

CASE 3018: Application of TENNECO

OIL CO. for a waterflood project, \_\_\_\_\_

Chaves County, New Mexico.

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CASE No.

3018

Application,  
TRANSCRIPTS,  
SMALL Exhibits  
ETC.

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. 3018  
Order No. R-2686

APPLICATION OF TENNECO OIL COMPANY  
FOR A WATERFLOOD PROJECT, CHAVES  
COUNTY, NEW MEXICO.

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9 o'clock a.m. on March 25, 1964, at Santa Fe, New Mexico, before Examiner Elvis A. Utz.

NOW, on this 6th day of April, 1964, 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, seeks authority to institute a waterflood project in the Round Tank-San Andres Pool by the injection of water into the San Andres formation through its USA Mehurin Well No. 2 located in Unit I of Section 24, Township 15 South, Range 28 East, NMPM, Chaves County, New Mexico.
- (3) That the applicant proposes to inject water through tubing installed in a packer set at approximately 2925 feet, to fill the casing-tubing annulus above the packer with inert fluid, and to install a pressure gauge at the surface to detect leakage into the annulus.
- (4) That the wells in the project area are in an advanced state of depletion and should properly be classified as "stripper" wells.
- (5) That the proposed waterflood project is in the interest of conservation and should result in recovery of otherwise unrecoverable oil, thereby preventing waste.

-2-

CASE No. 3018  
Order No. R-2686

(6) That the subject application should be approved and the project should be governed by the provisions of Rule 701 of the Commission Rules and Regulations.

IT IS THEREFORE ORDERED:

(1) That the applicant, Tenneco Oil Company, is hereby authorized to institute a waterflood project in the Round Tank-San Andres Pool by the injection of water into the San Andres formation through its USA Mehurin Well No. 2 located in Unit I of Section 24, Township 15 South, Range 28 East, NMPM, Chaves County, New Mexico;

PROVIDED HOWEVER, that injection shall be through tubing installed in a packer set at approximately 2925 feet, the casing-tubing annulus above the packer shall be filled with inert fluid, and a pressure gauge shall be installed at the surface to detect leakage into the annulus.

(2) That the subject waterflood project shall be governed by the provisions of Rule 701 of the Commission Rules and Regulations, including the allowable provisions thereof, and including the provisions with respect to expansion of the waterflood project.

(3) That monthly progress reports of the waterflood project herein authorized shall be submitted to the Commission in accordance with Rules 704 and 1119 of the Commission Rules and Regulations.

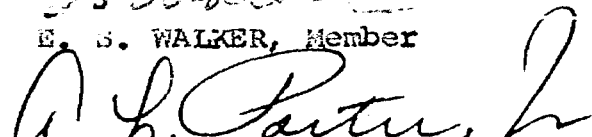
(4) That jurisdiction of this cause is retained for the entry of such further orders as the Commission may deem necessary.

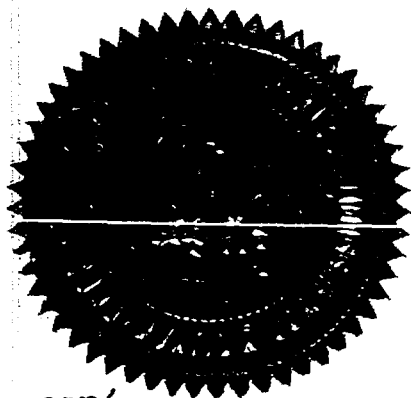
DONE at Santa Fe, New Mexico, on the day and year hereinabove designated.

STATE OF NEW MEXICO  
OIL CONSERVATION COMMISSION

  
JACK M. CAMPBELL, Chairman

  
E. S. WALKER, Member

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



esr/

OIL CONSERVATION COMMISSION

P. O. BOX 871

SANTA FE, NEW MEXICO

April 6, 1964

C  
O  
P  
Y

Mr. Clarence Hinkle  
Hinkle, Bondurant and Christy  
Attorneys at Law  
Post Office Box 10  
Roswell, New Mexico

Dear Sir:

Enclosed herewith is Commission Order No. R-2686, entered in Case No. 3018, approving the Tenneco Pound Tank-San Andres Waterflood Project.

According to our calculations, when all of the authorized injection wells have been placed on active injection, the maximum allowable which this project will be eligible to receive under the provisions of Rule 701-E-3 is 168 barrels per day.

Please report any error in this calculated maximum allowable immediately, both to the Santa Fe Office of the Commission and the appropriate district proration office.

In order that the allowable assigned to the project may be kept current, and in order that the operator may fully benefit from the allowable provisions of Rule 701, it behooves him to promptly notify both of the aforementioned Commission offices by letter of any change in the status of wells in the project area, i.e., when active injection commences, when additional injection or producing wells are drilled, when additional wells are acquired

OIL CONSERVATION COMMISSION  
P. O. BOX 871  
SANTA FE, NEW MEXICO

-2-

Mr. Clarence Hinkle  
Hinkle, Bondurant and Christy  
Attorneys at Law  
Roswell, New Mexico

through purchase or unitization, when wells have received a  
response to water injection, etc.

