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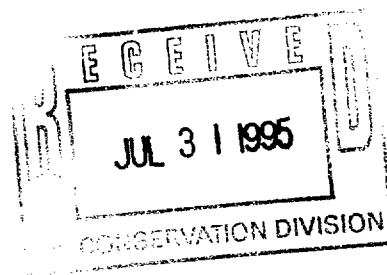
Amoco Production Company

501 WestLake Park Boulevard
Post Office Box 3092
Houston, Texas 77253

**D. L. Hood, JOMT Manager
Wasson JOMT**

July 11, 1995

Re: Application for Authority to Inject
South Hobbs (GSA) Unit
Hobbs Grayburg-San Andres Pool
Lea County, New Mexico



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

Amoco Exploration and Production U.S.A. Operations Group hereby requests administrative approval to convert the below well to water injection. Form C-108 and the necessary documentation is attached.

South Hobbs (GSA) Unit Well No. 22
Unit Letter C, Section 3, T-19-S, R-38-E, Lea County, NM

As required a copy of this application complete with all attachments has been served by certified mail to each of the parties shown on the attached service list.

If you have any questions concerning this application, please contact Devina Prince at (713) 366-7686.

D. L. Hood

DMP/mos

Attachments

cc: State of New Mexico
Oil Conservation Division
P. O. Box 1980
Hobbs, NM 88240

**Service List
South Hobbs (GSA) Unit
Conversion to Water Injection
South Hobbs (GSA) Unit Well No. 22**

Surface Owners:

State of New Mexico
Commissioner of Public Lands
P. O. Box 1148
Santa Fe, NM 87504

Offset Owners:

Shell Western E&P, Inc.
P. O. Box 991
Houston, TX 77001

Chevron, U.S.A.
Attn: J. C. Prindle
P. O. Box 670
Hobbs, NM 88240

Conoco, Inc.
P. O. Box 460
Hobbs, NM 88240

Marathon Oil Company
P. O. Box 552
Midland, TX 79702

Samedan Oil Corporation
10 Desta Drive, Suite 240-E
Midland, TX 79705

DISTRICT I
P.O. Box 1980, Hobbs, NM 88240

DISTRICT II
P.O. Drawer DD, Artesia, NM 88210

DISTRICT III
1000 Rio Brazos Rd., Aztec, NM 87410

OIL CONSERVATION DIVISION
P.O. Box 2088
Santa Fe, New Mexico 87504-2088

WELL API NO.	30-025-07587
5. Indicate Type of Lease	STATE ☐ FEE ☒
6. State Oil & Gas Lease No.	A-1212-1
7. Lease Name or Unit Agreement Name	South Hobbs (GSA) Unit
8. Well No.	22
9. Pool name or Wildcat	Hobbs Grayburg - San Andres

SUNDRY NOTICES AND REPORTS ON WELLS (DO NOT USE THIS FORM FOR PROPOSALS TO DRILL OR TO DEEPEN OR PLUG BACK TO A DIFFERENT RESERVOIR. USE "APPLICATION FOR PERMIT" (FORM C-101) FOR SUCH PROPOSALS.)	
1. Type of Well OIL WELL ☒ GAS WELL ☐ OTHER	
2. Name of Operator Amoco Production Company (Room 17.165)	
3. Address of operator P.O. Box 4891, Houston, Texas 77210-4891	
4. Well Location Unit Letter C : 660 Feet From The North Line and 1980 Feet From The West Line Section 3 Township 19-S Range 38-E NMPM Lea, NM County	
10. Elevation (Show whether DF, RKB, RT, GR, etc.) 3615' GR	

11. Check Appropriate Box to Indicate Nature of Notice, Report, or Other Data

NOTICE OF INTENTION TO:		SUBSEQUENT REPORT OF:	
PERFORM REMEDIAL WORK ☐	PLUG AND ABANDON ☐	REMEDIAL WORK ☐	ALTERING CASING ☐
TEMPORARILY ABANDON ☐	CHANGE PLANS ☐	COMMENCE DRILLING OPNS. ☐	PLUG AND ABANDONMENT ☐
PULL OR ALTER CASING ☐		CASING TEST AND CEMENT JOB ☐	
OTHER: Conversion from Producer to Injector ☒		OTHER: ☐	

12. Describe Proposed or Completed Operations (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work.) SEE RULE 1103.

- | | |
|---|--|
| 1. MIRUSU. TOH w/ Prod. Equip. | 6. Overflush w/ 100 Bbls produced water & surfactant |
| 2. RIH w/ bit/scraper. Tag TD @ 4268. CO fill > 5ft. | 7. Do not swab. TOH w/ IPC, pkr. tailpipe. |
| 3. RIH w/ IPC, trt pkr, tailpipe and bull plug on bottom Set pkr at 4160'.
-- Land perf subs within 5' of the following depths:
4185', 4202', 4220', and 4265'.
-- Perf subs shall be 1 SPF, 90 degree phasing, 0.5" diameter. | 8. RIH w/ injection pkr. Set at 4160'. |
| 4. Test backside to 500 psi for 30 min. Contact Eng for suppl. brief if test fails. Anticipate isolating leak & squeezing cmt. | 9. Perform CIT (casing integrity test) for NMOCD. |
| 5. Pump w/ 3000 gals 20% HCL (50 gals/ft net pay).
-- Acid system is as follows:
1 gpt A-260 Corrosion Inh 3 gpt M76 Biocide (for tanks
5 ppt A-179 Inhibitor aid -- Do not exceed 2.5 BPM or 1500
10 gpt L-63 Iron Control
3 gpt W-53 Anti-sludge | 10. Install flowline tie-in and injection/automation equip. from SHU SHU #37 |
| | 11. Rig down service unit. |

NOTE: Engineering Contact: Dave French (713) 366-4237

I hereby certify that the information above is true and complete to the best of my knowledge and belief.

