DANIEL S. NUTTER

REGISTERED PETROLEUM ENGINEER

PETROLEUM CONSULTATION AND STATE AND FEDERAL REGULATORY SERVICES

105 EAST ALICANTE

SANTA FE, NEW MEXICO 87501

PHONE (505) 982-0757

April 7, 1983

Mr. Joe D. Ramey
Division Director
Oil Conservation Division
New Mexico Energy and Minerals Department
Post Office Box 2088
Santa Fe, New Mexico 87501

Dear Mr. Ramey:

Enclosed herewith, in duplicate, is the application of Warren Petroleum Company, a Division of Gulf Oil Corporation, for authority to convert to water disposal the Gulf Oil Corporation Maud Saunders Well No. 4, a plugged and abandoned well located 1815 feet from the South line and 660 feet from the West line of Section 34, Township 14 South, Range 33 East, NMPM, Saunders Field, Lea County, New Mexico.

Waters to be disposed of will consist of cooling tower blowdown and contained water from the inlet scrubbers of the Warren Saunders Gasoline Plant.

Application is made pursuant to Rule 701 D of the Division Rules and Regulations for administrative approval for disposal into the San Andres, a formation older than Triassic which is nonproductive of oil or gas within a radius of two miles from the proposed injection well.

Publication of Warren's intent to utilize the subject well for water disposal has been made in the Hobbs Daily News Sun, and copies of this application have been furnished to each leasehold operator within one half mile of the well. Warren Petroleum is the owner of the surface of the land upon which the well is located.

Your approval of the subject application at the expiration of the required 15-day waiting period is respectfully requested.

Very truly yours,

Daniel S. Nutter

xc: attached mailing list

MAILING LIST

Mr. Jerry T. Sexton
District Supervisor
New Mexico Oil Conservation Division
P. O. Box 1980
Hobbs, NM 88240

Charles B. Gillespie, Jr.
P. O. Box 8
Midland, TX 79702

Petroleum Corp. of Texas and BBL Ltd
P. O. Box 911
Breckenridge, TX 76024

R and C Company
P. O. Box 6434
Odessa, Texas

Getty Oil Co.
P. O. Box 1231
Midland, TX 79702

Attn: District Manager

Warren Petroleum Co.
P. O. Box 1589
Tulsa, OK 74102

Attn: Ms. Lynn T. Reed

Warren Petroleum Co.
P. O. Box 1689
Lovington, NM 88260

Attn: Mr. Forrest C. Noah

BEFORE THE NEW MEXICO OIL CONSERVATION DIVISION

APPLICATION FOR ADMINISTRATIVE APPROVAL

WARREN PETROLEUM COMPANY

A Division of Gulf Oil Corporation

FOR CONVERSION TO WATER DISPOSAL

the

GULF OIL CORPORATION MAUD SAUNDERS WELL NO. 4

Located 1815' FSL 660' FWL Sec. 34-T14S-R33E

Lea County, New Mexico

T A B L E O F C O N T E N T S

STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT

OIL CONSERVATION DIVISION
POST OFFICE BOX 2088
STATE LAND OFFICE BUILDING
SANTA FE NEW MEXICO 87501

FORM C-108
Revised 7-1-81

APPLICATION FOR AUTHORIZATION TO INJECT

RECEIVED
APR 07 1983
OIL CONSERVATION DIVISION
SANTA FE

I. Purpose: ☐ Secondary Recovery ☐ Pressure Maintenance ☒ Disposal ☐ Storage
Application qualifies for administrative approval? ☐ yes ☐ no

II. Operator: Warren Petroleum Company, a Division of Gulf Oil Corporation

Address: P. O. Box 1689, Lovington, New Mexico 88260

Contact party: Dan Nutter, 105 E. Alicante Santa Fe, New Mexico 87501 Phone: (505) 982-0737

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 _____.

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: Dan Nutter Title Consulting Petroleum Engineer

Signature: Dan Nutter Date: APR 7 1983

* 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.

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;

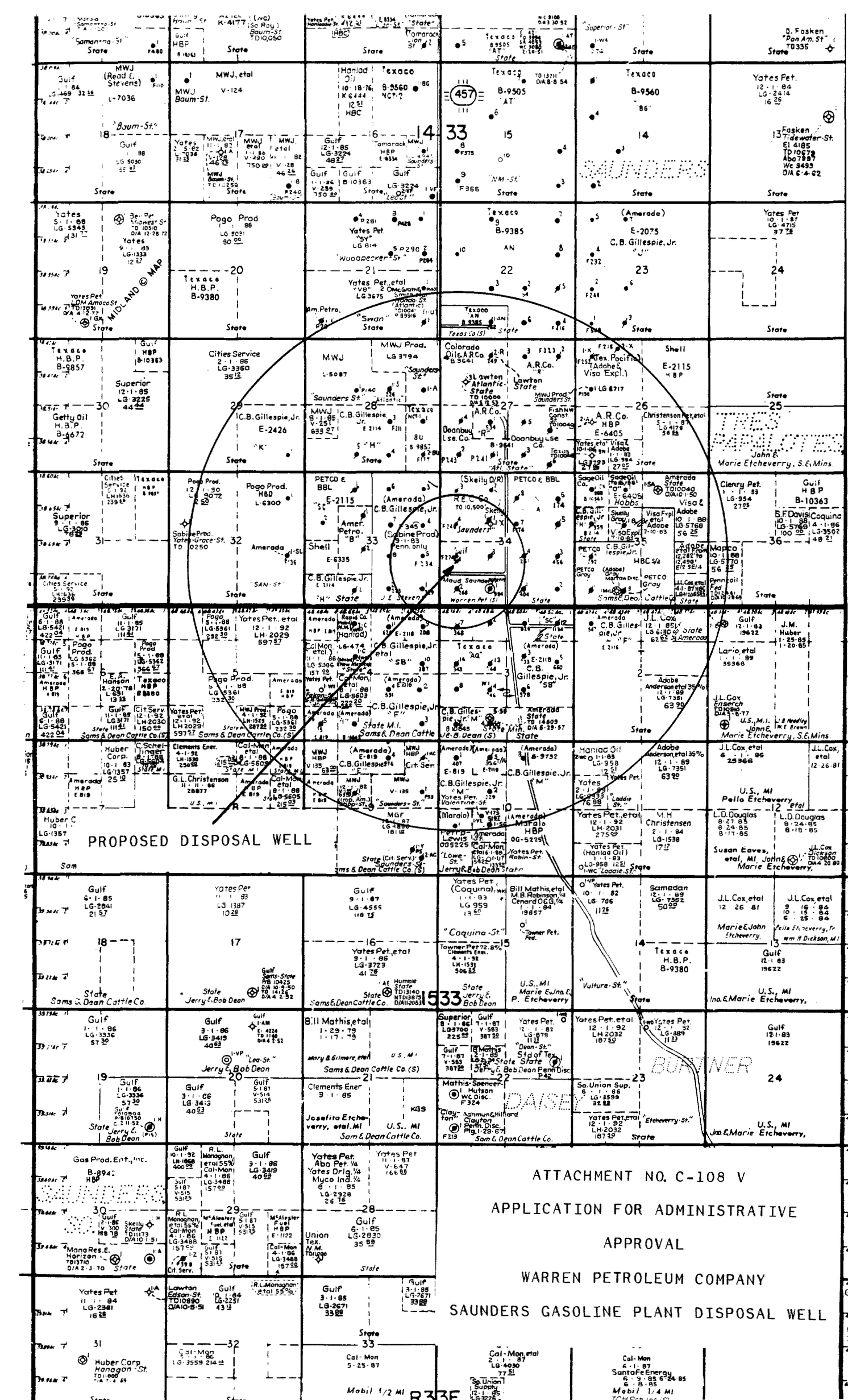
(2) the intended purpose of the injection well; with the exact location of single wells or the section, township, and range location of multiple wells:

(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.