Your cooperation in keeping the Commission so informed as to  
the status of the project and the wells therein will be appre-  
ciated.

Very truly yours,

A. L. PORTER, Jr.  
Secretary-Director

ALP/ir

cc: Oil Conservation Commission  
Artesia, New Mexico

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### Grinding

- (3) That the applicant proposes to inject water through tubing installed in a packer set at approximately 2925 feet  $\pm$ , to fill the casing-tubing annulus above the packer with inert fluid, and to install a pressure gauge at the surface to detect leakage into the annulus.

DRAFT  
JMD/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. 3018

Order No. R- 3686

APPLICATION OF TENNECO OIL COMPANY  
FOR A WATERFLOOD PROJECT, CHAVES  
COUNTY, NEW MEXICO.

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9 o'clock a.m. on  
March 25, 1964, at Santa Fe, New Mexico, before Examiner Elvis A. Utz.  
~~Examiner duly appointed by the Oil Conservation Commission of New~~  
~~Mexico, hereinafter referred to as the "Commission," in accordance~~  
~~with Rule 1214 of the Commission Rules and Regulations.~~

NOW, on this April day of 1964, the Commission,  
a quorum being present, having considered the ~~application, the~~ testimony,  
the record, ~~evidence adduced,~~ 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, seeks authority  
to institute a waterflood project in the Round Tank-San Andres Pool  
by the injection of water into the San Andres formation through  
its 45A Mehurin well No 2 located in Unit I of Section  
24, Township 15 South, Range 28 East, NMPM, Chaves County, New  
Mexico.

(3) see attachment  
(4)(3) That the wells in the project area are in an advanced  
state of depletion and should properly be classified as "stripper"  
wells.



Ordered

④/ Provided However, That injection shall be through tubing installed in a packer set at approximately 2925 feet, the casing-tubing annulus above the packer shall be filled with inert fluid, and a pressure gauge shall be installed at the surface to detect leakage into the annulus.

(5) That the proposed waterflood project is in the interest of conservation and should result in recovery of otherwise unrecoverable oil, thereby preventing waste.

(6) That the subject application should be approved and the project should be governed by the provisions of Rule 701 of the Commission Rules and Regulations.

IT IS THEREFORE ORDERED:

(1) That the applicant, Tenneco Oil Company, is hereby authorized to institute a waterflood project in the Round Tank-San Andres Pool by the injection of water into the San Andres formation through its USA Mubwin well no 2 located in Unit I of Section 24, Township 15 South, Range 28 East, NMPM, Chaves County, New Mexico.

*Insert* (2) That the subject waterflood project shall be governed by the provisions of Rule 701 of the Commission Rules and Regulations, including the allowable provisions thereof, and including the provisions with respect to expansion of the waterflood project.

(3) That monthly progress reports of the waterflood project herein authorized shall be submitted to the Commission in accordance with Rules 704 and 1119 of the Commission Rules and Regulations.

(4) 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.

CLARENCE E. HINKLE  
W. E. BONDURANT, JR.  
HOWARD C. BRATTON  
S. B. CHRISTY IV  
LEWIS C. COX, JR.  
PAUL W. EATON, JR.  
CONRAD E. COFFIELD  
HAROLD L. HENSLEY, JR.  
MICHAEL R. WALLER

LAW OFFICES  
HINKLE, BONDURANT, BRATTON & CHRISTY  
HINKLE BUILDING  
ROSWELL, NEW MEXICO

February 28, 1964

1964 MAR 6

TELEPHONE 622 6510  
AREA CODE 505  
POST OFFICE BOX 10

New Mexico Oil Conservation Commission  
P.O. Box 2088  
Santa Fe, New Mexico

Gentlemen:

Comes now Tenneco Oil Company and applies for permission to conduct a pilot water flood by the injection of water into one well in the Round Tank San Andres Field, Chaves County, New Mexico. Applicant requests permission under Rule 701, and in support thereof shows as follows:

1. Attached as Exhibit "1" is a plat showing the proposed injection well, which is in the NE $\frac{1}{4}$ SE $\frac{1}{4}$  of Section 24, Township 15 South, Range 28 East, N.M.P.M., Chaves County, New Mexico. Said plat also shows all wells drilled to the San Andres Formation within two miles of the injection well.

2. Attached hereto as Exhibit "2" is a copy of the Sonic Log of the injection well, which is Tenneco's United States of America Mehurin No. 2 well.