SIGNATURE Devina M. Prince TITLE Staff Assistant DATE 06-21-95
TYPE OR PRINT NAME Devina M. Prince TELEPHONE NO. (713) 366-7686

(This space for State Use)

APPROVED BY _____ TITLE _____ DATE _____
CONDITIONS OF APPROVAL, IF ANY:

Form C-108 Required Information
South Hobbs (GSA) Unit
Well No. 22 Conversion to Injector

Item No. O

III. Well Data.
See attached data sheet.

V. See attached map.

VII. Proposed operation data:

(a) Average Injection Rate:
2000 BWIPD

(b) Maximum Injection Rate:
3000 BWIPD

(c) Average Injection Pressure:
600 psi

(d) Maximum Injection Pressure:
1000 psi

This system is closed and injecting mainly South Hobbs Unit produced water and some City of Hobbs make up water.

Water injection is compatible with the receiving formation. Water analysis sheet for the South Hobbs Unit produced water and the City of Hobbs make up water is attached.

VIII. Previously submitted by earlier referenced orders.

IX. There is no stimulation program planned for this conversion. If stimulation is required after conversion, C-103 will be filed to notify the NMOCD of our intention.

X. Previously submitted by earlier referenced orders.

XI. Previously submitted by earlier referenced orders (PMX-143).

XII. All available geologic and engineering data have been examined and there is no evidence of open faults or other hydrolic connection between the injection zone and any underground source of drinking water.

XIII. Copy of this application and attachments have been mailed, as required by "Proof of Notice" section, to all parties on the attached service list.

APPLICATION FOR AUTHORIZATION TO INJECT

- I. Purpose: ☐ Secondary Recovery ☒ Pressure Maintenance ☐ Disposal ☐ Storage
Application qualifies for administrative approval? ☐ yes ☐ no
- II. Operator: Amoco Explor. Prod. USA Opers Group
Address: P.O. Box 4891, Houston, Tx 77210
Contact party: Devina Prince Phone: (713) 366-7686
- 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 PMX-143
- 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: Devina M. Prince Title: Staff Assistant
Signature: Devina M. Prince Date: July 11, 1995
- * 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.

AFFIDAVIT OF PUBLICATION

State of New Mexico,
County of Lea.

I. Kathi Bearden

General Manager

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 _____
1 weeks.

Beginning with the issue dated

June 25, 1995 19____
and ending with the issue dated

June 25, 1995 19____

Kathi Bearden
General Manager

Sworn and subscribed to before

me this 29th day of

June, 1995
Maureen L. Ruffino
Notary Public.

My Commission expires
March 24, 1998
(Seal)

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

LEGAL NOTICE

June 25, 1995

Amoco Exploration and Production U.S.A. Operations
Group will on or before June 28, 1995, apply for administra-
tive approval to convert one producing South Hobbs (GSA)
Unit Well to water injection well. The well name, number and
location is as follows:

Well Name and Number: South Hobbs (GSA) Unit No. 22 Unit O Sec. 9-T-19S-R-38-0

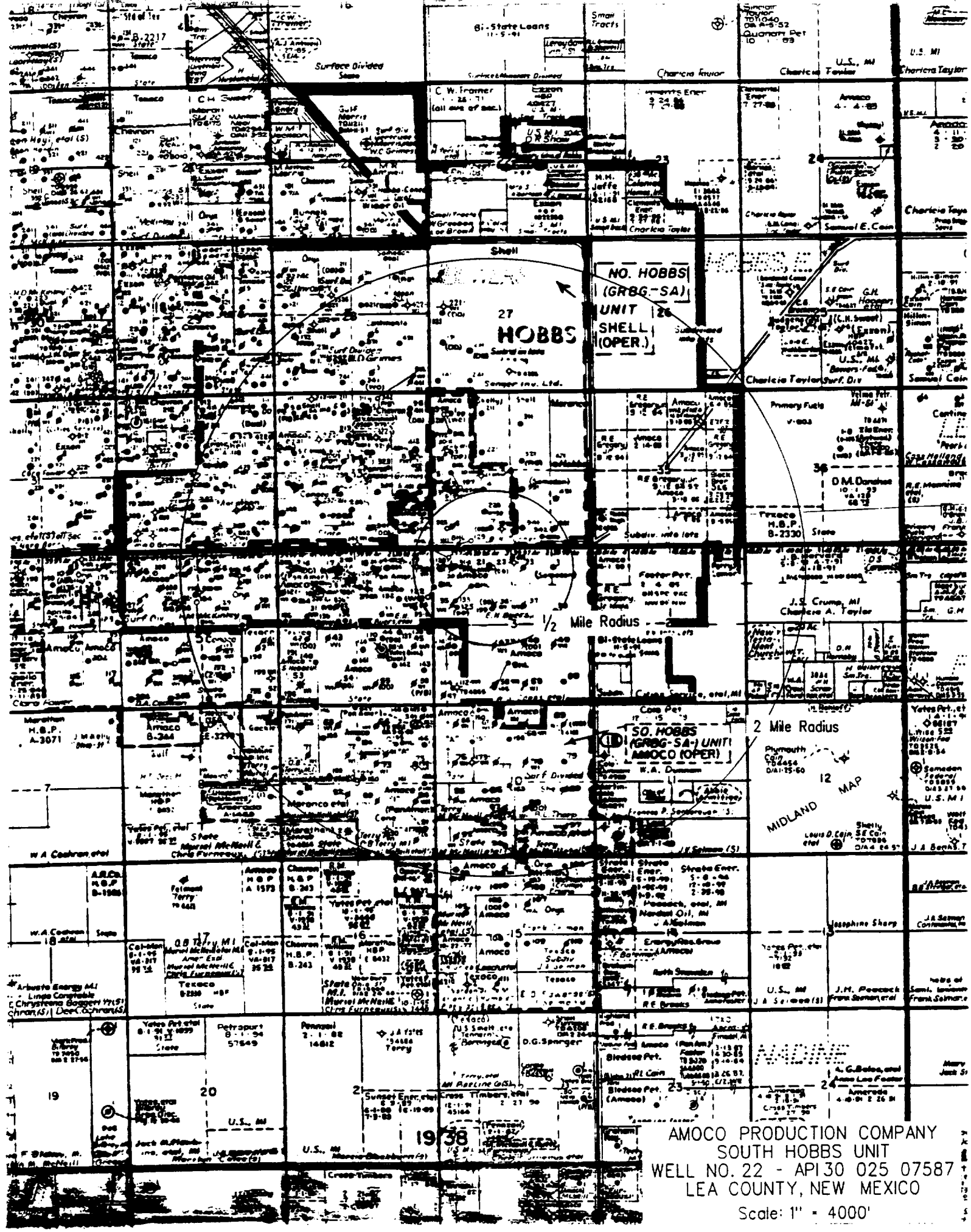
The purpose of this work is to expand the South Hobbs
(GSA) Unit Pressure Maintenance Project. Water will be in-
jected into the Grayburg-San Andres formation at an average
rate of 2000 BWIPD with an average injection pressure of
600 psi. Any questions concerning this project may be di-
rected to:

