

CASE 4269: Application of TEXACO  
FOR A WATERFLOOD PROJECT, LEA  
COUNTY, NEW MEXICO.

Case Number

4269

Application  
Transcripts.

Small Exhibits

ETC.

OIL CONSERVATION COMMISSION

P. O. BOX 2088

SANTA FE, NEW MEXICO 87501

December 2, 1969

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

Dear Sir:

Enclosed herewith is Commission Order No. R-3889, entered in Case No. 4269, approving the Texaco State "JD" Rhodes Waterflood Project.

Injection is to be through the two authorized water injection wells, each of which shall be equipped with plastic-lined tubing set in a packer located as near to the top of the liner as practicable. The casing-tubing annulus shall be loaded with an inert fluid and equipped with a pressure gauge at the surface.

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 156 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.

OIL CONSERVATION COMMISSION

P. O. BOX 2088

SANTA FE, NEW MEXICO 87501

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Mr. Charles White  
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Santa Fe, New Mexico

December 2, 1969

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

Enclosures

ALP/DSN/ir

cc: Oil Conservation Commission  
Hobbs, New Mexico

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

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. 4269  
Order No. R-3889

APPLICATION OF TEXACO INC. FOR A  
WATERFLOOD PROJECT, LEA COUNTY,  
NEW MEXICO.

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9 a.m. on November 25, 1969, at Santa Fe, New Mexico, before Examiner Elvis A. Utz.

NOW, on this 2nd day of December, 1969, 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, Texaco Inc., seeks permission to institute a waterflood project in its State "JD" Unit Area, Rhodes (Yates-Seven Rivers) Pool, by the injection of water into the Yates-Seven Rivers formations through two injection wells located in Unit D and Unit F of Section 27, Township 26 South, Range 37 East, NMPM, Lea 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.

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CASE No. 4269

Order No. R-3889

(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 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, Texaco Inc., is hereby authorized to institute a waterflood project in its State "JD" Unit Area, Rhodes (Yates-Seven Rivers) Pool, by the injection of water into the Yates-Seven Rivers formations through the following-described wells in Section 27, Township 26 South, Range 37 East, NMPM, Lea County, New Mexico:

Texaco New Mexico "AD" State Well No. 2  
located in Unit D

Amerada New Mexico "JA" State Well No. 1  
located in Unit F

(2) That the subject waterflood project is hereby designated the Texaco State "JD" Rhodes 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 Texaco State "JD" Rhodes Waterflood Project to include such additional lands and injection wells in the area of the 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. 4269

Order No. R-3889

(3) That monthly progress reports of the 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

  
ALEX J. ARMIJO, Member

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

  
esr/

Case 4268

Heard 11-25-69

Rec. 11-26-69

Grant Texaco permission to convert these 2 wells to water injection wells as follows:

Trinidad. Met 'A D' H #2 D-27-265-37E.

Annular. - - 'A' - - #1 F - - -

Injectors will be thru int. plastic coated tubing under a packer and ~~into~~ thru a ~~fiberglass~~ perf. fiberglass liner into the Rhodol-  
yates - SR pool pay.

Annular. shall be filled w/ inert fluid w/ gauges at the surface.

The 160 has been unitized.  
see case. 4268.

W. H. Hef



NOTE: DUE TO THE THANKSGIVING HOLIDAY, THIS HEARING IS SCHEDULED FOR TUESDAY RATHER THAN WEDNESDAY AS CUSTOMARY.

Docket No. 32-69

DOCKET: EXAMINER HEARING - TUESDAY - NOVEMBER 25, 1969

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 4259: Application of Aztec Oil & Gas 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 perforated interval from 5112 feet to 5138 feet in its State "SS" Well No. 1 located in Unit F of Section 24, Township 17 South, Range 36 East, Spencer-San Andres Pool, Lea County, New Mexico.
- CASE 4260: Application of Tamarack Petroleum Company, Inc. for a water-flood expansion, Lea County, New Mexico. Applicant, in the above-styled cause, seeks authority to expand its Northeast Pearl Queen Unit Waterflood Project, Pearl-Queen Pool, by the conversion to water injection one additional injection well, its Unit Well No. 18, located in Unit L of Section 23, Township 19 South, Range 35 East, Lea County, New Mexico.
- CASE 4261: Application of Pennzoil United, Inc., for special pool rules and unorthodox gas well location, Lea County, New Mexico. Applicant, in the above-styled cause, seeks the promulgation of special pool rules for the Quail Ridge-Morrow Gas Pool, Lea County, New Mexico, including a provision for 320-acre spacing units. Applicant further seeks approval of the unorthodox location in said pool for its Mescalero Ridge Well No. 1 at a location 660 feet from the South line and 660 feet from the West line of Section 20, Township 19 South, Range 34 East.
- CASE 4262: Application of Plains Radio Broadcasting Company for an exception to Order No. R-3221, as amended, Chaves County, New Mexico. Applicant, in the above-styled cause, seeks an exception to Order No. R-3221, as amended, which order prohibits the disposal of water produced in conjunction with the production of oil on the surface of the ground in Lea, Eddy, Chaves, and Roosevelt Counties, New Mexico. Said exception would be for the applicant's White Ranch Well No. 1 located in Unit E of Section 34, Township 11 South, Range 29 East, White Ranch Siluro-Devonian Pool, Chaves County, New Mexico. Applicant seeks authority to dispose of salt

