

SWD 13  
June 5-19

~~Handwritten scribbles~~  
cc New OCC  
Eng 5-19

SINCLAIR OIL & GAS COMPANY  
BOX 1470  
MIDLAND, TEXAS

April 25, 1958  
75

New Mexico Oil Conservation Commission  
P. O. Box 871  
Santa Fe, New Mexico

Attention: Mr. A. L. Porter, Jr.

Gentlemen:

Enclosed please find Sinclair Oil & Gas Company's application under statewide Rule 701 for administrative approval to dispose of salt water produced from wells in the Dean Devonian and Dean Permo-Pennsylvanian Pools, Lea County, New Mexico, by injecting same into the San Andres and/or the Yates formations through the well located 330 feet from the north and west lines of Section 4-16S-37E.

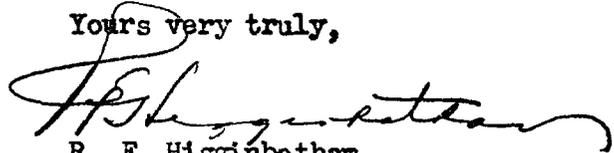
The proposed injection well is the State Well #1 and was obtained by Sinclair from Carlton Beal & Associates after their efforts to complete in the Dean Permo-Pennsylvanian Pool were unsuccessful. The minerals under this well are owned by the State of New Mexico and are presently leased to The Atlantic Refining Company which has granted Sinclair permission to use subject well for disposal purposes. Sinclair will obtain any approvals necessary from the Commissioner of Public Lands to use this well as a salt water disposal well in the manner proposed herein for as long as the disposal operations are needed. Sinclair has secured an option from Mr. & Mrs. John Easley of Lovington, New Mexico, for the leasing or purchase of the necessary surface acreage around the well, a copy of same is attached.

We initially plan to dispose of about 1500 barrels per day of Devonian water and about 500 barrels per day of Permo-Pennsylvanian water which is currently being produced from these pools on leases of Sinclair Oil & Gas Company, Cities Service Oil Company and Magnolia Petroleum Company. However, we anticipate that our water production will increase and that the other operators in these fields will join us when they have a disposal problem. We propose to inject this water into the San Andres formation in the open hole interval 5000-6338 feet if possible, however, we believe that it may be necessary to utilize additional porous zones found from 3246-3523 feet in the Yates formation. Neither of these formations are productive of oil or gas within a radius of 2 miles from the proposed injection well and the water occurring naturally in these formations is mineralized to such a degree as to be unfit for domestic, stock, irrigation, and/or other general use. We request permission to dispose of the above described salt water into either the San Andres formation or the Yates formation or both formations if necessary.

Also enclosed please find a full-scale electric log on subject well, an area map showing the ownership of offset leases, a diagrammatic sketch showing the present condition of the disposal well and a letter to the surface owners requesting a waiver and explaining this application. We have complied with Item 3 on Page 2 of the application in that we have notified all offset operators and the New Mexico State Engineer via registered mail of this letter and our application by copies thereof. In lieu of obtaining waivers from all offset operators and the New Mexico State Engineer we request that our application be held for a period of 15 days, as provided in Item 6 in the application, before processing.

Sinclair Oil & Gas Company respectfully requests this application be granted administratively as provided by Statewide Rule 701, Subparagraph C. Please advise if we can furnish any additional information concerning this matter.

Yours very truly,



R. F. Higginbotham,  
Assistant Division  
Production Superintendent

RFH:FMA:mk  
Encl.

cc: VIA REGISTERED MAIL

The Atlantic Refining Co., Box 1610, Midland, Texas  
Magnolia Petroleum Co., Box 900, Dallas, Texas  
Humble Oil & Refining Co., Box 1600, Midland, Texas  
Columbian Carbon Co., San Jacinto Building, Houston, Texas  
Cities Service Oil Co., Leggett Building, Midland, Texas  
Gulf Oil Corporation, Box 4232, Odessa, Texas  
Mr. & Mrs. John Easley (Surface Owners) Box 775, Lovington, New Mexico  
New Mexico State Engineer, Box 1079, Santa Fe, New Mexico

