

CASE 3907: Application of SKELLY  
OIL COMPANY FOR A WATERFLOOD  
PROJECT, ROOSEVELT COUNTY, N.M.

Case Number

3907

Application  
Transcripts.

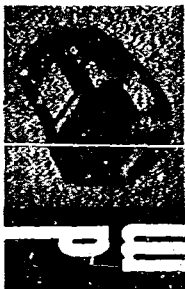
Small Exhibits

ETC.

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

1120 SIMMS BLDG. • P. O. BOX 1092 • PHONE 242-6691 • ALBUQUERQUE, NEW MEXICO



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

October 23, 1968

EXAMINER HEARING

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IN THE MATTER OF: )

Application of Skelly Oil )  
Company for waterflood project, )  
Roosevelt County, New Mexico. )

Case No. 3907

-----  
BEFORE: Daniel Nutter, Examiner

TRANSCRIPT OF HEARING

MR. NUTTER: Call Case No. 3907.

MR. HATCH: Case 3907, application of Skelly Oil Company for waterflood project, Roosevelt County, New Mexico.

(Whereupon, Applicant's Exhibits Numbers 1 through 5 were marked for identification.)

MR. JACOBS: Ronald J. Jacobs, appearing on behalf of the applicant, Skelly Oil Company. We have one witness, Mr. Hall. He has previously been sworn. I think that this is sufficient.

MR. NUTTER: The record will show he is still under oath; letter of appearance also.

LARRY R. HALL

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

DIRECT EXAMINATION

BY MR. JACOBS:

Q Mr. Hall, are you familiar with the application in Case No. 3907, and if so, would you explain what is being sought in that application?

A Case 3907 is the application of Skelly Oil Company for authority to inject water into their Hobbs "W" 9 Well in the Chaveroo Pool, Roosevelt County, New Mexico.

Q Mr. Hall, referring to what has been marked for identification as Exhibit Number 1, would you relate to the

Examiner what this exhibit shows?

A Exhibit Number 1 is a copy of the plat showing the proposed injection well circled in red, and the location and ownership of all leases within the two-mile radius of the exposed well. The Skelly Hobbs "W" lease is shown in yellow. The Hobbs "W" 9, the proposed injection well, is located 1650 feet from the north line and 1650 feet of Section 29, Township 7 South, Range 34 East, Roosevelt County, New Mexico.

Q Now, referring to what has been marked for identification as Exhibit Number 2, would you identify that exhibit, and relate to the Examiner what it shows?

A Our Exhibit 2 is a schematic diagram of the proposed injection well showing the size and setting depth of the casing, the quantities used in tops of cement, the size and setting depth of the tubing, the location of the packers and the perforated interval. The Hobbs "W" 9 was drilled to a total depth of 4500 feet, casing was set total depth of the overall intervals 4369 to 4443 was perforated. This was perforated in what is more commonly known as P2 and P3 porosity zone. The well was treated with 4,000 gallons of 28 per cent acid, swab tested at the rate of 15 barrels of salt water per hour, with flood level at 2,000 feet from surface, with a very slight rainbow of oil after 24 hours. The well was temporarily abandoned after completion in June of 1968. We propose to

inject down two and three-eighths inch OD internally-lined tubing below a packer set at approximately 4275 into the perforations tested salt water.

Q Now, I direct your attention to what has been marked for identification as Exhibit Number 3, would you relate to the Examiner what that exhibit shows.

A Exhibit Number 3 is a log section of the formation density log on the proposed injection well.

Q It covers the interval into which you propose to inject water?

A This is true, yes, sir.

Q Now, referring to what has been marked for identification as Exhibit Number 4, would you relate to the Examiner what this exhibit shows?

A Exhibit 4 is a structure map contoured on the top of the San Andres Formation contoured interval of 25 feet. It can be noted from the map the Hobbs "W" 9 is structurally low to the offsets and represent, in our opinion the productive limits of the pool to the southeast. The pay zone to the Chaveroo Pool are below the oil-water contact in the Hobbs "W" 9 as evidenced by the production tests. The Hobbs "W" 9 is 73 feet low to the north offset and 74 feet low to the west offset on the top of the San Andres.

Q Now, referring to what has been marked for

identification as Exhibit Number 5, would you relate to the Examiner what this exhibit shows?

A Exhibit Number 5 is a water analysis of the water produced from the Hobbs "W" 9. This analysis shows the water to be mineralized water, unsuitable for domestic, stock, or irrigation, or general use. The approval of the Commission to permit the injection of this produced water into the proposed well as set forth in this application will eliminate the surface disposal of the produced water on the Skelly Hobbs "W" lease.

Q Mr. Hall, in your opinion, what effect would the injection of produced water into the proposed well have on the recovery of oil in the area?

A Injection of water into the proposed injection interval could have an effect on the recovery of oil in this area. The primary producing mechanism in the Chaveroo Pool, we believe, is the solution gas drive. Some thought has been given in regard to the waterflooding, but to our knowledge, no unit study has been made. Several pilots are in the process of being formed, or are now installed within the Chaveroo boundary. The proposal presented by Skelly is to inject produced water back into the reservoir below the oil-water contact and help maintain the reservoir energy. This injection of produced water, we believe, will increase production in the

offset wells. The average daily production from the eight producing wells on the Hobbs "W" lease was 22 barrels of oil per day per well for the month of August, to high as 39 barrels on the No. 7, and a low of ten barrels on the No. 8. Due to the rapid decline rate being experienced on this lease, the wells will be in the stripper classification before very long. We are experiencing somewhere between a 30 and 40 per cent decline rate. The primary purpose of this application is to conduct a pilot waterflood and disposal of produced salt water from the Hobbs "W" lease, and I might add, other leases within the immediate area. We have been contacted by various other operators with considerable interest in this disposal well, injection well. Based on the performance and information we hope to gain from injection into the Hobbs "W" 9, we request administrative approval to expand the project, convert additional wells on the Hobbs "W" lease.