water produced by said well in an unlined surface pit located in the vicinity of said well. In the alternative, applicant seeks authority to dispose of said produced water into the Siluro-Devonian formation in the perforated interval from 8743 feet to 8750 feet in its White Ranch Well No. 3 located in Unit M of said Section 34.

- CASE 4263: Application of Wynn & Brooks for an unorthodox gas well location, San Juan County, New Mexico. Applicant, in the above-styled cause, seeks approval for the unorthodox location of its Federal "E" Well No. 3, to be located 590 feet from the South line and 1590 feet from the West line of Section 13, Township 27 North, Range 8 West, Blanco-Mesaverde and Basin-Dakota Pools, San Juan County, New Mexico.
- CASE 4264: Application of Wynn & Brooks for an unorthodox gas well location, San Juan County, New Mexico. Applicant, in the above-styled cause, seeks approval for the unorthodox location of its Federal "J" Well No. 1, to be located 2390 feet from the South line and 2410 feet from the East line of Section 11, Township 27 North, Range 8 West, Blanco-Mesaverde and Basin-Dakota Pools, San Juan County, New Mexico.
- CASE 4265: Application of Union Oil Company of California 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, San Andres and other formations in the open-hole interval from approximately 4450 feet to 5890 feet in its Midway State Well No. 3 located in Unit J, Section 12, Township 17 South, Range 36 East, Lovington Field, Lea County, New Mexico.
- CASE 4245: (Continued from the November 5, 1969, Examiner Hearing) Application of Texas Pacific Oil Company, Inc., for several non-standard gas proration units, Lea County, New Mexico. Applicant, in the above-styled cause, seeks the dedication and rededication of certain acreage and the establishment of the following non-standard gas proration units in Townships 22 and 23 South, Range 36 East, Jalmat Gas Pool, Lea County, New Mexico:

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(Case 4245 continued)

A 160-acre unit comprising the W/2 SE/4 and the E/2 SW/4 of Section 8, Township 22 South, Range 36 East, to be dedicated to the State "A" a/c-2 Well No. 56 located in Unit J of said Section 8;

A 200-acre unit comprising the NW/4 and the NW/4 SW/4 of Section 11, Township 22 South, Range 36 East, to be dedicated to the State "A" a/c-2 Well No. 42 located in Unit E of said Section 11;

A 280-acre unit comprising the SE/4, S/2 SW/4, and the NE/4 SW/4 of Section 11, Township 22 South, Range 36 East, to be dedicated to the State "A" a/c-2 Well No. 36 located in Unit M of said Section 11;

A 200-acre unit comprising the N/2 NE/4, the SE/4 NE/4, and the NE/4 NW/4 of Section 15 and the SE/4 SW/4 of Section 10, Township 23 South, Range 36 East, to be dedicated to the State "A" a/c-1 Well No. 31 located in Unit H of said Section 15;

A 160-acre unit comprising the S/2 NW/4, SW/4 NE/4 and the NW/4 NW/4 of Section 15, Township 23 South, Range 36 East, to be dedicated to the State "A" a/c-1 Well No. 33 located in Unit F of said Section 15;

A 240-acre unit comprising the SW/4 of Section 3, and the N/2 NW/4 of Section 10, Township 23 South, Range 36 East, to be dedicated to the State "A" a/c-1 Well No. 35 located in Unit I of said Section 3;

A 160-acre unit comprising the S/2 NW/4 and N/2 SW/4 of Section 10, Township 23 South, Range 36 East, to be dedicated to the State "A" a/c-1 Well No. 37 located in Unit F of said Section 10.

