



# GREENHILL PETROLEUM CORPORATION

Incorporated in Delaware, U.S.A.

11490 WESTHEIMER ROAD, SUITE 200  
HOUSTON, TEXAS 77077-6841  
TELEPHONE (713) 589-8484  
FAX (713) 589-7892

May 21, 1992

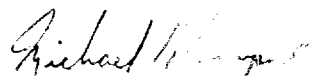
State of New Mexico  
Oil Conservation Division  
Energy, Minerals and Natural Resources Department  
Attention: Mr. David Catanach  
P. O. Box 2088  
Santa Fe, New Mexico 87501-2088

Re: Eunice Monument Unit Area  
Well Numbers 21 and 28  
Lea County, New Mexico

Dear Mr. Catanach:

Enclosed find the application covering the conversion of Well Numbers 21 and 28 from producing oil wells to injection wells in the Eunice Monument Area. I will forward the certified receipts whereby we notified the surface owners, mineral owner, and offset operators when I receive them. Please advise if I can provide you with additional information.

Very truly yours,



Michael J. Newport  
Land Manager-Permian Basin

MJN:sjs  
92.373

Enclosures



# GREENHILL PETROLEUM CORPORATION

11490 WESTHEIMER ROAD, SUITE 200  
HOUSTON, TEXAS 77077-6841  
TELEPHONE (713) 589-8484  
FAX (713) 589-7892

Incorporated in Delaware, U.S.A.

VIA CERTIFIED MAIL

May 21, 1992

Chevron USA Inc.  
P. O. Box 1150  
Midland, Texas 79702

Re: Eunice Monument Unit Area  
Well Numbers 21 and 28  
Lea County, New Mexico

Gentlemen:

Enclosed find the application covering the conversion of Well Numbers 21 and 28 from producing oil wells to injection wells. We are required by the Commission to submit a copy of the application by certified mail to the offset operators.

Very truly yours,

Michael J. Newport  
Land Manager-Permian Basin

MJN:sjs  
92.375

Enclosure



# GREENHILL PETROLEUM CORPORATION

11490 WESTHEIMER ROAD, SUITE 200  
HOUSTON, TEXAS 77077-6841  
TELEPHONE (713) 589-8484  
FAX (713) 589-7892

Incorporated in Delaware, U.S.A.

VIA CERTIFIED MAIL

May 21, 1992

Mr. Delbert Dale Cooper  
Mr. Jimmie Tom Cooper  
dba Cooper Brothers  
P. O. Box 6  
Monument, New Mexico 88265

Re: Eunice Monument Unit Area  
Well Numbers 21 and 28  
Lea County, New Mexico

Gentlemen:

Enclosed find the application covering the conversion of Well Numbers 21 and 28 from producing oil wells to injection wells. We are required by the Commission to submit a copy of the application by certified mail to the surface owners.

Very truly yours,

Michael J. Newport  
Land Manager-Permian Basin

MJN:sjs  
92.371

Enclosure

APPLICATION FOR AUTHORIZATION TO INJECT

- I. Purpose: ☒ Secondary Recovery ☐ Pressure Maintenance ☐ Disposal ☐ Storage  
Application qualifies for administrative approval? ☒ Yes ☐ No
- II. Operator: GREENHILL PETROLEUM CORPORATION  
Address: 11490 Westheimer, Suite 200, Houston, Texas 77077  
Contact party: Mike Newport Phone: (713) 589-8484
- 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? ☒ Yes ☐ No  
If yes, give the Division order number authorizing the project R-3786.
- 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  
Signature: *Michael J. Newport* Date: 5-20-92
- \* 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.

## 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.

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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.



# GREENHILL PETROLEUM CORPORATION

11490 WESTHEIMER ROAD, SUITE 200  
HOUSTON, TEXAS 77077-6841  
TELEPHONE (713) 589-8484  
FAX: (713) 589-7892

Incorporated in Delaware, U.S.A.

June 4, 1992

State of New Mexico  
Oil Conservation Division  
Energy, Minerals and Natural Resources Department  
P. O. Box 2088  
Santa Fe, New Mexico 87501-2088

Attention: Mr. David Catanach

Re: Eunice Monument Area  
Well Numbers 21 and 28  
Lea County, New Mexico

Dear Mr. Catanach:

Enclosed please find copies of the certified receipts whereby the surface owner and the offset operator have been notified of the conversion of Eunice Monument Well Numbers 21 and 28 from producing oil wells to water injection wells.

Very truly yours,

Michael J. Newport  
Land Manager-Permian Basin

MJN:sjs  
92.412

Enclosures

● **SENDER:** Complete items 1 and 2 when additional services are desired, and complete items 3 and 4.  
Put your address in the "RETURN TO" Space on the reverse side. Failure to do so will prevent this card from being returned to you. The return receipt fee will provide you the name of the person delivered to and the date of delivery. For additional fees the following services are available. Consult postmaster for fees and check box(es) for additional service(s) requested.

1. ☐ Show to whom delivered, date, and addressee's address. (Extra charge) 2. ☐ Restricted Delivery (Extra charge)

3. Article Addressed to:  Mr. Delbert Dale Cooper Mr. Jimmie Tom Cooper dba Cooper Brothers P. O. Box 6 Monument, NM 88265	4. Article Number <b>P 799533916</b>  Type of Service: <input type="checkbox"/> Registered <input type="checkbox"/> Insured <input checked="" type="checkbox"/> Certified <input type="checkbox"/> COD <input type="checkbox"/> Express Mail <input checked="" type="checkbox"/> Return Receipt for Merchandise  Always obtain signature of addressee or agent and <b>DATE DELIVERED</b> .
5. Signature — Addressee X <i>Betty R Cooper</i>	8. Addressee's Address (ONLY if requested and fee paid)
6. Signature — Agent X	
7. Date of Delivery <i>5-29-92</i>	

PS Form 3811, Apr. 1989

★ U.S.G.P.O. 1989-238-815

**DOMESTIC RETURN RECEIPT**

● **SENDER:** Complete items 1 and 2 when additional services are desired, and complete items 3 and 4.  
Put your address in the "RETURN TO" Space on the reverse side. Failure to do so will prevent this card from being returned to you. The return receipt fee will provide you the name of the person delivered to and the date of delivery. For additional fees the following services are available. Consult postmaster for fees and check box(es) for additional service(s) requested.

1. ☐ Show to whom delivered, date, and addressee's address. (Extra charge) 2. ☐ Restricted Delivery (Extra charge)

3. Article Addressed to:  Chevron, USA Inc. P. O. Box 1150 Midland, Texas 79702	4. Article Number <b>P 799 533 916</b>  Type of Service: <input type="checkbox"/> Registered <input type="checkbox"/> Insured <input checked="" type="checkbox"/> Certified <input type="checkbox"/> COD <input type="checkbox"/> Express Mail <input checked="" type="checkbox"/> Return Receipt for Merchandise  Always obtain signature of addressee or agent and <b>DATE DELIVERED</b> .
5. Signature — Addressee X	8. Addressee's Address (ONLY if requested and fee paid)
6. Signature — Agent X <i>David A. England</i>	
7. Date of Delivery	

PS Form 3811, Apr. 1989

★ U.S.G.P.O. 1989-238-815

**DOMESTIC RETURN RECEIPT**

INJECTION WELL DATA SHEET

Greenhill Petroleum Corporation		Eunice Monument		
OPERATOR		LEASE		
21	2310 FSL & 330 FWL	19	20S	37E
WELL NO.	FOOTAGE LOCATION	SEC.	TOWNSHIP	RANGE

Tubular Data

Surface Casing

Size: 10 3/4" Cemented with 125 SX  
TOC: Surface feet determined by circ.  
Hole size: 12 1/4"

Intermediate Casing

Size: 7 5/8" Cemented with 200 SX  
TOC: 430 feet determined by 60% calc  
Hole Size: 9 5/8"

Long String

Size: 5 1/2" Cemented with 150 SX  
TOC: 1606 feet determined by 60% calc  
Hole Size: 6 3/4"

Total Depth: ~~3874~~ 3957

Injection Interval

3668 feet to 3957 feet  
(perforated or open-hole, indicate which)

Tubing size 2 3/8 lined with IPC set in a  
(material)  
\_\_\_\_\_ packer at 3625 feet.  
(brand & model)  
(or describe any other casing-tubing seal).