Q Mr. Hall, what is the anticipated injection rate and the anticipated pressure for injection on the Hobbs "W" 9?

A Initially, we anticipate from 200 to 250 barrels per day, with the maximum rates being dictated by the water production in the area of the injection well capacity. Our maximum anticipated injection pressure is approximately 1500 pounds.

Q Now, Mr. Hall, I think you mentioned it, but just so

it will be clear what is the force of the water that will be injected into this well?

A The force of water that will be injected is produced water from the same interval that we propose to inject back into.

Q So that the water that you are going to put into the reservoir is produced water from that same reservoir?

A That is true.

Q You anticipate no difficulty as regard to compatibility of the water?

A That's right. No compatibility problems are expected.

Q Mr. Hall, will the granting of this application result in any waste?

A No, the granting of this application will result -- the produced water which is presently being disposed of in surface pits be injected underground and we expect an increase in production from the up-dip wells, and thereby we hope to recover oil that might not otherwise be recovered.

Q Mr. Hall, in your opinion, will the granting of this application result in the impairment of any correlative rights?

A In my opinion, there will be no impairment of correlative rights.

Q Were Exhibits 1 through 5 prepared by you, or under your supervision?

A Exhibits 1, 2, and 4 were prepared by me, or under my supervision, and Exhibits 3 and 5 were taken from well data previously available on the well.

Q With regard to Exhibits 3 and 5, Mr. Hall, do they accurately reflect the information contained thereon?

A They do.

MR. JACOBS: We offer into evidence Exhibits 1 through

5.

MR. NUTTER: Skelly Exhibits 1 through 5 are admitted in evidence.

(Whereupon, Applicant's Exhibits 1 through 5, inclusive, were admitted in evidence.)

MR. JACOBS: I might point out, we are also, in this case, asking that permission be granted to administratively expand the project to include other wells on this lease so that we will not have to show a response if the need for such expansion is dictated by the necessity of utilizing water. That's all we have.

CROSS EXAMINATION

BY MR. NUTTER:

Q Mr. Hall, you mentioned that the average daily production here is 22 barrels of oil per day. What is the average daily water production for the Hobbs "W" lease?

A The lease is producing currently -- the August production, which is comparable to the 22-barrel average, was 61 barrels.

Q Of water per day?

A Yes. That's total lease water.

Q Now, you mentioned that you would inject from 200 to 250 barrels of water per day, so does that mean you are going to be taking water from other leases in the area?

A Yes. Considerable interest has been indicated. I think it was Monday we got a letter from Tenneco, which is the east offset.

Q West offset.

A The west offset, their State V, lease, and, lease, and they have 150 to 175 barrels of water per day now, and they have expressed a desire to join our system.

Q Are all of your wells making water, or only the ones over on the southwest flank, near the water-oil contact?

A I can only speak in generalities. We have a Hobbs "T" lease. All wells that we have, to my knowledge, do exhibit some water production.

Q But there definitely is a water well contact that cuts across here, as evidenced by the drillstem test on this well?

A Production test, yes.

Q Or production test. And although this water-oil contact is present, there is no evidence in here of an active water drive?

A No, sir, bottom hole pressure is declining rapidly, and so are producing rights.

Q And so you feel that you may enhance oil production by the injection of water?

A Yes, we do.

Q What about the annulus of the well, Mr. Hall?

A The annulus will be loaded with an inhibited fluid and we will attach a pressure gauge to the surface.

MR. NUTTER: Are there any other questions of Mr. Hall? He may be excused. Do you have anything further, Mr. Jacobs?

MR. JACOBS: Nothing further.

MR. NUTTER: Does anyone have anything they wish to offer in Case No. 3907? The case will be taken under advisement.

I N D E XWITNESSPAGE

LARRY R. HALL

Direct Examination by Mr. Jacobs

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Cross Examination by Mr. Nutter

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EXHIBITSMARKEDOFFERED AND  
ADMITTEDApplicant's Exhibits  
Numbers 1 through 5

2

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C E R T I F I C A T E

STATE OF NEW MEXICO    )  
                               )   ss  
 COUNTY OF BERNALILLO   )

I, GLENDA BURKS, Court Reporter 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.

Glenda Burks  
 COURT REPORTER

I do hereby certify that the foregoing is  
 a complete record of the proceedings in  
 the Examiner hearing of Case No. 3907  
 heard by me on 10/23, 1968.

[Signature], Examiner  
 New Mexico Oil Conservation Commission

ROUGH DRAFT FOR WATERFLOOD LETTERS

Mr. Ronald J. Jacobs  
Skelly Oil Company  
Post Office Box 1650  
Tulsa, Oklahoma 74102

Dear Sir:

Reference is made to Commission Order No. R-3544, <sup>recently</sup> entered in Case No. 3907, approving the Skelly Chevron Hobbs "W" Waterflood Project.

Initial injection is to be through the one authorized water injection well which shall be equipped with plastic or ~~the~~ cement lined tubing set in a packer at approximately 4275 feet. The casing tubing annulus shall be loaded with an inhibited fluid and equipped with a pressure gauge to facilitate detection of leakage in the casing, tubing, or packer.

As to allowable, our calculations indicate that 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 when the Southeast New Mexico normal unit allowable is 42 barrels per day or less.

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 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 appreciated.

Very truly yours,

A. L. PORTER, Jr.  
Secretary-Director

cc: OCC: Hobbs x  
Artesia x  
Aztec       

USGS       

~~Mr. Frank Irby~~, State Engineer Office, Santa Fe, New Mexico  
Mr. D. E. Gray

OIL CONSERVATION COMMISSION

P. O. BOX 2088

SANTA FE, NEW MEXICO 87501

November 4, 1968

C  
Mr. Ronald J. Jacobs  
Skelly Oil Company  
Post Office Box 1650  
Tulsa, Oklahoma 74102

O  
Dear Sir:

Reference is made to Commission Order No. R-3544, recently entered in Case No. 3907, approving the Skelly Chaveroo Hobbs "W" Water-flood Project.

