

CASE 3936: Appli. of TENNECO OIL  
CO. FOR SALT WATER DISPOSAL,  
LEA COUNTY, NEW MEXICO.

---

Case Number

3936

Application

Transcripts

Small Exhibits

ETC.

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SPECIALIZING IN: DEPOSITIONS, HEARINGS, STATEMENTS, EXPERT TESTIMONY, DAILY COPY, CONVENTIONS

1120 SIMMS BLDG. • P. O. BOX 1092 • PHONE 243-6691 • ALBUQUERQUE, NEW MEXICO



BEFORE THE  
NEW MEXICO OIL CONSERVATION COMMISSION

Santa Fe, New Mexico

November 12, 1968

EXAMINER HEARING

IN THE MATTER OF:

Application of Tenneco Oil )  
Company for salt water )  
disposal, Lea County, New )  
Mexico. )

Case No. 3936

BEFORE: Daniel S. Nutter, Examiner

TRANSCRIPT OF HEARING

DEC 20 AM 8 19

MR. NUTTER: Are you ready, Mr. Kelly?

MR. KELLY: I am ready.

MR. NUTTER: The hearing will come to order, please.

The first case this afternoon will be Case 3936.

MR. HATCH: Case 3936, application of Tenneco Oil Company for salt water disposal, Lea County, New Mexico.

MR. KELLY: Booker Kelly, of White, Gilbert, Koch, and Kelly, Santa Fe, New Mexico, appearing on behalf of the applicant. I have one witness, and ask that he be sworn.

(Witness sworn.)

(Whereupon, Applicant's Exhibits Numbers 1 through 4, inclusive, were marked for identification.)

HENRY NICHOLAS KNIGHT

called as a witness, and having been first duly sworn, was examined and testified as follows:

DIRECT EXAMINATION

BY MR. KELLY:

Q Would you state your name, position, and employer, please?

A Henry Nicholas Knight. I'm a Production Engineer for Tenneco Oil Company in Midland, Texas.

Q And have you previously qualified as an expert witness before this Commission?

A Yes, I have.

Q Referring to what has been marked as Exhibit Number 1, would you state what Tenneco seeks by this application?

A Tenneco is requesting permission to convert the E. J. Wells No. 2 Well to salt water disposal. This well is indicated on Exhibit Number 1 by the red circle near the center of Section 12. This well is located in Unit G, 2110 feet from the north line and 23 -- excuse me. That's 2310 feet from the north line and 2310 feet from the east line of Section 12, 25 South, Range 36 East.

This exhibit shows all the producing wells within a radius of two miles from the zone from which they produce.

Q What is the present status of the proposed injection well?

A Currently, the E. J. Wells No. 2 is a shut-in producer in the Yates and Seven Rivers Formation. This well was shut in in December, 1969 at which time Tenneco --

MR. NUTTER: December of when, please?

THE WITNESS: 1967, at which time Tenneco requested the allowable be cancelled and advised the U.S.G.S. that we wished to retain the well for future waterflood possibilities.

Q Would you give the Examiner a brief summary of the production history of this well?

A This well has been owned and operated by five different oil companies. It was first completed November 4, 1935 by Burk Ross, Incorporated. It was recompleted on March the 4th, 1939 as a gas well in the Yates-Seven Rivers Formation. In November, 1951, operation was taken over by Plains Production Company. In September, 1954, the well was operated by Three States Natural Gas Company. Delhi-Taylor Corporation took over the well in June of 1961, and Tenneco Oil Company assumed operations in September of 1963.

Q Now, referring to what has been marked as Exhibit Number 2, which is your diagrammatic sketch of the proposed disposal well, would you explain that to the Examiner?

A This Exhibit Number 2 shows all the casing strings in the well, their sizes and setting depths. It shows sixteen-inch surface casing set at 223 feet with 200 sacks of cement circulated to the surface. It shows ten-inch casing set at 1633 feet with 600 sacks of cement which was circulated to the surface and there's seven-inch 24-pound per foot casing set at 3310 feet with 300 sacks of cement.

The calculated top of this cement is at 2200 feet and the well was drilled to an original TD of 3372 feet, has been plugged back in a series of operations, has two bridge plugs in it, and current plugback is at 3134 feet, cemented.

Q And what will be your proposed zones of injection?

A Proposed zone of injection will be the Yates-Seven Rivers, and a perforated interval from 2920 feet to the top of the cement at 3134 feet.

Q And what do you anticipate your initial volume of water will be and what pressures would you anticipate?

A Well, our initial volume of water is a little bit indefinite. We are apparently producing approximately 100 barrels of water a day from our E. J. Wells lease.

Sinclair Oil Company and the Linear Oil Company, both operators in the southwest quarter of Section 12, have requested permission to use this well for salt water disposal, so our injection rates will be somewhere between 100 barrels a day and 500 barrels a day, initially. We have asked for permission to inject up to 1000 barrels a day at 1000 pounds.

MR. NUTTER: Where would that other water come from, Sinclair's --

THE WITNESS: Sinclair's Hannigan Lease located in the southwest quarter of Section 12, and then Linear has the southwest quarter of that.

MR. NUTTER: That 40-acre tract there?

THE WITNESS: Right.

Q Do you think this well will have any problem taking

down this amount of water?

A No, I don't believe it will.

Q Now, referring to what has been marked Exhibit Number 3 which is the water analysis, would you explain that to the Examiner?

A Well, this is a copy of a Dowell Wall Laboratory Report of water analyses on the Yates-Seven Rivers water taken from the E. J. Well, No. 2 well, and this test indicates that the chloride content of the water is 112,000 parts per million which are in excess of those being used domestically.

Q Do you have a log on this well?

A We have a portion of a log which was run in 1954. This log is a gamma ray neutron log which was run from 2600 feet to 3214 feet.

Q That is what has been marked as Exhibit Number 4, is that right?

A Yes.

Q Would you explain the significance to the Examiner?

A Well, the only thing significant, really, on this log is that it locates the top of the Yates Formation at approximately 2880 feet and the top of the Seven Rivers Formation at approximately 3100 feet.

Q Does the log show the fresh water strata in the area?



A No, it does not. The log was not run near enough the surface to show this. We checked with the geologist with the Oil Conservation Commission in Hobbs and he has informed me that the bottom of the Santa Rosa Zone in this area is about 850 feet and that's considered the lowest zone at which any waters need to be protected or where any fresh waters exist.

Q Do you feel that this proposed installation as shown on Exhibit 3 will protect any possible fresh waters?

A Yes, I do.

Q Or any migration of fluid from any other zone?

A Yes, it will.

Q How do you plan to handle the water on the surface?

