric, etc.), formation and pressure tests, and directional surveys should be attached hereto, to the extent required by applicable Federal and or State laws and regulations. All attachments should be listed on this form, see space 33.

Space 4: If there are no applicable State requirements, locations on Federal or Indian land should be described in accordance with Federal requirements. Please note all Lat./ Longs. In NAD 83. Calculate all "Top of Producing Intervals" and "BHL" first as distance from the section corner, second as the Lat. /Long. Spacing orders are based on a well location in a section. Well locations must match the surveyed footages.

Space 17: Indicate elevation used for depth measurements given in other spaces on this form and in any attachments.

Space 23: " Sacks Cement " : Attached supplemental records for this well should show the details of any multiple stage cementing and the location of the cementing tool. Show how reported top(s) of cement were determined, i.e. circulated (CIR), or calculated (CAL), or cement bond log (CBL), or temperature survey (TS).

Spaces 25 and 28: If this well is completed for commingled production from more than one pool (multiple zone completion), state in space 25 and 26, and in space 25 show the producing interval, or intervals, top(s), bottom(s) and name(s) (if any) for the pools reported in space 28 through 28c. Submit a separate completion report on this form for each pool separately produced, (not commingled).

Space 27: If a well was fracture treated or stimulated, all data required in Chapter 3, Section 45 must be filed with this Completion Report.

**Space 27: If a well was fracture treated or stimulated, provide Summary Data for # of Stages, Total Slurry, Total Proppant**

Space 28: Provide well test data for each interval tested or stimulated and flowed.

Space 32: Provide frac **flowback disposal volumes and handling and disposal site.**

Space 32: Provide final annulus casing pressure.

Space 32 or Attachment: Provide all Stimulation Chemicals by Name, Type, Volumes and CAS #s.

Attach a wellbore diagram whenever possible.



STATE OF WYOMING  
OIL AND GAS CONSERVATION COMMISSION  
Office of State Oil and Gas Supervisor  
P.O. Box 2640  
Casper, Wyoming 82602

**PRODUCTION TEST AND GAS-OIL RATIO REPORT**

OPERATOR RKI EXPLORATION AND PRODUCTION		API NUMBER 49-009-29955
ADDRESS 210 PARK AVE., SUITE 900 OKLAHOMA CITY, OK 73012		WELL NAME & NUMBER STODDARD 40-71 36 A-1FH
LEASE NAME STODDARD UNIT	RESERVOIR FRONTIER	FIELD WILDCAT
LOCATION (quarter-quarter and footages): NW/NW 400' FNL 1,050' FWL Sec. 36 , Twp. 40 N , Rge. 71 W		LATITUDE: 43.406233* LONGITUDE: -105.337282* COUNTY CONVERSE

**TEST DATA**

START OF TEST-DATE 4/27/2015	TIME 12:00 PM	END OF TEST-DATE 4/28/2015	TIME 12:00 PM	DURATION OF TEST 24 HRS
TUBING PRESSURE N/A	CASING PRESSURE 1,100	SEPARATOR PRESSURE 120	SEPARATOR TEMP. 125°F	CHOKE SIZE 20/64
OIL PRODUCTION DURING TEST 704.31 bbls.	GAS PRODUCTION DURING TEST 758.20 MCF		WATER PRODUCTION DURING TEST 781.72 bbls.	
OIL GRAVITY 43.6 *API	PRODUCING METHOD (Flowing, pumping, gas lift, etc.) FLOWING			

**GAS PRODUCTION**

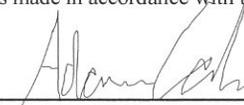
METER MANUFACTURER TOTAL FLOW	ORIFICE WELL TESTER <input checked="" type="checkbox"/>
Flange Tap <input checked="" type="checkbox"/> PIPE TAP <input type="checkbox"/> L-10 <input type="checkbox"/>	CRITICAL FLOW PROVER <input type="checkbox"/>
ORIFICE DIAMETER 1	PIPE DIAMETER (Inside dia.) 2.067
DIFFERENTIAL PRESSURE RANGE 0-400	ORIFICE DIAMETER 1
GAS GRAVITY (Air-1.0) 0.91872 Meas. <input checked="" type="checkbox"/> Est. <input type="checkbox"/>	MAX. STATIC PRESSURE RANGE 0-1500
DIFFERENTIAL NO FLOW READING 0.064	PIPE DIAMETER 2
DIFFERENTIAL 180	FLOWING, TEMPERATURE 110°F
	GAS GRAVITY (Air-1.0) 0.91872 Meas. <input checked="" type="checkbox"/> Est. <input type="checkbox"/>
	STATIC NO FLOW READING 12.516
	24 HOUR COEFFICIENT N/A
	STATIC 67
	PRESSURE: (Indicate Units) PSIG

**TEST RESULTS**

DAILY OIL 704 bbls.	DAILY WATER 782 bbls.	DAILY GAS 758.2 MCF	GAS-OIL RATIO 1076.51 SCF/STB
------------------------	--------------------------	------------------------	----------------------------------

I hereby, swear or affirm that the statements herein made are complete and correct, and that the test described was made in accordance with the rules, regulations and Instructions of the Wyoming Oil and Gas Conservation Commission.