CASE 4266: Application of Texas Pacific Oil Company, Inc., for several non-standard gas proration units, Lea County, New Mexico. Applicant, in the above-styled cause, seeks the dedication and rededication of certain acreage and the establishment of the following non-standard gas proration units in Township 22 South, Range 36 East, Culmat Gas Pool, Lea County, New Mexico:

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(Case 4266 continued)

A 280-acre unit comprising the SW/4 of Section 9 and the E/2 SE/4 and SW/4 SE/4 of Section 8 to be dedicated to the State "A" a/c-2 Well No. 38 located in Unit K of said Section 9;

A 160-acre unit comprising the E/2 SW/4, SW/4 SW/4 and NW/4 SE/4 of Section 8 to be dedicated to the State "A" a/c-2 Well No. 56 located in Unit J of said Section 8;

A 120-acre unit comprising the S/2 NW/4 and NW/4 SW/4 of Section 8 to be dedicated to the State "A" a/c-2 Well No. 51 located in Unit F of said Section 8;

A 160-acre unit comprising the SW/4 of Section 5 to be dedicated to the State "A" a/c-2 Well No. 41 located in Unit M of said Section 5;

A 160-acre unit comprising the NW/4 of Section 5 to be dedicated to the State "A" a/c-2 Well No. 44 located in Unit F of said Section 5;

A 160-acre unit comprising the SE/4 of Section 5 to be dedicated to the State "A" a/c-2 Well No. 27 located in Unit P of said Section 5.

CASE 4267: In the matter of the hearing called by the Oil Conservation Commission on its own motion to permit Edward M. Kriss and all other interested parties to appear and show cause why the Edward M. Kriss Little Chama Valley Company Well No. 1, a wildcat well, located 545 feet from the North line and 1530 feet from the West line of Section 2, Township 1 North, Range 2 East, Rio Arriba County, New Mexico, should not be plugged and abandoned in accordance with a Commission-approved plugging program.

CASE 4268: Application of Texaco Inc., for a unit agreement, Lea County, New Mexico. Applicant, in the above-styled cause, seeks approval of the State "JD" Unit Area comprising 160 acres, more or less, of State lands in the NW/4 of Section 27, Township 26 South, Range 37 East, Rhodes (Yates-Seven Rivers) Pool, Lea County, New Mexico.

CASE 4269: 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 in its State "JD" Unit Area by the injection of water into the Yates-Seven Rivers formations through two wells located in Unit D and Unit E of Section 27, Township 26 South, Range 37 East, Rhodes (Yates-Seven Rivers) Pool, Lea County, New Mexico.

CASE 4270: Application of Byron McKnight for an exception to Order No. R-111-A, Lea County, New Mexico. Applicant, in the above-styled cause, seeks an exception to the potash-oil area casing and cementing rules as set forth in Commission Order No. R-111-A. Applicant proposes to drill to a depth of approximately 3800 feet in the Yates formation two exploratory wells located in the SW/4 NE/4 and SE/4 NE/4 of Section 26, Township 19 South, Range 33 East, Lea County, New Mexico, in such a manner as to eliminate the necessity of running the salt protection string required by said Order No. R-111-A provided the production string would be cemented to the surface.

CASE 4271: Application of Texaco Inc. for a waterflood expansion and amendment of Order No. R-2748, Lea County, New Mexico. Applicant, in the above-styled cause, seeks authority to expand its waterflood project in the Rhodes (Yates-Seven Rivers) Pool, authorized by Order No. R-2748, by the injection of water through four additional wells in Sections 22 and 27 of Township 26 South, Range 37 East, Lea County, New Mexico. Applicant further seeks amendment of said order to establish a procedure whereby additional injection wells as may be necessary to complete an efficient injection pattern may be approved administratively.

CASE 4272: Application of Shell Oil Company for an unorthodox oil well location and to directionally drill. Lea County, New Mexico. Applicant, in the above-styled cause, seeks authority to drill its Sanger Well No. 6 at an unorthodox surface location in Unit E 1490 feet from the North line and 330 feet from the West line of Section 27, Township 18 South, Range 38 East, Hobbs (Grayburg-San Andres) Pool, Lea County, New Mexico. Applicant further seeks authority to directionally drill said well in such a manner as to bottom the well in the subject pool at a point in Unit D of said Section 27 approximately 200 feet north of said surface location. Applicant proposes to dedicate said Unit D to the well.