3. Attached hereto as Exhibit "3" is a copy of the Gamma Ray Laterolog of said well.

4. Attached hereto as Exhibit "4" is a schematic drawing of the injection well showing the information required by Rule 701. Injection will be into the San Andres Formation at the depths indicated.

5. Attached hereto is an analysis of the water which will be injected.

6. Water for injection will be obtained from the surrounding oil wells in Section 24, and in Sections 19 and 30, Township 15 South, Range 29 East. It is anticipated that approximately 300 barrels per day will be injected.

DOCKET MAILED

Date 3-12-64

*[Signature]*

New Mexico Oil Conservation Commission  
February 28, 1964  
Page 2

It is requested that this pilot water flood project be governed by the provisions of Rule 701, and that provision be made for conversion of additional wells to injection by administrative procedure, if the pilot injection program is successful.

A copy of this application, complete with all attachments, is being sent to the office of the State Engineer, State Capitol Building, Santa Fe, New Mexico.

It is requested that this matter be set down for examiner hearing at the first available date.

Very truly yours,

HINKLE, BONDURANT, BRATTON & CHRISTY

Howard C. Bratton

HCB:bb  
Enclosures

1 cc: State Engineer (with exhibits)  
1 cc: Mr. J.D. Moon  
2 cc: Mr. John Anderson

## HALLIBURTON DIVISION LABORATORY

HALLIBURTON COMPANY

LOVINGTON, NEW MEXICO

No. W3-40-64

## LABORATORY REPORT

Date January 20, 1964

Anneco Oil Co. - 1/2 Lea Pumping Ser.

Robbs Highway

Robbs, New Mexico

This report is the property of Halliburton Company and neither it nor any part thereof nor a copy thereof is to be published or disclosed without first securing the express written approval of laboratory management; it may however, be used in the course of regular business operations by any person or concern and employees thereof receiving such report from Halliburton Company

Date Received 1-18-64

Well & Lease	As Marked	Depth	Formation	San Andres
Location	Sec 24, T-15-S, R-28-E	Field	Round Tank	Source Lease Tank Battery
Chaves, Co	New, Mexico	Fitzgerald	Mehurin	
Specific gravity	1.123		1.130	
60/60 °F				
Color, filtrate	Colorless		Colorless	
pH	6.6		6.3	
Resistivity	ND		ND	
°F				
Chlorides, Cl	102,400		112,000	
Sulfates, SO <sub>4</sub>	4000+		4000+	
Alkalinity, HCO <sub>3</sub>	ND		ND	
Calcium, Ca	3,200		5,750	
Magnesium, Mg	1,260		485	
Iron, Fe	Negl.		Negl.	
Sodium, Na*	62,500		65,000	
Sulfides, H <sub>2</sub> S	50		50	

Remarks

ppm equals Parts per million uncorrected or milligrams per liter  
\* includes Potassium as Na.

Respectfully submitted.

HALLIBURTON COMPANY

Laboratory Analyst

By Dave Sutton, Division Chemist

Brewer

## NOTICE

This report is limited to the described sample tested. Any user of this report agrees that Halliburton shall not be liable for any loss or damage, whether due to act or omission, resulting from such report or its use.

3015

25-64

25-64

Grant Tenneco permission to conduct  
a pilot water flood in the Round Lake -  
San Andreas oil Pool.

2. The only injection well will be operation  
N.S.T. Melurim #2 H. 24-155-28E.

3. Injection shall be thru tubing & below  
a packer to be set at approx 2425.  
The annulus <sup>above</sup> the packer shall  
be filled with inert fluid & a  
pressure gauge set at the surface  
in order to assist in detecting  
leakage into the annulus.

Chitt V

DOCKET: EXAMINER HEARING - WEDNESDAY - MARCH 25, 1964

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

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

CASE 3014: In the matter of the hearing called by the Oil Conservation Commission on its own motion to permit Otto V. Reynolds and all other interested parties to appear and show cause why his Wood Well No. 1 located in Unit N, Section 14, and his Lohman Well No. 1 and Gale Well No. 1, located in Units C and E, respectively, Section 24, and the Seitzinger Well No. 1 located in Unit H, Section 23, all in Township 29 North, Range 11 West, San Juan County, New Mexico, should not be plugged in accordance with a Commission-approved plugging program.

CASE 3015: Application of Lone Star Producing Company for a dual completion, Lea County, New Mexico. Applicant, in the above-styled cause, seeks approval of the dual completion (conventional) of its Atlantic State Well No. 1 located in Unit G of Section 30, Township 17, South, Range 36 East, Lea County, New Mexico, to produce oil from an undesignated San Andres Pool and from undesignated Abo Detritus through parallel strings of 2-3/8 inch tubing.