Amoco Production Company,
P.O. Box 1000,
Denver City, TX 79323
Attn: Mr. John Hammerle,
Team Leader

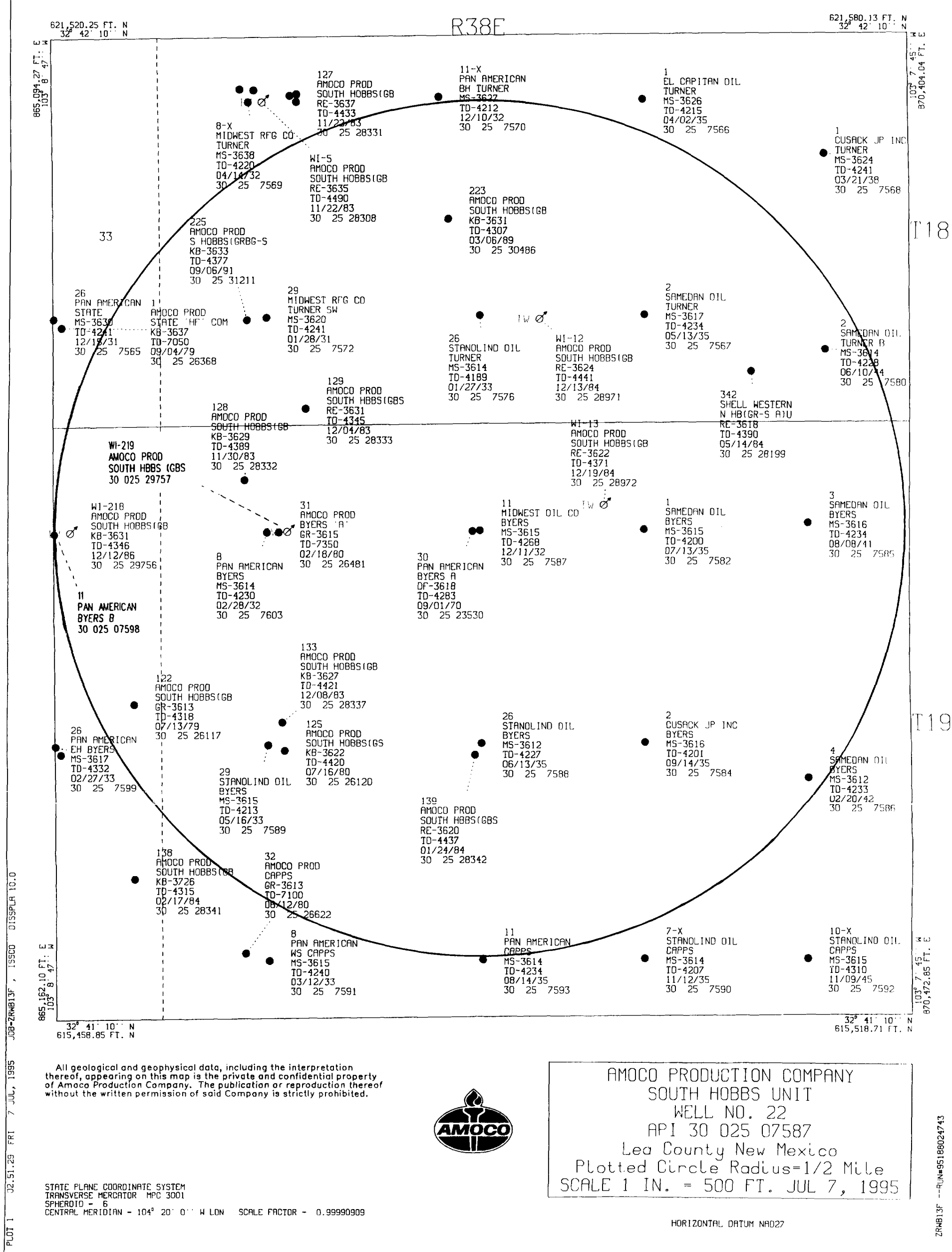
Phone: (505) 397-8270
Interested parties must file objections or request for hearing
with the Off. Conservation Division, P.O. Box 2088, Santa Fe,
New Mexico, 87501 within 15 days of the date of this notice.

D.L. Hood, Wasson JOMT Mgr.
Amoco Exploration and Production,
U.S.A. Operations Group,
Permian Basin Business Unit,
Post Office Box 4891,
Houston, Texas 77210-4891

One question is noted at the
bottom of page 2 of this notice.