ATTACHMENT NO. C-108 V

APPLICATION FOR ADMINISTRATIVE

APPROVAL

WARREN PETROLEUM COMPANY

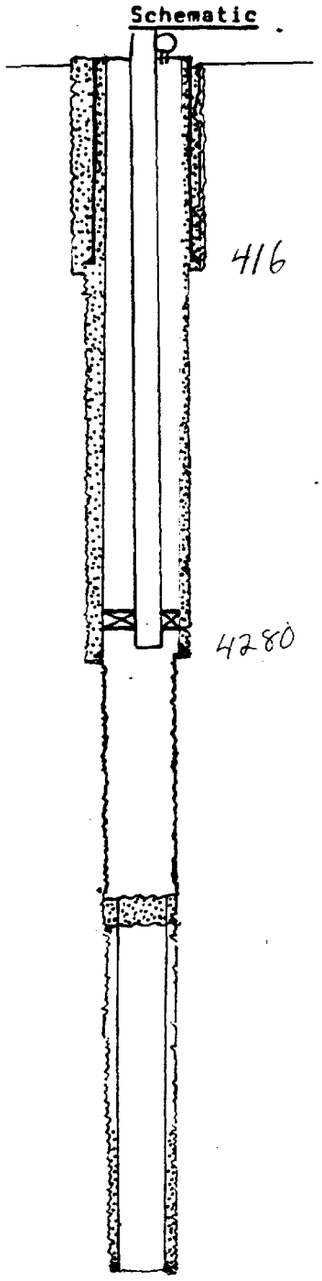
SAUNDERS GASOLINE PLANT DISPOSAL WELL

OPERATOR, LEASE NAME AND WELL NUMBER	LOCATION	CASING AND CEMENT			PERFORATIONS	POTENTIAL	CURRENT STATUS
		SURFACE	INTERMEDIATE	PRODUCTION			
Petroleum Corp. of Texas State A Well No. 4 (formerly Shell Oil State A No. 4)	1980' FSL 1980' FEL 34-14S-33E Unit J	13 3/8" @ 331' 325 sx. cmt. Cmt. circ.	8 5/8" @ 4205' 3000 sx. cmt Cmt. circ.	5 1/2" liner 3984'-9921' 900 sx. @ shoe T. cmt. 4615'	9770'-83' 9805'-10' 9842'-56'	251 BO 3 BW	Now P & A; See Attachment b 3
Gulf Oil Corporation Maud Saunders Well No. 3	1980' FSL 1980' FWL 34-14S-33E Unit K	13 3/8" @ 297' 395 sx. cmt. Cmt. circ.	9 5/8" @ 4249' 1600 sx. cmt. T. cmt. 1995'	7" @ 9924' 181 sx. cmt. T. cmt. 8715'	9853'-55' 9855'-9905'	392 BO 108 BW 9-23-52	Now P & A; See Attachment b 4
Gulf Oil Corporation Maud Saunders Well No. 4-x	1830' FSL 660' FWL 34-14S-33E Unit L	13 3/8" @ 401' 396 sx. cmt.					Surface csg. parted while cementing. Now P & A; See Attachment b5
Gulf Oil Corporation Maud Saunders Well No. 4	1815' FSL 660' FWL 34-14S-33E Unit L	13 3/8" @ 416' 500 sx. cmt. Cmt. circ.	8 5/8" @ 4280' 3300 sx. cmt. Cmt. circ.	5 1/2" @ 10010' 450 sx. cmt. ~~Calc.~~ top ~~7916'~~ 7795' T.S.	9790'-9810' 9818'-23' 9844'-9940' 9952'-60'	274 BO 0 BW 7-10-58	Proposed Disposal Well Now P & A; See Attachments b 6 and b 7
Gulf Oil Corporation Maud Saunders Well No. 2	660' FSL 660' FWL 34- 14S-33E Unit M	13 3/8" @ 312' 350 sx. cmt. Cmt. circ.	9 5/8" @ 4229' 1800 sx. cmt. Top not rptd.	7" @ 9999' 300 sx. cmt. T. cmt. 7645'	9832'-62' 9870'-86'	268 BO 108 BW 6-16-52	Now P & A; See Attachment b 8
Gulf Oil Corporation Maud Saunders Well No. 1	660' FSL 1980' FWL 34-14S-33E Unit N	13 3/8" @ 327' 350 sx. cmt. Cmt. circ.	9 5/8" @ 4197' 1800 sx. cmt. Top not rptd.	7" @ 10759' 800 sx. cmt. T. cmt. 7550'	9800'-12' 9822'-36' 9864'-70' 9865'-82'	996 BO 468 BW 1-11-50	Now P & A; See Attachment b 9
Chas. B. Gillespie Jr. State G Well No. 2 (formerly Amerada State S "B" No. 2)	660' FNL 1980' FWL 3-15S-33E Unit C	11 3/4" @ 297' 225 sx. cmt. Cmt. circ.	7 5/8" @ 3100' 1000 sx. cmt. T. cmt. 809'	5" @ 8208' 600 sx. cmt. T. cmt. 3753' 4" liner 8191'-9915' 275 sx cmt	9783'-9803' 9830'-58' 9885'-9913' Open hole: 9915'-10000'	824 BO 1 BW 5-22-51	TD 10000' Now TA
Chas. B. Gillespie Jr. State G Well No. 7 (formerly Amerada State S "B" No. 7)	800' FNL 660' FWL 3-15S-33E Unit D	13 3/8" @ 296' 250 sx. cmt. Cmt. circ.	8 5/8" @ 4200' 1450 sx. cmt. T. cmt. 1440'	5 1/2" @ 10010' 600 sx. cmt. T. Cmt. 6740'	9801'-07' 9900'-22' 9944'-51' 9957'-65'	368 BO 9-28-51	PBTD 10005' Currently producing approx. 1.5 BOPD

OPERATOR, LEASE NAME AND WELL NUMBER	LOCATION	CASING AND CEMENT			PERFORATIONS	POTENTIAL	CURRENT STATUS
		SURFACE	INTERMEDIATE	PRODUCTION			
Chas. B. Gillespie Jr. Stevens Well No. 4 (formerly Amerada J. E. Stevens No. 4)	1980' FNL 660' FEL 33-14S-33E Unit H	13 3/8" @ 296' 250 sx. cmt. Cmt. circ.	8 5/8" @ 4159' 1500 sx. cmt. T. cmt. 1848'	5 1/2" liner 4034'-9998' 200 sx. @ top 600 sx. @ shoe	9862'-93' 9932'-53'	344 BO 42 BW 5-13-58	PBTD 9990' Currently SI
Chas. B. Gillespie Jr. Stevens Well No. 5 (formerly Amerada J. E. Stevens No. 5)	1980' FSL 660' FEL 33-14S-33E Unit I	13 3/8" @ 295' 250 sx. cmt. Cmt. circ.	8 5/8" @ 4159' 1500 sx. cmt. Top not rptd.	5 1/2" liner 4035'-10021' 200 sx. @ top 600 sx. @ shoe	9814'-23' 9854'-68' 9882'-96' 9936'-54'	234 BO 12 BW 9-29-58	PBTD 10012' Currently producing approx. 2 BOPD
Chas. B. Gillespie Jr. Stevens Well No. 8 (formerly Amerada J. E. Stevens No. 8)	1980' FSL 1980' FEL 33-14S-33E Unit J	13 3/8" @ 298' 250 sx. cmt. Cmt. circ.	8 5/8" @ 4168' 1500 sx. cmt. T. cmt. 2098'	5 1/2" liner 4063'-10008' 200 sx. @ top 600 sx. @ shoe	9934'-56'	265 BO 9 BW 8-28-59	PBTD 10000' Currently producing approx. 9 BOPD
Chas. B. Gillespie Jr. Stevens Well No. 1 (formerly Amerada J. E. Stevens No. 1)	660' FSL 660' FEL 33-14S-33E Unit P	13 3/8" @ 296' 250 sx. cmt. Cmt. circ.	8 5/8" @ 4164' 1500 sx. cmt. T. cmt. 660'	5 1/2" @ 10025' 600 sx. cmt. T. cmt. 7712'	9858'-92' 9910'-24' 9934'-52' 9974'-92'	220 BO 31 BW 1-25-53	PBTD 10020' Currently producing less than 1 BOPD
Guest and Wolfson M. H. Saunders Well No. 4 (formerly Fish Northwest Constructors Maud Saunders A No. 4)	1980' FNL 660' FWL 34-14S-33E Unit E	13 3/8" @ 366' 365 sx. cmt. Cmt. circ.	8 5/8" @ 4300" 2100 sx. cmt. Cmt. circ.	5 1/2" @ 10014' 600 sx. cmt. Top not rptd.	9866'-9900' 9910'-20' 9935'-60'	275 BO 35 BW 1-26-58	Now P & A; See Attachment b 1
Skelly Oil Co. M. H. Saunders Well No. 5 (formerly Fish Northwest Constructors Maud Saunders A No. 1)	1980' FNL 1980' FWL 34-14S-33E Unit F	13 3/8" @ 397' 375 sx. cmt. Cmt. circ.	8 5/8" @ 4287'				Intermediate casing parted while cementing. Subsequently plugged back and used as gas volume tank. Now P & A; See Attachment b 2
Skelly Oil Co. M. H. Saunders Well No. 1 (formerly Fish Northwest Constructors Maud Saunders A No. 1-x	1955' FNL 1985' FWL 34-14S-33E Unit F	13 3/8" @ 366' 350 sx. cmt. Cmt. circ.	8 5/8" @ 4310' 2500 sx. cmt. Cmt. circ.	5 1/2" @ 10030' 600 sx. cmt. Top not rptd.	9818'-26' 9836'-90' 9914'-44' 9962'-92'	201 BO 3 BW	Now P & A ; See Attachment b 10

OPERATOR	LEASE			
Gulf Oil Corporation	Maud Saunders			
WELL NO.	FOOTAGE LOCATION	SECTION	TOWNSHIP	RANGE
4	1815' FSL and 660' FWL	34	14S	33E

Schematic



Tabular Data

Surface Casing

Size 13 3/8" Cemented with 500 sx.

TOC Surface feet determined by cement circulated

Hole size 17 1/2"

Intermediate Casing

Size 8 5/8" Cemented with 3300 sx.

TOC Surface feet determined by cement circulated

Hole size 11 3/4"

Long string

Size 5 1/2" Cemented with 450 sx.

TOC 7916 feet determined by calculated

Hole size 7 7/8"

Total depth 10010'

Injection interval

4280 feet to 4597 feet open hole
(perforated or open-hole, indicate which)

For more detailed information on the subject well, see Attachment C-108 VI (a) 1;

For more detailed schematic drawing of present condition of the subject well, see Attachment C-108 VI (b) 6;

For more detailed schematic drawing of proposed conversion of subject well to water injection, see Attachment C-108 VI (b) 7.

Tubing size 2 3/8" lined with plastic coating (material) set in a 8 5/8" Baker Model AD-1 NP (brand and model) packer at 4250 feet.
(or describe any other casing-tubing seal).

