

**APPLICATION FOR  
CLASS II ADMINISTRATIVE UPDATE**

**Jay-Bee Oil & Gas, Inc.**

**Coffman Well Pad**

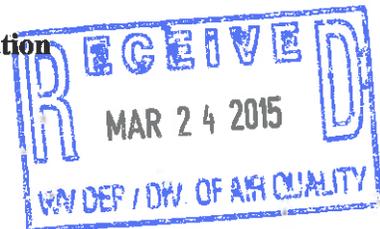
**Doddridge County, West Virginia**

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**SECTION I**

**Application Form**



WEST VIRGINIA  
 DEPARTMENT OF ENVIRONMENTAL PROTECTION  
 DIVISION OF AIR QUALITY  
 601 57<sup>th</sup> Street, SE  
 Charleston, WV 25304  
 Phone: (304) 926-0475 • www.dep.wv.gov/daq

**APPLICATION FOR GENERAL PERMIT REGISTRATION**  
 CONSTRUCT, MODIFY, RELOCATE OR ADMINISTRATIVELY UPDATE  
 A STATIONARY SOURCE OF AIR POLLUTANTS

- CONSTRUCTION     MODIFICATION     RELOCATION     CLASS I ADMINISTRATIVE UPDATE  
 CLASS II ADMINISTRATIVE UPDATE

**CHECK WHICH TYPE OF GENERAL PERMIT REGISTRATION YOU ARE APPLYING FOR:**

- |   |  |
|---|--|
| <input type="checkbox"/> <b>G10-D</b> – Coal Preparation and Handling                                   | <input type="checkbox"/> <b>G40-C</b> – Nonmetallic Minerals Processing                  |
| <input type="checkbox"/> <b>G20-B</b> – Hot Mix Asphalt   | <input type="checkbox"/> <b>G50-B</b> – Concrete Batch                                   |
| <input type="checkbox"/> <b>G30-D</b> – Natural Gas Compressor Stations                                 | <input type="checkbox"/> <b>G60-C</b> – Class II Emergency Generator                     |
| <input type="checkbox"/> <b>G33-A</b> – Spark Ignition Internal Combustion Engines                      | <input type="checkbox"/> <b>G65-C</b> – Class I Emergency Generator                      |
| <input type="checkbox"/> <b>G35-A</b> – Natural Gas Compressor Stations (Flare/Glycol Dehydration Unit) | <input type="checkbox"/> <b>G70-A</b> – Class II Oil and Natural Gas Production Facility |

**SECTION I. GENERAL INFORMATION**

1. Name of applicant (as registered with the WV Secretary of State's Office): <b>Jay-Bee Oil &amp; Gas, Inc.</b>	2. Federal Employer ID No. (FEIN): <b>55-073-8862</b>
3. Applicant's mailing address: <b>3570 Shields Hill Rd Cairo, WV 26337</b>	4. Applicant's physical address: <b>3570 Shields Hill Rd Cairo, WV 26337</b>

5. If Applicant is a subsidiary corporation, please provide the name of parent corporation.

N/A

**WV 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 LLC / Registration (one page) including any name change amendments or other Business Certificate as Attachment A.

**SECTION II. FACILITY INFORMATION**

7. Type of plant or facility (stationary source) to be constructed, modified, relocated or administratively updated (e.g., coal preparation plant, primary crusher, etc.): <b>Natural Gas Well Pad Production Facility</b>	8a. Standard Industrial Classification (SIC) code: <b>1311</b>	AND	8b. North American Industry System (NAICS) code: <b>211111</b>
9. DAQ Plant ID No. (for existing facilities only): <b>017-00116</b>	10. List all current 45CSR13 and other General Permit numbers associated with this process (for existing facilities only): <b>G70-A079</b> _____ _____		

**A: PRIMARY OPERATING SITE INFORMATION**

<p>11A. Facility name of primary operating site: <b>Coffman Well Pad</b></p> <p>_____</p> <p>_____</p>	<p>12A. Address of primary operating site:</p> <p>Mailing: <u>None</u> Physical: _____</p> <p>_____</p>	
<p>13A. Does the applicant own, lease, have an option to buy, or otherwise have control of the proposed site? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO</p> <p>→ IF YES, please explain: <b>Applicant has a lease agreement with the land owner for installation of the Well Pad and associated equipment</b></p> <p>_____</p> <p>→ IF NO, YOU ARE NOT ELIGIBLE FOR A PERMIT FOR THIS SOURCE.</p>		
<p>14A → For <b>Modifications or Administrative Updates</b> at an existing facility, please provide directions to the present location of the facility from the nearest state road;</p> <p>→ For Construction or Relocation permits, please provide directions to the proposed new site location from the nearest state road. Include a <b>MAP as Attachment F.</b></p> <p><u>From Intersection of State Route 18 and State Route 23, proceed east on State Route 23 11.9 miles. Well Pad entrance is on the right.</u></p> <p>_____</p> <p>_____</p>		
<p>15A. Nearest city or town:</p> <p><b>Shirley</b></p>	<p>16A. County:</p> <p><b>Doddrige</b></p>	<p>17A. UTM Coordinates:</p> <p>Northing (KM): <u>4361.525</u></p> <p>Easting (KM): <u>526.896</u></p> <p>Zone: <u>17</u></p>
<p>18A. Briefly describe the proposed new operation or change (s) to the facility:</p> <p><b>Natural gas production and separation of liquids.</b></p>		<p>19A. Latitude &amp; Longitude Coordinates (NAD83, Decimal Degrees to 5 digits):</p> <p>Latitude: <u>39.402811</u></p> <p>Longitude: <u>-80.687603</u></p>

**B: 1<sup>ST</sup> ALTERNATE OPERATING SITE INFORMATION (only available for G20, G40, & G50 General Permits)**

<p>11B. Name of 1<sup>st</sup> alternate operating site:</p> <p>_____</p> <p>_____</p>	<p>12B. Address of 1<sup>st</sup> alternate operating site:</p> <p>Mailing: _____ Physical: _____</p> <p>_____</p>
<p>13B. Does the applicant own, lease, have an option to buy, or otherwise have control of the proposed site? <input type="checkbox"/> YES <input type="checkbox"/> NO</p> <p>→ IF YES, please explain: _____</p> <p>_____</p> <p>→ IF NO, YOU ARE NOT ELIGIBLE FOR A PERMIT FOR THIS SOURCE.</p>	

14B. → For **Modifications or Administrative Updates** 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 F.**

\_\_\_\_\_

\_\_\_\_\_

15B. Nearest city or town:	16B. County:	17B. UTM Coordinates: Northing (KM): _____ Easting (KM): _____ Zone: _____
18B. Briefly describe the proposed new operation or change (s) to the facility:		19B. Latitude & Longitude Coordinates (NAD83, Decimal Degrees to 5 digits): Latitude: _____ Longitude: _____

**C: 2<sup>ND</sup> ALTERNATE OPERATING SITE INFORMATION (only available for G20, G40, & G50 General Permits):**

11C. Name of 2 <sup>nd</sup> alternate operating site: _____ _____	12C. Address of 2 <sup>nd</sup> alternate operating site: Mailing: _____ Physical: _____	
13C. Does the applicant own, lease, have an option to buy, or otherwise have control of the proposed site? <input type="checkbox"/> YES <input type="checkbox"/> NO → IF YES, please explain: _____  → IF NO, YOU ARE NOT ELIGIBLE FOR A PERMIT FOR THIS SOURCE.		
14C. → For <b>Modifications or Administrative Updates</b> 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 <b>MAP as Attachment F.</b>		
15C. Nearest city or town:	16C. County:	17C. UTM Coordinates: Northing (KM): _____ Easting (KM): _____ Zone: _____
18C. Briefly describe the proposed new operation or change (s) to the facility:		19C. Latitude & Longitude Coordinates (NAD83, Decimal Degrees to 5 digits): Latitude: _____ Longitude: _____

<p>20. Provide the date of anticipated installation or change:</p> <p><u>5 / 15 / 15</u></p> <p>If this is an <b>After-The-Fact</b> permit application, provide the date upon which the proposed change did happen: :</p> <p><u>  /  /  </u></p>	<p>21. Date of anticipated Start-up if registration is granted:</p> <p><u>5/ 20 / 15</u></p>
<p>22. Provide maximum projected <b>Operating Schedule</b> of activity/activities outlined in this application if other than 8760 hours/year. (Note: anything other than 24/7/52 may result in a restriction to the facility's operation).</p> <p>Hours per day <u>24</u>    Days per week <u>7</u>    Weeks per year <u>52</u>    Percentage of operation <u>100</u></p>	

**SECTION III. ATTACHMENTS AND SUPPORTING DOCUMENTS**

<p>23. Include a check payable to WVDEP – Division of Air Quality with the appropriate <b>application fee</b> (per 45CSR22 and 45CSR13).</p>
<p>24. Include a <b>Table of Contents</b> as the first page of your application package.</p>
<p>All of the required forms and additional information can be found under the Permitting Section (General Permits) of DAQ's website, or requested by phone.</p>
<p>25. Please check all attachments included with this permit application. Please refer to the appropriate reference document for an explanation of the attachments listed below.</p> <ul style="list-style-type: none"> <li><input checked="" type="checkbox"/> ATTACHMENT A : CURRENT BUSINESS CERTIFICATE</li> <li><input checked="" type="checkbox"/> ATTACHMENT B: PROCESS DESCRIPTION</li> <li><input type="checkbox"/> ATTACHMENT C: DESCRIPTION OF FUGITIVE EMISSIONS</li> <li><input checked="" type="checkbox"/> ATTACHMENT D: PROCESS FLOW DIAGRAM</li> <li><input checked="" type="checkbox"/> ATTACHMENT E: PLOT PLAN</li> <li><input checked="" type="checkbox"/> ATTACHMENT F: AREA MAP</li> <li><input checked="" type="checkbox"/> ATTACHMENT G: EQUIPMENT DATA SHEETS AND REGISTRATION SECTION APPLICABILITY FORM</li> <li><input checked="" type="checkbox"/> ATTACHMENT H: AIR POLLUTION CONTROL DEVICE SHEETS</li> <li><input checked="" type="checkbox"/> ATTACHMENT I: EMISSIONS CALCULATIONS</li> <li><input checked="" type="checkbox"/> ATTACHMENT J: CLASS I LEGAL ADVERTISEMENT</li> <li><input type="checkbox"/> ATTACHMENT K: ELECTRONIC SUBMITTAL</li> <li><input checked="" type="checkbox"/> ATTACHMENT L: GENERAL PERMIT MODIFICATION APPLICATION FEE</li> <li><input type="checkbox"/> ATTACHMENT M: SITING CRITERIA WAIVER</li> <li><input type="checkbox"/> ATTACHMENT N: MATERIAL SAFETY DATA SHEETS (MSDS)</li> <li><input checked="" type="checkbox"/> ATTACHMENT O: EMISSIONS SUMMARY SHEETS</li> <li><input checked="" type="checkbox"/> OTHER SUPPORTING DOCUMENTATION NOT DESCRIBED ABOVE (Equipment Drawings, Aggregation Discussion, etc.)</li> </ul> <p>Please mail an original and two copies of the complete General Permit Registration Application with the signature(s) to the DAQ Permitting Section, at the address shown on the front page of this application. Please <b>DO NOT</b> fax permit applications. For questions regarding applications or West Virginia Air Pollution Rules and Regulations, please refer to the website shown on the front page of the application or call the phone number also provided on the front page of the application.</p>

SECTION IV. CERTIFICATION OF INFORMATION

This General Permit Registration Application shall be signed below by a Responsible Official. A Responsible Official is a President, Vice President, Secretary, Treasurer, General Partner, General Manager, a member of a Board of Directors, or Owner, depending on business structure. A business may certify an Authorized Representative who shall have authority to bind the Corporation, Partnership, Limited Liability Company, Association, Joint Venture or Sole Proprietorship. Required records of daily throughput, hours of operation and maintenance, general correspondence, Emission Inventory, Certified Emission Statement, compliance certifications and all required notifications must be signed by a Responsible Official or an Authorized Representative. If a business wishes to certify an Authorized Representative, the official agreement below shall be checked off and the appropriate names and signatures entered. Any administratively incomplete or improperly signed or unsigned Registration Application will be returned to the applicant.

