APPLICATION OF GREENHILL PETROLEUM CORPORATION FOR WATERFLOOD EXPANSION, LEA COUNTY NEW MEXICO.

Applicant, in the above-styled cause, seeks authority do expand its Lovington - Paddack Unit Waterflood Project, authorized by Divisia, Orde-No. R- 3124, by converting its hovington Paddack Unit Well lo. 9 located 660 feet from the South line and 1980 feet from the West line (Unit N) of Section 30 and it Loving ton Paddock Unit Well No. 10 located 660 feet from the North line and 2440 feet from the East line (Unit B) of Section 31, both in Township 16 South, Runge 37 East Lovington Paddack Unit, hovington - Paddack Pool, from producing oil wells to water injection wells. Said wells are both located approximately 5.5 miles southeast of hoving ton, New Mixico.





RONALD J. NELSON

Oil & Gas Investments Post Office Box 2432 - Hobbs, New Mexico 88241 '92 AU-1 20 PM 8 16

(505) 397-6419

April 2, 1992

Greenhill Petroleum Corporation 11490 Westheimer Road Suite 200 Houston, Texas 77077-6841

Case 10549

Attn: Michael J. Newport

Dear Sir:

I am in receipt of your letter dated March 23, 1992 regarding the Lovington Paddock Unit. It is my opinion that the conversion of some of these producers to injection wells could adversely affect the production from my State "Q" Lease located in Section 30, T16S-R37E.

This lease is produced from the Paddock and is an offset to your proposed injection. I feel it is possible this would cause a significant increase in water production on my lease causing it to become uneconomical to operate.

Therefore I object to your proposal.

Very truly yours,

Ronald J.

RJN/CW

cc: N.M. Oil Conservation Commission P.O. Box 1980 Hobbs, NM 88241

\N.M. Oil Conservation Commission
P.O. Box 2088
Santa Fe, N.M. 87504

Mailed copies to above listed Commissions on August 19, 1992 RE: Greenhill Application Dated 8-11-92



GREENHILL PETROLEUM CORPORATION

11490 WESTHEIMER ROAD SULTE 200 HOUSTON, TEXAS 77077-6641 TELEPHONE (713) 589-5484 FAX (713) 589-7892

1 . . .

Incorporated in Delaware, U.S.A.

August 11, 1992

Oil Conservation Division State of New Mexico Energy, Minerals and Natural Resources Department P. O. Box 2088 Santa Fe, New Mexico 87504-2088

Re: Lovington Paddock Unit Lea County, New Mexico

Attention: Mr. David Catanach

Dear Mr. Catanach:

Enclosed please find the C-108's and attachments whereby Greenhill Petroleum proposes to convert the following wells from producers to injection wells in the Lovington Paddock Unit. These wells are as follows:

Lovington Paddock Unit Numbers 9 and 10

Please contact me in the event you need additional information.

Very truly yours,

Richard Hund

Michael J. Newport Land Manager-Permian Basin

MJN:sjs 92.572

Enclosures

	STAT	E	0F	NEW	MEXICO
ENENGY	AND	MI	NER	IAL S	DEPARTMENT

Case 10549

Phone: (713) 589-8484

APPLICATION FOR AUTHORIZATION TO INJECT

- I. Purpose: X Secondary Recovery Pressure Maintenance Disposal Storage Application qualifies for administrative approval? X yes no
- II. Operator: <u>GREENHILL PETROLEUM CORPORATION</u>

Address: 11490 Westheimer, Suite 200, Houston, Texas 77077

Contact party: Mike Newport

III. Well data: Complete the data required on the reverse side of this form for each well proposed for injection. Additional sheets may be attached if necessary.

- IV. Is this an expansion of an existing project? x x y yes no R3124 If yes, give the Division order number authorizing the project R3124
- V. Attach a map that identifies all wells and leases within two miles of any proposed injection well with a one-half mile radius circle drawn around each proposed injection well. This circle identifies the well's area of review.
- * VI. Attach a tabulation of data on all wells of public record within the area of review which penetrate the proposed injection zone. Such data shall include a description of each well's type, construction, date drilled, location, depth, record of completion, and a schematic of any plugged well illustrating all plugging detail.
 - VII. Attach data on the proposed operation, including:
 - 1. Proposed average and maximum daily rate and volume of fluids to be injected;
 - 2. Whether the system is open or closed;
 - 3. Proposed average and maximum injection pressure;
 - 4. Sources and an appropriate analysis of injection fluid and compatibility with the receiving formation if other than reinjected produced water; and
 - 5. If injection is for disposal purposes into a zone not productive of oil or gas at or within one mile of the proposed well, attach a chemical analysis of the disposal zone formation water (may be measured or inferred from existing literature, studies, nearby wells, etc.).
- *VIII. Attach appropriate geological data on the injection zone including appropriate lithologic detail, geological name, thickness, and depth. Give the geologic name, and depth to bottom of all underground sources of drinking water (aquifers containing waters with total dissolved solids concentrations of 10,000 mg/l or less) overlying the proposed injection zone as well as any such source known to be immediately underlying the injection interval.
 - IX. Describe the proposed stimulation program, if any.

· · •· ····

- * X. Attach appropriate logging and test data on the well. (If well logs have been filed with the Division they need not be resubmitted.)
- * XI. Attach a chemical analysis of fresh water from two or more fresh water wells (if available and producing) within one mile of any injection or disposal well showing location of wells and dates samples were taken.
- XII. Applicants for disposal wells must make an affirmative statement that they have examined available geologic and engineering data and find no evidence of open faults or any other hydrologic connection between the disposal zone and any underground source of drinking water.
- XIII. Applicants must complete the "Proof of Notice" section on the reverse side of this form.
- XIV. Certification

I hereby certify that the information submitted with this application is true and correct to the best of my knowledge and belief.

Name: Michael J. Newport _____ Title Land Manager-Permian Basin Richay 1/hugl Date: <u>8-11-92</u> Signature:

* If the information required under Sections VI, VIII, X, and XI above has been previously submitted, it need not be duplicated and resubmitted. Please show the date and circumstance of the earlier submittal.

DISTRIBUTION: Original and one copy to Santa Fe with one copy to the appropriate Division district office.

a 14 au

III. WELL DATA

- A. The following well data must be submitted for each injection well covered by this application. The data must be both in tabular and schematic form and shall include:
 - (1) Lease name; Well No.; location by Section, Township, and Range; and footage location within the section.
 - (2) Each casing string used with its size, setting depth, sacks of cement used, hole size, top of cement, and how such top was determined.
 - (3) A description of the tubing to be used including its size, lining material, and setting depth.
 - (4) The name, model, and setting depth of the packer used or a description of any other seal system or assembly used.

Division District offices have supplies of Well Data Sheets which may be used or which may be used as models for this purpose. Applicants for several identical wells may submit a "typical data sheet" rather than submitting the data for each well.

- B. The following must be submitted for each injection well covered by this application. All items must be addressed for the initial well. Responses for additional wells need be shown only when different. Information shown on schematics need not be repeated.
 - (1) The name of the injection formation and, if applicable, the field or pool name.
 - (2) The injection interval and whether it is perforated or open-hole.
 - (3) State if the well was drilled for injection or, if not, the original purpose of the well.
 - (4) Give the depths of any other perforated intervals and detail on the sacks of cement or bridge plugs used to seal off such perforations.
 - (5) Give the depth to and name of the next higher and next lower oil or gas zone in the area of the well, if any.

XIV. PROOF OF NOTICE

All applicants must furnish proof that a copy of the application has been furnished, by certified or registered mail, to the owner of the surface of the land on which the well is to be located and to each leasehold operator within one-half mile of the well location.

Where an application is subject to administrative approval, a proof of publication must be submitted. Such proof shall consist of a copy of the legal advertisement which was published in the county in which the well is located. The contents of such advertisement must include:

- (1) The name, address, phone number, and contact party for the applicant;
- (2) the intended purpose of the injection well; with the exact location of single wells or the section, township, and range location of multiple wells;
- (3) the formation name and depth with expected maximum injection rates and pressures; and
- (4) a notation that interested parties must file objections or requests for hearing with the Oil Conservation Division, P. O. Box 2088, Santa Fe, New Mexico 87501 within 15 days.

NO ACTION WILL BE TAKEN ON THE APPLICATION UNTIL PROPER PROOF OF NOTICE HAS BEEN SUBMITTED.

NOTICE: Surface owners or offset operators must file any objections or requests for hearing of administrative applications within 15 days from the date this application was mailed to them.

AREA OF REVIEW WELLS WITHIN 1/2 MILE RADIUS OF 10-P

9-P Tipperary 1 Monsanto State Cities Service 1 State 105P 127P 10P Texaco 26 State O 11P Texas Crude 1 State 89P 108P 8SA 7SA 25P Texaco 25 State O 58SA 24P Rice 31 SWD 109P 26P 16SA 130P

MJN:sjs 92.575

AREA OF REVIEW WELLS WITHIN 1/2 MILE RADIUS OF 9-P

Tenneco 4 State Tenneco 2 State 1P 8P 9P Tipperary 1 Monsanto State 7P 104P 105P 127P 6SA 12P 10P 11P 89P 108P 2P

1. The proposed average and maximum daily rate and volume to be injected are 2000 PSI and 1500 BWPD.

.

2. The system will be a closed system.

•

.

.

4. The sources and an appropriate analysis of injection fluid and compatibility with the receiving formation if other than reinjected produced water is attached hereto as Exhibit "A".

VII

"4"

WATER ANALYSIS REPORT

		. •					
Company Address Lease Well		GREENHILL P LOVINGTON, SENE SECZE PAD 18 35.	ETROLEUM NM TI6S R36E	Da Da Ai	ate ate Sampled nalysis No.	: 8-22-90 : 8-22-90 : 2	·
Sample	Pt. :	WINDMILL	•	•			·
	ANALYSI	S			mg/L		* meg/L
1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12. 13. 14. 15. 16. 17. 18.	pH H2S Specifi Total D Suspend Dissolv Dissolv Oil In Phenolp Methyl Bicarbo Chlorid Oulfale Calcium Magnesi Sodium Iron Barium	c Gravity issolved Sol ed Solids ed Oxygen ed CO2 Water hthalein Alk Orange Alkal nate e um (Calculated)	7.6 0 1.001 ids alinity (Ca inity (CaCC	CO3) 3) HCO3 C1 SO4 Ca Mg Na Fe Ba	2086.2 NR NR NR NR 244.0 1035.2 200.0 350.0 224.9 32.1 0.0 0.0	HCO3 Cl SO4 Ca Mg Na	4.0 29.2 4.2 17.5 18.5 1.4
20.	Total H	um ardness (CaC	03)	Sr	0.0	•	

PROBABLE MINERAL COMPOSITION

*milli equivalents per Liter		Compound Equiv wt X meg/L	= mg/L
17 *Ca < *HCO3 /> 19 *Mg> *SO4 1 *Na> *C1	4	Ca(HCO3)2 81.0 4.0 CaSO4 68.1 4.2 CaCl2 55.5 9.3 Mg(HCO3)2 73.2 MgSO4 60.2	324 283 516
J Saturation Values Dist. Wate CaCO3 13 mg CaSO4 * 2H2O 2090 mg BaSO4 2.4 mg	er 20 C . J/L J/L J/L	MgCl247.618.5NaHCO384.0Na2SO471.0NaC158.41.4	881 82

REMARKS:

Petrolite Oilfield Chemicals Group

Respectfully submitted, D. SWEATT LHUDDO

WATER ANALYSIS REPORT

"A"

ينظ هاي هذه بينه عنه عنه ينه بينه جنه بنه جنه بين بالد هاي هند الله الله عنه ينه الله الله والله

Company Address Lease Well Sample	CREENHILL PETROLEUM LOVINGTON, NM SENE SEC 2 TI7S R36E S. A. #44 Pt. : WINDMILL	Date : Date Sampled : Analysis No. :	8-22-90 8-22-90 1
	ANALYSIS	mg/L	* meg/L
	add Body Free gad had your nam har		يين في سنا جي جد مند اللہ
1.	рН 7.5		
2.	H25 0	·	
3.	Specific Gravity 1.001		
4.	Total Dissolved Solids	2222.8	
5.	Suspended Solids	NR ·	
6.	Dissolved Oxygen	NR	
7.	Dissolved CO2	NR	· .
8.	Oil In Water	NR	
9.	Phenolphthalein Alkalinity (CaCO3)	·
10.	Methyl Orange Alkalinity (CaCO3)		-
11.	Blcarbonate HCO	3 244.0 H	1CO3 4.0
12.	Chloride Cl	917.6 C	25.9
13.	Sulfate 504	· 325,0 S	G.8 ⁻
14.	Calcium Ca	720.0 0	la 35.9
15.	Magnesium Mg	0.5 M	ig 0.0
. 16.	Sodium (calculated) Na	15.7 N	(a. 0.7'
17.	Iron Fe	0.0	
18.	Barium Ba	. 0.0	
19.	Strontium Sr	0.0	
2.0 -	Total Hardness (CaCOJ)	1800.0	

PROBABLE	MINERAL	COMPOSITIO	N
----------	---------	------------	---

*milli equivalents per Liter	, ,	Compound	Equiv wt :	X meg/L =	≖ mg/L
36 *Ca < *HCO3 /> 0 *Mg> *SO4	4	Ca(HCO3)2 CaSO4 CaC12	81.0 68.1 55.5	4.0. 6.8 25.2	324 461 1396
*Na> *C1	26	Mg(HCO3)2 MgSO4 MgCl2	73.2 60.2 47.6	0.0	. 2
Daturation Values Dist. Wate CaCO3 13 mg	r 20 C /L	NaHCO3 Na2SO4	84.0 71.0		
CaSO4 * 2H2O 2090 mg BaSO4 2.4 mg	/L /L	NaCl	58.4	0.7	40

REMARKS:

Petrolite Oilfield Chemicals Group

.