P  
Initial injection is to be through the one authorized water injection well which shall be equipped with plastic or cement-lined tubing set in a packer at approximately 4275 feet. The casing-tubing annulus shall be loaded with an inhibited fluid and equipped with a pressure gauge to facilitate detection of leakage in the casing, tubing, or packer.

Y  
As to allowable, our calculations indicate that 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 when the Southeast New Mexico normal unit allowable is 42 barrels per day or less.

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

OIL CONSERVATION COMMISSION

P. O. BOX 2088

SANTA FE, NEW MEXICO 87501

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Mr. Ronald J. Jacobs  
Skelly Oil Company  
Post Office Box 1650  
Tulsa, Oklahoma 74102

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

Very truly yours,

A. L. PORTER, Jr.  
Secretary-Director

ALP/DSN/ir

cc: Oil Conservation Commission offices in Hobbs and Artesia, N.M.  
Mr. D. E. Gray, State Engineer Office, Santa Fe, New Mexico

GOVERNOR  
DAVID F. CARGO  
CHAIRMAN

State of New Mexico  
**Oil Conservation Commission**



P. O. BOX 2088  
SANTA FE

October 31, 1968

LAND COMMISSIONER  
GUYTON B. HAYS  
MEMBER

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

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

Re: Case No. 3906  
Order No. 3907  
Applicant:  
Skelly Oil Company

Dear Sir:

Enclosed herewith is a copy of the above-referenced Commission order recently entered in the subject case. Letter pertaining to conditions of approval and maximum allowable to follow.

Very truly yours,

*A. L. Porter, Jr.*  
A. L. PORTER, Jr.  
Secretary-Director

ALP/ir

Carbon copy of order also sent to:

Hobbs OCC x  
Artesia OCC         
Aztec OCC         
State Engineer x

Other Mr. Ronald Jacobs

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. 3907  
Order No. R-3544

APPLICATION OF SKELLY OIL COMPANY  
FOR A WATERFLOOD PROJECT, ROOSEVELT  
COUNTY, NEW MEXICO.

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9 a.m. on October 23, 1968,  
at Santa Fe, New Mexico, before Examiner Daniel S. Nutter.

NOW, on this 31st day of October, 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, Skelly Oil Company, seeks permission  
to institute a pilot waterflood project in the Chaveroo-San Andres  
Pool by the injection of water into the San Andres formation  
through its Hobbs "W" Well No. 9, located in Unit F of Section  
29, Township 7 South, Range 34 East, NMPM, Roosevelt County, New  
Mexico.

(3) That the applicant further seeks an administrative  
procedure whereby said project could be expanded to include  
additional lands and injection wells in the area of the said  
project as may be necessary in order to complete an efficient  
injection pattern; that said administrative procedure should  
provide for administrative approval for conversion to water

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CASE No. 3907  
Order No. R-3544

injection in exception to the well response requirements of Rule 701 E-5 of the Commission Rules and Regulations.

(4) That the wells in the project area are in an advanced state of depletion.

(5) That the proposed pilot waterflood project should result in the 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 Rules 701, 702, and 703 of the Commission Rules and Regulations; provided, however, that the showing of well response as required by Rule 701 E-5 shall not be necessary before obtaining administrative approval for the conversion of additional wells to water injection.

IT IS THEREFORE ORDERED:

(1) That the applicant, Skelly Oil Company, is hereby authorized to institute a pilot waterflood project in the Chaveroo-San Andres Pool by the injection of water into the San Andres formation through its Hobbs "W" Well No. 9, located in Unit F of Section 29, Township 7 South, Range 34 East, NMPM, Roosevelt County, New Mexico.

(2) That the subject pilot waterflood project is hereby designated the Skelly Chaveroo Hobbs "W" Waterflood Project and shall be governed by the provisions of Rules 701, 702, and 703 of the Commission Rules and Regulations;

PROVIDED HOWEVER, that the Secretary-Director of the Commission may approve expansion of the Skelly Chaveroo Hobbs "W" Waterflood Project to include such additional lands and injection wells in the area of said project as may be necessary to complete an efficient water injection pattern; that the showing of well response as required by Rule 701 E-5 shall not be necessary before obtaining administrative approval for the conversion of additional wells to water injection.

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CASE No. 3907  
Order No. R-3544

(3) That monthly progress reports of the pilot waterflood project herein authorized shall be submitted to the Commission in accordance with Rules 704 and 1120 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.

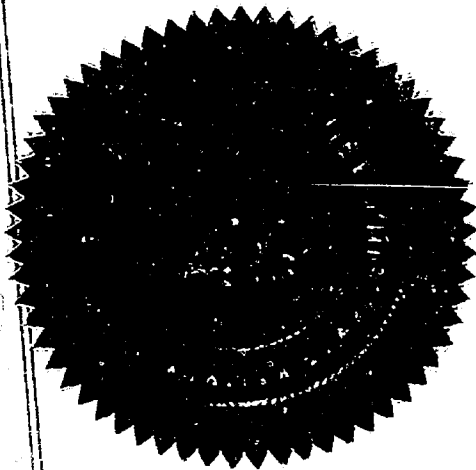
DONE at Santa Fe, New Mexico, on the day and year hereinabove designated.