AMOCO PRODUCTION COMPANY
SOUTH HOBBS UNIT
WELL NO. 22 - API 30 025 07587
LEA COUNTY, NEW MEXICO
Scale: 1" = 4000'





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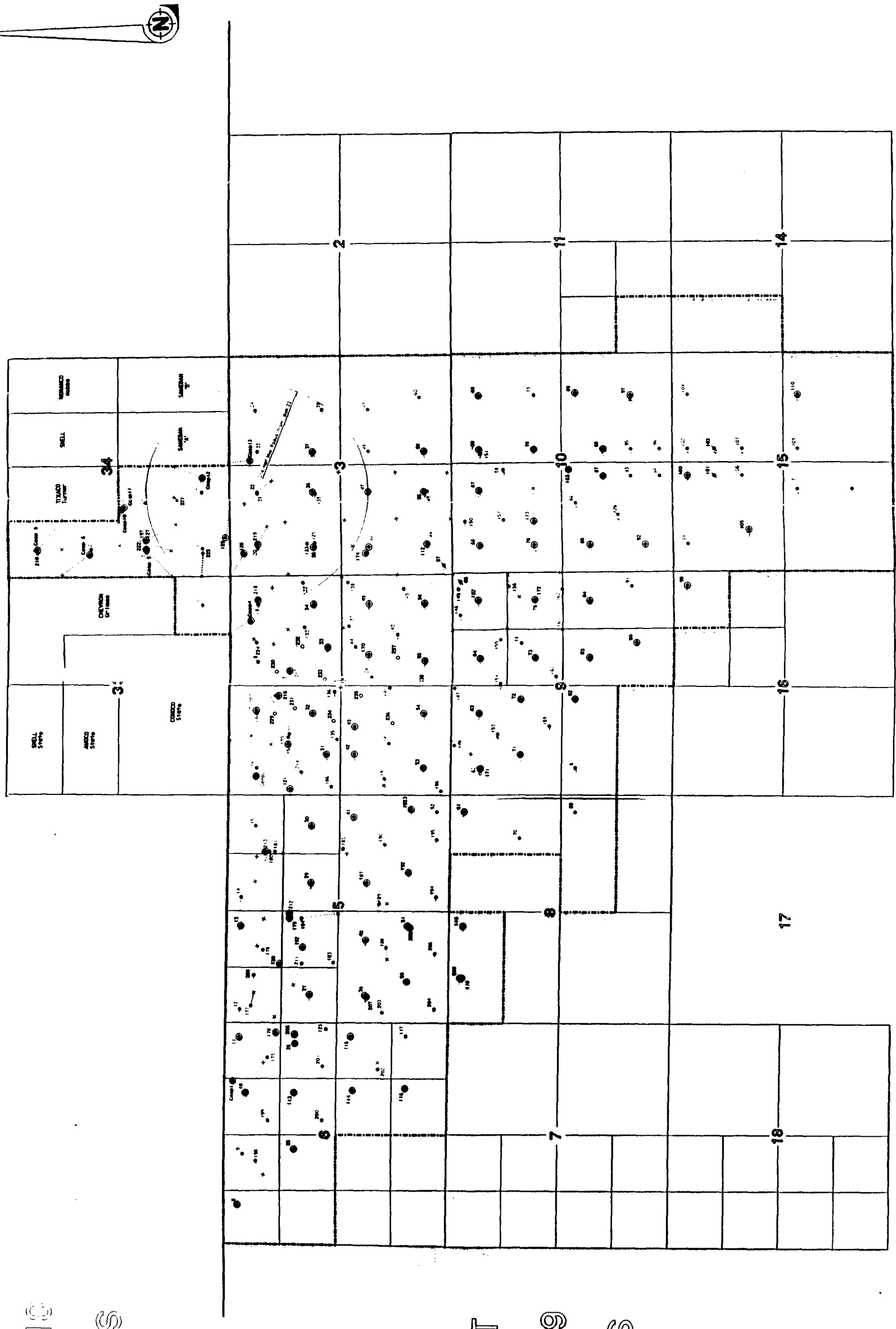
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Legend

PROPOSED LOCATION ○

PRODUCER ●

WATER INJECTOR ⊙

PLUGGED & ABANDONED ✕

BOTTOM HOLE LOCATION ×

UNIT BOUNDARY ———

UNIT LPN 538660

Amoco Production Company
Land Survey Department
Unit Plat

SOUTH HOBBS UNIT

Out of Sections 33 & 34, T18S-R38E
and
Sections 3-6, 8-11 & 14-16, T19S-R38E
Lea County, New Mexico
Scale: 1 in = 1000 ft Dr. B.J. RKH 10-24-91 NM438103.dgn Lv. 10

