PERMIT BY RULE

STRAT LAND EXPLORATION COMPANY

BRADLEY 6H-871

LIPSCOMB, LIPSCOMB COUNTY, TEXAS

JUNE 2016

COMM ENGINEERING

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Permit By Rule Application for Approval of Emissions

Strat Land Exploration Company
Bradley 6H-871

APPLICATION

APPENDIX

Application - Section 1

TCEQ Core Data Form

TCEQ Use Only

For detailed instructions regarding completion of this form, please read the Core Data Form Instructions or call 512-239-5175.

SECTION I: General Information

1. Reason for Submission (If other is checked please describe in space provided.)

☒ New Permit, Registration or Authorization (Core Data Form should be submitted with the program application.)

☐ Renewal (Core Data Form should be submitted with the renewal form) ☐ Other

2. Customer Reference Number (if issued)	Follow this link to search for CN or RN numbers in Central Registry**	3. Regulated Entity Reference Number (if issued)
CN 603401639		RN

SECTION II: Customer Information

4. General Customer Information	5. Effective Date for Customer Information Updates (mm/dd/yyyy)	5/23/2016

☐ New Customer ☒ Update to Customer Information ☐ Change in Regulated Entity Ownership

☐ Change in Legal Name (Verifiable with the Texas Secretary of State or Texas Comptroller of Public Accounts)

The Customer Name submitted here may be updated automatically based on what is current and active with the Texas Secretary of State (SOS) or Texas Comptroller of Public Accounts (CPA).

6. Customer Legal Name (If an individual, print last name first: e.g.: Doe, John)	If new Customer, enter previous Customer below:
Strat Land Exploration Company	

7. TX SOS/CPA Filing Number	8. TX State Tax ID (11 digits)	9. Federal Tax ID (9 digits)	10. DUNS Number (if applicable)
0005791906	17310862044	731086204	

11. Type of Customer:	☒ Corporation	☐ Individual	Partnership: ☐ General ☒ Limited
Government: ☐ City ☐ County ☐ Federal ☐ State ☐ Other		☐ Sole Proprietorship	☐ Other:

12. Number of Employees	13. Independently Owned and Operated?
☐ 0-20 ☒ 21-100 ☐ 101-250 ☐ 251-500 ☐ 501 and higher	☐ Yes ☒ No

14. Customer Role (Proposed or Actual) - as it relates to the Regulated Entity listed on this form. Please check one of the following:

☐ Owner ☐ Operator ☒ Owner & Operator

☐ Occupational Licensee ☐ Responsible Party ☐ Voluntary Cleanup Applicant ☐ Other:

15. Mailing Address:							
	15 East 5th Street						
	Suite 2020						
City	Tulsa	State	OK	ZIP	74103	ZIP + 4	

16. Country Mailing Information (if outside USA)	17. E-Mail Address (if applicable)
	rhall@stratland.com

18. Telephone Number	19. Extension or Code	20. Fax Number (if applicable)
(918) 584 - 3844		(918) 584 - 2957

SECTION III: Regulated Entity Information

21. General Regulated Entity Information (If `New Regulated Entity" is selected below this form should be accompanied by a permit application)

☒ New Regulated Entity ☐ Update to Regulated Entity Name ☐ Update to Regulated Entity Information

The Regulated Entity Name submitted may be updated in order to meet TCEQ Agency Data Standards (removal of organizational endings such as Inc, LP, or LLC).

22. Regulated Entity Name (Enter name of the site where the regulated action is taking place.)

Bradley 6H-871

23. Street Address of the Regulated Entity: (No PO Boxes)							
	City		State		ZIP		ZIP + 4	
24. County	Lipscomb						

Enter Physical Location Description if no street address is provided.

25. Description to Physical Location:	From Intersection of CR-21 and CR-N: Travel east on CR-N for 0.39 miles. Turn left onto lease road and staying left for 0.58 miles. Arrive at facility.				
26. Nearest City		State	Nearest ZIP Code		
Lipscomb		TX	79056		
27. Latitude (N) In Decimal:	36.31851	28. Longitude (W) In Decimal:	100.18371		
Degrees	Minutes	Seconds	Degrees	Minutes	Seconds
36	19	6.64	100	11	1.36

29. Primary SIC Code (4 digits)	30. Secondary SIC Code (4 digits)	31. Primary NAICS Code (5 or 6 digits)	32. Secondary NAICS Code (5 or 6 digits)
1311		211111	

33. What is the Primary Business of this entity? (Do not repeat the SIC or NAICS description.)

Natural Gas and Condensate/Crude Oil Production

34. Mailing Address:	15 East 5th Street						
	Suite 2020						
	City	Tulsa	State	OK	ZIP	74103	ZIP + 4	
35. E-Mail Address:	rhall@stratland.com						

36. Telephone Number	37. Extension or Code	38. Fax Number (if applicable)
(918) 584 - 3844		(918) 584 - 2957

39. TCEQ Programs and ID Numbers Check all Programs and write in the permits/registration numbers that will be affected by the updates submitted on this form. See the Core Data Form instructions for additional guidance.

☐ Dam Safety	☐ Districts	☐ Edwards Aquifer	☐ Emissions Inventory Air	☐ Industrial Hazardous Waste
☐ Municipal Solid Waste	☐ New Source Review Air	☐ OSSF	☐ Petroleum Storage Tank	☐ PWS
☐ Sludge	☐ Storm Water	☐ Title V Air	☐ Tires	☐ Used Oil
☐ Voluntary Cleanup	☐ Waste Water	☐ Wastewater Agriculture	☐ Water Rights	☒ Other: PBR 106.352, 359, 512

SECTION IV: Preparer Information

40. Name:	Jake Boudreaux	41. Title:	Senior Environmental Specialist

42. Telephone Number	43. Ext./Code	44. Fax Number	45. E-Mail Address
(337) 237 - 4373		(337) 234 - 1805	jake@commengineering.com

SECTION V: Authorized Signature

46. By my signature below, I certify, to the best of my knowledge, that the information provided in this form is true and complete, and that I have signature authority to submit this form on behalf of the entity specified in Section II, Field 6 and/or as required for the updates to the ID numbers identified in field 39.

Company:	Strat Land Exploration Company	Job Title:	Chief Operating Officer
Name(*In Print*):	Rick Hall	Phone:	(918) 584 - 3844
Signature:		Date:	

Application - Section 2

Texas Commission on Environmental Quality
Certification and Registration for Permits by Rule
Form PI-7-CERT
(Page 1)

I. Registrant Information		
A. Company or Other Legal Customer Name: Strat Land Exploration Company		
B. Company Official Contact Information (☒ Mr. ☐ Mrs. ☐ Ms. ☐ Other _____)		
Name: Rick Hall		
Title: Chief Operating Officer		
Mailing Address: 15 East 5th Street, Suite 2020		
City: Tulsa	State: OK	ZIP Code: 74103
Phone: (918) 584- 3844	Fax: (918) 584-2957	
E-mail Address: rhall@stratland.com		
All PBR registration responses will be sent via e-mail unless a hard copy is specifically requested. The company official must initial here if hard copy is requested. _____ *(please initial)*		
C. Technical Contact Information (☒ Mr. ☐ Mrs. ☐Ms. ☐ Other _____)		
Name: Rick Hall		
Title: Chief Operating Officer		
Company Name: Strat Land Exploration Company		
Mailing Address: 15 East 5th Street, Suite 2020		
City: Tulsa	State: OK	ZIP Code: 74103
Phone: (918) 584-3844	Fax: (918) 584-2957	
E-mail: rhall@stratland.com		
II. Facility and Site Information		
A. Name and Type of Facility		
Facility Name: Bradley 6H-871		
Type of Facility:	☒ Permanent	☐ Temporary
For portable units, please provide the serial number of the equipment being authorized below.		
Serial No:	Serial No:	
B. Facility Location Information		
Street Address:		
If there is no street address, provide written driving directions to the site and provide the closest city or town, county, and ZIP code for the site (attach description if additional space is needed).		
From Intersection of CR-21 and CR-N: Travel east on CR-N for 0.39 miles. Turn left onto lease road and staying left fo		
City: Lipscomb	County: Lipscomb	ZIP Code: 79056

II. Facility and Site Information *(continued)*	
C. TCEQ Core Data Form	
Is the Core Data Form (TCEQ Form Number 10400) attached?	☒ YES ☐ NO
If "NO," provide customer reference number (CN) and regulated entity number (RN) below.	
Customer Reference Number (CN): 603401639	
Regulated Entity Number (RN):	
D. TCEQ Account Identification Number (if known):	
E. PBR number(s) claimed under 30 TAC Chapter 106	
(List all the individual rule number(s) that are being claimed.)	
106. 352	106.
106. 359	106.
106. 512	106.
F. Historical Standard Exemption or PBR	
Are you claiming a historical standard exemption or PBR?	☐ YES ☒ NO
If "YES," enter rule number(s) and associated effective date in the spaces provided below.	
Rule Number(s)	Effective Date
G. Previous Standard Exemption or PBR Registration Number	
Is this authorization for a change to an existing facility previously authorized under a standard exemption or PBR?	☐ YES ☒ NO
If "YES," enter previous standard exemption number(s) and PBR registration number(s), and associated effective dates in the spaces provided below.	
Standard Exemption and PBR Registration Number(s)	Effective Date
H. Other Facilities at this Site Authorized by Standard Exemption, PBR, or Standard Permit	
Are there any other facilities at this site that are authorized by an Air Standard Exemption, PBR, or Standard Permit?	☐ YES ☒ NO
If "YES," enter standard exemption number(s), PBR registration number(s), and Standard Permit registration number(s), and associated effective date in the spaces provided below.	
Standard Exemption, PBR Registration, and Standard Permit Registration Number(s)	Effective Date

