

**RAILROAD COMMISSION OF TEXAS  
OIL AND GAS DIVISION**

**Form H-1**  
05/2004

**APPLICATION TO INJECT FLUID INTO A RESERVOIR PRODUCTIVE OF OIL OR GAS**

1. Operator name L.C.S. Production Company 2. Operator P-5 No. 479574  
(as shown on P-5, Organization Report)

3. Operator Address PO Box 6663 Abilene, TX 79608-6663

4. County Fisher 5. RRC District No. 7B

6. Field Name Raven Creek (Canyon Sand) 7. Field No. 74863200

8. Lease Name Carter, B. F. 9. Lease/Gas ID No. N/A

10. Check the Appropriate Boxes: New Project  Amendment

If amendment, Fluid Injection Project No. F- 21806

Reason for Amendment: Add wells  Add or change types of fluids  Change pressure   
Change volume  Change interval  Other (explain) \_\_\_\_\_

**RESERVOIR DATA FOR A NEW PROJECT**

11. Name of Formation Canyon Sand, Palo Pinto Reef & Strawn Lime 12. Lithology Sand & Limestone  
(e.g., dolomite, limestone, sand, etc.)

13. Type of Trap Stratigraphic, Structural Anticline 14. Type of Drive during Primary Production Solution Gas  
(anticline, fault trap, stratigraphic trap, etc.)

15. Average Pay Thickness 100' 16. Lse/Unit Acreage 298 17. Current Bottom Hole Pressure (psig) 1,500

18. Average Horizontal Permeability (mds) 5-5.7 mds 19. Average Porosity (%) 10.7% -13.9%

**INJECTION PROJECT DATA**

20. No. of Injection Wells in this application 1

21. Type of Injection Project: Waterflood  Pressure Maintenance  Miscible Displacement  Natural Gas Storage   
Steam  Thermal Recovery  Disposal  Other \_\_\_\_\_

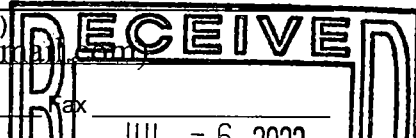
22. If disposal, are fluids from leases other than the lease identified in Item 9? Yes  No

23. Is this application for a Commercial Disposal Well? Yes  No

24. If for commercial disposal, will non-hazardous oil and gas waste other than produced water be disposed? Yes  No

25. Type(s) of Injection Fluid:  
Salt Water  Brackish Water  Fresh Water  CO<sub>2</sub>  N<sub>2</sub>  Air  H<sub>2</sub>S  LPG  NORM   
Natural Gas  Polymer  Other (explain) \_\_\_\_\_

26. If water other than produced salt water will be injected, identify the source of each type of injection water by formation, or by aquifer and depths, or by name of surface water source:  
Salt Water will be from the Canyon Sand formation

<p align="center"><b>CERTIFICATE</b></p> <p>I declare under penalties prescribed in Sec. 91.143, Texas Natural Resources Code, that I am authorized to make this report, that this report was prepared by me or under my supervision and direction, and that the data and facts stated therein are true, correct, and complete, to the best of my knowledge.</p>	<p align="right"><u>Bonnie Burklund</u> 06/14/2022 Signature Date</p> <p><u>Bonnie Burklund</u> Name of Person (type or print)</p> <p><u>(bonnieburklund@gmail.com)</u> Fax</p> <p>Phone <u>512-799-4057</u></p>
	

<b>For Office Use Only</b>	<b>Register No.</b>	<b>Amount \$</b>
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See Reverse Side for Required Attachments