Other Data

1. Name of the injection formation Grayburg San Andres
2. Name of Field or Pool (If applicable) Eunice Monument Grayburg San Andres
3. Is this a new well drilled for injection? NO  
If no, for what purpose was the well originally drilled? production
4. Has 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.  
No
5. Give the depth to and name of any overlying and/or underlying oil or gas zones (pools) in this area.



15

# INJECTION WELL DATA SHEET

Greenhill Petroleum Corporation		Eunice Monument Unit		
OPERATOR		LEASE		
28	330 FSL & 330 FWL	19	20S	37E
WELL NO.	FOOTAGE LOCATION	SEC.	TOWNSHIP	RANGE

## Tubular Data

### Surface Casing

Size: 13" Cemented with 125 SX

TOC: Surface feet determined by calc

Hole size: 16"

### Intermediate Casing

Size: 9 5/8" Cemented with 650 SX

TOC: Surface feet determined by calc.

Hole Size: 12 1/4"

### Long String

Size: 7" Cemented with 250 SX

TOC: 1109 feet determined by 60% calc

Hole Size: 8 5/8"

Total Depth: ~~3873~~ 3930

### Injection Interval

3710 feet to 3930 feet  
(perforated or open-hole, indicate which)

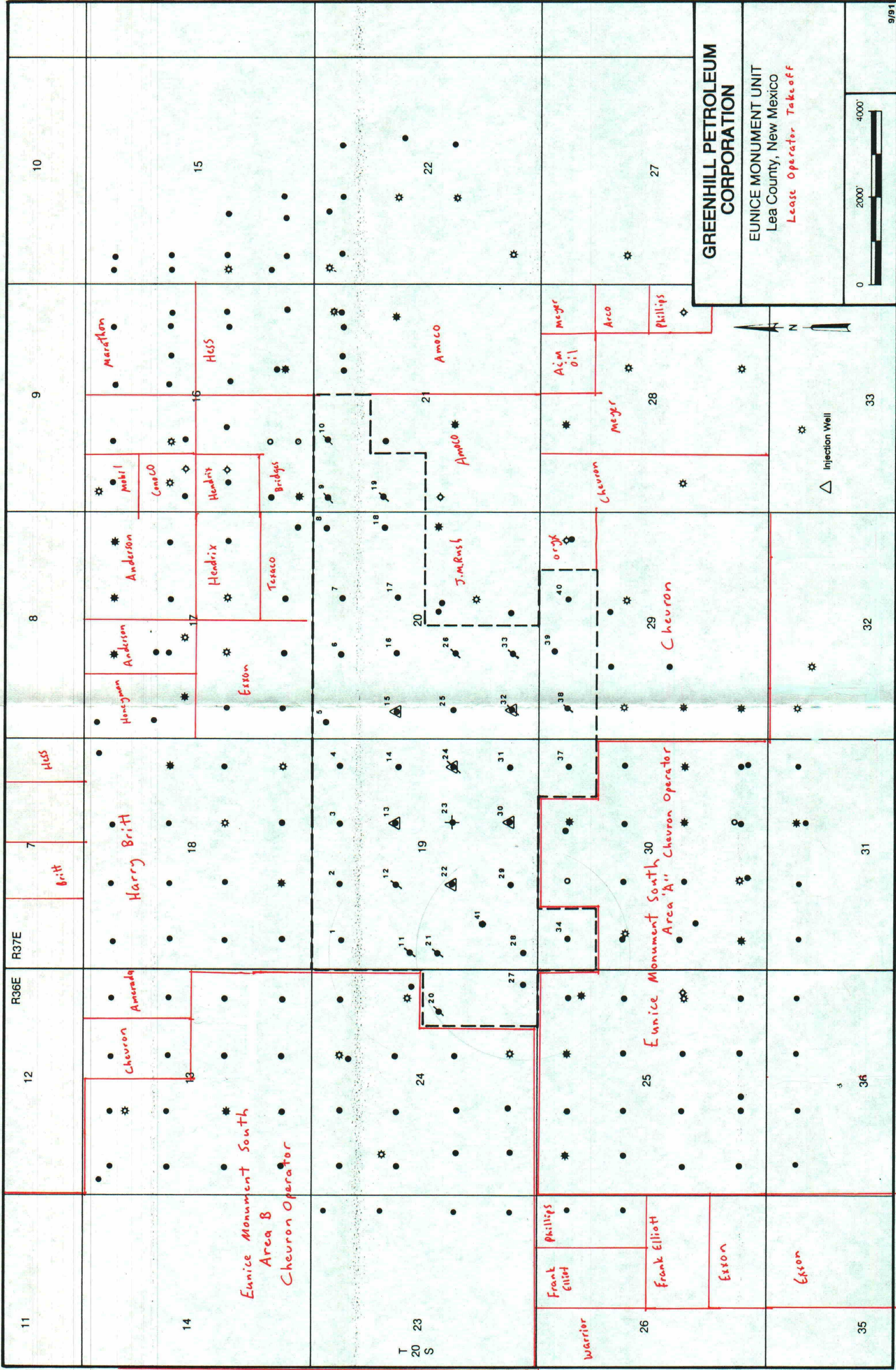
Tubing size 2 3/8 lined with IPC set in a  
(material)  
packer at 3600 feet.  
(brand & model)  
(or describe any other casing-tubing seal).

## Other Data

- Name of the injection formation Grayburg San Andres
- Name of Field or Pool (If applicable) Eunice Grayburg San Andres
- Is this a new well drilled for injection? No  
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 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 (pools) in this area.