FOR A CORPORATION (domestic or foreign)

I certify that I am a President, Vice President, Secretary, Treasurer or in charge of a principal business function of the corporation

FOR A PARTNERSHIP

I certify that I am a General Partner

FOR A LIMITED LIABILITY COMPANY

I certify that I am a General Partner or General Manager

FOR AN ASSOCIATION

I certify that I am the President or a member of the Board of Directors

FOR A JOINT VENTURE

I certify that I am the President, General Partner or General Manager

FOR A SOLE PROPRIETORSHIP

I certify that I am the Owner and Proprietor

I hereby certify that (please print or type) \_\_\_\_\_  
is an Authorized Representative and in that capacity shall represent the interest of the business (e.g., Corporation, Partnership, Limited Liability Company, Association Joint Venture or Sole Proprietorship) and may obligate and legally bind the business. If the business changes its Authorized Representative, a Responsible Official shall notify the Director of the Office of Air Quality immediately, and/or,

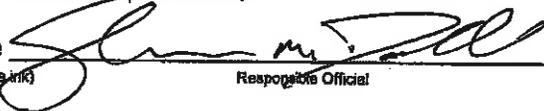
I hereby certify that all information contained in this General Permit Registration Application and any supporting documents appended hereto is, to the best of my knowledge, true, accurate and complete, and that all reasonable efforts have been made to provide the most comprehensive information possible

Signature

(please use blue ink)

Responsible Official

Date



3-17-2015

Name & Title Shane Dowell, Office Manager

(please print or type)

Signature

(please use blue ink)

Authorized Representative (if applicable)

Date

Applicant's Name \_\_\_\_\_

Phone & Fax

304/628-3119

Phone

304/628-3119

Fax

Email

sdowell@jaybeeoil.com

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**ATTACHMENT A**

**Business Registration**

Attachment A

Attached Current WV Business Certificate

**WEST VIRGINIA  
STATE TAX DEPARTMENT  
BUSINESS REGISTRATION  
CERTIFICATE**

ISSUED TO:  
**JAY-BEE OIL & GAS INC  
RR 1 BOX 5  
CAIRO, WV 26337-9701**

**BUSINESS REGISTRATION ACCOUNT NUMBER 1043-4424**

This certificate is issued on: **JUNE 26, 2010**

This certificate is issued by  
the West Virginia State Tax Commissioner  
in accordance with W.Va. Code § 17-12-1

The person or persons listed on this certificate are authorized  
to conduct business in the State of West Virginia at the location(s) above.

This certificate is not transferable and shall be displayed at the location(s) which business is conducted.

This certificate shall be returned to the State Tax Department upon the cessation of the business for which the certificate of registration was granted or until it is subject to revocation or annulment by the Tax Commissioner.

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

**TRAVEL AND TREE VENDORS:** Must carry a copy of this certificate in every vehicle operated by them.  
**CONTRACTORS, DRILLING OPERATORS, TIMBER LOGGING OPERATIONS:** Must carry a copy of this certificate displayed at every job site within West Virginia.

st.608 v.1  
L1988190484

SCANNED

JUN 24 10

WEST VIRGINIA  
STATE TAX DEPARTMENT

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**ATTACHMENT B**

**Process Description**

**Jay-Bee Oil & Gas, Incorporated**  
**Coffman Well Pad**  
**Attachment B**  
**Process Description**

Jay-Bee Oil & Gas currently operates the Coffman Well Pad under a G70-A General Permit registration. The following describes the current operations and the desired changes.

Natural gas and Produced Fluids (condensate and water) is received from two wells on this location at and passed through Gas Processing Units (one per well) to avoid ice formation during subsequent pressure drops. These materials then pass through a three-way separator where gas, condensate and water are separated. The gas is then routed to a gathering pipeline owned and operated by others.

Both the condensate and Produced Water are accumulated in six 210 BBL tanks (three for Condensate and three for Produced Water), pending truck transportation by others. The Condensate is transported to a regional processing facility and the Produced Water a regional disposal facility. Flash, working and breathing losses from these tanks is currently routed to a Vapor Recovery Unit (VRU) with the captured vapors routed back to the raw gas discharge line.

As the volume of condensate and water produced by these wells has dropped significantly, the volume of vapor produced by the storage tanks has also decreased significantly. Thus, it is no longer cost effective to control these emissions via the VRU. Jay-Bee Oil & Gas is seeking approval to replace the VRU with an enclosed combustor. **No other changes are being sought at this time.**

The proposed change will control the tank emissions to a greater degree as the VRU. This, combined with the absence of the VRU driver will significantly reduce overall emissions. However, the presence of a permanent combustor warrants the continued operation under a WVDEP issued permit.

A Process Flow Diagram depicting these features is provided in Attachment D.

### 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 <sup>1</sup>	Emission Point ID <sup>2</sup>	Emission Unit Description	Year Installed/ Modified	Design Capacity	Type <sup>3</sup> and Date of Change	Control Device <sup>4</sup>
GPU1	E1	Gas Processing Unit	2014	1.5 MMBTU/Hr	EXIST	None
GPU2	E2	Gas Processing Unit	2014	1.5 MMBTU/Hr	EXIST	None
TLU-1 + TLU-2	E3	Truck Loading	2014	467,500 Gal /Yr	EXIST	None
VRU-1	E4	VRU Compressor Arrow VRC2	2014	84 Hp	REM	
TNK1	E5	Condensate Tank	2014	210 BBL	EXIST	EC-1
TNK2	E5	Condensate Tank	2014	210 BBL	EXIST	EC-1
TNK3	E5	Condensate Tank	2014	210 BBL	EXIST	EC-1
TNK4	E5	Produced Water Tank	2014	210 BBL	EXIST	EC-1
TNK5	E5	Produced Water Tank	2014	210 BBL	EXIST	EC-1
TNK6	E5	Produced Water Tank	2014	210 BBL	EXIST	EC-1
EC-1	E5	Enclosed Combustor	2015		NEW	N/A
---	---	Fugitive VOC Emissions – Fittings and Connections	Pending Permit	N/A	EXIST	None
---	---	Haul Roads	Pending Permit	6 Trucks per day max.	EXIST	None

<sup>1</sup> For Emission Units (or Sources) use the following numbering system: 1S, 2S, 3S,... or other appropriate designation.

<sup>2</sup> For Emission Points use the following numbering system: 1E, 2E, 3E, ... or other appropriate designation.

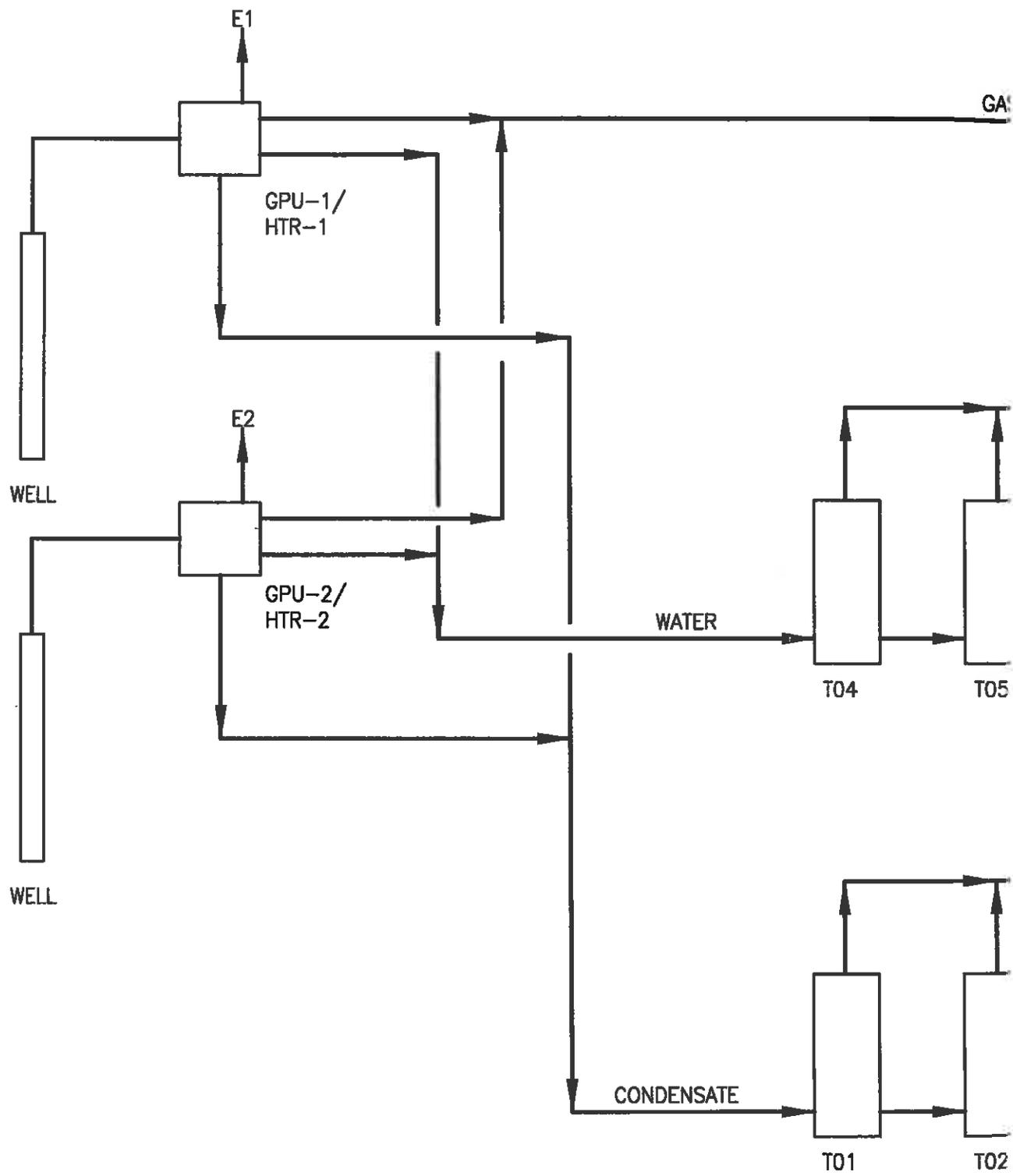
<sup>3</sup> New, modification, removal

<sup>4</sup> For Control Devices use the following numbering system: 1C, 2C, 3C,... or other appropriate designation.

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**ATTACHMENT D**

**Process Flow Diagram**



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**ATTACHMENT E**

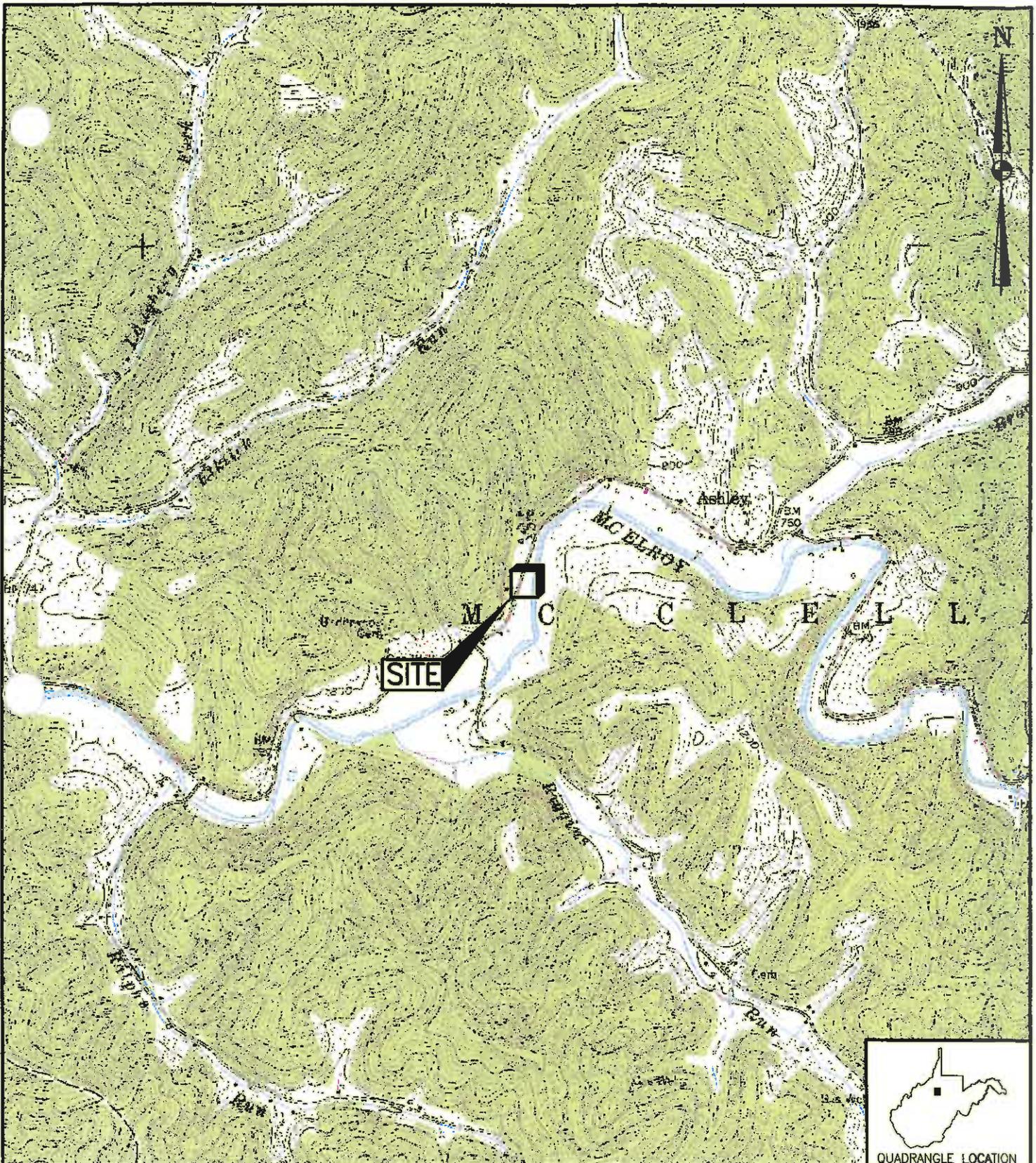
**Plot Plan**



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**ATTACHMENT F**

**Area Map**



REFERENCE: USGS 7.5' QUADRANGLE MAP OF: CENTER POINT, WEST VIRGINIA; DATED 1961, PHOTOREVISED 1976.