## INSTRUCTIONS FOR FORM H-1

1. **Application.** File the original Form H-1 application, including all attachments, with Assistant Director, Environmental Services, Railroad Commission of Texas, P. O. Box 12967, Capitol Station, Austin, Texas 78711. File one copy of the application and all attachments with the appropriate Railroad Commission District Office. Include with the original application a non-refundable fee of \$200, payable to the Railroad Commission of Texas. Submit an additional \$150 for each request for an exception to Statewide Rule 46(g)(3) and/or (j)(5)(B).
2. **Well Logs.** Attach the complete electric log or a similar well log for one of the proposed injection wells or for a nearby well. Attach any other logging and testing data, such as a cement bond log, available for the well that supports this application.
3.
  - (a) **For a new project**, attach a map with surveys marked showing the location and depth of all wells of public record within one-quarter (1/4) mile radius of the proposed injection well(s).
  - (b) **For an amendment to add wells to a previous authority**, attach a map with surveys marked showing the location and depth of all wells of public record within one-quarter (1/4) mile radius of the additional wells, unless such data has been submitted previously for the project.
  - (c) **Table of Wells.** For those wells in 3(a) or 3(b) that penetrate the top of the injection interval, attach a table of wells showing the dates drilled and their current status. The Commission may adjust or waive this data requirement in accordance with provisions in the "Area of Review" section of Statewide Rule 46 (Rule 46(e)).
4. **Water Letter.** Attach a letter from the Texas Commission on Environmental Quality (TCEQ) or its predecessor or successor agencies for a well within the project area stating the depth to which usable quality water occurs.
5. **Form(s) H-1A.** Attach Form H-1A showing each injection well to be used in the project. Up to TWO wells can be listed on each Form H-1A.
6. **Use of Fresh Water.** Attach Form H-7, Fresh Water Data Form, for a new injection project that includes the use of fresh water. An updated Form H-7 must be attached to Form H-1 for an expansion of a previously authorized fresh water injection project unless the fresh water is purchased from a commercial supplier, public entity, or from another operator.
7. **Plat of Leases, Notice and Hearings**
  - (a) **Plat of Leases.** Attach a plat of leases showing producing wells, injection wells, offset wells and identifying ownership of all surrounding leases within one-half (1/2) mile.
  - (b) **Notice.**
    - (1) Send or deliver a copy of the application to the owner of record of the surface tract on which the well(s) is located; each Commission-designated operator of any well located within one-half (1/2) mile of the proposed injection well(s); and the clerk of the city and county in which the well(s) is located. If this is the initial application for fluid injection authority for this reservoir, send copies of the application to all operators in the reservoir. Attach a signed statement indicating the date the copies of the application were mailed or delivered and the names and addresses of the persons to whom copies were sent.
    - (2) Attach an affidavit of publication signed by the publisher that notice of the application has been published in a newspaper of general circulation in the county where the well(s) will be located. Notice instructions and forms may be obtained from the Commission's Austin Office, the Commission's website ([www.rrc.state.tx.us](http://www.rrc.state.tx.us)) or the District Offices. Attach a newspaper clipping of the published notice.
    - (c) **Protests and Hearings.** An affected person or local government may protest this application. A hearing on the application will be held if a protest is received and the applicant requests a hearing, or if the Commission determines that a hearing is in the public interest. Any such request for a public hearing shall be in writing and contain: (1) the name, mailing address and phone number of the person making the request; and (2) a brief description of how the protestant would be adversely affected by the granting of the application. If the Commission determines that a valid protest has been received, or that a hearing would be in the public interest, a hearing will be held after issuance of proper and timely notice of the hearing by the Commission. If no protest is received within fifteen (15) days of publication or receipt in Austin of the application, the application may be processed administratively.

RAILROAD COMMISSION OF TEXAS -- OIL AND GAS DIVISION

Form H-1A

INJECTION WELL DATA (attach to Form H-1)

1. Operator Name (as shown on P-5) <b>L.C.S. Production Company</b>		2. Operator P-5 No. <b>479574</b>	
3. Field Name <b>Raven Creek (Canyon Sand)</b>		4. Field No. <b>74863200</b>	
5. Current Lease Name <b>Carter, B. F.</b>		6. Lease/Gas ID No. <b>N/A</b>	

7. Lease is **7** miles in a **Northeast** direction from **Eskota, TX** (center of nearest town).

8. Well No. <b>16</b>	9. API No. <b>151-33255</b>	10. UIC No.	11. Total Depth <b>5,300'</b>	12. Date Drilled <b>To Be Drilled</b>	13. Base of Usable Quality Water <b>100'/USDW 600'</b>
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14. (a) Legal description of well location, including distance and direction from survey lines: **Sec. 2, Blk. 19, T & P RR Co, A-1305**  
 (b) Latitude and Longitude of well location, if known (optional) Lat. **2,517' FSEL & 853' FSWL of** Long.