Other Data

1. Name of the injection formation San Andres

2. Name of Field or Pool (if applicable) Saunders Permo-Upper Pennsylvanian

3. Is this a new well drilled for injection? [ ] Yes [X] No

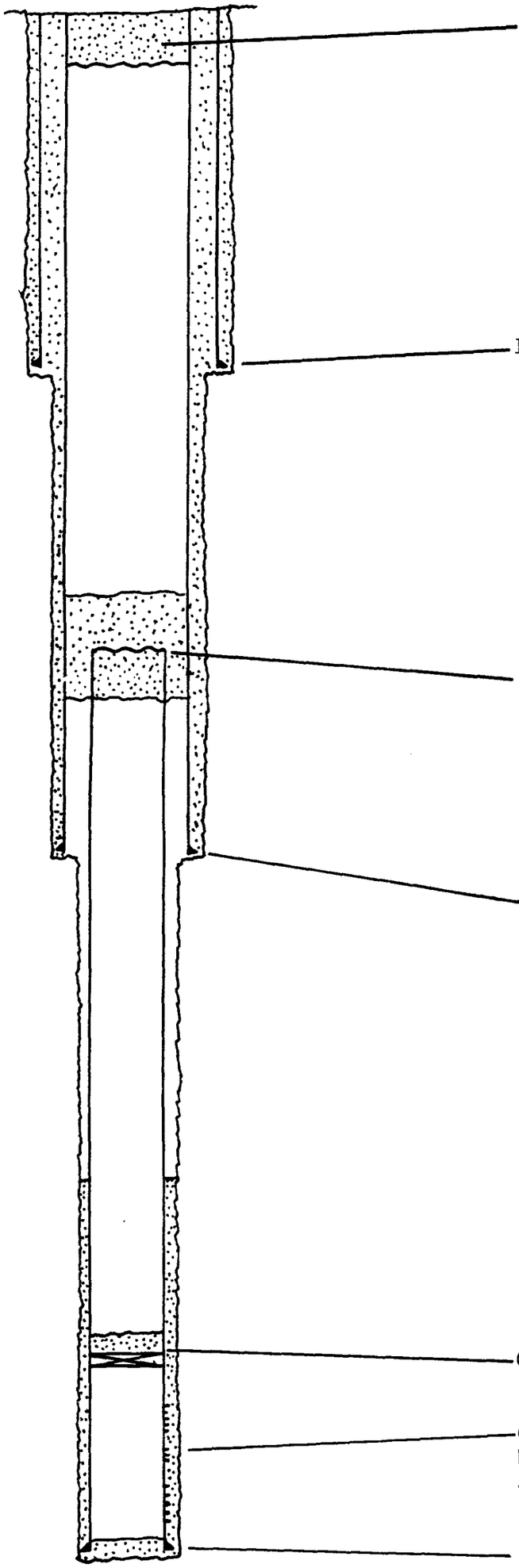
   If no, for what purpose was the well originally drilled? oil and gas production

4. 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) Originally perforated 9844'-9940' in the Saunders Permo-Upper Penn Pool. IP 7-10-58 274 BO, 0 BW, 24 hrs. P & A 3-8-77. Cut and pulled 5 1/2" csg. from 4597'. CIBP @ 9700' w/ 20 sx on top; cmt plugs 0-50', 1550-1650', 4230-4330', & 4547-4647

5. Give the depth to and name of any overlying and/or underlying oil of gas zones (pools) in this area. No overlying production in area; only limited underlying production. No production other than Saunders Permo-Upper Penn @ approx. 9800'

Completed as producing
oil well 1-26-58

P & A 4-25-74



10 sx. cement plug @ surface
with marker

13 3/8" Csg. @ 375' with 375 sx.
Cement Circulated

5 1/2" Csg. cut and pulled from 2980'. 60 sx. cement plug spotted across stub. (Estimate approx. 100' above and 100' below stub.)

8 5/8" Csg @ 4300' with 2100 sx.
Cement Circulated

Cast iron bridge plug @ 9971'
capped with 35' cement

Orig. perfs 9866'-9960'. Initial Potential 275 BO & 35 BW 1-26-58
Add'l perfs. 9992'-10,002 opened later. P & A 4-25-74.

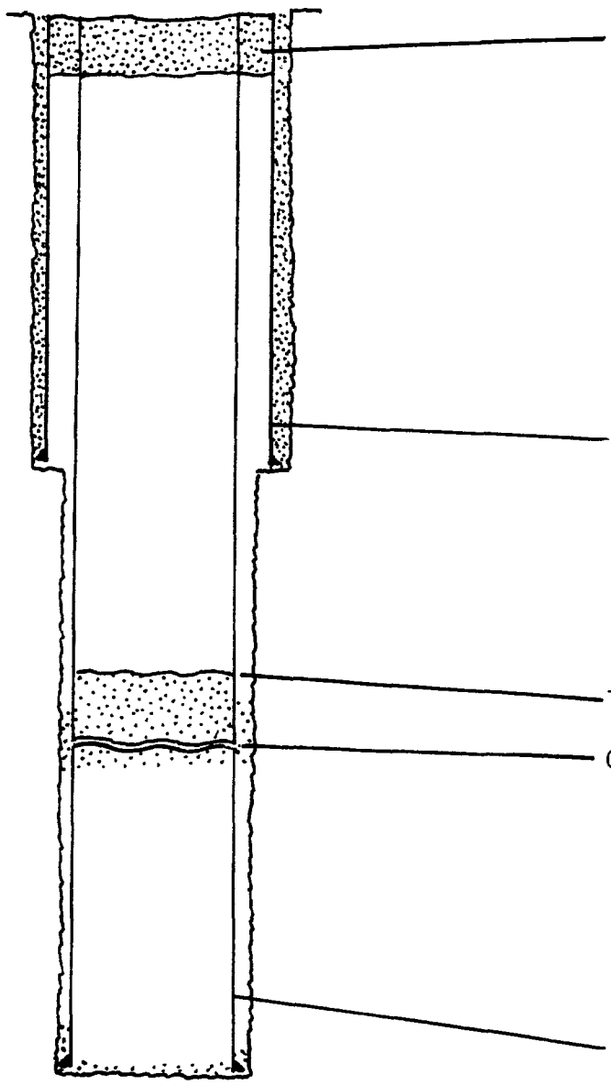
5 1/2" Csg. @ 10,014 with 600 sx.
Est. Top Cmt. 7637'

TD 10,013'
PBTD 10,002'

Guest and Wolfson M. H. Saunders # 4
Formerly Fish Northwest Constructors Maud Saunders A # 4
Location: 1980' FNL & 660' FWL Sec. 34-T14S-R33E (E)

Attachment C-108 VI (b) 1

Spudded 5-8-57
P & A 5-30-57
Recompleted as Gas
Volume Tank 12-57
Final P & A 3-20-74



Guest and Wolfson

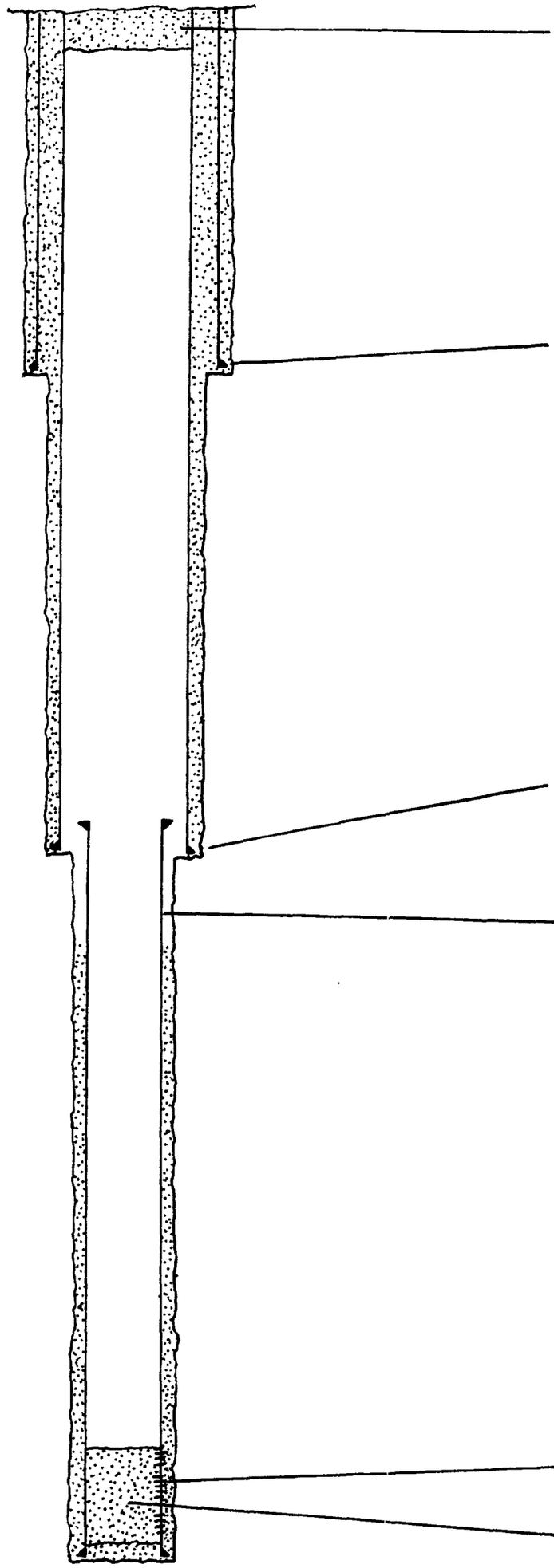
M. H. Saunders #5

1980' FNL 1980' FWL

Sec. 34-T14S-R33E

Originally Fish Northwest Constructors Maud Saunders A Well No. 1, later became Skelly Oil Company M. H. Saunders Well No. 1-x, then changed to Skelly's M. H. Saunders No. 5

Completed 3-52 as producing
oil well; P & A 4-70



10 sx. cement plug at surface

13 3/8" surface csg @ 331'
Cmtd. with 325 sx. Cement
circulated to surface

8 5/8" intermediate csg @ 4205'
Cmtd. with 3000 sx. Cement
circulated to surface

5 1/2" liner from 3984' to 9921'
Cemented with 900 sx at shoe;
Top of cement 4615' by T. S.