CASE 3016: Application of Texaco, Inc. for the creation of a new oil pool and for temporary pool rules, Lea County, New Mexico. Applicant, in the above-styled cause, seeks the creation of a new oil pool for Upper-Pennsylvanian production in Sections 25 and 36, Township 17 South, Range 35 East, Lea County, New Mexico, and the establishment of special pool rules therefor, including a provision for 80-acre proration units.

CASE 3017: Application of Texaco, Inc. for an exception to Rule 309-A, Lea County, New Mexico. Applicant, in the above-styled cause, seeks authority to produce up to a maximum of 20 proration units into its New Mexico State "AE" lease tank battery, Vacuum Abo Reef Pool, Lea County, New Mexico.

CASE 3018: Application of Tenneco Oil Company for a waterflood project, Chaves County, New Mexico. Applicant, in the above-styled cause, seeks authority to institute a waterflood project in the Round Tank San Andres Pool, Chaves County, New Mexico, by the injection of water into the San Andres formation through one well located in Unit I of Section 24, Township 15 South, Range 28 East.

CASE 3019: Application of Cactus Drilling Corporation for an unorthodox well location, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks authority to drill its proposed Texas No. 1 Jennings Federal Well at an unorthodox location 1300 feet from the North and East lines of Section 10, Township 20 South, Range 29 East, Eddy County, New Mexico; said well is a wildcat projected to the Devonian formation.

...and the *Journal of the American Medical Association* (JAMA) has been the most influential journal in the field of medicine for over a century.

1974-1975

WILLIAM  
HARRIS, JR., M.D.  
P. H. HARRIS, JR.

1. 1990年12月24日  
 2. 1991年1月1日

Frank M. Lloyd  
Chief  
Water Rights Div.



OWNER  
WALKER  
OWNER

...in the ...  
...in the ...  
...in the ...  
...in the ...

Please refer to ...  
...to the ...  
...protection office.

In order that the ...  
...of Rule 701, is ...  
...Commission office, by letter ...  
...area, i.e., when active ...  
...producing wells are ...  
...or utilization; also wells have received a response to water ...

Your cooperation in keeping the Commission ...  
...of the project and the wells therein will be appreciated.

Very truly,  
...

LAW OFFICES  
HINKLE, BONDURANT & CHRISTY

HINKLE BUILDING  
ROSWELL, NEW MEXICO

April 2, 1964

HINKLE  
BONDURANT, JR.  
CHRISTY IV  
BONDURANT, JR.  
BONDURANT, JR.  
COFFIELD  
HENDLEY, JR.  
WALLER

Mr. Elvis Utz  
Oil Conservation Commission  
Santa Fe, New Mexico

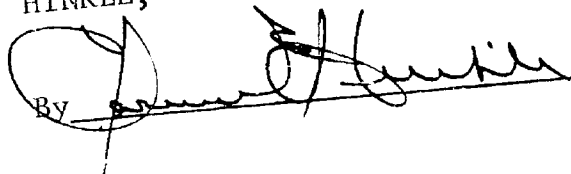
Re: OCC Case No. 3018

Dear Elvis:

The above case was heard before you on March 25 and was the application of Tenneco Oil Company for approval of a water flood project in the Round Tank San Andres Pool, Chaves County. Tenneco has contacted us with respect to this matter to see if there is any way that the order approving the application can be expedited inasmuch as they would like to go ahead with their plans for starting the injection of water. Anything you can do to expedite this matter, will be greatly appreciated.

Yours sincerely,

HINKLE, BONDURANT & CHRISTY

By 

CEH:cs



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

May 22, 1964

New Mexico Oil Conservation Commission  
P. O. Box 2088  
Santa Fe, New Mexico 87501

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

Dear Sir:

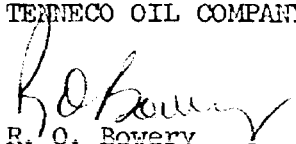
In accordance with Commission Order No. R-2686, approving the Tenneco Round Tank - San Andres Waterflood Project, this is to advise that the conversion of our USA-Mehurin Well No. 2 to a water injection well has been completed. The provisions called for in subject order for the injection well have been complied with.

The initial injection of water into the San Andres formation was made on May 11, 1964, with the injection of 220 bbls. of water in 14 hours. NMOC Form C-120, "Monthly Injection Report" will be submitted monthly starting in June covering May's injection.

Your cooperation in this matter has been appreciated.