DRAWN BY	DJF
DATE	2/19/15
ED BY	RAD
SET JOB NO.	214054-08
SET DWG FILE	COFFMANm01.dwg
DRAWING SCALE	1"=2000'



98 Vanadium Road Bridgeville, PA 15017 (412) 221-1100

JAY-BEE OIL & GAS, INC	
COFFMAN WELL PAD DODDRIDGE COUNTY, WEST VIRGINIA SITE LOCATION MAP	
DRAWING NO.	FIGURE 1
REV.	0

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**ATTACHMENT G**

**Equipment Data Sheets and  
Registration Section Applicability Form**

**General Permit G70-A Registration  
Section Applicability Form**

General Permit G70-A was developed to allow qualified applicants to seek registration for a variety of sources. These sources include natural gas well affected facilities, storage tanks, natural gas-fired compressor engines (RICE), natural gas producing units, natural gas-fired in-line heaters, pneumatic controllers, heater treaters, tank truck loading, glycol dehydration units, completion combustion devices, flares, enclosed combustion devices, and vapor recovery systems. All registered facilities will be subject to Sections 1.0, 2.0, 3.0, and 4.0.

General Permit G70-A allows the registrant to choose which sections of the permit they are seeking registration under. Therefore, please mark which additional sections that you are applying for registration under. If the applicant is seeking registration under multiple sections, please select all that apply. Please keep in mind, that if this registration is approved, the issued registration will state which sections will apply to your affected facility.

Section 5	Natural Gas Well Affected Facility	<input checked="" type="checkbox"/>
Section 6	Storage Vessels*	<input checked="" type="checkbox"/>
Section 7	Gas Producing Units, In-Line Heaters, Heater Treaters, and Glycol Dehydration Reboilers	<input checked="" type="checkbox"/>
Section 8	Pneumatic Controllers Affected Facility(NSPS, Subpart OOOO)	<input type="checkbox"/>
Section 9	<i>Reserved</i>	<input type="checkbox"/>
Section 10	Natural gas-fired Compressor Engine(s) (RICE)**	<input type="checkbox"/>
Section 11	Tank Truck Loading Facility ***	<input checked="" type="checkbox"/>
Section 12	Standards of Performance for Storage Vessel Affected Facilities (NSPS, Subpart OOOO)	<input type="checkbox"/>
Section 13	Standards of Performance for Stationary Spark Ignition Internal Combustion Engines (NSPS, Subpart JJJJ)	<input type="checkbox"/>
Section 14	Control Devices not subject to NSPS, Subpart OOOO	<input checked="" type="checkbox"/>
Section 15	National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines (40CFR63, Subpart ZZZZ)	<input type="checkbox"/>
Section 16	Glycol Dehydration Units	<input type="checkbox"/>
Section 17	Dehydration Units With Exemption from NESHAP Standard, Subpart HH § 63.764(d) (40CFR63, Subpart HH)	<input type="checkbox"/>
Section 18	Dehydration Units Subject to NESHAP Standard, Subpart HH and Not Located Within an UA/UC (40CFR63, Subpart HH)	<input type="checkbox"/>
Section 19	Dehydration Units Subject to NESHAP Standard, Subpart HH and Located Within an UA/UC (40CFR63, Subpart HH)	<input type="checkbox"/>

\* Applicants that are subject to Section 6 may also be subject to Section 12 if the applicant is subject to the NSPS, Subpart OOOO control requirements or the applicable control device requirements of Section 14.

\*\* Applicants that are subject to Section 10 may also be subject to the applicable RICE requirements of Section 13 and/or Section 15.

\*\*\* Applicants that are subject to Section 11 may also be subject to control device requirements of Section 14.

## NATURAL GAS-FIRED COMPRESSOR ENGINE (RICE) EMISSION UNIT DATA SHEET

Emission Unit (Source) ID No. <sup>1</sup>		VRU-1					
Emission Point ID No. <sup>2</sup>		4E					
Engine Manufacturer and Model		Cummins G5.9					
Manufacturer's Rated bhp/rpm		84 @ 1800					
Source Status <sup>3</sup>		RS					
Date Installed/Modified/Removed <sup>4</sup>		Upon Receipt of Permit					
Engine Manufactured/Reconstruction Date <sup>5</sup>		8/15/2014					
Is this engine subject to 40CFR60, Subpart JJJJ?		Yes					
Is this a Certified Stationary Spark Ignition Engine according to 40CFR60, Subpart JJJJ? (Yes or No) <sup>6</sup>		No					
Is this engine subject to 40CFR63, Subpart ZZZZ? (yes or no)		No					
Engine, Fuel and Combustion Data	Engine Type <sup>7</sup>	RB4S					
	APCD Type <sup>8</sup>	NSCR					
	Fuel Type <sup>9</sup>	RG					
	H <sub>2</sub> S (gr/100 scf)	<1					
	Operating bhp/rpm	84 @ 1800					
	BSFC (Btu/bhp-hr)	7914					
	Fuel throughput (ft <sup>3</sup> /hr)	526.4					
	Fuel throughput (MMft <sup>3</sup> /yr)	4.62					
	Operation (hrs/yr)	8760					
Reference <sup>10</sup>	Potential Emissions <sup>11</sup>	lbs/hr	tons/yr	lbs/hr	tons/yr	lbs/hr	tons/yr
AP	NO <sub>x</sub>	0.19	0.83				
AP	CO	0.38	1.66				
AP	VOC	0.27	1.2				
AP	SO <sub>2</sub>	<0.001	<0.01				
AP	PM <sub>10</sub>	0.013	0.06				
AP	Formaldehyde	0.012	0.065				
AP	Total HAPs	0.024	0.11				
AP	CO <sub>2</sub> e	89	391				
MRR <sup>12</sup>	Monitoring:	Engine Hours and Fuel Consumption					
	Recordkeeping:	Engine Hours and Fuel Consumption					
	Proposed Reporting	Calculated Emissions					

Instructions for completing the Engine Emission Unit Data Sheet:

- 1 Enter the appropriate Emission Unit (Source) identification number for each natural gas-fueled reciprocating internal combustion compressor/generator engine located at the production pad. Multiple compressor engines should be designated CE-1S, CE-2S, etc. or other appropriate designation. Generator engines should be designated GE-1S, GE-2S, etc. or other appropriate designation. If more than three (3) engines exist, please use additional sheets.
- 2 For Emission Points, use the following numbering system: 1E, 2E, etc. or other appropriate designation.
- 3 Enter the Source Status using the following codes: NS = Construction of New Source (installation); ES = Existing Source; MS = Modification of Existing Source; and RS = Removal of Source
- 4 Enter the date (or anticipated date) of the engine's installation (construction of source), modification or removal.
- 5 Enter the date that the engine was manufactured, modified or reconstructed.
- 6 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 and a manufacturer's EPA certification of conformity sheet.***
- 7 Enter the Engine Type designation(s) using the following codes: LB2S = Lean Burn Two Stroke, RB4S = Rich Burn Four Stroke, and LB4S = Lean Burn Four Stroke.
- 8 Enter the Air Pollution Control Device (APCD) type designation(s) using the following codes: NSCR = Rich Burn & Non-Selective Catalytic Reduction, PSC = Rich Burn & Prestratified Charge, SCR = Lean Burn & Selective Catalytic Reduction, or CAT = Lean Burn Catalytic Oxidation
- 9 Enter the Fuel Type using the following codes: PQ = Pipeline Quality Natural Gas, or RG = Raw Natural Gas
- 10 Enter the Potential Emissions Data Reference designation using the following codes. Attach all referenced data to this Compressor/Generator Data Sheet(s). Codes: MD = Manufacturer's Data, AP = AP-42 Factors, GR = GRI-HAPCalc™, or OT = Other \_\_\_\_\_ (please list)
- 11 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 as Attachment O.
- 12 Please propose monitoring, recordkeeping, and reporting in order to demonstrate compliance with the operation of this engine operation and associated air pollution control device. Include operating ranges and maintenance procedures required by the manufacturer to maintain the warranty.

# AIR POLLUTION CONTROL DEVICE

## Vapor Combustion Control Device Sheet

*Complete this vapor combustion control device sheet for each enclosed combustion device, flare, thermal oxidizer, or completion combustion device that is located at the natural gas production pad for the purpose of thermally destructing waste gas to control emissions of regulated pollutants to the atmosphere.*

<b>IMPORTANT: READ THE INSTRUCTIONS ACCOMPANYING THIS FORM BEFORE COMPLETING.</b>			
<b>General Information</b>			
1. Control Device ID#: EC-1		2. Installation Date: Upon Receipt of Permit <input checked="" type="checkbox"/> New	
3. Maximum Rated Total Flow Capacity: 900 scfh    22,110 scfd	4. Maximum Design Heat Input: 2.39 MMBtu/hr	5. Design Heat Content: BTU/scf	
<b>Control Device Information</b>			
6. Select the type of vapor combustion control device being used: <input checked="" type="checkbox"/> Enclosed Combustion Device <input type="checkbox"/> Elevated Flare <input type="checkbox"/> Ground Flare <input type="checkbox"/> Thermal Oxidizer <input type="checkbox"/> Completion Combustion Device			
7. Manufacturer: Hy-Bon Engineering Company, Inc. Model No.: Abutec 20		8. Hours of operation per year: 8760	
9. List the emission units whose emissions are controlled by this vapor combustion control device: (Emission Point ID#: E5)			
10. Emission Unit ID#	Emission Source Description:	Emission Unit ID#	Emission Source Description:
TNK1	Condensate Tank	TNK4	Produced Water Tank
TNK2	Condensate Tank	TNK5	Produced Water Tank
TNK3	Condensate Tank	TNK6	Produced Water Tank
<i>If this vapor combustor controls emissions from more than six emission units, please attach additional pages.</i>			
11. Assist Type		12. Flare Height	13. Tip Diameter
<input type="checkbox"/> Steam - <input type="checkbox"/> Air - <input type="checkbox"/> Pressure - <input checked="" type="checkbox"/> Non -		11.25 ft	ft
14. Was the design per §60.18? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No			
<b>Waste Gas Information</b>			
15. Maximum waste gas flow rate (scfm):	16. Heat value of waste gas stream (BTU/ft <sup>3</sup> )	17. Temperature of the emissions stream (°F)	18. Exit Velocity of the emissions stream (ft/s)
20			
19. Provide an attachment with the characteristics of the waste gas stream to be burned.			

Pilot Information				
20. Type/Grade of pilot fuel:	21. Number of pilot lights:	22. Fuel flow rate to pilot flame per pilot (scf/hr):	23. Heat input per pilot (BTU/hr):	24. Will automatic re-ignition be used?
Natural Gas	1	78	85,800	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
25. If automatic re-ignition will be used, describe the method:  If the pilot is not on, gas cannot flow to the combustor. The unit will try to reignite 25 times. After that it will go into manual mode whereby it will not function until repaired.				
26. Describe the method of controlling flame: Ignition module located in the combustor control panel				
27. Is pilot flame equipped with a monitor to detect the presence of the flame?  <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		28. If yes, what type? <input type="checkbox"/> Thermocouple <input type="checkbox"/> Infra-Red <input type="checkbox"/> Ultra Violet <input type="checkbox"/> Camera with monitoring control room <input type="checkbox"/> Other, describe:		

29. Pollutant(s) Controlled	30. % Capture Efficiency	31. Manufacturer's Guaranteed Control Efficiency (%)
VOC	99% (Hard Piped)	99%
32. Has the control device been tested by the manufacturer and certified? YES		
33. Describe all operating ranges and maintenance procedures required by the manufacturer to maintain warranty: Combustor burner, pilot, and air inlet arrestor must be checked for foreign debris (dust, sand, etc.) and cleaned at least quarterly		
34. Additional Information Attached? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO		
<i>Please attach a copy of manufacturer's data sheet.</i> <i>Please attach a copy of manufacturer's drawing.</i> <i>Please attach a copy of the manufacturer's performance testing.</i>		

**If any of the requested information is not available, please contact the manufacturer.**

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**ATTACHMENT H**

**Air Pollution Control Device Sheets**



**DATE:** 4/1/13

**TO:** Shane Dowell

**QUOTE NO.:** N/A

**REFERENCE:** (Ketel & Big Moses)

**MODEL:** **The Abutec 20 & Abutec 100 Vapor Combustor Unit**

Dear Shane Dowell:

In response to your inquiry, HY-BON Engineering, Co. is pleased to offer the following proposal for a HY-BON enclosed Vapor Combustor Unit (VCU). There are two models: **Abutec 20** (up to 22 mcf) and **Abutec 100** (up to 100 mcf) Medium Temperature Flares (MTF). Our VCU design incorporates HY-BON's 60+ years' experience with tank vapors with a combustor design which is highly effective, tested and certified "99% plus" for destruction of vent emissions from oil and condensate tank batteries, loading operations and storage facilities. The following items will show the advantages and benefits of incorporating this equipment into the Storage Tank facility:

**ADVANTAGES OF USING HY-BON's UNIQUE Combustor Technology:**

- **Operating Temperatures** up to 2100 degrees Fahrenheit
- **Compact & Easy to Install Design** (UNIT ARRIVES FULLY ASSEMBLED AND TESTED)
- **Eliminate Pilot Gas and operate on Process Gas ONLY**
- **Completely Enclosed Combustion** prevents the environment from being exposed to IR radiation, heat and light. Low risk of fire.