STATE OF NEW MEXICO  
OIL CONSERVATION COMMISSION

  
DAVID F. CARGO, Chairman

  
GUYTON B. HAYS, Member

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



esr/

Docket No. 31-68

DOCKET: EXAMINER HEARING - WEDNESDAY - OCTOBER 23, 1968

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

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

CASE 3894: Application of Signal Oil and Gas Company for a non-standard oil proration unit, Lea County, New Mexico. Applicant, in the above-styled cause, seeks approval of a non-standard oil proration unit comprising the W/2 NE/4 and the N/2 SE/4 of Section 17, Township 10 South, Range 34 East, Vada-Pennsylvanian Pool, Lea County, New Mexico, said unit to be dedicated to its State AP Well No. 1 located 1980 feet from the South line and 660 feet from the East line of said Section 17.

CASE 3895: Application of Sun Oil Company for a pressure maintenance project, Chaves County, New Mexico. Applicant, in the above-styled cause, seeks authority to institute a pressure maintenance project in its New Mexico State "H" Lease by the injection of water into the San Andres formation through its New Mexico State "H" Well No. 13 located in the SE/4 SE/4 of Section 16, Township 8 South, Range 30 East, Cato-San Andres Pool, Chaves County, New Mexico. Applicant further seeks the promulgation of special rules to govern operation of said pressure maintenance project.

CASE 3887: (Continued from the October 9, 1968, Examiner Hearing)

Application of Kersey & Company for a waterflood project, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks authority to institute a waterflood project by the injection of water into the Premier sand of Grayburg formation through two wells to be located in Units E and K of Section 12, Township 18 South, Range 28 East, Artesia Pool, Eddy County, New Mexico. Applicant further proposes to produce oil from the Upper Grayburg through parallel strings of tubing, if said zones are productive in the subject wells.

CASE 3896: Application of Kersey & Hanson, Yates Drilling Company, and John H. Trigg for several waterflood projects, Eddy County, New Mexico. Applicants, in the above-styled cause, seek authority to institute several cooperative waterflood projects by the injection of water into the Queen and Grayburg formations through four injection wells located in Sections 21

CASE 3896 continued

and 23, Township 18 South, Range 29 East, Turkey  
Track Queen-Grayburg Pool, Eddy County, New Mexico.

CASE 3897: Application of Kersey-Wittkopp and E. A. Hanson for two waterflood projects, Eddy County, New Mexico. Applicants, in the above-styled cause, seek authority to institute two cooperative waterflood projects by the injection of water into the Queen formation through two injection wells located in the NW/4 SE/4 and the SW/4 SE/4 of Section 6, Township 19 South, Range 31 East, Shugart Pool, Eddy County, New Mexico.

CASE 3898: 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 Queen formation in the open-hole interval from approximately 3258 feet to 3341 feet in its Ginsberg-Federal Well No. 6 located in Unit E of Section 31, Township 25 South, Range 38 East, Langlie-Mattix Field, Lea County, New Mexico.

CASE 3899: 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 San Andres formation in the interval from approximately 4087 feet to 4176 feet in its State AD Well No. 8 located in Unit J of Section 22, Township 10 South, Range 32 East, Mescalero-San Andres Pool, Lea County, New Mexico.

CASE 3900: Application of Continental Oil Company for downhole commingling, Lea County, New Mexico. Applicant, in the above-styled cause, seeks authority to commingle production from the Vacuum Wolfcamp Pool and the North Vacuum Abo Pool in the well-bore of its State H-35 Well No. 7 located 660 feet from the North line and 1780 feet from the East line of Section 35, Township 17 South, Range 34 East, Lea County, New Mexico.

CASE 3901: Application of Continental 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-Seven Rivers formations in the perforated interval from approximately 3330 feet to 3552 feet in its Lynn A-28 Well No. 6 located in Unit H of Section 28, Township

October 23, 1968 - Examiner Hearing  
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Docket No. 31-68

(CASE 3901 continued)

23 South, Range 36 East, Jalmat Pool, Lea County, New Mexico.

CASE 3902:

Application of Continental Oil Company 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 Queen formation through its Stevens "B" Well No. 8 located in Unit A of Section 12, Township 23 South, Range 36 East, Langlie-Mattix Pool, Lea County, New Mexico.

CASE 3903:

Application of Continental Oil Company 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 Delaware formation in the perforated intervals from approximately 4675 feet to 4765 feet in its Payne Well No. 11 and from 4666 feet to 4740 feet in its Payne Well No. 12 located 660 feet from the South line and 1650 feet from the West line of Section 30, 1935 feet from the North line and 2090 feet from the West line of Section 31, respectively, Township 26 South, Range 33 East, El Mar-Delaware Pool, Lea County, New Mexico.

CASE 3904:

Application of Continental Oil Company 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 Delaware formation through its Thompson Federal 19 Well No. 2 located in Unit F of Section 19, Township 26 South, Range 32 East, North Mason-Delaware Pool, Lea County, New Mexico.

CASE 3905:

Application of Texas Pacific 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 Devonian formation in the open-hole interval from approximately 12,269 feet to 12,541 feet in its State "O" Well No. 1 located in Unit J of Section 15, Township 10 South, Range 36 East, South Crossroads-Devonian Pool, Lea County, New Mexico.

**CASE 3906:** Application of Skelly Oil Company 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 Queen formation through its Mattix "A" Well No. 4 located in Unit K of Section 2, Township 24 South, Range 37 East, Langlie-Mattix Oil Pool, Lea County, New Mexico. Applicant further seeks a procedure whereby said project may be expanded administratively without a showing of well response.

**CASE 3907:** Application of Skelly Oil Company for a waterflood project, Roosevelt County, New Mexico. Applicant, in the above-styled cause, seeks authority to institute a pilot waterflood project by the injection of water into the San Andres formation through its Hobbs "W" Well No. 9 located in Unit F of Section 29, Township 7 South, Range 34 East, Chaveroo-San Andres Pool, Roosevelt County, New Mexico. Applicant further seeks a procedure whereby said project may be expanded administratively without a showing of well response.