A We plan to install a fiberglass line from a 500-barrel cumulator tank to the well head. This line will be approximately 400 feet long.

Q Will the injection tubing be plastic coated?

A Yes, it will.

Q Will you have some type of inhibited fluid in the annulus?

A Yes, we will.

Q And how about a pressure gauge at the top of the annulus?

A Yes.

Q You'll have one?

A Yes.

Q What is the condition of this casing, do you know?

A To the best of my knowledge, this casing is in good condition. However, it was installed in 1935, so we propose to set a packer about 2800 feet and inject through plastic-coated tubing to protect the casing.

Q Were Exhibits 1 through 4 prepared by you or under your supervision?

A Yes, they were.

MR. KELLY: At this time, I move the introduction of Tenneco's Exhibits 1 through 4.

MR. NUTTER: Tenneco's Exhibits 1 through 4 will be admitted in evidence.

(Whereupon, Applicant's Exhibits Numbers 1 through 4 were admitted in evidence.)

MR. KELLY: That's all we have on direct.

MR. NUTTER: Are there any questions of Mr. Knight?  
Off the record.

(Whereupon, off-the-record discussion was had.)

MR. NUTTER: Are there any other questions from Mr. Knight? He may be excused. Do you have anything further, Mr. Kelly?

MR. KELLY: That's all.

MR. NUTTER: Does anyone have anything they wish to offer in Case 3936? We'll take the case under advisement.

I N D E X

<u>WITNESS</u>	<u>PAGE</u>
HENRY NICHOLAS KNIGHT	
Direct Examination by Mr. Kelly	2

<u>EXHIBITS</u>	<u>MARKED</u>	<u>OFFERED AND ADMITTED</u>
Applicant's Exhibits Numbers 1 through 4	2	8

STATE OF NEW MEXICO     )  
                                   ) ss  
 COUNTY OF BERNALILLO    )

I, CHARLOTTE MACIAS, Court Reporter and Notary Public in and for the County of Bernalillo, State of New Mexico, do hereby certify that the foregoing and attached Transcript of Hearing before the New Mexico Oil Conservation Commission was reported by me, and that the same is a true and correct record of the said proceedings, to the best of my knowledge, skill, and ability.

*Charlotte Macias*  
 COURT REPORTER - NOTARY PUBLIC

I do hereby certify that the foregoing is a complete record of the proceedings in the hearing bearing of Case No. 3936, heard by me on 11/12, 1968.

*[Signature]*, Examiner  
 New Mexico Oil Conservation Commission

GOVERNOR  
DAVID F. CARGO  
CHAIRMAN

State of New Mexico  
**Oil Conservation Commission**



LAND COMMISSIONER  
GUYTON B. HAYS  
MEMBER

STATE GEOLOGIST  
A. L. PORTER, JR.  
SECRETARY - DIRECTOR

P. O. BOX 2088  
SANTA FE

November 19, 1968

Mr. Booker Kelly  
White, Gilbert, Koch & Kelly  
Attorneys at Law  
Post Office Box 787  
Santa Fe, New Mexico

Re: Case No. 3936  
Order No. R-3567  
Applicant:  
Tenneco Oil Company

Dear Sir:

Enclosed herewith are two copies of the above-referenced Commission order recently entered in the subject case.

Very truly yours,

A. L. PORTER, Jr.  
Secretary-Director

ALP/ir

Carbon copy of order also sent to:

Hobbs OCC x  
Artesia OCC \_\_\_\_\_  
Aztec OCC \_\_\_\_\_  
Other State Engineer Office

BEFORE THE OIL CONSERVATION COMMISSION  
OF THE STATE OF NEW MEXICO

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

CASE No. 3936  
Order No. R-3567

APPLICATION OF TENNECO OIL COMPANY  
FOR SALT WATER DISPOSAL, LEA COUNTY,  
NEW MEXICO.

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9 a.m. on November 12, 1968, at Santa Fe, New Mexico, before Examiner Daniel S. Nutter.

NOW, on this 19th day of November, 1968, the Commission, a quorum being present, having considered the testimony, the record, and the recommendations of the Examiner, and being fully advised in the premises,

FINDS:

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

(2) That the applicant, Tenneco Oil Company, is the owner and operator of the E. J. Wells Well No. 2, located in Unit G of Section 12, Township 25 South, Range 36 East, NMPM, Jalmat Pool, Lea County, New Mexico.

(3) That the applicant proposes to utilize said well to dispose of produced salt water into the Yates and Seven Rivers formations with injection into the perforated interval from approximately 2920 feet to 3130 feet.

(4) That the injection should be accomplished through 2 7/8-inch plastic-lined tubing installed in a packer set at approximately 2800 feet; that the casing-tubing annulus should be filled with an inert fluid; and that a pressure gauge should

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CASE No. 3936  
Order No. R-3567

be attached to the annulus at the surface in order to determine leakage in the casing, tubing, or packer.

(5) That approval of the subject application will prevent the drilling of unnecessary wells and otherwise prevent waste and protect correlative rights.

IT IS THEREFORE ORDERED:

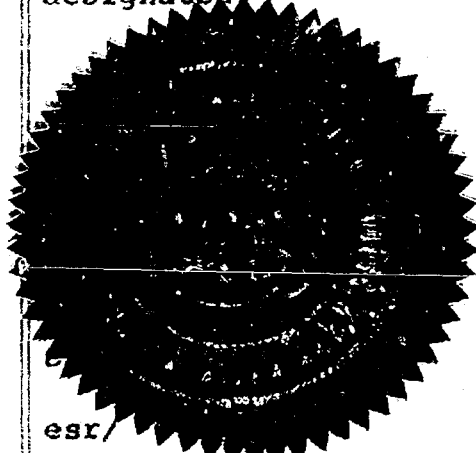
(1) That the applicant, Tenneco Oil Company, is hereby authorized to utilize its E. J. Wells Well No. 2, located in Unit G of Section 12, Township 25 South, Range 36 East, NMPM, Jalmat Pool, Lea County, New Mexico, to dispose of produced salt water into the Yates and Seven Rivers formations, injection to be accomplished through 2 7/8-inch tubing installed in a packer set at approximately 2800 feet, with injection into the perforated interval from approximately 2920 feet to 3130 feet;

PROVIDED HOWEVER, that the tubing shall be plastic-lined; that the casing-tubing annulus shall be filled with an inert fluid; and that a pressure gauge shall be attached to the annulus at the surface in order to determine leakage in the casing, tubing, or packer.

(2) That the applicant shall submit monthly reports of its disposal operations in accordance with Rules 704 and 1120 of the Commission Rules and Regulations.