**Economically Efficient Vapor Elimination:**

- Our enclosed VCU is a stainless steel enclosed flare design capable of meeting industry's regulations while offering you significant cost savings. This flare is proven throughout the world and is scalable to your application.
- Highest Destruction Removal Efficiency (DRE) in the industry
- Our Combustors are tested and certified according to EPA 40 CFR 60, subpart OOOO. The MTF model achieves 99%+ DRE
- Offers "Alternate Operating Scenario" for Permit Compliance during maintenance of Vapor Recovery Units and other site operations.

CUSTOMER: Jay-Bee Oil and Gas  
QUOTE #: 20442WA

**Other relative points to note for the *Abutec 20* and *Abutec 100*:**

- CDM Compliant
- EPA 40 CFR 60, Subpart OOOO Compliant
- Completely Enclosed Combustion
- Low Capital and Operating Costs
- Meets 40 CFR 60.18 regulations
- 99%+ Destruction Efficiency (third party verified)
- Very High Turndown Ratio
- Only requires 220 btu/ft<sup>3</sup> gas to maintain combustion
- Fully automated system based on pressure, with data logging on temperature, pressure, run time (additional parameters optional).
- Output via thumb drive, to a SCADA system, or wireless connection to company computer or IPHONE.
- High Temperature Flares (HTF) with 99.99% DRE are also available

**Technical Summary:**

**Flare Gas Stream: *Abutec 20 Mscfd***

**Type:** Enclosed Tank Battery Flare Composition: 2200 btu/ft<sup>3</sup> gas

**Temperature:** Ambient to 100°F +/- 20 deg°F

**Flow Rate:** up to 22,110 scfd (standard cubic feet per day) or 15 scfm

**Auxiliary Fuel Requirements:** N/A

**Burner Size:** 2.39 million BTU/hr (0.7 MW)

**Inlet Pressure Requirements:** 2-4 oz/in<sup>2</sup> (3.5-7.0 "w.c.")

**Turndown Ratio:** 2:1

**Mechanical**

**Design Wind Speed:** 100 mph

**Ambient Temperature:** -30 deg°F up to 120 deg°F

**Electrical Area Classification:** General Area Classification (non-hazardous)

**Elevation:** Up to 3,000 ft ASL – please advise if higher elevation

**Process**

**Smokeless Capacity:** 100% Operating Temperature 1400 deg°F to 2100 deg°F (1500 deg°F Nominal); Retention Time 0.3 sec Flare Inlet Pressure 2-4 oz/in<sup>2</sup> (3.5-7.0 "w.c.")

**Utilities**

Pilot Gas Process Gas

Electricity 1 Phase, 60 Hz, 120V / 10A (Solar Option) Auxiliary Fuel N/A

**Emissions**

Destruction Efficiency: 99% DRE

**Flare Gas Stream: *Abutec 100 Mscfd***

**Type:** Enclosed Tank Battery Flare

**Composition:** 2200 btu/ft<sup>3</sup> gas

**Temperature:** Ambient to 100°F +/- 20 deg°F

**Flow Rate:** up to 100,000 scfd (standard cubic feet per day) or 69.5 scfm

CUSTOMER: Jay-Bee Oil and Gas  
QUOTE #: 20442WA

**Auxiliary Fuel Requirements:** N/A

**Burner Size:** 9.21 million BTU/hr (2.7 MW), Inlet Pressure Requirements 2-4 oz/in<sup>2</sup> (3.5-7.0 "w.c.") Turndown Ratio 5:1

**Mechanical**

**Design Wind Speed:** 100 mph

**Ambient Temperature:** -30 deg°F up to 120 deg°F

**Electrical Area Classification:** General Area Classification (non-hazardous)

**Elevation:** Up to 3,000 ft ASL – please advise if higher elevation

**Process**

**Smokeless Capacity:** 100%

**Operating Temperature:** 1400 deg°F to 2100 deg°F (1500 deg°F Nominal); Retention Time 0.3 sec

**Flare Inlet Pressure:** 2-4 oz/in<sup>2</sup> (3.5-7.0 "w.c.")

**Utilities**

Pilot Gas Process Gas

Electricity 1 Phase, 60 Hz, 120V / 10A (Solar Option) Auxiliary Fuel N/A

**Emissions**

Destruction Efficiency: 99% DRE

**EPA Federal Environmental Compliance:**

- The recent publication of the Federal Register applies the Quad O New Point Source regulations that state that all Storage Tank facilities constructed on or after August 23, 2011 will need to be at or below 6 Tons of VOC's per year.
  - Includes new source performance standards for VOC's and sulfur dioxide and new air toxics standards for oil and natural gas production and natural gas transmission.
  - "Condensate & crude oil storage tanks – Effects every tank battery (and all major modifications) installed since August 2011 with the "potential to emit" 6 tons or more of VOC's. This equates to 20 to 50 barrels of oil a day throughput, or 1 to 10 barrels of condensate – *basically every new tank battery in the United States.*
  - Requires all crude oil and condensate tanks to control their air toxics by at least 95 percent. In addition, emissions from these tanks will be counted towards determining whether a facility is a major source.
  - These new regulations require, by federal statute, a VRU, Combustor or a Flare on every new or modified oil and condensate tank battery across the United States installed or modified since August 23, 2011. Each site must be in full compliance by October 15, 2013
  - The use of a HY-BON Enclosed Vapor Combustor, when combined with a HY-BON Vapor Recovery Tower and/or, HY-BON Vapor Recovery Unit (VRU) is considered a "Total Solutions Approach" to reducing emissions.

**Health and Safety Concerns:**

- Capturing storage tank vapors with an EVC reduces the potential for dangerous flammable vapors collecting in low areas on location during still days and/or potentially hazardous gases (Hydrogen Sulfide Gas) escaping, threatening human and animal life.

CUSTOMER: Jay-Bee Oil and Gas  
 QUOTE #: 20442WA

**Commercial Summary:**

<u>Quantity</u>	<u>Model/Description</u>	<u>Pricing</u>
One (1)	<i>Abutec 20</i> Vapor Combustor Unit Handling up to 22 mcf (includes basic automation package)	\$9,500.00
One (1)	<i>Abutec 100</i> Vapor Combustor Unit Handling up to 100 mcf (includes basic automation package)	\$19,900.00
Options	1 Year Service Package (Tuning of unit at site, Field Maintenance, Spare Parts, and 24/6 support)	\$2,250.00 Price per Unit
Options	Solar Package (when site power is not Available)	\$5,720.00 Price per Unit
Options	Stainless Steel Knock Out pot with Manual drain valve (100 model)	\$ 850.00 Price per Unit
Options	Transport to Site (FOB Destination) 10% service charge added for coordination / handling (36) <i>Abutec 20's</i> or (12) <i>Abutec 100's</i> can fit on one truck	Prepay and add

**Delivery**

**Typical Spare Parts List**

The following is a list of spare parts suggested for the system being specified. The prices are net unit prices and represent FOB Kennesaw, GA (ABUTEK Facility). Typical lead-time is 2-4 weeks.

Thermocouple, Type K, (QTY: 1):	\$358.75
Pressure Switch, (QTY: 1):	\$296.25
Ignition Transformer (QTY: 1):	\$448.75
Spark Electrode (QTY: 1):	\$ 66.25

**CUSTOMER: Jay-Bee Oil and Gas**  
**QUOTE #: 20442WA**

**Our field Engineering and Technical Staff are available to make a site visit to make recommendations to insure the proper installation and construction procedures.**

**We look forward to this opportunity to provide our equipment and services.**

**Highest Regards,**

**Hy-Bon Engineering Company, Inc.**

CUSTOMER: Jay Bee Oil  
QUOTE #: 20962SB

# QUAD O COMPLIANT ENCLOSED VAPOR COMBUSTORS

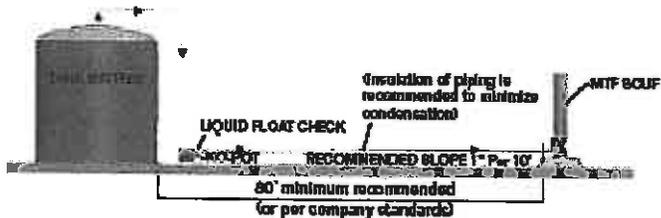
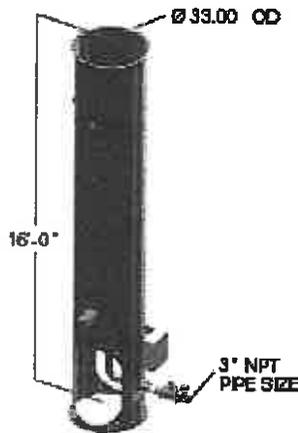


## ABUTEC 20

- Flow – 0 – 20MSCFD
- Inlet pressure – as low as 2oz/in<sup>2</sup> and up to 120psig

## ABUTEC 100

- Flow – 20 – 100MSCFD
- Inlet pressure – as low as 2oz/in<sup>2</sup> and up to 120psig



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**ATTACHMENT I**

**Emissions Calculations**

Jay-Bee Oil & Gas, Inc.

Coffman Well Pad  
Joddridge County County, WV

Source	Description	NOx lb/hr	CO lb/hr	CO2e lb/hr	VOC lb/hr	SO2 lb/hr	PM lb/hr	n-Hexane lb/hr	benzene lb/hr	formaldehyde lb/hr	Total HAPs lb/hr
VRU-1	VRU Compressor REMOVED	0.00	0.00	0.0	0.00	0.000	0.000	0.000	0.000	0.000	0.000
GPU-1	GPU #1	0.15	0.13	181.2	0.01	0.001	0.011	0.003	0.002	0.000	0.003
GPU-2	GPU #2	0.15	0.13	181.2	0.01	0.001	0.011	0.003	0.000	0.000	0.012
---	Blowdowns <sup>1</sup>			N/A	N/A						
TNK1-TNK6	Condensate Tanks + Water Tank <sup>2</sup>	0.00	0.01	5.6	0.01			0.000	0.000	0.000	0.00
TLU-1	Condensate Truck Loading <sup>3</sup>				4.44						
TLU-2	Water Truck Loading <sup>3</sup>				0.22						
---	Truck Traffic Fugitive Dust						N/A				
---	Fittings Fugitive Emissions			0.7	0.05						
<b>Total</b>		<b>0.30</b>	<b>0.26</b>	<b>369</b>	<b>4.74</b>	<b>0.00</b>	<b>0.02</b>	<b>0.01</b>	<b>0.00</b>	<b>0.00</b>	<b>0.02</b>

Source	Description	NOx tpy	CO tpy	CO2e tpy	VOC tpy	SO2 tpy	PM tpy	n-Hexane TPY	benzene tpy	formaldehyde tpy	Total HAPs tpy
VRU-1	VRU Compressor REMOVED	0.00	0.00	0	0.00	0.000	0.00	0.00	0.00	0.00	0.00
GPU-1	GPU #1	0.66	0.55	794	0.04	0.004	0.05	0.01	0.00	0.00	0.01
GPU-2	GPU #2	0.66	0.55	794	0.04	0.004	0.05	0.01	0.00	0.00	0.01
---	Blowdowns <sup>1</sup>			0	0.00						
TNK1-TNK6	Condensate Tanks + Water Tanks <sup>2</sup>	0.01	0.06	18	0.06			0.00	0.00	0.00	0.00
TLU-1	Condensate Truck Loading <sup>3</sup>				0.01						
TLU-2	Water Truck Loading <sup>3</sup>				0.03						
---	Truck Traffic Fugitive Dust						N/A				
---	Fittings Fugitive Emissions			3	0.22						
<b>Total</b>		<b>1.32</b>	<b>1.16</b>	<b>1,608</b>	<b>0.39</b>	<b>0.01</b>	<b>0.10</b>	<b>0.02</b>	<b>0.00</b>	<b>0.00</b>	<b>0.02</b>

<sup>1</sup> No Blowdowns with removal of VRU

<sup>2</sup> Condensate and water tank emissions will be controlled by a VCU at 99%.