**CASE 3908:** Application of Pan American Petroleum Corporation for salt water disposal, Chaves County, New Mexico. Applicant, in the above-styled cause, seeks authority to dispose of produced salt water into the San Andres formation in the perforated interval from approximately 3932 feet to 4027 feet in its Miller Federal Well No. 4 located in Unit L of Section 35, Township 7 South, Range 31 East, Tom-Tom San Andres Pool, Chaves County, New Mexico.

**CASE 3909:** Application of Champlin Petroleum Company for salt water disposal, Roosevelt County, New Mexico. Applicant, in the above-styled cause, seeks authority to dispose of produced salt water into San Andres formation, Chaveroo-San Andres Pool, Roosevelt County, New Mexico, through the following two wells located in Township 7 South, Range 33 East:

Champlin Lauck-Federal Well No. 12,  
Unit J of Section 29; Disposal Interval -  
4202 feet to 4404 feet;

Champlin State 32-7-33 Well No. 5, Unit J  
of Section 32; Disposal Interval - 4303  
feet to 4425 feet.

CASE 3910:

Application of Atlantic Richfield Company for compulsory pooling, Lea County, New Mexico. Applicant, in the above-styled cause, seeks an order pooling all mineral interests in the Bough "C" zone of the Pennsylvanian formation underlying the SW/4 of Section 17, Township 10 South, Range 34 East, Vada-Pennsylvanian Pool, Lea County, New Mexico. Said acreage to be dedicated to a well located in the NE/4 SW/4 of said Section 17.

CASE 3911:

Application of Atlantic Richfield Company for compulsory pooling, Lea County, New Mexico. Applicant, in the above-styled cause, seeks an order pooling all mineral interests in the Bough "C" zone of the Pennsylvanian formation underlying the SE/4 of Section 8, Township 10 South, Range 34 East, Vada-Pennsylvanian Pool, Lea County, New Mexico. Said acreage to be dedicated to a well located in the NW/4 SE/4 of said Section 8. In the alternative applicant seeks approval of a non-standard oil proration unit comprising the E/2 SE/4 of said Section 8 and the W/2 SW/4 of Section 9, said Township and Range, said unit to be dedicated to a well to be drilled in the NE/4 SE/4 of said Section 8.

CASE 3882:

(Continued from the October 9, 1968, Examiner Hearing)  
Application of Solar Oil Company for a special gas-oil ratio limitation, Lea County, New Mexico. Applicant, in the above-styled cause, seeks an exception to Rule 506 of the Commission Rules and Regulations to provide for a limiting gas-oil ratio of 6,000 cubic feet of gas per barrel of oil in the Teague Blinbry Pool, Lea County, New Mexico.

CASE 3883:

(Continued from the October 9, 1968, Examiner Hearing)  
Application of Solar Oil Company for a special gas-oil ratio limitation, Lea County, New Mexico. Applicant, in the above-styled cause, seeks an exception to Rule 506 of the Commission Rules and Regulations to provide for a limiting gas-oil ratio of 6,000 cubic feet of gas per barrel of oil in the Imperial Tubb-Drinkard Pool, Lea County, New Mexico.

WHITE, GILBERT, KOCH & KELLY  
(GILBERT, WHITE AND GILBERT)

ATTORNEYS AND COUNSELORS AT LAW

LINCOLN BUILDING

SANTA FE, NEW MEXICO 87501

October 7, 1968

CARL H. GILBERT (1891-1963)

L. C. WHITE

WILLIAM W. GILBERT

SUMNER S. KOCH

WILLIAM BOOKER KELLY

JOHN F. MCCARTHY, JR.

*Case 3907*

POST OFFICE BOX 787  
TELEPHONE 982-4301  
(AREA CODE 505)

New Mexico Oil and Gas Conservation Commission  
State Land Office  
P. O. Box 2088  
Santa Fe, New Mexico

Attn: Mr. A. L. Porter, Jr.  
Secretary-Director

Re: Application of Skelly Oil Company  
to water flood Hobbs "W" Well No. 9,  
Chaveroo San Andres Pool,  
Roosevelt County, N. M.

Gentlemen:

Please enter the undersigned as local counsel of record for  
Skelly Oil Company in the above application.