Respectfully submitted, D. SWEATT

:..

VIII Geologic Data

The zone of interest for this application to inject is the Paddock interval of the Glorieta Formation. In the area of the Lovington Field Paddock Unit, the Paddock interval is found at an average depth of 6150' and consists of light brown, finely crystalline dolomite, with thin lenticular fine-grained sandstone beds interbedded with the dolomite. Attached is a type log from the Lovington Field Paddock Unit. The well log (LPU #36) is an injection well and shows two main zones within the field unit where water has been injected.

٠

The only known underground source of fresh water in the Lovington Field Paddock Unit Area is the Ogalalla Formation. The approximate base of the formation is 200'. No source is known to be immediately underlying the proposed injection interval.



DATA FILE NAME: b:lpf36.cm1

-

· ·

DATE OF FLOT: 10/ 3/1990

.

. •



PROPOSED STIMULATION PROGRAM FOR CONVERSIONS FROM PROCEDURES TO INJECTION WELLS LOVINGTON PADDOCK UNIT LEA COUNTY, NM

- 1. MIRU PU w/reverse unit. Check and report pressure on casing strings. Inspect wellhead connections for condition and pressure rating. Insure all casing valves are at least 2000 psig W. P. Pull and lay down rods and pump.
- 2. Rig up and pressure test BOP to 3000 psig for 5 min. Pull tubing and TAC. Lay down TAC.
- 3. PU bit, casing scraper and collars and TIH to 200' above casing shoe. Scrape casing to 10 ft. above shoe. Do not go below casing shoe with scraper. POOH and lay down scraper. TIH to 10 ft. above casing shoe and circulate hole clean with clean water. Rotate and clean out bottom of open-hole interval below casing shoe.
- 4. Spot enough 20% NEFE HCL acid to cover the open-hole interval. Slowly pull bit above top of acid and POOH.
- 5. Rig up perforating contractor. String shoot water flood intervals w/400 grains per foot primacord. TIH with bit and tubing and circulate open hole interval clean to TD w/water. POOH laying down workstring.
- 6. PU new 2 3/8" IPC tubing string w/new water flood packer and TIH to 20" above casing shoe. Circulate inhibited fresh water into tubing-casing annulus and set packer. Pressure test annulus to 500 psig for 5 min. Release pressure. RD BOP and install waterflood and wellhead.
- 7. Pressure test annulus per NMOCD requirements. Release rig.
- 8. Rig up acid contractor and treat below packer with 15 tons CO_2 and 3000 gal. 20% NEFE HCL acid using diverter in 3 stages. Flow well back to recover load and clean-up formation. SI well.
- 9. Install wellhead filter cartridge housing and filter. Hook up new water injection line.
- 10. Put well on injection. When rate and pressure stabilize, run water injection survey.

-	TI			•		
	ب المستنب . - م مام الم مام الله - (14 مالم مالم الم	ter ter		• •		
P. O. BOX 1468	Martin Water Laborato	nes, inc.	•	709 W. INDIANA		
IONAHANS, IEXAS 79756 H, 943-3234 OR 563-1040						
	RESULT OF WATER A	NALYSES				
	L.X.	BORATORY NO.	1189311			
o: Mr. Dan Westover	5A	MPLE RECEIVE	o <u>11-27-8</u>	9		
12/// Jones Road, Suite 375	, Houston, TX RE	SULTS REPORT	ED_12-4-89			
Crearbell Patro law		T . .	- · ·			
COMPANY Greennill Petroleum	LEASE -	Lovington	San Andres	Unit		
FIELD OR POOL	LOVINGLON	Too				
SECTION BLOCK SURVEY _	COUNTY	Lea	STATENM			
OURCE OF SAMPLE AND DATE TAKE	N:	_ 11 _ 1	11 27 20			
NO. 1 FIDDUCED WALEF - LAKE	in from injection pum	p discharge.	. 11-27-89			
NO. 2						
NO. 3						
				······································		
NU. 4						
	HEMICAL AND PHYSICAL E	POPERTIES		والمية العالمين والبراني التي من من المانية المعامل المنافع المعامل المعامل المعامل المعامل المعامل المعامل ال والمعامل المورك المعامل		
· · · · · · · · · · · · · · · · · · ·	NO. 1	NO. 2	NO.1	NOA		
Specific Gravity at 60° F.	1 0160					
pH When Sampled	<u> </u>	+				
pH When Received		1				
Bicarbonate as HCO3	1,464	1				
Supersaturation as CaCO3 ···	70	1				
Undersaturation as CaCO3						
Total Hardness as CaCO3	5,700	1				
Calcium as Ca	1,540	1				
Magnesium as Mg	450			· ·		
Sodium and/or Potassium	5,369	1				
Sulfate as SO4	2.358	1				
Chioride as Ci	9,730	1				
Iron as Fe	0.32	· .				
Barlum as Ba	0					
Turbidity, Electric	72					
Color as Pt	56					
Total Solids, Calculated	20,910		· · · · · · · · · · · · · · · · · · ·	·		
Temperature °F.	67	·				
Carbon Dioxide, Calculated	381	<u> </u>				
Dissolved Oxygen, - chemets	0.000					
Hydrogen Sulfide	480	·				
Resistivity, ohms/m at 77° F.	0,420					
Suspended Oll	15					
Filtrable Solids as mg/1	22.9					
Volume Filtered, ml	850					
		·				
		<u> </u>				
				,		
		L				
	Results Reported As Milligram	ns Per Liter		at avidance of		
Additional Determinations And Remarks	Results Reported As Milligram The above results sh	i ns Per Liter ow no direct	t or indire	ct evidence of		
Additional Determinations And Remarks air contamination in this s	Results Reported As Milligram The above results sh study, therefore indi	I ns Per Liter ow no direct cating effect	t or indire	ct evidence of ol against this		
Additional Determinations And Remarks air contamination in this s condition is being accompli- them to be essentially all	Results Reported As Milligram The above results sh study, therefore indi shed. Our microscop a very fine paraffin	I ns Per Liter ow no direct cating effec ic study of , therefore	t or indire tive contr the filtra indicating	ct evidence of ol against this ble solids showed no particular		
Additional Determinations And Remarks air contamination in this s condition is being accompli them to be essentially all significance to the higher	Results Reported As Milligran The above results sh study, therefore indi lshed. Our microscop a very fine paraffin quantity we have enc	I ow no direct cating effect ic study of , therefore ountered as	t or indire tive contr the filtra indicating compared t	ct evidence of ol against this ble solids showed no particular o recent studies.		
Additional Determinations And Remarks air contamination in this s condition is being accomply them to be essentially all significance to the higher We have identified no evide	Results Reported As Milligram The above results sh study, therefore indi ished. Our microscop a very fine paraffin quantity we have ence ance of any other dev	I ow no direct cating effect ic study of , therefore ountered as elopment of	t or indire tive contr the filtra indicating compared t concern an	ct evidence of ol against this ble solids showed no particular o recent studies. d therefore see		
Additional Determinations And Remarks air contamination in this s condition is being accomply them to be essentially all significance to the higher We have identified no evide no need to make any changes	Results Reported As Milligram The above results sh study, therefore indi lshed. Our microscop a very fine paraffin quantity we have enc ence of any other dev s at this time.	I as Per Liter ow no direct cating effect ic study of , therefore ountered as elopment of	t or indire ctive contr the filtra indicating compared t concern an	ct evidence of ol against this ble solids showed no particular o recent studies. d therefore see		
Additional Determinations And Remarks air contamination in this s condition is being accompli- them to be essentially all significance to the higher We have identified no evide no need to make any changes	Results Reported As Milligram The above results sh study, therefore indi lshed. Our microscop a very fine paraffin quantity we have enc ence of any other dev s at this time.	I ow no direct cating effec ic study of , therefore ountered as elopment of	t or indire ctive contr the filtra indicating compared t concern an	ct evidence of ol against this ble solids showed no particular o recent studies. d therefore see		
Additional Determinations And Remarks air contamination in this s condition is being accompli- them to be essentially all significance to the higher We have identified no evide no need to make any changes	Results Reported As Milligran The above results sh study, therefore indi lshed. Our microscop a very fine paraffin quantity we have enc ence of any other dev ; at this time.	I ow no direct cating effect ic study of , therefore ountered as elopment of	t or indire tive contr the filtra indicating compared t concern an	ct evidence of ol against this ble solids showed no particular o recent studies. d therefore see		

cc: Mr. Bryant Bradley, Ozark Training
 & Consulting, Austin
 Mr. Cy Jones, Hobbs

_JĽ Waylan C. Martin, M.A.

	TP.		•	
	السلمر .			
Ma	artin Water Laborator	ies, Inc.		
. P. O. BOX 1466				709 W. INDIANA DLAND, TEXAS 79701
943-3234 OR 563-1040		·	• • •	PHONE 683-4521
RESU	JLT OF WATER A	NALYSES.	0.007.0	
	LA	BORATORY NO.	98943	
Mr. Dan Westover	SAN	APLE RECEIVED	9-1-39	• - • • • •
2777 Jones Road, Suite 375, Housto	on, TX RE	SULTS REPORTE	<u>9-8-89</u>	
	· · _		· · · · ·	
MPANY Greenhill Petroleum Corporat	tion LEASE L	ovington Pad	dock/San And	res Unit
ELD OR POOL	Lovington			· · · ·
CTION BLOCK SURVEY	COUNTY	<u>Lea</u>	TATE NM	·····
URCE OF SAMPLE AND DATE TAKEN:				
No. 1 Raw water - taken from water	supply well #	<u>1. 9-1-89 (</u>	V68 51 T1	75 R 36 E
, Raw water - taken from water	supply well #	2. 9-1-89	VLC SI TI	75 R36F
NU. 2				
. ю., з				
NO. 4		·		
IMARKSI				
JUST FERRY STANK CHEMICAL	AND PHYSICAL P	ROPERTIES		
an ender som halt i handest a titlet i varialt	···· / NO. 1	· NO. Z	NO. 3	NO. 4
Specific Gravity at 60° F.	1.0025	1.0018		
pH When Sampled .	7.2	7.4		
pH When Received	7.03	7.34	1	
Bicarbonate as HCO3	229	249	1:	1
Supersaturation as CaCO3	8	· 4 ####	- 4 223	
Undersaturation as CaCO3			1	
Total Hardness as CaCO3		· 164	1	· · · · · · · · · · · · · · · · · · ·
Calcium as Ca	120	51	1	
Magneslum as Mg 1,	1 3.31: 17 1 2 3.3	9 1	Mr. Carrier and	
Sodium and/or Potassium	171	130	1	
Sulfate as SO4	99	89	1.	1
Chloride as Cl	320	107		
Iron as Fei	0.48	0.64	1	
Barlum as Ba	0	0		
Turbiding Standard version in the second				
Color as Pt		<u>-</u>		
Total Solide, Calculated	056 1100	634 105		
Temperature *F.	65	66		
Carbon Dioxide, Calculated	25	16 12	at Section	
Dissolved Oxygen Withtlet _ Chamate	<u>4</u> 7	3.0	1	
Hydroxen Sulfide		0.0	1. :	
Pastativity abma/m at 77° F	2 72	10.0	1	
Nessativity, distant at // 14	7.12	<u> </u>	+	
			<u> </u>	
Ellinhia Calida as and/				
Filtrable Solids as mg/1		<u>•</u>		· · · · · · · · · · · · · · · · · · ·
Filtrable Solida as mg/1	-2.1	•		2 2 mg 3 m 4
Flitrable Solids as mg/j	-2.1 -	<u></u>		2 2 1 2 1 2 1 2 2 2 2 2 2 2 2 2 2 2 2 2
Flitrable Solids as mg/j	-2.1 -10.000	<u>3:2-:</u> 1.000 ::		: 2
Filtrable Solids as mg/j	2.1	•		2 2 19 19 19 19 19 19 19 19 19 19 19 19 19
Filizable Solids as mg/1	2.1 2.1 	*		2 2 1 2 1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2
Flitrable Solids as mg/1	Reported As Milligram	s Per Liter nce in the al	pove results	at water
Flitrable Solids as mg/1	Reported As Milligram nary significa ad only a very	s Per Liter nce in the al minor amount	pove results t of sand in	at water the filtrable
Flitrable Solids as mg/1 Volume Flitered, mi Results Additional Determinations And Remarks The prin rell #1 is that we again identifies iolids. This generally confirms t	Reported As Milligram nary significa ad only a very the results of	* Per Liter nce in the al minor amount the sample	pove results t of sand in taken 7-27-8	at water the filtrable 9 and reported
Flitrable Solids as mg/1	Reported As Milligram nary significa ad only a very the results of aviously high	Per Liter nce in the al minor amount the sample level of same	pove results t of sand in taken 7-27-8 d was tempor	at water the filtrable 9 and reported ary. We also
Flitrable Solids as mg/1	Reported As Milligram nary significa ad only a very the results of eviously high the suspended	Per Liter nce in the al minor amount the sample level of samp material at	pove results t of sand in taken 7-27-8 i was tempor water well	at water the filtrable 9 and reported ary. We also #2. In gen-
Flitrable Solida as mg/1 Volume Filtered, mi Results Additional Determinations And Remarks The prim yell #1 is that we again identified iolids. This generally confirms to yn laboratory: #789270 that the pre- dentified no significant sand in iral, we find the current chemical	Reported As Milligram nary significa ad only a very the results of aviously high the suspended I and physical	s Per Liter nce in the al minor amount the sample i level of same material at properties of	pove results t of sand in taken 7-27-8 i was tempor water well of these wat	at water the filtrable 9 and reported ary. We also #2. In gen- ers to be

Form No. 3

•

cc: Nr. Bryant Bradley, Ozark Training
 & Consulting, Austin
 Mr. Cy Jones, Hobbs

· . .