AMOCO PRODUCTION COMPANY
AMOCO GRAPHICS SYSTEM - INDEX LISTING

PAGE 0001
JOB-ID AGS

DATE 07/07/95

***** W E L S ***** COMPTON EL *****
***** ORIGINAL LEASE NAME----- DATE TY ELEV. TD--- -X AXIS -Y AXIS

API WELL NO.	LOCATION	ORIGINAL OPERATOR NAME	NUMBER	ORIGINAL LEASE NAME	DATE	TY	ELEV.	TD	-X AXIS	-Y AXIS
300250756500	10033018S038E	PAN AMERICAN	26	STATE	12/15/31	MS	3630	4241	0.05	8.67
300250756600	10034018S038E	EL CAPITAN OIL CO	1	TURNER	04/02/35	MS	3626	4215	7.34	11.39
300250756700	10034018S038E	SAMEDAN OIL	2	TURNER	05/13/35	MS	3617	4234	7.37	8.75
300250756800	10034018S038E	CUSACK JP INC	1	TURNER	03/21/38	MS	3624	4241	9.58	10.73
300250756900	10034018S038E	MIDWEST RFG CO	8-X	TURNER	04/14/32	MS	3638	4220	2.45	11.34
300250757000	10034018S038E	PAN AMERICAN	11-X	BH TURNER	12/10/32	MS	3627	4212	4.81	11.41
300250757200	10034018S038E	MIDWEST RFG CO	29	TURNER SW	01/28/31	MS	3620	4241	2.69	8.70
300250757400	10034018S038E	STANOLIND OIL & GAS	5	BH TURNER	07/12/48	MS	3631	3246	2.35	11.50
300250757600	10034018S038E	STANOLIND OIL & GAS	26	TURNER	01/27/33	MS	3614	4189	5.33	8.73
300250758000	10034018S038E	SAMEDAN OIL	2	TURNER B	06/10/44	MS	3614	4228	9.61	8.34
300250758200	10003019S038E	SAMEDAN OIL	1	BYERS	07/13/35	MS	3615	4200	7.39	6.11
300250758400	10003019S038E	CUSACK JP INC	2	BYERS	09/14/35	MS	3616	4201	7.41	3.47
300250758500	10003019S038E	SAMEDAN OIL	3	BYERS	08/08/41	MS	3616	4234	9.43	6.21
300250758600	10003019S038E	SAMEDAN OIL	4	BYERS	02/20/42	MS	3612	4233	9.44	3.04
300250758700	10003019S038E	MIDWEST OIL CORPORATION	11	BYERS	12/11/32	MS	3615	4268	5.36	6.09
300250758800	10003019S038E	STANOLIND OIL & GAS	26	BYERS	06/13/35	MS	3612	4227	5.38	3.45
300250758900	10003019S038E	STANOLIND OIL & GAS	29	BYERS	05/16/33	MS	3615	4213	2.74	3.42
300250759000	10003019S038E	STANOLIND OIL & GAS	7-X	CAPPS	11/12/35	MS	3614	4207	7.42	0.80
300250759100	10003019S038E	PAN AMERICAN	8	WS CAPPS	03/12/33	MS	3615	4240	2.77	0.75
300250759200	10003019S038E	STANOLIND OIL & GAS	10-X	CAPPS	11/09/45	MS	3615	4310	9.45	0.81
300250759300	10004019S038E	PAN AMERICAN	11	CAPPS	08/14/35	MS	3614	4234	5.41	0.77
300250759400	10004019S038E	PAN AMERICAN	11	BYERS "B"	07/28/32	MS	3623	4233	0.08	6.03
300250759500	10004019S038E	PAN AMERICAN	26	EH BYERS	02/27/33	MS	3617	4332	0.10	3.39
300250759600	10003019S038E	PAN AMERICAN	8	BYERS	02/28/32	MS	3614	4230	2.72	6.06
300252353000	10003019S038E	PAN AMERICAN	30	BYERS A	09/01/70	DF	3618	4283	5.27	6.08
300252611700	10004019S038E	AMOCO PROD	122	SOUTH HOBBS(GBSA)UT	07/13/79	GR	3613	4318	1.08	3.93
300252612000	10003019S038E	AMOCO PROD	125	SOUTH HOBBS(GBSA)UNT	07/16/80	KB	3622	4420	2.95	3.35
300252636800	10003018S038E	AMOCO PROD	1	STATE "HF" COM	09/04/79	KB	3637	7050	0.15	8.57
300252648100	10003019S038E	AMOCO PROD	31	BYERS "A"	02/18/80	GR	3615	7350	2.87	6.06
300252658300	10034018S038E	AMOCO PROD	31	TURNER TR 2	03/17/80	GR	3623	7112	2.52	11.49
300252662200	10003019S038E	AMOCO PROD	32	CAPPS	06/12/80	GR	3613	7100	2.48	0.84
300252664700	10004019S038E	AMOCO PROD	35	BYERS "B"	05/01/80	GR	3618	7096	0.17	3.29
300252819900	10034018S038E	SHELL WESTERN EXPL&PROD	342	N HB(GR-S A)U SC 34	05/14/84	RE	3618	4390	8.70	8.06
300252830800	10034018S038E	AMOCO PROD	WI-5	SOUTH HOBBS(GBSA)CO	11/22/83	RE	3635	4490	2.62	11.34
300252833100	10034018S038E	AMOCO PROD	127	SOUTH HOBBS(GBSA)UN	11/22/83	RE	3637	4433	3.05	11.35
300252833200	10003019S038E	AMOCO PROD	128	SOUTH HOBBS(GBSA)UN	11/30/83	KB	3629	4389	2.44	6.71
300252833300	10034018S038E	AMOCO PROD	129	SOUTH HBBS(GBSA)UNT	12/04/83	RE	3631	4345	3.18	7.59
300252833700	10003019S038E	AMOCO PROD	133	SOUTH HOBBS(GBSA)UN	12/08/83	KB	3627	4421	2.92	3.71
300252834100	10004019S038E	AMOCO PROD	138	SOUTH HOBBS(GBSA)UNT	02/17/84	KB	3726	4315	1.09	1.76
300252834200	10003019S038E	AMOCO PROD	139	SOUTH HBBS(GBSA)UNT	01/24/84	RE	3620	4437	5.31	3.30
300252897100	10034018S038E	AMOCO PROD	WI-12	SOUTH HOBBS(GBSA)CP	12/13/84	RE	3624	4441	5.07	8.69
300252897200	10003019S038E	AMOCO PROD	WI-13	SOUTH HOBBS(GBSA)CP	12/19/84	RE	3622	4371	6.89	6.41
300252944400	10034018S038E	AMOCO PROD	197	SOUTH HOBBS(GBSA)UT	12/10/85	KB	3639	4378	3.05	11.44
300252975600	10004019S038E	AMOCO PROD	WI-218	SOUTH HOBBS(GBSA)UT	12/12/86	KB	3631	4346	0.28	6.05
300252975700	10003019S038E	AMOCO PROD	WI-219	SOUTH HOBBS(GBSA)UT	11/25/86	KB	3640	4353	2.97	6.07
300252989300	10034018S038E	AMOCO PROD	222	SOUTH HOBBS(GBSA)UT	07/11/87	KB	3638	4390	2.97	11.42
300253048600	10034018S038E	AMOCO PROD	223	SOUTH HOBBS(GBSA)UT	03/06/89	KB	3631	4307	4.94	9.92
300253121100	10034018S038E	AMOCO PROD	225	S HOBBS(GR&G-SA)UT	09/06/91	KB	3633	4377	2.45	8.67