SIGNATURE



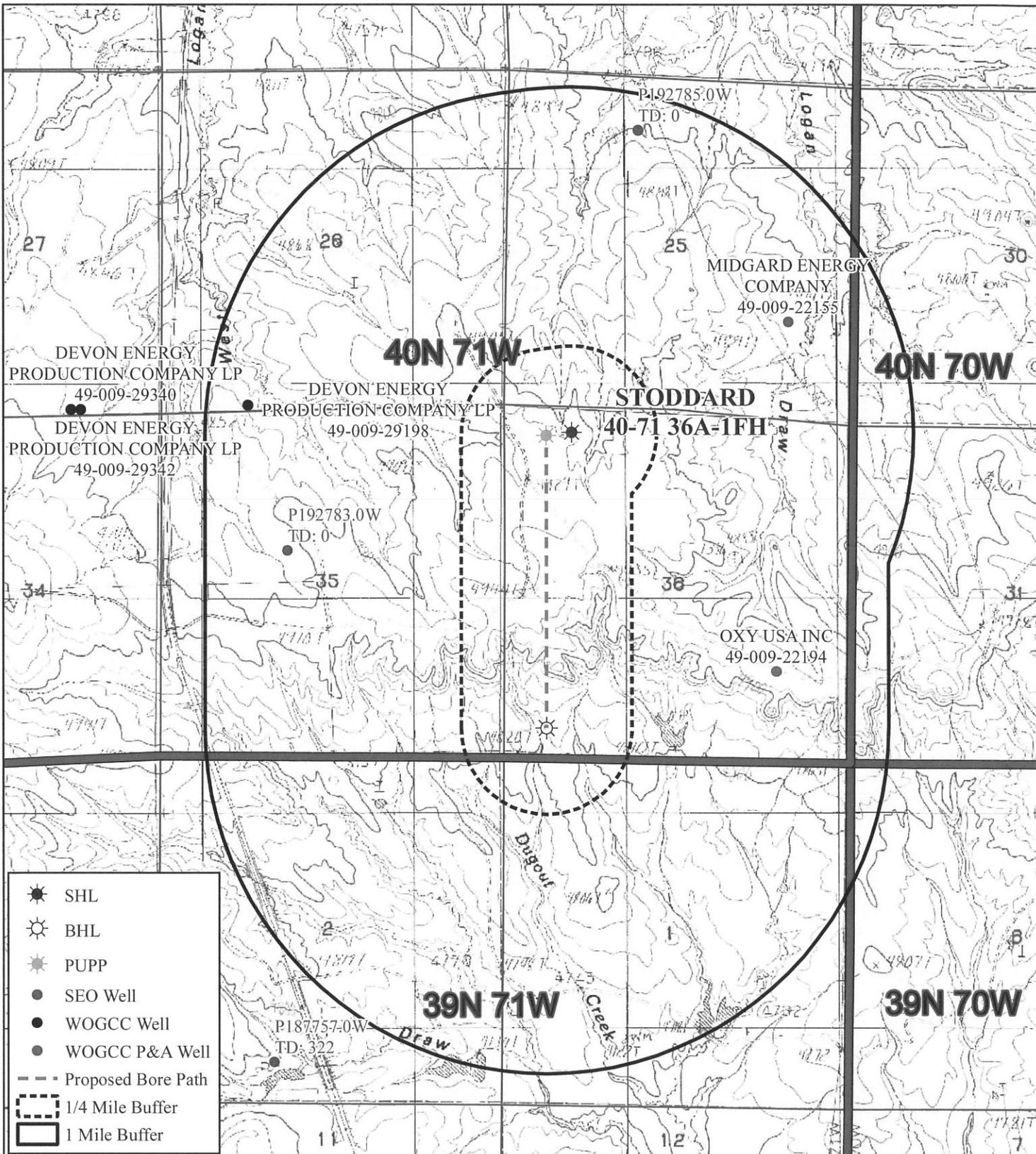
TITLE

SR. PRODUCTION ENGINEER

DATE

5/14/2015





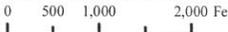
-  SHL
-  BHL
-  PUPP
-  SEO Well
-  WOGCC Well
-  WOGCC P&A Well
-  Proposed Bore Path
-  1/4 Mile Buffer
-  1 Mile Buffer

1	1/20/2015	Updated PUPP & BHL locations	MDR	OTM	JDB	
0	8/4/2014	Issued for client review	JDB	OTM	DLH	
Rev.	Date	Description	By	Proj. Engr.	Checked	Rev. Request

Client: RKI Exploration & Production, LLC  
 210 Park Ave  
 Suite 900  
 Oklahoma City, OK 73102

Prepared By: Wood Group PSN -  
**WOOD GROUP**  
 Project & Asset Management  
 2615 Aviation Dr  
 Sheridan, WY 82801  
 (307) 675-6400 - www.woodgroup.com

MAP C  
 STODDARD  
 40-71 36A-1FH  
 SEC. 36 T40N, R71W  
 CONVERSE COUNTY, WY

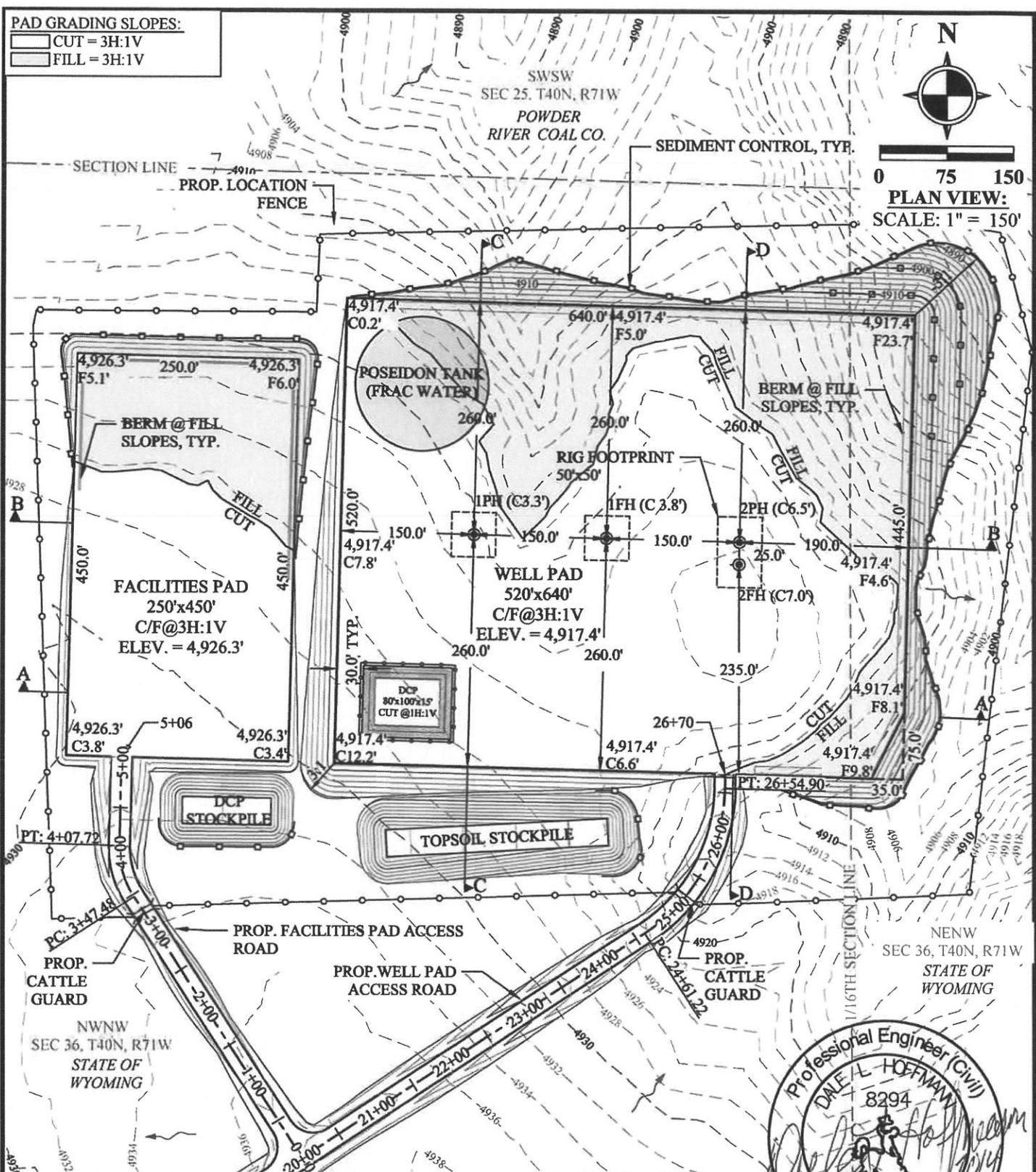
Client PM: R. Briscoe	743918	Drawn: JDB	Checked: JDB	Approval: BC	Date: 1/20/2015	Sheet: 1 OF 1	Rev: 1
-----------------------	--------	------------	--------------	--------------	-----------------	---------------	--------