٠

Waylan C. Martin, M.A.

• ·

8γ.

.

. ·

Calcium Carbonate Scale Prediction Lovington San Andres Unit Paragon Engineering Services

Water "A": 50% Lovington WSW 1.+50% WSW,#2, Analysis No. 1188285 Water "B": Calculated produced water analysis assuming injection water is 56% produced & 44% source. Analysis No. 1188290 Analysis: Martin Water Laboratories, Inc. Date Reported: 12/07/88.

PRECIPITATION

13

Hypothetical Composition of Mixed Waters^{*} mg/1

• • •

% Water "A"	100	80	44.	40	20	0
% Water "B"	0	20	36	06	80	100
Components:						~
CATIONS						
Calcium, Ca	138.50	646.18	1560.00	1661.54	2169.21	2676.89
Magnesium, Mg	15.50	122.82	316.00	337.46	444.79	552.11
Iron, Fe	1.09	1.74	2.90	3,03	3.68	4.32
Barlum, Ba	0.00	0.00	0.00	0.00	0.00	0.00
Sodium, Na	150.00	1931.43	5138.00	5494.29	7275.71	9057.14
ANIONS			•		•	
Chloride, Cl	323.00	3555.86	9375.00	10021.57	13254.43	16487.29
Sulfate, SO4	99.50	655.04	1655.00	1766.11	2321.64	2877.18
Carbonate, CO3	0.00	0.00	0.00	0.00	0.00	0.00
Bicarbonate, HCO3	223.00	766.57	1745.00	1853.71	2397.29	2940.86
Tot. Dsol'd Solids	950.59	7679.63	19791.90	21137.71	· 27866.75	34595.79
Massurad of Usluar	.7 00		4 70			
1/H+ = 10*bH	1000000		5011972 34			• •
$H_{+} = 1/10^{+} \text{ mH}$	100000001	000001255	0000001995	000000207	000000242	000000278
$1/H_{+} = 10^{\circ} nH$.0000001	7977419 17	.0000001773	4839445 40	4129154 49	3400478.77
Calculated on Values		۸.87		85.8	4.42	5000010111 5.56
					0.02	
Calcium Carbonate Sol	ubility Ca	culation.				
						•
1. Calculate molar	ionic streng	gth of water,	(u).			
(u) = sum of (mg/	/1 x Conv. 1	Factor) for a	all lons.			
Conv.						
Factor						
Ca .00005	.006925	.032309	.078000	.083077	,108461	.133845
Mg .000082	.001271	.010071	.025712	.027672	.036472	.045273
Ba .000015	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
Na .000022	.003300	.042491	.113036	.120874	.160066	.199257
Cl .000014	.004522	.049782	.131250	.140302	.185562	.230822
504 .000021	.002090	.013756	.034755	.037088	.048754	.060421
CO3 .000033	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
HC03 .000008	.001784	.006133	.013960	.014830	.019178	.023527
 U =	.02	.15	.40	.42	.56	.69

100	80	44	40	20	0
U	20	20	. 80	.80	100
Stiff & Davis gr from the equation	aph for (u); is below.	pCa and pA	lK are calc	ulated	
1/mols Ca++/Liter (1/Equiv. Total f	•) Alk/Liter)				•
e: 80F 120F	(49C)				
	2 (2	2 0 7	2.00		2 20
F 1.68	2.80	2.56	2.58	2.70	3.29 2.78
2.46	 1.79	1.41	1.38	1.27	1.18
2.44	1.90	1.54	1.52	1.41	1.32
iff & Davis CaCO	3 Stabillity	Index (SI).			
Ca + pAlk)					
٨٩ ٨	٨ 29	A 02	5.98	5.88	5.78
6.58	5.85	5.51	5,48	5.37	5.27
			3		· · · · · ·
42	.571 1.01	.68 1	1.20	1.24	1.28
	100 0 Stiff & Davis gr from the equation 1/mois Ca++/Liter (1/Equiv. Total A e: 80F (120F 2.06 F 1.68 2.46 2.46 2.44 iff & Davis CaCO Ca + pAlk) 6.96 6.58 04	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	$100 80 44 40 \\ 0 20 56 60$ Stiff & Davis graph for (u); pCa and pAlk are calc from the equations below. $1/mols Ca++/Liter)$ (1/Equiv. Total Alk/Liter) e: 80F (26.7C) 120F (49C) F 2.06 2.60 3.07 3.08 F 1.68 2.16 2.56 2.58 2.46 1.79 1.41 1.38 2.44 1.90 1.54 1.52 iff & Davis CaCO3 Stabillity Index (SI). Ca + pAlk) 6.96 6.29 6.02 5.98 6.58 5.85 5.51 5.48 .04 .57 .68 .70 .104 .57 .57 .58 .51 .5	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$

eleven significant figures. Only eight decimal places are shown in this print out.

(O3 Is	Across	System				•
•						
	Calcu	lation of Oddo Two Phase Oddo an Lovingto Paragon E	& Thomson System (Wat d Thomson M n San Andre ngineering	CaCO3 Scaling er & Gas) lethod s Unit Services) Index	- Is

Water: Calculated produced water composition. See CaCO3 calculation. Analysis: Martin Water Laboratories, Inc. No. 1188286 Date Reported: 12/07/88. Approximate Location in System: Reservoiries

 $Is = D + (1.549 \times 10^{-2} \times T) - (4.26 \times 10^{-6} \times T^{2}) - (7.44 \times 10^{-5} \times P) + 0.919u - 2.52(u)^{0.5} + 5.89$

P =	2000.00	psia
X =	.05	Mole Fraction CO2
Ca =	· . 066755	Moles/1
Alk =	.048211	
D =	-5.80922	log[(C)(A1k)*2/(P)(X)]
T =	120.00	Temp, F
u =	. 69	Molar Ionic Strength

C =	Ca(mg/1)/401	.=	.066755	
AIK	= (HCO3 + CO	3(mg/1))/6100	0 =	.0482108
D =	log(((C)(A1k)*2/((P)(X)))	=	-5.80922

Variable	Value >	< Constant	=	Product
				يون هيه الحد فيه عنه الديا الدو
D	-5.80922	1.00	=	-5.81
т	120.00	.01549	=	1.86
(T)(T)	14400.00	000004	=	06
Р	2000.00	000074	=	15
น	.69	.919	=	.63
(u)°0.5	.8306624	-2.52	=	-2.09
	•			5.89
				······
		Sum = Is	=	

	T 41.43	Innes I .			1
01]	erade				
				•	:
	turno		21	. 22	23
··)			America .		
		T1/+40			
					. <u> </u>
	his	southern coloren	Amarind	·.	
		*			
·jento ¢	T'II''''''''''''''''''''''''''''''''''	Ameriad	standard Standard	Ameriad 27 (Inderd	28
	Provent, Tr.		. 9;11	ott	
٠	•		+ juint		
Tuno	Tapaco Inthese	Tashua :	Americal Pro-Top		
•	• •		• • • • • • • • • • • • • • • • • • •	unten . Teffs	
•		- -			
il			71544	- 1 34	. 35
•"		J. 11400 .	· · Amerinal	· · · · ·	
•"		۹ ۱۰			
				<u> </u>	1
•	+ [Lanita	- Cono CO	Tiriit's	Americal fin	•
	e guine	-Diracito		-	· .
ļ				3	. 2
	+ Yatel Pannzail		Como 10 4		
	Saithar	•	Y-113 Phillips		
	٠	•	· · · · · · · · · · · · · · · · · · ·		
	Pransei	halten	Unicon . Serven	transil	
		•	***	-	
	Branop Paskan	Fasken •			·
	liniton	PALalters Tanall	9.	10	11 ~
ar is fort	Terdantag		open -	:	
		<u> </u>	(· · · · · · · · · · · · · · · · · · ·	· · · · · · · · · · · · · · · · · · ·
•	())(())))) ())	Chavien			
	Kunt oil	colonias . Hant			
			16	15	14
***	Chivith	Hunt	•		
•	A-+++0	+	f .		
			•		
		•		,	
			1		

.

• :

•

•

-					•	· ·	1	147 1477 17113	Hess	n Thans Kiving	Yales		Yatus	A.ii1]	10	ПЗ6Е У.н.,	R37E	7410
	• •	2	21				Beauvill Fauls & sylves		7.1c, 17.5 6	omehi teopolis DY43	3 3 	Salio Yrdoz Tiprarg	· · · ·			Yátes Z	cilitis Nurting	Arearbug Skallen
-					•	 Yat	دي		Hus	· .	Tipps 0 Sol	ra-3 11	Temes So	Uprining 011	epun Tesse	rig .ns Cliffel Service	fina	Fing
		•	28	-	•	3	Turra		Unline Trias	*	¢ witer	٥١١	(+	d= Eiph • + ciavo •	/···		·	Ana
	•			Yaiy,	Ynius		Erjo	<u>,</u>	£110ŋ	TEIECO	7.,		•	• •	<u>ا</u> ھر		A	
T 10			33 P• 30 T.I=10]	Yates -	Terneo Yutus	μίε ι j			L	9 TL\$ALD fuilifi	• •	*	 12 17 17 10	36 &" 'u· •	13 • 13 • 24 •		• • • •
T 17 S			λ	 LO 	Fri 31A		A	1	///	110 n		•	<u>A</u>	13 42 •	, 33 (35) • 1	, 23 , 40 , 4	A ³⁴ ."	×
				• .	fuilies tuieco	(1)11(5) 	BTA	71:169	i m			*		**************************************	· •.	``&`` ۱		Taxate Thillipt
			Ext	•n 1		Yales		•		Tcre	10	*	junti Hes	· •	•••••••••••••••••••••••••••••••••••••••	•	•	Tullips Tatero
			or.'	n ·		A18			-			•	U.N	•••	unii unii tunii	m Huss	D. Se	enez . .hit
	•			•	. •	meridia.	-1 			•	Rud S	100005	R y R	pad i Stephe				E P
							`` ,	•	B	۸T		:				Perio		open
[- <u></u>		٥								

•

•

۰.

·

- .

.

· .

	Ting tonde Providitab gratek	Providence (And	u.	i	
ertral Frances	1.1611 1.1611 1.1611 20	1	זי	71	· ·
No. dag	· Nigging - rupon bith	jira 20 */			
1 5.4	م منبر و A و منبر و	And the state of t	للقار مدم	V	·
	Vates caling Lonington Anutud An State willow B	Americant American • Spright # 1 & ear	1		
الماريد مدير ماريد مركز المريز ماريد مريز ماريد مريز ماريد مريز ماريد ماريز ماريد ماريز ماريد ماريز ماريد ماريز ماريد ماريز ماريد ماريز ماريد ماريز ماري ماريز ماريز ماريز ماريز ماريز ماريز ماريز ماريز ماريز ماري ماري ماري ماري ماري ماري ماري ماري	John Americal American Ameri American American Americ	IIVIJAL 28	27	26	
	Tipures . Tipures . 11-4. wither 21	Alut Konstaka Fi			
• • • • • • • • • • • • • • • • • • •	Autor Andre	All Anisted Anisted Anise	2	· •	
•' •' 	The first state of the first sta		34	35	
, n , n	Total a state of the state of t	the Americal Americal Americal Americal Americal		1 1 1	
	Cong ba (Money) Wing () Inney () Cong ba Wing () Inney () Cong ba Cong ba () Cong ba () () () () () () () () () (Tilling Tilling Tilling	((1	
		Time Tillen and Install a	⁴ رسر س	2	
••••	+ lit () - 1 / Company / Compa	Alarra Jean Th The sate of the same of the Theory shall be and the Here of the same of the		·	
		Tipliary Parcell Tipliary Parcell Tipliary State Could + Gampil			
+ 77.15g	1-11-15 0-14 # 2 1-14-1- #1				
	falber Wight a falber 8 Jahr 8 Jahrda J	1 -1-1-1-1 -1-1-1	10		
	Anter	, islidalud (31.44)	· · ·		· .
Aria	Allong A Dall				- - -
* **** **** ***	. 17	18	15	14	
	•		· · ·	•	
			1	· · · · · · · · · · · · · · · · · · ·	
				ILL PETHOLEUM CORPORATION INGTON SAN ANDRES UNIT Loa County, Now Maxko	
	1 22	51	22		1

.

		t travell 32 trats soll at		Taka Timita Tå flask	- عدد ا الم مرم الم مرم
	21	22	23	January Lit	Jun 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
		Landin Landit Zanielt Zaniel	Jan Marana A shall co	Alternative of a state	Jurgy date marticitit
		•			·
	28	27	28 parton da Vador ant min d ant parton d ant p ant p	25 1 - T 1	• 4H : • F • 10H
	. •		of full well 1	and and a set of the	u o Lfu Lfm f
		· .	2 ⁷ 1		A' [
 τ.	33 Baraidett State bett by	34	35	A	۰ ۲۰ ۲۰
16 S			1-ig14+1 4	• • • • • • • •	
17* S	ere .	•		A • · · · · · · · · · · · · · · · · · ·	А ^н
	Turned form	Al 3	2		
		• Terese betw.36 r.1l		A" A" A" A"	A"
		1 (m. 17)2-11		• • • • • • • • • • • • • • • • • • •	. L f4 Tg
		f cillos « Aunil	*		•./u 18
	9 .	10 10	11 project	12 prish salen Hi jurish salen Hi jurish salen Hi jurish og i tan jidom og i tan	
	•	P _H en.		L Charles and Charles and all Charles for the	
	• •		alini (Lat. 4)	A start file this a start and a start and hidrog B and an and hidrog B and	",
	16	15	14 .	13 +3	11
		· .		·	
1		1	1		l

.