WORKING IN THE FIELD

~~WATER ANALYSIS REPORT~~

Date : 6-25-94
Date Sampled : 6-22-94
Analysis No. : 1669

ANALYSIS		mg/L	* meq/L	
1.	pH	6.8		
2.	H2S	PCS.		
3.	Specific Gravity	1.007		
4.	Total Dissolved Solids		9997.2	
5.	Suspended Solids			
6.	Dissolved Oxygen			
7.	Dissolved CO2			
8.	Oil In Water			
9.	Phenolphthalein Alkalinity (CaCO3)			
10.	Methyl Orange Alkalinity (CaCO3)			
11.	Bicarbonate	HCO3	1446.9	HCO3 23.7
12.	Chloride	Cl	4560.0	Cl 128.6
13.	Sulfate	SO4	449.0	SO4 9.4
14.	Calcium	Ca	421.0	Ca 24.0
15.	Magnesium	Mg	130.0	Mg 10.7
16.	Sodium (calculated)	Na	2919.8	Na 127.0
17.	Iron	Fe	0.1	
18.	Barium	Ba	0.4	
19.	Srconium	Sr	10.0	
20.	Total Hardness (CaCO3)		1738.0	

PROBABLE MINERAL COMPOSITION

*milli equivalents per Liter				Compound Equiv wt X meq/L = mg/L				
24	-Ca	→	CaCO ₃	24	Ca(HCO ₃) ₂	81.0	23.7	1922
	/	→			CaSO ₄	68.1	0.3	19
12	-Mg	→	MgSO ₄	12	CaCl ₂	33.5		
	←	/			Mg(HCO ₃) ₂	73.2		
127	-Na	→	NaCl	127	MgSO ₄	60.2	9.1	545
					MgCl ₂	47.6	1.0	70
Saturation Values Dist. Water 20 C					NaHCO ₃	84.0		
CaCO ₃			13 mg/L		Na ₂ SO ₄	71.0		
CaSO ₄ + 2H ₂ O			2090 mg/L		NaCl	58.4	127.0	7422
NaSO ₄			2.4 mg/L					

REMARKS: G. WHITE - BENNETT - FILE

Respectfully submitted,
SERILA DEARMAN



Petrolite Corporation
 200 North Lorraine, Suite 1100
 Midland, TX 79701-4738

TRETOLITE DIVISION

(915) 682-4301
 Fax (915) 684-7873

Reply to:
 P.O. Box 60180
 Midland, TX 79711-0180

SCALE TENDENCY REPORT

Company	: AMOCO PRODUCTION CO.	Date	: 6-25-94
Address	: HOBBS, NEW MEXICO	Date Sampled	: 6-22-94
Lease	: SOUTH HOBBS UNIT	Analysis No.	: 1669
Well	: TURBINE #2	Analyst	: SERILA DEARMAN
Sample Pt.	:		

STABILITY INDEX CALCULATIONS
 (Stiff-Davis Method)
 CaCO₃ Scaling Tendency

S.I. = 0.8 at 100 deg. F or 38 deg. C
 S.I. = 0.9 at 150 deg. F or 66 deg. C
 S.I. = 0.9 at 175 deg. F or 79 deg. C
 S.I. = 1.1 at 212 deg. F or 100 deg. C

CALCIUM SULFATE SCALING TENDENCY CALCULATIONS
 (Skillman-McDonald-Stiff Method)
 Calcium Sulfate

S = 2333 at 100 deg. F or 38 deg. C
 S = 2300 at 150 deg. F or 66 deg. C
 S = 2251 at 175 deg. F or 79 deg. C
 S = 2193 at 195 deg. F or 91 deg. C
 S = 2142 at 212 deg. F or 100 deg. C

Petrolite Oilfield Chemicals Group

Respectfully submitted,
 SERILA DEARMAN

INJECTION WELL DATA SHEET

OPERATOR Conoco LEASE Douglas Hobbs (GSA) Unit
 WELL NO. 22 FOOTAGE LOCATION 460' NW x 198' E NWL SECTION 5 TOWNSHIP 19S RANGE 28E

SchematicTabular DataSurface Casing

Size _____ " Cemented with _____ sx.

TOC _____ feet determined by _____

Hole size _____

Intermediate Casing

Size _____ " Cemented with _____ sx.

TOC _____ feet determined by _____

Hole size _____

Long string

Size _____ " Cemented with _____ sx.

TOC _____ feet determined by _____

Hole size _____

Total depth _____

Injection interval
4171' feet to 4170' feet
 (perforated or open-hole, indicate which)