**PAD GRADING SLOPES:**  
 [Symbol] CUT = 3H:1V  
 [Symbol] FILL = 3H:1V



**PLAN VIEW:**  
 SCALE: 1" = 150'



0	8/8/14	Issued for client review	JSB	OTM	DLH	---
Rev.	Date	Description	By	Proj. Engr.	Checked	Rev. Request

**Client:**  
 RKI Exploration & Production, LLC  
 210 Park Avenue  
 Suite 900  
 Oklahoma City, OK 73102

**Prepared By:**  
**WOOD GROUP**  
 Wood Group PSN - Project & Asset Management  
 2615 Aviation Dr. Sheridan, WY  
 8 2 8 0 1  
 (307) 675-6400  
 www.woodgroup.com

**STODDARD**  
 40-71 36A-1,2PH-1,2FH  
 ENGINEERED WELL PAD DESIGN  
 SEC 40, T71N, R36W  
 CONVERSE COUNTY, WY

Land Agent: R. Briscoe	743918	Drawn: JSB	Checked: DLH	Approval: BC	Date: 8/8/14	Sheet: 3 OF 5	Rev: 0
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G:\Engineering\W60\STODDARD 40-71 36A-1,2PH-1,2FH\CIVIL\STODDARD 40-71 36A-1,2PH-1,2FH EWRD (REV 0).dwg 8-08-14 01:17:40 PM Owen.Mullinax





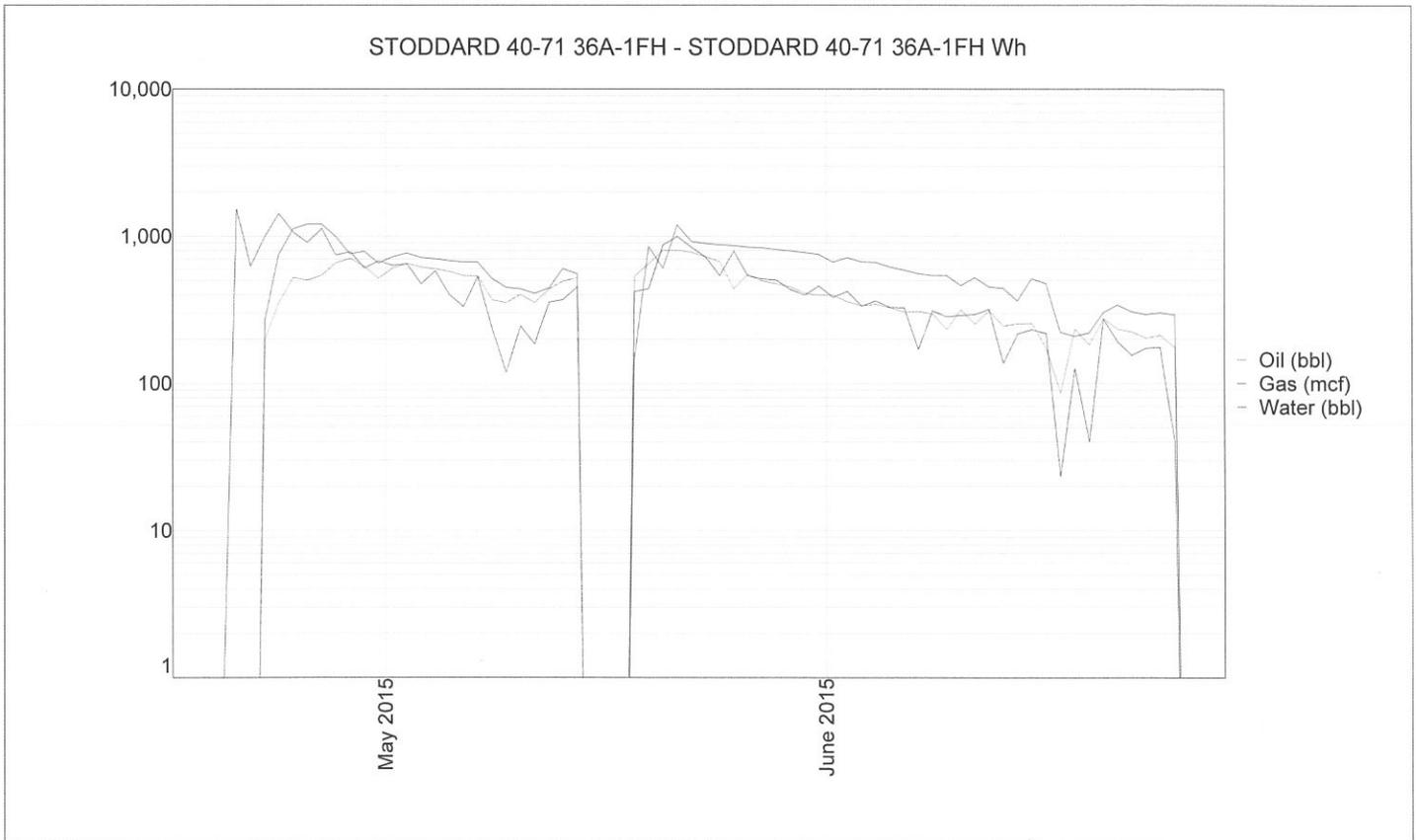
# Daily Production Report

## STODDARD 40-71 36A-1FH - STODDARD 40-71 36A-1FH Wh

Selected Time Frame: 05/18/2015 - 06/16/2015

Date: 6/29/2015

Time: 8:37 AM



### Daily Production

Date	Oil	Gas	Water
06/16/2015	173.37	477	218.32
06/15/2015	255.47	516	231.64
06/14/2015	254.22	363	216.68
06/13/2015	245.47	444	136.67
06/12/2015	310.90	452	318.32
06/11/2015	252.97	524	293.34
06/10/2015	316.73	462	290.01
06/09/2015	232.55	540	283.34
06/08/2015	296.73	540	311.65
06/07/2015	308.40	557	169.98
06/06/2015	305.06	587	326.68
06/05/2015	327.15	618	328.32
06/04/2015	344.65	664	363.35
06/03/2015	336.73	669	334.99
06/02/2015	359.24	715	421.67
06/01/2015	397.58	665	383.31
05/31/2015	396.75	751	458.35
05/30/2015	409.67	774	398.35
05/29/2015	451.76	794	433.32
05/28/2015	475.51	811	503.33
05/27/2015	496.77	835	513.33

### Notes

<DT> = Down Time

<GM> = Gas Meter





# Daily Production Report

## STODDARD 40-71 36A-1FH - STODDARD 40-71 36A-1FH Wh

Selected Time Frame: 05/18/2015 - 06/16/2015

Date: 6/29/2015

Time: 8:37 AM

### Daily Production

Date	Oil	Gas	Water
05/26/2015	549.28	842	536.67
05/25/2015	439.25	863	790.01
05/24/2015	670.97	875	539.96
05/23/2015	726.81	893	721.69
05/22/2015	776.82	923	840.02
05/21/2015	801.41	1,189	994.97
05/20/2015	799.74	606	871.69
05/19/2015	650.13	848	439.99
05/18/2015	533.44	149	420.03
Total:	12,895.50	19,943	13,089.99
Average:	429.85	665	436.33

### Notes

<DT> = Down Time

<GM> = Gas Meter

0.6 X AVE

258

399

262

INSTALLED ESP 5/17/15...