II. Facility and Site Information *(continued)*	
I. Other Air Preconstruction Permits	
Are there any other air preconstruction permits at this site?	☐ YES ☒ NO
If "YES," enter permit number(s) in the spaces provided below.	
J. Affected Air Preconstruction Permits	
Does the PBR being claimed directly affect any permitted facility?	☐ YES ☒ NO
If "YES," enter the permit number(s) in the spaces provided below.	
K. Federal Operating Permit (FOP) Requirements (30 TAC Chapter 122 Applicability)	
1. Is this facility located at a site that is required to obtain an FOP pursuant to 30 TAC Chapter 122?	☐ YES ☐ NO ☐ To Be Determined
If the site currently has an existing FOP, enter the permit number:	
Check the requirements of 30 TAC Chapter 122 that will be triggered if this certification is accepted. *(check all that apply)* ☐ Initial Application for an FOP ☐ Significant Revision for an SOP ☐ Minor Revision for an SOP ☐ Operational Flexibility/Off Permit Notification for an SOP ☐ Revision for a GOP ☐ To be Determined ☒ None	
2. Identify the type(s) of FOP issued and/or FOP application(s) submitted/pending for the site. *(check all that apply)* ☐ SOP ☐ GOP ☐ GOP application/revision (submitted or under APD review) ☒ N/A ☐ SOP application/revision (submitted or under APD review)	
III. Fee Information (*See Section VII. for address to send fee or go to www.tceq.texas.gov/epay to pay online.)*	
A. Fee Requirements	
Is a fee required per Title 30 TAC § 106.50?	☒ YES ☐ NO
If "NO," specify the exception (*check all that apply*)	
1. Registration is solely to establish a federally enforceable emission limit.	☐ YES ☐ NO
2. Registration is within six months of an initial PBR review, and it is addressing deficiencies, administrative changes, or other allowed changes.	☐ YES ☐ NO
3. Registration is for a remediation project (30 TAC § 106.533).	☐ YES ☐ NO

III. Fee Information (*See Section VII. for address to send fee or go to www.tceq.texas.gov/epay to pay online.) (continued)*	
B. Fee Amount	
1. A $100 fee is required if *any* of the answers in III.B.1 are "YES."	
This business has less than 100 employees.	☒ YES ☐ NO
This business has less than 6 million dollars in annual gross receipts.	☐ YES ☒ NO
This registration is submitted by a governmental entity with a population of less than 10,000.	☐ YES ☒ NO
This registration is submitted by a non-profit organization.	☐ YES ☒ NO
2. A $450 fee is required for all other registrations.	
C. Payment Information	
Check/money order/transaction or voucher number:	
Individual or company name on check:	
Fee Amount: $ 100.00	
Was fee paid online?	☐ YES ☒ NO
IV. Technical Information Including State And Federal Regulatory Requirements **Place a check next to the appropriate box to indicate what is included in your submittal.** **NOTE:** *Any technical or essential information needed to confirm that facilities are meeting the requirements of the PBR must be provided. Not providing key information could result in an automatic deficiency and voiding of the project.*	
A. PBR requirements (Checklists are optional; however, your review will go faster if you provide applicable checklists.)	
Did you demonstrate that the general requirements in 30 TAC § 106.4 are met?	☒ YES ☐ NO
Did you demonstrate that the individual requirements of the specific PBR are met?	☒ YES ☐ NO
B. Confidential Information (All pages properly marked "CONFIDENTIAL")	☐ YES ☒ NO
C. Process Flow Diagram	☐ YES ☒ NO
D. Process Description	☒ YES ☐ NO
E. Maximum Emissions Data and Calculations	☒ YES ☐ NO
Note: *If the facilities listed in this registration are subject to the Mass Emissions Cap & Trade program under* ***30 TAC Chapter 101, Subchapter H, Division 3,*** *the owner/operator of these facilities must possess NO_x allowances equivalent to the actual NO_x, emissions from these facilities.*	

IV. Technical Information Including State And Federal Regulatory Requirements
(continued)

Place a check next to the appropriate box to indicate what is included in your submittal.

Note: Any technical or essential information needed to confirm that facilities are meeting the requirements of the PBR must be provided. Not providing key information could result in an automatic deficiency and voiding of the project.

F. Is this certification being submitted to certify the emissions for the entire site?	☒ YES ☐ NO
If "NO," include a summary of the specific facilities and emissions being certified.	
G. Table 1(a) (Form 10153) Emission Point Summary	☒ YES ☐ NO
H. Distances from Property Line and Nearest Off-Property Structure	
Distance from this facility's emission release point to the nearest property line: 286 feet	
Distance from this facility's emission release point to the nearest off-property structure: 2192 feet	
I. Project Status	
Has the company implemented the project or waiting on a response from TCEQ? ☒ Implemented ☐ Waiting	
J. Projected Start of Construction and Projected Start of Operation Dates	
Projected Start of Construction (provide date):	
Projected Start of Operation (provide date):	

V. Delinquent Fees

This form **will not be processed** until all delinquent fees and/or penalties owed to the TCEQ or the Office of the Attorney General on behalf of the TCEQ is paid in accordance with the Delinquent Fee and Penalty Protocol. For more information regarding Delinquent Fees and Penalties, go to the TCEQ Web site at: www.tceq.texas.gov/agency/delin/index.html.

VI. Signature For Registration And Certification

The signature below confirms that I have knowledge of the facts included in this application and that these facts are true and correct to the best of my knowledge and belief. I further state that to the best of my knowledge and belief, the project for which this application is made will not in any way violate any provision of the Texas Water Code (TWC), Chapter 7; the Texas Health and Safety Code, Chapter 382, the Texas Clean Air Act (TCAA); the air quality rules of the Texas Commission on Environmental Quality; or any local governmental ordinance or resolution enacted pursuant to the TCAA. I further state that I understand my signature indicates that this application meets all applicable nonattainment, prevention of significant deterioration, or major source of hazardous air pollutant permitting requirements. The signature further signifies awareness that intentionally or knowingly making or causing to be made false material statements or representations in the application is a criminal offense subject to criminal penalties.

Name (printed):

Signature (original signature required):

Date:

Texas Commission on Environmental Quality
Form PI-7-CERT
Certification and Registration for Permits by Rule

VII. Submitting Copies of the Certification and Registration		
Air Permits Initial Review Team (APIRT)	Regular, Certified, Priority Mail MC 161, P.O. Box 13087 Austin, Texas 78711-3087 Hand Delivery, Overnight Mail MC 161, 12100 Park 35 Circle, Building C, Third Floor Austin, Texas 78753	Originals Form PI-7-CERT, Core Data Form, and all attachments. Not required if using ePermits[1]
Revenue Section, TCEQ	Regular, Certified, Priority Mail MC 214, P.O. Box 13088 Austin, Texas 78711-3088 Hand Delivery, Overnight Mail MC 214, 12100 Park 35 Circle, Building A, Third Floor Austin, Texas 78753	Original Money Order or Check, Copy of Form PI-7-CERT, and Core Data Form. Not required if fee was paid using ePay[2].
Appropriate TCEQ Regional Office	To find your Regional Office address, go to the TCEQ Web site at www.tceq.texas.gov/publications/gi/gi-002.html, or call (512) 239-1250.	Copy of Form PI-7-CERT, Core Data Form, and all attachments.
Appropriate Local Air Pollution Control Program(s)	To Find your local or Regional Air Pollution Control Programs go to the TCEQ, APD Website at www.tceq.texas.gov/permitting/air/local_programs.html, or call (512) 239-1250	Copy of Form PI-7-CERT, Core Data Form, and all attachments.

[1] ePermits located at www3.tceq.texas.gov/steers/
[2] ePay located at www.tceq.texas.gov/epay

Application - Section 3

Strat Land Exploration Company
Bradley 6H-871

Permit by Rule Summary

The Bradley 6H-871 is a natural gas production facility located in Lipscomb County, Texas. This Form PI-7 CERT is being submitted to establish enforceable emission rates. All requirements under Permit by Rule sections 30 TAC § 106.352 (Oil & Gas), § 106.359 (Maintenance, Start-up and Shutdown), and § 106.512 (Engines) are met. Separate checklists and supporting documentation are enclosed.

Emission calculations are based on the potential to emit. Total emissions of NO_X and CO from all sources in the facility are each less than 250 tpy. Emissions of PM_{10}, SO_2 and VOCs are each less than 25 tpy. Therefore, emissions do not exceed limits of the general requirements in 30 TAC § 106.4(a).

The NESHAP for Oil and Natural Gas Production Facilities (40 CFR Part 63, Subpart HH) defines a major source as one which emits or has the potential to emit 10 tpy or more of any single HAP, or 25 tpy or more of any combination of HAPs. This facility emits less than 25 tpy; therefore, it is not subject to this regulation.

The NSPS for Oil and Natural Gas Production Facilities (40 CFR Part 60, Subpart OOOO) requirements are met for the applicable sources. The facility will comply with all registration and reporting requirements as necessary, as well as comply with all emissions standards.

Emission Totals

Criteria Pollutant	Tons/Year
NO_X	1.1870
CO	1.7610
SO_2	1.5500
PM_{10}	0.0310
$PM_{2.5}$	0.0290
VOC	10.2979
HAPs	0.1209

Proposed Actions

This application is being submitted for coverage of an existing facility located in Lipscomb County, Texas. Strat Land Exploration Company is requesting federally enforceable emissions limits and will comply with all recordkeeping and reporting requirements. The facility is not currently permitted.

Application - Section 4

Strat Land Exploration Company
Bradley 6H-871

Process Description

The Bradley 6H-871 is a natural gas production facility in Lipscomb County, Texas, which handles sweet natural gas (less than 5 ppm H_2S) and condensate/crude oil. The facility handles all stages of production. The facility annually processes approximately:

1,825 barrels of condensate/crude oil,
25.55 million standard cubic feet of natural gas, and
1,825 barrels of produced water.

Separation
Production from the nearby well flows to a two phase, high pressure separator. The natural gas from the low pressure separator flows to a sales pipeline. The liquids flow to a heater treater (EPN: HT-01). The natural gas from the heater treater flows to a sales pipeline. The condensate/crude oil flows to the oil storage tank and the produced water flows to the water storage tank.

Condensate/Crude Oil Storage and Load Out
Condensate/crude oil is stored in one (1) 300 barrel Oil Storage Tank (EPN: OST-01). Flash, standing, and working losses are vented to the atmosphere. The stored condensate/crude oil is then shipped via tank truck to sales. Volatile Organic Compounds (VOCs) emissions resulting from the Tank Truck Oil Loading Facility (EPN: OIL-LD-01) are vented to the atmosphere. The facility handles condensate/crude oil prior to lease custody transfer.

Produced Water Storage and Disposal
Condensate/crude oil is stored in one (1) 200 barrel Water Storage Tank (EPN: WST-01). Flash, standing, and working losses are vented to the atmosphere. The water is then shipped via tank truck to disposal. Volatile Organic Compounds (VOCs) emissions resulting from the tank truck water loading facility (EPN: WTR-LD-01) are vented to the atmosphere.