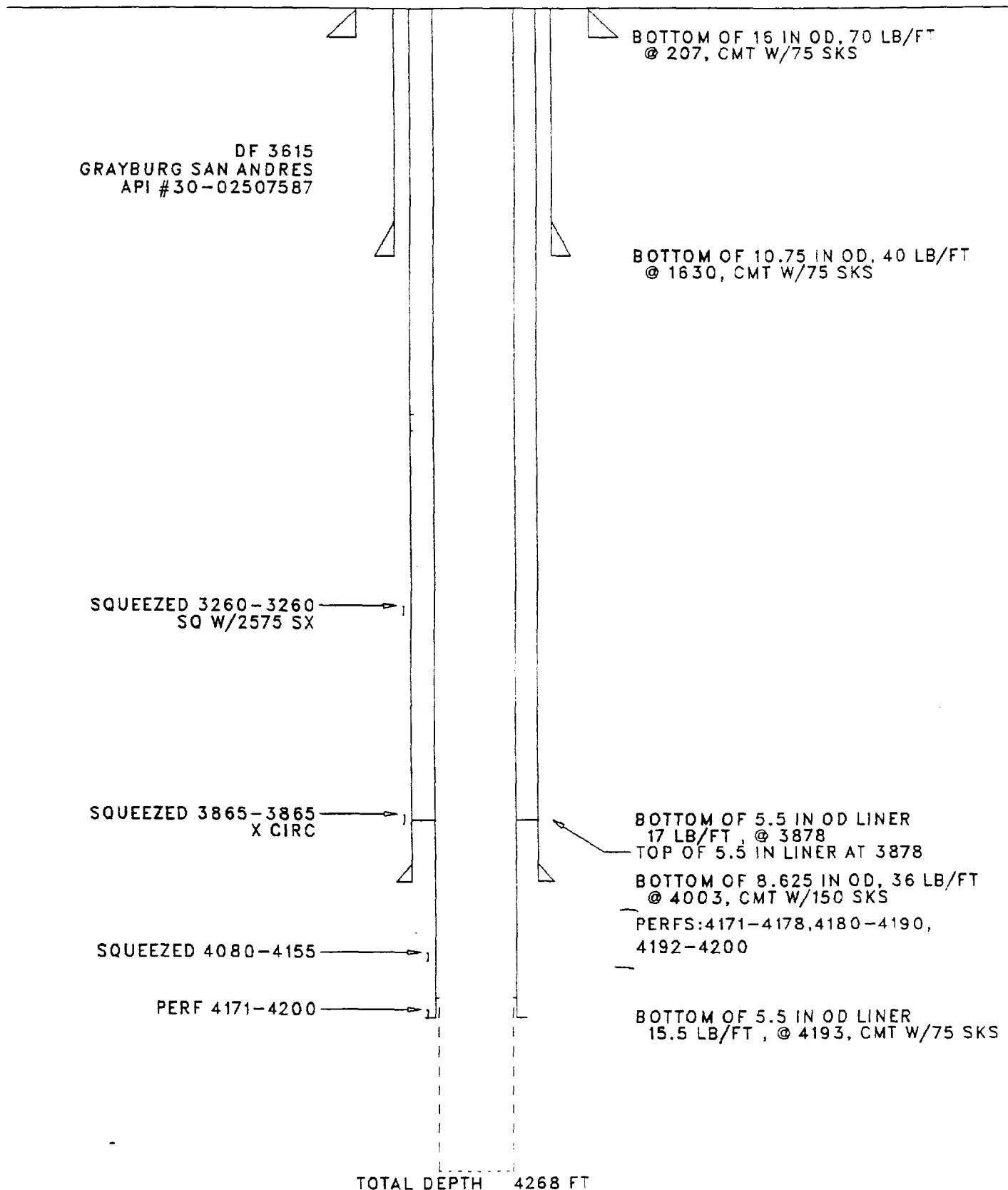
See attached well bore
 diagram and well
 history.

Tubing size 2 3/8 lined with Elastic Coated set in a
 (material)
Baker Fullbore Packer packer at 4160' feet
 (brand and 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) Hobbs Grayburg San Andres
- Is this a new well drilled for injection? ☐ Yes ☒ No
 If no, for what purpose was the well originally drilled? Producing
- Has the well ever been perforated in any other zone(s)? List all such perforated intervals and give plugging detail (sacks of cement or bridge plug(s) used) See attached history
- Give the depth to and name of any overlying and/or underlying oil or gas zones (pools) in this area. 2nd rock - lower; 3rd rock - upper

SOUTH HOBBS UNIT 22 (924557)
HOBBS GRAYBURG SAN ANDRES FIELD
660' FNL X 1980' FWL, SEC 3, T19S, R38E
LEA COUNTY, NEW MEXICO



South Hobbs Unit No. 22
(Formerly: Byers "A" No. 11)
660' FNL x 1980' FWL, Section 3, T-19-S, R-38-E
Completion and Workover History

- 12-11-32: 16" - 70" csg SA 207'. Cmt w/75 sx. Drill to 1633'. Hole crooked. Plugged back w/300 sx cmt. PB to 995'. Resumed drilling and re-drilled to 1630'. Ran and set 10-3/4" 40# and 45# csg. SA 1630'. Cmt w/75 sx. 8-5/8" 36# CSA 4003'. Cmt w/150 sx. TD - 4174'. On potential test well flowed 1555 BO x 0 BW in 24 hours. GOR 1104.
- 02-16-34: Acidized w/2000 gals 50% HCl acid.
Potential PWO - 1329 BOPD. GOR 1853.
Potential AWO - 4500 BOPD. GOR 584.
- 09-08-34: Acidized w/2000 gals 50% HCl acid.
Potential PWO - 4500 BOPD. GOR 584.
Potential AWO - 15,374 BOPD. GOR 976.
- 03-06-48: Deepened hole 4174'-4193'. Run log. RIH w/retainer and SA 3952'. Cmt bottom plug w/12 sx. Perf 8-5/8" csg @ 3260' w/4 SPF. Set retainer at 3210'. Cmt behind 8-5/8" csg w/2575 sx w/2% CaCl. Drill on retainer @ 3210' and clean out hole to 4193'. Run 315' of 5-1/2" 15.5# liner. Cmt w/75 sx. Ran 5-1/2" csg from 3878' to surf. Perf 4080'-4100', 4115'-55', and 4165'-93' w/6 SPF. PAWO - flow 222 BOPD. GOR 675.
- 07-17-58: Acidize w/1000 gals 15% HCl acid. Max 1200#. AIR 2.8 BPM.
PPWO - flowed 34 BO x 5 BW in 24 hours. GOR 2745.
PAWO - flowed 55 BO x 14 BW in 24 hours. GOR 2745.
- 04-26-66: Plug back w/sand 4193'-4162'. RIH w/cmt retainer SA 4050'. Squeeze perfs 4080'-4155' w/150 sx. Incor w/1/2#/sx Tuf-plug in last 50 sx. Max 3000#. Rev out 17 sx. Drill out retainer and cmt. Test squeeze to 700#. OK. Clean out sand fill to 4193'. Acidize w/500 gals LSTNE. Max 250#. Min vac.
PPWO - Pump 0 BO x 141 BW in 24 hours.
PAWO - Pump 47 BO x 69 BW in 24 hours. GOR 1188.
- 12-16-69: RIH w/BP @ 4157'. Test squeezed perfs 4080'-4155'. Perfs leaking. POOH w/BP. RIH w/cmt ret. @ 4050'. Re-squeeze perfs 4080'-4155' and perfs 4165'-93' w/75 sx neat and 50 sx w/1/4# tuf-plug. Could not pump into perfs. Acidize perfs w/300 gals acid. Max 1500#. AIR 2.5 BPM. Squeeze perfs w/75 sx neat and 50 sx w/1/4#/sx tuf-plug. Max 2500#. Drill cmt and clean out to 4193'. Press squeeze to 1500# and bled off to 250# in 8 min. Acidize w/250 gals 15% acid prior to squeezing. Squeeze w/100 sx neat and 50 sx w/1/4#/sx tuf-plug. Max 2500#. Rev out 65 sx. Drill cmt and clean out to 4193'. Perf 4176'-86' w/2 SPF. Acidized w/2000 gals 15% NE acid. Max 200#. Min vac. AIR 1 BPM. ISIP vac.
PPWO - Pump 34 BO x 87 BW in 24 hours.
PAWO - Pump 20 BO x 111 BW in 24 hours.