**RKI Exploration & Production, LLC**  
**Stoddard 40-71-36 1FH**  
 nw nw 36, T40N, R71W  
 Converse County, Wyoming

**Heater Treater (HTR01)**

Run time (hrs): 8,760  
 Burner Size: 0.500 MMBtu/hr  
 Fuel Heat Value: 1,020 btu/scf

		Potential Emissions (tpy)									
		NOx	CO	VOC	SO2	PM10	H2S	HAPs	CO2	Methane	N2O
HTR-1		0.21	0.18	0.01	0.00	0.02	0.00	0.00	257.65	0.00	0.00

		Potential Emissions (lb/hr)									
		NOx	CO	VOC	SO2	PM10	H2S	HAPs	CO2	Methane	N2O
HTR-1		0.049	0.041	0.001	0.00	0.004	0.000	0.000	58.8235294	0.00112745	0.00107843

Emission Factors (AP42 1.4 - Natural Gas Combustion)

	lb/MMscf	lb/MMBtu	
NOx	100	0.09803922	AP-42 Table 1.4-1
CO	84	0.08235294	AP-42 Table 1.4-1
VOC	5.5	0.00539216	AP-42 Table 1.4-2
PM	7.6	0.00745098	AP-42 Table 1.4-2
SO2	0.60	0.00058824	AP-42 Table 1.4-2
CO2	120000	117.647059	AP-42 Table 1.4-2
Methane	2.3	0.0022549	AP-42 Table 1.4-2
N2O	2.2	0.00215686	AP-42 Table 1.4-2



\*\*\*\*\*

\* Project Setup Information \*

\*\*\*\*\*

Project File : M:\Users\JIngerson\Wyoming Air Applications\Stoddard 40-71-36 1FH\Water Flash.
Flowsheet Selection : Oil Tank with Separator
Calculation Method : RVP Distillation
Control Efficiency : 98.0%
Known Separator Stream : Low Pressure Oil
Entering Air Composition : No

Filed Name : Stoddard
Well Name : Stoddard 40-71-36 1FH Water Tank Flash w/ 1% Oil
Well ID : 49-009-29955
Permit Number : WDEQ Application Submittal
Date : 2015.07.13

\*\*\*\*\*

\* Data Input \*

\*\*\*\*\*

Separator Pressure : 50.00[psig]
Separator Temperature : 125.00[F]
Ambient Pressure : 12.14[psia]
Ambient Temperature : 55.00[F]
C10+ SG : 0.8237
C10+ MW : 235.03

-- Low Pressure Oil -----

Table with 3 columns: No., Component, mol %. Rows include H2S, O2, CO2, N2, C1, C2, C3, i-C4, n-C4, i-C5, n-C5, C6, C7, C8, C9, C10+, Benzene, Toluene, E-Benzene, Xylenes, n-C6, 224Trimethylp.

-- Sales Oil -----

Production Rate : 2.6[bbbl/day]
Days of Annual Operation : 365 [days/year]
API Gravity : 43.6
Reid Vapor Pressure : 5.50[psia]

\*\*\*\*\*

\* Calculation Results \*

\*\*\*\*\*

-- Emission Summary -----

Item Uncontrolled Uncontrolled Controlled Controlled



	[ton/yr]	[lb/hr]	[ton/yr]	[lb/hr]
Total HAPs	0.030	0.007	0.001	0.000
Total HC	2.869	0.655	0.057	0.013
VOCs, C2+	2.822	0.644	0.056	0.013
VOCs, C3+	2.567	0.586	0.051	0.012

Uncontrolled Recovery Info.

Vapor	128.0700	x1E-3	[MSCFD]
HC Vapor	126.7600	x1E-3	[MSCFD]
GOR	49.26		[SCF/bbl]

-- Emission Composition -----

No	Component	Uncontrolled [ton/yr]	Uncontrolled [lb/hr]	Controlled [ton/yr]	Controlled [lb/hr]
1	H2S	0.000	0.000	0.000	0.000
2	O2	0.000	0.000	0.000	0.000
3	CO2	0.008	0.002	0.008	0.002
4	N2	0.012	0.003	0.012	0.003
5	C1	0.046	0.011	0.001	0.000
6	C2	0.255	0.058	0.005	0.001
7	C3	1.292	0.295	0.026	0.006
8	i-C4	0.259	0.059	0.005	0.001
9	n-C4	0.629	0.144	0.013	0.003
10	i-C5	0.146	0.033	0.003	0.001
11	n-C5	0.141	0.032	0.003	0.001
12	C6	0.033	0.008	0.001	0.000
13	C7	0.026	0.006	0.001	0.000
14	C8	0.008	0.002	0.000	0.000
15	C9	0.001	0.000	0.000	0.000
16	C10+	0.000	0.000	0.000	0.000
17	Benzene	0.002	0.000	0.000	0.000
18	Toluene	0.004	0.001	0.000	0.000
19	E-Benzene	0.000	0.000	0.000	0.000
20	Xylenes	0.001	0.000	0.000	0.000
21	n-C6	0.023	0.005	0.000	0.000
22	224Trimethylp	0.002	0.000	0.000	0.000
	Total	2.888	0.659	0.058	0.013

-- Stream Data -----

No.	Component	MW	LP Oil mol %	Flash Oil mol %	Sale Oil mol %	Flash Gas mol %	W&S Gas mol %	Total Emissions mol %
1	H2S	34.80	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	O2	32.00	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3	CO2	44.01	0.0238	0.0102	0.0000	0.6908	0.1745	0.3080
4	N2	28.01	0.0555	0.0034	0.0000	2.6094	0.0589	0.7182
5	C1	16.04	0.3630	0.0676	0.0000	14.8525	1.1571	4.6976
6	C2	30.07	1.0631	0.6174	0.0006	22.9266	10.5506	13.7501
7	C3	44.10	3.9325	3.3199	0.2818	33.9871	52.2463	47.5259
8	i-C4	58.12	1.2921	1.2244	0.7953	4.6117	8.1361	7.2250
9	n-C4	58.12	5.1099	4.9523	4.0690	12.8412	19.1786	17.5402
10	i-C5	72.15	3.1839	3.1888	3.1762	2.9432	3.3923	3.2762
11	n-C5	72.15	4.2937	4.3222	4.3877	2.8954	3.2671	3.1710
12	C6	86.16	3.2020	3.2554	3.4176	0.5801	0.6442	0.6276
13	C7	100.20	7.1390	7.2763	7.6999	0.4037	0.4537	0.4408
14	C8	114.23	6.3438	6.4710	6.8652	0.1057	0.1211	0.1172
15	C9	128.28	2.6286	2.6819	2.8473	0.0142	0.0176	0.0167
16	C10+	235.03	53.7695	54.8655	58.2724	0.0001	0.0001	0.0001
17	Benzene	78.11	0.3106	0.3161	0.3329	0.0404	0.0450	0.0438
18	Toluene	92.13	1.8976	1.9350	2.0506	0.0644	0.0730	0.0708
19	E-Benzene	106.17	0.5650	0.5764	0.6118	0.0059	0.0068	0.0066
20	Xylenes	106.17	1.5237	1.5545	1.6500	0.0137	0.0159	0.0153
21	n-C6	86.18	2.8280	2.8776	3.0292	0.3924	0.4372	0.4256
22	224Trimethylp	114.24	0.4747	0.4839	0.5125	0.0212	0.0238	0.0231
	MW		164.69	167.21	174.56	41.14	48.84	46.85
	Stream Mole Ratio		1.0000	0.9800	0.9227	0.0200	0.0573	0.0773
	Heating Value	[BTU/SCF]				2295.46	2762.24	2641.57
	Gas Gravity	[Gas/Air]				1.42	1.69	1.62