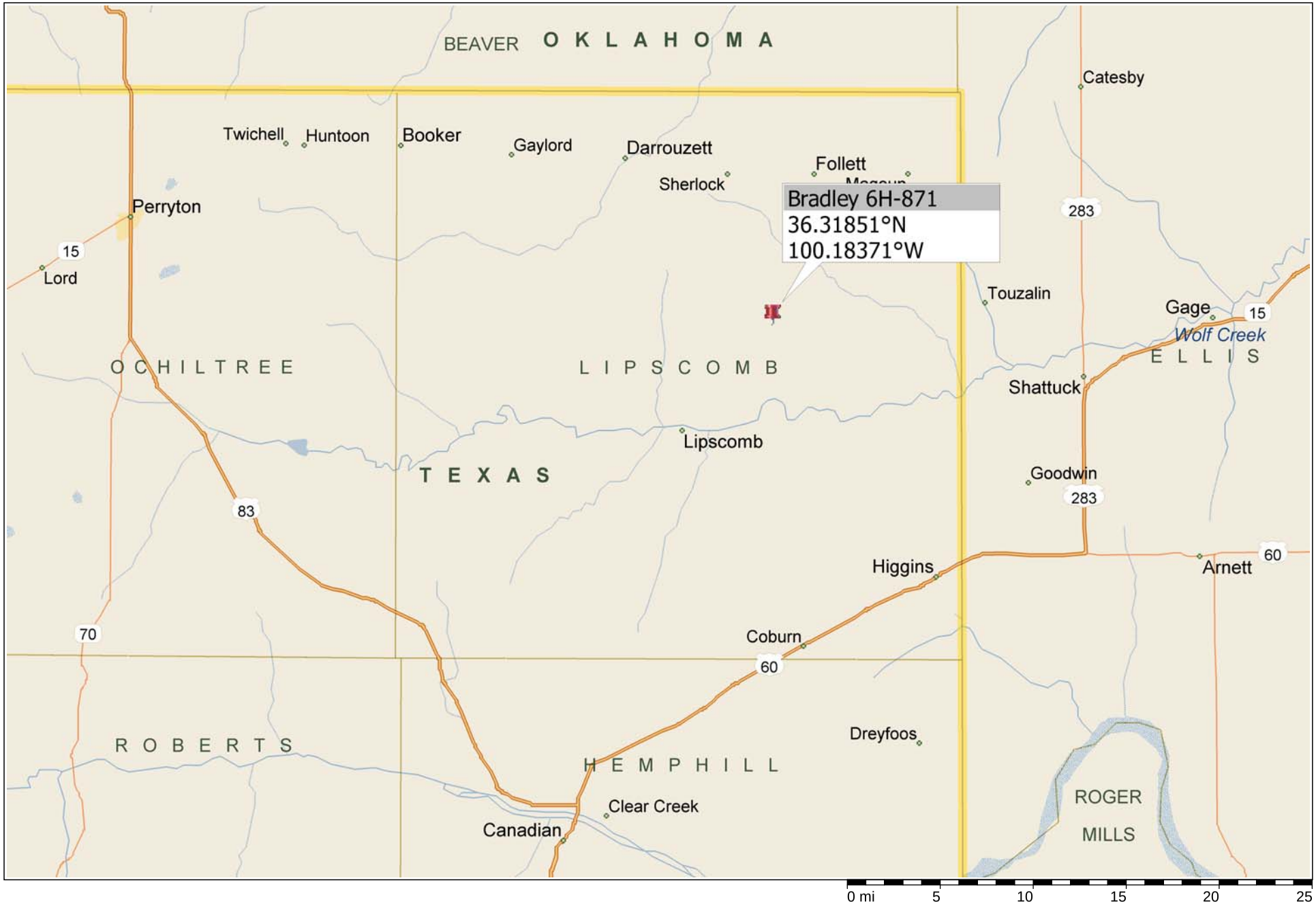
Miscellaneous Sources
Fugitive natural gas and light liquid emissions (EPN: FE-01) occur from potential leaks from flanges, valves, and piping connections. Fugitive emissions are calculated using typical Strat Land Exploration Company facility component counts and emission factors in EPA 4531, R-95-017 and TCEQ's "Air Permit Technical Guidance for Chemical Source Equipment Leak Fugitives". The weight percent for the gas components and liquid components is assumed at 100%, as a worst case scenario.

Maintenance, Start-Up, and Shutdown (MSS) emissions (EPN: MSS-01) are included in this registration to reflect emissions from routine MSS activities.

Facility specific analytical data is not available. As a worst case scenario, emissions are estimated using E&P Tank Version 2.0 Geographical Database Southwest Region, Case 17. This case is most representative of the area, reservoir conditions, API gravity and operating conditions of the facility. It is believed the emissions will be more conservative than using actual facility analyses.

Application - Section 5

Strat Land Exploration Company - Bradley 6H-871



Application - Section 6

Texas Commission on Environmental Quality
Permit by Rule Applicability Checklist
Title 30 Texas Administrative Code § 106.4

The following checklist was developed by the Texas Commission on Environmental Quality (TCEQ), **Air Permits Division**, to assist applicants in determining whether or not a facility meets all of the applicable requirements. Before claiming a specific Permit by Rule (PBR), a facility must first meet all of the requirements of **Title 30 Texas Administrative Code § 106.4** (30 TAC § 106.4), "Requirements for Permitting by Rule." Only then can the applicant proceed with addressing requirements of the specific Permit by Rule being claimed.

The use of this checklist is not mandatory; however, it is the responsibility of each applicant to show how a facility being claimed under a PBR meets the general requirements of 30 TAC § 106.4 and also the specific requirements of the PBR being claimed. If all PBR requirements cannot be met, a facility will not be allowed to operate under the PBR and an application for a construction permit may be required under 30 TAC § 116.110(a).

Registration of a facility under a PBR can be performed by completing **Form PI-7** (Registration for Permits by Rule) or **Form PI-7-CERT** (Certification and Registration for Permits by Rule). The appropriate checklist should accompany the registration form. Check the most appropriate answer and include any additional information in the spaces provided. If additional space is needed, please include an extra page and reference the question number. The PBR forms, tables, checklists, and guidance documents are available from the TCEQ, Air Permits Division Web site at: www.tceq.texas.gov/permitting/air/nav/air_pbr.html.

1. 30 TAC § 106.4(a)(1) and (4): Emission limits	
List emissions in tpy for **each** facility (add additional pages or table if needed):	
• Are the SO_2, PM_{10}, VOC, or other air contaminant emissions claimed for **each** facility in this PBR submittal less than 25 tpy?	☒ YES ☐ NO
• Are the NO_x and CO emissions claimed for each facility in this PBR submittal less than 250 tpy?	☒ YES ☐ NO
*If the answer to both is "Yes," continue to the question below. If the answer to either question is "No," a **PBR cannot be claimed**.*	
Has any facility at the property had public notice and opportunity for comment under 30 TAC Section 116 for a regular permit or permit renewal? (This does not include public notice for voluntary emission reduction permits, grandfathered existing facility permits, or federal operating permits.)	☐ YES ☒ NO
If "Yes," skip to Section 2. If "No," continue to the questions below.	
If the site has had no public notice, please answer the following:	
• Are the SO_2, PM_{10}, VOC, or other emissions claimed for **all** facilities in this PBR submittal less than 25 tpy?	☒ YES ☐ NO
• Are the NO_x and CO emissions claimed for all facilities in this PBR submittal less than 250 tpy?	☒ YES ☐ NO
If the answer to both questions is "Yes," continue to Section 2.	
*If the answer to either question is "No," **a PBR cannot be claimed**. A permit will be required under Chapter 116.*	

2. 30 TAC § 106.4(a)(2): Nonattainment check	
$ Are the facilities to be claimed under this PBR located in a designated ozone nonattainment county?	☐ YES ☒ NO
If "Yes," please indicate which county by checking the appropriate box to the right.	
(Marginal) - Hardin, Jefferson, and Orange counties:	☐ BPA
(Moderate) - Brazoria, Chambers, Fort Bend, Galveston, Harris, Liberty, Montgomery, and Waller counties:	☐ HGA
(Moderate) - Collin, Dallas, Denton, Ellis, Johnson, Kaufman, Parker, Rockwall, and Tarrant counties	☐ DFW
If "Yes," to any of the above, continue to the next question. If "No," continue to Section 3.	
• Does this project trigger a nonattainment review?	☐ YES ☐ NO
Does this project trigger a nonattainment review?	
• Is the project's potential to emit (PTE) for emissions of VOC or NO_x increasing by 100 tpy or more? *PTE is the maximum capacity of a stationary source to emit any air pollutant under its worst-case physical and operational design unless limited by a permit, rules, or made federally enforceable by a certification.*	☐ YES ☐ NO
• Is the site an existing major nonattainment site and are the emissions of VOC or NO_x increasing by 40 tpy or more?	☐ YES ☐ NO
If needed, attach contemporaneous netting calculations per nonattainment guidance.	
Additional information can be found at: www.tceq.texas.gov/permitting/air/forms/newsourcereview/tables/nsr_table8.html and www.tceq.texas.gov/permitting/air/nav/air_docs_newsource.html	
*If "Yes," to any of the above, the project is a major source or a major modification and **a PBR may not be used**. A Nonattainment Permit review must be completed to authorize this project. If "No," continue to Section 3.*	
3. 30 TAC § 106.4(a)(3): Prevention of Significant Deterioration (PSD) check	
Does this project trigger a review under PSD rules?	
To determine the answer, review the information below:	
• Are emissions of any regulated criteria pollutant increasing by 100 tpy of any criteria pollutant at a named source?	☐ YES ☒ NO
• Are emissions of any criteria pollutant increasing by 250 tpy of any criteria pollutant at an unnamed source?	☐ YES ☒ NO
• Are emissions increasing above significance levels at an existing major site?	☐ YES ☒ NO
PSD information can be found at: www.tceq.texas.gov/assets/public/permitting/air/Forms/NewSourceReview/Tables/10173tbl.pdf and www.tceq.texas.gov/permitting/air/nav/air_docs_newsource.html *If "Yes," to any of the above, **a PBR may not be used**. A PSD Permit review must be completed to authorize the project. If "No," continue to Section 4.*	

Permit by Rule Applicability Checklist
Title 30 Texas Administrative Code § 106

4. 30 TAC § 106.4(a(6): Federal Requirements		
$ Will all facilities under this PBR meet applicable requirements of Title 40 Code of Federal Regulations (40 CFR) Part 60, New Source Performance Standards (NSPS)?		☒ YES ☐ NO ☐ NA
If "Yes," which Subparts are applicable?	Subpart JJJJ, Subpart OOOO	
• Will all facilities under this PBR meet applicable requirements of 40 CFR Part 63, Hazardous Air Pollutants Maximum Achievable Control Technology (MACT) standards?		☐ YES ☐ NO ☒ NA
If "Yes," which Subparts are applicable?		
• Will all facilities under this PBR meet applicable requirements of 40 CFR Part 61, National Emissions Standards for Hazardous Air Pollutants (NESHAPs)?		☐ YES ☐ NO ☒ NA
If "Yes," which Subparts are applicable?		
If "Yes" to any of the above, please attach a discussion of how the facilities will meet any applicable standards.		
5. 30 TAC § 106.4(a)(7): PBR prohibition check		
• Are there any air permits at the site containing conditions which prohibit or restrict the use of PBRs?		☐ YES ☒ NO
If "Yes," PBRs may not be used or their use must meet the restrictions of the permit. A new permit or permit amendment may be required.		
List permit number(s):		
6. 30 TAC § 106.4(a)(8): NO_x Cap and Trade		
• Is the facility located in Harris, Brazoria, Chambers, Fort Bend, Galveston, Liberty, Montgomery, or Waller County?		☐ YES ☒ NO
If "Yes," answer the question below. If "No," continue to Section 7.		
• Will the proposed facility or group of facilities obtain required allowances for NO_x if they are subject to 30 TAC Chapter 101, Subchapter H, Division 3 (relating to the Mass Emissions Cap and Trade Program)?		☐ YES ☐ NO