STATE OF NEW MEXICO  
OIL CONSERVATION COMMISSION

APPLICATION  
TO DISPOSE OF SALT WATER BY INJECTION INTO A POROUS FORMATION  
NOT PRODUCTIVE OF OIL OR GAS

April 23, 1958

Pool Name Dean Permo-Penn & Devonian County Lea

Operator Sinclair Oil & Gas Company (Drilled by Carlton Beal)

Address P. O. Box 1470, Midland, Texas

Lease Name State (Section 4-16S-37E) Well No. 1

Depth to top of injection zone 5000' (San Andres) and/or 3246' (Yates)

Depth to base of injection zone 6338' (San Andres) and/or 3523' (Yates)

Size of surface casing 13 3/8" OD

Length of surface casing 445 Feet

Number of sacks of cement used on surface casing 500

Size of long string 8 5/8" OD: (5 1/2" casing cut @ 9000' & pulled)

Number of sacks of cement used on long string 2440 ex (3 5/8) Circulated

Size of tubing 3 1/2" OD (If necessary) Length of tubing 5000' or 3200' (If necessary)

Depth of tubing packer setting 4950' or 3200' (If necessary)

Name and model of packer Baker Model A Tension Packer (If necessary)

Is injection through tubing or long string of annulus? Long string or tubing

Open hole in San Andres and/or

Is injection through perforations or open hole? perforations in Yates

No, (Dry hole in Dean

Was the well drilled for salt water disposal purposes? Permo-Penn)

List perforated intervals and number of sacks of cement used on any squeeze cementing operations 11554-11582 & 11592-11630 \* (See below)

What is depth of the shallowest zone productive of oil or gas in this pool? 10,400'

What is depth of the deepest zone containing fresh water in this pool? 50 - 180'

Are there any other salt water disposal wells in this pool using this same zone for injection purposes? No If so, list operator, lease and well number \_\_\_\_\_

What is the approximate volume of salt water to be injected daily? 2000 bbls/day initially

Will system be open or closed type? Closed

Will injection be by gravity or pump pressure? Pump pressure

If by pump pressure, give approximate number of pounds per square inch 1000 - 1500

Will it be necessary for water to be filtered or chemically treated? No

- \* (1) Cast iron bridging plug set at 10600 feet w/2 sacks cement on top.  
(2) Spotted 25 sacks cement at top of 5 1/2" (8958 - 9020')  
(3) Set 140 sack cement plug from 6338 to 6911 feet.  
(4) Hole full of drilling mud between and below above plugs.  
(See attached diagramatic sketch.)

Note: Tubing and packer will be used if injection pressures or unforeseeable corrosion problems so require.

Is this well so cased and completed that water can enter no other formation than the above setout injection zone? Yes

- 1. Attach a complete full-scale electrical log of this well. (one copy to OCC only.)  
One copy of electric log is enclosed.
- 2. List Names and addresses of all offset operators and surface owners.

The Atlantic Refining Company, P. O. Box 1610, Midland, Texas.  
Magnolia Petroleum Company, P. O. Box 900, Dallas, Texas.  
Humble Oil & Refining Company, P. O. Box 1600, Midland, Texas.  
Columbian Carbon Company, San Jacinto Building, Houston, Texas.  
Cities Service Oil Company, Leggett Building, Midland, Texas.  
Gulf Oil Corporation, P. O. Box 4232, Odessa, Texas.  
Mr. & Mrs. John Easley (Surface Owner), P. O. Box 775, Lovington, New Mexico.

- 3. Have notices of this application been sent by registered mail or given to all offset operators and to the New Mexico State Engineer? Yes
- 4. Attach waivers from all offset operators and New Mexico State Engineer.  
Waivers not requested - See paragraph 6 below.
- 5. Attach waivers from surface owners of land on which well is located or a letter from company making application to the surface owner explaining said application and requesting waiver. See attachment.
- 6. No application will be processed until Item 1 has been attached to the application. Should all necessary waivers not accompany application, the Commission shall hold such application for a period of fifteen (15) days from date of receipt in the Santa Fe Office. If, after said fifteen (15) day period, no protest or request for hearing is received in the Santa Fe Office, the application will then be processed.

SINCLAIR OIL & GAS COMPANY  
 Operator  
  
 By  
 H. F. Defenbaugh  
 Division Production Superintendent

THE STATE OF Texas  
 COUNTY OF Midland

BEFORE ME, The undersigned authority, on this day personally appeared H. F. Defenbaugh known to me to be the person whose name is subscribed to the above instrument, who being by me duly sworn on oath states that he is duly authorized to make the above report and that he has knowledge of the facts stated therein and that said report is true and correct.