11.	а 20			11 13	ji, P.,]					S		= 1
P			P			, 1 ¹ ,1		JI .;			ADDOCK SAN ANDRE		ULY 196
and a second	•!	11.1	II .,	¹¹ ., ¹¹ .		ıi.	ıi.,		ll., II.,		INGTON P	LEUM COF	7, NEW ME
	11.	58		¹¹ ., ., .,	⁸⁸ II., II.,	<u>I</u> .,	<u>h.</u> ,	4		11.1 11.1		HILL PETRO	1000 1000 ALE: 1" = 200
IÌ			1.		، ا، ا			° j	j i.,			GREEN	
··.			, I [!] .1			II.,					1, 1		- 7
11.,	I			l.ı l.ı	<u> </u> ∙ı ⊮∙ı	11.	7		5-	1.	И.,		₩ ¹ •1
li.,	The second secon		<u>lı.,</u>	1. ₁ 11. ₁).,,, ji				The second secon	** • ļ	11		ılı, II.,
, it	1	29		li., ji., jii., ș		li,		w	de la		۳. ۱۱., [∞]	1	
l.,	li.,			ì., lì.,		, , , ,	1	I.	11.				
11.1		J.,	lı.,	<u> 1,</u>], <u>1</u> ,			ll.,	34° ¹	1.		· ·		·
	;1					2	₹ a		11.				Ji ,
	l'.,	r.	¥.,	s	`	11 10				ļī"			
		× !, ,		5.el a a a a a a a a a a a a a a a a a a a			1. 1.	0]] 			~		3. 74
l.,			k.ej	1. La La ^A a				i. I _d		۶.			
- her i soon	,	- ·.	£,	3		.1	1			•	h.		
			1		· · · ·	11.11	11:14		III t.	E a	P.		
		۰.	ž.	14 14 14 14 14 14 14 14 14 14 14 14 14 1	nd: II. La nda		1. 1.		B.e	•.	B. 6	, . 	1 ³ ,1
	25	11,				A LAND	1. 4		a P	A I	ı. II.	71 	
		ļ					۰. ۱.	3 đ]	a:	".			
			٩	3. 1			11. 1. ₄	Antes .	ħ.e				
		} .1	, ! -,	• į	A. aj	11+ 1.		8.q 1	2.		۱۱.,	And the state	ı!.,
			i.			ji.ji		ļ. ļ.					
	ų	2		ž				N			E		





BEFORE THE OIL CONSERVATION COMMISSION OF THE STATE OF NEW MEXICO

IN THE MATTER OF THE HEARING CALLED BY THE CIL CONSERVATION COMMISSION OF NEW MEXICO FOR THE PURPOSE OF CONSIDERING:

> CASE No. 3467 Order No. R-3124

APPLICATION OF SKELLY OIL COMPANY FOR A WATERFLOOD PROJECT, LEA COUNTY, NEW MEXICO.

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9 a.m. on September 28, 1966, at Santa Fe, New Mexico, before Examiner Elvis A. Utz.

NOW, on this <u>30th</u> day of <u>September</u>, 1966, the Commission, a quorum being present, having considered the testimony, the record, and the recommendations of the Examiner, and being fully advised in the premises,

FINDS:

(1) That due public notice having been given as required by law, the Commission has jurisdiction of this cause and the subject matter thereof.

(2) That the applicant, Skelly Oil Company, seeks permission to institute a waterflood project in the Lovington Paddock Unit Area, Lovington-Paddock Pool, by the injection of water into the Lovington Glorieta (Paddock) formation through 22 injection wells in Sections 25, 35, and 36, Township 16 South, Range 36 East, Section 31, Township 16 South, Range 37 East, Sections 1, 2, and 12, Township 17 South, Range 36 East, and Section 6, Township 17 South, Range 37 East, NMPM, Lea County, New Mexico.

(3) That the wells in the project area are in an advanced state of depletion and should properly be classified as "stripper" wells.

(4) That the proposed waterflood project should result in the recovery of otherwise unrecoverable oil, thereby preventing waste.

-2-CASE No. 3467 Order No. R-3124

(5) That the subject application should be approved and the project should be governed by the provisions of Rules 701, 702, and 703 of the Commission Rules and Regulations.

IT IS THEREFORE ORDERED:

(1) That the applicant, Skelly Oil Company, is hereby authorized to institute a waterflood project in the Lovington Paddock Unit Area, Lovington-Paddock Pool, Lea County, New Mexico, by the injection of water into the Lovington Glorieta (Paddock) formation through the following-described wells:

TOWNSHIP 16 SOUTH, RANGE 36 EAST, NMPM

Mobil-State "K" Well No. 4, Unit I, Section 25 Skelly-Mexico "Y" Well No. 1, Unit A, Section 35 Cities Service-State "AE" Well No. 3, Unit I, Section 35

Skelly-State "R" Well No. 10, Unit C, Section 36 Skelly-State "R" Well No. 8, Unit K, Section 36 Skelly-State "N" Well No. 3, Unit A, Section 36 Tidewater-State "M" Well No. 4, Unit I, Section 36

TOWNSHIP 16 SOUTH, RANGE 37 EAST, NMPM

Texaco-Graham Well No. 3, Unit C, Section 31 Skelly-State "O" Well No. 24, Unit G, Section 31 Skelly-State "O" Well No. 20, Unit I, Section 31 Sinclair-State "182-A" Well No. 5, Unit K, Section 31

TOWNSHIP 17 SOUTH, RANGE 36 EAST, NMPM

Lee Drlg. Co.-State "E" Well No. 1, Unit C, Section 1

Amerada-State "LA" Well No. 16, Unit A, Section 1 Amerada-State "LA" Well No. 20, Unit K, Section 1 Mobil-State "R" Well No. 10, Unit I, Section 1 Lee Drlg. Co.-State "E" Well No. 5, Unit A, Section 2

Mobil State "R" Well No. 12, Unit I, Section 2 Cities Service-State "AJ" Well No. 1, Unit C, Section 12

McBee-State "A" Well No. 2, Unit A, Section 12

-3-CASE No. 3467 Order No. R-3124

TOWNSHIP 17 SOUTH, RANGE 37 EAST, NMPM

Ashland-C.S. Caylor Well No. 5, Unit C, Section 6 Skelly-C. S. Caylor Well No. 5, Unit A, Section 6 Skelly-C. S. Caylor Well No. 2, Unit K, Section 6

(2) That the subject waterflood project is hereby designated the Lovington Paddock Waterflood Project and shall be governed by the provisions of Rules 701, 702, and 703 of the Commission Rules and Regulations.

(3) That monthly progress reports of the waterflood project herein authorized shall be submitted to the Commission in accordance with Rules 704 and 1120 of the Commission Rules and Regulations.

(4) That jurisdiction of this cause is retained for the entry of such further orders as the Commission may deem necessary.

DONE at Santa Fe, New Mexico, on the day and year hereinabove designated.

STATE OF NEW MEXICO OIL CONSERVATION COMMISSION

JACK M. CAMPBELL, Chairman

GUYTON B. HAYS, Member

A. L. PORTER, Jr., Member & Secretary

SEAL

esr/

GREENHILL PETRO	GREENHILL PETROLEUM CORPORATION			Lovington Paddock Unit				
OPERATOR			LEASE					
9	660 FSL & 1980 F	WL	30	T16S-R37E				
WELL NO.	FOOTAGE 1	OCATION	SEC.	TOWNSHIP RANGE				
			Tub	ular Data				
		<u>Surfa</u>	<u>ce Casing</u>					
111		Size:	<u>13 3/8</u> ″	Cemented withSX				
		TOC:	surface	feet determined by				
	10041	Hole	size:	17 1/2				
	133/8"	Inter	<u>mediate Casi</u>	ng				
		Size:	<u> 8 5/8 </u> "	Cemented withSX				
		TOC:	surface	feet determined by circ				
		Hole	Size: <u>11</u>					
	2 5/8"	Long	String					
	2115'	Size:	5 1/2" "	Cemented withSX				
		TOC:	3153	feet determined by				
		Hole	Size: 7	7/8				
L_	51/2"	Total	Depth: <u>62</u>	270'				
	0~ 10	Injec	<u>tion Interva</u>	1				
			6144	feet to <u>6262</u> feet				
		(perf	orated or op	en-hole, indicate which)				
Tubing size <u>2</u> 3	/8 lined wit	h	IPC	set in a				
		_ packer	at 6050	jfeet,				
(brand & model (or describe any o) ther casing-tub	ing seal)	•					
Other Data		0						
1 Name of the in	lection formati	on	Paddock					
	se Basil (IE and	14	Lauinsten De					
Z. Name of Field	or root (it app	licablej	Lovington Pa					
3. Is this a new If no, for what	well drilled fo t purpose was t	r injecti he well o	on? <u>No</u> riginally dr	illed? production				
4. Has the well e intervals and used.	ver be perforat give plugging d No	ed in any etail (sa	other zone() cks of cemen	s)? List all such perforated t or bridge plug(s)				
5. Give the depth (pools) in thi	to and name of s area.	any over	lying and/or	underlying oil or gas zones				

Above-Glorietta

	Greenhi	L11 Petroleum Corporation Lovington Paddock
•	OPENATON # 10	LEASE 660' FNL & 2440' FEL 31 16S 37E
	WELL NO.	FOOTAGE LOCATION SEC. TOWNSHIP RANGE
		•
	•	Tubular Data
		Surface Casing
S	Spud Date	Sizo: 8-5/8 ~ Comented with 1500 SX
	0 11 94	TOC: Surface feet determined by calc
		Role size: 11"
		Intermediate Casing
		Class Camputed with
÷		3912 TOC: feet determined by
•		llolo Sizo:
		Long String
	•	Size: 5-1/2" Comontod with 300 SX
•	·	TOC: <u>4010</u> foot determined by <u>temp surr</u>
		- 6105 llole Size: 7-7/8"
		Total Depth: 6260'
		TD 4260' Injection Interval
		feet to feet
	•	(porforated or open-hole, indicate which)
Tub	oing sizo	$\frac{2^{3}/8}{(material)}$ lined with set in a
•	(brand & mod	packer at <u>- 6050</u> feet.
(or	describe any	y other casing-tubing seal).
<u>Oth</u>	or Data	
1.	Name of the	injection formation <u>Poddock</u>
2.	Name of Fiel	ld or Pool (If applicable) Paddock
3.	Is this a no	ew well drilled for injection? No
-,•	If no, for y	what purpose was the well originally drilled? Production
4,	llas the well intervals as used. No	l ever be perforated in any other zone(s)? List all such perforated nd give plugging detail (sacks of coment or bridge plug(s)
F	Clara blia d-	oth to and name of any overlying and/or underlying of an
υ,	(pools) in	this area.
•	Λϧον	e Glorieta

Greenhill Pet	roleum Corporation	Lovington Paddock
OPERATOR	0100/ FW 4 100	LEASE
#25	2130' FNL & 198	0' FWL 31 16S 37E
WELL NO.	FOOTAGE LOCATI	ON SEC. TOWNSHIP RANGE
· ·		<u>Tubular Data</u>
pud Date 1-16-54	11	Surface Casing
onverted o Inj. 12/54		TOC: Surface feet determined by cale
12/ 31		Hole size: //
		Intermediate Casing
	3215'	Size: Cemented with SX
		TOC: feet determined by
		llole size:
		Long String
		Size: 5-1/2" Cemented with 450 SX
	6106	TOC: 4160 feet determined by temp survey Hole size: 7 %
	70 6270'	Total Depth: 6270'
		Injection Interval
		6107 feet to 6270 feet (perforated or open-hole, indicate whic
ubing size 2-3,	/8" lined with IPC	set in a - packer
t 6043 feet.	(Or describe any o	other casing-tubing seal).
<u>Ither Data</u>		
. Name of the	injection formation	n: <u>Paddock</u>
2. Name of Field	d or Pool (If appl	icable) <u>Paddock</u>
3. Is this a ne If no, for w	w well drilled for hat purpose was the	Injection? <u>No</u> e well originally drilled? <u>Production</u>
I. Has the well perforated f bridge plug(ever been perfora ntervals and give s) used. No	ted in any other zone(s)? List all such plugging details (sacks of cement or

Above Glorieta

.