7. Highly Reactive Volatile Organic Compounds (HRVOC) check		
• Is the facility located in Harris County?		☐ YES ☒ NO
If "Yes," answer the next question. If "No," skip to the box below.		
• Will the project be constructed after June 1, 2006?		☐ YES ☐ NO
If "Yes," answer the next question. If "No," skip to the box below.		
• Will one or more of the following HRVOC be emitted as a part of this project?		☐ YES ☐ NO
If "Yes," complete the information below:		
	lb/hr	tpy
► 1,3-butadiene		
► all isomers of butene (e.g., isobutene [2-methylpropene or isobutylene])		
► alpha-butylene (ethylethylene)		
► beta-butylene (dimethylethylene, including both cis- and trans-isomers)		
► ethylene		
► propylene		
• Is the facility located in Brazoria, Chambers, Fort Bend, Galveston, Liberty, Montgomery, or Waller County?		☐ YES ☒ NO
If "Yes," answer the next question. If "No," the checklist is complete.		
• Will the project be constructed after June 1, 2006?		☐ YES ☐ NO
If "Yes," answer the next question. If "No," the checklist is complete.		
• Will one or more of the following HRVOC be emitted as a part of this project?		☐ YES ☐ NO
If "Yes," complete the information below:		
	lb//hr	tpy
► ethylene		
► propylene		

Save Form Reset Form

Company: Strat Land Exploration Company
Facility: Bradley 6H-871

Total Emissions

EPN	Description	NOx		CO		PM_{10}		$PM_{2.5}$		SO2		VOC		HAPs	
		lbs/hr	tons/yr	lbs/hr	tons/yr	lbs/hr	tons/yr	lbs/hr	tons/yr	lbs/hr	tons/yr	lbs/hr	tons/yr	lbs/hr	tons/yr
FE-01	Fugitive Emissions	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	1.6990	7.4430	0.0000	0.0000
HT-01	Heater Treater Burner	0.0710	0.3110	0.0600	0.2630	0.0050	0.0220	0.0050	0.0200	0.0010	0.0040	0.0040	0.0180	0.0010	0.0040
MSS-01	Maintenance, Start-Up, and Shutdown Emissions	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0900	0.3930	0.0000	0.0000
OIL-LD-01	Tank Truck Crude/Condensate Loading Losses	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	28.2468	0.1357	0.0000	0.0000
OST-01	Oil Storage Tank	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.5150	2.2570	0.0210	0.0900
PE-01	Natural Gas Pump Engine	0.2000	0.8760	0.3420	1.4980	0.0020	0.0090	0.0020	0.0090	0.3530	1.5460	0.0070	0.0310	0.0060	0.0260
WST-01	Water Storage Tank	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0043	0.0189	0.0002	0.0009
WTR-LD-01	Tank Truck Water Loading Losses	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.2734	0.0013	0.0000	0.0000
	TOTAL EMISSIONS	0.2710	1.1870	0.4020	1.7610	0.0070	0.0310	0.0070	0.0290	0.3540	1.5500	30.8395	10.2979	0.0282	0.1209

Note: 1) VOC emissions do not include methane and ethane but do include HAP emissions.
2) Some listed emission rates indicated as lbs/hr are not continuous for a year, therefore, the TPY are not calculated using 8760 hrs.

Application - Section 7

Oil and Gas Handling and Production Facilities
Air Permits by Rule (PBR) Checklist
Title 30 Texas Administrative Code § 106.352(l)

Check the most appropriate answer and include any technical information in the spaces provided. If additional space is needed, please include an extra page that references this checklist. The forms, checklists, and guidance documents are available from the Texas Commission on Environmental Quality (TCEQ), Air Permits Division Web site at: www.tceq.texas.gov/permitting/air/permitbyrule/subchapter-o/oil_and_gas.html. If you have any questions, or need additional assistance, please contact the Air Permits Division at (512) 239-1250.

The facility can register by submitting this application and any supporting documentation. Below is a checklist to ensure you have provided all appropriate documentation. For sites that require registration or if the company chooses to register the site with the TCEQ, a Core Data Form is required with this checklist.

For additional assistance with your application, including resources to help calculate your emissions, please visit the Small Business and Local Government Assistance (SBLGA) webpage at the following link: www.TexasEnviroHelp.org

This checklist is for use by the operator to ensure a complete application.

Have you included each of the following items in the application?

- ☒ Process Description.
- ☒ Plot plan or area map.
- ☒ TCEQ Oil and Gas Emission Calculation Spreadsheet (or equivalent).
- ☒ Detailed summary of maximum emissions estimates with supporting documentation, such as result reports from any emission estimation computer program.
- ☒ Gas and Liquid analyses. If a site specific analysis is not submitted, please provide justification as to why a representative site was used.
- ☒ Technical documents (manufacturer's specification sheet, operational design sheets)
- ☒ State and Federal applicability.
- ☒ Core Data Form (for new sites that have never been registered with the TCEQ).

General Information and Questions/Descriptions

Is the project located in one of the Barnett Shale counties and did the start of construction or modification begin on or after April 1, 2011? ☐ Yes ☒ No

[**Note:** *Counties included in the Barnett Shale area: Cooke, , Dallas, Denton, , Ellis, Erath, Hill, Hood, Jack, Johnson, Montague, Palo Pinto, Parker, Somervell, Tarrant, and Wise counties.*]

For what is considered start of construction see: www.tceq.texas.gov/assets/public/permitting/air/Guidance/NewSourceReview/factsheet-const.pdf

*If **"Yes,"** do not complete this checklist. The project is subject to the requirements of §106.352(a)-(k). Additional information for Barnett Shale area projects can be found at:* **www.tceq.texas.gov/permitting/air/permitbyrule/subchapter-o/oil_and_gas.html.**

Are the total site-wide emissions from all facilities claimed under 30 TAC §106.352(l) less than 25 tpy VOC, 250 tpy NOx, 250 tpy CO, and 25 tpy SO_2? ☒ Yes ☐ No

Oil and Gas Handling and Production Facilities
Title 30 Texas Administrative Code § 106.352(l)

General Information and Questions/Descriptions *(continued)*		
Does any facility at the site handle a stream with more than 24 ppm hydrogen sulfide (H_2S)? *If **"Yes,"** answer the following questions.*	☐ Yes	☒ No
Are there flares, engines, or turbines at the site? *If **"Yes,"** attach supporting documentation to demonstrate compliance with the requirements.* ***Additional information and checklists can be found at:*** *§106.492 Flares:* www.tceq.texas.gov/permitting/air/permitbyrule/subchapter-v/flares.html *§106.512 Stationary Engines and turbines:* www.tceq.texas.gov/permitting/air/permitbyrule/subchapter-w/stationary_eng_turb.html	☒ Yes	☐ No
Does any facility at the site handle a stream with more than 24 ppm hydrogen sulfide (H_2S)? *If **"Yes,"** answer the following questions. Registration is required prior to the start of operation.* *If **"No,"** The questions below are not applicable.*	☐ Yes	☒ No
Indicate the actual distance from the nearest emissions point to the nearest offsite receptor(ft.): [**Note:** *An offsite receptor includes any recreational area, residence, or other structure not occupied or used solely by the owner or operator of the facility. A facility handling sour gas must be located at least 1/4 mile from the nearest offsite receptor.*]		
Indicate the total actual emission rate of sulfur compounds, excluding sulfur oxides, from all vents (lb/hr.):		
Does the height of all vents at the site emitting sulfur compounds meet the minimum required height based on the H_2S emission rate in 106.352(l)(4)? [**Note:** *Truck loading and fugitive sources are not considered vents.*]	☒ Yes	☐ No

Recordkeeping: To demonstrate compliance with the requirements of the PBR, sufficient records must be maintained at all times. The records must be made available immediately upon request to the commission or any air pollution control program having jurisdiction. If you have any questions about the recordkeeping requirements, contact the Air Permits Division or the Air Program in the TCEQ Regional Office for the region in which the site is located.

Save Form Reset Form

Application - Section 8

Texas Commission on Environmental Quality
Stationary Engines and Turbines
Air Permits by Rule (PBR) Checklist
Title 30 Texas Administrative Code § 106.512

Check the most appropriate answer and include any additional information in the spaces provided. If additional space is needed, please include an extra page and reference the question number. The permit by rule (PBR) forms, tables, checklists, and guidance documents are available from the Texas Commission on Environmental Quality (TCEQ), Air Permits Division Web site at: www.tceq.texas.gov/permitting/air/nav/air_pbr.html.

This PBR (§ 106.512) requires registration with the commission's Office of Air in Austin before construction if the horsepower (hp) of the facility is greater than 240 hp. Registration of the facility can be performed by completing a Form PI-7, "Registration for Permits by Rule," or Form PI-7-CERT, "Registration and Certification for Permits by Rule." This checklist should accompany the registration form.

For additional assistance with your application, including resources to help calculate your emissions, please visit the Small Business and Local Government Assistance (SBLGA) webpage at the following link: www.TexasEnviroHelp.org

Definitions:

The following words and terms, when used in this section, shall have the following meanings, unless the context clearly indicates otherwise.

A. **Rich-burn Engine**: A rich-burn engine is a gas-fired, spark-ignited engine that is operated with an exhaust oxygen content less than four percent by volume.

B. **Lean-burn Engine**: A lean-burn engine is a gas-fired, spark-ignited engine that is operated with an exhaust oxygen content of four percent by volume, or greater.

C. **Rated Engine Horsepower**: Engine rated horsepower shall be based on the engine manufacturer's maximum continuous load rating at the lesser of the engine or driven equipment's maximum published continuous speed.

D. **Turbine Horsepower**: Turbine rated horsepower shall be based on turbine base load, fuel power heating value, and International Standards Organization Standard Day Conditions of 59 degrees Fahrenheit, 1.0 atmosphere pressure, and 60 percent relative humidity.

