# , 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 SOJOURNER DRILLIN	NG CORPORATION	2. Operator P-5 No. 800750						
(as shown on P-5, Organization Report)  3. Operator Address P. O. BOX 3234, ABILENE, TEXAS 79604								
4. County FISHER		5. RRC District No7B						
6. Field Name RICE BROS. (CANYON)	j ·	7. Field No. <u>76360500</u>						
8. Lease NameRICE BROS. (CANYO	N) UNIT	9. Lease/Gas ID No17742						
10. Check the Appropriate Boxes:	New Project ☐ Amendment							
If amendment, Fluid Injection P	roject No. F- 6346	_						
Reason for Amendment: Add	d wells 🛛 Add or change ty	rpes of fluids ☐ Change pressure ☐						
Cha		Other (explain)						
	RESERVOIR DATA FOR A NEW	PROJECT						
11. Name of Formation <u>CANYON SAN</u>	D 12	Lithology SANDSTONE						
(e.g., dolomite, limestone, sand, etc.)  13. Type of Trap <u>STRATIGRAPHIC TRAP</u> 14. Type of Drive during Primary Production <u>SOLUTION GAS</u> (anticline, fault trap, stratigraphic trap, etc.)								
15. Average Pay Thickness 30	16. Lse/Unit Acreage 846.5	17. Current Bottom Hole Pressure (psig) 850						
18. Average Horizontal Permeability (mds)	) 19. Average Po	prosity (%)						
	INJECTION PROJECT DA	TA .						
20. No. of Injection Wells in this application	n 1							
21. Type of Injection Project: Waterfloo		Miscible Displacement ☐ Natural Gas Storage ☐						
Steam	☐ Thermal Recovery ☐	Disposal						
22. If disposal, are fluids from leases other	r than the lease identified in Item 9?	Yes □ No ⊠						
23. Is this application for a Commercial Dis								
24. If for commercial disposal, will non-hazardous oil and gas waste other than produced water be disposed? Yes \( \sqrt{No} \) \( \sqrt{N} \)								
24. If for commercial disposal, will non-haz		Yes □ No ☒ produced water be disposed? Yes □ No ☒						
24. If for commercial disposal, will non-haz								
	zardous oil and gas waste other than							
25. Type(s) of Injection Fluid:	zardous oil and gas waste other than $ Fresh \ Water \ \square \ \ CO_2 \ \square \ \ N_2 $	produced water be disposed? Yes □ No ☒ □ Air □ H₂S □ LPG □ NORM □						
25. Type(s) of Injection Fluid:  Salt Water   Brackish Water   Natural Gas   Polymer	zardous oil and gas waste other than  Fresh Water	produced water be disposed? Yes \( \text{No \( \text{\text{\text{\text{\text{\text{\text{PG}}}}}} \) No \( \text{\tiny{\text{\tinx}\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\tinit}\text{\tinit}\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\tinit}\text{\tin}}\tex						
25. Type(s) of Injection Fluid: Salt Water ☑ Brackish Water □ Natural Gas □ Polymer □  26. If water other than produced salt wa	zardous oil and gas waste other than  Fresh Water	produced water be disposed? Yes □ No ☒ □ Air □ H₂S □ LPG □ NORM □						
25. Type(s) of Injection Fluid: Salt Water ☑ Brackish Water □ Natural Gas □ Polymer □  26. If water other than produced salt wa	zardous oil and gas waste other than  Fresh Water	produced water be disposed? Yes \( \text{No \( \text{\text{\text{\text{\text{\text{\text{PG}}}}}} \) No \( \text{\tiny{\text{\tinx}\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\tinit}\text{\tinit}\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\tinit}\text{\tin}}\tex						
25. Type(s) of Injection Fluid:  Salt Water	Fresh Water   CO <sub>2</sub> N <sub>2</sub> Other (explain)  Iter will be injected, identify the source water source:  1.143, Texas Natural enthis report, that this prevision and direction, Name of Person	produced water be disposed? Yes No						
25. Type(s) of Injection Fluid:  Salt Water    Brackish Water      Natural Gas    Polymer      26. If water other than produced salt wa aquifer and depths, or by name of surface  CERTIFICATE I declare under penalties prescribed in Sec. 97 Resources Code, that I am authorized to make	Fresh Water   CO <sub>2</sub> Other (explain)  Iter will be injected, identify the source water source:  1.143, Texas Natural enthis revision and direction, re true, correct, and	produced water be disposed? Yes No						
25. Type(s) of Injection Fluid:  Salt Water    Brackish Water    Natural Gas    Polymer      26. If water other than produced salt wa aquifer and depths, or by name of surface  CERTIFICATE I declare under penalties prescribed in Sec. 97 Resources Code, that I am authorized to make report was prepared by me or under my super and that the data and facts stated therein arcomplete, to the best of my knowledge.	Fresh Water   CO <sub>2</sub> N <sub>2</sub> Other (explain)  Iter will be injected, identify the source water source:  1.143, Texas Natural enthis report, that this prevision and direction, Name of Person	produced water be disposed? Yes No						