---

Bubble Pt. @ 100F	[psia]	39.65	20.52	6.29
RVP @ 100F	[psia]	16.29	12.62	5.56
Spec. Gravity @ 100F		0.720	0.722	0.725



\*\*\*\*\*  
 \* Project Setup Information \*

\*\*\*\*\*  
 Project File : M:\Users\JIngerson\Wyoming Air Applications\Stoddard 40-71-36 1FH\Oil Flash.ep  
 Flowsheet Selection : Oil Tank with Separator  
 Calculation Method : RVP Distillation  
 Control Efficiency : 98.0%  
 Known Separator Stream : Low Pressure Oil  
 Entering Air Composition : No

Filed Name : Stoddard  
 Well Name : Stoddard 40-71-36 1FH Oil Tank Flash  
 Well ID : 49-009-29955  
 Permit Number : WDEQ Application Submittal  
 Date : 2015.07.13

\*\*\*\*\*  
 \* Data Input \*

Separator Pressure : 50.00[psig]  
 Separator Temperature : 125.00[F]  
 Ambient Pressure : 12.14[psia]  
 Ambient Temperature : 55.00[F]  
 C10+ SG : 0.8237  
 C10+ MW : 235.03

-- Low Pressure Oil -----

No.	Component	mol %
1	H2S	0.0000
2	O2	0.0000
3	CO2	0.0238
4	N2	0.0555
5	C1	0.3630
6	C2	1.0631
7	C3	3.9325
8	i-C4	1.2921
9	n-C4	5.1099
10	i-C5	3.1839
11	n-C5	4.2937
12	C6	3.2020
13	C7	7.1390
14	C8	6.3438
15	C9	2.6286
16	C10+	53.7695
17	Benzene	0.3106
18	Toluene	1.8976
19	E-Benzene	0.5650
20	Xylenes	1.5237
21	n-C6	2.8280
22	224Trimethylp	0.4747

-- Sales Oil -----

Production Rate : 258[bb1/day]  
 Days of Annual Operation : 365 [days/year]  
 API Gravity : 43.6  
 Reid Vapor Pressure : 5.50[psia]

\*\*\*\*\*  
 \* Calculation Results \*

-- Emission Summary -----

Item Uncontrolled Uncontrolled Controlled Controlled



	[ton/yr]	[lb/hr]	[ton/yr]	[lb/hr]
Total HAPs	3.160	0.721	0.063	0.014
Total HC	284.650	64.989	5.693	1.300
VOCs, C2+	280.038	63.936	5.601	1.279
VOCs, C3+	254.735	58.159	5.095	1.163

Uncontrolled Recovery Info.

Vapor	12.7100	[MSCFD]
HC Vapor	12.5800	[MSCFD]
GOR	49.26	[SCF/bbl]

-- Emission Composition -----

No	Component	Uncontrolled [ton/yr]	Uncontrolled [lb/hr]	Controlled [ton/yr]	Controlled [lb/hr]
1	H2S	0.000	0.000	0.000	0.000
2	O2	0.000	0.000	0.000	0.000
3	CO2	0.830	0.189	0.830	0.189
4	N2	1.231	0.281	1.231	0.281
5	C1	4.612	1.053	0.092	0.021
6	C2	25.303	5.777	0.506	0.116
7	C3	128.254	29.282	2.565	0.586
8	i-C4	25.699	5.867	0.514	0.117
9	n-C4	62.391	14.245	1.248	0.285
10	i-C5	14.466	3.303	0.289	0.066
11	n-C5	14.001	3.197	0.280	0.064
12	C6	3.226	0.737	0.065	0.015
13	C7	2.617	0.597	0.052	0.012
14	C8	0.796	0.182	0.016	0.004
15	C9	0.126	0.029	0.003	0.001
16	C10+	0.001	0.000	0.000	0.000
17	Benzene	0.210	0.048	0.004	0.001
18	Toluene	0.399	0.091	0.008	0.002
19	E-Benzene	0.043	0.010	0.001	0.000
20	Xylenes	0.100	0.023	0.002	0.000
21	n-C6	2.245	0.513	0.045	0.010
22	224Trimethylp	0.162	0.037	0.003	0.001
	Total	286.712	65.459	5.734	1.309

-- Stream Data -----

No.	Component	MW	LP Oil mol %	Flash Oil mol %	Sale Oil mol %	Flash Gas mol %	W&S Gas mol %	Total Emissions mol %
1	H2S	34.80	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	O2	32.00	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3	CO2	44.01	0.0238	0.0102	0.0000	0.6908	0.1745	0.3080
4	N2	28.01	0.0555	0.0034	0.0000	2.6094	0.0589	0.7182
5	C1	16.04	0.3630	0.0676	0.0000	14.8525	1.1571	4.6976
6	C2	30.07	1.0631	0.6174	0.0006	22.9266	10.5506	13.7501
7	C3	44.10	3.9325	3.3199	0.2818	33.9871	52.2463	47.5259
8	i-C4	58.12	1.2921	1.2244	0.7953	4.6117	8.1361	7.2250
9	n-C4	58.12	5.1099	4.9523	4.0690	12.8412	19.1786	17.5402
10	i-C5	72.15	3.1839	3.1888	3.1762	2.9432	3.3923	3.2762
11	n-C5	72.15	4.2937	4.3222	4.3877	2.8954	3.2671	3.1710
12	C6	86.16	3.2020	3.2554	3.4176	0.5801	0.6442	0.6276
13	C7	100.20	7.1390	7.2763	7.6999	0.4037	0.4537	0.4408
14	C8	114.23	6.3438	6.4710	6.8652	0.1057	0.1211	0.1172
15	C9	128.28	2.6286	2.6819	2.8473	0.0142	0.0176	0.0167
16	C10+	235.03	53.7695	54.8655	58.2724	0.0001	0.0001	0.0001
17	Benzene	78.11	0.3106	0.3161	0.3329	0.0404	0.0450	0.0438
18	Toluene	92.13	1.8976	1.9350	2.0506	0.0644	0.0730	0.0708
19	E-Benzene	106.17	0.5650	0.5764	0.6118	0.0059	0.0068	0.0066
20	Xylenes	106.17	1.5237	1.5545	1.6500	0.0137	0.0159	0.0153
21	n-C6	86.18	2.8280	2.8776	3.0292	0.3924	0.4372	0.4256
22	224Trimethylp	114.24	0.4747	0.4839	0.5125	0.0212	0.0238	0.0231
	MW		164.69	167.21	174.56	41.14	48.84	46.85
	Stream Mole Ratio		1.0000	0.9800	0.9227	0.0200	0.0573	0.0773
	Heating Value	[BTU/SCF]				2295.46	2762.24	2641.57
	Gas Gravity	[Gas/Air]				1.42	1.69	1.62