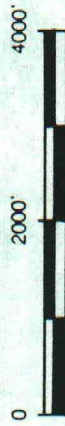
Tubb



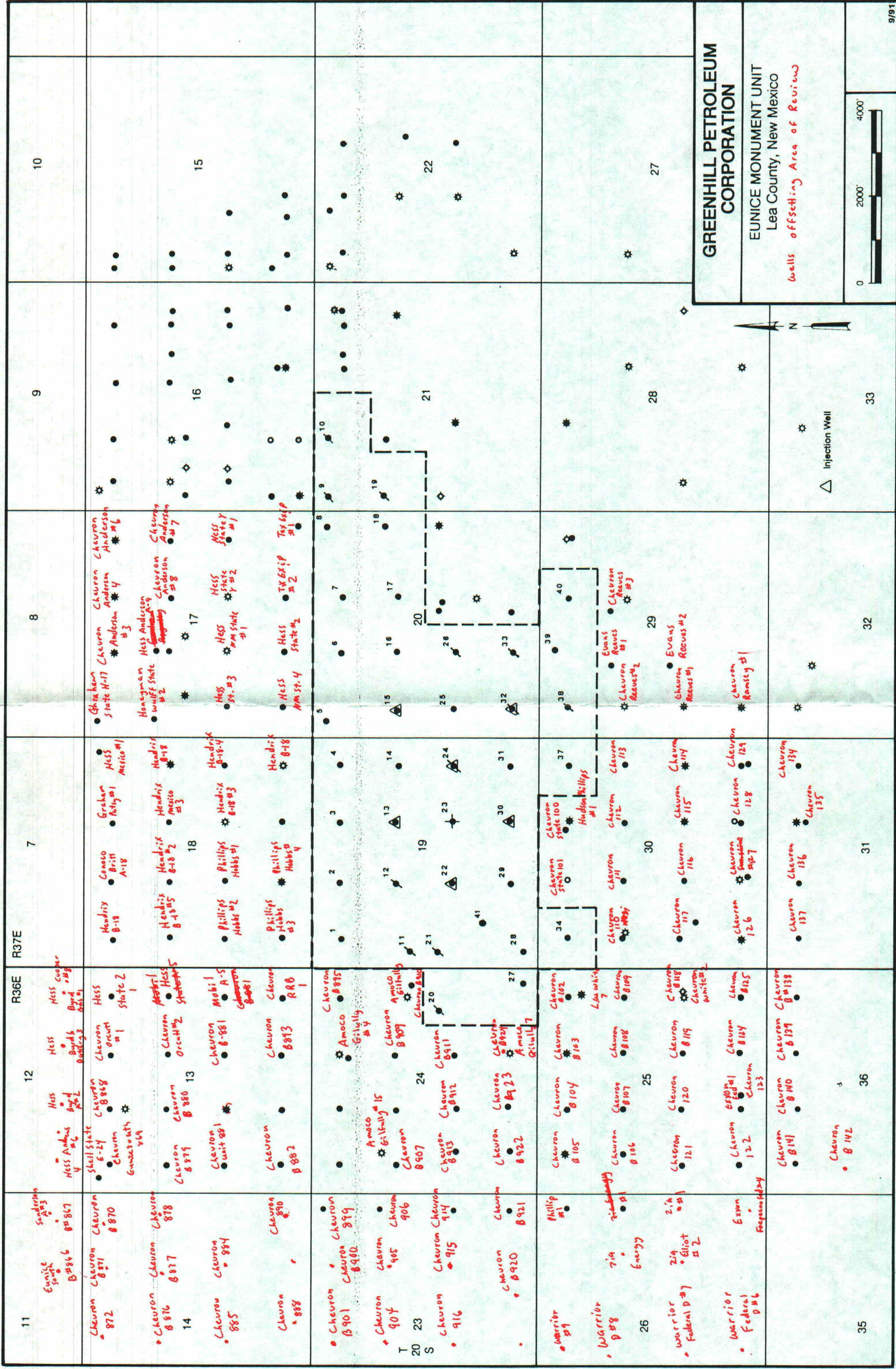


GREENHILL PETROLEUM CORPORATION

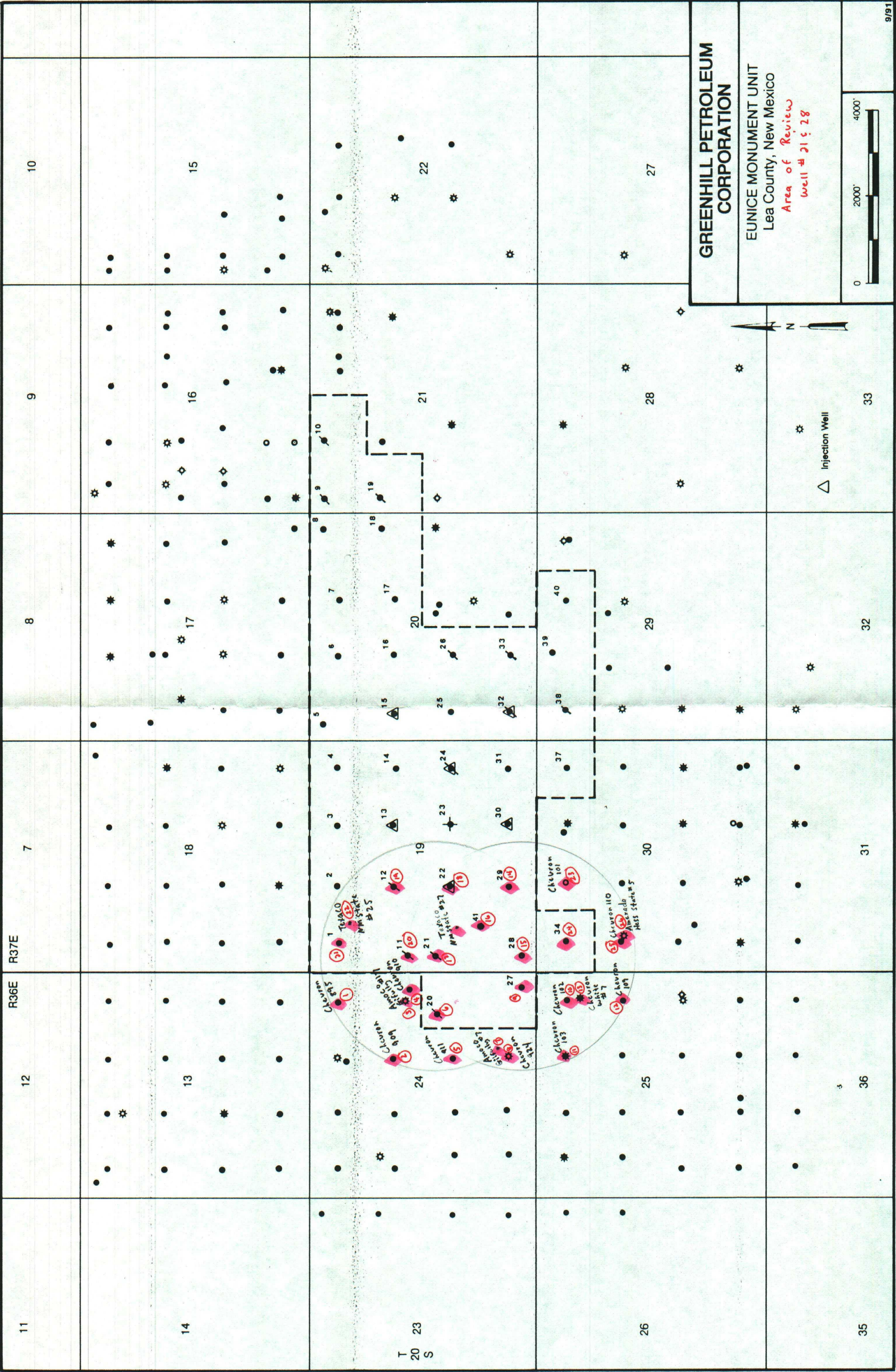
EUNICE MONUMENT UNIT  
Lea County, New Mexico  
*Lease Operator Takeoff*















# GREENHILL PETROLEUM CORPORATION

Incorporated in Delaware U.S.A.

DIVISION  
11490 WESTHEIMER ROAD, SUITE 200  
HOUSTON, TEXAS 77077-0841

TELEPHONE (713) 589-8484  
FAX (713) 589-7892

June 8, 1992

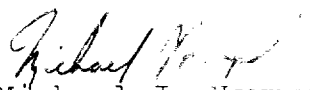
State of New Mexico  
Attention: Mr. David Catanach  
P. O. Box 2088  
Santa Fe, New Mexico 87501-2088

Re: Eunice Monument Area  
Well Numbers 21 and 28  
Lea County, New Mexico

Dear Mr. Catanach:

Enclosed find the proof of publication covering Well Numbers 21 and 28. Greenhill Petroleum Corporation has proposed that the wells be converted from production to injection pursuant to our letter and application dated May 21, 1992.

Very truly yours,



Michael J. Newport  
Land Manager-Permian Basin

MJN:sjs  
92.417

Enclosure

AFFIDAVIT OF PUBLICATION

State of New Mexico,  
County of Lea.

I, Kathi Bearden

of the Hobbs Daily News-Sun, a daily newspaper published at Hobbs, New Mexico, do solemnly swear that the clipping attached hereto was published once a week in the regular and entire issue of said paper, and not a supplement thereof for a period

of \_\_\_\_\_

One weeks.  
Beginning with the issue dated

May 31, 1992  
and ending with the issue dated

May 31, 1992

Kathi Bearden  
General Manager

Sworn and subscribed to before

me this 1 day of

June, 1992  
Paula Parrish  
Notary Public.

My Commission expires \_\_\_\_\_

Aug. 5, 1995  
(Seal)

This newspaper is duly qualified to publish legal notices or advertisements within the meaning of Section 3, Chapter 167, Laws of 1937, and payment of fees for said publication has been made.