05-15-79: Drill from 4193'-4257' w/4-3/4" bit. Acidized perfs 4176'-86' and open hole w/1600 gals 15% NE acid. Communicated w/squeezed perfs 4080'-4155'. Pump 300# mothballs and 3000 gals acid in 2 equal stages w/300# mothball between stages. Max 800#. Min 100#. AIR 3 BPM. ISIP vac.

PPWO - Pump 22 BOPD x 87 BWPD x 0 MCFD.

PAWO - Pump 69 BOPD x 454 BWPD x 0 MCFD.

06-05-81: Perf 4119'-30' w/2 SPF. Acidize perfs 4176'-86' and O. H. w/5000 gals acid. Max 400#. AIR 5 BPM. Acidize perfs 4119'-30' w/1500 gals acid. Max 200#. AIR 3 BPM.

PPWO - Pump 27 BO x 330 BW x 38 mcf in 24 hours.

PAWO - Pump 68 BO x 815 BW x 190 mcf in 24 hours.

01-29-87: Acidize and stimulate well in effort to increase production. (MISU, pull rods, pump, 2-7/8" tubing and mother hubbard. RIH with pint point packer with 2' spacing (for 5-1/2" csg). Run PPI packer without fluid plug and RFC valve in place. Set packer at 4200' (note 5-1/2" csg set at 4200', well has open hole interval from 4200' - 4268'. Acidize the open hole interval 4200-4268' with a total of 3400 gallons of 15% NE HCL acid with additives. Acid contains 1gal/1000 gal acid WA-211 corrosion and 2gal/1000 gal acid WA-212 surfactant. Pmp acid at 1 BPM. Limit maximum surface treating pressure to 1000 psi. Run fluid plug and RFC valve. Acidize the following intervals with 50 gals of 15% NE HCL acid (with additives as in prior step) per foot of perfs. Intervals: 4192-4200', 4180-4190' and 4171-4179'. Total acid volume required 1250 gallons. Pull packer up to 4100' and fish RFC valve and fluid plug. Flush acid to perfs with 40 barrels of clean water. Release packer and POH. RIH with mother hubbard and 2-7/8" tubing as was pulled earlier. Run pump and rods and return well to prod.)

08-08-89: Stimulate production due to ESP cycling and IWR greater than 1. (Procedure: POH with prod. tbg x equip. Check pmp x repair as necessary: RIH with workstring and PPI packer @ 2' spacing acidize openhole w/1000 gal 15% NE HCL w/PKR x acidize perfs w/75 gals NE HCL containing 1gal/1000 gal WA-211 + 2gal/1000 gal WA-212. Interval perfs 4171-4178' and 4180-4190', open hole 4193-4210'. Total acid volume is 2375 gallons. Pmp acid at 1 BPM x limit pressure to 800 PSI above RFC opening. Pull PKR up to 3900' and flush with perfs with 30 BBLs clean wtr. Release PKR and POH. RIH with production equipment as pulled earlier and return well to production.)

10-20-89: Deepen to 4315' and log and acidize additional pay. (Procedure: Change out ESP after workover with equipment from well no. 135. MIRU service unit x pull ESP x prod. tbg. inspect and repair equipment as necessary. RIH w/4-3/4" bit and drill out to 4315'. Rig up loggers x log interval 2315-4315' (minimum charge 2000') w/GR-CNL-CAL x rig down loggers. RIH w/workstring and PKR x 2 JTS tailpipe x set PK @ 4200'. Acidize openhole w/2500 gal 20% NE CHL x additives (WA211 and WA212) in 3 stages using 200 lbs rock salt to divert as follows.

Stage 1 -- 500 gal acid

Stage 2 -- 1000 gal acid

Stage 3 - 1000 gal acid

Pmp acid @ 5 BPM x limit pressure to 2000 psi.

Flush to bottom w/50 bbl water x POH UN prod. equip. from well #135 x RDSU

11-09-90 Acidize to treat for scale buildup and improve rates. (Procedure: POH with production tbgs. x equip. Inspect x repair equip. as necessary. RIH with workstring and packer @ set at 4160' Acidize pay with 5000 gal 20% NE HCL containing 2 gal/1000 WA-211 and 2 gal/1000 gal WA-212. pump in 3 stages as follows:

Stage 1 -- 1500 gal acid and 200# rock salt

Stage 2 -- 1500 gal acid and 200# rock salt

Stage 3 -- 2000 gal acid

Pmp at 5 BPM x limit pressure to 2000 psi above RFC opening.

Flush to perfs with 40 bbls clean water. Release PKR and POH. RIH with production equip. as pulled earlier and return well to production.)

06-22-95 Proposal to convert well from producer to water injector.