	Greenhill OPERATOR	Petroleum Corporati	on ·	Loving	ton San Andı	res Unit		<u>.</u>
	#16 WELL NO.	2310 FEL & 198 FOOTAGE LOC	O FSL	. <u>· 31</u> sec,	T16S TOWNSHIP	R37E RANGE		
Com 12 Con In 	pleted /6/39 everted to jection 3/16/63	$\frac{2 3/8}{2 3/8} \text{ lined with}$	Surfa Size: TOC: Nole Inter Size: TOC: Nole Long Size: TOC: Nole Total Infec (perf	Two Two Two Tages of the second se	bular Data Comented feet d 15 1/4 Ling Cemented feet d 10 1/4 Cemented feet d 10 1/4 Cemented feet d 6 3/4 4950' val feet to open-hole, f PC orial) 4557	with	200 by 500 by 200 by by fo iich) fo fo	
<u>Oth</u>	<u>or Data</u>					•		·
1,	Name of the	a injection formation	1	<u> </u>	an Andres	•		
2.	Namo of FL	old or Pool (If appl	Lcable)	L	ovington Sau	n Andres	•	•
3.	Is this a m If no, for	new well drilled for what purpose was th	inject: 9 well (ion? originally	No drilled?	Produ	uction	
4.	llas the we intervals used.	ll ovor bo porforate and give plugging do No	i in an tail (s	y other zon acks of com	e(s)? List ent or brid	all such p ge plug(s)	porforat	:od
5.	Give the de (pools) in	epth to and name of this area.	any ove	rlying and/	or underlyi	ng oil or j	gas zone	99
•	•	<u>Underlying - Gray</u>	burg		•	· · ·	·	
					•			. •
		•	• •		•			. * •
				•				·

. . . .

TENNECO OII	COMPANY	State	Q				
OPERATOR		LEASE					
4	2310 FNL & 1983 FV	WL 30	T16S-R3	7 E			
WELL NO.	FOOTAGE LOCATIO	ON SEC.	TOWNSHIP	RANGE			
<u>Tubular Data</u>							
Surface Casing							

		<u>Surface Casing</u>
		Size: <u>8 5/8"</u> Cemented with <u>600</u> SX
		TOC: <u>surface</u> feet determined by <u>circ.</u>
		Nole size: <u>11</u>
	L 2115 $asta''$	Intermediate Casing
	87/8	Size: Cemented withSX
		TOC: feet determined by
		Hole Size:
		Long String
		Size: <u>4 1/2"</u> Cemented with <u>770</u> SX
	L (505' 411,"	TOC: feet determined by
	112	Hole Size: 7 7/8"
		Total Depth: 6505'
		Injection Interval
		feet to feet (perforated or open-hole, indicate which)
Tu	bing size lined with	set in a
	n	(material)
 (or	(brand & model) (describe any other casing-tubing	
0rh	or Data	
1	N	
1.	Name of the injection formation	
2.	Name of Field or Pool (If applic	able)
3.	Is this a new well drilled for i If no, for what purpose was the	njection? well originally drilled?
4.	Has the well ever be perforated intervals and give plugging deta used.	in any other zone(s)? List all such perforated il (sacks of cement or bridge plug(s) -
5.	Give the depth to and name of an (pools) in this area.	y overlying and/or underlying oil or gas zones

CITIES SERVICE	OIL COMPANY	STATE C	CG		
OPERATOR		LEASE		<u> </u>	
1	660 FSI & 660 FEI.	30	T16S-R37E		
WELL NO.	FOOTAGE LOCA	TION SEC.	TOWNSHIP RANGE		
		Tu	ibular_Data	······	
Set		Surface Casing			
30 SX plug to 30'	0644	Size: 8 5/8" "	Cemented with	<u>900</u> sx	
	2019	TOC:	feet determine	d by <u>60% calc.</u>	
	L Set 25 sydue	Nole size:	L1 1/4"		
	2138' to 2150'	<u>Intermediate Cas</u>	ing		
Set 25 E Skoluc	Set 25 sx. plug	Size:″	Cemented with	SX	
3719' to 3816'	- 3130 to 3067	TOC:	feet determine	d by	
		Hole Size:			
IS sx coment	6356'	Long String			
plug 6356 to 61	50' 51/2'	Size: 5 1/2""	Cemented with	<u>400</u> SX	
		TOC:	feet determined	d by <u>60% calc</u>	
PIA		Hole Size:	7 7/8"		
1 × M		Total Depth:	6356'		
1-29-66		Injection Interv	al		
			feet to	feet	
		(perforated or o	pen-hole, indicate v	which)	
Tubing size	lined with	 (mate	 rial)	set in a	
—	p	acker at	fe	et.	
(brand & mode (or describe any	1) other casing-tubing	seal).			
<u>Other Data</u>					
1. Name of the 1	njection formation				
2. Name of Field	or Pool (If applic	able)			
3. Is this a new If no, for wh	well drilled for in at purpose was the v	njection? well originally d	rilled?		
4. Has the well intervals and used.	llas the well ever be perforated in any other zone(s)? List all such perforated intervals and give plugging detail (sacks of cement or bridge plug(s) used.				
5. Give the dept (pools) in th	h to and name of any is area.	v overlying and/o	r underlying oil or	gas zones	

GREENHILL I	PETROLEUM CORPORAT	ION		Lovington Pa	ddock		
OPERATOR			LEASE				
109	2540 FNL & 28	55FWL	. 31	Ť16S-R37E			
WELL NO.	FOOTAGE LOCA	TION	SEC.	TOWNSHIP	RANGE		
Ber			T	ibular Data			
N 1		<u>Surface</u>	Casing				
		Size:	<u>8 5/8"</u> ^	Comented w	ith	700	sx
		тос:	surface	feet de	termined	by <u>circ</u>	<u>. </u>
		llole si	ze:	12 1/4"			
	85/g"	Interme	diate Cas	ung			
	- 1785'	Size:		Cemented w	ith		SX
		тос:		feet de	termined	by	
		Nole Si	ze:				
		Long St	ring				
		Size:	<u>5 1/2"</u> "	Cemented w	ith	1585	sx
	51/2"	TOC:	surface	feet de	termined	by c <u>ircu</u>	lation
	642D	Hole Si:	28:	7 7/8"			
		Total De	epth:	6450'			
		Injectio	on Interv	al			
		<u></u>		feet to		fe	et
		(perfora	ited or o	pen-hole, in	dicate wi	iich)	
Tubing size	lined with _	<u> </u>	(mete	r{a])		_ set in	n a
	p	acker at			feet	:.	
(or describe any ot	her casing-tubing	seal).					
<u>Other Data</u>							
1. Name of the inj	ection formation			•			
2. Name of Field o	r Pool (If applic	able)	Lovingto	on Paddock			
3 Tethisaneww	ell drilled for i	niection?	nc)			
If no, for what	purpose was the	well orig	inally d	rilled?	prod.		
4. Has the well ev intervals and g used.	er be perforated ive plugging deta no	in any ot il (sacks	her zone of ceme	(s)? List al nt or bridge	ll such p plug(s)	erforate	∍d
5 Olive the desti-	to and name -F				-11		
(pools) in this	area.	y overlyi	ng and/o	c underlying	oll or g	as zones,	1

abov	≥-Glor	ietta
------	--------	-------

GREENHILL P	ETROLEUM CORPORAT	TION Lovington Paddock
OPERATOR		
108 WELL NO.	1615 FNL & 27 FOOTAGE LOC	CATION SEC. TOWNSHIP RANGE
	85%" - 1850' 51/2" (500'	Tubular_Data Surface Casing Size: Comented with 700 _SX TOC: feet determined by circ. Nole size: Intermediate Casing Size: Cemented with SX TOC: feet determined by Intermediate Casing Size: Cemented with SX TOC: feet determined by Nole Size: Long String Size: feet determined by circulation Nole Size: Injection Interval feet to feet
Tubing size	lined with	
	I	(material) packer atfeet.
(brand & model) (or describe any oth	ier casing-tubing	g seal).
Other Deta		
<u>ULIEL DALA</u>		
1. Name of the injo	ection formation	
2. Name of Field or	Pool (If applic	cable) Lovington Paddock
3. Is this a new we If no, for what	all drilled for i purpose was the	injection?
 Has the well even intervals and giused. 	er be perforated ve plugging deta	in any other zone(s)? List all such perforated ail (sacks of cement or bridge plug(s)
5. Give the depth t (pools) in this	o and name of an area.	ny overlying and/or underlying oil or gas zones

above-(Glorietta
---------	-----------

	GREENHILL PETROLEUM CORPORATI		ION		Lovington Paddock	
	OPERATOR			LEASE		
	104	240 FWL & 75 FI	1L	- 31	T16S-R37E	
<u> </u>	WELL NO.	FOOTAGE LOC	ATION	SEC.	TOWNSHIP RANGE	
		, <u>, , , , , , , , , , , , , , , , , , </u>		Tu	bular Data	
	N 1		<u>Surfa</u>	<u>ce Casing</u>		
			Size:	8 5/8" ~	Comented with	<u>0sx</u>
			TOC:	surface	feet determined	by circ.
			llole	size:	12 1/4"	
		9,5% "	Inter	mediate Cas	ing	
		- 1975 '	5170'	~	Comented with	SX
			TOC.		fact determined	
			Tere		····	
			Long_	5 1/2110	Computed with	1400 54
		G11, "	Size:	<u> </u>		<u>_1600</u> 5x
	ι	6460'TD	TOC:	surface	feet determined	by c <u>irculatio</u> n
			Hole .	Size:	7 7/8"	
			Total	Depth:	6425'	
			<u>Injec</u>	tion Interv	<u>al</u>	
			(norf	arated or (a)	feet to	feet
m		1	(berr	oraced or (0)	pen-noie, indicate wi	
10	bing size	lined with .	<u> </u>	(mate	rial)	set in a
<u> </u>	(brand & model)	l	acker	at	feet	
(or	describe any ot	her casing-tubing	g seal)	•		
<u>0th</u>	<u>er Data</u>					
1.	Name of the inj	ection formation			• ••	
2.	Name of Field o	r Pool (If applie	able)	Lovingto	n Paddock	
3.	Is this a new w If no, for what	ell drilled for i purpose was the	njecti well o	on? <u>no</u> riginally di	rilled? prod.	
4.	lias the well ever be perforated in any other zone(s)? List all such perforated intervals and give plugging detail (sacks of cement or bridge plug(s) used.					
5.	Give the depth (pools) in this	to and name of ar area.	y over:	lying and/o	r underlying oil or g	as zones

above-Glorietta

GREENHIL	L PETROLEUM CORPORAT	10N Lovington Paddock
OPERATOR		LEASE
U05 WELL NO.	69 FNL & 1324 FW FOOTAGE LOC	L 31 T 16S-R37E ATION SEC. TOWNSHIP RANGE
	<u>,</u>	<u>Tubular Data</u>
١	1	<u>Surface Casing</u>
		Size: <u>8 5/8"</u> Cemented with <u>700</u> SX
		TOC: <u>surface</u> feet determined by <u>circ.</u>
		llole size: <u>12 1/4"</u>
	85/8"	Intermediate Casing
	1860'	Size: "Cemented with SX
		TOC: feet determined by
		Hole Size:
		Long_String
		Size: <u>5 1/2"</u> Cemented with 1360 SX
	5火"	TOC: <u>surface</u> feet determined by <u>circulation</u>
	6450'	Hole Size:7 7/8"
		Total Depth: 6450'
		Injection Interval
		feet to feet
		(perforated or open-hole, indicate which)
Tubing size	lined with _	set in a
(brand & mode	I	packer atfeet.
(or describe any	other casing-tubing	; seal).
<u>Other Data</u>		
1. Name of the s	Injection formation	
2. Name of Field	i or Pool (If applic	able) Lovington Paddock
3. Is this a new If no, for wh	w well drilled for in the	njection? <u>no</u> well originally drilled? <u>prod</u> .
4. Has the well intervals and used.	ever be perforated i give plugging deta no	in any other zone(s)? List all such perforated il (sacks of cement or bridge plug(s)
5. Give the dept (pools) in th	th to and name of an ils area.	y overlying and/or underlying oil or gas zones

above-	Glorietta
--------	-----------

R. J. Nelson		Stat	te Q	
OPERATOR		LEASE		
2 1650FSL	& 1950 FWL	30	T16S	-R37E
WELL NO.	FOOTAGE LOCATION	SEC.	TOWNSHIP	RANGE

		<u>Tubular Data</u>	
		Surface CasingSize:8 5/8"~ Comented with425 sTOC:surfacefeet determined by circ.Hole size:11	х
	2100 '	Intermediate Casing Size: Cemented withS TOC: feet determined by	X
		Nole Size: Long String Size:4 1/2 ~ Cemented with690 _ S. TOC:4078feet determined by60% ca	X alc
	41/5" 6415'	Hole Size: 7 7/8 Total Depth: 6500'	
	7D 6500'	<u>Injection Interval</u> feet tofeet (perforated or open-hole, indicate which)	
Tubing size	lined with F	set in a	

Other Data

1.	Name of the injection formation		
2.	Name of Field or Pool (If applicable)	Lovington Paddock	
3.	Is this a new well drilled for injection If no, for what purpose was the well ori	n?	Production
4.	llas the well ever be perforated in any o intervals and give plugging detail (sack used. NO	other zone(s)? List s of cement or brid	all such perforated ge plug(s)