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

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



STATE OF NEW MEXICO  
OIL CONSERVATION COMMISSION

*David F. Cargo*  
DAVID F. CARGO, Chairman

*Guyton B. Hays*  
GUYTON B. HAYS, Member

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

esr/



DOCKET: EXAMINER HEARING - TUESDAY - NOVEMBER 12, 1968

9 A.M. - OIL CONSERVATION COMMISSION CONFERENCE ROOM  
STATE LAND OFFICE BUILDING - SANTA FE, NEW MEXICO

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The following cases will be heard before Daniel S. Nutter, Examiner, or  
Elvis A. Utz, Alternate Examiner:

- CASE 3927: Application of Gulf Oil Corporation for an unorthodox oil well location, Lea County, New Mexico. Applicant, in the above-styled cause, seeks authority to drill a producing oil well at an unorthodox location 5 feet from the North line and 1,315 feet from the West line of Section 33, Township 19 South, Range 35 East, as an infill well in the West Pearl Queen Unit Waterflood Project, Pearl-Queen Pool, Lea County, New Mexico.
- CASE 3928: Application of Jake L. Hamon for the creation of a new oil pool and for special pool rules, Lea County, New Mexico. Applicant, in the above-styled cause, seeks the creation of a new Devonian oil pool for its State "K-33" Well No. 1 located 1980 feet from the South and West lines of Section 30, Township 16 South, Range 36 East, Lea County, New Mexico, and for the promulgation of special rules therefor including a provision for 80-acre proration units.
- CASE 3929: Application of Leonard Latch for three waterflood projects, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks authority to institute three waterflood projects by the injection of water into the Yates formation through five wells on his Saunders A, B, and Travis leases located in Sections 12 and 13 of Township 17 South, Range 27 East, Empire (Yates-Seven Rivers) Pool, Eddy County, New Mexico.
- CASE 3930: Application of Pan American Petroleum Corporation for a dual completion and water injection, Lea County, New Mexico. Applicant, in the above-styled cause, seeks authority to dually complete its Meyers "B" Federal Well No. 4 located in Unit E of Section 21, Township 24 South, Range 37 East, Lea County, New Mexico, in such a manner as to permit the production of gas from the perforated interval 2950 feet to 3090 feet, Jalmat Gas Pool, and the injection of water for secondary recovery purposes into the Seven Rivers-Queen formations, Langlie-Mattix Pool, in the open-hole interval from 3295 feet to 3650 feet through parallel strings of tubing.
- CASE 3931: Application of Pan American Petroleum Corporation for salt water disposal, Roosevelt County, New Mexico. Applicant, in the above-styled cause, seeks authority to dispose of produced salt water into the San Andres formation in the interval from 4239 feet to 4389 feet in its Farrell Federal Well No. 10 located in Unit F of Section 28, Township 7 South, Range 33 East, and in

November 12, 1968

Examiner Hearing

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Docket No. 33-68

(Case 3931 continued)

the interval from 4402 to 4422 feet in its State "DF" Well No. 1 located in Unit I of Section 25, Township 7 South, Range 33 East, Chaveroo-San Andres Pool, Roosevelt County, New Mexico.

CASE 3932: Application of Pan American Petroleum Corporation for down-hole commingling, Lea County, New Mexico. Applicant, in the above-styled cause, seeks authority to commingle production from the Justis-Blinbry and Justis-Fusselman Pools in the wellbore of its State "AJ" Well No. 6 located in Unit M of Section 30, Township 25 South, Range 38 East, Lea County, New Mexico, with the provision that no more than one single allowable will be produced from said well.

CASE 3933: Application of Texaco, Inc., for a waterflood project, Lea County, New Mexico. Applicant, in the above-styled cause, seeks authority to institute a pilot waterflood project by the injection of water into the Drinkard formation through its C. H. Lockhart Federal NCT Well No. 8 located in Unit P of Section 18, Township 22 South, Range 38 East, Drinkard Pool, Lea County, New Mexico. Applicant further seeks a procedure whereby said project may be expanded administratively without a showing of a well response.

CASE 3934: Application of Texaco Inc., for a waterflood project, Lea County, New Mexico. Applicant, in the above-styled cause, seeks authority to institute a waterflood project by the injection of water into the Drinkard formation through the Drinkard string of its multiple completed (tubingless) V. M. Henderson Well No. 8 located in Unit E of Section 30, Township 21 South, Range 37 East, Drinkard Pool, Lea County, New Mexico.

CASE 3935: Application of Sinclair Oil Corporation for a waterflood project, Lea County, New Mexico. Applicant, in the above-styled cause, seeks authority to institute a pilot waterflood project by injection of water into the Yates and Seven Rivers formations through its B Davis Well No. 1 located 330 feet from the South and West lines of Section 34, Township 23 South, Range 36 East, Jalmat Pool, Lea County, New Mexico.

November 12, 1968  
Examiner Hearing  
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Docket No. 33-68

CASE 3936:

Application of Tenneco Oil Company for salt water disposal, Lea County, New Mexico. Applicant, in the above-styled cause, seeks authority to dispose of produced salt water into the Yates and Seven Rivers formations in the perforated interval from approximately 2920 feet to 3134 feet in its E. J. Wells Well No. 2 located in Unit G of Section 12, Township 25 South, Range 36 East, Jalmat Pool, Lea County, New Mexico.

CASE 3937:

Application of Anadarko Production Company for an amendment to Order No. R-2977, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks the amendment of Order No. R-2977, as corrected by Order No. R-2977-A, which authorized a cooperative waterflood project in the Square Lake Pool, Eddy County, New Mexico, to delete the water injection well previously authorized to be drilled 2630 feet from the South line and 2650 feet from the East line of Section 31, Township 16 South, Range 31 East, and to authorize for water injection its Grier Federal Well No. 6 located 1980 feet from the South and East lines of said Section 31.

CASE 3938:

Application of Aztec Oil & Gas Company for compulsory pooling and a non-standard proration unit, San Juan County, New Mexico. Applicant, in the above-styled cause, seeks an order pooling all mineral interests in the Pictured Cliffs formation underlying Lots 6, 7, NE/4 SW/4, and SE/4 SW/4 of Section 6, Township 29 North, Range 10 West, Aztec-Pictured Cliffs Gas Pool, San Juan County, New Mexico. Said non-standard unit to be dedicated to a well to be drilled 1830 feet from the South line and 1530 feet from the West line of said Section 6. Also to be considered will be the costs of drilling said well, a charge for the risk involved, a provision for the allocation of actual operating costs, and the establishment of charges for supervision of said well.