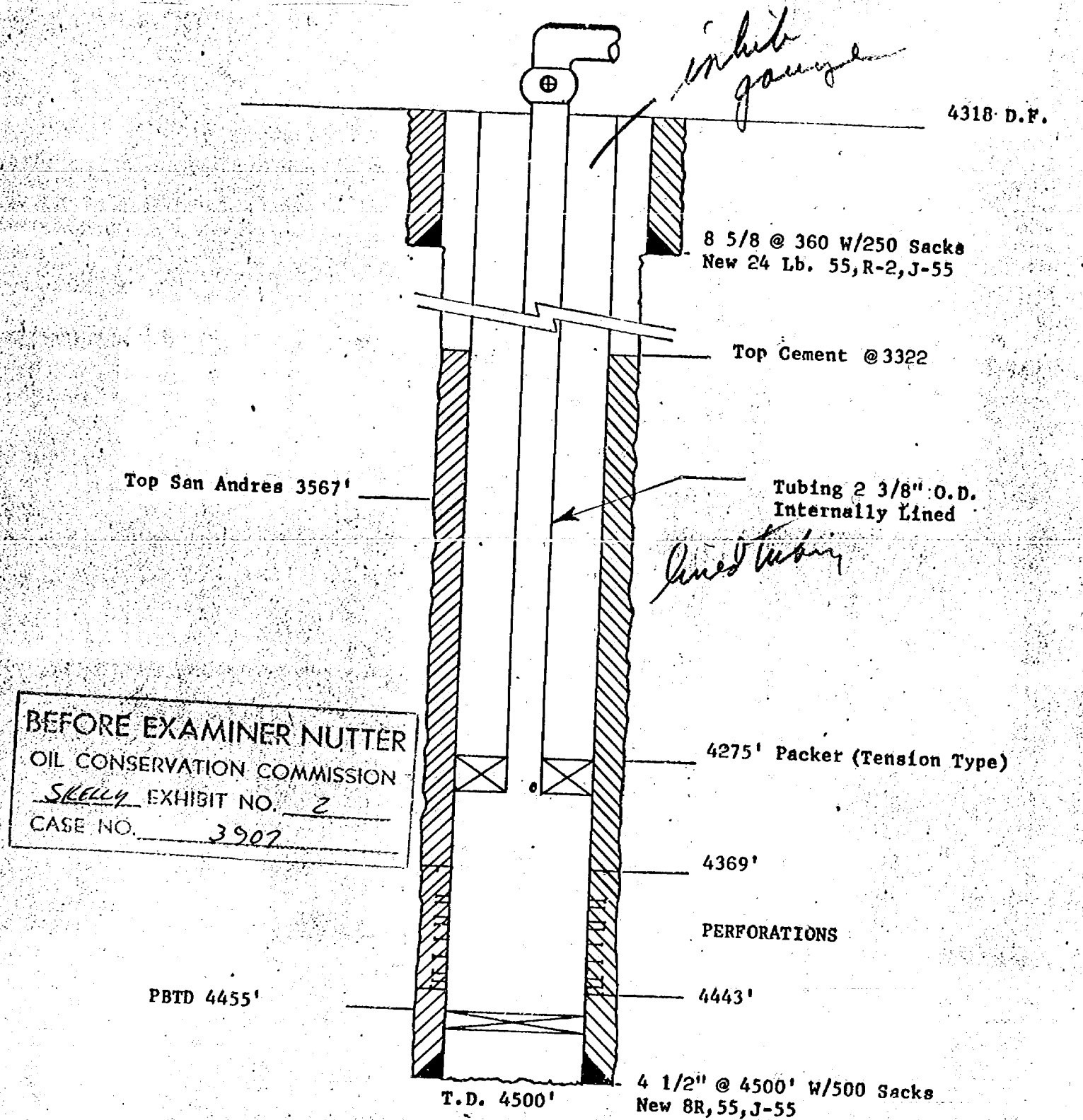
Very truly yours,

*L. C. White*  
L. C. WHITE

LCW:nb  
cc: Ronald J. Jacobs

68 OCT 9 AM 8 30

SKELLY OIL COMPANY  
 HOBBS "W" WELL NO. 9  
 1650 FNL, 1650 FWL  
 SECTION 29-7S-33E  
 ROOSEVELT COUNTY, NEW MEXICO



BEFORE EXAMINER NUTTER  
 OIL CONSERVATION COMMISSION  
 SKELLY EXHIBIT NO. 2  
 CASE NO. 3907

SAMPLE NO. \_\_\_\_\_

**THE WESTERN COMPANY**  
Service Laboratory

**WATER ANALYSIS**

Operator **Skelly Oil Company**  
Well **Hobbs W #9**  
Field **Chaveroo**  
Formation **San Andres**  
Depth **4369-4443'**  
County **Roosevelt, New Mexico**

Date Sampled **6-8-68**  
Date Received **6-18-68**  
Submitted by **Hobbs District**  
Worked by **Capps'**  
Other Description **4000 gallons 28% DS-30 Acid  
& 2500 gallons treated water 6/8/68**

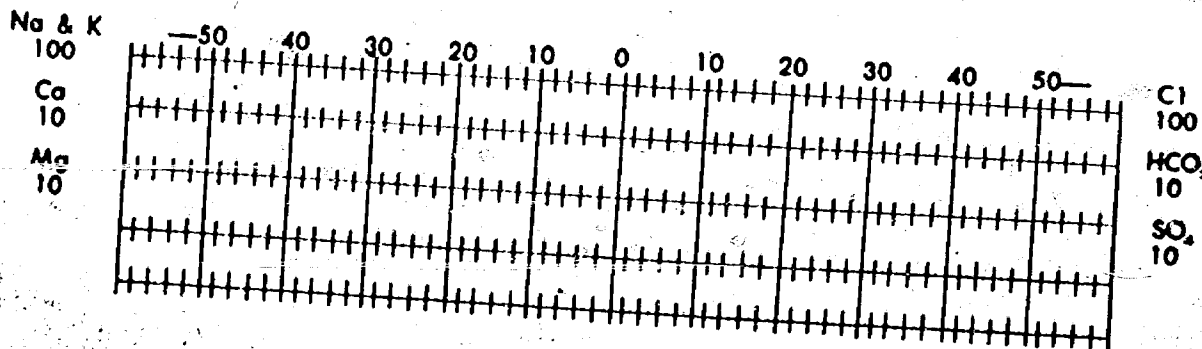
**CHEMICAL DETERMINATIONS**

Density 1.165 @ 76°F  
Iron Good Trace  
Sodium and Potassium 59,700 ppm  
Calcium 20,800 ppm  
Magnesium 6,320 ppm  
Chloride 146,800 ppm as Sodium Chloride  
pH 6.4  
Hydrogen Sulfide None  
Bicarbonate 329 ppm  
Sulfate 600 ppm  
Phosphate \_\_\_\_\_ ppm

Remarks:

RECEIVED EXAMINER INITIALS  
SKELLY 5  
3907

for Stiff type plot (in meq./l.)