SUBSCRIBED AND SWORN To before me, this the 23 day of April, 19 58.



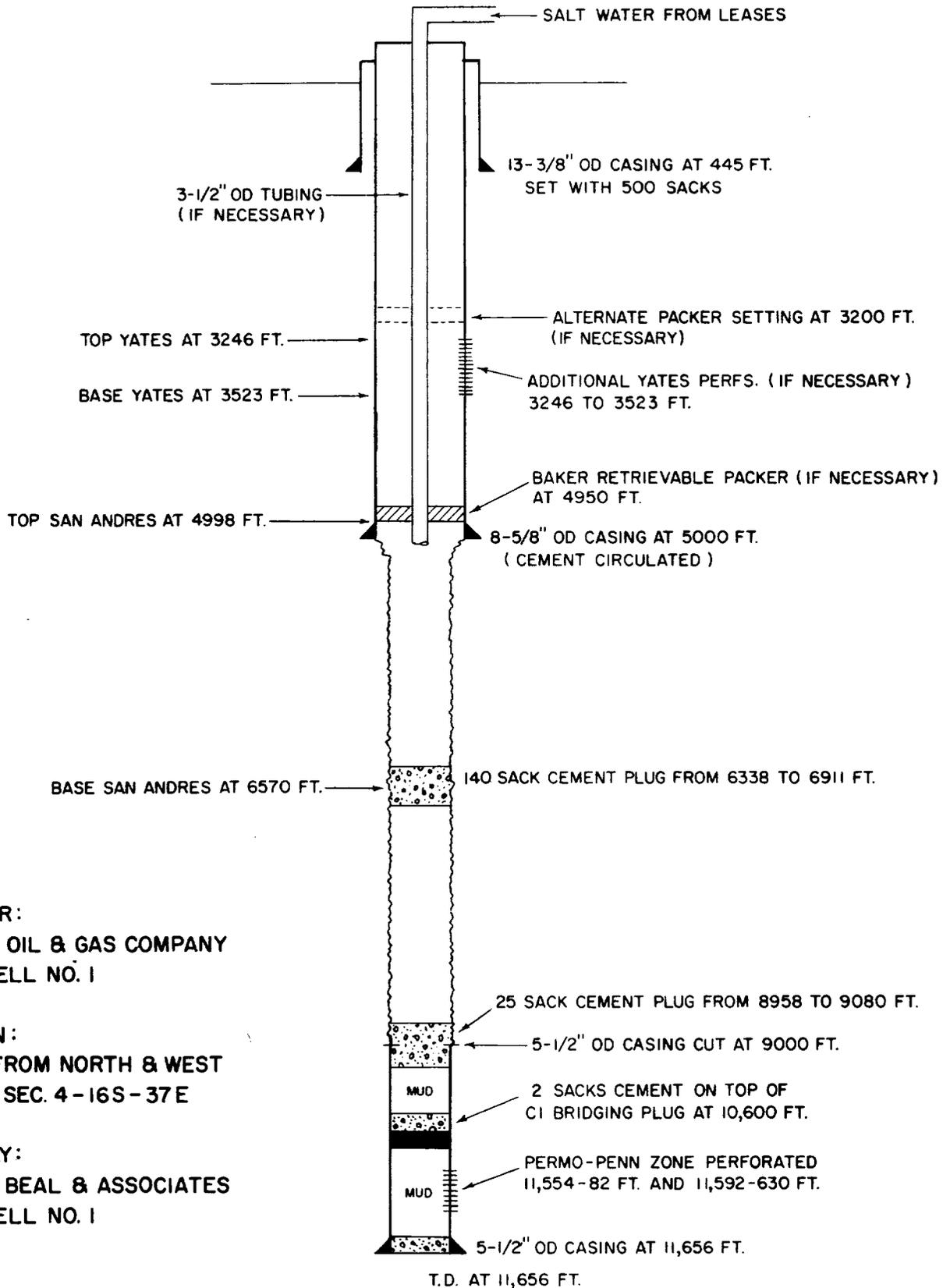
Roy D. Satterwhite   
 Notary Public in and for Midland  
 County, Texas.

cc: VIA REGISTERED MAIL  
 All operators listed in Item 2 above.  
 New Mexico State Engineer, P. O. Box 1079, Santa Fe, New Mexico.