Phone (713) 589-8484 Contact: Michael J. Newport-Greenhill Petroleum Corporation plans to convert the following producing wells to injection wells within the Eunice Monument Field Area. The purpose of the produced injection wells is to increase the reservoir pressure in order to improve the recovery of hydrocarbons. The wells are within Section 19, T20S-R37E, Lea County, New Mexico and are Well Numbers 21 and 28. The injection intervals are approximately between the depths of 3599 feet and 3990 feet in the Grayburg and San Andres Formations. The maximum injection rates are 2000 PSI and 1500 BWPD. Interested parties must file objections or request for hearing with the Oil Conservation Division, P.O. Box 2088, Santa Fe, New Mexico 87501, within fifteen (15) days.

LEGAL NOTICE  
May 31, 1992  
Greenhill Petroleum Corporation 11490  
Westheimer, Suite 200,  
Houston, Texas 77077-

# INJECTION WELL DATA SHEET

Chevron		Eunice Monument South		
OPERATOR		LEASE		
895	660 FNL & 660 FEL	24	20S	36E
WELL NO.	FOOTAGE LOCATION	SEC.	TOWNSHIP	RANGE

## Tubular Data

### Surface Casing

Size: 13" " Cemented with 175. SX

TOC: Surface feet determined by circulation

Hole size: 17 1/2"

### Intermediate Casing

Size: 9 5/8" " Cemented with 500 SX

TOC: 1163 feet determined by 60% calc.

Hole Size: 12"

### Long String

Size: 7" " Cemented with 300 SX

TOC: 2346 feet determined by 60% calc.

Hole Size: 8 3/4"

Total Depth: 3872'

### Injection Interval

feet to feet  
(perforated or open-hole, indicate which)

Tubing size lined with set in a  
(material)  
packer at feet.  
(brand & model)  
(or describe any other casing-tubing seal).

## Other Data

- Name of the injection formation Eunice Monument Grayburg S. A.
- Name of Field or Pool (If applicable) Eunice Monument GB/SA
- Is this a new well drilled for injection? No  
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 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 (pools) in this area.

# INJECTION WELL DATA SHEET

Chevron

Eunice Monument South Unit B

OPERATOR	LEASE			
909	1980 FNL & 1980 FEL	24	20S	36E
WELL NO.	FOOTAGE LOCATION	SEC.	TOWNSHIP	RANGE

## Tubular Data

### Surface Casing

Size: 13" ~ Cemented with 200 SX

TOC: Surface feet determined by circulation

Hole size: 17 1/4"

### Intermediate Casing

Size: 9 5/8" ~ Cemented with 600 SX

TOC: 852 feet determined by 60% calc.

Hole Size: 12"

### Long String

Size: 7" ~ Cemented with 300 SX

TOC: 2349 feet determined by 60% calc.

Hole Size: 8 3/4"

Total Depth: 3911'

### Injection Interval

                     feet to                      feet  
(perforated or open-hole, indicate which)

Tubing size                      lined with                      set in a  
                     (material)  
                     packer at                      feet.  
(brand & model)  
(or describe any other casing-tubing seal).

## Other Data

- Name of the injection formation
- Name of Field or Pool (If applicable) Eunice Monument GB/SA
- Is this a new well drilled for injection? No  
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 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 (pools) in this area.



## INJECTION WELL DATA SHEET

Amoco

Gillully Federal Gas Co.

OPERATOR	LEASE			
17	2200 FNL & 660 FEL	24	20S	36E
WELL NO.	FOOTAGE LOCATION	SEC.	TOWNSHIP	RANGE

Tubular DataSurface CasingSize: 8 5/8" Cemented with 425 SXTOC: 218 feet determined by 60% calcHole size: 12 1/4 "Intermediate CasingSize:        " Cemented with        SXTOC:        feet determined by       Hole Size:       Long StringSize: 5 1/2" " Cemented with 640 SXTOC: 763 feet determined by 60% calcHole Size: 7 7/8"Total Depth: 3600'Injection Interval       feet to        feet  
(perforated or open-hole, indicate which)

Tubing size        lined with        set in a  
(material)  
       packer at        feet.  
(brand & model)  
(or describe any other casing-tubing seal).

Other Data

- Name of the injection formation
- Name of Field or Pool (If applicable) Eumont Queen
- Is this a new well drilled for injection? No  
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 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 (pools) in this area.

INJECTION WELL DATA SHEET

Chevron		Eunice Monument South B		
OPERATOR		LEASE		
910	2310 FNL & 330 FEL	24	20S	36E
WELL NO.	FOOTAGE LOCATION	SEC.	TOWNSHIP	RANGE

Tubular Data

Surface Casing

Size: 13" " Cemented with 225. SX  
TOC: Surface feet determined by Circ.  
Hole size: 17 1/2 "

Intermediate Casing

Size: 9 5/8" Cemented with 600 SX  
TOC: 846 feet determined by 60% calc.  
Hole Size: 12"

Long String

Size: 7" " Cemented with 300 SX  
TOC: 2332 feet determined by 60% calc.  
Hole Size: 8 3/4 "  
Total Depth: 3865'

Injection Interval

----- feet to ----- feet  
(perforated or open-hole, indicate which)

Tubing size ----- lined with ----- set in a  
----- (material)  
----- packer at ----- feet.  
(brand & model)  
(or describe any other casing-tubing seal).

Other Data

- 1. Name of the injection formation -----
- 2. Name of Field or Pool (If applicable) Eunice Monument GB/SA
- 3. Is this a new well drilled for injection? No  
If no, for what purpose was the well originally drilled? production
- 4. Has 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.  
No
- 5. Give the depth to and name of any overlying and/or underlying oil or gas zones (pools) in this area.



## INJECTION WELL DATA SHEET

Greenhill Petroleum Corporation

Eunice Monument

OPERATOR

LEASE

20

2310 FSL &amp; 990 FEL

24

20S

36E

WELL NO.

FOOTAGE LOCATION

SEC.

TOWNSHIP

RANGE

Tubular DataSurface CasingSize: 13" Cemented with 200 SXTOC: Surface feet determined by calc.Hole size: 17 1/2"Intermediate CasingSize: 9 5/8" Cemented with 400 SXTOC: 56 feet determined by 60% calc.Hole Size: 12"Long StringSize: 7" Cemented with 300 SXTOC: 2343 feet determined by 60% calc.Hole Size: 8 3/4"Total Depth: 3856'Injection Interval                     feet to                      feet  
(perforated or open-hole, indicate which)Tubing size                      lined with                      set in a  
(material)                     packer at                      feet.  
(brand & model)  
(or describe any other casing-tubing seal).Other Data

1. Name of the injection formation
2. Name of Field or Pool (If applicable) Eunice Monument Grayburg San Andres
3. Is this a new well drilled for injection? No  
If no, for what purpose was the well originally drilled? production
4. Has 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 to and name of any overlying and/or underlying oil or gas zones (pools) in this area.

The well is  
currently  
shut-in.

# INJECTION WELL DATA SHEET

Amoco

Gillully Federal Gas Company

OPERATOR	LEASE			
7	660 FSL & 1980 FEL	24	20S	36E
WELL NO.	FOOTAGE LOCATION	SEC.	TOWNSHIP	RANGE

## Tubular Data

### Surface Casing

Size: 13" Cemented with 200. SX

TOC: Surface feet determined by circ.

Hole size: 17 1/4"

### Intermediate Casing

Size: 9 5/8" Cemented with 600 SX

TOC: 838 feet determined by 60% calc.

Hole Size: 12"

### Long String

Size: 7" Cemented with 500 SX

TOC: 1500' feet determined by

Hole Size: 8 3/4"

Total Depth: 3858'

### Injection Interval

----- feet to ----- feet  
(perforated or open-hole, indicate which)

Tubing size ----- lined with ----- set in a  
----- (material)  
----- packer at ----- feet.

(brand & model)

(or describe any other casing-tubing seal).

## Other Data

- Name of the injection formation -----
- Name of Field or Pool (If applicable) Eumont Queen
- Is this a new well drilled for injection? No  
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 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 (pools) in this area.