**Jay-Bee Oil & Gas, LLC**  
**ENGINE EMISSIONS**

**Coffman Well Pad**  
**Doddridge County County, WV**

**Controlled Emission Rates**

**Source CE-1**  
**Flash Gas Compressor**

**Engine Data:**

Engine Manufacturer	Cummins	
Engine Model	G5.9	
Type (Rich-burn or Low Emission)	Rich Burn	
Aspiration (Natural or Turbocharged)	Natural	
Manufacturer Rating	84	hp
Speed at Above Rating	1,800	rpm
Configuration (In-line or Vee)	In-line	
Number of Cylinders	6	
Engine Bore	4.020	inches
Engine Stroke	4.720	inches
Engine Displacement	359	cu. in.
Engine BMEP	103	psi
Fuel Consumption (HHV)	7,914	Btu/bhp-hr

**Emission Rates:**

	g/bhp-hr	lb/hr	tons/year	g/hr	lb/day	AP-42 4-stroke rich lb/mmBtu
Oxides of Nitrogen, NOx	1.018	0.19	0.83	86	4.52	
Carbon Monoxide CO	2.045	0.38	1.66	172	9.09	
VOC (NMNEHC)	1.450	0.27	1.18	122	6.44	
CO2	449	83	364	37,716	1,996	
CO2e		89	391			

Comment
453.59 grams = 1 pound
2,000 pounds = 1 ton

**Total Annual Hours of Operation**

<b>Total Annual Hours of Operation</b>	<b>8,760</b>				
SO2		0.0004	0.0017		0.0006
PM2.5		0.0063	0.0277		0.0095
PM (Condensable)		0.0066	0.0289		0.0099
CH4		0.1282	0.5529		0.0022 Factor From 40 CFR 98, Table C-2
N2O		0.0115	0.0503		0.0002 Factor From 40 CFR 98, Table C-2
acrolein		0.0017	0.0077		0.00263
acetaldehyde		0.0019	0.0081		0.00279
formaldehyde	0.081	0.0150	0.0657		Per Mfg.
benzene		0.0011	0.0046		0.00158
toluene		0.0004	0.0016		0.000558
ethylbenzene		2E-05	0.0001		2.48E-05
xylene s		0.0001	0.0006		0.000195
methanol		0.002	0.0089		0.00306
total HAPs		0.0222	0.0973		

**Exhaust Parameters:**

Exhaust Gas Temperature	1,078	deg. F
Exhaust Gas Mass Flow Rate		lb/hr
Exhaust Gas Mass Flow Rate	430	acfm

Exhaust Stack Height	96	inches
	8.00	feet

Exhaust Stack Inside Diameter	4	inches
	0.333	feet

Exhaust Stack Velocity	82.1	ft/sec
	4,927.4	ft/min

**Jay-Bee Oil & Gas, LLC**

**Coffman Well Pad  
Doddridge County, WV**

**Potential Emission Rates**

**GPU-1**

Burner Duty Rating	1500.0 Mbtu/hr
Burner Efficiency	98.0 %
Gas Heat Content (HHV)	1263.0 Btu/scf
Total Gas Consumption	29086.0 scfd
H2S Concentration	0.000 Mole %
Hours of Operation	8760

NOx	0.1501	lbs/hr	0.657	TPY
CO	0.1261	lbs/hr	0.552	TPY
CO2	180.1	lbs/hr	788.7	TPY
CO2e	181	lbs/hr	794	tpy
VOC	0.0083	lbs/hr	0.036	TPY
SO2	0.0009	lbs/hr	0.004	TPY
H2S	0.0000	lbs/hr	0.000	TPY
PM10	0.0114	lbs/hr	0.050	TPY
CHOH	0.0001	lbs/hr	0.000	TPY
Benzene	0.0000	lbs/hr	0.000	TPY
N-Hexane	0.0027	lbs/hr	0.012	TPY
Toluene	0.0000	lbs/hr	0.000	TPY
Total HAPs	0.0028	lbs/hr	0.012	TPY

**AP-42 Factors Used**

NOx	100 Lbs/MMCF
CO	84 Lbs/MMCF
CO <sub>2</sub>	120,000 Lbs/MMCF
VOC	5.5 Lbs/MMCF
PM	7.6 Lbs/MMCF
SO <sub>2</sub>	0.6 Lbs/MMCF
CH <sub>4</sub>	2.3 Lbs/MMCF
N <sub>2</sub> O	2.2 Lbs/MMCF
HCOH	0.075 Lbs/MMCF
Benzene	0.0021 Lbs/MMCF
n-Hexane	1.8 Lbs/MMCF
Toluene	0.0034 Lbs/MMCF

**Global Warming Potential = 1**

**Global Warming Potential = 25  
Global Warming Potential = 310**

**Jay-Bee Oil & Gas, LLC**

**Coffman Well Pad  
Doddridge County County, WV**

**Potential Emission Rates**

**Source GPU-2**

Burner Duty Rating                    1500.0 Mbtu/hr  
 Burner Efficiency                        98.0 %  
 Gas Heat Content (HHV)                1263.0 Btu/scf  
 Total Gas Consumption                 29086.0 scfd  
 H2S Concentration                        0.000 Mole %  
 Hours of Operation                        8760

NOx	0.1501	lbs/hr	0.657	TPY
CO	0.1261	lbs/hr	0.552	TPY
CO2	180.1	lbs/hr	788.7	TPY
CO2e	181	lbs/hr	794	tpy
VOC	0.0083	lbs/hr	0.036	TPY
SO2	0.0009	lbs/hr	0.004	TPY
H2S	0.0000	lbs/hr	0.000	TPY
PM10	0.0114	lbs/hr	0.050	TPY
CHOH	0.0001	lbs/hr	0.000	TPY
Benzene	0.0000	lbs/hr	0.000	TPY
N-Hexane	0.0027	lbs/hr	0.012	TPY
Toluene	0.0000	lbs/hr	0.000	TPY
Total HAPs	0.0028	lbs/hr	0.012	TPY

**AP-42 Factors Used**

NOx                                        100 Lbs/MMCF  
 CO    84 Lbs/MMCF  
 CO<sub>2</sub>                                        120,000 Lbs/MMCF  
 VOC                                         5.5 Lbs/MMCF  
 PM    7.6 Lbs/MMCF  
 SO<sub>2</sub>                                         0.6 Lbs/MMCF  
 CH<sub>4</sub>                                         2.3 Lbs/MMCF  
 N<sub>2</sub>O                                         2.2 Lbs/MMCF  
 HCOH                                      0.075 Lbs/MMCF  
 Benzene                                    0.0021 Lbs/MMCF  
 n-Hexane                                 1.8 Lbs/MMCF  
 Toluene                                    0.0034 Lbs/MMCF

**Global Warming Potential = 1**

**Global Warming Potential = 25**

**Global Warming Potential =310**

**Coffman Well Pad  
Doddridge County, WV**

**Potential Emission Rate**

**Enclosed Combustor Pilot**

Burner Duty Rating 80.0 Mbtu/hr  
 Burner Efficiency 99.0 %  
 Gas Heat Content (HHV) 1257.6 Btu/scf  
 Total Gas Consumption 1542.1 scfd  
 H2S Concentration 0.000 Mole %  
 Hours of Operation 8760

NOx	0.0079	lbs/hr	0.035	TPY
CO	0.0067	lbs/hr	0.029	TPY
CO2	9.5	lbs/hr	41.6	TPY
CO2e	10	lbs/hr	42	TPY
VOC	0.0004	lbs/hr	0.002	TPY
SO2	0.0000	lbs/hr	0.000	TPY
H2S	0.0000	lbs/hr	0.000	TPY
PM10	0.0006	lbs/hr	0.003	TPY
CHOH	0.0000	lbs/hr	0.000	TPY
Benzene	0.0000	lbs/hr	0.000	TPY
N-Hexane	0.0001	lbs/hr	0.001	TPY
Toluene	0.0000	lbs/hr	0.000	TPY
Total HAPs	0.0001	lbs/hr	0.001	TPY

**AP-42 Factors Used (Tables 1.4.1-1.4.3)**

NOx 100 Lbs/MMCF  
 CO 84 Lbs/MMCF  
 CO<sub>2</sub> 120,000 Lbs/MMCF  
 VOC 5.5 Lbs/MMCF  
 PM 7.6 Lbs/MMCF  
 SO<sub>2</sub> 0.6 Lbs/MMCF  
 CH<sub>4</sub> 2.3 Lbs/MMCF  
 N<sub>2</sub>O 2.2 Lbs/MMCF  
 HCOH 0.075 Lbs/MMCF  
 Benzene 0.0021 Lbs/MMCF  
 n-Hexane 1.8 Lbs/MMCF  
 Toluene 0.0034 Lbs/MMCF

Global Warming Potential = 1

Global Warming Potential = 25

Global Warming Potential =310

**Coffman Well Pad  
Doddridge County County, WV**

**Potential Emission Rates**

**Source EC-1**

**Enclosed Vapor Combustor - Control of Condensate Tank Emissions**

Destruction Efficiency 99.0 %  
 Gas Heat Content (HHV) 2354.0 Btu/scf  
 Max Flow to T-E 0.00023 MMSCFD 0.084 MMCF/Yr  
 Max BTUs to Flare 0.0226 MMBTU/Hr 198 MMBTU/Yr

NOx	0.00	lbs/hr	0.01	tpy
CO	0.01	lbs/hr	0.04	tpy
CO2	2.64	lbs/hr	11.5	tpy
CO2e	3.42	lb/hr	11.6	tpy
VOC	0.01	lb/hr	0.05	tpy
CH4	0.00	lbs/hr	0.0002	tpy
N2O	0.0000	lbs/hr	0.0000	tpy
PM	0.0001	lb/hr	0.0003	tpy
Benzene	0.0000	lb/hr	0.0000	tpy
CHOH	0.0000	lb/hr	0.0000	tpy
n-Hexane	0.0001	lb/hr	0.0001	tpy
Toluene	0.0000	lb/hr	0.0000	tpy

Notes: From E&P Tanks, Condensate Tank vapors to VCU are 75.43% VOC.  
 Condensate Tank Vapors are 0.223 MSCFD [1.07 lb/hr] and 2354 BTU/SCF  
 Hourly VOC emissions are determined as follows: Condensate Tank Vapors to Flare (1.07 lb/Hr) times 1 minus control efficiency (1-.99 or 0.01) times percent VOCs (75.43%) = 0.008 lb/Hr.

Annual combustor VOC emissions from control of tank emissions are determined as follows:  
 Condensate tank emission = 1.07lb/hr x 8760 hours/yr x 0.0 x 0.754 = 70.7 lb/yr = 0.04 tpy.

**Factors Used**

AP-42 Table 13.5-1	NOx	0.068 Lbs/MMBTU
AP-42 Table 13.5-1	CO	0.37 Lbs/MMBTU
40 CFR 98 Table C-1	CO2	116.89 Lbs/MMBTU
40 CFR 98 Table C-2	CH4	0.0022 Lbs/MMBTU
40 CFR 98 Table C-2	N2O	0.00022 Lbs/MMBTU
AP-42 Table 1.4-2	PM	7.6 lb/MMSCF
AP-42 Table 1.4-3	Benzene	0.0021 lb/MMSCF
AP-42 Table 1.4-3	Toluene	0.0034 lb/MMSCF
AP-42 Table 1.4-3	Hexane	1.8 lb/MMSCF
AP-42 Table 1.4-3	CHOH	0.075 lb/MMSCF

**Coffman Well Pad  
Doddridge County County, WV**

**Potential Emission Rates**

**Source EC-1**

**Enclosed Vapor Combustor - Control of Water Tank Emissions**

Destruction Efficiency 99.0 %  
 Gas Heat Content (HHV) 1257.0 Btu/scf  
 Max Flow to T-E 0.00023 MMSCFD 0.084 MMCF/Yr  
 Max BTUs to Flare 0.0120 MMBTU/Hr 106 MMBTU/Yr

NOx	0.00	lbs/hr	0.00	tpy
CO	0.00	lbs/hr	0.02	tpy
CO2	1.41	lbs/hr	6.2	tpy
CO2e	2.19	lb/hr	6.2	tpy
VOC	0.00	lb/hr	0.01	tpy
CH4	0.00	lbs/hr	0.0001	tpy
N2O	0.0000	lbs/hr	0.0000	tpy
PM	0.0001	lb/hr	0.0003	tpy
Benzene	0.0000	lb/hr	0.0000	tpy
CHOH	0.0000	lb/hr	0.0000	tpy
n-Hexane	0.0001	lb/hr	0.0001	tpy
Toluene	0.0000	lb/hr	0.0000	tpy

Notes: Water Tank vapors to VCU are assumed to be the same as inlet gas (18.40% VOC).  
 Water Tank Flash Gas Flow Rate is 7.5 scf/BBL x 30 BBL/day or 225 scfd  
 Hourly VOC emissions are determined as follows: Water Tank Vapors to Flare (0.99 lb/Hr from Water Flash Spreadsheet) times 1 minus control efficiency (1-.99 or 0.01) times percent VOCs (18.4%) = 0.002 lb/Hr.

Annual combustor VOC emissions from control of tank emissions are determined as follows:  
 Water tank emission = 0.99 lb/hr x 8760 hours/yr x 0.01 x 0.184 = 15.95 lb/yr = 0.01 tpy.