- Attachments:
- (1) Electric log on Subject well (OCC copy only).
  - (2) Area map.
  - (3) Diagramatic sketch of proposed installation.

bcc: FHR, LAW, HPD, CCS, WJR.

**SINCLAIR OIL & GAS COMPANY**  
**DIAGRAMATIC SKETCH OF PROPOSED SALT WATER DISPOSAL WELL**  
**DEAN DEVONIAN & PERMO-PENN. FIELDS**  
**LEA COUNTY, NEW MEXICO**



**OPERATOR:**  
**SINCLAIR OIL & GAS COMPANY**  
**STATE WELL NO. 1**

**LOCATION:**  
**330 FT. FROM NORTH & WEST**  
**LINES OF SEC. 4-16S-37E**

**FORMERLY:**  
**CARLTON BEAL & ASSOCIATES**  
**STATE WELL NO. 1**

# SINCLAIR OIL & GAS COMPANY

PETROLEUM LIFE BUILDING  
Box 1470  
**MIDLAND, TEXAS**

April 25, 1958

G. D. ALVEN, JR.  
VICE PRES. & DIVISION MANAGER

H. L. ELSTON  
ASSISTANT DIVISION MANAGER

C. S. TINKLER  
DIVISION EXPLORATION SURF

H. F. DEFENBAUGH  
DIVISION PRODUCTION SURF

F. C. ROGERS  
DIVISION SURFACE PRODUCTION SURF

Mr. & Mrs. John Easley  
P. O. Box 775  
Lovington, New Mexico

Dear Mr. & Mrs. Easley:

Please refer to the instrument dated March 7, 1958, wherein you granted Sinclair Oil & Gas Company an option to purchase or lease the northwest 10 acres of land in Lot 4, Section 4-T16S-R37E, Lea County, New Mexico.

In anticipation of our exercising one of these options we are proceeding to make application to the New Mexico Oil Conservation Commission for permission to use the State #1 Well located on said land for water injection purposes. (See attached copy). We are proposing to initially inject approximately 2,000 barrels of salt water per day through the well located on the above described land into the San Andres and/or Yates formations. We have determined that neither of these formations are productive of oil or gas within a two mile radius nor do they contain fresh water suitable for domestic or irrigation purposes.

It is a requirement of the New Mexico Oil Conservation Commission that we obtain a waiver from the surface owners under a proposed disposal well. If you have no objection to the use of this well for this purpose would you kindly sign one copy of this letter and return to the undersigned. Your cooperation in this matter will be greatly appreciated.