# INJECTION WELL DATA SHEET

Chevron		Eunice Monument South Unit B		
OPERATOR		LEASE		
924	602 FSL 2090 FEL	24	20S	36E
WELL NO.	FOOTAGE LOCATION	SEC.	TOWNSHIP	RANGE

## Tubular Data

### Surface Casing

Size: 8 5/8" Cemented with 800 SX  
 TOC: surface feet determined by circulation  
 Hole size: 12 1/4"

### Intermediate Casing

Size:         " Cemented with          SX  
 TOC:          feet determined by           
 Hole Size:         

### Long String

Size: 5 1/2" Cemented with 805 SX  
 TOC: surface feet determined by circ.  
 Hole Size: 7 7/8"  
 Total Depth: 4160'

### Injection Interval

         feet to          feet  
 (perforated or open-hole, indicate which)

Tubing size          lined with          set in a  
         (material)  
         packer at          feet.  
 (brand & model)  
 (or describe any other casing-tubing seal).

## Other Data

- Name of the injection formation
- Name of Field or Pool (If applicable) Eunice Monument GB/SA
- 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 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 (pools) in this area.

# INJECTION WELL DATA SHEET

Greenhill Petroleum Corporation		Eunice Monument Unit		
OPERATOR		LEASE		
27	330 FSL & 330 FEL	24	20S	36E
WELL NO.	FOOTAGE LOCATION	SEC.	TOWNSHIP	RANGE

## Tubular Data

### Surface Casing

Size: 13" Cemented with 300 SX

TOC: Surface feet determined by Circ.

Hole size: 15 1/2"

### Intermediate Casing

Size: 9 5/8" Cemented with 400 SX

TOC: 235 feet determined by 60% calc

Hole Size: 12 1/2"

### Long String

Size: 7" Cemented with 300 SX

TOC: 2246 feet determined by 60% calc

Hole Size: 8 3/4"

Total Depth: 3861'

### Injection Interval

----- feet to ----- feet  
(perforated or open-hole, indicate which)

Tubing size \_\_\_\_\_ lined with \_\_\_\_\_ set in a  
(material)  
\_\_\_\_\_ packer at \_\_\_\_\_ feet.  
(brand & model)  
(or describe any other casing-tubing seal).

## Other Data

- Name of the injection formation \_\_\_\_\_
- Name of Field or Pool (If applicable) Eunice Monument Grayburg San Andres
- Is this a new well drilled for injection? No  
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 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 (pools) in this area.

INJECTION WELL DATA SHEET

Chevron USA		Eunice Monument South		
OPERATOR		LEASE		
102	660 FNL & 660 FEL	25	20S	36E
WELL NO.	FOOTAGE LOCATION	SEC.	TOWNSHIP	RANGE

Tubular Data

Surface Casing

Size: 10 3/4" " Cemented with 35 SX  
TOC: surface feet determined by circ.  
Hole size: 13 3/4 "

Intermediate Casing

Size: 7 5/8" " Cemented with 225 SX  
TOC: surface feet determined by circ.  
Hole Size: 9 7/8 "

Long String

Size: 5 1/2" " Cemented with 150 SX  
TOC: 1750' feet determined by C-101  
Hole Size: 6 3/4 "  
Total Depth: 3998'

Injection Interval

\_\_\_\_\_ feet to \_\_\_\_\_ feet  
(perforated or open-hole, indicate which)

Tubing size \_\_\_\_\_ lined with \_\_\_\_\_ set in a  
\_\_\_\_\_ (material)  
\_\_\_\_\_ packer at \_\_\_\_\_ feet.  
(brand & model)  
(or describe any other casing-tubing seal).

Other Data

- Name of the injection formation \_\_\_\_\_
- Name of Field or Pool (If applicable) Eunice Monument Grayburg SA
- Is this a new well drilled for injection? No  
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 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 (pools) in this area.



# INJECTION WELL DATA SHEET

Chevron		Eunice Monument Grayburg San Andres		
OPERATOR		LEASE		
103	660 FNL & 1980 FEL	25	20S	36E
WELL NO.	FOOTAGE LOCATION	SEC.	TOWNSHIP	RANGE

## Tubular Data

### Surface Casing

Size: 13" " Cemented with .250 SX

TOC: surface feet determined by circulation

Hole size: 17 1/2"

### Intermediate Casing

Size: 9 5/8" " Cemented with 500 SX

TOC: 1155 feet determined by 60% calc

Hole Size: 12"

### Long String

Size: 7" " Cemented with 250 SX

TOC: 2568 feet determined by 60% calc

Hole Size: 8 3/4"

Total Depth: 4005'

### Injection Interval

----- feet to ----- feet  
(perforated or open-hole, indicate which)

Tubing size ----- lined with ----- set in a  
(material)  
----- packer at ----- feet.  
(brand & model)  
(or describe any other casing-tubing seal).

## Other Data

- Name of the injection formation -----
- Name of Field or Pool (If applicable) Eunice Monument Grayburg San Andres
- Is this a new well drilled for injection? -----  
If no, for what purpose was the well originally drilled? -----
- Has 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). -----
- Give the depth to and name of any overlying and/or underlying oil or gas zones (pools) in this area. -----

# INJECTION WELL DATA SHEET

Chevron	Eunice Monument South Unit			
OPERATOR	LEASE			
109	1980 FNL & 660 FEL	25	20S	36E
WELL NO.	FOOTAGE LOCATION	SEC.	TOWNSHIP	RANGE

## Tubular Data

### Surface Casing

Size: 10 3/4" Cemented with 175. SX  
 TOC: surface feet determined by circulation  
 Hole size: 13 3/4"

### Intermediate Casing

Size: 7 5/8" Cemented with 250 SX  
 TOC: surface feet determined by circulation  
 Hole Size: 9 7/8"

### Long String

Size: 5 1/2" Cemented with 140 SX  
 TOC: 1886 feet determined by calc  
 Hole Size: 6 3/4"  
 Total Depth: 3986'

### Injection Interval

----- feet to ----- feet  
 (perforated or open-hole, indicate which)

Tubing size ----- lined with ----- set in a  
 ----- (material)  
 ----- packer at ----- feet.  
 (brand & model)  
 (or describe any other casing-tubing seal).

## Other Data

- Name of the injection formation -----
- Name of Field or Pool (If applicable) Eunice Monument Grayburg San Andres
- Is this a new well drilled for injection? No  
 If no, for what purpose was the well originally drilled? -----
- Has 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.  
No
- Give the depth to and name of any overlying and/or underlying oil or gas zones (pools) in this area.

## INJECTION WELL DATA SHEET

Chevron	L. W. White			
OPERATOR	LEASE			
7	990 FNL & 660 FEL	25	20S	36E
WELL NO.	FOOTAGE LOCATION	SEC.	TOWNSHIP	RANGE

Tubular DataSurface CasingSize: 8 5/8" Cemented with 300 SXTOC: surface feet determined by circ.Hole size: 12 1/4"Intermediate CasingSize:       " Cemented with        SXTOC:        feet determined by       Hole Size:       Long StringSize: 5 1/2" Cemented with 1200 SXTOC: surface feet determined by circ.Hole Size: 7 7/8"Total Depth: 3750'Injection Interval       feet to        feet  
(perforated or open-hole, indicate which)Tubing size        lined with        set in a  
(material)       packer at        feet.  
(brand & model)  
(or describe any other casing-tubing seal).Other Data

- Name of the injection formation
- Name of Field or Pool (If applicable) Eumont Gas
- Is this a new well drilled for injection? No  
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 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 (pools) in this area.

# INJECTION WELL DATA SHEET

Greenhill Petroleum Corporation		Eunice Monument Unit		
OPERATOR		LEASE		
29	660 FSL & 1980 FWL	19	20 S	37 E
WELL NO.	FOOTAGE LOCATION	SEC.	TOWNSHIP	RANGE

## Tubular Data

### Surface Casing

Size: 13" Cemented with 125 SX

TOC: Surface feet determined by Calc.

Hole size: 16"

### Intermediate Casing

Size: 9 5/8" Cemented with 600 SX

TOC: Surface feet determined by Calc.