#### **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).
- 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.
- 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) <u>Plat of Leases</u>. 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) <u>Attach an affidavit of publication</u> 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) or the District Offices. Attach a newspaper clipping of the published notice.
  - (c) <u>Protests and Hearings</u>. 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	e (as shown	on P-5)	and the second	The state of the s				2. Operat	or P-5 No.		
SOJOURNER DRILLING CORPORATION							800750				
3. Field Name RICE BROS. (		4. Field No. 76360500									
5. Current Lease Name RICE BROS. (CANYON) UNIT							6. Lease/Gas ID No. 17742				
7. Lease is _8 miles in a NNE direction from McCAULEY (center of nearest town).											
8. Well No.	9. API No		10. UIC No				2. Date Drilled		of Usable Quality Water		
103	103 151-30303 4700								-		
14. (a) Legal description of well location, including distance and direction from survey lines:  2000' FWL & 360' FNL OF S. J. SWENSON SURVEY NO. 1											
(b) Latitude and Longitude of well location, if known (optional) Lat. 32.893521 Long100.159629 NAD 27											
15. New Injection Well 🖾 or Injection Well Amendment 🗆 Reason for Amendment: Pressure 🗆 Volume 🗀 Interval 🗀 Fluid Type 🛭											
						plain)	r · · · · · · · · · · · · · · · · · ·				
Casing	Size	Setting Depth	Hole Size	Casing Weigh		Cement Class	# Sacks of - Cement	Top of Cement	Top Determined by		
16. Surface	8 5/8	158	11	24		C	150	SURFACE	CIRCULATION		
17. Intermediate		1000	~ ~				700				
18. Long string 19. Liner	4 1/2	4698	7 7/8			С	700	150	CALCULATION		
20. Tubing size 2 3/8	21. Tubing 442		22. Injection tubing packer depth 4428				23. Injection interval				
24. Cement Sque	eze Operat	ions (List all)	Squeez	e Interv	al (ft)		No. of Sack	s	Top of Cement (ft)		
	83 0			*							
25. Multiple Com	pletion?		26. Down	nole Wa	ter Sep	paration?		NOTE: If the answer is "Yes" to Item 25			
Yes □ No ☑			Yes □ No 🏻			or 26, provide a Wellböre 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)					
PRODUCED SALTWATER			2500 BPD			500 BPD					
-			# 5						<del></del>		
30. Maximum Su			for Liqu		200	psig					
8. Well No.	9. API No			10. UIC No. 11. Total Depth 1				Drilled 13. Base of Usable Quality Water (ft)			
14. (a) Legal des	scription of v	well location, inclu	ding distant	ce and o	direction	n from survey lir	nes:				
(b) Latitude :	and Longitu	de of well location,	if known (	notional	) Lat.			Long.			
	·		*				В				
15. New Injection	n Well ഥ o	r Injection Well Ar	nendment				Pressure L	volume 🗀 II	nterval 🔲 Fluid Type 🗀		
				0	ther (ex	(plain)					
Casing	Size	Setting Depth	Hole Siz	Casin Weigl		Cement Class	# Sacks of Cement	Top of Cement	Top Determined by		
16. Surface 17. Intermediate											
18. Long string		2000 D									
19. Liner 20. Tubing size	21. Tubin	g depth	22. Injed	22. Injection tubing packer depth				interval			
24. Cement Squeeze Operations (List all)			Sauee	Squeeze Interval (ft)		No. of Sacks		to Top of Cement (ft)			
Z ii oomoni oqui			oqueeze interval (it)								
		*	1								
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						
1											
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 Su	for Liquidpsig			for Gas	for Gaspsig.						

- 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."