Per \_\_\_\_\_



## SKELLY OIL COMPANY

P. O. BOX 1850

PRODUCTION DEPARTMENT

TULSA, OKLAHOMA 74102

*Case 3907*

C. L. BLACKSHER, VICE PRESIDENT

W. P. WHITMORE, MGR. PRODUCTION

W.D. CARSON, MGR. TECHNICAL SERVICES

J. R. TEEL, MGR. JOINT OPERATIONS

GEORGE W. SELINGER, MGR. CONSERVATION

October 1, 1968

Re: Application to Waterflood Hobbs "W"  
Well No. 9, Chaveroo San Andres Pool  
Roosevelt County, New Mexico

New Mexico Oil and Gas Conservation Commission  
State Land Office  
P. O. Box 2088  
Santa Fe, New Mexico 87501

Attention: Mr. A. L. Porter, Jr.  
Secretary-Director

Gentlemen:

We are attaching in triplicate our application to conduct a waterflood project in the Chaveroo San Andres Pool by injection into our Hobbs "W" Well No. 9 located in Unit F of Section 29, Township 7 South, Range 34 East, Roosevelt County, New Mexico.

We would appreciate you setting this matter down for the next examiner's hearing which we understand will be October 23, 1968.

Very truly yours,

*Ronald J. Jacobs*  
Ronald J. Jacobs

RJJ:mw  
Attach.

cc-Mr. L. C. White w/attach.

00 OCT 3 1968

DOCKET MAILED

Date 10-11-68

BEFORE THE OIL CONSERVATION COMMISSION OF THE STATE OF NEW MEXICO

IN THE MATTER OF THE APPLICATION OF SKELLY )  
OIL COMPANY FOR AN ORDER AUTHORIZING IT TO )  
INJECT WATER INTO ITS HOBBS "W" NO. 9 WELL )  
LOCATED IN SECTION 29, TOWNSHIP 7 SOUTH, )  
RANGE 34 EAST, CHAVEROO SAN ANDRES POOL, )  
ROOSEVELT COUNTY, NEW MEXICO. )

CASE NO. 3907

A P P L I C A T I O N

Comes now Skelly Oil Company and alleges and states:

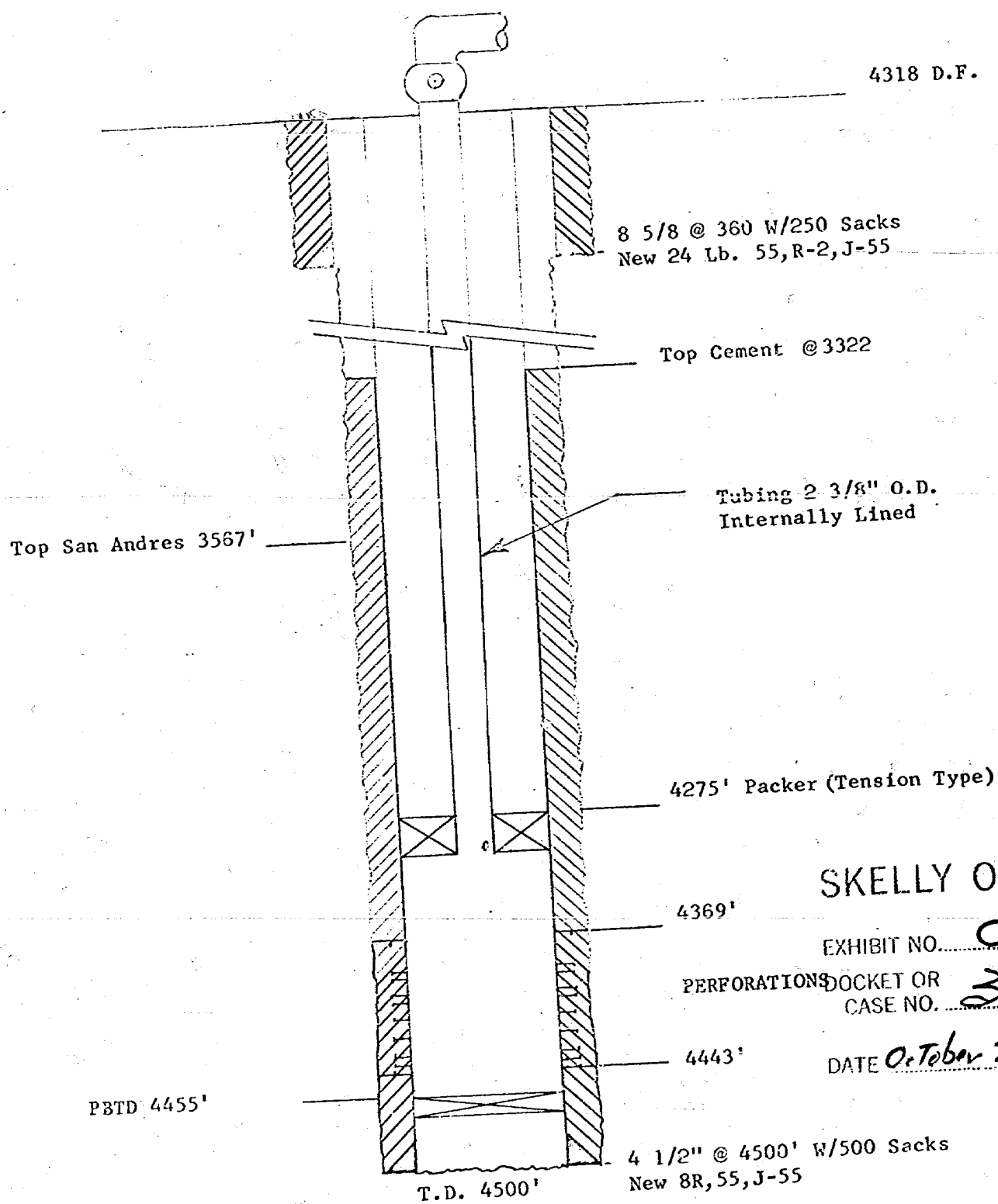
1. That it is a Delaware Corporation authorized to do business in the State of New Mexico, and that it is operating wells on its Hobbs "W" lease located in portions of Sections 29 and 30, Township 7 South, Range 34 East, Roosevelt County, New Mexico.
2. That the wells on this lease are producing from the Chaveroo San Andres Pool and produce substantial quantities of salt water in association with that production and that in order to eliminate surface pits in this area, it is necessary and desirable that a method of subsurface injection be authorized.
3. That Skelly Oil Company has heretofore drilled its Hobbs "W" Well No. 9 located in Unit F of Section 29, Township 7 South, Range 34 East, Roosevelt County, New Mexico and that attempts were made to complete the well in the Chaveroo San Andres Pool but the zone was found to be wet and the well is now temporarily abandoned as being nonproducing of hydrocarbons in the pool. That in order to recover oil which would not otherwise be recovered and to increase the ultimate recovery, applicant proposes to conduct a waterflood project on said lease by injecting water into the San Andres formation, Chaveroo San Andres Pool in its Hobbs "W" Well No. 9 above described.
4. That based on the performance and information gained from the injection into the aforementioned well the applicant may request administrative approval to expand the project and to convert additional wells.
5. That attached hereto and made a part hereof is Exhibit "A", a plat showing the location of the proposed injection well and the location of all other wells within a radius of two miles from the proposed injection well and the formation from which wells are producing or have produced. The plat also indicates the wells within the aforementioned two mile radius.
6. That attached hereto and made a part hereof is Exhibit "B", a log of the proposed injection well.
7. That attached hereto and made a part hereof is Exhibit "C", a diagrammatic sketch of the proposed injection well showing all casing strings including a diameter and setting depths; quantities used and tops of cement; perforation interval; tubing strings, including diameter and setting depths; and the type and location of packers.
8. That the interval into which injection will be made is the San Andres Pool approximately 3567' below surface through perforations in the interval 4369' to 4443' and that the water will be produced water on Skelly Oil Company's Hobbs "W" lease and from other wells in the immediate vicinity and that the anticipated initial injection volumes will be between 200-300 barrels of water per day, with an anticipated maximum of 1000 barrels of water per day at a maximum pressure of 1500 psi.