Perforations 9770'-83' 9805'-10'
9842'-56'

P & A April 1970 Spotted 25 sx.
cmt. 9770'-9910'; no csg pulled.

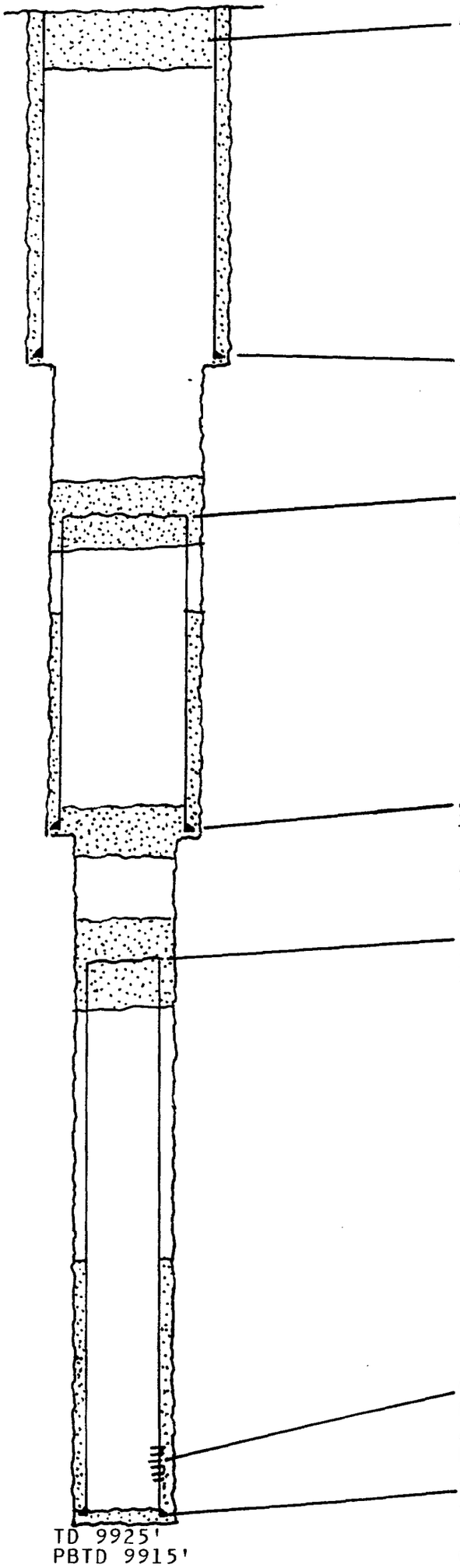
TD 9921'
PBTD 9889'

Petroleum Corporation of Texas
State A Well No. 4
Formerly Shell Oil Co. State A No.4
1980' FSL 1980' FEL Sec. 34-T14S-R33E

Attachment C-108 VI (b) 3

Completed as producing
oil well 9-23-52;

P & A 2-5-71



40 sx. cement plug at surface
with marker

13 3/8" Csg. @ 297' with 395 sx.
Cement Circulated

9 5/8" Csg. cut and pulled from
800'. 55 sx. cement plug spotted
from 750' to 850' across stub.

9 5/8" Csg. @ 4249" with 1600 sx.
Top cmt. @ 1995' by temp. survey.

40 sx. cement plug spotted 4200'
to 4300' across 9 5/8" shoe.

7" Csg. cut and pulled from 4794'.
30 sx. cement plug spotted 4744'
to 4844' across stub.

Orig. perfs. 9855'-9905'. Initial
Potential 392 BO & 108 BW 9-23-52.
Addl. perfs. 9853'-9855' later.
P & A 2-5-71.

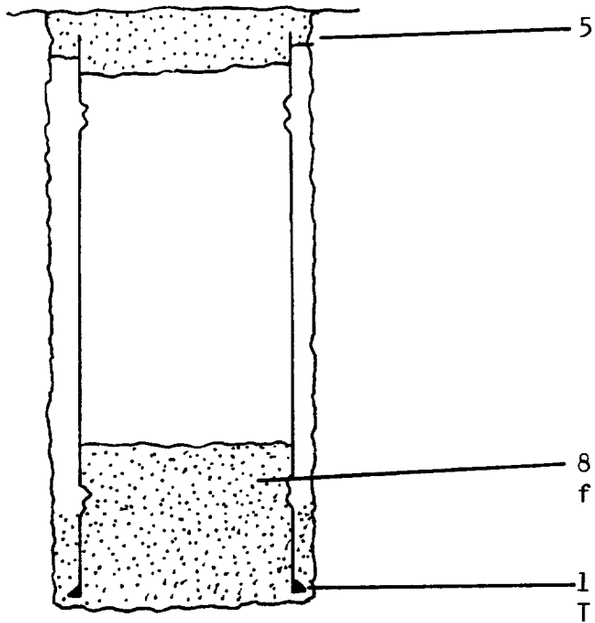
7" Csg. @ 9924' with 181 sx. cement.
Top cmt. 8715' by temp. survey.

TD 9925'
PBTD 9915'

Gulf Oil Corporation
Maud Saunders # 3
Location: 1980' FSL & 1980' FWL Sec. 34-T14S-R34E

Spudded 5-17-58

P & A 5-19-58

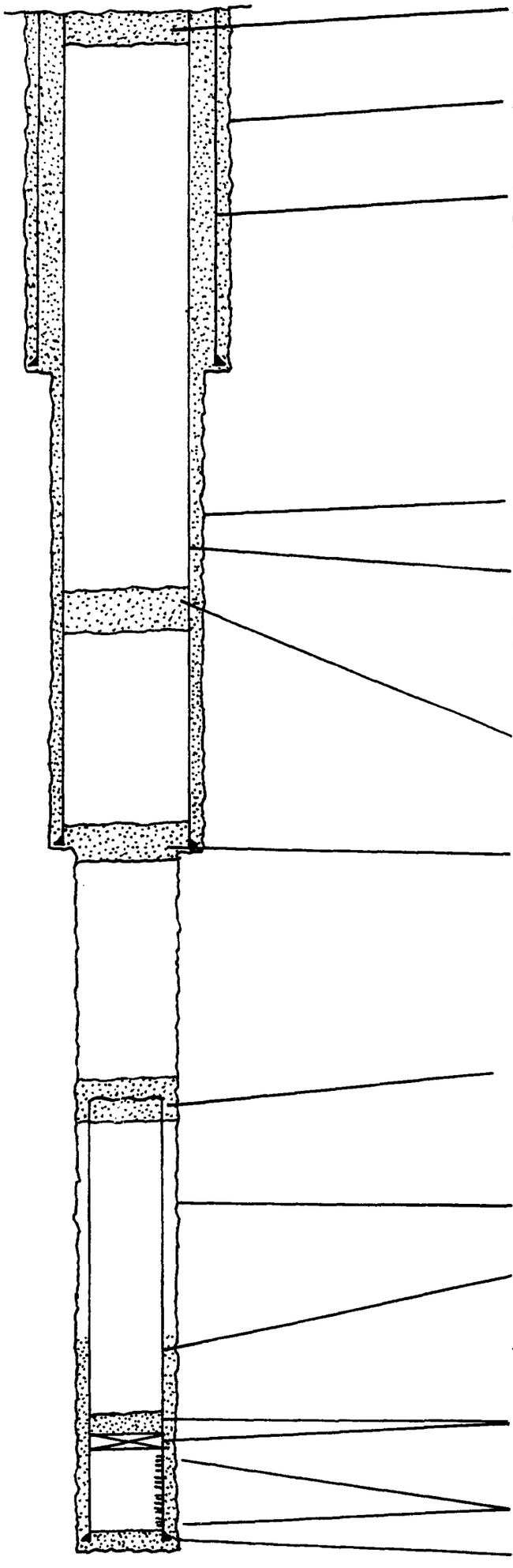


Ran 401' 13 3/8" casing. Mixed 396 sx. cement and pumped in casing. When bottom plug hit shoe and plugged, cement failed to pump out. Pressure went to 1200# and casing parted at top collar in cellar and dropped. Attempted to clean out cement inside casing and found bad casing condition second joint from top and at 338'. Unable to pull casing. 82' cement in bottom of casing 319' to 401'. Placed cement plug in top of casing from surface to 50'. P & A 5-19-58.

Gulf Oil Corporation
Maud Saunders # 4X
Location: 1830' FSL & 660' FWL Sec. 34-T14S-R34E

Completed as producing
oil well 7-10-58

P & A 3-8-77



18 sx. cement plug 0-50'

17 1/2" hole

13 3/8" 48 lb. surface casing @ 416'. Cemented with 500 sx. cement. Cement circulated.

11 3/4" hole

8 5/8" intermediate casing, 28 and 32 lb., @ 4280'. Cemented with 3300 sx. cement. Cement circulated

40 sx. cement plug 1550'-1650'

50 sx. cement plug 4230'-4330'

Cut and pulled 5 1/2" production casing from 4597'. Spotted 100' cement plug 4547'-4647' across 5 1/2" stub.