Bubble Pt. @ 100F	[psia]	39.65	20.52	6.29
RVP @ 100F	[psia]	16.29	12.62	5.56
Spec. Gravity @ 100F		0.720	0.722	0.725



RKI Exploration & Production, LLC  
 Stoddard 40-71-36 1FH  
 nw nw 36, T40N, R71W  
 Converse County, Wyoming

Oil Loadout

Source ID Number: OIL LOAD-1  
 Name: Oil Truck Loadout  
 Model: Liquid Loading

Liquid Temperature (°F): 55  
 Vapor Pressure (psia): 5.56  
 Hours Per Day: 24  
 Load Frequency (trucks/yr): 396

Throughput Value (gal/yr): 3955140  
 Molecular Weight (lb/lb-mole): 26.49  
 Saturation Factor: 0.6  
 Days Per Year: 365  
 Load Duration (min/truck): 60.00

Loading Loss (lb/1000 gal) =  $(12.46 * S * P * M) / T$  (AP-42 Section 5.2 (1/95)) where:

S = Saturation Factor = dedicated normal service  
 P = True Vapor Pressure of liquid loaded\*, psia  
 M = Molecular Weight of Vapors, lb/lb-mole  
 T = Temp. of bulk liquid loaded, deg. F + 460)

Loading Loss (lb VOC/1000 gal) = 2.14 lb/1000 gal

Pollutant	Uncontrolled Emissions		Estimated Emissions		Source of Emission Factor
	Loading Loss (lb/1000 gal)	Throughput (gal/yr)	(lb/yr)	(tpy)	
VOC	2.14	3955140	8456.98	4.23	AP42
			0.9654	lb/hr	

Pollutant	Controlled Emissions		Estimated Emissions		Source of Emission Factor
	Loading Loss (lb/1000 gal)	Throughput (gal/yr)	(lb/yr)	(tpy)	
VOC	0.04	3955140	169.14	0.08	Combustor specs
			0.0193	lb/hr	



**RKI Exploration & Production, LLC**  
**Patsy Draw 38-72-33 1FH**  
**nw ne 33, T38N, R72W**  
**Converse County, Wyoming**

**Water Loadout**

Source ID Number: WATER LOAD-1  
 Name: Water Truck Loadout

Throughput Value (gal/yr): 40,165 (assumed 1% oil in water is source of emissions)

Liquid Temperature (°F): 55  
 Vapor Pressure (psia): 5.56  
 Hours Per Day: 24  
 Load Frequency (trucks/yr): 5  
 Molecular Weight (lb/lb-mole): 26.49  
 Saturation Factor: 0.6  
 Days Per Year: 365  
 Load Duration (min/truck): 60.00

Loading Loss (lb/1000 gal) =  $(12.46 * S * P * M) / T$  (AP-42 Section 5.2 (1/95)) where:

S = Saturation Factor = dedicated normal service  
 P = True Vapor Pressure of liquid loaded\*, psia  
 M = Molecular Weight of Vapors, lb/lb-mole  
 T = Temp. of bulk liquid loaded, deg. R = (deg. F + 460)

Loading Loss (lb VOC/1000 gal) = 2.14 lb/1000 gal

**Uncontrolled Emissions**

Pollutant	Loading Loss (lb/1000 gal)	Throughput (gal/yr)	Estimated Emissions (lb/yr)	Source of Emission Factor
VOC	2.14	40165	85.88	AP42
			0.0098 lb/yr	

**Controlled Emissions**

Pollutant	Loading Loss (lb/1000 gal)	Throughput (gal/yr)	Estimated Emissions (lb/yr)	Source of Emission Factor
VOC	0.04	40165	1.72	Combustor specs
			0.0002 lb/yr	



RKI Exploration & Production, LLC

LP Flare

Stoddard 40-71-36 1FH

Equipment ID: FLR-1  
 Source Description: Low Pressure Flare for Tank Emissions  
 Make/Model: Steffes SVG-3 Low Pressure Flare

Pilot: Spark  
 Tank Gas HV: 2,295 Btu/scf (inlet gas stream)  
 Gas Fuel: 530 scf/hr from tank vent  
 NMNE VOC Gas wt: 30.86 lb/lb-mol  
 Gas HAP Gas wt: 0.47 lb/lb-mol

VOC Destruction Efficiency: 98%

Potential Emissions from Facility Flare Emissions

Pollutant	Emission Factor		Nominal Rating (hp)	Hrs of Operation (hrs/yr)	Estimated Emissions		Source of Emission Factor
	(lb/MMBtu)	(g/hp-hr)			Maximum (lb/hr)	Total (tpy)	
NOx	0.140	--	NA	8760	0.17	0.75	C6 S2 Guidance
CO	0.035	--	NA	8760	0.04	0.19	C6 S2 Guidance
Total NMNE VOC	--	--	NA	8760	0.86	3.78	Gas Analysis
HAPs	--	--	NA	8760	0.01	0.06	Gas Analysis
H2S	0.32	--	NA	8760	0.000	0.00	Gas Analysis
SO2	0.00	--	NA	8760	0.00	0.00	Gas Analysis
Carbon Dioxide	116.6	-	NA	8760	141.88	621.4	Subpart C Default
Methane	0.0022	-	NA	8760	0.00	0.01	Subpart C Default

106.492(1)(D) Checklist Calculation

Heat Release (Btu/hr): 1,216,350.00  
 Allowable Minimum: 0.00  
 Does Heat Release Meet 492 Re: Yes

60.18 Maximum Velocity Calculation

Flare gas Heat Value: 2.42 Megajoules/scf  
 Net Heating Value (HT): 85.5 MJ/scm

40 CFR §60.18(f)(6): The maximum permitted velocity, Vmax (m/sec), for air-assisted flares shall be determined by the following equation: Vmax=8.706+0.7084 (HT) Vmax (per 60.18) 227.3 ft/sec



**RKI Exploration & Production, LLC**

**HP Flare**

**Stoddard 40-71-36 1FH**

Equipment ID: FLR-2  
 Source Description: High Pressure Flare for Separator/HT/Emergency Emissions  
 Make/Model: Steffes SHP-6 High Pressure Flare

Pilot: Spark  
 Separator Gas HV: **1,531** Btu/scf (inlet gas stream)  
 Gas Fuel: **16,625** scf/hr from Separator & H/T vents (Only when gathering system is down - assume 10%)  
 NMNE VOC Gas wt: 11.21 lb/lb-mol  
 Gas HAP Gas wt: 0.45 lb/lb-mol