CASE 3939:

Application of Aztec Oil & Gas Company for four unorthodox gas well locations, San Juan County, New Mexico. Applicant, in the above-styled cause, seeks approval of unorthodox Blanco-Mesaverde Gas Pool locations for four wells located as follows:

SAN JUAN COUNTY, NEW MEXICO  
Township 30 North, Range 11 West

Hampton Well No. 4 - 1,140 feet from the West line and 970 feet from the North line of Section 13

November 12, 1968

Examiner Hearing

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Docket No. 33-68

(Case 3939 continued)

Township 31 North, Range 12 West

Richardson Well No. 7 - 1,584 feet from the East line  
and 1,621 feet from the South line  
of Section 15

East Well No. 10 1,770 feet from the North line  
and 790 feet from the West line of  
Section 26

East Well No. 8 790 feet from the South and East  
lines of Section 26.

CASE 3940:

Application of Shell Oil Company for an amendment to Order No. R-2808, Lea County, New Mexico. Applicant, in the above-styled cause, seeks the amendment of Order No. R-2808 to permit the dedication of a non-standard proration unit authorized therein to its Livingston Wells Nos. 7 and 2 located in Units V and W, respectively, of Section 3, Township 21 South, Range 37 East, Tubb Gas Pool, Lea County, New Mexico. Applicant further seeks authority to produce the allowable assigned to said unit from either of the aforesaid wells in any proportion.

CASE 3941:

Application of Agua, Inc., for salt water disposal, Eddy County, New Mexico. Applicant, in the above-styled cause, proposes to dispose of produced salt water into the San Andres formation in the open-hole interval between the casing shoe set at 2050 feet and a cement plug at 5400 feet after cleaning out and acidizing the well between 2050 feet and 3600 feet in its Empire-Abo SWD Well No. 01, formerly the Humble Federal Empire-Abo Well No. 3, located in Unit O of Section 1, Township 18 South, Range 27 East, Empire-Abo Field, Eddy County, New Mexico.

CASE 3942:

Application of Cities Service Oil Company for salt water disposal, Lea County, New Mexico. Applicant, in the above-styled cause, seeks authority to dispose of produced salt water into the Yates and Seven Rivers formations in the perforated interval from approximately 3790 feet to 3834 feet in its Closson "B" Well No. 18 located in Unit M of Section 19, Township 22 South, Range 36 East, Jalmat Pool, Lea County, New Mexico.

November 12, 1968  
Examiner Hearing  
-5-

Docket No. 33-68

CASE 3943:

Application of Continental Oil Company for a dual completion, Lea County, New Mexico. Applicant, in the above-styled cause, seeks authority to dually complete its Lynn A-28 Well No. 5, located in Unit A of Section 28, Township 23 South, Range 36 East, Lea County, New Mexico, in such a manner as to produce gas from the Yates formation of the Jalmat Gas Pool through the casing-tubing annulus and to dispose of produced salt water through tubing into the Seven Rivers formation of said pool in the interval from 3340 to 3374 feet.

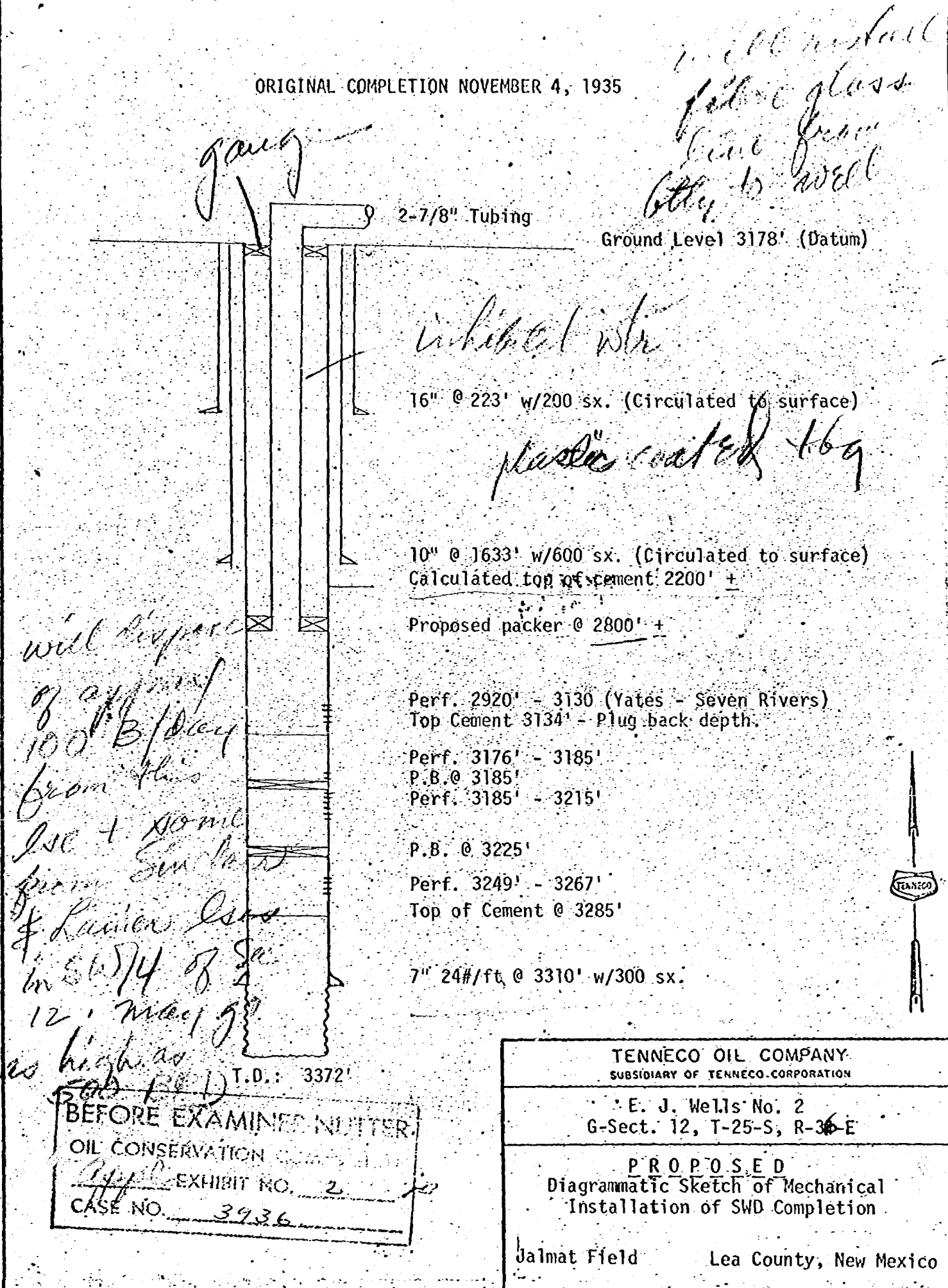
CASE 3944:

Application of Sun Oil Company for a pressure maintenance project, Roosevelt County, New Mexico. Applicant, in the above-styled cause, seeks authority to institute a pressure maintenance project in its James McFarland Lease by the injection of water into the San Andres formation through its James McFarland Well No. 4 located in the NW/4 SW/4 of Section 20, Township 7 South, Range 33 East, Chaveroo-San Andres pool, Roosevelt County, New Mexico. Applicant further seeks the promulgation of special rules to govern operation of said pressure maintenance project.