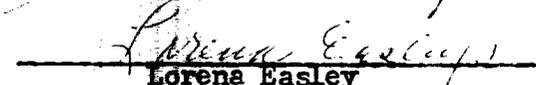
Yours very truly,

  
H. F. Defenbaugh

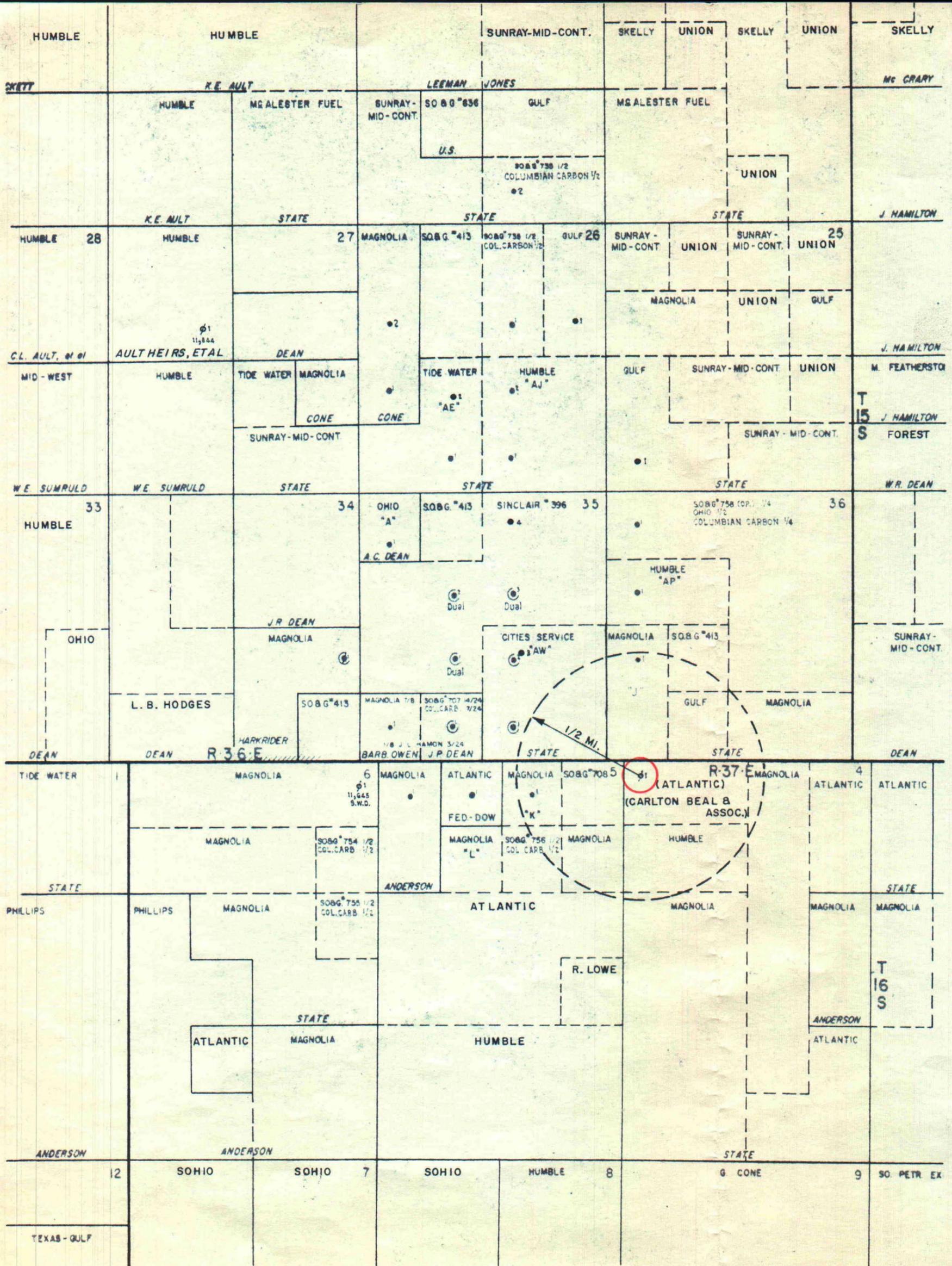
HFD:RMA:mk  
Encl.

The undersigned as surface owners under the above described land have no objection to the above described salt water injection project.

  
John Easley

  
Lorena Easley

cc: New Mexico Oil Conservation Commission  
P. O. Box 871 Santa Fe, New Mexico



**SINCLAIR OIL & GAS CO.**  
**DEAN POOL AREA**  
 LEA CO., N.M.  
 SCALE 1" = 2000

ADDRESSES OF ALL OPERATORS WITHIN 1/2 MILE OF SALTWATER DISPOSAL WELL

- ATLANTIC — BOX 871 — MIDLAND, TEX.
- MAGNOLIA — BOX 900 — DALLAS, TEX.
- HUMBLE — BOX 1600 — MIDLAND, TEX.
- COLUMBIAN CARBON — SAN JACINTO BLDG. — HOUSTON, TEX.
- CITIES SERVICE — LEGGETT BLDG. — MIDLAND, TEX.
- GULF — BOX 4232 — ODESSA, TEX.

- ⊙ DEVONIAN WELL
- PERMO-PENNSYLVANIAN WELL

— PROPOSED SALTWATER DISPOSAL WELL FOR INJECTION INTO SAN ANDRES FORMATION — SINCLAIR OIL & GAS — OPERATOR



STATE OF NEW MEXICO

STATE ENGINEER OFFICE

SANTA FE

S. E. REYNOLDS  
STATE ENGINEER

April 30, 1958

ADDRESS CORRESPONDENCE TO:  
P. O. BOX 1079  
SANTA FE, N. M.

Oil Conservation Commission  
State Capitol  
Santa Fe, New Mexico

Attn. Mr. A. L. Porter, Jr., Director

Gentlemen:

We received on April 28, 1958 application to dispose of salt water by injection into a porous formation, dated April 23, 1958, by Sinclair Oil & Gas Company. This application seeks to inject oil field brines into either the San Andres or Yates formation between the depths of 5000 feet and 6338 feet or between 3246 feet and 3523 feet, respectively.