Texas Commission on Environmental Quality
Stationary Engines and Turbines
Air Permits by Rule (PBR) Checklist
Title 30 Texas Administrative Code § 106.512

Questions/Description and Response		
Will the engine or turbine be used as a replacement at an oil and gas site and does it meet all the requirements of the policy memo entitled, "Replacement of All Engine and Turbine Components for Oil and Gas Production?"		☐ YES ☒ NO
If "YES," registration is not required for like-kind replacements of engine or turbine components. *If "NO," please continue.*		
Rule	**Introduction**	
(1)	Is the engine or turbine rated less than 240 hp?	☒ YES ☐ NO
If "YES," then registration is not required, but the facility must comply with conditions (5) and (6) of this rule. *If "NO," then registration is required and the facility must be registered by submitting a completed Form PI-7 and Table 29 or Table 31, as applicable, within 10 days after construction begins.*		
Indicate the type of equipment (pick one): ☒ Engine ☐ Turbine		
If an engine, continue to the questions regarding "Engines." *If a turbine, skip to the questions regarding "Gas Turbines."*		
Rule	**Engines**	
(2)	Is the engine rated at 500 hp or greater?	☐ YES ☐ NO
If "NO," the engine is between 240 hp and 500 hp. The engine must be registered by submitting a completed Form PI-7 and a Table 29 within 10 days after construction begins and must comply with the conditions in §§ 106.512(5) and (6). Skip to the questions regarding § 106.512(4). *If "YES," in addition to registration, the engine must operate in compliance with the following nitrogen (NO_x) emission limit(s). Check the limit(s) applicable to this engine by answering the following:*		
(2)(A)(i)	The engine is a gas-fired, rich-burn engine and will not exceed 2.0 grams per horsepower hour (g/hp-hr) under all operating conditions.	☐ YES ☐ NO
Indicate grams per horsepower hour NO_x:_____ (g/hp-hr)		
(2)(A)(ii)	The engine is a spark-ignited, gas-fired, lean-burn engine or any compression-ignited, dual fuel-fired engine manufactured new after June 18, 1992, and will not exceed 2.0 g/hp-hr NO_x at manufacturer's rated full load and speed at all times; except, the engine will not exceed 5.0 g/hp-hr NO_x under reduced speed and 80% and 100% of full torque conditions.	☐ YES ☐ NO
Indicate grams per horsepower hour NO_x:_____ (g/hp-hr)		

Texas Commission on Environmental Quality
Stationary Engines and Turbines
Air Permits by Rule (PBR) Checklist
Title 30 Texas Administrative Code § 106.512

Questions/Description and Response		
Rule	**Engines (*continued*)**	
(2)(A)(iii)	The engine is any spark-ignited, lean-burn two-cycle or four-cycle engine or any compression-ignited, dual fuel-fired engine rated 825 hp or greater and manufactured between September 23, 1982 and June 18, 1992, and will not exceed 5.0 g/hp-hr NO_x under all operating conditions.	☐ YES ☐ NO
Indicate grams per horsepower hour NO_x: _____ g/hp-hr		
(2)(A)(iv)	The engine is any spark-ignited, gas-fired, lean-burn, four-cycle engine or compression-ignited, dual-fuel-fired engine that was manufactured before June 18, 1992, and is rated less than 825 hp, or was manufactured before September 23, 1982, and will not exceed 5.0 g/hp-hr NO_x at manufacturer's rated full load and speed at all times; except, the engine will not exceed 8.0 g/hp-hr NO_x under reduced speed and 80% and 100% of full torque conditions.	☐ YES ☐ NO
Indicate grams per horsepower hour NO_x: _____ g/hp-hr		
(2)(A)(v)	The engine is any spark-ignited, gas-fired, two-cycle, lean-burn engine that was manufactured before June 18, 1992, and is rated less than 825 hp, or was manufactured before September 23, 1982, and will not exceed 8.0 g/hp-hr NO_x under all operating conditions.	☐ YES ☐ NO
Indicate grams per horsepower hour NO_x: _____ g/hp-hr		
(2)(A)(vi)	The engine is any compression-ignited, liquid-fired engine and will not exceed 11.0 g/hp-hr NO_x under all operating conditions.	☐ YES ☐ NO
Indicate grams per horsepower hour NO_x: _____ g/hp-hr		
(2)(B)	Does the engine require an automatic air-fuel ratio controller to meet the NO_x limit(s) above?	☐ YES ☐ NO
(2)(B)	For spark-ignited gas-fired or compression-ignited dual fuel-fired engines, is the engine required to have an automatic air-fuel ratio controller under condition (2)(B) of the PBR?	☐ YES ☐ NO
(2)(C)	Are you aware of and accept responsibility for the record and testing requirements as specified in (2)(C) of the PBR?	☐ YES ☐ NO

Texas Commission on Environmental Quality
Stationary Engines and Turbines
Air Permits by Rule (PBR) Checklist
Title 30 Texas Administrative Code § 106.512

Questions/Description and Response		
Rule	**Gas Turbines**	
(3)	Is the turbine rated 500 hp or more?	☐ YES ☐ NO
If "NO," the turbine is between 240 hp and 500 hp. The engine only needs to be registered by submitting a completed Form PI-7 and a Table 31 within 10 days after construction begins. *If "YES," in addition to registration, the turbine must operate in compliance with the following emission limit(s) and must comply with the conditions in §§ 106.512(5)(6). Skip to questions regarding "Additional Requirements."*		
(3)(A)	Will the emissions of NO_x exceed 3.0 g/hp-hr for gas firing?	☐ YES ☐ NO
(3)(B)	Will the turbine meet all applicable NO_x and sulfur dioxide (or fuel sulfur) emission limitations, monitoring requirements, and reporting requirements of 40 CFR Part 60, NSPS Subpart GG?	☐ YES ☐ NO
Rule	**Additional Requirements**	
(4)	Is the engine or turbine rated less than 500 hp or used for temporary replacement purposes?	☐ YES ☐ NO
If "NO," continue to next question. *If "YES," the equipment does not have to meet the emission limits of §§ 106.512(2) and (3). However, the temporary replacement equipment can only remain in service for a maximum of 90 days.*		
(5)	What type of fuel will be used and will the fuel meet the requirements of the PBR?	☒ YES ☐ NO
Indicate the fuel(s) used. ☒ Natural gas ☐ Liquid Petroleum gas ☐ Field gas ☐ Liquid fuel		
(6)	Does the installation comply with the National Ambient Air Quality Standards (NAAQS)?	☒ YES ☐ NO
Indicate which method is used and attach the modeling report and/or calculations and diagrams to support the selected method. ☒ Modeling ☐ Stack height ☐ Facility emissions and property line distance		
(6)	Have you included a modeling report and/or calculations and diagrams to support the selected NAAQS compliance determination method?	☒ YES ☐ NO
Rule	**Other Applicable Rules and Regulations**	
For the following four questions, please refer to the Electric Generators under Permit by Rule policy memo from October 2006.		
Is the engine or turbine used to generate electricity?		☐ YES ☒ NO
If "NO," the following do not apply.		

Texas Commission on Environmental Quality
Stationary Engines and Turbines
Air Permits by Rule (PBR) Checklist
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Questions/Description and Response	
Rule	**Other Applicable Rules and Regulations (continued)**
Will the engine or turbine be used to generate electricity to operate facilities authorized by a New Source Review Permit?	☐ YES ☒ NO
If "YES," the engine or turbine does not qualify for this PBR and authorization must be obtained through a permit amendment.	
If the engine or turbine is used to generate electricity, will it be exclusively for on-site use at locations which cannot be connected to an electric grid?	☐ YES ☐ NO
If "YES," describe why access to the electric grid is not available. *If "NO," the engine or turbine does not qualify for this PBR.*	
Has an Electric Generating Unit Standard Permit been issued for one of the following activities for which the engine or turbine will only be used to generate electricity?	☐ YES ☐ NO
☐ Engines or turbines used to provide power for the operation of facilities registered under the Air Quality Standard Permit for Concrete Batch Plants. ☐ Engines or turbines satisfying the conditions for facilities permitted by rule under 30 TAC Chapter 106, Subchapter E (relating to Aggregate and Pavement). ☐ Engines or turbines used exclusively to provide power to electric pumps used for irrigating crops	
If "NO," the engine or turbine does not qualify for this PBR.	
If the engine or turbine is located in the Houston/Galveston nonattainment area, is the site subject to the Mass Emission Cap and Trade Program?	☐ YES ☒ NO
Why or Why Not: The facility is not located in the Houston/Galveston non attainment area.	
Is the facility subject to 30 TAC Chapter 115?	☐ YES ☒ NO
Why or Why Not: The facility is not located in an ozone non attainment county.	
Is the facility subject to 30 TAC Chapter 117?	☐ YES ☒ NO
Why or Why Not: The facility is not located in an ozone non attainment area.	

Other Applicable Rules and Regulations (continued)	
Is the facility subject to 40 CFR Part 60, NSPS Subpart D?	☐ YES ☒ NO
Why or Why Not: The facility does not have any Fossil-Fuel-Fired Steam Generators.	
Is the facility subject to 40 CFR Part 60, NSPS Subpart Da?	☐ YES ☒ NO
Why or Why Not: The facility does not have any electric utility steam generating units.	
Is the facility subject to 40 CFR Part 60, NSPS Subpart Db?	☐ YES ☒ NO
Why or Why Not: The facility does not have any Industrial-Commercial-Institutional Steam Generating Units	
Is the facility subject to 40 CFR Part 60, NSPS Subpart Dc?	☐ YES ☒ NO
Why or Why Not: The facility does not have any Small Industrial-Commercial-Institutional Steam Generating Units.	
Is the facility subject to 40 CFR Part 60, NSPS Subpart GG?	☐ YES ☒ NO
Why or Why Not: The facility does not have any stationary gas turbines.	
Is the facility subject to 40 CFR Part 63, MACT Subpart YYYY?	☐ YES ☒ NO
Why or Why Not: The facility does not have any stationary gas turbines.	
Is the facility subject to 40 CFR Part 63, MACT Subpart ZZZZ	☒ YES ☐ NO
Why or Why Not: Engine complies with Subpart JJJJ.	
Is the facility subject to 40 CFR Part 63, MACT Subpart PPPPP?	☐ YES ☒ NO
Why or Why Not: The facility does not have any engine test cells/stands.	

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Record Keeping: In order to demonstrate compliance with the general and specific requirements of this PBR, sufficient records must be maintained to demonstrate that all requirements are met at all times. If the engine or turbine is rated greater than 500 horsepower, all records must be maintained as required by 30 TAC § 106.512(2)(C). The registrant should also become familiar with the additional record keeping requirements in 30 TAC § 106.8. The records must be made available immediately upon request to the commission or any air pollution control program having jurisdiction. If you have any questions about the type of records that should be maintained or testing requirements, contact the Air Program in the TCEQ Regional Office for the region in which the site is located.