VOC Destruction Efficiency: **98%**

**Potential Emissions from Facility Flare Emissions**

Pollutant	Emission Factor		Nominal Rating (hp)	Hrs of Operation (hrs/yr)	Estimated Emissions		Source of Emission Factor
	(lb/MMBtu)	(g/hp-hr)			Maximum (lb/hr)	Total (tpy)	
NOx	0.140	--	NA	876	3.56	1.56	C6 S2 Guidance
CO	0.035	--	NA	876	0.89	0.39	C6 S2 Guidance
Total NMNE VOC	--	--	NA	876	9.82	4.30	Gas Analysis
HAPs	--	--	NA	876	0.40	0.17	Gas Analysis
H2S	0.32	--	NA	876	0.000	0.00	Gas Analysis
SO2	0.00	--	NA	876	0.00	0.00	Gas Analysis
Carbon Dioxide	116.6	-	NA	876	2968.93	1300.4	Subpart C Default
Methane	0.0022	-	NA	876	0.06	0.02	Subpart C Default

**106.492(1)(D) Checklist Calculation**

Heat Release (Btu/hr) 25,452,875.00  
 Allowable Minimum 0.00  
 Does Heat Release Meet 492 Re **Yes**

**60.18 Maximum Velocity Calculation**

Flare gas Heat Value 1.62 Megajoules/scf  
 Net Heating Value (HT) 57.0 MJ/scm

40 CFR §60.18(f)(6): The maximum permitted velocity, Vmax (m/sec), for air-assisted flares shall be determined by the following equation: Vmax=8.706+0.7084 (HT) Vmax (per 60.18) **161.1 ft/sec**



RKI Exploration & Production, LLC  
 Robbins Unit 39-72-4 Pad Well 1FH  
 ne nw 46, T39N, R72W  
 Converse County, Wyoming

RKI Exploration & Production, LLC  
 Stoddard 40-71-36 1FH  
 nw nw 36, T40N, R71W  
 Converse County, Wyoming

**Fugitive Emissions (FUG-1)**

Uncontrolled Emissions

Wt Percent Gas: 100.00 AMR Gas Analysis of 4/27/2015 and C6+ Breakout Analysis  
 Wt Percent HC: 97.00 AMR Gas Analysis of 4/27/2015 and C6+ Breakout Analysis  
 Wt Percent VOC: 42.30 AMR Gas Analysis of 4/27/2015 and C6+ Breakout Analysis  
 Wt Percent HAPs: 2.48 AMR Gas Analysis of 4/27/2015 and C6+ Breakout Analysis

Equipment Type	Gas Leak EF lb/hr/source	Source Count	Percent HC	Percent VOC	Percent HAPs	Operated Hours	Gas Rate lb/hr	Leak Rate in Tons Per Year			
								Gas Rate tpy	HC Rate tpy	VOC Rate tpy	HAPs Rate tpy
Valves	0.005420	75	97.00	42.30	2.48	8,760	0.3943	1.727	1.675	0.731	0.002
Flanges	0.000241	118	97.00	42.30	2.48	8,760	0.0276	0.121	0.117	0.051	0.000
Connectors	0.000458	124	97.00	42.30	2.48	8,760	0.0551	0.241	0.234	0.102	0.000
Other	0.016666	17	97.00	42.30	2.48	8,760	0.2748	1.204	1.168	0.509	0.001
Open Ended Lines	0.003080	-	97.00	42.30	2.48	8,760	-	-	-	-	-
Pumps	0.028750	-	97.00	42.30	2.48	8,760	-	-	-	-	-
Totals							0.752	3.293	3.194	1.393	0.004

Notes: Oil and Gas Production Operations leak emissions factors from EPA 453/R-95-017.



RKI Exploration & Production, LLC  
 Stoddard 40-71-36 1FH  
 nw nw 36, T40N, R71W  
 Converse County, Wyoming

Flash Gas Component Analysis

Oil Tank Flash Gas Analysis from E&P TANKS 2.0 Run (07/21/2015)

Component	(1) mol %	(2) mol fraction	(3) Comp MW	(4) Gas MW	(5) HC MW	(6) VOC MW	(7) HAP MW
H2S	-	-	34.08	-	-	-	-
O2	-	-	32.00	-	-	-	-
CO2	0.6908	0.0069	44.01	0.3040	-	-	-
N2	2.6094	0.0261	28.01	0.7310	-	-	-
C1	14.8528	0.1485	16.04	2.3827	2.3827	-	-
C2	22.9266	0.2293	30.07	6.8938	6.8938	-	-
C3	33.9871	0.3399	44.10	14.9870	14.9870	14.9870	-
i-C4	4.6117	0.0461	58.12	2.6804	2.6804	2.6804	-
n-C4	12.8412	0.1284	58.12	7.4636	7.4636	7.4636	-
i-C5	2.9432	0.0294	72.15	2.1235	2.1235	2.1235	-
n-C5	2.8954	0.0290	72.15	2.0890	2.0890	2.0890	-
C6	0.5801	0.0058	86.18	0.4999	0.4999	0.4999	-
C7	0.4037	0.0040	100.20	0.4045	0.4045	0.4045	-
C8	0.1057	0.0011	114.23	0.1207	0.1207	0.1207	-
C9	0.0142	0.0001	128.26	0.0182	0.0182	0.0182	-
C10+	0.0001	0.0000	142.28	0.0001	0.0001	0.0001	-
Benzene	0.0404	0.0004	78.11	0.0316	0.0316	0.0316	0.0316
Toluene	0.0644	0.0006	92.14	0.0593	0.0593	0.0593	0.0593
E-Benzene	0.0059	0.0001	106.17	0.0063	0.0063	0.0063	0.0063
Xylenes	0.0137	0.0001	106.17	0.0145	0.0145	0.0145	0.0145
n-C6	0.3924	0.0039	86.18	0.3382	0.3382	0.3382	0.3382
224 Trimethylpentane	0.0212	0.0002	114.24	0.0242	0.0242	0.0242	0.0242
Totals	100.0000	1.0000		41.1725	40.1375	30.8610	0.4741

Wt % HC: 97.49  
 Wt % VOCs: 74.96  
 Wt % HAPs: 1.15



RKI Exploration & Production, LLC  
 Stoddard 40-71-36 1FH  
 nw nw 36, T40N, R71W  
 Converse County, Wyoming

Gas Analysis from AMR Analysis (04/27/2015) & C6+ Breakout Information

Component	(1) mol %	(2) mol fraction	(3) Comp MW	(4) Gas MW	(5) HC MW	(6) VOC MW	(7) HAP MW
H2S	-	-	34.08	-	-	-	-
O2	-	-	32.00	-	-	-	-
CO2	1.2990	0.0130	44.01	0.5717	-	-	-
N2	0.7920	0.0079	28.01	0.2219	-	-	-
C1	64.7100	0.6471	16.04	10.3808	10.3808	-	-
C2	13.6750	0.1368	30.07	4.1119	4.1119	-	-
C3	9.7690	0.0977	44.10	4.3077	4.3077	-	-
i-C4	1.3950	0.0140	58.12	0.8108	0.8108	-	-
n-C4	3.2690	0.0327	58.12	1.9000	1.9000	-	-
i-C5	1.0540	0.0105	72.15	0.7605	0.7605	-	-
n-C5	1.0410	0.0104	72.15	0.7511	0.7511	-	-
C6	1.9129	0.0191	86.18	1.6484	1.6484	-	-
C7	0.2058	0.0021	100.20	0.2062	0.2062	-	-
C8+	0.1438	0.0014	114.23	0.1643	0.1643	-	-
C9	-	-	128.26	-	-	-	-
C10+	-	-	142.28	-	-	-	-
Benzene	0.0992	0.0010	78.11	0.0775	0.0775	0.0775	0.0775
Toluene	0.0854	0.0009	92.14	0.0787	0.0787	0.0787	0.0787
E-Benzene	0.0042	0.0000	106.17	0.0045	0.0045	0.0045	0.0045
Xylenes	0.0216	0.0002	106.17	0.0229	0.0229	0.0229	0.0229
n-C6	0.4431	0.0044	86.18	0.3818	0.3818	0.3818	0.3818
224 Trimethylpentane	0.0800	0.0008	114.24	0.0914	0.0914	0.0914	0.0914
Totals	100.0000	1.0000		26.4921	25.6985	11.2058	0.6568