Hole Size: 12 1/4"

### Long String

Size: 7" Cemented with 250 SX

TOC: 2792 feet determined by 60% Calc

Hole Size: 8 5/8"

Total Depth: 3870'

### Injection Interval

\_\_\_\_\_ feet to \_\_\_\_\_ feet  
(perforated or open-hole, indicate which)

Tubing size \_\_\_\_\_ lined with \_\_\_\_\_ set in a  
(material)  
\_\_\_\_\_ packer at \_\_\_\_\_ feet.  
(brand & model)  
(or describe any other casing-tubing seal).

## Other Data

- Name of the injection formation \_\_\_\_\_
- Name of Field or Pool (If applicable) Eunice Monument Grayburg San Andres
- Is this a new well drilled for injection? No  
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 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 (pools) in this area.

# INJECTION WELL DATA SHEET

Texaco		New Mexico H State NCT 4		
OPERATOR		LEASE		
27	1653 FSL & 969 FWL	19	20S	37E
WELL NO.	FOOTAGE LOCATION	SEC.	TOWNSHIP	RANGE

## Tubular Data

### Surface Casing

Size: 8 5/8" Cemented with 700 SX

TOC: Surface feet determined by calc

Hole size: 11"

### Intermediate Casing

Size:            Cemented with            SX

TOC:            feet determined by           

Hole Size:           

### Long String

Size: 5 1/2" Cemented with 750 SX

TOC: 67' feet determined by 60% calc.

Hole Size: 7 7/8"

Total Depth: 3550'

### Injection Interval

           feet to            feet  
(perforated or open-hole, indicate which)

Tubing size            lined with            set in a  
           (material)  
           packer at            feet.  
(brand & model)  
(or describe any other casing-tubing seal).

## Other Data

- Name of the injection formation
- Name of Field or Pool (If applicable) Eumont Yates 7 Rivers QN (Pro Gas)
- Is this a new well drilled for injection? no  
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 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 (pools) in this area.

## INJECTION WELL DATA SHEET

Greenhill Petroleum Corporation

Eunice Monument

OPERATOR

LEASE

22

1980 FSL &amp; 1980 FWL 19

20S

37E

WELL NO.

FOOTAGE LOCATION

SEC.

TOWNSHIP

RANGE

Tubular DataSurface CasingSize: 13" Cemented with 140 SXTOC: Surface feet determined by circ.Hole size: 16"Intermediate CasingSize: 8 5/8" Cemented with 200 SXTOC: 100 feet determined by 60" calc.Hole Size: 10"Long StringSize: 5 1/2" Cemented with 150 SXTOC: 264 feet determined by 60" calc.Hole Size: 6 3/4"Total Depth: 3860'Injection Interval3668 feet to 3800 feet  
(perforated or open-hole, indicate which)Tubing size 2 3/8 lined with plastic set in a  
AD 1 (material) packer at 3585 feet.(brand & model)  
(or describe any other casing-tubing seal).Other Data

1. Name of the injection formation \_\_\_\_\_
2. Name of Field or Pool (If applicable) Eunice Monument Grayburg San Andres
3. Is this a new well drilled for injection? No  
If no, for what purpose was the well originally drilled? production.
4. Has 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.  
none
5. Give the depth to and name of any overlying and/or underlying oil or gas zones (pools) in this area.  
None

INJECTION WELL DATA SHEET

Greenhill Petroleum Corporation

Eunice Monument Unit

OPERATOR		LEASE		
12	1980 FNL & 1980 FWL	19	20S	37E
WELL NO.	FOOTAGE LOCATION	SEC.	TOWNSHIP	RANGE

Tubular Data

Surface Casing

Size: 10 3/4" Cemented with 125 SX

TOC: surface feet determined by circ.

Hole size: 12 1/4"

Intermediate Casing

Size: 7 5/8" Cemented with 225 SX

TOC: 186 feet determined by 60% calc

Hole Size: 9 5/8"

Long String

Size: 5 1/2" Cemented with 160 SX

TOC: 2122 feet determined by 60% calc.

Hole Size: 6 3/4"

Total Depth: 3865'

Injection Interval

feet to feet  
(perforated or open-hole, indicate which)

Tubing size lined with set in a  
(material)  
packer at feet.  
(brand & model)  
(or describe any other casing-tubing seal).

Other Data

- Name of the injection formation
- Name of Field or Pool (If applicable) Eunice Monument Grayburg San Andres
- Is this a new well drilled for injection? No  
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 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 (pools) in this area.

# INJECTION WELL DATA SHEET

Greenhill Petroleum Corporation

Eunice Monument Unit

OPERATOR

LEASE

11

2310 FNL & 330 FWL

19

20S

37E

WELL NO.

FOOTAGE LOCATION

SEC.

TOWNSHIP

RANGE

## Tubular Data

### Surface Casing

Size: 13" Cemented with 125 SX

TOC: surface feet determined by circulation

Hole size: 16"

### Intermediate Casing

Size: 9 5/8" Cemented with 300 SX

TOC: 442 feet determined by 60% calc.

Hole Size: 12 1/4"

### Long String

Size: 7" Cemented with 300 SX

TOC: 1997 feet determined by 60% calc.

Hole Size: 8 5/8"

Total Depth: 3865

### Injection Interval

----- feet to ----- feet  
(perforated or open-hole, indicate which)

Tubing size ----- lined with ----- set in a  
(material)

----- packer at ----- feet.

(brand & model)

(or describe any other casing-tubing seal).

## Other Data

1. Name of the injection formation -----

2. Name of Field or Pool (If applicable) Eunice Monument Grayburg San Andres

3. Is this a new well drilled for injection? No  
If no, for what purpose was the well originally drilled? production

4. Has 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.  
No

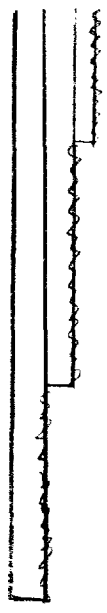
5. Give the depth to and name of any overlying and/or underlying oil or gas zones (pools) in this area.



INJECTION WELL DATA SHEET

Greenhill Petroleum Corporation		Eunice Monument		
OPERATOR		LEASE		
1	660 FNL & 660 FWL	19	20S	37E
WELL NO.	FOOTAGE LOCATION	SEC.	TOWNSHIP	RANGE

Tubular Data



Surface Casing

Size: 13" Cemented with 125 SX  
TOC: Surface feet determined by circulation  
Hole size: 16"

Intermediate Casing

Size: 9 5/8" Cemented with 600 SX  
TOC: 312 feet determined by 60% calc  
Hole Size: 12 1/4"

Long String

Size: 7" Cemented with 350 SX  
TOC: 1679 feet determined by 60% calc.  
Hole Size: 8 5/8"

Total Depth: \_\_\_\_\_

Injection Interval

\_\_\_\_\_ feet to \_\_\_\_\_ feet  
(perforated or open-hole, indicate which)

Tubing size \_\_\_\_\_ lined with \_\_\_\_\_ set in a  
(material)  
\_\_\_\_\_ packer at \_\_\_\_\_ feet.  
(brand & model)  
(or describe any other casing-tubing seal).

Other Data

- Name of the injection formation \_\_\_\_\_
- Name of Field or Pool (If applicable) Eunice Monument Grayburg San Andres
- Is this a new well drilled for injection? No  
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 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 (pools) in this area.