7 7/8" hole

5 1/2" production casing, 15.5 and 17 lb., @ 10010'. Cemented with 450 sx. cement. Cement top ~~calculated~~ @ ~~7916~~'. 7795 T.S.

Cast iron bridge plug @ 9700', topped with 20 sx., 150', of cement.

Perforations 9790'-9960'

TD 10010', PBTD 9980'

Gulf Oil Corporation Maud Saunders #4
Location: 1815' FSL & 660' FWL Sec. 34-T14S-R33E

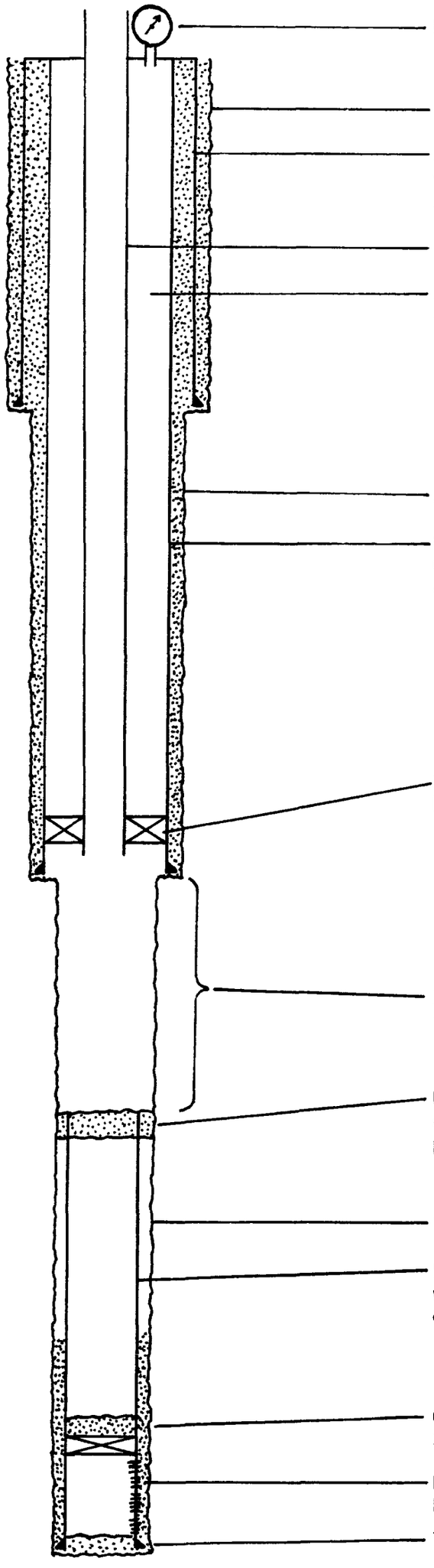
PRESENT CONDITION

Proposed Disposal Well

Attachment C-108 VI (b) 6

Completed as producing
oil well 7-10-58

P & A 3-8-77



Pressure gauge on annulus

17 1/2" hole

13 3/8" casing, 48 lb., @ 416'. Cmt'd with 500 sx. cement. Cement circulated to surface.

2 3/8" plastic-lined tubing

2 3/8' x 8 5/8" annular space loaded with an inert fluid.

11 3/4" hole

8 5/8" casing, 28 and 32 lb., @ 4280'. Cemented with 3300 sx. cement. Cement circulated to surface.

2 3/8" x 8 5/8" Baker Model AD-1 NP Packer set at 4250'

Injection into open hole interval from 4280' to 4597'

Propose to clean out to top of 5 1/2" casing stub at 4597', leaving cement plug from 4597' to 4647'.

7 7/8" hole

5 1/2" casing 4597'-10010' cemented with 450 sx. cement. ~~Calculated~~ top of cement ~~7916'~~. 7795 T.S.

Cast iron bridge plug capped with 20 sx., 150', cement above perfs.

Perforations Saunders Permo-Upper Penn Pool 9790'-9960'.

TD 10010', PBTD 9980'

Gulf Oil Corporation Maud Saunders #4
Location: 1815' FSL & 660' FWL Sec. 34-T14S-R33E

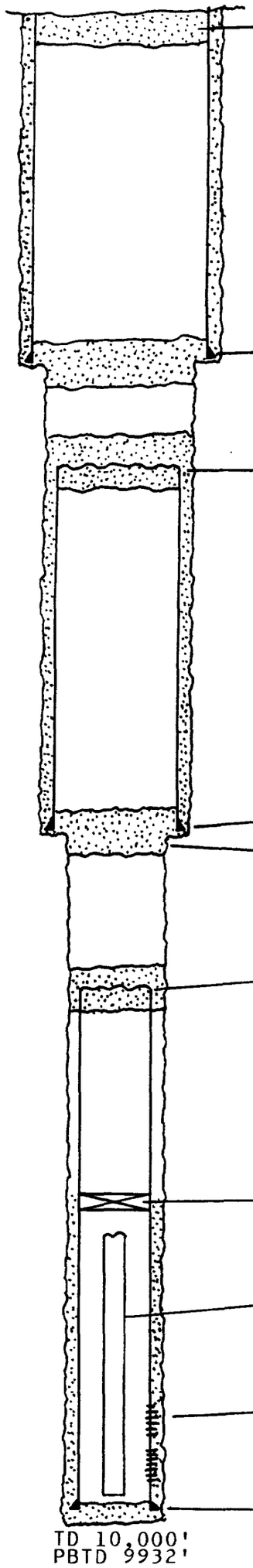
PROPOSED CONVERSION

Proposed Disposal Well

Attachment C-108 VI (b) 7

Completed as producing
oil well 6-16-52

P & A 9-16-69



40 sx. cement plug @ surface with marker

13 3/8" Csg. @ 312' with 350 sx. Cement Circulated

9 5/8" Csg. cut and pulled from 813'. 55 sx. cement plug spotted from 763' to 863' across stub.

9 5/8" Csg. @ 4229' with 1800 sx. Cmt. top probably @ about 813'

40 sx. cement plug spotted from 4180' to 4280' across 9 5/8" csg. shoe.

7" Csg. cut and pulled from 5235'. 30 sx. cement plug spotted 5150' to 5250' across stub.

Cast iron bridge plug @ 7820'

Approx. 1925' tubing and rods lost in bottom of hole

Orig. perfs. 9870' to 9886' Initial Potential 6-16-52 268 BO & 108 BW. Addl. perfs 9832' to 9862' opened later. P & A 9-16-69.

7" Csg. @ 9999 with 300 sx. Top cement 7645' by temp. survey.

TD 10,000'
PBTD 9932'

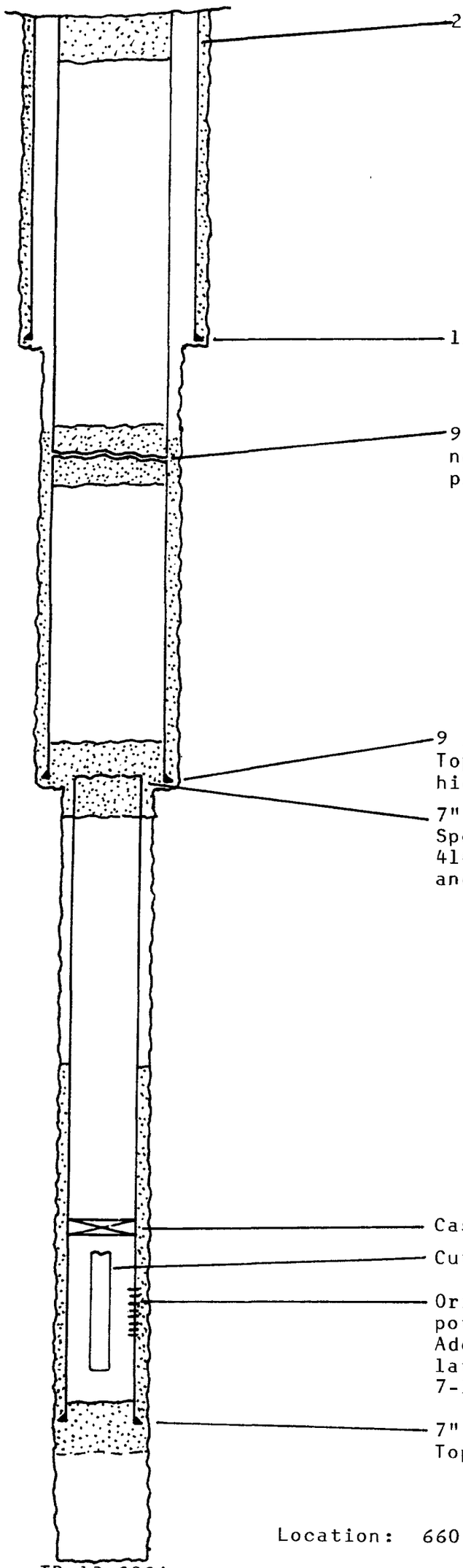
Gulf Oil Corporation
Maud Saunders # 2

Location: 660' FSL & 660' FWL Sec. 34-T14S-R33E

Attachment C-108 VI (b) 8

Completed as producing
oil well 1-11-50

P & A Feb. 71



20 sx. cement plug @ surface with marker

13 3/8" Csg. @ 327' with 350 sx. Cement Circulated

9 5/8" Csg. cut @ 800'. Could not pull so spotted 35 sx. cement plug 750' to 850' across cut.

9 5/8" Csg. @ 4197' with 1800 sx. Top cmt. not reported but probably higher than 800'.