Yours very truly,

TENNECO OIL COMPANY

  
R. O. Bowery  
District Office Supervisor

LMR:es

cc: New Mexico Oil Conservation Commission  
Artesia, New Mexico

# HALLIBURTON DIVISION LABORATORY

HALLIBURTON COMPANY  
LOVINGTON, NEW MEXICO

No. W3-40-64

## LABORATORY REPORT

Date January 20, 1964

TO Tanneco Oil Co. - % Lea Pumping Ser.  
Hobbs Highway  
Lovington  
Hobbs, New Mexico

This report is the property of Halliburton Company and neither it nor any part thereof nor a copy thereof is to be published or disclosed without first securing the express written approval of laboratory management; it may however, be used in the course of regular business operations by any person or concern and employees thereof receiving such report from Halliburton Company

Date Received 1-18-64

Well & Lease As Marked Depth Formation San Andres

Location Sec 24, T-15-S, R-28-E Field Round Tank Source Lease Tank Battery  
Chaves, Co New, Mexico Fitzgerald MEHURIN Mehurin

Specific gravity	1.123	1.130
60/60 °F		
Color, filtrate	Colorless	Colorless
pH	6.6	6.3
Resistivity	ND	ND
°F		
ppm (mpl)		
Chlorides, Cl	102,400	112,000
Sulfates, SO <sub>4</sub>	4000+	4000+
Alkalinity, HCO <sub>3</sub>	ND	ND
Calcium, Ca	3,200	5,750
Magnesium, Mg	1,260	485
Iron, Fe	Negl.	Negl.
Sodium, Na*	62,500	65,000
Sulfides, H <sub>2</sub> S	50	50

BEFORE EXAMINER UTZ  
OIL CONSERVATION COMMISSION  
EXHIBIT NO. 7  
CASE NO. 3018

Remarks

ppm equals Parts per million uncorrected or milligrams per liter  
\* includes Potassium as Na.

Respectfully submitted,

HALLIBURTON COMPANY

Laboratory Analyst

By Dave Sutton, Division Chemist

Brewer

### NOTICE

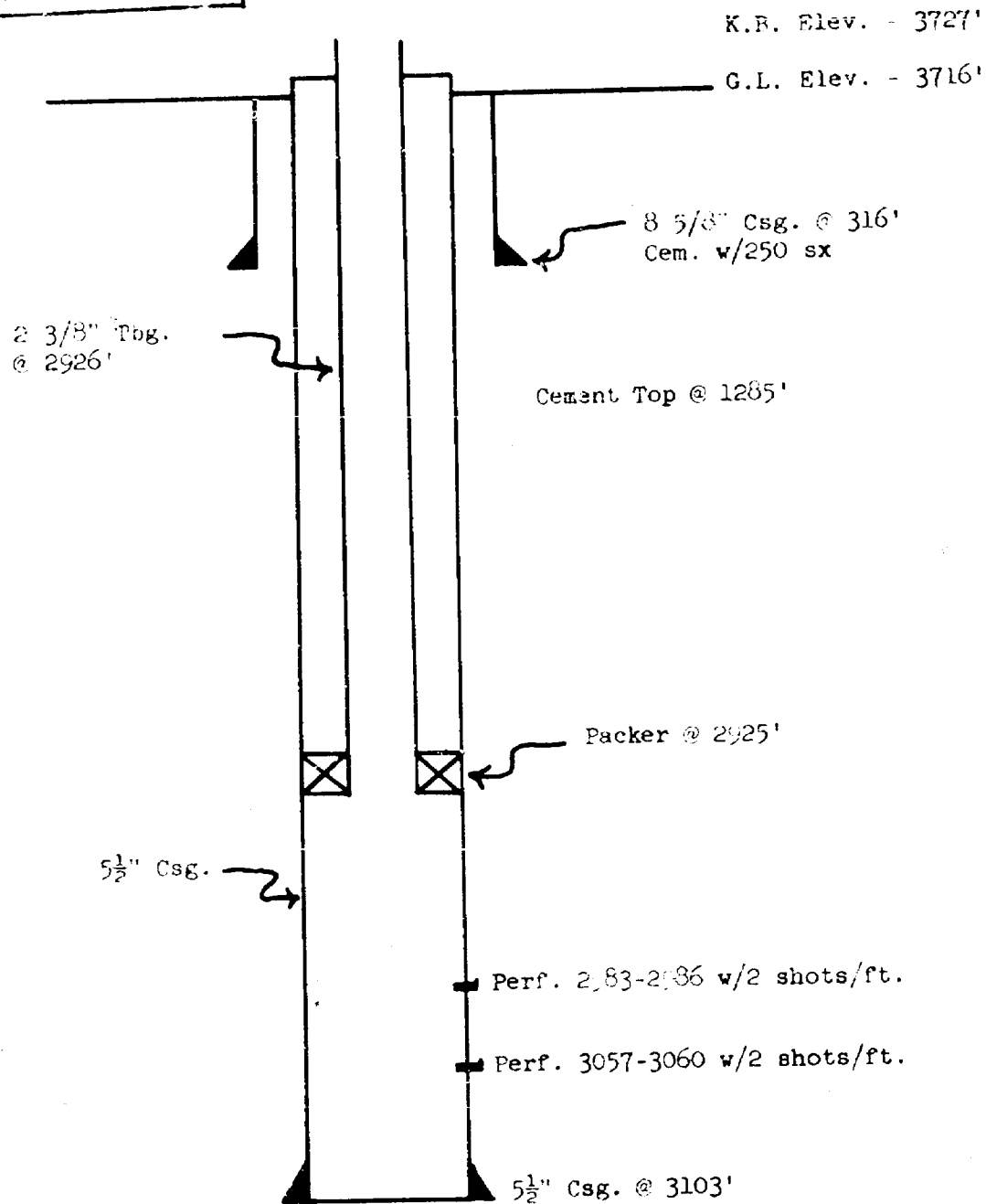
This report is limited to the described sample tested. Any user of this report agrees that Halliburton shall not be liable for any loss or damage, whether due to act or omission, resulting from such report or its use.