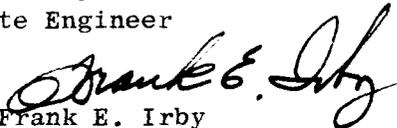
This office offers no objection to this disposal, but requires that the Sinclair Oil and Gas Company notify this office immediately after determining which of the two formations will be used for this disposal. If both formations are required in order to dispose of the total waste, then the Company shall so notify this office.

Please notify this office what SWD number is given this application as soon as it has been assigned.

Very truly yours,

S. E. Reynolds  
State Engineer

By:

  
Frank E. Irby  
Chief  
Water Rights Division

FEI/ma  
cc-F. H. Hennighausen  
Sinclair Oil & Gas Co.

# SINCLAIR OIL & GAS COMPANY

PETROLEUM LIFE BUILDING  
Box 1470  
MIDLAND, TEXAS

April 30, 1958

G. D. ALVERN, JR.  
VICE PRESIDENT & REGIONAL MANAGER

H. J. ELSTON  
VICE PRESIDENT & REGIONAL MANAGER

C. S. TINKLER  
VICE PRESIDENT & REGIONAL MANAGER

H. F. DEFENBAUGH  
VICE PRESIDENT & REGIONAL MANAGER

F. C. ROGERS  
VICE PRESIDENT & REGIONAL MANAGER

New Mexico Oil Conservation Commission  
P. O. Box 871  
Santa Fe, New Mexico

Gentlemen:

Please refer to our application dated April 25, 1958, to dispose of salt water into our State #1 Well in the Dean Pool Area, Lea County, New Mexico. Along with this application we forwarded a copy of a letter to Mr. & Mrs. John Easley, the surface owners, explaining our application and requesting a waiver.

We have this date received the above requested waiver from the surface owners and enclose a photostatic copy of same to complete your file.

Yours very truly,



H. F. Defenbaugh

HFD:RMA:mk  
Attachment

OIL CONSERVATION COMMISSION

BOX 2045

HOBBS, NEW MEXICO

DATE May 28, 1958

OIL CONSERVATION COMMISSION  
BOX 871  
SANTA FE, NEW MEXICO

Re: Proposed NSP \_\_\_\_\_  
Proposed NSL \_\_\_\_\_  
Proposed NFC \_\_\_\_\_  
Proposed DC \_\_\_\_\_  
SWD-13

Gentlemen:

I have examined the application dated \_\_\_\_\_  
for the Sinclair Oil & Gas Co. State #1 4--16-37  
Operator Lease and Well No. S-T-R

and my recommendations are as follows:

Order issued--mc  
O.K.---J.W.R.  
*J.W.R.*  
\_\_\_\_\_  
\_\_\_\_\_

Yours very truly,

OIL CONSERVATION COMMISSION



Engineer

# SCHLUMBERGER WELL SURVEYING CORPORATION

HOUSTON, TEXAS



## Induction-Electrical Log

|  |                          |   |                                      |  |   |  |
|--|--------------------------|---|--------------------------------------|--|---|--|
| COUNTY<br>FIELD or<br>LOCATION<br>WELL | Lea<br>Dean<br>State # 1 | COMPANY<br>Carlton Beal &<br>Associates | COMPANY CARLTON BEAL &<br>ASSOCIATES |  | Other Surveys<br>IES GRN                        |  |
|  |                          |   | WELL STATE # 1                       |  | Location of Well<br>330' f N&W/L                |  |
|  |                          |   | FIELD DEAN                           |  | Elevation: D.F.:<br>K.B.: 3851<br>or G.L.: 3840 |  |
|  |                          |   | LOCATION SEC. 4 16S 37E              |  | FILING No. _____                                |  |
|  |                          |   | COUNTY LEA                           |  |   |  |
|  |                          |   | STATE NEW MEXICO                     |  |   |  |