CASE 3945:

Application of Mobil Oil Corporation for lease commingling, Lea County, New Mexico. Applicant, in the above-styled cause, seeks authority to commingle Vacuum Grayburg-San Andres production from its State "G" lease comprising the W/2 NE/4 and SE/4 NE/4 of Section 24, Township 17 South, Range 34 East, Lea County, New Mexico, with Vacuum Grayburg-San Andres production from that portion of its Bridges State lease comprising the W/2 of said Section 24, allocating the production to each lease on the basis of monthly well tests.

ORIGINAL COMPLETION NOVEMBER 4, 1935



TENNECO OIL COMPANY  
SUBSIDIARY OF TENNECO CORPORATION

E. J. Wells No. 2  
G-Sect. 12, T-25-S, R-36-E

PROPOSED  
Diagrammatic Sketch of Mechanical  
Installation of SWD Completion

Jalmat Field Lea County, New Mexico



# POWELL INCORPORATED

## FIELD LABORATORY REPORT

### WATER ANALYSIS

TO: Three States Natural Gas Company  
P. O. Box 168  
Jal, New Mexico

LABORATORY LOCATION Midland, Texas	REPORT NUMBER 8327
COMPANY Three States Natural	WELL E. J. Wells No. 2
POOL Jalmat	LOCATION SW/4, NE/4, Sec. 12, T25S, R36E
COUNTY Lea	STATE New Mexico
FORMATION Seven Rivers	DEPTH 3000'
SUBMITTED BY Operator	TESTS DESIRED Complete Analysis

DATE SAMPLE SUBMITTED  
August 18, 1958

SAMPLE SOURCE

	PPM	EPM		PPM	EPM
CALCIUM	862	43	CHLORIDE	112,600	3,175
MAGNESIUM	16,650	1,370	SULFATE	13,450	280
SODIUM	47,200	2,053	BICARBONATE	685	11
IRON			CARBONATE		
HYDROGEN SULFIDE			HYDROXIDE		

SPECIFIC GRAVITY

1.160

AT 78

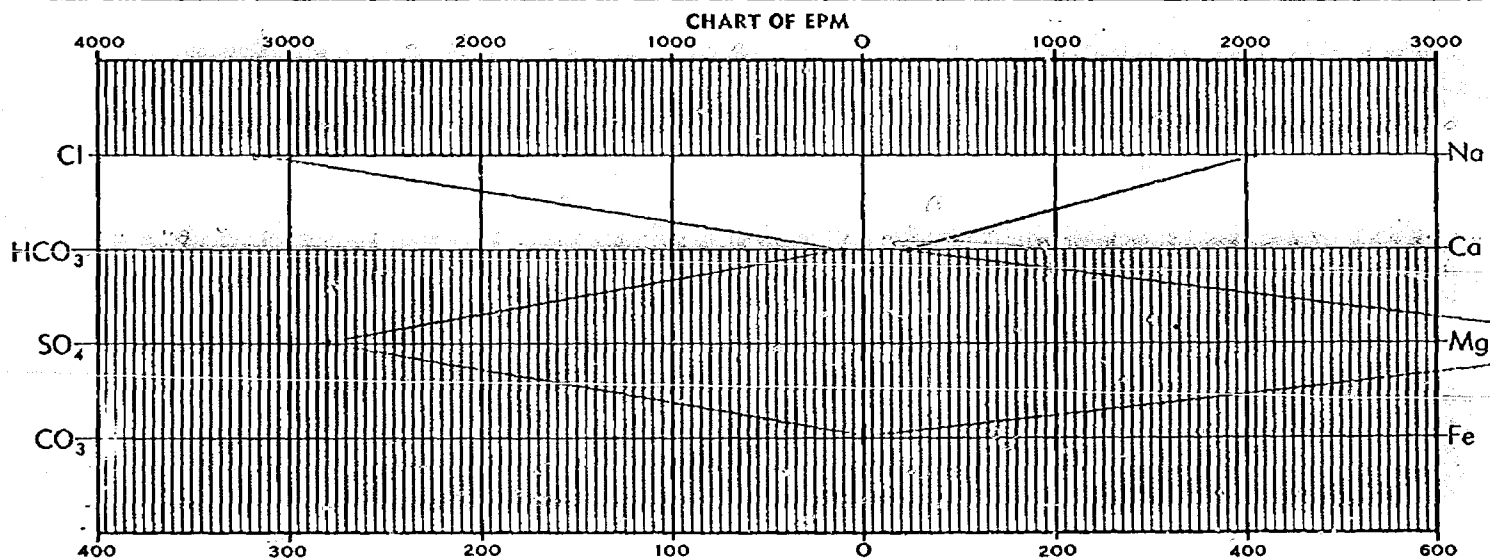
°F pH

7.3

CaCl<sub>2</sub>/MgCl<sub>2</sub>

.0365

% SALT SATURATION



#### REMARKS:

cc:

Rosene, Tulsa  
Bowersock, Fort Worth  
Hurst, Midland  
Stewart, Midland

HAS/cav

water = 1.65 bbls. per day

BEFORE EXAMINER NUTTER

OIL CONSERVATION COMMISSION

EXHIBIT NO. 3

CASE NO. 3936

CHEMIST H. A. Stewart

8/21/58

DATE



TENNECO OIL COMPANY • P. O. BOX 1031 • 1800 WILCO BUILDING • MIDLAND, TEXAS 79701

October 25, 1968

Mr. A. L. Porter, Jr. - Section Director  
Oil Conservation Commission  
P. O. Box 871  
Santa Fe, New Mexico 87501

RE: Application for Salt Water  
Disposal, E. J. Wells No. 2,  
G-Sect. 12, T-25-S, R-36-E,  
Jalmat Field, Lea County,  
New Mexico.