116  
SCHEMATIC OF PROPOSED INJECTION WELL

USA Mehurin No. 2

NE SE Section 24, T-15-S, R-28-E  
Round Tank San Andres Field  
Chaves Co., New Mexico

BEFORE EXAMINER UTZ  
OIL CONSERVATION COMMISSION  
EXHIBIT NO. 6  
CASE NO. 3018



All depths from K.B.

**DEARNLEY-MEIER REPORTING SERVICE, Inc.**

FARMINGTON, N. M.  
PHONE 325-1182

SANTA FE, N. M.  
PHONE 983-3871

ALBUQUERQUE, N. M.  
PHONE 243-6691

BEFORE THE  
NEW MEXICO OIL CONSERVATION COMMISSION  
Santa Fe, New Mexico  
March 25, 1964

EXAMINER      HEARING

IN THE MATTER OF:

Application of Tenneco Oil Company  
for a waterflood project, Chaves County,  
New Mexico

Case No. 3018

BEFORE:      ELVIS A. UTZ, EXAMINER

TRANSCRIPT OF HEARING



DEARNLEY, MEIER, WILKINS and CROWNOVER

General Court Reporting Service

Suite 1120 Simms Building Albuquerque, New Mexico Phone 243-6691

BEFORE THE  
NEW MEXICO OIL CONSERVATION COMMISSION  
Santa Fe, New Mexico  
March 25, 1964

EXAMINER HEARING

IN THE MATTER OF:

Application of Tenneco Oil Company  
for a waterflood project, Chaves  
County, New Mexico.

CASE NO. 3018

BEFORE: ELVIS A. UTZ, EXAMINER

TRANSCRIPT OF HEARING

MR. UTZ: Case 3018.

MR. DURRETT: Application of Tenneco Oil Company for a  
waterflood project, Chaves County, New Mexico.

MR. HINKLE: Mr. Examiner, Clarence Hinkle of Hinkle,  
Bondurant & Christy. We change the name so much, I almost forgot.  
We have one witness, and several exhibits here.

(Witness sworn)

MR. UTZ: Let the record show that there were other  
appearances requested and there were none.



DEARNLEY, MEIER, WILKINS and CROWNOVER

General Court Reporting Service

Suite 1120 Simms Building Albuquerque, New Mexico Phone 243-6691

MIKE MAHOOD,

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

DIRECT EXAMINATION

BY MR. HINKLE:

Q Your name is Mike Mahood?

A That's correct.

Q Are you employed by the Tenneco Oil Company?

A Yes, sir.

Q What capacity?

A Petroleum Engineer in the Reservoir Engineering Section.

Q How long have you been employed by the Tenneco?

A Two and a half years.

Q Have you ever testified before the Commission?

A No, I haven't.

Q Are you a graduate petroleum engineer?

A Yes.

Q What school?

A Oklahoma University.

Q When did you graduate?

A 1961.

Q Have you been with Tenneco ever since you graduated?

A Yes, I have.

Q In what capacity?





DEARNLEY, MEIER, WILKINS and CROWNOVER

General Court Reporting Service

Suite 1120 Simms Building

Albuquerque, New Mexico

Phone 243-6691

PAGE 4

A As petroleum engineer.

Q Well, what have you been doing, what have been your duties as a reservoir engineer?

A I have been concerned with reservoir estimates, property evaluation, field studies.

Q Has your time been devoted to New Mexico or other areas?

A About half of the time has been devoted to West Texas and Southeast New Mexico.

Q Are you familiar with the development in the Round Pool area?

A Yes, sir.

Q Round Tank, I guess it is. Have you been keeping up with the development of this area from the beginning?

A Yes, I have. Well, I have for the last six months, and I am familiar with the reservoir since it was - -

Q Are you familiar with the method of completion of the wells in that area?

A Yes, I am.

Q Have you examined the well logs?

A Yes, sir.

Q Made a study of the reservoir conditions in this area?

A Yes, sir.

Q Is this a new pool relatively speaking?