Wt % HC: 97.00  
 Wt % VOCs: 42.30  
 Wt % HAPs: 2.48



**CERTIFICATE OF ANALYSIS**  
**ROUTINE HYDROCARBON GAS ANALYSIS**

COMPANY..... RKI EXPLORATION AND PRODUCTION

LAB NUMBER..... CR- 15420  
 DATE SAMPLED..... 4-24-2015

STUDY NUMBER ..... CR-4  
 DATE TESTED ..... 4-27-2015

SAMPLE IDENTIFICATION..... STODDARD 40-71 36 A 1 FH

LOCATION..... DOUGLAS, WYOMING  
 PRESSURE..... 93 PSIG  
 TYPE SAMPLE..... SPOT  
 CYLINDER ID..... AMR 002  
 SAMPLE METHOD... GPA-2166

TEMPERATURE ..... 116.04 F  
 SAMPLED BY ..... RKI  
 COUNTY ..... CONVERSE  
 TEST METHOD ..... GPA 2261

<u>COMPONENTS</u>	<u>MOLE%</u>	<u>GPM</u>
NITROGEN.....	0.792	
METHANE.....	64.710	
CARBON DIOXIDE.....	1.299	
ETHANE.....	13.675	3.648
H2S.....	0.000	0.000
PROPANE.....	9.769	2.684
iso-BUTANE.....	1.395	0.455
n-BUTANE.....	3.269	1.028
iso-PENTANE.....	1.054	0.384
n-PENTANE.....	1.041	0.376
HEXANES+.....	2.996	1.304
TOTALS.....	100.000	9.880

SPECIFIC GRAVITY AT 60/60 F, calculated.....	0.91872
TOTAL GPM ( ETHANE INCLUSIVE ).....	9.880
CALCULATED BTU / REAL CF AT 14.73 PSIA, dry basis.....	1543.957
CALCULATED BTU / REAL CF AT 14.73 PSIA, wet basis.....	1517.348
AVERAGE MOLECULAR WEIGHT.....	26.609
MOLAR MASS RATIO.....	0.9187
RELATIVE DENSITY, ( G X Z (AIR) / Z ).....	0.9244
IDEAL GROSS HEATING VALUE, BTU / IDEAL CF AT 14.696 PSIA.....	1530.955
COMPRESSIBILITY FACTOR ( Z ).....	0.99386

NOTE: ABOVE CALCULATIONS PERFORMED USING PHYSICAL CONSTANTS FROM GPA 2145-09. THE HEXANES+ (C6+) FACTORS ARE CALCULATED AS A RATIO AMOUNT OF HEXANES (60%), HEPTANES (30%), AND OCTANES (10%).

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James A. Kane, President  
 American Mobile Research, Inc.



Stoddard 40-71-36 1FH  
Frontier Gas Analysis of 4/27/2015

**C6+ Total: 2.9960**

Component	C6+ Factor	mole %
Other C6	0.6385	1.9129
n-C6	0.1479	0.4431
C7	0.0687	0.2058
C8+	0.0480	0.1438
2,2,4 Trimethyl Pentane	0.0267	0.0800
Benzene	0.0331	0.0992
Toluene	0.0285	0.0854
Ethylbenzene	0.0014	0.0042
Xylenes	0.0072	0.0216
		<b>2.9960</b>



15-7	MBU 7/12 No 1			
at	Wildcat			
14	4/9/2014			
			average composition of Frontier condensate (mol%)	
	0		0.0000	O2
5	0.01499		0.0238	CO2
3	0.0116		0.0555	N2
3	0.2249		0.3629	C1
1	0.6085		1.0631	C2
5	2.6986		3.9325	C3
5	1.0976		1.2921	iC4
5	4.5178		5.1099	nC4
2	2.5866		3.1839	iC5
4	3.4491		4.2937	nC5
4	2.7713		3.2020	Hexanes
5	7.3132		7.1390	Heptanes
5	6.402		6.3438	Octanes
	2.3236		2.6286	Nonanes
9	0.1869		0.3106	Benzene
3	1.7103		1.8976	Toluene
4	1.3535		0.5650	e-Benzene
4	1.8481		1.5237	Xylene
1	2.4145		2.8280	n-C6
2	0.5695		0.4747	2,2,4-Trimethylpentane
4	57.8975		53.7695	C10+
8	230.841		235.0290	C10+ Molecular Weight
6	0.81684		0.8237	C10+ Specific Gravity
	5.4		5.5	average molecular wt. (gm/mol)
	41.3		42.1	
	32		39.3	average pressure (psi)
	120		121.5	average temperature (F)

Frontier Oil Analyses (40 psi ± 25 psi) - Converse County				
Well Name		Patterson State 14W-36/1/2H	Hornbuckle 16-3229H	Henry Land
Field Name		Wildcat	Wildcat	Wildcat
Date of Analysis		10/22/2014	12/27/2013	4/22/20
Component (mol%)				
O2		0	0	0
CO2		0.0084	0.0533	0.0188
N2		0.0014	0.0936	0.1155
C1		0.0623	1.0167	0.1476
C2		0.7884	1.8973	0.9588
C3		4.8491	4.1799	4.0023
iC4		1.5992	1.2831	1.1888
nC4		6.8533	4.0841	4.9841
iC5		4.362	3.0648	2.722
nC5		6.387	3.5773	3.7614
Hexanes		3.8658	3.3966	2.774
Heptanes		6.9164	8.1149	6.2118
Octanes		5.9117	8.244	4.8178
Nonanes		2.1143	4.5366	1.54
Benzene		0.3341	0.4076	0.3138
Toluene		1.9056	2.682	1.2928
e-Benzene		0.184	0.4132	0.309
Xylene		1.1554	2.5157	0.575
n-C6		3.2905	3.002	2.605
2,2,4-Trimethylpentane		0.4212	0.4889	0.419
C10+		48.9896	46.9483	61.242
C10+ Molecular Weight		223.508	241.379	244.38
C10+ Specific Gravity		0.80945	0.83232	0.8362
RVP		5.18	5.98	5.36
API Gravity		43.7	41.3	42.2
Sample Pressure (psi)		48	37	40
Sample Temp. (F)		113	138	115