Dear Sir:

Attached is a New Mexico Oil Conservation Commission Form C-108 completed for Tenneco Oil Company's E. J. Wells No. 2 well, Jalmat (Yates - Seven Rivers) Field, Lea County, New Mexico. Our proposal is to convert this well to salt water disposal, in the Yates - Seven Rivers formation, to receive water produced from the same formation in our three producing wells on the lease. We have invited the participation of Sinclair Oil Company and Mr. Sidney Lanier, operators of leases in the SW/4 of Sect. 12, T-25-S, R-36-E. Tenneco's current water production is approximately 70 barrels per day, Sinclair reports 150 barrels per day and Mr. Lanier produces approximately 20 barrels per day. We anticipate that this water will initially be disposed of at a vacuum, but have requested permission to dispose of a maximum of 1,000 barrels per day at 1,000 psig.

Tenneco Oil Company requests that this application for salt water disposal be granted and approved inasmuch as there are no objections by offset operators; fresh water sands are protected by cemented casing and tubing set on a packer; and disposal into the Yates - Seven Rivers formation will permit greater recovery of commercial oil from the Yates - Seven Rivers field.

Very truly yours,

TENNECO OIL COMPANY

F. J. McDonald  
District Superintendent

DOCKET MAILED

Date 11-1-68

HNK:cw

Attachments

cc: New Mexico Oil Conservation Commission - Hobbs, New Mexico  
United States Geological Survey - Roswell, New Mexico  
New Mexico State Engineer - Santa Fe, New Mexico




NEW MEXICO OIL CONSERVATION COMMISSION  
APPLICATION TO DISPOSE OF SALT WATER BY INJECTION INTO A POROUS FORMATION

OPERATOR Tenneco Oil Company		ADDRESS P. O. Box 1031 Midland, Texas 79701	
LEASE NAME E. J. Wells	WELL NO. 2	FIELD Jalmat (Yates - Seven Rivers)	COUNTY Lea
LOCATION UNIT LETTER <u>G</u> WELL IS LOCATED <u>2310</u> FEET FROM THE <u>North</u> LINE AND <u>2310</u> FEET FROM THE <u>East</u> LINE, SECTION <u>12</u> TOWNSHIP <u>25-S</u> RANGE <u>36-E</u> NMPM.			

CASING AND TUBING DATA					
NAME OF STRING	SIZE	SETTING DEPTH	SACKS CEMENT	TOP OF CEMENT	TOP DETERMINED BY
SURFACE CASING	16"	223'	200	Surface	Circulated
INTERMEDIATE	10"	1633'	500	Surface	Circulated
LONG STRING	7"	3310'	300	2200'	Calculated
TUBING	2-7/8"	2800'	NAME, MODEL AND DEPTH OF TUBING PACKER Proposed - Guiberson "Shorty Tension Pkr" @ 2800'		
NAME OF PROPOSED INJECTION FORMATION Yates - Seven Rivers			TOP OF FORMATION 2880'		BOTTOM OF FORMATION 3400' (est.)
IS INJECTION THROUGH TUBING, CASING, OR ANNULUS? Tubing		PERFORATIONS OR OPEN HOLE? Perforations		PROPOSED INTERVAL(S) OF INJECTION 2920' - 3134'	
IS THIS A NEW WELL DRILLED FOR DISPOSAL? No		IF ANSWER IS NO, FOR WHAT PURPOSE WAS WELL ORIGINALLY DRILLED? Oil Production		HAS WELL EVER BEEN PERFORATED IN ANY ZONE OTHER THAN THE PROPOSED INJECTION ZONE? Additional Yates - 7 River	
LIST ALL SUCH PERFORATED INTERVALS AND SACKS OF CEMENT USED TO SEAL OFF OR SQUEEZE EACH Perf. 3176' to 3215'; Perf. 3249' - 3267' sealed off in Feb. 1937. Drilled out to 3134' Aug. 1954. Added 50 sx. cement Nov. 1951.					
DEPTH OF BOTTOM OF DEEPEST FRESH WATER ZONE IN THIS AREA Santa Rosa - 850'		DEPTH OF BOTTOM OF NEXT HIGHER OIL OR GAS ZONE IN THIS AREA None		DEPTH OF TOP OF NEXT LOWER OIL OR GAS ZONE IN THIS AREA Top Queen @ 3400' (est)	
ANTICIPATED DAILY INJECTION VOLUME (BBL/DAY)	MINIMUM 100	MAXIMUM 1000	OPEN OR CLOSED TYPE SYSTEM Closed	IS INJECTION TO BE BY GRAVITY OR PRESSURE? Gravity	APPROX. PRESSURE (PSI) Max. 1000 psi
ANSWER YES OR NO WHETHER THE FOLLOWING WATERS ARE MINERALIZED TO SUCH A DEGREE AS TO BE UNFIT FOR DOMESTIC, STOCK, IRRIGATION, OR OTHER GENERAL USE			WATER TO BE DISPOSED OF Yes	NATURAL WATER IN DISPOSAL ZONE Yes	ARE WATER ANALYSES ATTACHED? Yes
NAME AND ADDRESS OF SURFACE OWNER (OR LESSEE, IF STATE OR FEDERAL LAND) James F. Bryant, Drawer P, Jal, New Mexico					
LIST NAMES AND ADDRESSES OF ALL OPERATORS WITHIN ONE-HALF (1/2) MILE OF THIS INJECTION WELL See Attached Sheet					
HAVE COPIES OF THIS APPLICATION BEEN SENT TO EACH OF THE FOLLOWING?		SURFACE OWNER Yes		EACH OPERATOR WITHIN ONE-HALF MILE OF THIS WELL Yes	
ARE THE FOLLOWING ITEMS ATTACHED TO THIS APPLICATION (SEE RULE 701-B)		PLAT OF AREA Yes		ELECTRICAL LOG Yes	
				THE NEW MEXICO STATE ENGINEER Yes	
				DIAGRAMMATIC SKETCH OF WELL Yes	

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

 J. F. Carnes  
(Signature)

District Production Engineer  
(Title)

(Date)

NOTE: Should waivers from the State Engineer, the surface owner, and all operators within one-half mile of the proposed injection well, not accompany this application, the New Mexico Oil Conservation Commission will hold the application for a period of 15 days from the date of receipt by the Commission's Santa Fe office. If at the end of the 15-day waiting period no protest has been received by the Santa Fe office, the application will be processed. If a protest is received, the application will be set for hearing, if the applicant so requests. SEE RULE 701.

LIST OF NAMES AND ADDRESSES OF ALL OPERATORS WITHIN 1/2 MILE OF THIS INJECTION WELL

Continental Oil Company  
P. O. Box 460  
Hobbs, New Mexico 88240

Argus Production Co.  
3313 Republic Bank Tower  
Dallas, Texas 75201

Sinclair Oil Co.  
P. O. Box 1920  
Hobbs, New Mexico 88240

Humble Oil Co.  
P. O. Box 2100  
Hobbs, New Mexico 88240

Dalport Oil Corp.  
3471 First National Bank Bldg.  
Dallas, Texas 75202

Ralph Lowe  
P. O. Box 832  
Midland Tower Bldg.  
Midland, Texas 79701

S. Lanier  
1807 North "D"  
Midland, Texas 79701

October 25, 1968

TO OFFSET OPERATORS

RE: Tenneco Oil Company's  
E. J. Wells No. 2 Well,  
G-12, T-25-S, R-36-E,  
Lea County, New Mexico.