WHEREFORE, PREMISES CONSIDERED, applicant prays that this Commission set this matter down for hearing, that notice hereof be given as required by law, and that at the conclusion of said hearing based on the evidence adduced, the Commission enter its order granting Skelly Oil Company permission to conduct a waterflood project in the Chaveroo San Andres Pool through injection in its Hobbs "W" Well No. 9 located in Unit F of Section 29, Township 7 South, Range 34 East, Roosevelt County, New Mexico, and to further provide for administrative expansion of the project area and the conversion of additional wells by administrative means without the necessity of separate hearings, and for such other orders, rules and regulations as may be necessary in the premises.

Respectfully submitted,

SKELLY OIL COMPANY

SKELLY OIL COMPANY  
 HOBBS "W" WELL NO. 9  
 1650 FNL, 1650 FWL  
 SECTION 29-7S-33E  
 ROOSEVELT COUNTY, NEW MEXICO



SKELLY OIL CO.

EXHIBIT NO. C

PERFORATIONS DOCKET OR  
CASE NO. 3907

DATE October 23, 1968

DRAFT

GMH/esr

*Ida  
Spec*

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. 3907

Order No. R- 3544

*Sum*  
*[Signature]*  
APPLICATION OF SKELLY OIL COMPANY  
FOR A WATERFLOOD PROJECT, ROOSEVELT COUNTY,  
NEW MEXICO.

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9 a.m. on October 23, 1968,  
at Santa Fe, New Mexico, before Examiner Daniel S. Nutter.

NOW, on this 25 day of Oct, 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, Skelly Oil Company,  
pilot  
seeks permission to institute a/waterflood project in the \_\_\_\_\_  
===== Unit Area, Chaveroo-San Andres Pool by  
the injection of water into the San Andres formation  
its Hobbs "W" Well No. 9, located in Unit F of Section 29,  
through /===== injection wells in Section =====  
Township 7 ~~North~~ South, Range 34 ~~West~~ East, NMPM,  
Roosevelt County, New Mexico.

(3) That the applicant further seeks an administrative  
procedure whereby said project could be expanded to include  
additional lands and injection wells in the area of the said  
project as may be necessary in order to complete an efficient  
injection pattern; that said administrative procedure should  
provide for administrative approval for conversion to water  
injection in exception to the well response requirements of  
Rule 701 E-5 of the Commission Rules and Regulations.

waste.

(6) That the subject application should be approved and the project should be governed by the provisions of Rules 701, 702, and 703 of the Commission Rules and Regulations; provided however, that the showing of well response as required by Rule 701 E-5 shall not be necessary before obtaining administrative approval for the conversion of additional wells to water injection.

(1) That the applicant, Skelly Oil Company,  
pilot  
is hereby authorized to institute a waterflood project in the  
Chaveroo-  
Unit-Area= San Andres Pool  
by the injection of water into the San Andres formation  
~~through the following described wells in Township~~  
~~North, South, Range West, East, NMPM,~~  
~~County, New Mexico:~~

through its Hobbs "W" Well No. 9, located in Unit F of Section 29,  
Township 7 South, Range 34 East, NMPM, Roosevelt County, New Mexico.

(2) That the subject <sup>pilot</sup> waterflood project is hereby designated  
the Skelly Chaveroo Hobbs "W" Waterflood Project and shall  
be governed by the provisions of Rules 701, 702, and 703 of the  
Commission Rules and Regulations:

PROVIDED HOWEVER, that the Secretary-Director of the Commis-  
sion may approve expansion of the Skelly Chaveroo Hobbs "W"  
Waterflood Project to include such additional lands and injection  
wells in the area of said project as may be necessary to complete  
an efficient water injection pattern; that the showing of well  
response as required by Rule 701 E-5 shall not be necessary before  
obtaining administrative approval for the conversion of additional  
wells to water injection.

entry of such further orders as the Commission may deem necessary.

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