7" Csg. cut and pulled from 4196'. Spotted 40 sx. cement plug from 4146' to 4246' across 9 5/8" shoe and 7" stub.

Cast iron bridge plug @ 9608'.

Cut and recovered tubing from 9766'.

Orig. perfs. 9865'-9882'. Initial potential 1-11-50 996 BO & 468 BW. Addl. perfs.9840'-9860' opened later. Also 9800' to 9864'. TA 7-17-70. P & A Feb. 71.

7" Csg. @ 10759' with 800 sx. Top cmt. @ 7550' by temp. survey.

TD 13,232'
PBTD 10,709'

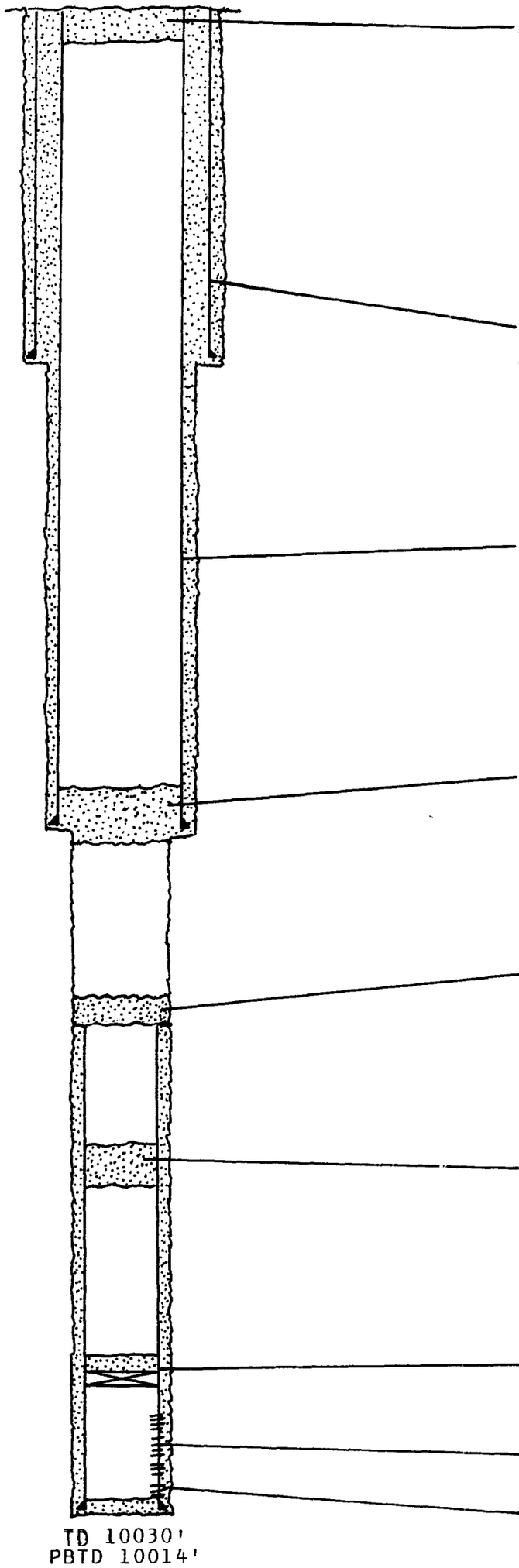
Gulf Oil Corporation
Maud Saunders # 1

Location: 660' FSL & 1980' FWL Sec. 34-T14S-R33E

Attachment C-108 VI (b) 9

Completed as producing
oil well July 1957

P & A 1-8-72



10 sx. cement plug at surface
with marker

13 3/8" csg. @ 366' 350 sx. cmt.
Cement circulated to surface

8 5/8" intermediate casing
@ 4310'. Cemented with 2500 sx.
Cement circulated to surface

50 sx. cmt. plug 4175'-4350'

Cut and pulled 5 1/2" production
casing @ 5195'. Spotted 50 sx.
cmt. 4968'-5195' on top of stub.

50 sx. cmt. plug 5690'-6150'

CIBP @ 9736' capped with 20' cmt.

Perforations 9818'-26' 9836'-90'
9914'-44' 9962'-92'

5 1/2" production csg. @ 10030'
Cmtd with 600 sx. Top not rptd.

TD 10030'
PBTD 10014'

Skelly Oil Company M. H. Saunders #1

Formerly Fish Northwest Constructors Maud Saunders A 1-

Location: 1955' FNL 1985' FWL Sec. 34-T14S-R33E

Attachment C-108 VI (b) 10

DATA SHEET

(Section VII, Form C-108)

1. Proposed Rates Of Injection

   A. Average daily rate of injection: 450 barrels

   B. Maximum daily rate of injection: 600 barrels

2. Type Of System

   System will be open.

3. Anticipated Injection Pressures

   It is anticipated that injection will be on a vacuum, and that no additional pressure will be needed. However, should surface pressure be necessary to accomplish injection, such pressures would not exceed 0.2 psi per foot of depth to the top of the injection zone at 4280 feet, or 856 psi.

4. Source Of Injection Water

   Source of the disposal water is cooling tower blowdown and contained water from inlet scrubbers at the Warren Petroleum Company Saunders Gasoline Plant. See Attachment VII (b) for analysis of disposal water.

5. Disposal Zone Water Analysis

   Disposal is to be into a zone not productive of oil or gas at or within one mile of the proposed well, and an analysis of the disposal zone water is therefore attached hereto as Attachment VII (c).

UNICHEM INTERNATIONAL

P. O. BOX 1499
HOBBS, NEW MEXICO 88240

707 NORTH LEECH
PHO. (505) 393-7751

WATER ANALYSIS REPORT

(Expressed in ppm Unless Indicated Otherwise)

ATTN: Mr. Forrest Noah

FOR: Warren Petroleum Company

PLANT: Saunders

LOCATION: Tatum, NM

DATE SAMPLED:

DATE SUBMITTED:

DATE ANALYZED: 2-23-83

SAMPLE SOURCE		Waste Water
pH		9.02
Pheno. Alkalinity	($CaCO_3$)	268
Total Alkalinity	($CaCO_3$)	348
Bicarbonate	(HCO_3)	0
Carbonate	(CO_3)	155
Hydroxide	(OH)	64
Total Hardness	($CaCO_3$)	2500
Calcium	($CaCO_3$)	1300
Magnesium	($CaCO_3$)	1200
Chloride	(Cl)	4700
Sulfate	(SO_4)	1867
Total Phosphate	(PO_4)	
Orthophosphate	(PO_4)	
Polyphosphate	(PO_4)	
Silica	(SiO_2)	
Iron	(Fe)	NIL
Chromate	(CrO_4)	
Specific Conductance	(MMHOS)	13990
Chloride Concentrations		
Hardness Concentrations		
Sulfide (S)		NIL
Barium (Ba^{+2})		0.2
Sodium (Na^+) (Calc)		2995
Total Dissolved Solids		10589

REMARKS: Here is the analysis for the sample you requested. If we may be of further service, please call.

Thank-you,

Richard L. Maddux

Richard L. Maddux

cc: Scott Wilson

Eddie Slavens

Attachment C-108 VII (b)

UI-S-74

TYPICAL WATER ANALYSIS

SAN ANDRES FORMATION

LEA COUNTY, NEW MEXICO

ANALYSIS		PPM or Mg/L	EPM or Meq./L	Ionic PPM	
1. PH	7.25				
2. H_2S	Pos.				
3. CO_2	Pos.				
4. Specific Gravity	1.12				
5. Phenol Alkalinity ($CaCO_3$)		0.0			
6. M P. Alkalinity ($CaCO_3$)		520.0			
7. Bicarbonate ($CaCO_3$)		520.0	10.4	HCO_3	634
8. Chlorides (Cl)		187,000.0	5,267.6	Cl	187,000
9. Sulphates (SO_4)		2,800.0	58.33	SO_4	2,800
10. Total Hardness ($CaCO_3$)		10,000.0			
11. Calcium ($CaCO_3$)		5,750.0	115.0	Ca	2,300
12. Magnesium ($CaCO_3$)		4,250.0	85.0	Mg	1,037
13. Sodium (Na)			5,135.73	Na	118,122
14. [illegible]	Barium (Ba)			NO_3	0
15. Iron (Fe)					
16. Total Disolved Solids					311,893

GEOLOGICAL DATA

(Section VIII, Form C-108)

Disposal is proposed by injection into the San Andres Formation in the open hole interval from 4280 feet to approximately 4297 feet in the Gulf Oil Corporation Maud Saunders Well No. 4, located 1815 feet from the South line and 660 feet from the West line of Section 34, Township 14 South, Range 33 East, NMPM, Lea County, New Mexico.

The San Andres formation in this well, as well as throughout the general area, is a limestone-dolomite section of Middle Permian Age underlying the Grayburg formation and overlying the Glorieta formation. The top of the San Andres formation in the proposed disposal well occurs at 4278 feet, while the base of the formation is found at 5574 feet, for an overall thickness of some 1296 feet. The San Andres formation is productive of oil and gas throughout many areas of Southeast New Mexico, and although porosity and permeability in the subject well are good, the formation is mot productive of oil or gas within a two-mile radius of the proposed injection well.

Fresh water may be found in the Ogallala formation in the vicinity of the proposed injection well. This ground water is usually found at depths of less than 300 feet and all oil wells drilled in the area have surface casing set and cemented to a depth of at least 295 feet, and in most cases deeper. In addition the Santa Rosa formation in the vicinity of the proposed injection well contains a highly mineralized brackish water which is unfit for domestic, stock, or irrigation use. This water usually occurs at depths of from 900 feet to 1500 feet in the subject area.