**Factors Used**

AP-42 Table 13.5-1	NOx	0.068 Lbs/MMBTU
AP-42 Table 13.5-1	CO	0.37 Lbs/MMBTU
40 CFR 98 Table C-1	CO2	116.89 Lbs/MMBTU
40 CFR 98 Table C-2	CH4	0.0022 Lbs/MMBTU
40 CFR 98 Table C-2	N2O	0.00022 Lbs/MMBTU
AP-42 Table 1.4-3	PM	7.6 lb/MMSCF
AP-42 Table 1.4-3	Benzene	0.0021 lb/MMSCF
AP-42 Table 1.4-3	Toluene	0.0034 lb/MMSCF
AP-42 Table 1.4-3	Hexane	1.8 lb/MMSCF
AP-42 Table 1.4-3	CHOH	0.075 lb/MMSCF

**Jay-Bee Oil & Gas, Inc.**  
FUGITIVE EMISSIONS

**Coffman Well Pad**  
**Doddridge County County, WV**

**Fugitive VOC Emissions**

Volatile Organic Compounds, NMNEHC from gas analysis:	18.40	weight percent
Methane from gas analysis:	59.35	weight percent
Carbon Dioxide from gas analysis:	0.32	weight percent
Gas Density	0.0580	lb/scf

Emission Source:	Number	Oil & Gas Production*	VOC %	VOC, lb/hr	VOC TPY	CO2 lb/Hr	CO2 TPY	CH4 lb/hr	CH4 TPY	CO2e
<b>Valves:</b>										
Gas/Vapor:	6	0.02700 scf/hr	18.4	0.002	0.008	0.000	0.000	0.006	0.0244	0.611
Light Liquid:	13	0.05000 scf/hr	100.0	0.038	0.165					0.000
Heavy Liquid (Oil):	-	0.00050 scf/hr	100.0	0.000	0.000					0.000
Low Bleed Pneumatic	-	1.39000 scf/hr	18.4	0.000	0.000	0.000	0.000	0.000	0.0000	0.000
<b>Relief Valves:</b>	10	0.04000 scf/hr	18.4	0.004	0.019	0.000	0.000	0.014	0.0603	1.508
<b>Open-ended Lines, gas:</b>	2	0.06100 scf/hr	18.4	0.001	0.006					0.000
<b>Open-ended Lines, liquid:</b>	-	0.05000 lb/hr	100.0	0.000	0.000					0.000
<b>Pump Seals:</b>										0.000
Gas:	-	0.00529 lb/hr	18.4	0.000	0.000	0.000	0.000	0.000	0.0000	0.000
Light Liquid:	-	0.02866 lb/hr	100.0	0.000	0.000					0.000
Heavy Liquid (Oil):	-	0.00133 lb/hr	100.0	0.000	0.000					0.000
<b>Compressor Seals, Gas:</b>	1	0.01940 lb/hr	18.4	0.004	0.016	0.000	0.000	0.001	0.0029	0.073
<b>Connectors:</b>										0.000
Gas:	2	0.00300 scf/hr	18.4	0.000	0.000	0.000	0.000	0.000	0.0009	0.023
Light Liquid:	0	0.00700 scf/hr	100.0	0.000	0.000					0.000
Heavy Liquid (Oil):	-	0.00030 scf/hr	100.0	0.000	0.000					0.000
<b>Flanges:</b>										0.000
Gas:	12	0.00086 lb/hr	18.4	0.002	0.008	0.000	0.000	0.006	0.0268	0.671
Light Liquid:	0	0.00300 scf/hr	100.0	0.000	0.000					0.000
Heavy Liquid:		0.0009 scf/hr	100.0	0.000	0.000					0.000

**Fugitive Calculations:**

	lb/hr	t/y
VOC	0.051	0.221
CH4	0.026	0.115
CO2	0.000	0.001
CO2e	0.659	2.89

Notes: \*Factors are from 40 CFR 98, Table W-1A (scf/hr), where available. Remaining are API (lb/hr)

**Jay-Bee Oil & Gas, Inc.**  
**GAS ANALYSIS INFORMATION**

**Coffman Well Pad**  
**Doddridge County County, WV**

**Inlet Gas Composition Information:**

	Fuel Gas mole %	Fuel M.W. lb/lb-mole	Fuel S.G.	Fuel Wt. %	LHV, dry Btu/scf	HHV, dry Btu/scf	AFR vol/vol	VOC NM / NE	Z Factor	GPM
Nitrogen, N2	0.394	0.110	0.004	0.530			-		0.0039	
Carbon Dioxide, CO2	0.151	0.066	0.002	0.319			-		0.0015	
Hydrogen Sulfide, H2S	0.000	0.000	0.000	0.000	0.0	0.0	0.000		0.0000	
Helium, He	-	-	-	-			-		-	
Oxygen, O2	-	-	-	-			-		-	
Methane, CH4	77.080	12.366	0.427	59.350	701.0	778.5	7.346		0.7693	
Ethane, C2H6	14.832	4.460	0.154	21.406	240.1	262.5	2.474		0.1471	3.945
Propane	4.967	2.190	0.076	10.512	115.0	125.0	1.183	10.512	0.0488	1.361
Iso-Butane	0.616	0.358	0.012	1.718	18.5	20.0	0.191	1.718	0.0060	0.200
Normal Butane	1.210	0.703	0.024	3.375	36.4	39.5	0.375	3.375	0.0117	0.379
Iso Pentane	0.266	0.192	0.007	0.921	9.8	10.6	0.101	0.921	0.0027	0.097
Normal Pentane	0.262	0.189	0.007	0.907	9.7	10.5	0.100	0.907	0.0026	0.094
Hexane	0.158	0.136	0.005	0.654	7.0	7.5	0.072	0.654	0.0016	0.065
Heptane	0.064	0.064	0.002	0.308	3.3	3.5	0.034	0.308	0.0006	0.029
	100.000	20.836	0.719		1,140.7	1,257.6	11.875	18.396	0.9958	6.172

**Gas Density (STP) = 0.058**

Ideal Gross (HHV)	1,257.6
Ideal Gross (sa'd)	1,236.5
GPM	-
Real Gross (HHV)	1,263.0
Real Net (LHV)	1,145.6

**Jay-Bee Oil & Gas, Inc.**  
**GAS ANALYSIS INFORMATION**

**Coffman Well Pad**  
**Doddridge County County, WV**

**Condensate Tank Vapor Composition Information:**

	Fuel Gas mole %	Fuel M.W. lb/lb-mole	Fuel S.G.	Fuel Wt. %	LHV, dry Btu/scf	HHV, dry Btu/scf	AFR vol/vol	VOC NM / NE	Z Factor	GPM
Nitrogen, N2	0.031	0.009	0.000	0.021			-		0.0003	
Carbon Dioxide, CO2	0.071	0.031	0.001	0.076			-		0.0007	
Hydrogen Sulfide, H2S	0.000	0.000	0.000	0.000	0.0	0.0	0.000		0.0000	
Helium, He	-	-	-	-			-		-	
Oxygen, O2	-	-	-	-			-		-	
Methane, CH4	20.023	3.212	0.111	7.804	182.1	202.2	1.908		0.1998	
Ethane, C2H6	22.820	6.862	0.237	16.670	369.4	403.8	3.806		0.2264	6.070
Propane	25.814	11.383	0.393	27.654	597.6	649.5	6.149	27.654	0.2536	7.075
Iso-Butane	6.881	4.000	0.138	9.716	206.5	223.8	2.131	9.716	0.0668	2.239
Normal Butane	16.288	9.467	0.327	23.000	490.4	531.4	5.044	23.000	0.1575	5.108
Iso Pentane	3.047	2.198	0.076	5.341	112.7	121.9	1.161	5.341	0.0305	1.109
Normal Pentane	2.843	2.051	0.071	4.983	105.4	114.0	1.083	4.983	0.0284	1.024
Hexane	1.689	1.456	0.050	3.536	74.4	80.3	0.764	3.536	0.0167	0.691
Heptane	0.492	0.493	0.017	1.198	25.1	27.1	0.258	1.198	0.0049	0.226
	100.000	41.163	1.421		2,163.5	2,354.0	22.306	75.428	0.9856	23.542

**Gas Density (STP) = 0.115**

Ideal Gross (HHV)	2,354.0
Ideal Gross (sat'd)	2,313.7
GPM	-
Real Gross (HHV)	2,388.4
Real Net (LHV)	2,195.1

Gas Data

GAS DATA INFORMATION

Specific Gravity of Air, @ 29.92 in. Hg and 60 -F, 28.9625  
 One mole of gas occupies, @ 14.696 psia & 32 -F, 359.2 cu ft. per lb-mole  
 One mole of gas occupies, @ 14.696 psia & 60 -F, 379.64 cu ft. per lb-mole

Hydrogen Sulfide (H2S) conversion chart:

0 grains H2S/100 scf	=	0.00000 mole % H2S
		0.0 ppmv H2S
0 mole % H2S	=	0 grains H2S/100 scf
		0.0 ppmv H2S
0 ppmv H2S	=	0.000 grains H2S/100 scf
		0.00000 mole % H2S

Ideal Gas at 14.696 psia and 60°F

		MW lb/mol	Specific Gravity	Lb per Cu Ft	Cu Ft per Lb	LHV, dry Btu/scf	HHV, dry Btu/scf	LHV Btu/lb	HHV Btu/lb	cu ft of air / 1 cu ft of gas	Z factor
Nitrogen	N2	28.013	0.9672	0.0738	13.552	0	0	0	0	0	0.9997
Carbon Dioxide	CO2	44.010	1.5196	0.1159	8.626	0	0	0	0	0	0.9964
Hydrogen Sulfide	H2S	34.076	1.1766	0.0898	11.141	587	637	6,545	7,100	7.15	0.9846
Water	H2O	18.000	0.6215	0.0474	21.091	0	0	0	0	0	1.0006
Oxygen	O2	31.999	1.1048	0.0843	11.864	0	0	0	0	0	0.9992
Methane	CH4	16.043	0.5539	0.0423	23.664	909.4	1,010.0	21,520	23,879	9.53	0.9980
Ethane	C2H6	30.070	1.0382	0.0792	12.625	1,618.7	1,769.6	20,432	22,320	16.68	0.9919
Propane	C3H8	44.097	1.5226	0.1162	8.609	2,314.9	2,516.1	19,944	21,661	23.82	0.9825
Iso-Butane	C4H10	58.124	2.0069	0.1531	6.532	3,000.4	3,251.9	19,629	21,257	30.97	0.9711
Normal Butane	C4H10	58.124	2.0069	0.1531	6.532	3,010.8	3,262.3	19,680	21,308	30.97	0.9667
Iso Pentane	C5H12	72.151	2.4912	0.1901	5.262	3,699.0	4,000.9	19,478	21,052	38.11	1.0000
Normal Pentane	C5H12	72.151	2.4912	0.1901	5.262	3,706.9	4,008.9	19,517	21,091	38.11	1.0000
Hexane	C6H14	86.178	2.9755	0.2270	4.405	4,403.8	4,755.9	19,403	20,940	45.26	0.9879
Heptane	C7H16	100.205	3.4598	0.2639	3.789	5,100.0	5,502.5	22,000	23,000	52.41	0.9947

Real Gas at 14.696 psia and 60°F

		MW lb/mol	Specific Gravity	Lb per Cu Ft	Cu Ft per Lb	LHV, dry Btu/scf	HHV, dry Btu/scf	LHV Btu/lb	HHV Btu/lb	cu ft of air / 1 cu ft of gas	Gal/Mole
Nitrogen	N2	28.013	0.9672	0.0738	13.552	0	0	0	0	0	4.1513
Carbon Dioxide	CO2	44.010	1.5196	0.1159	8.626	0	0	0	0	0	6.4532
Hydrogen Sulfide	H2S	34.076	1.1766	0.0898	11.141	621	672	6,545	7,100	7.15	5.1005
Water	H2O	18.000	0.6215	0.0474	21.091						3.8376
Oxygen	O2	31.999	1.1048	0.0843	11.864	0	0	0	0	0	3.3605
Methane	CH4	16.043	0.5539	0.0423	23.664	911	1,012	21,520	23,879	9.53	6.4172
Ethane	C2H6	30.070	1.0382	0.0792	12.625	1,631	1,783	20,432	22,320	16.68	10.126
Propane	C3H8	44.097	1.5226	0.1162	8.609	2,353	3,354	19,944	21,661	23.82	10.433
Iso-Butane	C4H10	58.124	2.0069	0.1531	6.532	3,101	3,369	19,629	21,257	30.97	12.386
Normal Butane	C4H10	58.124	2.0069	0.1531	6.532	3,094	3,370	19,680	21,308	30.97	11.937
Iso Pentane	C5H12	72.151	2.4912	0.1901	5.262	3,709	4,001	19,478	21,052	38.11	13.86
Normal Pentane	C5H12	72.151	2.4912	0.1901	5.262	3,698	4,009	19,517	21,091	38.11	13.713
Hexane	C6H14	86.178	2.9755	0.2270	4.405	4,404	4,756	19,403	20,940	45.26	15.566
Heptane	C7H16	100.205	3.4598	0.2639	3.789	5,101	5,503	22,000	23,000	52.41	17.488

16.3227  
17.488

## Flash Emission Calculations

Using Gas-Water Ratio Method

### Site specific data

Estimated Gas-water-ratio	=	7.50 scf/bbl
Throughput	=	10,950 bbl/yr
Stock tank gas molecular weight	=	37.74 g/mole

### Conversions

1 lb	=	453.6 g
1 mole	=	22.4 L
1 scf	=	28.32 L
1 ton	=	2000 lb

### Equations

$$E_{TOT} = Q \frac{(bbl)}{(yr)} \times R \frac{(scf)}{(bbl)} \times \frac{28.32(L)}{1(scf)} \times \frac{1(mole)}{22.4(L)} \times MW \frac{(g)}{(mole)} \times \frac{1(lb)}{453.6(g)} \times \frac{1(ton)}{2000(lb)}$$

- $E_{TOT}$  = Total stock tank flash emissions (TPY)
- $R$  = Measured gas-oil ratio (scf/bbl)
- $Q$  = Throughput (bbl/yr)
- $MW$  = Stock tank gas molecular weight (g/mole)

$$E_{spec} = E_{TOT} \times X_{spec}$$

- $E_{spec}$  = Flash emission from constituent
- $X_{spec}$  = Weight fraction of constituent in stock tank gas