Dear Sirs:

Attached is a New Mexico Oil Conservation Commission Form C-108 completed for the subject well. Hearing for this application is set for November 12, 1968. Please advise if you have objections to this application.

Very truly yours,

TENNECO OIL COMPANY

*J. J. Carnes*  
for H. J. McDonald  
District Superintendent

HNK:cw

Attachment



TENNECO OIL COMPANY • P. O. BOX 1031 • 1800 WILCO BUILDING • MIDLAND, TEXAS 79701

October 25, 1968

Mr. James F. Bryant  
Drawer P  
Jal  
New Mexico

RE: Application for Salt Water  
Disposal, E. J. Wells No. 2  
Well, Unit G-Sect. 12, T-25-S,  
R-36-E, Lea County, New Mexico.

Dear Mr. Bryant:

Tenneco Oil Company proposes to convert the subject well to salt water disposal to serve our E. J. Wells Lease. Attached is a New Mexico Oil Conservation Commission Form C-108 which is being submitted for this conversion.

As operator of the surface around this well, Tenneco Oil Company respectfully requests your waiver of notice of hearing on the above application by signing and returning one copy of this letter to the above address.

Very truly yours,

TENNECO OIL COMPANY

*F. J. McDonald*  
for F. J. McDonald  
District Superintendent

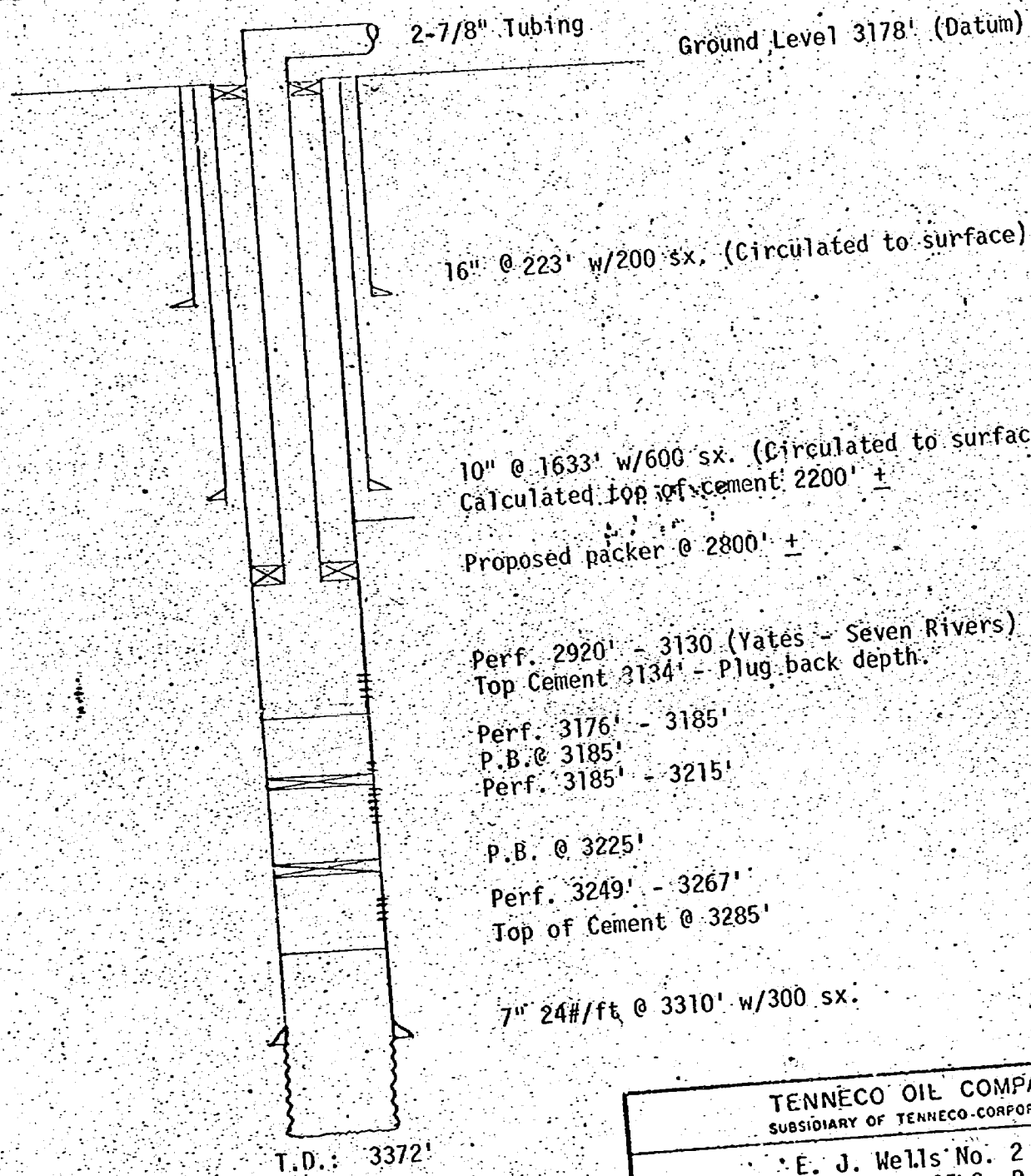
HNK:cw

Attachment

SIGNED: \_\_\_\_\_

DATE: \_\_\_\_\_

ORIGINAL COMPLETION NOVEMBER 4, 1935



TENNECO OIL COMPANY  
SUBSIDIARY OF TENNECO CORPORATION

E. J. Wells No. 2  
G-Sect. 12, T-25-S, R-31-E

PROPOSED  
Diagrammatic Sketch of Mechanical  
Installation of SWD Completion

Jalmat Field Lea County, New Mexico



# POWELL INCORPORATED

## FIELD LABORATORY REPORT

### WATER ANALYSIS

TO: Three States Natural Gas Company  
P. O. Box 168  
Jal, New Mexico

LABORATORY LOCATION		REPORT NUMBER
Midland, Texas		8327
COMPANY		WELL
Three States Natural		E. J. Wells No. 2
POOL		LOCATION
Jalmat		SW/4, NE/4, Sec. 12, T25S, R36E
COUNTY		STATE
Lea		New Mexico
FORMATION		DEPTH
Seven Rivers		3000'
SUBMITTED BY		TESTS DESIRED
Operator		Complete Analysis