There are no other known fresh water sands overlying the proposed disposal zone, and there are no known fresh water sands underlying the disposal zone anywhere in the vicinity.

STIMULATION PROGRAM

(Section IX, Form C-108)

The proposed injection well was originally drilled in 1958 as an oil well in the Saunders Permo-Upper Penn Pool. 13 3/8" surface casing was set at 416' and cement circulated to the surface. 8 5/8" intermediate casing was set at 4280' and cement circulated to the surface. 5 1/2" production casing was set at 10,010' and cemented with 450 sacks of cement. The top of the cement was not reported but it is estimated that the cement came back to at least 7916'. When the well was plugged in 1977, the 5 1/2" casing was cut and pulled from 4597'. It is proposed to re-enter the well and clean it out to the top of the 5 1/2" casing stub and use the open hole interval from 4280' to 4597' as the disposal zone.

Treatment of the aforesaid open hole interval will consist of 10,000 gallons of 20% NEFE HCL acid.

LOGGING AND TEST DATA

(Section X, Form C-108)

The proposed injection well was originally drilled as an oil well in the Saunders Permo-Penn Pool in 1958.

Inasmuch as the San Andres formation was not a zone of interest during the drilling of the well, no tests were made in the San Andres. All testing was reserved for the Lower Wolfcamp and Upper Pennsylvanian sections, and a successful completion was made there.

No testing of the San Andres formation as to its suitability as a disposal zone has as yet been conducted on the subject well pending approval of this application.

The Schlumberger Gamma Ray-Neutron Log run on the subject well on July 10, 1958, is included here as Attachment b to this Data Sheet, with the proposed disposal interval marked in red thereon.

FRESH WATER ANALYSIS

(Section XI, Form C-108)

As indicated by Attachments (b) and (c) to this Data Sheet, there have been many fresh water wells drilled over the years within one mile of the proposed disposal well. Attachment (b) is a tabulation of all wells showing their State Engineer File Number, their location, and the purpose for which they were licensed. Attachment (c) is a map showing the wells' approximate location by quarter-quarter-quarter section.

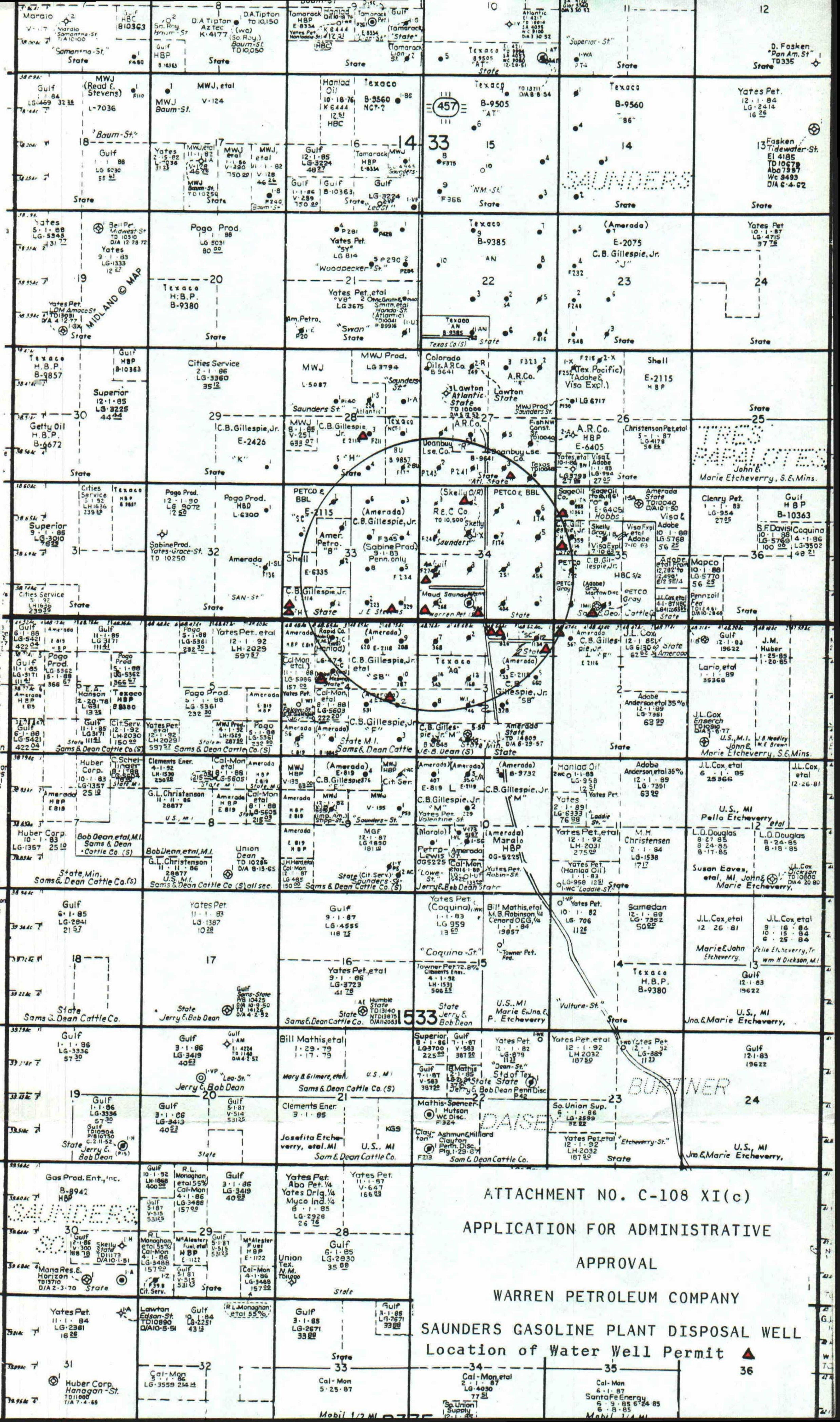
Most of the wells were drilled as water supply wells for oil field drilling operations during the development of the Saunders Pool, and were then abandoned. A ground search of the area failed to turn up any evidence of current use of any of the subject wells except L-1911 and L-1912. These two wells are water supply wells for the Warren Saunders Gasoline Plant. Attachments (d) and (e) are water analyses of the product of these two wells, taken only recently.

WATER WELLS WITHIN ONE MILE RADIUS
OF PROPOSED DISPOSAL WELL

FILE NO.	DESCRIPTION	SERVICE	REMARKS
L-4281	SE SW SE of S27-T14S-R33E	OWD	Unable to locate
L-2419	SW NW SE of S28-T14S-R33E	OWD	Unable to locate
L-1660	SW SE SE of S33-T14S-R33E	OWD	Unable to locate
L-7321-S-6	SW SW SW of S33-T14S-R33E	COM, IND, MUN, WF, DOM	Unable to locate
L-7567	SW SW SW of S33-T14S-R33E	COM, IND, MUN, WF, DOM	Unable to locate
L-3788	NE NW of S34-T14S-R33E	DOM, OWD	Unable to locate
L-3857	SW NW SW of S34-T14S-R33E	OWD	Unable to locate
L-1911	SW SW SW of S34-T14S-R33E	IND	West water well at plant. Analysis is attached
L-1912	SE SE SW of S34-T14S-R33E	IND	East water well at plant. Analysis is attached
L-2229	SW NW NW of S35-T14S-R33E	OWD	Unable to locate
L-1684	SW SW NW of S35-T14S-R33E	OWD, STOCK	Unable to locate
L-8205	SW SE SW of S35-T14S-R33E	OWD, STOCK	Unable to locate
L-4861	NW NW NW of S2-T15S-R33E	SRO	Unable to locate
L-2094	SE NE NE of S3-T15S-R33E	OWD, STOCK	Out of service
L-3841	NW NW NE of S3-T15S-R33E	DOM, OWD	Unable to locate
L-3870	NW NW NE of S3-T15S-R33E	DOM, OWD	Unable to locate
L-5275	SW SE NW of S4-T15S-R33E	STOCK	Unable to locate
L-8237	NW NE SE of S4-T15S-R33E	OWD	Unable to locate

KEY TO TYPE OF SERVICE:

OWD - Oil Well Drilling
COM - Commercial
IND - Industry
MUN - Municipal
DOM - Domestic
SRO - Secondary Recovery
WF - Water Flood



ATTACHMENT NO. C-108 XI(c)

APPLICATION FOR ADMINISTRATIVE APPROVAL

WARREN PETROLEUM COMPANY

SAUNDERS GASOLINE PLANT DISPOSAL WELL

Location of Water Well Permit ▲

UNICHEM INTERNATIONAL

P. O. BOX 1499
HOBBS, NEW MEXICO 88240

707 NORTH LEECH
PHO. (505) 393-7751

WATER ANALYSIS REPORT

(Expressed in ppm Unless Indicated Otherwise)

ATTN: Mr. Forrest Noah

FOR: Warren Petroleum Company

DATE SAMPLED: 3-3-83

PLANT: Saunders

DATE SUBMITTED: 3-4-83

LOCATION: Tatum, NM

DATE ANALYZED: 3-4-83

SAMPLE SOURCE:		East Water Well
pH		7.28
Pheno. Alkalinity	($CaCO_3$)	NIL
Total Alkalinity	($CaCO_3$)	148
Bicarbonate	(HCO_3)	181
Carbonate	(CO_3)	0
Hydroxide	(OH)	0
Total Hardness	($CaCO_3$)	228
Calcium	($CaCO_3$)	170
Magnesium	($CaCO_3$)	58
Chloride	(Cl)	58
Sulfate	(SO_4)	54.1
Total Phosphate	(PO_4)	
Orthophosphate	(PO_4)	
Polyphosphate	(PO_4)	
Silica	(SiO_2)	
Iron	(Fe)	0.08
Chromate	(CrO_4)	
Specific Conductance	(MMHOS)	518
Chloride Concentrations		
Hardness Concentrations		
Sulfide (S)		NIL
Barium (Ba^{+2})		0.08
Sodium (Na^+) (Calc)		26.7
Total Dissolved Solids		401

REMARKS: Here is the analysis for the sample you requested. If we may be of further service, please call.