5. Give the depth to and name of any overlying and/or underlying oil or gas zones (pools) in this area.

al	Ьc	v	е	G1	or	ie	ta

Greenhill Pe OPERATOR	troleum Corporation	Lovingt LEASE	ton San Andre	<u>S</u>	
#58 WELL NO.	2310' FNL & 1309' FOOTAGE LOCA	FWL 31 ATION SEC.	16S TOWNSHIP	37E RANGE	
Completed		T <u>Surface Casing</u>	ubular Data		
5-15-41		Size: 13	" Cemented v	vith <u>180</u>	SX
deepen to 5070	13"	TOC: <u>Surface</u> Hole size: <u>1</u> <u>Intermediate Ca</u>	feet de 17-1/4"	etermined by	<u>circ</u>
		Size: 8-5/8	" Cemented v	with <u>400</u>	SX
	85/8"	Hole Size:1	Teet de		<u>Ca [C</u>
		Size: <u>5-1/2</u>	" Cemented w	vith _ 200	sx
	4570'	TOC: <u>3479</u>	feet de	etermined by	calc
		Hole Size:7	7-7/8"		
	1 4990'	Total Depth: _	4990'		۰.
		<u>Injection Inter</u> <u>4570</u> (perforated or	<u>val</u> feet to open-hole, in	5070 ndicate which	feet
Tubing size <u>2</u>	- /8 lined with _		erial)	4	set in a
(brand & mod (or describe any <u>Other Data</u>	el) other casing-tubing	g seal).	455	0feet.	
1. Name of the	injection formation	San A	ndres		<u></u>
2. Name of Field	d or Pool (If applic	cable) Lovingto	n San Andres		
3. Is this a new If no, for wh	w well drilled for b hat purpose was the	Injection? <u>No</u> well originally	drilled? Pro	oduction	
4. Has the well intervals and used. NO	ever be perforated 1 give plugging deta	in any other zon ail (sacks of cem	e(s)? List a ent or bridge	all such per plug(s)	Eorated
5. Give the dep (pools) in th	th to and name of ar his area.	ny overlying and/	or underlying	g oil or gas	zones

Underlying-Grayburg

Greenhill Petro	leum Corporation	Lovington San Andres Unit
OPERATOR		LEASE
<u>#7</u>	1980 FNL & 1980	FEL 31 T16S R37E
WELL NO.	FOUNDE LOCAL	ton SEC. township Rhinge
·		Tului an Data
	- -	
·		Surface_Casing
		Size: 8 5/8 ". Cemented with 485 SX
· .		TOC: <u>Surface</u> feet determined by <u>calc.</u>
		liole size: $10^{1/4}$
	85/9	Intermediate Casing
Completed	2043	Size: "Comented with SX
1/5/49		
deepen to goist		100: feet determined by
4990	1	Hole Size:
	51/2	Long String
	4020	Size: <u>5 1/2</u> " Comented with <u>375</u> SX
	- TD 49551	TOC: feet determined by <u>80% calc.</u>
· · · ·	•	Hole Size: $7^{\frac{1}{4}}$
· ·		Total Dopth 1055^{1}
· · ·		
	-	Injection Interval
· · · ·	•	4620 feet to 4990 feet (perforated or open-hole, indicate which)
Tubing size		set in a
	DA	(material) cker at 4530 feet.
(brand & model)	c. cosing-tubing	seel)
	custing-custing	
<u>Uther Data</u>	· .	
1. Name of the inject	tion formation _	San Andres
2. Name of Field or 1	Pool (If applica	ble) Lovington San Andres
3. Is this a new well If no, for what pu	L drilled for in urpose was the w	jection? <u>No</u> ell originally drilled? <u>Production</u>
4. Has the well ever intervals and give used. No	be perforated in plugging detail	n any other zone(s)? List all such perforated 1 (sacks of cement or bridge plug(s)
5. Give the depth to (pools) in this as	and name of any	overlying and/or underlying oil or gas zones
Underlying	- Grayburg	
	, 1	······································

OPERATOR O, 18 Gas Corp Monson to 30 St LEASE 376 <u>30</u> Section WELL NO. FOOTAGE LOCATION 4/2 8 5/8 13 18 Schematic Tabular Data Surface Casing Size 13 7/8 " Cemented with 405 sx. TOC Surface feet determined by Circ Hole size 1712 Hos Intermediate Casing Size 8578 " Cemented with 1575 sx. TOC Surface feet determined by CIrc Hole size ____// Long string Size $4\frac{1}{2}$ " Cemented with 1450 sx. 4215 TOC 4350 feet determined by file Hole size <u>7%</u> Total depth <u>11350</u> Injection interval feet to feet (perforated or open-hole, indicate which) 8826 D 11350 Tubing size ______ lined with ______(material) _____ set in a feet _____ packer at _____ (brand and model) (or describe any other casing-tubing seal). Other Data 1. Name of the injection formation _____ 2. Name of Field or Pool (if applicable) 3. Is this a new well drilled for injection? /_7 Yes /7 No If no, for what purpose was the well originally drilled? Has the well ever been perforated in any other zone(s)? List all such perforated intervals 4 and give plugging detail (sacks of cement or bridge plug(s) used) ____ Give the depth to and name of any overlying and/or underlying oil or gas zones (pools) in 5. this area.

.

,

Rice Engineering			Abo SWD (S	tate "O")		
OPERATOR			LEASE			•
13 2310'	FNL & 2626	FWL	31	165	37E	~
WELL NO. FO	DTAGE LOCAT	LON	SEC.	TOWNSHIP	RANGE	
			<u>Tubular D</u>	ata		
Completed 1-18-53 Converted to SWD (Inject thru 9730-10260)	-133/8 2.46	Surface Size: TOC: Sur Hole si Interme	<u>Casing</u> 13-3/8" Cemen rface feet d ze: 18" <u>diate Casing</u>	ted with etermined	246 SX circ by c alc	-
	9 <i>5/y</i> " 3270'	Size: 9 TOC: 3 Hole si Long St	-5/8" Cement 52 feet det ze: 12-1/4" ring	ed with	1400- SX 2;rc y 50%-cal	e . 82 at shoe
cmt bond log 1964		Size:	5-1/2" Cement	ted with 1	982 SX '	at 8988
top good cont 3765		TOC:	247 feet de	etermined	by 80% ca	llc
sq2d several intervals		Hole si	7e: 7-7/8"			
above and below this point.		Total D	apth. 12 251			
		JULAI D	eptii: 12,251			
	51/2"	Injecti	<u>on Interval</u>			
· · · · · · · · ·	1,011 12 251'	- (perfora	feet to ted or open-l	- nole, indi	feet cate whic	:h)
Tubing size – lir	ed with -	set in a	-		packer	
at - feet. (Or de	scribe any	other cas	ing-tubing so	eal).		
<u>Other Data</u>						
1. Name of the inject	on formatic	n:				
2. Name of Field or Po	ol (If app)	icable)	East Lovingt	<u>on (Penn)</u>		
3. Is this a new well If no, for what pur	drilled for pose was th	· Injectio Ne well or	on? <u>No</u> riginally dri	11ed? <u>Prod</u>	<u>uction</u>	
4. Has the well ever b perforated interval bridge plug(s) used	een perfora s and give l.	ited in an plugging	y other zone details (sac	(s)? List ks of ceme	all such nt or	١
5. Give the depth to a zones (pools) in th	ind name of iis area. Abo (Above	any overl	ying and/or	underlying	oil or y	jas .

	GREENHILL PETROLEUM CORPORATIO	N	Lovi	Ington	Paddock		
	OPERATOR		LEAS	E			
	89 1275 FWL & 1745	FNL.	31		T165-R37E		
	WELL NO. FOOTAGE LOO	CATION	SEC.	T	OWNSHIP RA	NGE	
	<u>wrt tan an a ar an </u>			Tubul:	ar <u>Data</u>		
		<u>Surfac</u>	e Casing				
	1	Size:_	8 5/8	<u>''</u> " C	emented with	1350	SX
		TOC: _	surface		_ feet determ	nined by <u>ci</u>	rc
		Hole s	ize: <u>1</u>	.2 1/4	11		
		Intern	<u>nediate C</u>	asing			
		Size:_		_″ C	emented with	<u></u>	sx
	- 8%'	TOC: _			_ feet determ	ined by	
		Hole S	Size:				
		Long S	String				
		Size:	5 1/2"	_″ C	emented with	1400	sx
		TOC:	surfac	e	_ feet determ	ined by <u>cir</u>	с.
	<u> </u>	Hole S	Size:	7 7/8	8"		
	OSSU TD	Total	Depth:	6350		<u>.</u>	
		Inject	<u>ion Inte</u>	rval			
		<u></u>			feet to	f	leet
		(perfo	orated or	open	-hole, indica	te which)	
Tul	bing size lined with					set	in a
		packer a	(ma			_feet.	
(or	(brand & model) describe any other casing-tubin	ng seal).					
<u>Oth</u>	<u>er Data</u>						
1.	Name of the injection formation	n					
2.	Name of Field or Pool (If appl	icable)					
3.	Is this a new well drilled for If no, for what purpose was the	injectio e well on	on? iginally	No dril	led?pr	oduction	
4.	Has the well ever be perforate intervals and give plugging de used.	d in any tail (sao	other zo ks of ce	one(s) ement	? List all s or bridge plu	such perfora g(s)	ited
5.	Give the depth to and name of (pools) in this area.	any over]	lying and	l/or u	nderlying oil	or gas zor	ies

GREENHILL PE	TROLEUM CORPORATION	Lovington Paddock
OPERATOR		LEASE
130 2300) FSL & 1460 FEL	31 T16S-R37E
WELL NO.	FOOTAGE LOCA	ATION SEC. TOWNSHIP RANGE
		<u>Tubular Data</u>
	ł (Surface Casing
		Size: 8 5/8" Cemented with 500 SX
		TOC: feet determined by
		Hole size: 12 1/4"
		Intermediate Casing
	1325'	Size: Cemented withSX
	JUU SACING	TOC: feet determined by
		Hole Size:
		Long String
	L 6530'	Size: <u>5 1/2</u> " Cemented with <u>1450</u> SX
	1450 sacks	TOC: surface feet determined by circulation
	TD 6530	Hole Size: 7 7/8"
		Total Depth: 6530'
		Injection Interval
		feet to feet (perforated or open-hole, indicate which)
Tubing size	lined with _	set in a
-	F	packer atfeet.
(brand & mode or describe any	other casing-tubing	g seal).
ther Data		
. Name of the i	njection formation	·
. Name of Field	l or Pool (If applic	cable)
. Is this a new If no, for wh	well drilled for in the set of th	<pre>injection? well originally drilled?production</pre>
. Has the well intervals and used.	ever be perforated I give plugging deta	in any other zone(s)? List all such perforated ail (sacks of cement or bridge plug(s)
. Give the dept	ch to and name of ar	ny overlying and/or underlying oil or gas zones

(pools) in this area.

	GREENH	ILL PETH	ROLEU	M CO	RPOR/	TION		Lovi	ngton Paddocl	k	
	OPERA	TOR						LEASE			
	127		150	FNL	and	2500	FWL	31	T16S-R37E		
	WELL	NO.		FOO	TAGE	LOCA	TION	SEC.	TOWNSHIP	RANGE	
			·····		. <u></u>	<u> </u>					
								Tub	<u>ular Data</u>		
							<u>Surf</u>	ace Casing			
							Size	. <u> </u>	Cemented wi	th60	osx
							TOC:	<u>surface</u>	feet det	ermined by	<u>circ</u>
							Hole	size: <u>12 1/4</u>	4''		
							Inte	rmediate Casi	ng		
			0-1	.,			Size		Cemented wi	th	sx
			8/2y مرا	s" D QAN	ke		TOC:		feet det	ermined by	
			001				Hole	Size:			
							Long	String			
							Size	: <u>5 1/2"</u>	Cemented wi	th <u>1275</u>	SX
			51/2				TOC:	surface	feet det	ermined by	circ.
			64	65'			Hole	Size: _ 7 7	7/8"		•
							Tota	1 Depth: <u>646</u>	5		
							<u>Inje</u>	ction Interva	1		
							(Dor	forsted or or	feet to		feet
							(per	LOTACED OF OF	Jen-noie, tho	icate white	
Tul	bing siz	.e	-	_ lín	ed w	ith _		(mater	 ial)	S	et in a
	(brand		<u></u>			p	acker	at		feet.	
(or	describ	e any o) ther	casi	ng-t	ubing	seal).			
<u>Oth</u>	<u>er Data</u>										
1.	Name of	the in	jecti	lon f	orma	tion .			<u></u>		
2.	Name of	Field	or Po	001 (lf a	pplic	able)	<u></u>			
3.	Is this If no,	a new for wha	well t pui	dril cpose	led was	for is	nject well	ion? originally dr	illed?		
4.	Has the interva used.	well e	ver 1 give	pe pe plug	rfor ging	ated deta	in an il (s	y other zone(acks of cemer	(s)? List al nt or bridge	l such perf plug(s)	orated
5.	Give th (pools)	e depth in thi	to a s are	and n ea.	ame	of an	y ove	rlying and/or	underlying	oil or gas	zones

Texas Crude		State 31
OPERATOR		LEASE
1	990' FNL & 660'	FEL 31 16S 37E
WELL NO.	FOOTAGE LOCATI	ON SEC. TOWNSHIP RANGE
		<u>Tubular Data</u>
Completed 9-16-68	/0 3×	<u>Surface Casing</u>
P&A'd		Size: 13-3/8" Cemented with 200 SX
9-16-68	1600	TOC: Surface feet determined by calc
	1300 50 51 13.3/8"	Hole size: 17-1/2"
	214	Intermediate Casing
		Size: Cemented with SX
	1600 1700 50.54	TOC: feet determined by
		Hole size:
	4300 9578" 4400 4400'	Long String
	5960	Size: 9-5/8" Cemented with 400 SX
	35 3K 8176	TOC: 3194 feet determined by 80% calc
	8276 3551	Hole size: 12-1/4"
	Qu1)8	Total Depth: 11,159'
	9578 355X TO	<u>Injection Interval</u>
	<i>)1,1591</i>	- feet to - feet (perforated or open-hole, indicate which)
Tubing size -	lined with -	set in a - packer
at - feet.	(Or describe any o	ther casing-tubing seal).
<u>Other Data</u>		
1. Name of the i	njection formation	:
2. Name of Field	or Pool (If appli	cable) <u>East Lovington (Penn)</u>
3. Is this a new If no, for wh	well drilled for at purpose was the	Injection? <u>No</u> well originally drilled? <u>Production</u>
 Has the well perforated in bridge plug(s 	ever been perforat tervals and give p) used.	ed in any other zone(s)? List all such lugging details (sacks of cement or

5. Give the depth to and name of any overlying and/or underlying oil or gas zones (pools) in this area.

Above Abo

14

÷.