A It was developed in 1962. The discovery well was in mid



DEARNLEY, MEIER, WILKINS and CROWNOVER

General Court Reporting Service

Suite 1120 Simms Building Albuquerque, New Mexico Phone 243-6691

PAGE

1962.

Q How many wells in the pool?

A Ten or so.

Q How many?

A Ten wells.

Q What are they producing from?

A San Andres.

Q Is this a very prolific pool?

A No.

Q What is the present average production of the wells in it?

A Approximately three barrels per day.

Q What do the wells come in at?

A Average potential is between 20 and 30 barrels a day.

Q Then, they graduate down, or gradually decline to the present time?

A Gradually. The average cumulative of the wells is approximately 2,000 barrels.

Q What depth are the wells?

A Approximately 3,000 feet.

Q What does it cost?

A Forty to fifty thousand dollars.

Q How much oil has been produced from the pool so far, approximately?



DEARNLEY, MEIER, WILKINS and CROWNOVER

General Court Reporting Service

Suite 1120 Simms Building Albuquerque, New Mexico Phone 243-6691

A Approximately 32,000 barrels as of 1-64.

Q Does it look like any of these wells will pay out?

A No, sir. None of them will.

Q Please refer to Applicant's Exhibit Number One, and explain to the Commission what that is, what it shows?

A We propose to initial a pilot waterflood by injecting the USA Mehurin Number Two. This well is circled in red up here.

Q It is located in the Southeast Quarter of Section 24?

A Right, correct.

Q Does this Exhibit Number One show all of the wells in the pool?

A Yes, sir.

Q In the Round Tank Field?

A Yes, it does.

Q What else does it show?

A All leasehold within an area.

Q That is the owners of the leasehold interests?

A Within an area, approximately two miles surrounding the field.

Q What does Tenneco own in the area?

A We have all of Section 24 and all of the - - in Township 15 South, Range 28 East, and in Township - -

Q No, you mean in the section, do you not?

A Right, that is in Section 24.



*General Court Reporting Services*

Suite 1120 Simms Building

Albuquerque, New Mexico

Phone 243-6691

PACS

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Q Does that indicate in any way that all of these wells are producing from the same formation?

A Yes, all of these are producing from the same interval, as will be shown on the cross sections as remarked on the structure map.

Q That A and A Prime and B and B Prime indicate, are they indexed on the cross section which you will present?

A That's correct.

Q Now, refer to Applicant's Exhibit Number Three, and explain what that is and what it shows?

A Exhibit Three is a cross section in a north-south area of the field. The upper line is the marker that we have picked on top of the San Andres on top of the main pay interval, as correlative across the field.

Q This is A, is it, or A Prime?

A Correct.

Q What is this well that is anchoring on A?

A This well on the far left is Tenneco's Fitzgerald Number Four, which is the north end of the cross section.

Q That is one shown on Exhibit Number Two?

A That's correct.

Q This cross section shows all the perforated intervals in these wells?

A Porosity trends are correlable to some extent. There is



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A In the State A Number One, it is completed through perforations, and open hole. The State Number Two is completed by an open hole completion.

Q In perforating the wells, they have been perforated into what the analysis showed was the best pay section?

A That's correct.

Q In this entire pay interval?

A Yes, sir.

Q Is there any correlation between the different pay intervals from the top of the main pay down to the oil-water contact?

A The intervals are roughly correlable. There are two main porosity intervals with several smaller intervals above and below.

Q Now, refer to Applicant's Exhibit Number Four, which is the other cross section shown on Exhibit Number Two, and explain that to the Commission?

A Exhibit Number Four is a cross section across the field in an east-west direction, starting at Tenneco's Mehurin Number Three, going through the proposed injection well, Mehurin Number Two, and ending on the Fitzgerald A Number Two.

Q Does that show substantially the same formation as on your Exhibit Number Three?

A That's correct.

Q You have the same correlations that you had on the other



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MR. UTZ: I don't think it does.  
A There is 5 inch casing in this well down to 3103.  
MR. UTZ: That was 5 at 3103?  
MR. HINKLE: That will be shown by the next exhibit,  
however.

Q (By Mr. Hinkle) Any further comments with respect to the  
electrical log?

A No, sir.

Q Now, refer to Applicant's Exhibit Number Six, which  
purports to be a schematic of the proposed injection well, and  
explain what that shows?

A We propose to inject water down tubing underneath a  
packer into the perforations located at 2933 to 2936 and 3057 to  
3060, in the USA Mehurin Number Two, which is located in the  
Northeast-Southeast Quarter of Section 24.

Q As shown on Exhibit Number One?

A Right.

Q And Two? What else does this show?

A Perforations and casing depth are shown on this exhibit.

Q Now, in drilling this injection well, or any of the other  
wells in the pool for that matter, was any appreciable amount of  
fresh water encountered?