INJECTION WELL DATA SHEET

Texaco		New Mexico H State NCT 3		
OPERATOR		LEASE		
25	992 FNL & 957 FWL	19	20S	37E
WELL NO.	FOOTAGE LOCATION	SEC.	TOWNSHIP	RANGE

Tubular Data

Surface Casing

Size: 8 5/8" Cemented with 800 SX  
TOC: Surface feet determined by circulation  
Hole size: 11"

Intermediate Casing

Size: \_\_\_\_\_ Cemented with \_\_\_\_\_ SX  
TOC: \_\_\_\_\_ feet determined by \_\_\_\_\_  
Hole Size: \_\_\_\_\_

Long String

Size: 5 1/2" Cemented with 450 SX  
TOC: 1396 feet determined by 60% calc.  
Hole Size: 7 7/8"  
Total Depth: 3550'

Injection Interval

\_\_\_\_\_ feet to \_\_\_\_\_ feet  
(perforated or open-hole, indicate which)

Tubing size \_\_\_\_\_ lined with \_\_\_\_\_ set in a  
\_\_\_\_\_ (material)  
\_\_\_\_\_ packer at \_\_\_\_\_ feet.  
(brand & model)  
(or describe any other casing-tubing seal).

Other Data

- Name of the injection formation \_\_\_\_\_
- Name of Field or Pool (If applicable) Eumont Yates 7 Rivers ON
- Is this a new well drilled for injection? No  
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 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 (pools) in this area.

INJECTION WELL DATA SHEET

Chevron		Eunice Monument South		
OPERATOR		LEASE		
101	660 FNL & 1980 FWL	30	20S	37E
WELL NO.	FOOTAGE LOCATION	SEG.	TOWNSHIP	RANGE

Tubular Data



8 5/8"  
10-6

Surface Casing

Size: 8 5/8" Cemented with 650 SX

TOC: surface feet determined by circ.

Hole size: 12 1/4"

Intermediate Casing

Size: Cemented with SX

TOC: feet determined by

Hole Size:

Long String

Size: 5 1/2" Cemented with 610 SX

TOC: surface feet determined by circ.

Hole Size: 7 7/8"

Total Depth: 4000'

Injection Interval

feet to feet  
(perforated or open-hole, indicate which)

Tubing size lined with set in a  
(material)  
packer at feet.  
(brand & model)  
(or describe any other casing-tubing seal).

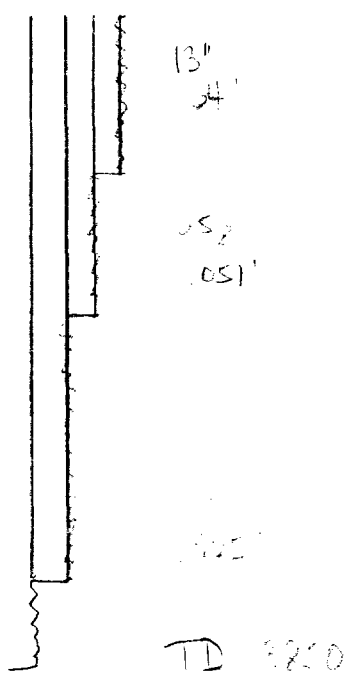
Other Data

- 1. Name of the injection formation
- 2. Name of Field or Pool (If applicable) Eunice Monument Grayburg San Andres
- 3. Is this a new well drilled for injection? No  
If no, for what purpose was the well originally drilled? production
- 4. Has 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.  
No
- 5. Give the depth to and name of any overlying and/or underlying oil or gas zones (pools) in this area.

INJECTION WELL DATA SHEET

Greenhill Petroleum Corporation		Eunice Monument		
OPERATOR		LEASE		
34	660FWL & 660 FNL	30	20S	37E
WELL NO.	FOOTAGE LOCATION	SEC.	TOWNSHIP	RANGE

Tubular Data



Surface Casing

Size: 13" Cemented with 160 SX

TOC: surface feet determined by circ.

Hole size: 17 1/2"

Intermediate Casing

Size: 9 5/8" Cemented with 400 SX

TOC: 150' feet determined by 60% calc.

Hole Size: 12 1/2"

Long String

Size: 7" Cemented with 300 SX

TOC: 2126 feet determined by 60% calc

Hole Size: 8 3/4"

Total Depth: 3850'

Injection Interval

                     feet to                      feet  
(perforated or open-hole, indicate which)

Tubing size                      lined with                      set in a                      (material)

                     packer at                      feet.

(brand & model)

(or describe any other casing-tubing seal).

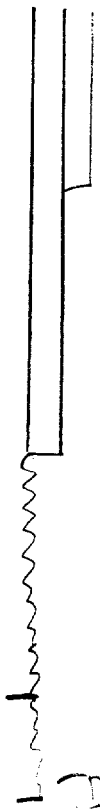
Other Data

1. Name of the injection formation
2. Name of Field or Pool (If applicable) Eunice Monument Grayburg San Andres
3. Is this a new well drilled for injection? No  
If no, for what purpose was the well originally drilled? production
4. Has 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).  
No
5. Give the depth to and name of any overlying and/or underlying oil or gas zones (pools) in this area.

INJECTION WELL DATA SHEET

Chevron		Eunice Monument South Unit		
OPERATOR		LEASE		
110	1980 FNL & 660 FWL	30	20S	37E
WELL NO.	FOOTAGE LOCATION	SEC.	TOWNSHIP	RANGE

Tubular Data



Surface Casing  
Size: 13" Cemented with 200 SX

TOC: surface feet determined by circ.

Hole size: 17 1/2"

Intermediate Casing

Size: 8 5/8" Cemented with 600 SX

TOC: surface feet determined by circ.

Hole Size: 11"

Long String

Size: 6 5/8" Cemented with 100 SX

TOC: 3018' feet determined by calc.

Hole Size: 7 7/8"

Total Depth: 3958'

Injection Interval

feet to feet  
(perforated or open-hole, indicate which)

Tubing size lined with set in a  
(material)  
packer at feet.  
(brand & model)  
(or describe any other casing-tubing seal).

Other Data

- Name of the injection formation
- Name of Field or Pool (If applicable) Eunice Monument Grayburg San Andres
- Is this a new well drilled for injection? No  
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 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 (pools) in this area.

## INJECTION WELL DATA SHEET

Amerada Hess  
OPERATORState W  
LEASE5  
WELL NO.1980 FNL & 780 FWL  
FOOTAGE LOCATION30  
SEC.20S  
TOWNSHIP37E  
RANGETubular DataSurface CasingSize: 8 5/8" Cemented with 300 SXTOC: Surface feet determined by circ.Hole size: 12 1/4"Intermediate CasingSize: \_\_\_\_\_ Cemented with \_\_\_\_\_ SX

TOC: \_\_\_\_\_ feet determined by \_\_\_\_\_

Hole Size: \_\_\_\_\_

Long StringSize: 5 1/2" Cemented with 850 SXTOC: Surface feet determined by 60% calc.Hole Size: 7 7/8"Total Depth: 3520'Injection Interval\_\_\_\_\_ feet to \_\_\_\_\_ feet  
(perforated or open-hole, indicate which)

Tubing size \_\_\_\_\_ lined with \_\_\_\_\_ set in a  
 \_\_\_\_\_ (material)  
 \_\_\_\_\_ packer at \_\_\_\_\_ feet.  
 (brand & model)  
 (or describe any other casing-tubing seal).

Other Data

1. Name of the injection formation \_\_\_\_\_
2. Name of Field or Pool (If applicable) Eumont Yates Seven Rivers Queen
3. Is this a new well drilled for injection? \_\_\_\_\_  
 If no, for what purpose was the well originally drilled? \_\_\_\_\_
4. Has 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 to and name of any overlying and/or underlying oil or gas zones (pools) in this area.  
 \_\_\_\_\_

## VII

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".

## ARTICLE VIII

### Geologic Data

The zone of interest for this application to inject is the Permian Age San Andres Formation. In the area of Greenhill Petroleum Corporation's Eunice Monument Unit, the San Andres is found at an average depth of 3800'. The San Andres is comprised of several zones composed of medium to coarse crystalline grainstones and fine to medium sandstones. Attached is a type log from the Eunice Monument Grayburg/San Andres Unit which shows the San Andres Zones that are currently being produced and those that will be injected into.

The only know underground source of fresh water in the Eunice Monument Area is the Ogalalla Formation. The approximate base of the formation is 200'.