|                |                |            |            |            |            |            |
|----------------|----------------|------------|------------|------------|------------|------------|
| RUN No.        |                |            |            |            |            |            |
| Date           | 9-21-57        |            |            |            |            |            |
| First Reading  | 11650          |            |            |            |            |            |
| Last Reading   | 4998           |            |            |            |            |            |
| Feet Measured  | 6652           |            |            |            |            |            |
| Csg. Schlum.   | 4998           |            |            |            |            |            |
| Csg. Driller   | 5000           |            |            |            |            |            |
| Depth Reached  | 11656          |            |            |            |            |            |
| Bottom Driller | 11660          |            |            |            |            |            |
| Depth Datum    | KB 11' Abv. GL |            |            |            |            |            |
| Mud Nat.       | Chem.          |            |            |            |            |            |
| Dens. Visc.    | 9 48           |            |            |            |            |            |
| Mud Resist.    | 1.5 @ 85 °F    | @ °F       | @ °F       | @ °F       | @ °F       | @ °F       |
| " Res. BHT     | .85 @ 151 °F   | @ °F       | @ °F       | @ °F       | @ °F       | @ °F       |
| Rmf            | .56 @ 151 °F   | @ °F       | @ °F       | @ °F       | @ °F       | @ °F       |
| Rmc            | 1.7 @ 85 °F    | @ °F       | @ °F       | @ °F       | @ °F       | @ °F       |
| " pH           | 11 @ °F        | @ °F       | @ °F       | @ °F       | @ °F       | @ °F       |
| " Wtr. Loss    | 11 CC 30 min.  | CC 30 min. | CC 30 min. | CC 30 min. | CC 30 min. | CC 30 min. |
| Bit Size       | 7 7/8"         |            |            |            |            |            |
| Spcgs.—AM      | 16"            |            |            |            |            |            |
| IND.           | 5 FF 40'       |            |            |            |            |            |
| Opr. Rig Time  | 4-Hrs.         |            |            |            |            |            |
| Truck No.      | 1762-Hobbs     |            |            |            |            |            |
| Recorded By    | Mahoney        |            |            |            |            |            |
| Witness        | Word           |            |            |            |            |            |

**SCHLUMBERGER WELL SURVEYING CORPORATION**



*Gamma Ray-Neutron*

*Production*

|   |                         |                  |
|---|-------------------------|------------------|
| COUNTY LEA<br>FIELD or LOCATION DEAN<br>WELL STATE # 1<br>COMPANY CARLTON BEAL & ASSOCIATES | COMPANY CARLTON BEAL    | Other Surveys    |
|   | ASSOCIATES              | IES ML           |
|   | WELL STATE # 1          | Location of Well |
|   | FIELD DEAN              | 330' f N&W/L     |
|   | LOCATION SEC. 4 16S 37E | Elevation D.F.   |
| COUNTY LEA  | K.B.: 3851              | or G.L.: 3240    |
| STATE NEW MEXICO  | FILING No.              |                  |

Log Depths Measured From KB 11 Ft. above GL

| RUN NO.            |  |
|--------------------|--|
| Date               | 9-21-57  |
| First Reading      | 11654  |
| Last Reading       | 100  |
| Footage Measured   | 11554  |
| Max. Depth Reached | 11656  |
| Bottom Driller     | 11660  |
| Maximum Temp. °F.  | 151  |
| Fluid Nature       | CHEM.  |
| Fluid Level        | FT. 11   |
| Casina Size        | 8 5/8 in. in. }<br>lb. } 0 to 5000 in. }<br>to |
| Casina Weight      | in. }<br>lb. } to                              |
| Casina Size        | in. }<br>lb. } to                              |
| Casina Weight      | 7 7/8 in. 5000 to 11660 in. }<br>to            |
| Bit Size           | in. }<br>to                                    |
| No. Counters Used  | 1  |
| Type Equipment     | GNAM-A   |
| Type Panel         | GNP-G # 119                                    |
| Curr. Rio Time     | 6 HRS.   |
| Truck No.          | 1762-HOBBS                                     |
| Observer           | MAHONEY  |
| Whens              | WORD   |

FOLD HERE

| REMARKS: CALIBRATION | BACKGROUND CPS | TEST SOURCE CPS | GALV. INCREASE DIVISIONS | PANEL SENS. TAP. FOR CAL. |
|----------------------|----------------|-----------------|--------------------------|---------------------------|
| GAMMA RAY            | 152            | 430             | 100                      | 400                       |
| NEUTRON              | 0              | 240             | 100                      | 400                       |

SONDE DECENTRALIZED

**REPRODUCTION**  
P. O. BOX 1857  
MIDLAND, TEXAS