## Flash Emissions

Constituent	TPY
Total	4.3194
<b>VOC</b>	<b>0.7954</b>
Nitrogen	2.29E-02
Carbon Dioxide	1.38E-02
Methane	2.56E+00
Ethane	9.24E-01
Propane	4.54E-01
Isobutane	7.42E-02
n-Butane	1.46E-01
2,2 Dimethylpropane	0.00E+00
Isopentane	3.98E-02
n-Pentane	3.92E-02
2,2 Dimethylbutane	0.00E+00
Cyclopentane	0.00E+00
2,3 Dimethylbutane	1.62E-02
2 Methylpentane	0.00E+00
3 Methylpentane	0.00E+00
n-Hexane	1.03E-02
Methylcyclopentane	0.00E+00
Benzene	1.73E-04
Cyclohexane	9.93E-04
2-Methylhexane	0.00E+00
3-Methylhexane	0.00E+00
2,2,4 Trimethylpentane	0.00E+00
Other C7's	6.48E-03
n-Heptane	2.42E-03
Methylcyclohexane	0.00E+00
Toluene	3.46E-04
Other C8's	3.46E-03
n-Octane	5.18E-04
Ethylbenzene	0.00E+00
M & P Xylenes	0.00E+00
O-Xylene	0.00E+00
Other C9's	0.00E+00
n-Nonane	0.00E+00
Other C10's	1.51E-03
n-Decane	0.00E+00
Undecanes (11)	0.00E+00

$E_{TOT}$

Sum of C3+

## Water Truck Loading Lost Emissions Per AP-42

Per AP-42, Chapter 5.2.2.1.1, the uncontrolled loading loss emission factor  $L_L$  can be estimated as follows:

$$L_L = 12.46[SPM/T]$$

Where:

$L_L$  = uncontrolled loading loss in pounds per 1000 gallons of liquid loaded

S = saturation factor (0.6)

P = true vapor pressure of liquid loaded (0.5 psia)

M = Molecular weight of vapor in lb/lb-mole (estimated at 20.5)

T = temperature of bulk liquid loaded in deg R or 460 + deg F (60 Deg F)

Thus,  $L_L = 12.46[0.6 \times 0.5 \times 20.5]/[460 + 60]$

$L_L = 0.15$  lb/1000 gallons loaded

It is conservatively assumed that these emissions are 80% VOCs

Given a maximum water production of 30 BBL (1260 gallons) a day, truck loading has dropped to a maximum of one truck every other day. Thus, uncontrolled emissions per event are estimated at 0.45 lb of VOC per day [ $1.26 \times 0.15 \times .80$ ]. There is no control on the water truck loading operations. As uncaptured emissions are estimated at 0.45 lb/event and each event takes place within a 2 hour period, the uncaptured hourly emission rate is conservatively estimated at 0.22 lb/hr [0.45 lb/2].

Maximum annual throughput is 10,950 BBL per year (459,900 gallons per year). Thus, uncaptured emissions are conservatively estimated at 55.1 pounds per year [ $459.9 \times 0.15 \times 0.8$ ] or 0.03 tons per year.

## Condensate Truck Loading Lost Emissions Per AP-42

Per AP-42, Chapter 5.2.2.1.1, the uncontrolled loading loss emission factor  $L_L$  can be estimated as follows:

$$L_L = 12.46[SPM/T]$$

Where:

$L_L$  = uncontrolled loading loss in pounds per 1000 gallons of liquid loaded

S= saturation factor (0.6)

P=true vapor pressure of liquid loaded 3.1 psia (condensate)

M= Molecular weight of vapor in lb/lb-mole (calculated at 53.18 – From E&P Tanks)

T= temperature of bulk liquid loaded in deg R or 460+deg F (60 Deg F)

Thus,  $L_L = 12.46[0.6 \times 3.1 \times 53.18]/[460+60]$

$L_L = 2.37$  lb/1000 gallons loaded

### VOC Emissions

Per E&P Tanks 89.3% of these emissions are VOCs (Working and Breathing vapors).

Annual maximum condensate production is now 190 BBL. Thus, given a maximum loading of 100 BBL (4,200 gallons) of condensate per event, uncontrolled emissions are estimated at 8.89 lb of VOC per event  $[2.37 \times 4.2 \times .893]$ . There is no control on the tank loading. Thus, uncaptured VOC emissions are estimated at 8.89 lb/day on the days when loading tanks place. As all loading will take place within 2 hours, worst case hourly tank loading VOC emissions are estimated at 4.44 lb/hr.

Maximum annual condensate loading is 183 BBL (7,665 gallons per year). Thus, two loading events per year are anticipated. Therefore un-captured VOC emissions are conservatively estimated at 17.78 pounds per year or 0.01 tpy.

```

*****
* Project Setup Information *
*****
Project File      : C:\Rogers_Files\Misc\Jay-Bee Oil & Gas\Coffman\Coffman Update 2-12-15.ept3
Flowsheet Selection : Oil Tank with Separator
Calculation Method  : RVP Distillation
Control Efficiency   : 0.00%
Known Separator Stream : High Pressure Oil
Entering Air Composition : No
Component Group      : C10+

Filed Name        : Jay-Bee O&G
Well Name         : Coffman
Date              : 2015.02.12

```

```

*****
* Data Input *
*****
Separator Pressure (psia) : 340.00
Separator Temperature (F) : 65.0
C10+ SG                  : 0.78
C10+ MW(lb/lbmol)       : 153.30

```

-- High Pressure Oil -----

No.	Component	Mole%	Wt%
1	H2S	0.0000	0.0000
2	O2	0.0000	0.0000
3	CO2	0.0250	0.0134
4	N2	0.0110	0.0037
5	C1	7.0149	1.3662
6	C2	7.9949	2.9191
7	C3	9.0719	4.8578
8	i-C4	2.6540	1.8729
9	n-C4	7.6659	5.4099
10	i-C5	4.3350	3.7977
11	n-C5	5.7989	5.0803
12	C6	6.8459	7.1621
13	C7	13.2659	16.1401
14	C8	12.6969	17.6108
15	C9	4.9350	7.6868
16	C10+	8.6649	16.1290
17	Benzene	0.1130	0.1072
18	Toluene	0.6130	0.6857
19	E-Benzene	0.5340	0.6884
20	Xylenes	1.4360	1.8512
21	n-C6	6.3239	6.6175
22	224Trimethylp	0.0000	0.0000

-- Sales Oil -----

```

Production Rate (bbl/day) : 0.50
Days of Annual Operation  : 365
API Gravity                : 70.76
Reid Vapor Pressure (psia) : 5.30
Ambient Pressure (psia)   : 14.70
Ambient Temperature (F)   : 60.0

```

```

*****
* Calculation Results *
*****

```

-- Emission Summary -----

```

Uncontrolled
ton

```

Total HAPs 0.0790  
 Total HC 4.5480  
 VOCs, C2+ 4.1930  
 VOCs, C3+ 3.4340  
 CO2 0.0030  
 CH4 0.3550

Uncontrolled Recovery Information:

Vapor (mscfd): 0.2297  
 HC Vapor (mscfd): 0.2295  
 CO2 (mscfd): 0.0000  
 CH4 (mscfd): 0.0500  
 GOR (SCF/STB): 459.4400

-- Emission Composition

NoComponent	Uncontrolled ton
1 H2S	0.0000
2 O2	0.0000
3 CO2	0.0030
4 N2	0.0010
5 C1	0.3550
6 C2	0.7590
7 C3	1.2590
8 i-C4	0.4400
9 n-C4	1.0470
10 i-C5	0.2430
11 n-C5	0.2270
12 C6	0.0830
13 Benzene	0.0010
14 Toluene	0.0020
15 E-Benzene	0.0010
16 Xylenes	0.0010
17 n-C6	0.0750
18 224Trimethylp	0.0000
19 Pseudo Comp1	0.0370
20 Pseudo Comp2	0.0160
21 Pseudo Comp3	0.0020
22 Pseudo Comp4	0.0010
23 Pseudo Comp5	0.0000
24 Total	4.5530

-- Stream Data

NoComponent	MW lb/lbmol	LP Oil mole %	Flash Oil mole %	Sales Oil mole %	Flash Gas mole %	W&S Gas mole %	Total Emission mole %
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	0.0250	0.0019	0.0000	0.1042	0.0120	0.0714
4 N2	28.01	0.0110	0.0001	0.0000	0.0485	0.0004	0.0314
5 C1	16.04	7.0149	0.1940	0.0000	30.4336	1.2040	20.0231
6 C2	30.07	7.9949	1.5341	0.0001	30.1770	9.5210	22.8201
7 C3	44.10	9.0719	5.0681	0.0434	22.8184	31.2291	25.8140
8 i-C4	58.12	2.6540	2.3377	0.3962	3.7399	12.4461	6.8407
9 n-C4	58.12	7.6659	7.6063	3.0165	7.8705	31.5035	16.2877
10 i-C5	72.15	4.3350	5.0843	5.0295	1.7623	5.3700	3.0472
11 n-C5	72.15	5.7989	6.9889	7.3932	1.7131	4.8840	2.8425
12 C6	84.00	6.8459	8.6782	10.0559	0.5551	1.5050	0.8934
13 Benzene	78.11	0.1130	0.1437	0.1674	0.0075	0.0206	0.0122
14 Toluene	92.14	0.6130	0.7887	0.9343	0.0097	0.0307	0.0172
15 E-Benzene	106.17	0.5340	0.6888	0.8195	0.0024	0.0087	0.0046
16 Xylenes	106.17	1.4360	1.8527	2.2049	0.0052	0.0190	0.0101
17 n-C6	86.18	6.3239	8.0234	9.3119	0.4890	1.3147	0.7831
18 224Trimethylp	114.24	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
19 Pseudo Comp1	96.00	13.2659	17.0754	20.2327	0.1865	0.6368	0.3469
20 Pseudo Comp2	107.00	12.6969	16.3755	19.4727	0.0669	0.2499	0.1321
21 Pseudo Comp3	121.00	4.9350	6.3700	7.5871	0.0080	0.0335	0.0171
22 Pseudo Comp4	134.00	3.6474	4.7092	5.6118	0.0021	0.0098	0.0048

23 Pseudo Comp5	166.81	5.0175	6.4788	7.7229	0.0002	0.0012	0.0005
		LP Oil	Flash Oil	Sales Oil	Flash Gas	W&S Gas	Total Emission
MW (lb/lbmol):	80.35	93.70	101.48	34.51	53.18	41.16	
Stream Mole Ratio:	1.0000	0.7744	0.6497	0.2256	0.1248	0.3503	
Stream Weight Ratio:	80.35	72.56	65.93	7.78	6.64	14.42	
Total Emission (ton):				2.458	2.095	4.553	
Heating Value (BTU/scf):				1996.32	2990.70	2350.48	
Gas Gravity (Gas/Air):				1.19	1.84	1.42	
Bubble Pt. @100F (psia):	297.56	32.36	5.47				
RVP @100F (psia):	94.94	21.75	5.29				
Spec. Gravity @100F:	0.66	0.69	0.70				

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**ATTACHMENT J**

**Class I Legal Advertisement**

**To Be Provided Upon Receipt  
of Affidavit**

**AIR QUALITY PERMIT NOTICE**  
**Notice of Application**

Notice is given that Jay-Bee Oil & Gas, Inc has applied to the West Virginia Department of Environmental Protection, Division of Air Quality, for a Class II Administrative Update to its G70-A General Permit Registration for its Coffman Well Pad off of West Virginia Route 23 near Shirley in Doddridge County, West Virginia. (Lat. 39.402811, Long. -80.687603)

The applicant estimates the following reduction in potential emissions of Regulated Air Pollutants will be:

2.39 tons of Nitrogen Oxides per year  
2.76 tons of Carbon Monoxide per year  
0.12 tons of Particulate Matter per year  
0.01 tons of Sulfur Dioxide per year  
3.53 tons of Volatile Organics per year  
2,230 tons of Greenhouse Gases per year

Startup of operational modifications is planned to begin on or about the 15th day of May 2015. Written comments will be received by the West Virginia Department of Environmental Protection, Division of Air Quality, 601 57<sup>th</sup> 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 1227, during normal business hours.

Dated this the (Day) day of (Month), (Year).