Letty Texaco		518	ite U		
OPERATOR	<u></u>		LEASE	·····	
26	660' FNL & 660'	FEL	31	165	37E
WELL NO.	FOOTAGE LOCATIO	N	SEC.	TOWNSHIP	RANGE
		<u>I</u> 1	ıbular [<u>Data</u>	
Completed	11	<u>Surface Casir</u>	Iđ		
0-10-00		Size: 8-5/	/8" Ceme	ented with	1200 SX
		TOC: Surface	feet o	determined	by calc
		Hole size: 1	11"		
		<u>Intermediate</u>	Casing		
	2097'	Size:	Cement	ted with	SX
		TOC:	fee	et determin	ed by
		Hole size:			
		Long String			
	41/2"	Size: 4-1/2"	Cement	ted with 9	50 SX
	T06405'	TOC: 2468	feet d	etermined b	y 80% cal
		Hole size:	7-7/8"		
		Total Depth:	6405 <i>'</i>		
		Injection In	<u>terval</u>		
		 (perforated or	feet to r open-l	- hole, indic	feet ate which:
Tubing size –	lined with -	set in a	-	p	acker
at - feet.	(Or describe any o	ther casing-to	ubing s	eal).	
<u>Other Data</u>					
1. Name of the i	njection formation	:			
2. Name of Field	or Pool (If appli	cable) <u>Lovin</u>	gton Pa	<u>ddock</u>	
3. Is this a new If no, for wh	well drilled for at purpose was the	Injection? <u>N</u> well origina	<u>o</u> lly dri	11ed? <u>Produ</u>	<u>iction</u>
4. Has the well perforated in bridge plug(s	ever been perforat tervals and give p) used.	ed in any oth lugging detai	er zone ls (sac	(s)? List ks of cemer	all such it or

Glorieta (Overlying)

,

TOR 1980' NO. FOC	FNL & 660'	LEASE Y FEL 31 16S 37E ION SEC. TOWNSHIP RANGE <u>Tubular Data</u> <u>Surface Casing</u> Size: 8-5/8" Cemented with 925 SX TOC: Surface feet determined by calc Hole size: 11". <u>Intermediate Casing</u> Size: Cemented with SX TOC: feet determined by Hole size: Long String Size: 4-1/2" Cemented with 750 SX TOC: 3292 feet determined by 80% cal
1980 [,] NO. FOC	FNL & 660'	Y FEL 31 16S 37E ION SEC. TOWNSHIP RANGE Tubular Data Surface Casing Size: 8-5/8" Cemented with 925 SX TOC: Surface feet determined by calc Hole size: 11"- Intermediate Casing Size: Size: Cemented with SX TOC: feet determined by Hole size: Long String Size: 4-1/2" Cemented with 750 SX TOC: 3292 feet determined by 80% cal
NO. FO(DTAGE LOCATI	ION SEC. TOWNSHIP RANGE <u>Tubular Data</u> <u>Surface Casing</u> Size: 8-5/8" Cemented with 925 SX TOC: Surface feet determined by calc Hole size: 11"- <u>Intermediate Casing</u> Size: Cemented with SX TOC: feet determined by Hole size: <u>Long String</u> Size: 4-1/2" Cemented with 750 SX TOC: 3292 feet determined by 80% cal
	85/8" 2081 '	Tubular DataSurface CasingSize:8-5/8" Cemented with 925 SXTOC: Surface feet determined by calcHole size:11".Intermediate CasingSize:Cemented with SXTOC:feet determined byHole size:Long StringSize:4-1/2" Cemented with 750 SXTOC:3292 feet determined by 80% cal
	85/8" 2081 '	Surface CasingSize:8-5/8" Cemented with 925 SXTOC: Surface feet determined by calcHole size:11"-Intermediate CasingSize:Cemented withSize:Cemented withSXTOC:feet determined byHole size:Long StringSize:4-1/2" Cemented withTOC:3292 feet determined by 80% cal
·	85/8" 2081 ·	Size: 8-5/8" Cemented with 925 SX TOC: Surface feet determined by calc Hole size: 11"- <u>Intermediate Casing</u> Size: Cemented with SX TOC: feet determined by Hole size: <u>Long String</u> Size: 4-1/2" Cemented with 750 SX TOC: 3292 feet determined by 80% cal
	85/8" 2081 ·	TOC: Surface feet determined by calc Hole size: 11"- <u>Intermediate Casing</u> Size: Cemented with SX TOC: feet determined by Hole size: <u>Long String</u> Size: 4-1/2" Cemented with 750 SX TOC: 3292 feet determined by 80% cal
	85/8" 2081 '	Hole size: 11". <u>Intermediate Casing</u> Size: Cemented with SX TOC: feet determined by Hole size: <u>Long String</u> Size: 4-1/2" Cemented with 750 SX TOC: 3292 feet determined by 80% cal
	85/8" 2081 ·	Intermediate CasingSize:Cemented withSXTOC:feet determined byHole size:Long StringSize:4-1/2"Cemented with750SXTOC:3292feet determined by80% cal
	-2081'	Size:Cemented withSXTOC:feet determined byHole size:
	411/6 11	TOC:feet determined byHole size:Long StringSize: 4-1/2"Cemented with 750 SXTOC: 3292feet determined by 80% call
	411/6 11	Hole size: <u>Long String</u> Size: 4-1/2" Cemented with 750 SX TOC: 3292 feet determined by 80% cal
	41/6 "	<u>Long String</u> Size: 4-1/2" Cemented with 750 SX TOC: 3292 feet determined by 80% cal
	au 1/4 "	Size: 4-1/2" Cemented with 750 SX TOC: 3292 feet determined by 80% cal
	d1 + 1/0 * 1	TOC: 3292 feet determined by 80% cal
	di la "	
	L'1 12	Hole size: 7-7/8"
	TO 6400.	Total Depth: 6400′
		Injection Interval
		- feet to - feet (perforated or open-hole, indicate which
e – line	ed with -	set in a - packer
feet. (Or des	scribe any o	other casing-tubing seal).
f the injection	on formation	n:
f Field or Poo	ol (If appli	icable) <u>Lovington Paddock</u>
s a new well (for what purp	drilled for pose was the	Injection? <u>No</u> e well originally drilled? <u>Production</u>
e well ever be ated intervals plug(s) used	een perforat s and give p	ted in any other zone(s)? List all such plugging details (sacks of cement or
	e - ling feet. (Or des f the injection f Field or Poor f Field or Poor s a new well of for what purp e well ever be ated intervals plug(s) used	e - lined with - feet. (Or describe any of f the injection formation f Field or Pool (If app) s a new well drilled for for what purpose was the e well ever been perfora ated intervals and give plug(s) used.

Glorieta (Overlying)

Greenhill	Petroleum Corp	oration		Lov	ington	Paddock	
OPERATOR				<u> </u>	LEASE		
#26	2130' FS	L & 216	O' FEL		31	165	37E
WELL NO.	FOOTAGE	E LOCATI	ON		SEC.	TOWNSHIP	RANGE
				<u>T</u> (<u>ubular [</u>	<u>)ata</u>	
Spud Date 8-26-53			<u>Surfac</u> Size: TOC: S Hole s	e <u>Casir</u> 8-5/8 Surface	ng 3" Ceme feet c	ented with determined	975 SX by calc
			Intern	ediate	Casing		
		. 85/8"	Size:		Cement	ted with	SX
		2041	TOC:		feet o	determined	by
			Hole s	ize:			
			Long S	<u>String</u>			
			Size:	5-1/2	" Cemen	ted with 4	100 SX
		5%"	TOC:	4077	feet de	termined by	y temp survey
	4	<i>,</i> //0'		Danth.	6959/		
		6252'	lotal	Deptn:	0202		
	,		Inject	tion In	<u>terval</u>		
			(perfo	rated o	feet to r open-	- hole, indic	feet cate which)
Tubing size	- lined w	ith –	set in	a	· •	I	packer
at - fee	t. (Or descril	be any c	other ca	asing-t	ubing s	eal).	
<u>Other Data</u>							
1. Name of t	he injection f	ormatior	1:				
2. Name of F	ield or Pool (If appli	cable)	<u>Padd</u>	<u>ock</u>		
3. Is this a If no, fo	new well dril r what purpose	led for was the	Inject e well (ion? <u>N</u> origina	<u>o</u> 11y dri	11ed? <u>Proc</u>	duction
4. Has the w perforate bridge pl	ell ever been p d intervals and ug(s) used. No	perforat d give p	ced in a plugging	any oth g detai	er zone ls (sac	(s)? List ks of ceme	all such nt or

5. Give the depth to and name of any overlying and/or underlying oil or gas zones (pools) in this area. Above Glorieta outside POR?

I

INJECTION WELL DATA SHEET

Greenhill Pet	roleum Corporation	· L	ovington	Paddock	
OPERATOR	1650/ 551 8 330	/ 551	LEASE	165	265
					PANCE
net no.			<u>Tubular I</u>	Data	
Completed 10-31-53	103/4" 179'	Surface Cas Size: 10-3/ TOC: Surfac Hole size: Intermediat Size: 7-5/8	ing 4 " Cem ce feet 13-3/4" <u>ce Casing</u> 3" Cemen	ented with determined ted with 15	300 SX by calc 540 SX
5/2. 1 	75/8" 3-428' 51/2" 706300'	TOC: Surfac Hole size: <u>Long Strinc</u> Size: 5-1/2 TOC: 3231 Hole size:	ce feet 9-7/8" 1 2" Cemen feet 6-3/4"	determined ted with 7 determined	by calc 730 SX by temp surve
4 4 1		Total Depti	h: 6300'		
	(5394 perforated	feet to or open-	6300 hole, indi	feet cate whic
Tubing size 2-7/	8" lined with IPC s	et in a	-	. 1	packer
at 5394 feet.	(Or describe any ot	her casing	-tubing s	eal).	
)ther Data	- 		. ·		
. Name of the i	njection formation:	Paddo	<u>ck</u>		
2. Name of Field	or Pool (If applic	able) <u>Pa</u>	<u>ddock</u>		
3. Is this a new If no, for wh	well drilled for I at purpose was the	njection? well origin	<u>No</u> nally dri	11ed? <u>Pro</u>	<u>duction</u>
4. Has the well perforated in bridge plug(s N	ever been perforate tervals and give pl) used. o	ed in any o ugging det	ther zone ails (sac	(s)? List ks of ceme	all such nt or
5. Give the dept zones (pools)	h to and name of ar in this area.	y overlyin	g and/or	underlying	oil or (

Above Glorieta

.

۰.