A There was no fresh water encountered with the exception  
of a couple of wells encountered some very shallow sand from 100



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Q What is their attitude?

A They are favorable to trying this. They had proposed to gather all of their water from their leases and deliver it to us at our Mehurin Number Two for injection purposes.

Q Are the wells producing much water at the present time?

A All the wells are producing 50 to 60 percent water.

Q What quantity of water will you have available for injection purposes from the various wells?

A Right now, we feel like we have about 325 barrels a day.

Q Do you propose to inject all of that water into the injection well you have just referred to?

A Yes, sir, if we can get it in the ground.

Q What is the character of the formation generally, that is, as to porosity and permeability?

A Porosity averages approximately 7½ percent. Permeability, we have some permeability information from a core on the Kern County Land Company Mullins 1-B that indicates the permeability in the range of 15 to 20 millidarcies. However, the permeability calculated from pressure build up tests indicates that we actually have less than a millidarcy permeability.

Q Have you made any calculations as to the probable reserves or oil in place there, if it can be recovered?

A Well, it appears that there is approximately four million barrels of oil in place under the entire reservoir, as we

see it now. To date, we have recovered something under one percent



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of this. As far as making an estimate of recoverable oil it is difficult at this time.

Q You are up to a point of either abandoning this pool, plugging the wells, or trying to go ahead with the secondary?

A That's correct.

Q The purpose of the proposed pilot at this time is to determine whether or not this formation will take the water effectively?

A That's correct.

Q Have you got any time estimates as to how long you desire to experiment with this and conduct the pilot flood?

A The withdrawals from this area that we are proposing to inject into have been small. We don't think that it is going to take over about three or four months before we know something one way or the other on this.

Q Now, in the event the pilot is successful, do you have any plans for the future?

A If the pilot is successful, we plan to unitize all of the leases in the field, all of the wells in the field.

Q Have the other lease owners indicated that they would comment in that connection in the event the waterflood pilot is successful?

A Kern County Land Company and Max Pryor both have indicated that they are in agreement with this.



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Have you any other information regarding this case?



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advisability of using this produced water or salt water instead of fresh water in connection with this project?

A Well, we definitely feel like the project would be better off with salt water and aside from that, there is no fresh water available in the area.

Q Why do you say it would be better off?

A We think clay swelling will be confined if there is any problem with it.

Q Do you know whether a copy of this application and all the exhibits were furnished to the State Engineer?

A Yes, they were.

Q Do you know whether, or not a reply has been received or any action taken by the State Engineer on this application?

A Our attorneys received a letter address from the State Engineer to Mr. Porter, stating that it appears to be no danger of any contamination of the fresh water sands in the area with this proposed injection program.

Q And that the State Engineer has no objection to the application?

A That's correct.

Q Are you requesting any additional allowable in connection with this project?

A No, we are not.

Q Just seeking to come under Rule 701 of the Commission?



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E. Hildner

Mr. Hildner

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STATE OF

COUNTY OF

of

and the undersigned, appearing at  
the public hearing of the proceedings in  
the case for hearing of Case No. 100,000,  
and by me, James D. Crowood,

James D. Crowood, Reporter  
Mexico Oil Conservation Commission





# HALLIBURTON DIVISION LABORATORY

HALLIBURTON COMPANY  
LOVINGTON, NEW MEXICO

No. W3-10-64

## LABORATORY REPORT

Date January 20, 1964

TO Tenneco Oil Co. - Lea Pumping Ser.

Hobbs Highway  
Lovington  
Hobbs, New Mexico

This report is the property of Halliburton Company and neither it nor any part thereof nor a copy thereof is to be published or disclosed without first securing the express written approval of laboratory management; it may however, be used in the course of regular business operations by any person or concern and employees thereof receiving such report from Halliburton Company

Date Received 1-18-64

Well & Lease As Marked Depth Formation San Andres

Location Sec 24, T-15-S, R-28-E Field Round Tank Source Lease Tank Battery  
Chaves, Co New, Mexico Fitzgerald MEHM Mehurin

Specific gravity 60/60 °F	1.123	1.130
Color, filtrate	Colorless	Colorless
pH	6.6	6.3
Resistivity °F	ND	ND
	ppm (mpl)	
Chlorides, Cl	102,400	112,000
Sulfates SO <sub>4</sub>	4000+	4000+
Alkalinity, HCO <sub>3</sub>	ND	ND
Calcium, Ca	3,200	5,750
Magnesium, Mg	1,260	485
Iron, Fe	Negl.	Negl.
Sodium, Na*	62,500	65,000
Sulfides, H <sub>2</sub> S	50	50

Remarks

ppm equals Parts per million uncorrected or milligrams per liter  
\* includes Potassium as Na.

Respectfully submitted,

HALLIBURTON COMPANY

Laboratory Analyst

By Dave Sutton, Division Chemist

Brewer

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