By: Mr. Shane Dowell – Office Manager  
Jay Bee Oil & Gas, Inc.  
3570 Shields Hill Rd.  
Cairo, WV 26337

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**ATTACHMENT O**

**Emissions Summary Sheets**

**G70-A EMISSIONS SUMMARY SHEET**

Emission Point ID No.	Emission Point Type <sup>1</sup>	Emission Unit Vented Through This Point		Air Pollution Control Device		All Regulated Pollutants - Chemical Name/CAS <sup>2</sup> (Speciate VOCs & HAPs)	Maximum Potential Uncontrolled Emissions <sup>3</sup>		Maximum Potential Controlled Emissions <sup>4</sup>		Emission Form or Phase (At exit conditions, Solid, Liquid or Gas/Vapor)	Est. Method Used <sup>5</sup>
		ID No.	Source	ID No.	Device Type		lb/hr	ton/yr	lb/hr	ton/yr		
1E	Upward Vertical Stack	GPU-1	GPU	None		NOx	0.15	0.66	0.15	0.66	Gas	EE
						CO	0.13	0.55	0.13	0.55	Gas	EE
						VOC	0.01	0.04	0.01	0.04	Gas	EE
						PM	0.01	0.05	0.01	0.05	Solid	EE
						HCOH	<0.01	<0.01	<0.01	<0.01	Gas	EE
						Total HAPs	<0.01	0.01	<0.01	0.01	Gas	EE
						CO2e	181.2	794	181.2	794	Gas	EE
2E	Upward Vertical Stack	GPU-2	GPU	None		NOx	0.15	0.66	0.15	0.66	Gas	EE
						CO	0.13	0.55	0.13	0.55	Gas	EE
						VOC	0.01	0.04	0.01	0.04	Gas	EE
						PM	0.01	0.05	0.01	0.05	Solid	EE
						HCOH	<0.01	<0.01	<0.01	<0.01	Gas	EE
						Total HAPs	<0.01	0.01	<0.01	0.01	Gas	EE
						CO2e	181.2	794	181.2	794	Gas	EE
E3	Fugitive	TLU-1 and TLU-2	Truck Loading	None		NOx					Gas	EE
						CO					Gas	EE
						VOC	4.66	0.03	4.66	0.03	Gas	EE
						PM					Solid	EE
						HCOH	<0.01	<0.01	<0.01	<0.01	Gas	EE
						Total HAP	<0.01	0.01	<0.01	0.01	Gas	EE
4E		VRU-1 (Removed)	Un-Controlled Tank Emissions	VRU-1	VRU	NOx	0.00	0.00	0.00	0.00	Gas	EE
						CO	0.00	0.00	0.00	0.00	Gas	EE
						VOC	0.00	0.00	0.00	0.00	Gas	EE
						PM	0.00	0.00	0.00	0.00	Solid	EE
						HCOH	0.00	0.00	0.00	0.00	Gas	EE
						Total HAPs	0.00	0.00	0.00	0.00	Gas	EE
						CO2e	0.00	0.00	0.00	0.00	Gas	EE

5E	Upward Vertical Stack	EC-1	Produced Water and Condensate Tank Vapors	Enclosed Combustor		NOx CO VOC PM HCOH Total HAPs CO2e	<0.01 0.01 12.42 <0.01 <0.01 <0.01 5.6	0.01 0.06 0.06 <0.01 <0.01 <0.01 18	<0.01 0.01 12.42 <0.01 <0.01 <0.01 5.6	0.01 0.06 0.06 <0.01 <0.01 <0.01 18	Gas Gas Gas Solid Gas Gas Gas	EE EE EE EE EE EE EE
						NOx CO VOC PM HCOH Total HAPs CO2e					Gas Gas Gas Solid Gas Gas Gas	EE EE EE EE EE EE EE
						NOx CO VOC PM Total HAPs CO2e					Gas Gas Gas Solid Gas Gas Gas	EE EE EE EE EE EE EE

The EMISSION 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 EMISSIONS 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.

<sup>1</sup> Please add descriptors such as upward vertical stack, downward vertical stack, horizontal stack, relief vent, rain cap, etc.

<sup>2</sup> List all regulated air pollutants. Speciate VOCs, including all HAPs. Follow chemical name with Chemical Abstracts Service (CAS) number. LIST Acids, CO, CS<sub>2</sub>, VOCs, H<sub>2</sub>S, Inorganics, Lead, Organics, O<sub>3</sub>, NO, NO<sub>2</sub>, SO<sub>2</sub>, SO<sub>3</sub>, all applicable Greenhouse Gases (including CO<sub>2</sub> and methane), etc. DO NOT LIST H<sub>2</sub>, H<sub>2</sub>O, N<sub>2</sub>, O<sub>2</sub>, and Noble Gases

<sup>3</sup> 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).

<sup>4</sup> 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).<sup>4C</sup>

<sup>5</sup> Indicate method used to determine emission rate as follows: MB = material balance; ST = stack test (give date of test); EE = engineering estimate; M = modeling; O = other (specify).

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**ATTACHMENT P**

**Other Supporting Documentation**

## **Coffman Well Pad Attachment P Regulatory Analysis**

Both State and Federal environmental regulations governing air emissions apply to the planned Coffman Well Pad. The West Virginia Department of Environmental Protection (WVDEP) has been delegated the authority to implement certain federal air quality requirements for the state. Air quality regulations that potentially affect the modification are discussed herein.

### **1.1 PSD and NSR**

The facility will remain a minor source with respect to Prevention of Significant Deterioration (PSD) regulations as it will not have the potential to emit more than the annual emission thresholds of any PSD regulated pollutant with the voluntary restrictions (e.g., catalytic converter on the engine).

The facility is within an area designated as attainment for all criteria pollutants. Consequently, the facility is not subject to the New Source Review (NSR) regulations. Consequently, NSR requirements are not applicable to this project.

### **1.2 Title V Operating Permit Program**

West Virginia has incorporated provisions of the federal Title V operating permit program. Thresholds for inclusion under the Title V program are 10 tpy of any single Hazardous Air Pollutant (HAP) or 25 tons of any combination of HAP and/or 100 tpy of all other regulated pollutants. Additionally, facilities regulated under certain New Source Performance Standards (NSPS) require facilities to have Title V permits.

The facility will remain a minor source. Additionally, there are no NSPS regulating this facility that triggers a Title V permit. Hence, a Title V permit will not be required for this Class II Administrative Update to the Coffman Well Pad.

### **1.3 Aggregation**

Source aggregation determinations are typically made based on the following criteria:

- Whether the facilities are under common control,
- Whether the facilities belong to the same Major Group (i.e. the first two digit code) as described in the Standard Industrial Classification Manual, 1972, as amended by the 1977 Supplement;
- Whether the facilities are located on one or more contiguous or adjacent properties; and the distance between all pollutant emitting activities,

- Whether the facilities can operate independently

Only if all criteria are met does a permitting authority aggregate the facilities into a single source.

The planned equipment changes at this Jay-Bee Oil & Gas facility do not change any aspect of the aggregation determination completed during evaluation of the initial permit application. No further analysis is required.

#### **1.4 New Source Performance Standards**

New Source Performance Standards (NSPS) regulations promulgated under 40 CFR 60 require new and reconstructed facilities to control emissions to the level achievable by Best-Available Control Technology (BACT). Specific NSPS requirements potentially applicable to the Coffman Well Pad are as follows:

- 40 CFR 60, Subpart Dc—Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units
- 40 CFR 60, Subpart LLL – Onshore Natural Gas Processing Stations: SO<sub>2</sub> Emissions
- 40 CFR 60, Subpart JJJJ – Stationary Spark Ignition Internal Combustion Engines
- 40 CFR 60, Subpart OOOO - Standards of Performance for Crude Oil and Natural Gas Production, Transmission and Distribution

##### **1.4.1 Subpart Dc**

This subpart limits SO<sub>2</sub> and PM emissions from boilers and heaters fired by various fuels. While the primary thrust of this set of regulations is to control SO<sub>x</sub> and PM emissions from coal and oil-fired boilers and heaters, natural gas fired units are also covered under this rule. The existing Gas Processing Units have heat inputs that are well below the threshold of coverage for this rule (10 MMBTU/Hr). Thus, this rule does not apply.

##### **1.4.2 Subpart LLL**

This set of regulations governs emissions from processes used to remove sulfur gases from the field gas stream (sweetening unit) and subsequent sulfur recovery operations. The field gas that will be received by the Coffman Well Pad does not contain sufficient sulfur compounds to warrant a sweetening unit. Accordingly, not such equipment will be present. Hence, this rule does not apply.

##### **1.4.3 Subpart IIII**

This subpart governs emissions from new compression ignition internal combustion engines (CI ICE) manufactured after July 11, 2005. There will be no compression ignition engines (e.g. diesel-fired emergency generator) at this station. Hence, this rule does not apply.

#### 1.4.4 Subpart JJJJ

This subpart governs emissions from new stationary spark ignition internal combustion engines (SI ICE) manufactured after July 1, 2007. The driver for the Vapor Recovery Unit was a SI ICE manufactured after this date. Accordingly, this rule applied to this engine. However, as this unit was the sole trigger for facility coverage under Subpart JJJJ and it will be removed upon approval of this application, the facility will no longer fall under Subpart JJJJ.

#### 1.4.5 Subpart OOOO

This subpart governs emissions from a broad spectrum of operations in the oil and natural gas industries, including operations at natural gas well pads. The potentially applicable sections of this rule sets restrictions, recordkeeping and reporting requirements on emissions from storage vessels with potential VOC emissions greater than 6 tons per year, fugitive emissions, reciprocating compressors and pneumatic controllers. This rule applies to the Coffman Well Pad.

One of the key components to this rule [40 CFR 60.5390(b)] applicable to the Coffman Well Pad is the requirement that all pneumatic controllers located between the well head and a processing plant must have a bleed rate of less than 6 scfh. All pneumatic controllers to be installed at Coffman Well Pad will meet these criteria.

This rule also stipulates that storage vessels with VOC emissions equal to or greater than 6 tpy must control those emissions by 95% by October 15, 2013. The condensate tanks at Coffman will have an estimated *uncontrolled* VOC emission rate in excess of this threshold. However, as described in 40 CFR 60.5365(e), *the determination may take into account requirements under a legally and practically enforceable limit in an operating permit or other requirement established under a Federal, State, local or tribal authority*. The control systems proposed in this Class II Administrative Update will reduce VOC emissions from the condensate tank to rates below the 6 tpy limit per tank. Thus, the condensate tank at this facility will not be regulated under 40 CFR 60, Subpart OOOO.

### 1.5 **National Emission Standards for Hazardous Air Pollutants**

National Emission Standards for Hazardous Air Pollutants (NESHAPs) promulgated under 40 CFR 63 regulate the emission of Hazardous Air Pollutants (HAPs) from certain industrial processes. In general, these rules apply to major sources of HAPs with a major source being defined as having the potential to emit more than 10 tpy of any individual HAP or 25 tpy of total HAPs. Emissions standards under these rules have been established as the Maximum Achievable Control Technology (MACT) for each source category. The following NESHAP source category standards are potentially applicable to the planned Coffman Well Pad:

- 40 CFR 63, Subpart ZZZZ – NESHAP from Stationary Reciprocating Internal Combustion Engines

- 40 CFR 63, Subpart DDDDD – NESHAP for Industrial, Commercial and Institutional Boilers and Process Heaters

#### 1.5.1 Subpart ZZZZ

This Subpart governs emissions from a stationary reciprocating internal combustion engine (RICE) located both at major and area source of HAPs. The facility will not be a major source of HAPs, but will be considered an area source of HAPs. Hence, this rule is potentially applicable to the facility. However, as noted above, the single engine at the Coffman Well Pad will be removed. Thus, there will not be any Existing Stationary RICE at the facility. Hence, this rule does not apply.

#### 1.5.2 Subpart DDDDD

This Subpart applies to industrial boilers and process heaters of various sizes and fuel types located at facilities that are classified as a major source of HAPs. As the facility will not be a major source of HAPs as a result of this Class II Administrative Update, this rule will still not apply.

### 1.6 **Chemical Accident Prevention**

Subparts B-D of 40 CFR 68 present the requirements for the assessment and subsequent preparation of a Risk Management Plan (RMP) for a facility that stores more than a threshold quantity of a regulated substance listed in 40 CFR 68.130. If a facility stores, handles or processes one or more regulated substances in an amount greater than its corresponding threshold, the facility must prepare and implement an RMP. The Coffman Well Pad potentially stores more than 10,000 lbs of a flammable mixture containing several of the substances listed in Table 3 in 40 CFR 68.130. However, an RMP is not required as this facility qualifies for the exclusion provided for remote oil and gas production facilities (40 CFR 68.115).

### 1.7 **West Virginia State Requirements**

#### 1.7.1 45 CSR 2

The purpose of 45CSR2 is to control smoke and particulate matter emissions from fuel burning units. The facility is subject to the opacity requirement of 45 CSR 2. Emissions from the facility cannot exceed 10% over any six minute period.

#### 1.7.2 45 CSR 4

This regulation prohibits the emission of objectionable odors. Jay-Bee Oil & Gas is obligated to run the station in a manner that does not produce objectionable odors.

#### 1.7.3 45 CSR 6

This rule establishes emission standards for particulate matter and other requirements for incineration of refuse not subject to or specifically exempted from federal regulation. The

combustor falls under this rule. PM emissions from the combustor must remain below the allowable limit.

The combustor must also meet the visible emissions requirements of this rule limiting visible emissions to 20% opacity.

#### 1.7.4 45 CSR 10

This regulation limits emissions of sulfur oxides. As the sulfur content of the Inlet Gas contains no measurable sulfur, emissions of sulfur oxides is negligible. The various non-engine combustion units have a design heat input less than 10 MMBTU/Hr and are therefore exempt from the requirements of this rule.

#### 1.7.5 45 CSR 13

The state regulations applicable to the permitting of the proposed construction are in Title 45 Series 13 of the Code of State Regulations. The Coffman Well Pad has the potential to emit several regulated pollutants in excess of the thresholds that define a Stationary Source.

When taking into consideration the voluntary limit to operate the engines equipped with catalysts only when the catalytic converters are properly functioning, the facility's potential to emit is less than the thresholds that would classify the facility as a Major Source under 45 CSR 14.

#### 1.7.6 45 CSR 16

This series of regulations is an incorporation, by reference, of the New Source Performance Standards codified under 40 CFR 60. As discussed under the federal regulations, the Coffman Well Pad is subject to certain emission limitations, monitoring, testing and recordkeeping of Subpart JJJJ. The facility is also subject to Subpart OOOO.

#### 1.7.7 45 CSR 30

The state regulations applicable to Title V operating permits are in Title 45 Series 30. The planned Coffman Well Pad, as noted above, does not have the potential to emit any regulated pollutant about the threshold that would define it as a major facility. The facility is not subject to any New Source Performance Standards that trigger the need to submit a Title V application and obtain a Title V permit. Hence this rule is not applicable.

#### 1.7.8 Other Applicable Requirements

Through Series 34, WVDEP has adopted the National Emission Standards for Hazardous Air Pollutants for Source Categories. Both of these topics have been addressed above.