15. New Injection Well  or Injection Well Amendment  Reason for Amendment: Pressure  Volume  Interval  Fluid Type

All Casing Information is Proposed: Other (explain) \_\_\_\_\_

Casing	Size	Setting Depth	Hole Size	Casing Weight	Cement Class	# Sacks of Cement	Top of Cement	Top Determined by
16. Surface	8-5/8"	140'	12-1/4"	24#	C	145	Surface	Circulation
17. Intermediate								
18. Long string	4-1/2"	5,200'	7-7/8"	10.6#	C	375	3,600'	Calculation
19. Liner	4-1/2"	5,200'	7-7/8"	10.6#	C&C Lite	550	Surface	Circulation
20. Tubing size	21. Tubing depth	22. Injection tubing packer depth		23. Injection interval				
<b>2-3/8"</b>	<b>3,900'</b>	<b>3,900'</b>		<b>4,000' to 5,200'</b>				
24. Cement Squeeze Operations (List all)			Squeeze Interval (ft)		No. of Sacks		Top of Cement (ft)	

25. Multiple Completion? Yes  No  26. Downhole Water Separation? Yes  No  NOTE: If the answer is "Yes" to Item 25 or 26, provide a Wellbore Sketch.

27. Fluid Type: **Salt Water** 28. Maximum daily injection volume for each fluid type (rate in bpd or mcf/d): **2,000 bpd** 29. Estimated average daily injection volume for each fluid type (rate in bpd or mcf/d): **500 bpd**

30. Maximum Surface Injection Pressure: for Liquid **2,000** psig for Gas \_\_\_\_\_ psig.

8. Well No.	9. API No.	10. UIC No.	11. Total Depth	12. Date Drilled	13. Base of Usable Quality Water (ft)
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14. (a) Legal description of well location, including distance and direction from survey lines:  
 (b) Latitude and Longitude of well location, if known (optional) Lat. \_\_\_\_\_ Long. \_\_\_\_\_

15. New Injection Well  or Injection Well Amendment  Reason for Amendment: Pressure  Volume  Interval  Fluid Type

Other (explain) \_\_\_\_\_

Casing	Size	Setting Depth	Hole Size	Casing Weight	Cement Class	# Sacks of Cement	Top of Cement	Top Determined by
16. Surface								
17. Intermediate								
18. Long string								
19. Liner								
20. Tubing size	21. Tubing depth	22. Injection tubing packer depth		23. Injection interval				
24. Cement Squeeze Operations (List all)			Squeeze Interval (ft)		No. of Sacks		Top of Cement (ft)	

25. Multiple Completion? Yes  No  26. Downhole Water Separation? Yes  No  NOTE: If the answer is "Yes" to Item 25 or 26, provide a Wellbore Sketch.

27. Fluid Type \_\_\_\_\_ 28. Maximum daily injection volume for each fluid type (rate in bpd or mcf/d) \_\_\_\_\_ 29. Estimated average daily injection volume for each fluid type (rate in bpd or mcf/d) \_\_\_\_\_

30. Maximum Surface Injection Pressure: for Liquid \_\_\_\_\_ psig for Gas \_\_\_\_\_ psig.

**FORM H-1A INSTRUCTIONS**

05/2004

1. File as an attachment to Form H-1 to provide injection well data for each application for a new injection well permit or to amend an injection well permit.
2. Complete the current field name and number (Items 3 and 4) with the current field designation in Commission records.
3. Complete the current lease name and number (Items 5 and 6) with the current lease identification in Commission records for each well in the application. Use separate H-1A Forms for each lease.
4. Provide the current well number(s) for existing wells in Item 8. Provide the proposed well numbers for wells that have not yet been drilled.
5. Check in Item 15 the appropriate box for a new injection well permit or an amendment to an injection well permit. If an amendment, check the appropriate boxes for the reason(s) for the application(s) for amendment. If "other" is checked, provide a brief explanation.
6. Provide complete well construction information (Items 16 through 26), including all proposed re-completion (e.g. liner, cement squeeze, tubing, packer). Attach additional sheets if necessary. For Item 19, if the liner was not to the surface, indicate both the top and the bottom depth of the liner as the "Setting Depth."