Recommended Calculation Method: In order to demonstrate compliance with this PBR, emission factors for each air contaminant from the EPA Compilation of Air Pollutant Emission Factors (AP-42), Fifth Edition, Volume 1, Section 3.1: Stationary Gas Turbines for Electricity Generation at: www.epa.gov/ttn/chief/ap42/index.html should be used, including, the specific air contaminant's emission limit listed on the table below.

PRINT FORM RESET FORM

Texas Commission on Environmental Quality
Stationary Engines and Turbines
Air Permits by Rule (PBR) Checklist
Title 30 Texas Administrative Code § 106.512

TCEQ Exemption 30 TAC §106.512 General Guidelines										
NO_X g/hp-hr Emission Limits										
Date Original Manufacture		N/A	NA	Before 09/23/82		09/23/82 to 06/18/92			After 06/18/92	
Mfg. Rated Horsepower		X < 240	240< X<500	X >500*		500 ≤ X ≤824*		X >825	X >500*	
Operating Speed		N/A	N/A	Full	Reduced	Full	Reduced	N/A	Full	Reduced
Operating Torque		N/A	N/A	N/A	80-100%	N/A	80-100%	N/A	N/A	80-100%
Ignition Type		*Engine Combustion Design*								
Spark	Rich Burn ††	N/A	N/A	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Spark	Lean Burn**	N/A	N/A	5.0	8.0	5.0	8.0	5.0	2.0	5.0
Spark	2-Cycle	N/A	N/A	8.0	8.0	8.0	8.0	5.0	2.0	5.0
Compression	Dual Fuel	N/A	N/A	5.0	8.0	5.0	8.0	5.0	2.0	5.0
Compression	Liquid Fuel	N/A	N/A	11.0	11.0	11.0	11.0	11.0	11.0	11.0
Turbines†		NA	NA	3.0	3.0	3.0	3.0	3.0	3.0	3.0
PI-7 Registration		No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Emission Testing		No	No	Biennial	Biennial	Biennial	Biennial	Biennial	Biennial	Biennial

Notes:

* Lower emission rates apply to lean-burn engine operating: Full Speed & Any Torque or Any Speed & <80% or >100% Torque
† Turbine emissions are also regulated by EPA NSPS Standards for NO_X and SO_2
** Lean Burn > 4% exhaust 0_2
†† Rich Burn = ≤ 4% exhaust 0_2

Appendix - Section 1

Company Name: Strat Land Exploration Company
Facility: Bradley 6H-871
EPN: FE-01
FIN: None
CIN: None
Source Description: Fugitive Emissions
Based on: Typical Facility Component counts

Gas

number	component	emission factor (kg/hr per component)*	emission factor (lb/hr of TOC per component)	lb/hr	tpy	VOC content* (wt %)	Control Efficiency (%)	lb/hr	tpy
68	Valve	0.0045	0.00992	0.674618047	2.954827046	100	0	0.675	2.955
0	Pump Seal	0.0024	0.00529	0	0	100	0	0.000	0.000
204	Connector	0.0002	0.00044	0.089949073	0.39397694	100	0	0.090	0.394
68	Flange	0.00039	0.00086	0.058466897	0.256085011	100	0	0.058	0.256
7	Open-ended Line	0.002	0.00441	0.030864878	0.135188166	100	0	0.031	0.135
3	Other	0.0088	0.01940	0.058202341	0.254926255	100	0	0.058	0.255

Light Oil

number	component	emission factor (kg/hr per component)	emission factor (lb/hr of TOC per component)	lb/hr	tpy	VOC content* (wt %)	Control Efficiency (%)	lb/hr	tpy
94	Valve	0.0025	0.00551	0.518089023	2.269229921	100	0	0.518	2.269
0	Pump Seal	0.013	0.02866	0	0	100	0	0.000	0.000
282	Connector	0.00021	0.00046	0.130558434	0.57184594	100	0	0.131	0.572
94	Flange	0.00011	0.00024	0.022795917	0.099846117	100	0	0.023	0.100
9	Open-ended Line	0.0014	0.00309	0.02777839	0.121669349	100	0	0.028	0.122
5	Other	0.0075	0.01653	0.08267378	0.362111158	100	0	0.083	0.362

Heavy Oil

number	component	emission factor (kg/hr per component)	emission factor (lb/hr of TOC per component)	lb/hr	tpy	VOC content* (wt %)	Control Efficiency (%)	lb/hr	tpy
0	Valve	0.0000084	0.0000185	0	0	100	0	0.000	0.000
0	Pump Seal**	-	0.00113	0	0	100	0	0.000	0.000
0	Connector	0.0000075	0.0000165	0	0	100	0	0.000	0.000
0	Flange	0.00000039	0.0000009	0	0	100	0	0.000	0.000
0	Open-ended Line	0.00014	0.0003086	0	0	100	0	0.000	0.000
0	Other**	-	0.0006830	0	0	100	0	0.000	0.000

Water/Oil

number	component	emission factor (kg/hr per component)	emission factor (lb/hr of TOC per component)	lb/hr	tpy	VOC content* (wt %)	Control Efficiency (%)	lb/hr	tpy
5	Valve	0.000098	0.0002161	0.001080271	0.004731586	100	0	0.001	0.005
0	Pump Seal	0.000024	0.0000529	0	0	100	0	0.000	0.000
15	Connector	0.00011	0.0002425	0.003637646	0.015932891	100	0	0.004	0.016
5	Flange	0.0000029	0.0000064	3.19672E-05	0.000140016	100	0	0.000	0.000
1	Open-ended Line	0.00025	0.0005512	0.000551159	0.002414074	100	0	0.001	0.002
0	Other	0.014	0.0308649	0	0	100	0	0.000	0.000

	lb/hr	tpy
Uncontrolled THC emissions:	1.6993	7.4429

	lb/hr	tpy
VOC emissions:	**1.699**	**7.443**

* Emission factors are for oil and gas production facilities (not refineries), and come from the EPA's "Protocol for Equipment Leak Emission Estimates" November 1995, EPA 4531, R-95-017, Table 2-4.
** Emission factors that are not based on the EPA document are from the TCEQ "Air Permit Technical Guidance for Chemical Source Equipment Leak Fugitives (Draft October 2000)

Company Name: Strat Land Exploration Company
Facility: Bradley 6H-871
EPN: HT-01
FIN: HT-01
CIN: None
Source Description: Heater Treater Burner

Emission Calculations:

Heat Rating of Unit:	0.75	MMBtu/hr
Btu Value of Fuel Gas:	1050	Btu/scf
Fuel Use of Unit:	714	scf/hr-avg
	6.25	MMscf/yr
Hours Operated for Year:	8760	hrs
Percent Operation for Year:	100.00	%

	Pollutant	Factor lb/MMscf fuel	Avg. lbs/hr	Total tons/yr	Source of Factor
CRITERIA	NOx	100	0.071	0.311	AP-42, Table 1.4-1 (7/98)
	CO	84	0.060	0.263	AP-42, Table 1.4-1 (7/98)
	PM_{10}	7.6	0.005	0.022	AP-42, Table 1.4-2 (7/98)
	$PM_{2.5}$		0.005	0.020	PM Calculator
	SO_2	0.938	0.001	0.004	AP-42, Table 1.4-2 (7/98)-Adjusted [1]
	VOC	5.5	0.004	0.018	AP-42, Table 1.4-2 (7/98)
TOXIC AIR POLLUTANTS	N-Hexanes	1.800	0.001	0.004	AP-42, Table 1.4-3 (7/98)
	Acetaldehyde		0.000	0.000	No emission factor
	Formaldehyde	0.075	0.000	0.000	AP-42, Table 1.4-3 (7/98)
	Benzene	0.002	0.000	0.000	AP-42, Table 1.4-3 (7/98)
	Toluene	3.40E-03	0.000	0.000	AP-42, Table 1.4-3 (7/98)
	Ethylbenzene		0.000	0.000	No emission factor
	Xylenes		0.000	0.000	No emission factor
	Total TAP		0.001	0.004	
OTHER	Methane	2.3	0.002	0.009	AP-42, Table 1.4-2 (7/98)
	Ethane	3.1	0.002	0.009	AP-42, Table 1.4-3 (7/98)
	Non-toxic VOC (Heptane+)		0.003	0.014	= VOC - Total TAPs

Additional Notes:

1. The AP-42 factor for SO_2 is based on a fuel content of 2000 gr $H_2S/10^6$ scf (3.2 ppmv). This calculation adjusts the factor for 5 ppm(v) H2S.

Company: Strat Land Exploration Company
Facility: Bradley 6H-871
Description: Maintenance, Start-Up and Shutdown Emissions
EPN: MSS-01
FIN: MSS-01
CIN: N/A

Equipment Maintenance/Shutdown Emissions

Source	Description	Vessel Dimensions			Vessel Conditions			Blowdown Conditions		Actual	Std. T&P	Piping	Vol./Event	Total	Total Volume
ID		OD, in.	L, ft.	Wall, in.	psig	°F	LL %	psig	°F	Ft^3	MSCF	%	MSCF	Occurances	MSCF
S-01	Separator	36	10	0.375	60	72	10	0	80	72.94	0.292	33.300	0.389	4.00	1.56
HT-01	Heater Treater Burner	48	20	0.375	25	125	10	0	80	247.95	0.356	33.300	0.475	4.00	1.90
														Total (MSCF)	**3.46**

VOC mole %	100.000%
Molecular Weight	86.178

lb/hr VOC	0.090
tons/yr VOC	0.393

Company Name: Strat Land Exploration Company
Facility Name: Bradley 6H-871
EPN: OIL-LD-01
FIN: OIL-LD-01
CIN: None
Source Description: Tank Truck Crude/Condensate Loading Losses

Using equation L_L = 12.46* SPM/T from AP-42, Chapter 5, Section 5.2-4

S =	0.6	= Saturation Factor
P =	4	= True vapor pressure of liquid loaded (psia)
M =	63.88	= Molecular Weight of Vapors (lb/lb-mole)
T =	539.67	= Temperature of bulk liquid loaded (in degrees Rankine)
Hourly Loading Rate =	7980	= Gallons Loaded per Hour
Annual Loading Rate =	76650	= Gallons Loaded per Year
Control =	0	= Efficiency of any Control Device (e.g. a VRU)
L_L =	3.5397	= Loading Loss (in pounds of VOC released per 1000 gallons of liquid loaded)
VOC lb/hr =	28.2468	
VOC tpy =	0.1357	