Thank-you,

Richard L. Maddux

Richard L. Maddux

cc: Scott Wilson

Eddie Slavens

Attachment C-108 XI (d)

U-I S-74

UNICHEM INTERNATIONAL

P. O. BOX 1499
HOBBS, NEW MEXICO 88240

707 NORTH LEECH
PHO. (505) 393-7751

WATER ANALYSIS REPORT

(Expressed in ppm Unless Indicated Otherwise)

ATTN: Mr. Forrest Noah

FOR: Warren Petroleum Company

DATE SAMPLED: 2-22-83

PLANT: Saunders

DATE SUBMITTED: 2-22-83

LOCATION: Tatum, NM

DATE ANALYZED: 2-23-83

SAMPLE SOURCE:		West Water Well
pH		6.81
Pheno. Alkalinity	($CaCO_3$)	NIL
Total Alkalinity	($CaCO_3$)	156
Bicarbonate	(HCO_3)	190
Carbonate	(CO_3)	0
Hydroxide	(OH)	0
Total Hardness	($CaCO_3$)	400
Calcium	($CaCO_3$)	312
Magnesium	($CaCO_3$)	88
Chloride	(Cl)	96
Sulfate	(SO_4)	337
Total Phosphate	(PO_4)	
Orthophosphate	(PO_4)	
Polyphosphate	(PO_4)	
Silica	(SiO_2)	
Iron	(Fe)	0.03
Chromate	(CrO_4)	
Specific Conductance	(MMHOS)	926
Chloride Concentrations		
Hardness Concentrations		
Sulfide (S)		NIL
Barium (Ba^{+2})		0.2
Sodium (Na^+) (Calc)		111
Total Dissolved Solids		881

REMARKS: Here is the analysis for the sample you requested. If we may be of further service, please call.

Thank-you,

Richard L. Maddux

Richard L. Maddux

cc: Scott Wilson

Eddie Slavens

Attachment C-108 XI (e)

U.I.S.-74

AFFIRMATIVE STATEMENT

(Section XII, Form C-108)

Applicant hereby affirms that he has examined the available geologic and engineering data and finds no evidence of open faults or other hydrologic connection between the disposal zone and any underground source of drinking water.

PROOF OF

NOTICE TO OFFSET OPERATORS

P 331 614 905

RECEIPT FOR CERTIFIED MAIL

NO INSURANCE COVERAGE PROVIDED—
NOT FOR INTERNATIONAL MAIL
(See Reverse)

SENT TO: Getty Oil Co.
STREET AND NO.: P.O. Box 1231
P.O., STATE AND ZIP CODE: Midland TX 79702

POSTAGE		$
CONSULT POSTMASTER FOR FEES	CERTIFIED FEE	¢
OPTIONAL SERVICES	SPECIAL DELIVERY	¢
	RESTRICTED DELIVERY	¢
RETURN RECEIPT SERVICE	SHOW TO WHOM AND DATE DELIVERED	¢
	SHOW TO WHOM, DATE, AND ADDRESS OF DELIVERY	¢
	SHOW TO WHOM AND DATE DELIVERED WITH RESTRICTED DELIVERY	¢
	SHOW TO WHOM, DATE AND ADDRESS OF DELIVERY WITH RESTRICTED DELIVERY	¢
TOTAL POSTAGE AND FEES		$
POSTMARK OR DATE		

PS Form 3800, Apr. 1976

P 331 614 903

RECEIPT FOR CERTIFIED MAIL

NO INSURANCE COVERAGE PROVIDED—
NOT FOR INTERNATIONAL MAIL
(See Reverse)

SENT TO: R & C Company
STREET AND NO.: P.O. Box 6434
P.O., STATE AND ZIP CODE: Odessa, TX

POSTAGE		$
CONSULT POSTMASTER FOR FEES	CERTIFIED FEE	¢
OPTIONAL SERVICES	SPECIAL DELIVERY	¢
	RESTRICTED DELIVERY	¢
RETURN RECEIPT SERVICE	SHOW TO WHOM AND DATE DELIVERED	¢
	SHOW TO WHOM, DATE, AND ADDRESS OF DELIVERY	¢
	SHOW TO WHOM AND DATE DELIVERED WITH RESTRICTED DELIVERY	¢
	SHOW TO WHOM, DATE AND ADDRESS OF DELIVERY WITH RESTRICTED DELIVERY	¢
TOTAL POSTAGE AND FEES		$
POSTMARK OR DATE	APR 7 1983	

PS Form 3800, Apr. 1976

P 331 614 906

RECEIPT FOR CERTIFIED MAIL

NO INSURANCE COVERAGE PROVIDED—
NOT FOR INTERNATIONAL MAIL
(See Reverse)

SENT TO: Petr. Corp of Tex & BBL Ltd
STREET AND NO.: PO Box 911
P.O., STATE AND ZIP CODE: Breckenridge TX 76024

POSTAGE		$
CONSULT POSTMASTER FOR FEES	CERTIFIED FEE	¢
OPTIONAL SERVICES	SPECIAL DELIVERY	¢
	RESTRICTED DELIVERY	¢
RETURN RECEIPT SERVICE	SHOW TO WHOM AND DATE DELIVERED	¢
	SHOW TO WHOM, DATE, AND ADDRESS OF DELIVERY	¢
	SHOW TO WHOM AND DATE DELIVERED WITH RESTRICTED DELIVERY	¢
	SHOW TO WHOM, DATE AND ADDRESS OF DELIVERY WITH RESTRICTED DELIVERY	¢
TOTAL POSTAGE AND FEES		$
POSTMARK OR DATE		

PS Form 3800, Apr. 1976

P 331 614 904

RECEIPT FOR CERTIFIED MAIL

NO INSURANCE COVERAGE PROVIDED—
NOT FOR INTERNATIONAL MAIL
(See Reverse)

SENT TO: Chas. B. Gillespie, Jr.
STREET AND NO.: P.O. Box 18
P.O., STATE AND ZIP CODE: Midland, TX 79702

POSTAGE		$
CONSULT POSTMASTER FOR FEES	CERTIFIED FEE	¢
OPTIONAL SERVICES	SPECIAL DELIVERY	¢
	RESTRICTED DELIVERY	¢
RETURN RECEIPT SERVICE	SHOW TO WHOM AND DATE DELIVERED	¢
	SHOW TO WHOM, DATE, AND ADDRESS OF DELIVERY	¢
	SHOW TO WHOM AND DATE DELIVERED WITH RESTRICTED DELIVERY	¢
	SHOW TO WHOM, DATE AND ADDRESS OF DELIVERY WITH RESTRICTED DELIVERY	¢
TOTAL POSTAGE AND FEES		$
POSTMARK OR DATE		

PS Form 3800, Apr. 1976

AFFIDAVIT OF PUBLICATION

State of New Mexico,

County of Lea.

I, _____

ROBERT L. SUMMERS

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 in a supplement thereof for a period

of _____

ONE _____ weeks.

Beginning with the issue dated

MARCH 23, 19 83

and ending with the issue dated

MARCH 23, 19 83

Robert L. Summers
Publisher.

Sworn and subscribed to before me this 23RD day of

MARCH, 19 83

Lynette Naegele
Notary Public.

My Commission expires

March 23, 19 86
(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.

LEGAL NOTICE
MARCH 23, 1983
NOTICE

Notice is hereby given pursuant to Rule 701 B 3 of the New Mexico Oil Conservation Division Rules and Regulations that it is the intent of Gulf Oil Corporation, acting by and through Warren Petroleum Company, a Division thereof, to utilize the Gulf Oil Corporation Maud Saunders Well No, 4 located 1815 feet from the South line and 660 feet from the West line of Section 34, Township 14 South, Range 33 East, NMPM, Lea County, New Mexico, for the underground disposal of cooling tower blowdown and contained water from inlet scrubbers at the Warren Saunders Gasoline Plant. Disposal will average 450 barrels per day but could go as high as 600 barrels per day. Maximum injection pressure will not exceed 856 pounds per square inch. Questions regarding this proposal may be directed to Dan Nutter, Registered Petroleum Engineer, 105 East Alicante, Santa Fe, New Mexico 87501, Telephone (505) 982-0757. Objections to this proposal or requests for hearing on the matter, together with the reasons therefor, must be filed in writing with the Oil Conservation Division, P. O. Box 2088, Santa Fe, New Mexico 87501, within 15 days after date of publication of this notice.

OIL CONSERVATION DIVISION
DISTRICT I

OIL CONSERVATION DIVISION
P. O. BOX 2088
SANTA FE, NEW MEXICO 87501

DATE April 12, 1983

RE: Proposed MC
Proposed DHC
Proposed NSL
Proposed NSP
Proposed SWD X
Proposed WFX
Proposed PMX

Gentlemen:

I have examined the application for the:

Warren Petroleum Corp.	Maud Saunders	No. 4-L	34-14-33
Operator	Lease and Well No.		Unit, S - T - R

and my recommendations are as follows:

O.K.----J.S.

Yours very truly,

/mc