DATE SAMPLE SUBMITTED

August 18, 1958

SAMPLE SOURCE

	PPM	EPM		PPM	EPM
CALCIUM	862	43	CHLORIDE	112,600	3,175
MAGNESIUM	16,650	1,370	SULFATE	13,450	280
SODIUM	47,200	2,053	BICARBONATE	685	11
IRON			CARBONATE		
HYDROGEN SULFIDE			HYDROXIDE		

SPECIFIC GRAVITY

1.160

AT

78

°F

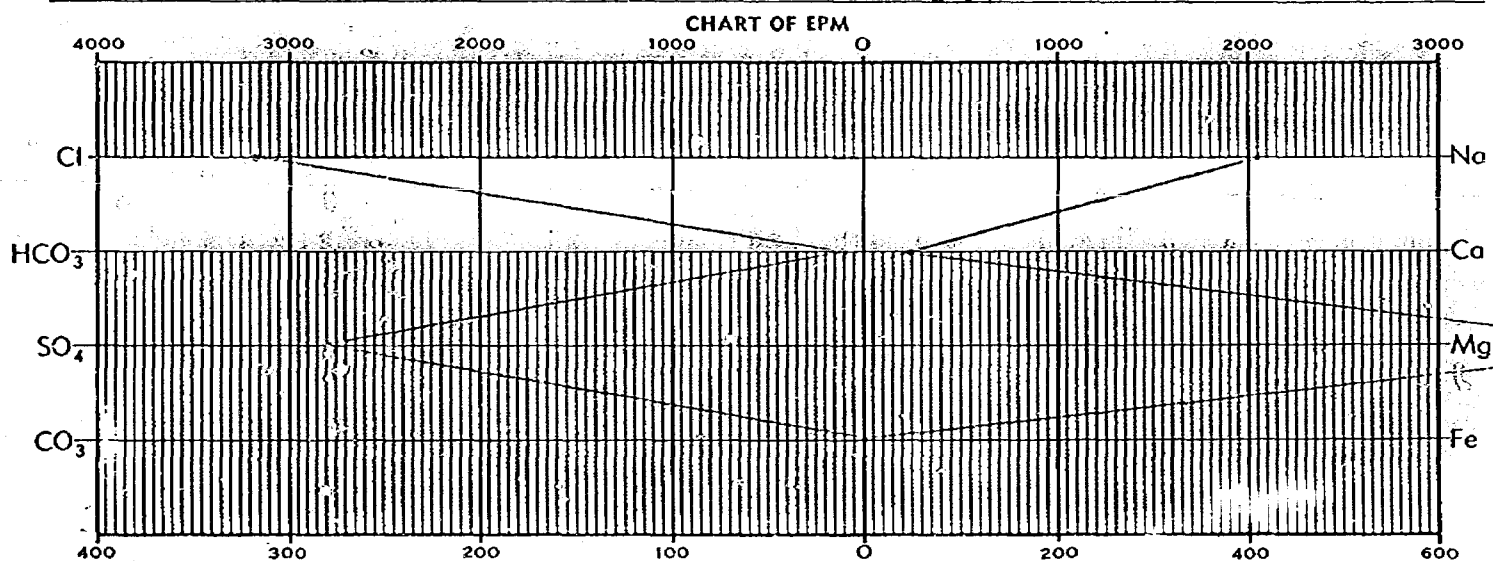
pH

7.3

CaCl<sub>2</sub>/MgCl<sub>2</sub>

.0365

% SALT SATURATION



#### REMARKS:

cc:  
Rosene, Tulsa  
Bowersock, Fort Worth  
Hurst, Midland  
Stewart, Midland

water - 1.65 bbls. per day

HAS/cav

CHEMIST

H. A. Stewart

8/21/58

DATE

DRAFT

GMH/esr

BEFORE THE OIL CONSERVATION COMMISSION  
OF THE STATE OF NEW MEXICO

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

CASE No. 3936

Order No. R- 3567

APPLICATION OF TENNECO OIL COMPANY  
FOR SALT WATER DISPOSAL, LEA COUNTY,  
NEW MEXICO.

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9 a.m. on November 12 1968,  
at Santa Fe, New Mexico, before Examiner Daniel S. Nutter.

NOW, on this \_\_\_\_\_ day of November, 1968, the Commission, a  
quorum being present, having considered the testimony, the record,  
and the recommendations of the Examiner, and being fully advised  
in the premises,

FINDS:

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

(2) That the applicant, Tenneco Oil Company,  
is the owner and operator of the E. J. Wells Well No. 2,  
located in Unit G of Section 12, Township 25 South, Range  
36 East, NMPM, Jalmat Pool, Lea  
County, New Mexico.

(3) That the applicant proposes to utilize said well to  
dispose of produced salt water into the Yates and Seven Rivers  
formations, with injection into the perforated interval  
from approximately 2920 feet to 3130 ~~3134~~ feet.

(4) That the injection should be accomplished through  
2 7/8-inch plastic-lined tubing installed in a packer set at

approximately 2800 feet; that the casing-tubing annulus should be filled with an inert fluid; and that a pressure gauge should be attached to ~~the annulus or the annulus left open~~ <sup>the annulus</sup> at the surface in order to determine leakage in the casing, tubing, or packer.

(5) That approval of the subject application will prevent the drilling of unnecessary wells and otherwise prevent waste and protect correlative rights.

IT IS THEREFORE ORDERED:

(1) That the applicant, Tenneco Oil Company, is hereby authorized to utilize its E. J. Wells Well No. 2, located in Unit G of Section 12, Township 25 South, Range 36 East, NMPM, Jalmat Pool, Lea

County, New Mexico, to dispose of produced salt water into the Yates and Seven Rivers formations, injection to be accomplished through 2 7/8-inch tubing installed in a packer set at approximately 2800 feet, with injection into the perforated interval from approximately 2920 feet to 3130 ~~3135~~ feet;

PROVIDED HOWEVER, that the tubing shall be plastic-lined; that the casing-tubing annulus shall be filled with an inert fluid; and that a pressure gauge shall be attached to the annulus ~~or the annulus left open~~ at the surface in order to determine leakage in the casing, tubing, or packer.

(2) That the applicant shall submit monthly reports of its disposal operations in accordance with Rules 704 and 1120 of the Commission Rules and Regulations.

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

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



Tenneco Oil Co. dispose prod saltwater

E. J. Wells # 2

Jalmar Rea Co

G (2310 FNL & FEL) 12 25S 36E

dispose Yates-7R

perfs 2920-2970 3134

Nov 12 th