EPN: OST-01
FIN: OST-01
CIN: None

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

Project File : \\tsclient\T\Customers\Strat Land Exploration\Air Permit Applications\Texas\Lipscomb
Flowsheet Selection : Oil Tank with Separator
Calculation Method : AP42
Control Efficiency : 100.0%
Known Separator Stream : Geographical Region
Geographical Region : All Regions in US
Entering Air Composition : No

Well Name : Bradley 6H-871
Well ID : Oil Storage Tanks, OST-01
Date : 2016.04.14

****
* Data Input *
****

Separator Pressure : 29.00[psig]
Separator Temperature : 60.00[F]
Ambient Pressure : 14.70[psia]
Ambient Temperature : 80.00[F]
C10+ SG : 0.8410
C10+ MW : 224.00

-- Low Pressure Oil ----------

No.	Component	mol %
1	H2S	0.0000
2	O2	0.0000
3	CO2	0.0100
4	N2	0.0200
5	C1	1.1300
6	C2	1.4100
7	C3	3.2900
8	i-C4	0.4500
9	n-C4	4.0200
10	i-C5	0.7000
11	n-C5	4.0700
12	C6	0.9600
13	C7	5.5900
14	C8	5.5200
15	C9	4.2700
16	C10+	63.0500
17	Benzene	0.1600
18	Toluene	0.3700
19	E-Benzene	0.0700
20	Xylenes	0.2500
21	n-C6	4.6600
22	224Trimethylp	0.0000

-- Sales Oil ----------
Production Rate : 5[bbl/day]
Days of Annual Operation : 365 [days/year]
API Gravity : 44.0
Reid Vapor Pressure : 5.70[psia]
Bulk Temperature : 80.00[F]

-- Tank and Shell Data ----------
Diameter : 12.00[ft]
Shell Height : 15.00[ft]
Cone Roof Slope : 0.06
Average Liquid Height : 8.00[ft]
Vent Pressure Range : 0.06[psi]
Solar Absorbance : 0.68

-- Meteorological Data ----------

City : Amarillo, TX
Ambient Pressure : 14.70[psia]
Ambient Temperature : 80.00[F]
Min Ambient Temperature : 43.80[F]
Max Ambient Temperature : 70.70[F]
Total Solar Insolation : 1659.00[Btu/ft^2*day]

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

-- Emission Summary ----------

Item	Uncontrolled [ton/yr]	Uncontrolled [lb/hr]
Total HAPs	0.090	0.021
Total HC	2.490	0.568
VOCs, C2+	2.257	0.515
VOCs, C3+	1.885	0.430

Uncontrolled Recovery Info.

Vapor	127.4700 x1E-3	[MSCFD]
HC Vapor	126.6700 x1E-3	[MSCFD]
GOR	25.49	[SCF/bbl]

-- Emission Composition ----------

No	Component	Uncontrolled [ton/yr]	Uncontrolled [lb/hr]
1	H2S	0.000	0.000
2	O2	0.000	0.000
3	CO2	0.005	0.001
4	N2	0.008	0.002
5	C1	0.234	0.053
6	C2	0.372	0.085
7	C3	0.719	0.164
8	i-C4	0.080	0.018
9	n-C4	0.569	0.130
10	i-C5	0.059	0.013
11	n-C5	0.265	0.061
12	C6	0.022	0.005
13	C7	0.052	0.012
14	C8	0.019	0.004
15	C9	0.006	0.001
16	C10+	0.000	0.000
17	Benzene	0.002	0.000
18	Toluene	0.002	0.000
19	E-Benzene	0.000	0.000
20	Xylenes	0.000	0.000
21	n-C6	0.088	0.020
22	224Trimethylp	0.000	0.000
	Total	2.502	0.571

-- 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	0.0100	0.0028	0.0000	0.1959	0.0001	0.1715
4	N2	28.01	0.0200	0.0007	0.0000	0.5192	0.0002	0.4544
5	C1	16.04	1.1300	0.1279	0.0000	27.1024	0.0002	23.7206
6	C2	30.07	1.4100	0.5757	0.0000	23.0321	0.0001	20.1581
7	C3	44.10	3.2900	2.3325	0.2054	28.1054	15.6914	26.5564
8	i-C4	58.12	0.4500	0.3947	0.1579	1.8822	4.6804	2.2314
9	n-C4	58.12	4.0200	3.6978	1.9822	12.3702	41.1010	15.9553
10	i-C5	72.15	0.7000	0.6930	0.5708	0.8823	4.4793	1.3311
11	n-C5	72.15	4.0700	4.0783	3.5962	3.8544	20.9551	5.9882

12	C6	86.16	0.9600	0.9869	1.0032	0.2631	1.6379	0.4346
13	C7	100.20	5.5900	5.7855	6.1023	0.5231	3.3840	0.8801
14	C8	114.23	5.5200	5.7265	6.1185	0.1670	1.0964	0.2830
15	C9	128.28	4.2700	4.4330	4.7553	0.0456	0.3010	0.0775
16	C10+	166.00	63.0500	65.4827	70.3968	0.0004	0.0027	0.0007
17	Benzene	78.11	0.1600	0.1650	0.1708	0.0299	0.1893	0.0498
18	Toluene	92.13	0.3700	0.3835	0.4078	0.0199	0.1292	0.0335
19	E-Benzene	106.17	0.0700	0.0727	0.0778	0.0013	0.0083	0.0021
20	Xylenes	106.17	0.2500	0.2595	0.2781	0.0039	0.0258	0.0067
21	n-C6	86.18	4.6600	4.8011	4.9400	1.0018	6.3177	1.6651
22	224Trimethylp	114.24	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
	MW		171.77	176.95	184.50	37.48	63.88	40.78
	Stream Mole Ratio		1.0000	0.9628	0.9576	0.0372	0.0053	0.0424
	Heating Value	[BTU/SCF]				2146.87	3557.55	2322.89
	Gas Gravity	[Gas/Air]				1.29	2.21	1.41
	Bubble Pt. @ 100F	[psia]	63.02	18.16	3.34			
	RVP @ 100F	[psia]	120.32	64.36	20.24			
	Spec. Gravity @ 100F		0.756	0.759	0.763			

Company Name: Strat Land Exploration Company
Facility: Bradley 6H-871
EPN: PE-01
FIN: PE-01
CIN: None
Source Description: Natural Gas Pump Engine
Engine Type: Rich-burn, 4-stroke

Emission Calculations:

Rated Engine Capacity:	32	hp
Btu Value of Fuel Gas:	1050	Btu/scf
Engine Heat Input:	7500	Btu/hp-hr
Hours Operated for Year:	8760	hrs
Calculated Heat Rate:	0.24	MMBtu/hr
Calculated Fuel Use:	229	cu. ft./hr;
	2.01	MMCF/yr
Percent Operation for Year:	100.00	%

	Pollutant	Factor lb/MMBTU	g/hp-hr	Avg. lbs/hr	Total tons/yr	Source of Factor
CRITERIA	NOx		2.834	0.200	0.876	40 CFR 1048.101(c)
	CO		4.847	0.342	1.498	40 CFR 1048.101(c)
	PM_{10}	9.50E-03	0.032	0.002	0.009	AP-42, Table 3.2-3, 7/00
	$PM_{2.5}$	9.50E-03	0.032	0.002	0.009	AP-42, Table 3.2-3, 7/00
	SO_2 [1]	1.47E+00	5.001	0.353	1.546	AP-42, Table 3.2-3, 7/00 - Adjusted [1]
	VOC	2.96E-02	0.101	0.007	0.031	AP-42, Table 3.2-3, 7/00
TOXIC AIR POLLUTANTS	N-Hexanes			0.000	0.000	No emission factor
	Formaldehyde	2.05E-02	0.070	0.005	0.022	AP-42, Table 3.2-3, 7/00
	Acetaldehyde	2.79E-03	0.009	0.001	0.004	AP-42, Table 3.2-3, 7/00
	Benzene	1.58E-03	0.005	0.000	0.000	AP-42, Table 3.2-3, 7/00
	Toluene	5.58E-04	0.002	0.000	0.000	AP-42, Table 3.2-3, 7/00
	Ethylbenzene	2.48E-05	0.0001	0.000	0.000	AP-42, Table 3.2-3, 7/00
	Xylenes	1.95E-04	0.001	0.000	0.000	AP-42, Table 3.2-3, 7/00
	Total TAP			**0.006**	**0.026**	
OTHER	Methane	2.30E-01	0.782	0.055	0.241	AP-42, Table 3.2-3, 7/00
	Ethane	7.04E-02	0.239	0.017	0.074	AP-42, Table 3.2-3, 7/00
	TOC	3.58E-01	1.218	0.086	0.377	AP-42, Table 3.2-3, 7/00
	Non-toxic VOC (Heptane+)			0.001	0.005	= VOC - Total TAPs

Additional Notes:

1. The AP-42 factor for SO_2 is based on a fuel content of 2000 gr $H_2S/10^6$ scf (3.2 ppm). This calculation adjusts the factor for 8000 ppm H_2S.

EPN: WST-01
FIN: WST-01
CIN: None

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

Project File : \\tsclient\T\Customers\Strat Land Exploration\Air Permit Applications\Texas\Lipscomb
Flowsheet Selection : Oil Tank with Separator
Calculation Method : AP42
Control Efficiency : 100.0%
Known Separator Stream : Geographical Region
Geographical Region : All Regions in US
Entering Air Composition : No

Well Name : Bradley 6H-871
Well ID : Water Storage Tanks, WST-01
Date : 2016.04.14

****
* Data Input *
****

Separator Pressure : 29.00[psig]
Separator Temperature : 60.00[F]
Ambient Pressure : 14.70[psia]
Ambient Temperature : 80.00[F]
C10+ SG : 0.8410
C10+ MW : 224.00

-- Low Pressure Oil ----------

No.	Component	mol %
1	H2S	0.0000
2	O2	0.0000
3	CO2	0.0100
4	N2	0.0200
5	C1	1.1300
6	C2	1.4100
7	C3	3.2900
8	i-C4	0.4500
9	n-C4	4.0200
10	i-C5	0.7000
11	n-C5	4.0700
12	C6	0.9600
13	C7	5.5900
14	C8	5.5200
15	C9	4.2700
16	C10+	63.0500
17	Benzene	0.1600
18	Toluene	0.3700
19	E-Benzene	0.0700
20	Xylenes	0.2500
21	n-C6	4.6600
22	224Trimethylp	0.0000

-- Sales Oil ----------
Production Rate : 5[bbl/day]
Days of Annual Operation : 365 [days/year]
API Gravity : 44.0
Reid Vapor Pressure : 5.70[psia]
Bulk Temperature : 80.00[F]