# EMU41

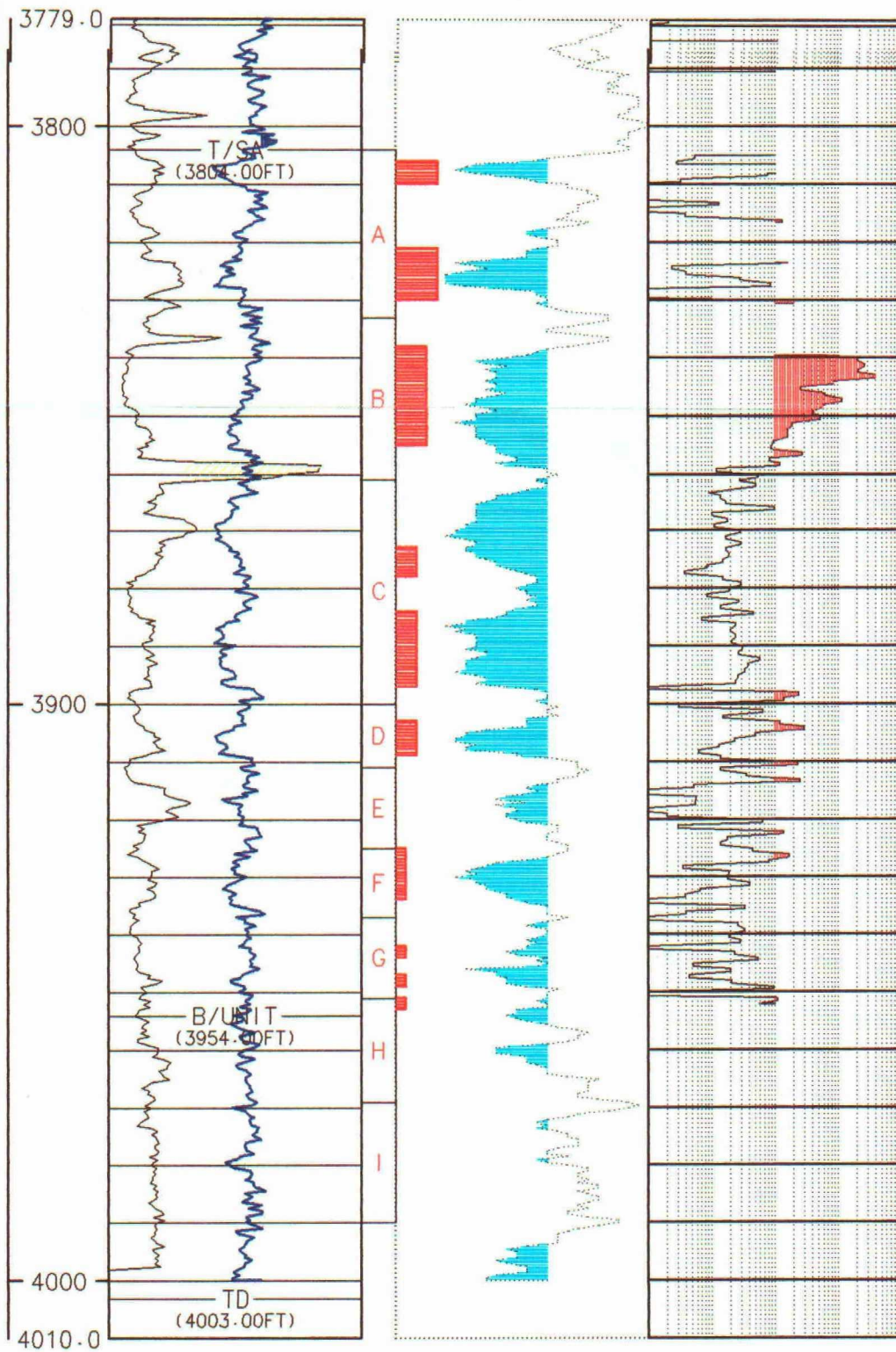
0 PE 5

0 EMU-PERFS 6

0 GRN 150

0.25 PHIX

0 0.1 CPERM 1000



## IX

### PROPOSED STIMULATION PROGRAM FOR CONVERSIONS FROM PRODUCER TO INJECTION WELLS LOVINGTON PADDOCK UNIT LEA COUNTY, NEW MEXICO

1. MIRU PU with 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 minutes. Pull tubing.
3. PU bit, casing scraper and collars and TIH to 2000' above casing shoe. Scrape casing to 10 feet above shoe. Do not go below casing shoe with scraper. POOH and lay down scraper. TIH to 10 feet above casing shoe and circulate hole clean with clean water. Rotate, clean out, and deepen 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. Perforate water flood intervals with 90 gram frac jets. TIH with bit and tubing and circulate open hole interval clean to TD with water. POOH laying down workstring.
6. PU new 2 3/8" IPC tubing string with new water flood packer and TIH to 5' above casing shoe. Circulate inhibited fresh water into tubing-casing annulus and set packer. Pressure test annulus to 500 psig for 5 minutes. 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<sub>2</sub> and 3000 gallons of 20% NEFE HCL Acid using diverter in three 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.

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RESULT OF WATER ANALYSES

LABORATORY NO. 1188291  
TO: Mr. Roger Hostenback SAMPLE RECEIVED 11-28-88  
% Hobbs Motor Inn. Drawer "L", Hobbs, NM RESULTS REPORTED 12-7-88

COMPANY Paragon Engineering Service LEASE Greenhill Petroleum's Eunice Monument  
FIELD OR POOL Eunice Monument  
SECTION      BLOCK      SURVEY      COUNTY Lea STATE NM  
SOURCE OF SAMPLE AND DATE TAKEN:

NO. 1 Raw water - taken from water supply well #1. 11-28-88

NO. 2 Raw water - taken from water supply well #2. 11-28-88

NO. 3 Produced water - taken from heater-treater. 11-28-88

NO. 4     

REMARKS:

CHEMICAL AND PHYSICAL PROPERTIES				
	NO. 1	NO. 2	NO. 3	NO. 4
Specific Gravity at 60° F.	1.0028	1.0029	1.0152	
pH When Sampled	7.2	7.1	6.7	
pH When Received	8.03	7.84	7.01	
Bicarbonate as HCO <sub>3</sub>	300	317	1,903	
Supersaturation as CaCO <sub>3</sub>	12	12	---	
Undersaturation as CaCO <sub>3</sub>	---	---	20	
Total Hardness as CaCO <sub>3</sub>	440	485	4,050	
Calcium as Ca	109	120	648	
Magnesium as Mg	41	45	590	
Sodium and/or Potassium	175	187	4,551	
Sulfate as SO <sub>4</sub>	215	212	298	
Chloride as Cl	249	291	8,593	
Iron as Fe	0.12	0.28	2.2	
Barium as Ba	0	0	60	
Turbidity, Electric	1	1	61	
Color as Pt	4	8	22	
Total Solids, Calculated	1,088	1,172	16,643	
Temperature °F.	62	53	49	
Carbon Dioxide, Calculated	33	41	628	
Dissolved Oxygen, Winkler	5.9	1.0	0.0	
Hydrogen Sulfide	0.0	0.0	525	
Resistivity, ohms/m at 77° F.	6.32	5.82	0.490	
Suspended Oil			685	
Filtrable Solids as mg/l	1.4	3.1	82.0	
Volume Filtered, ml	10,000	2,000	600	
Precipitated Barium Sulfate	---	---	13.9	

Results Reported As Milligrams Per Liter

Additional Determinations And Remarks The above reveals a single incompatibility between these supply waters and the produced water. This is from oxygen in the supply water and hydrogen sulfide in the produced water, which would cause elemental sulfur precipitation and severely aggravate corrosion. The only feasible means of resolving this is to remove oxygen from the supply water prior to mixing or alternate waters to limit incompatibility to the interface. Oxygen removal would be strongly recommended. The primary concern with the produced water is the significant amount of suspended barium sulfate, suggesting it is likely to have scaling from barium sulfate. This most likely would be back at producing wells and subsequent water handling equipment. The oil content was somewhat high, but this is a variable component at heater-treaters.

By

Waylan C. Martin, M.A.