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CASE 4273: Application of Tesoro Petroleum Corporation for an unorthodox oil well location and amendment of Order No. R-2807-A, McKinley County, New Mexico. Applicant, in the above-styled cause, seeks approval for the unorthodox oil well location of its Well No. 59, formerly classified as a water injection well, located 1430 feet from the South line and 2625 feet from the East line of Section 36, Township 18 North, Range 9 West, Hospah Upper Sand Oil Pool, McKinley County, New Mexico. Applicant further seeks the amendment of Order No. R-2807-A to permit a procedure whereby additional producing and injection wells in its Hospah Unit Area may be approved administratively.

CASE 4274: Application of Pan American Petroleum Corporation for an unorthodox oil well location, San Juan County, New Mexico. Applicant, in the above-styled cause, seeks authority to drill its Navajo Tribal "N" Well No. 11 at an unorthodox location 1150 feet from the West line and 560 feet from the North line of Section 17, Township 26 North, Range 18 West, Tocito Dome-Pennsylvanian "D" Oil Pool, San Juan County, New Mexico.

TEXACO

Hobbs, New Mexico

NOV 13 1969  
November 11, 1969

*Sub  
file - Core 4269*

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

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

Re: Request For Hearing  
Proposed State "JD" Unit  
Rhodes Yates Pool  
Lea County, New Mexico

Gentlemen:

Enclosed are the required exhibits to facilitate Texaco's Request for a Hearing for the proposed State "JD" Unit. The Request for Hearing was made in our letter to you dated November 5, 1969, requesting a hearing for November 25, 1969.

The radioactivity log is from a producing well in the proposed Unit since no logs are available on a proposed injection well.

Yours very truly,

*H. E. Dawson*

D. E. Dawson  
District Engineer

BRH-ac

Enclosures

dearnley-meier

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 25, 1969

EXAMINER HEARING

IN THE MATTER OF:

Application of Texaco Inc., for a  
unit agreement, Lea County, New  
Mexico.

) Case No. 4268

Application of Texaco Inc., for a  
waterflood project, Lea County,  
New Mexico.

) Case No. 4269

BEFORE: Elvis A. Utz, Examiner.

TRANSCRIPT OF HEARING



MR. UTZ: Do you intend to consolidate Cases 4268 and 4269?

MR. WHITE: Yes, sir, if we may, please, sir.

MR. UTZ: Cases 4268 and 4269.

MR. HATCH: Case 4268. Application of Texaco, Inc., for a unit agreement, Lea County, New Mexico.

Case 4269. Application of Texaco, Inc., for a waterflood project, Lea County, New Mexico.

MR. UTZ: These cases will be consolidated for purposes of testimony and separate orders will be written.

You may proceed.

MR. WHITE: If the Examiner please, L. C. White, of Santa Fe, New Mexico, appearing on behalf of the Applicant. And, we have Mr. Henson to be sworn.

(Witness sworn).

(Whereupon, Applicant's Exhibits 1 through 7 were marked for identification.)

BILLY R. HENSON

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

DIRECT EXAMINATION

BY MR. WHITE:

Q Mr. Henson, by whom are you employed and in what

capacity?

A I am employed with Texaco, Incorporated as a production engineer.

Q Are you familiar with the unit agreement pertaining to Case 4268?

A Yes, I am.

Q And are you familiar with the application of Case 4269?

A Yes, sir.

Q Have you previously testified before the Oil Conservation Commission and had your qualifications as a petroleum engineer been accepted as a matter of record?

A Yes, sir.

Q Referring to Case 4268, what is the purpose of the unit agreement?

A It's for secondary recovery.

Q Would you refer to Exhibit marked No. 1 and explain that insofar as it pertains to this case?

A This is a map of the area. You will notice that we have outlined in dotted blue lines the area of the "JD" Unit there in the northwest quarter of Section 27, Township 26 South, Range 36 East.

It shows the proposed injection wells and all of the offset operators and the lease names.

Q Who are the parties to this unit agreement?

A Amerada and Texaco.

Q Will you refer to Exhibit No. 2 and that is the unit agreement; is it not?

A Yes, it is the unit agreement.

Q And on what page is the description of the unit agreement referred to and described?

A Page -- Exhibit A, page seventeen is the outline of the unit.

Q What zones are to be unitized?

A It would be the Yates and the Seven Rivers.

Q And are they tied into the perforation points?

A Yes, sir, they are -- on the Amerada JA State, Well No. 2.

Q What is the depth zone?

A Unitized from twenty-nine twelve to thirty-four hundred feet on that particular well.