-- Tank and Shell Data ----------
Diameter : 15.00[ft]
Shell Height : 6.00[ft]
Cone Roof Slope : 0.06
Average Liquid Height : 4.00[ft]
Vent Pressure Range : 0.06[psi]
Solar Absorbance : 0.68

```
-- Meteorological Data ----------------------------------------------------------------
City                      : Amarillo, TX
Ambient Pressure          : 14.70[psia]
Ambient Temperature       : 80.00[F]
Min Ambient Temperature   : 43.80[F]
Max Ambient Temperature   : 70.70[F]
Total Solar Insolation    : 1659.00[Btu/ft^2*day]


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

-- Emission Summary -------------------------------------------------------------------
Item                Uncontrolled   Uncontrolled
                    [ton/yr]       [lb/hr]
Total HAPs          0.090          0.021
Total HC            2.499          0.571
VOCs, C2+           2.264          0.517
VOCs, C3+           1.890          0.432

Uncontrolled Recovery Info.
       Vapor        128.5400 x1E-3 [MSCFD]
       HC Vapor     127.7400 x1E-3 [MSCFD]
       GOR          25.71          [SCF/bbl]

-- Emission Composition ---------------------------------------------------------------
No  Component       Uncontrolled   Uncontrolled
                    [ton/yr]       [lb/hr]
1   H2S             0.000          0.000
2   O2              0.000          0.000
3   CO2             0.005          0.001
4   N2              0.008          0.002
5   C1              0.235          0.054
6   C2              0.374          0.085
7   C3              0.746          0.170
8   i-C4            0.081          0.018
9   n-C4            0.571          0.130
10  i-C5            0.057          0.013
11  n-C5            0.254          0.058
12  C6              0.021          0.005
13  C7              0.049          0.011
14  C8              0.018          0.004
15  C9              0.005          0.001
16  C10+            0.000          0.000
17  Benzene         0.002          0.000
18  Toluene         0.002          0.000
19  E-Benzene       0.000          0.000
20  Xylenes         0.000          0.000
21  n-C6            0.083          0.019
22  224Trimethylp   0.000          0.000
    Total           2.511          0.573

-- Stream Data ------------------------------------------------------------------------
No. Component           MW       LP Oil    Flash Oil Sale Oil  Flash Gas W&S Gas   Total Emissions
                                 mol %     mol %     mol %     mol %     mol %     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    0.0100    0.0028    0.0000    0.1959    0.0001    0.1710
4   N2                  28.01    0.0200    0.0007    0.0000    0.5192    0.0002    0.4531
5   C1                  16.04    1.1300    0.1279    0.0000    27.1024   0.0002    23.6536
6   C2                  30.07    1.4100    0.5757    0.0000    23.0321   0.0001    20.1012
7   C3                  44.10    3.2900    2.3325    0.3437    28.1054   21.9961   27.3280
8   i-C4                58.12    0.4500    0.3947    0.1951    1.8822    4.8470    2.2595
9   n-C4                58.12    4.0200    3.6978    2.2994    12.3702   39.9539   15.8803
10  i-C5                72.15    0.7000    0.6930    0.6020    0.8823    3.9599    1.2739
11  n-C5                72.15    4.0700    4.0783    3.7350    3.8544    18.2442   5.6855
```

Per guidance from the Texas Commission of Environmental Quality, water storage tank emissions were calculated using crude oil/condensate properties and water production rate. Emissions are then estimated at one percent of the calculated value.

12	C6	86.16	0.9600	0.9869	1.0089	0.2631	1.3825	0.4055
13	C7	100.20	5.5900	5.7855	6.0859	0.5231	2.8330	0.8171
14	C8	114.23	5.5200	5.7265	6.0842	0.1670	0.9153	0.2623
15	C9	128.28	4.2700	4.4330	4.7244	0.0456	0.2511	0.0717
16	C10+	166.00	63.0500	65.4827	69.9050	0.0004	0.0023	0.0007
17	Benzene	78.11	0.1600	0.1650	0.1711	0.0299	0.1592	0.0464
18	Toluene	92.13	0.3700	0.3835	0.4060	0.0199	0.1081	0.0311
19	E-Benzene	106.17	0.0700	0.0727	0.0773	0.0013	0.0069	0.0020
20	Xylenes	106.17	0.2500	0.2595	0.2763	0.0039	0.0215	0.0062
21	n-C6	86.18	4.6600	4.8011	4.9545	1.0018	5.3183	1.5511
22	224Trimethylp	114.24	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
	MW		171.77	176.95	183.50	37.48	61.84	40.58
	Stream Mole Ratio		1.0000	0.9628	0.9574	0.0372	0.0054	0.0426
	Heating Value	[BTU/SCF]				2146.87	3450.96	2312.82
	Gas Gravity	[Gas/Air]				1.29	2.13	1.40
	Bubble Pt. @ 100F	[psia]	63.02	18.16	3.93			
	RVP @ 100F	[psia]	120.32	64.36	23.43			
	Spec. Gravity @ 100F		0.756	0.759	0.762			

Company Name: Strat Land Exploration Company
Facility Name: Bradley 6H-871
EPN: WTR-LD-01
FIN: WTR-LD-01
CIN: None
Source Description: Tank Truck Water Loading Losses

Using equation L_L = 12.46* SPM/T from AP-42, Chapter 5, Section 5.2-4

S =	0.6	= Saturation Factor
P =	4	= True vapor pressure of liquid loaded (psia)
M =	61.84	= Molecular Weight of Vapors (lb/lb-mole)
T =	539.67	= Temperature of bulk liquid loaded (in degrees Rankine)
Hourly Loading Rate	7980.000	= Gallons Loaded per Hour
Annual Loading Rate	76650	= Gallons Loaded per Year
Control	0	= Efficiency of any Control Device (e.g. a VRU)
L_L =	3.4267	= Loading Loss (in pounds of VOC released per 1000 gallons of liquid loa
VOC lb/hr =	27.3447	
VOC tpy =	0.1313	
Assume 1% VOC lb/hr =	0.2734	
Assume 1% VOC tpy =	0.0013	

Appendix - Section 2

Company Name: Strat Land Exploration Company
Facility: Bradley 6H-871

Ambient sampling or dispersion modeling, accomplished pursuant to guidance obtained from the executive director, was used to demonstrate NAAQS:

Engine/EPN	Max Hourly Concentration of NO2/NOx From Screen3 Modeling (µg/m3)	Max Annual Concentration of NO2/NOx (Max Hourly Concentration X 0.08) (µg/m3)	NO2/NOx Ratio (From Table Below)	Annual NO2 Concentration (Max. Annual Conc. X NO2/NOx Ratio)(µg/m3)
PE-01	**50.25**	**4.02**	**0.3264**	**1.312128**
			Background Concentration for County =	**70**
			Total =	**71.312128**
			Is Total Below NAAQS Limit for NO2 of 100µg/m3	**YES**

Unless otherwise documented by actual test data, the following nitrogen dioxide NC_2/NO_x ratios shall be used for modeling NO2;

Device	Nox Emission Rate (g/hp-hr)	NO_2/NO_x Ratio
IC Engine	Less than 2.0	0.4
IC Engine	2.0 thru 10.0	0.15 + (0.5/Q)
IC Engine	Greater than 10.0	0.2
Turbines		0.25
IC Engine with Catalytic Converter		0.85

Q = NO_x emission rate (g/hp-hr)

EPN: PE-01 FIN: PE-01 CIN: None

06/13/16

10:02:55
*** SCREEN3 MODEL RUN ***
*** VERSION DATED 96043 ***

C:\Lakes\Screen View\Strat Land\Bradley 6H-871\PE-01.scr

SIMPLE TERRAIN INPUTS:

SOURCE TYPE	=	POINT
EMISSION RATE (G/S)	=	0.251996E-01
STACK HEIGHT (M)	=	4.5720
STK INSIDE DIAM (M)	=	0.0508
STK EXIT VELOCITY (M/S)	=	24.4145
STK GAS EXIT TEMP (K)	=	755.3722
AMBIENT AIR TEMP (K)	=	299.8167
RECEPTOR HEIGHT (M)	=	0.0000
URBAN/RURAL OPTION	=	RURAL
BUILDING HEIGHT (M)	=	0.0000
MIN HORIZ BLDG DIM (M)	=	0.0000
MAX HORIZ BLDG DIM (M)	=	0.0000

THE REGULATORY (DEFAULT) MIXING HEIGHT OPTION WAS SELECTED.
THE REGULATORY (DEFAULT) ANEMOMETER HEIGHT OF 10.0 METERS WAS ENTERED.

BUOY. FLUX = 0.093 M**4/S**3; MOM. FLUX = 0.153 M**4/S**2.

*** FULL METEOROLOGY ***

****
*** SCREEN AUTOMATED DISTANCES ***
****

*** TERRAIN HEIGHT OF 0. M ABOVE STACK BASE USED FOR FOLLOWING DISTANCES ***

DIST (M)	CONC (UG/M**3)	STAB	U10M (M/S)	USTK (M/S)	MIX HT (M)	PLUME HT (M)	SIGMA Y (M)	SIGMA Z (M)	DWASH
87.	50.25	3	1.0	1.0	320.0	8.29	11.03	6.65	NO
100.	46.42	3	1.0	1.0	320.0	8.29	12.51	7.52	NO
200.	37.57	4	1.0	1.0	320.0	8.29	15.60	8.57	NO

```
    300.   23.11        4     1.0    1.0   320.0    8.29   22.64
12.14    NO
    400.   15.35        4     1.0    1.0   320.0    8.29   29.47
15.31    NO
    500.   10.92        4     1.0    1.0   320.0    8.29   36.16
18.33    NO
    600.   10.97        6     1.0    1.0 10000.0   15.84   21.48
10.21    NO

 MAXIMUM 1-HR CONCENTRATION AT OR BEYOND    87. M:
     87.   50.25        3     1.0    1.0   320.0    8.29   11.03
6.65    NO

  DWASH=   MEANS NO CALC MADE (CONC = 0.0)
  DWASH=NO MEANS NO BUILDING DOWNWASH USED
  DWASH=HS MEANS HUBER-SNYDER DOWNWASH USED
  DWASH=SS MEANS SCHULMAN-SCIRE DOWNWASH USED
  DWASH=NA MEANS DOWNWASH NOT APPLICABLE, X<3*LB

      ************************************
      *** SUMMARY OF SCREEN MODEL RESULTS ***
      ************************************

  CALCULATION        MAX CONC    DIST TO   TERRAIN
   PROCEDURE        (UG/M**3)    MAX (M)    HT (M)
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SIMPLE TERRAIN      50.25           87.        0.


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** REMEMBER TO INCLUDE BACKGROUND CONCENTRATIONS **
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