2

1

······································	ZEIROLEUM CORPORALI		LUVINGI	UN PADDUCK		
• OPERATOR # 7	330' FEL & 33()' FSL	LEASE 25	165	36E	
WELL NO.	FOOTAGE LOCA	LION	SEC.	TOWNSHIP	RANGE	
	· · · · · · · · · · · · · · · · · · ·					
	, , , , ,		Tubu	lor_Dota	• •	
Spud Date 8-1-53	. 1	<u>Surface</u> C	asing '	• . • •	•	
		Sizo: <u>8-5</u>	<u>/8"·</u>	Comented w	1th <u>800</u>	S
		TOC: <u>Su</u>	rface	feet de	termined by	
		. Nole size	:		•	
		Intermed	ato Casli	IE		
	*5/0°	Size:		Comented w		S
	2104	TOC:		Eoot de	torminod by	calc
		Nole Siz	3:	•		
	•	Long Str	lng		3	
		Size: 5	-1/2" "	Cemented v	11th 225	. 5
•		TOC . 48	50	feat de	atermined by	* 807
•	₹%"	x00. <u>4</u> (seculation of	, <u>, , , , , , , , , , , , , , , , , , </u>
	- 6015'	Hole Siz	8; <u>/-/</u>		······································	,
	L . TD 6260	, Total De	pth: <u>626</u>	50'		
	•	Injectio	<u>n Intervo</u>	1.	•	
		- (parforn	tail or on	feet to	ndicate which	foot
mahdaan adama	- 14	(forrore			, ·	
	IINGG WICH	•	(mater	ial)	·····	aac Tu
(brand & mode	1)	packor at	• 		foot,	
or describe any	other casing-tubin	g soal).		•	,	
Ither Data			•			
Name of the 1	njection formation	L		· · · · ·	, 	•
. Name of Field	or Pool (If appli	.cable)	Paddock	• •		
. Is this a new	well drilled for	injection	No		• , Production	
It no, for wh	ac purpose was che	MOTT OLI	jinariy a		······································	• •
1. Ilao the woll	over be perforated l give plugging det	l in any o ail (sack:	ther zone of come	(s)? List at or bridg	all such per to plug(s)	Eornted
intorvals and used.	-					
intorvals and used. No	·		•	•		
5. Give the dept (pools) in the	h to and name of a	iny overly	ing and/o	r underlyin	ig oil or gas	201195
5. Give the dept (pools) in the	to and name of a is area. Srieta	ny overly	Ing and/o	r underlyin	ig oil or gas	zonos

•

ı

Greenhill Pet	troleum Corporation	Lov	ington	Paddock	
OPERATOR			LEASE	100	275
		00' FWL 	30 		J/E DANCE
nell no.	TOUTAGE LOCAT		326.	TONNSHIT	MAGE
		T	ıbular	Data	
completed		<u>Surface_Casir</u>	īđ		
0-20-33		Size: 13-3/8	" Cem	ented with	350 SX
		TOC: Surface	feet	determined	by calc
	1,33/8"	llole size:	17-1/4	11	
	323'	Intermediate	Casing		
	•	Size: 9-5/8"	Cemen	ted with	2700 SX
		TOC: Surface	feet	determined	by calc
		llole size:	12-1/4"		
	95%"	<u>Long String</u>			
		Size: 7"	Cemer	ited with	450 SX
		TOC: 4113	feet de	etermined b	y 70% cal
	· ?" (258'	Hole size:	8-3/4"		
	TO 6420'	Total Depth:	6270 ⁴	,	
	10 0000	<u>Injection In</u>	<u>terval</u>		
	· ·	6109 (perforated o	feet to or open-	o 6188 -hole, indi	feet cate whic
Tubing size 2-3	8/8" lined with IPC	set in a	Номс)	packer
at 6076 feet.	(Or describe any	other casing-t	ubing	seal).	
<u>Other Data</u>					
1. Name of the	injection formation	on: <u>Padd</u>	<u>lock</u>	1	
2. Name of Fiel	d or Pool (If appl	icable) <u>Pado</u>	lock		
3. Is this a ne If no, for w	w well drilled for what purpose was th	· Injection? <u>N</u> ne well origina	<u>ło</u> ally dr	111ed? <u>Pro</u>	oduction
4. Ilas the well perforated f bridge plug(ever been perfora Intervals and give (s) used. No	ited in any oth plugging detai	ier zon ils (sa	e(s)? Lis cks of cem	t all such ent or
5. Give the dep zones (pools	oth to and name of s) in this area. Above Glorieta	any overlying	and/or	underlyin	g oil or g

Greenhil	1 Petroleum Corporation Lo	vington San Andres Unit
OPERATOR	LE	ASE
#6	660 FNL & 660 FWL	31 T16S R37E
WELL NO.	FOOTAGE LOCATION SE	C. TOUNSHIP RANGE
		<u>Tubular Data</u>
	Surface Cas	ng
	111 Sizo: 16	". Comontod with 5X
	. TOC; Sur	face foot determined by
	257' llola siza:	18
	16" Intermediat	o_Casing
Complëted 6/15/45	Size: 8 5	<u>/8</u> " Cemontod with <u>150</u> SX
Converted to	8 5/8" TOC: 1	271 foot dotorminod by calc 50%
Injection 3/28/63	lolo Sizo:	<u> </u>
-1 -01 00	Long String	
	. 7" Size: 7	" Comonted with 200 5X
•	TOC: 22	29 feet determined by 80% calc
	liole Size:	
	Total Dept	: 5000'
	Injection 1	nterval
	4538 (perforated	feet to 5000 feet or open-hole, indicate which)
Tubing size	$2^{3}/8$ lined with	IPC sot in a
		(matorial)
(brand & n	nodel)	4434foot.
(or describe a	any other casing-tubing seal).	
Other Data		
1. Name of th	he injection formationS	an Andres
2. Name of F	ield or Pool (If applicable)	ovington San Andres
3. Is this a If no, for	new well drilled for injection? r what purpose was the well origin	No 111y drilled?Production
4. Has the we intervals used.	ell ever be perforated in any other and give plugging detail (sacks of 10	r'zone(s)? List all such perforated E coment or bridge plug(s)
5. Give the (depth to and name of any overlying n this area.	and/or underlying oil or gas zones

Greennii Petr	oleum corporation .		
OPERATOR #11	940/ ENI & 1000/ EU	LEASE	375
WF11 NO	FOOTAGE LOCATION	SEC. TOWNSI	IP RANGE
		<u>jupujar vata</u>	
oud Date J-01-53	<u>Surf</u>	<u>ce Casing</u>	
onverted to	Size	13-3/8 " Cemented wi	1th 330 SX
Injection	TOC:	Surface feet determin	ned by calc
12/00	L/348" 3-47' Hole	size: 17-1/4"	
	Inte	mediate Casing	
	Size	7-5/8" Cemented with	h 2230 SX
	тос	Surface feet determin	ned by calc
	25/8" Hold	size: 11"	
	3295' Long	String	
	Siz	: 5-1/2" Cemented wit	h 350 SX
	. TOC	4208 feet determine	d by 70% cal
	Hol	size: 7-7/8"	
	5%" 6115' Tot	1 Depth: 6270'	
	Inj	ction Interval	
	(per	115 feet to 627 orated or open-hole, f	0 feet ndicate which
ubing size 2"	lined with IPC set	na -	packer
t 6034 feet.	(Or describe any other	casing-tubing seal).	
Ither Data			
. Name of the i	njection formation:	<u>Paddock</u>	
. Name of Field	or Pool (If applicabl) <u>Paddock</u>	
. Is this a new If no, for wh	well drilled for Inje at purpose was the wel	tion? <u>No</u> originally drilled?	<u>Production</u>
. Has the well perforated in bridge plug(s N	ever been perforated i tervals and give plugg) used. lo	any other zone(s)? l ng details (sacks of c	ist all suc cement or

Above Glorieta

16

	18
•	
	INJECTION WELL DATA SHEET
Greenhill Pet	roleum Corporation Lovington Paddock
· OPERATOR	
	781 FNL & 660° FWL 31 16S 37E
WELL NO.	TOTAL LONATON SLO. TOWNSMIL MAND
	<u>Tubular_Data</u>
	Surface Casing
d Date	Size: 13 3/8 ". Comented with 350 . SX
	TOC: Surface feet determined by calc
· · ·	L 133/8 "
	324'
	Intermediate Casing
	Size: 95/8 " Cemented with 2600 SX
	L95/8" TOC: Surface foot determined by calc.
	4644 Hole Size: 1274
	I one Chrine
	Size: 7 Cemented with 450 SX
	TOC: <u>2675</u> feet determined by <u>70%</u>
	- 7 ¹¹ Hole Size: <u>814</u>
TD	6250' Total Depth: 6250'
	Injection Interval
	6115 feet to 6248 feet
AD 1 DC	(material)
(brand & model	packer atfeet.
or describe any c	other casing-tubing seal).
<u>hor Data</u>	
Name of the fr	Paddock
, Name of Field	or root (ir applicable)
Is this a new If no, for wha	well drilled for injection? <u>No</u> at purpose was the well originally drilled? <u>production</u>
, llas the well e intervals and used. No	aver be perforated in any other zone(s)? List all such perforated give plugging detail (sacks of coment or bridge plug(s)
. Give the depth (pools) in thi	n to and name of any overlying and/or underlying oil or gas zones is area.
A	bove Glorieta
-	

eenhill Petrole	um Corporation Lovington Paddock
OPERATOR	LEASE
24	2310' FNL & 1968" FWL 31 16S 37E
WELL NO.	FOOTAGE LOCATION SEC. TOWNSHIP RANGE
	<u>Tubular_Data</u>
oud Date	Surface_Casing
-12-53	Size, $85/8$ " Comented with 950 . SX
eepen to 6280	
	TOC: Survey reet decomined by <u>carc.</u>
	Nole size: _//
	Intermediate Casing
	Size: Cemented with 5X
	TOG. Surface feet determined by calc
• *	
	Long String
	Size: 5 1/2 " Cemented with 400 SX
	TOC: 4077 feet determined by temp surve
	Hole Size: $7^{7/8}$
	5 ¹ /2 ¹ 6257 ¹
	Total Depth: 0257
	Injection Interval
	6111 feet to 6280 feet
. 2 3	(perforated or open-hole, indicate which)
Tubing size	11 Inod with for a set in a
Baker AD-1 PC	packer atfeet.
(brand & mod (or describe any	el) other casing-tubing seal).
Other Data	
Ocher_Daca	Paddock
1. Name of the	injection formation
2. Name of Fiel	d or Pool (If applicable) Paddock
3. Is this a ne	w well drilled for injection? No
IE no, for w	that purpose was the well originally drilled? Production
4. Has the well	ever be perforated in any other zone(s)? List all such perforated
intervals an used.	id give plugging detail (sacks of cement or bridge plug(s) No
5. Give the dep	th to and name of any overlying and/or underlying oil or gas zones
(pools) in t At	nis area. Nove Glorieta

	Greenh111	Petroleum Corporation	Lovington San Andres
	OPERATOR	· · · · · · · · · · · · · · · · · · ·	LEASE [.]
	8 ·	2150' FNL & 366' FEL	31 16S 37E
•	WELL NO.	FOOTAGE LOCATION	SEC. TOWNSHIP RANGE

Tubular Data

Completed Surface Casing 7-24-44 Size: 8-5/8" Cemented with 500 SX TOC: Surface feet determined by calc Hole size: 2048 Intermediate Casing Size: Cemented with SX TOC: feet determined by Hole size: Long String 51/2" 4610 Size: 5-1/2" Cemented with 500 SX TD TOC: 1886 feet determined by 80% calc 4918' Hole size: 7-7/8" Total Depth: 4978' Injection Interval feet to feet (perforated or open-hole, indicate which) Tubing size lined with - set in a packer -(Or describe any other casing-tubing seal). at feet. Other Data Name of the injection formation: 1. 2. Name of Field or Pool (If applicable) Lovington San Andres Is this a new well drilled for Injection? No 3. If no, for what purpose was the well originally drilled? <u>Production</u> 4. Has the well ever been perforated in any other zone(s)? List all such perforated intervals and give plugging details (sacks of cement or bridge plug(s) used.

5. Give the depth to and name of any overlying and/or underlying oil or gas zones (pools) in this area.

(Above) Grayburg

Greenhill Petroleum Corporation Lovington San Andres Unit OPERATOR LEASE · 31 #16 2310 FEL & 1980 FSL T16S R37E WELL NO. FOOTAGE LOCATION SEC. TOWNSHIP RANGE Tubular Data Surface Casing Size: 13 "Cemented with 200 SX TOC: _____ feet determined by ____ Hole size: $15 \frac{1}{4}$ 13" 294' Intermediate Casing Size: 8 5/8 " Cemented with 500 SX Completed 85/8 TOC: ______ feet determined by _____ 12/6/39 Nole Size: $10^{1/4}$. 3005' Converted to Injection Long String 3/16/63 5"2" Size: $5^{1/2}$ " Cemented with 200 SX 460.5' TOC: <u>3343</u> feet determined by <u>80% calc</u> 4950' 6 ³/4 Hole Size: Total Depth: _____4950' Injection Interval feet to ______ 4950 4605 feet (perforated or open-hole, indicate which) Tubing size _____2 3/8___ lined with ______ IPC (material) _ set in a _____ packer at ___ 4557 feet. (brand & model) (or describe any other casing-tubing seal). Other Data Name of the injection formation ______ San Andres 1. Name of Field or Pool (If applicable) Lovington San Andres 2. No 3. Is this a new well drilled for injection? If no, for what purpose was the well originally drilled? Production Has the well ever be perforated in any other zone(s)? List all such perforated 4, intervals and give plugging detail (sacks of cement or bridge plug(s) used. No . . . Give the depth to and name of any overlying and/or underlying oil or gas zones 5. (pools) in this area.

OPERATOR	LEASE
# 1	1655' FSL & 330' FEL 30 16S 37F
WELL NO.	FOOTAGE LOCATION SEC. TOWNSHIP RANGE
	Tubular Data
Completed	Surface Casing
8-25-54	Sizo: 13-3/8 Comented with 300 S
	TOC: Surface feet determined by
	285' Hole size: <u>15"</u>
	Intermediate Casing
	Size: 8-5/8 " Cemented with 1600
	TOC: feet determined by
	g5/g Hole Size: 10-3/4"
	Long String
	Size: 5-1/2 " Cemented with 425
•	TOC: 4080 feet determined by 70%
•	- 5 ⁴ 6105'
	$\frac{1}{10} \frac{1}{10} \frac$
.	10 6311 lotal Depth: <u>0277</u>
	Injection Interval
· .	feet tofeet (perforated or open-hole, indicate which)
ubing size -	lined with - set in
	(material)
(brand & model)) ther conting-tubing goal)
Las Data	thet casing-tubing beat/.
<u>ner Data</u>	
Name of the inj	jection formation
Name of Field (or Pool (If applicable) Paddock
Is this a new w If no, for what	well drilled for injection? <u>No</u> t purpose was the well originally drilled? <u>Production</u>
llas the well evident of the second s	ver be perforated in any other zone(s)? List all such perforated give plugging detail (sacks of cement or bridge plug(s)
Give the denth	to and name of any overlying and/or underlying oil or set young
	a oron
(pools) in this	

1