Q Do you have a log; is that your Exhibit 3?

A Yes, sir. That's Exhibit 3.

Q And are those points pointed out on the log?

A Yes, sir -- you will notice a black line -- a

dashed black line -- there at twenty-nine twelve, and at the bottom of the log, bottom of the unitized zone, at thirty-four hundred, which is the deeper than the TD of this well.

Q And did you give the name of that well?

A That's Amerada JA State Well No. 2.

Q What type of acreage is this federal state or field?

A State acreage.

Q And have you submitted this agreement to the State Land Office and have they given their preliminary approval?

A Yes, sir, they have.

Q What percent of the working interests are signed up?

A One hundred percent.

Q And all of the royalty is state?

A That's true.

Q And what are your unitized supplements?

A It would be all of the hydrocarbons, as set forth in Section 1.5 of the unit agreement, on page two.

Q And who are the operator --

A It would be Texaco, Incorporated.

Q Are you otherwise familiar with the terms of this unit agreement, and if so, is it the standard form in which the Oil Conservation Commission has previously approved?

A Yes, sir, it is the standard form that has been approved.

Q In your opinion, would the creation of this unit prevent waste by allowing you to produce hydrocarbons more efficiently?

A Yes, it would.

Q And does it protect the correlative rights?

A Yes, it does.

Q Is there any provision for the enlargement of the unit agreement, and if so, on what page does it appear?

A Yes, sir -- there is a provision on page eleven, article twelve.

Q And do you further request of the Commission to approve administratively and the enlargement of the unit without any response --

A Yes, we would.

Q Does that conclude your testimony as to Case 4268?

A Yes, sir, it does.

Q Now, will you refer to Case 4269 and state what Texaco seeks by this application?

A We seek approval to conduct a waterflood on the proposed State "JD" Unit.

Q Will you refer back to Exhibit No. 1 and point out what significant points there are on that exhibit in regard to this case?

A Exhibit 1 shows the proposed -- as I said earlier, the proposed "JD" Unit -- the triangles on the map indicate the proposed injection wells, and it's also color coated to show all of the producing zones, within at least a two-mile radius of the subject unit.

It shows the offset operators and the lease names.

Q Refer to Exhibit 4 and explain that, please.

A Exhibit 4 is a structure map of the Rhodes Yates Pool, contoured on top of the Yates. You notice that it's an anticline, trending northwest to the southeast, and it defines the productive limits of the pool.

Q Now, will you refer to Exhibit 5 and explain your diagrammatic sketch --

A Exhibit 5 is a diagrammatic sketch of the typical injection well in the unit, as we propose to equip it.

It shows the surface casing and the cemented

program and the cement circulated on the surface string. It also shows the production string, set at thirty-one hundred and ninety-eight feet, cemented with two hundred sacks, with calculated cement top at one thousand and eight feet.

Further, it shows the injection interval, and the proposed slaughtered liner, across the open hole interval. We are putting these liners in to prevent cavings and to insure that we get a good distribution of water.

Q Will your tubing be plastic coated?

A Yes, it will.

Q And will the annulus be filled with any corrosive inhibited fluid?

A Yes, it will.

Q And do you intend to have a pressure gauge on top of the surface to check against any leakage?

A Yes. We will equip the well with a pressure gauge on the surface.

Q Now, refer to Exhibit 6 and explain what that is, please.

A Exhibit 6 is an injection well data sheet on the two proposed injection wells in the unit. It shows the depth and size of the surface casing for each well --

a cementing program, the production size and depth for each well and the submitting program for it, plus the tops of the cement for both wells.

It also shows the total depths and the injection interval for each well.

Q Is there any fresh water in this area?

A Not to my knowledge.

Q Are there any other producing zones up structure from the perforated zones?

A No.

Q In your opinion, will this casing program effectively prevent migration?

A Yes, it will.

Q What will the source of your water be?

A We have a water source approximately two miles northwest of the proposed unit -- it's located in the southwest quarter of Section 9, Township 26, Range 37 East.

We have approved permits for four hundred and fifty acre feet per annum.

Q What amount of volume of water do you intend to inject into the well?

A Five hundred barrels per day per well.

Q What is the pressure?



A Initially, we estimate at six hundred feet PSI.

Q And what do you anticipate the leveling out volume and pressures to be?

A We aim to maintain a five hundred barrel per day injection rate, at an estimated pressure of fourteen hundred to fifteen hundred PSI.

Q Do you anticipate any problem of the zone not being able to absorb or accommodate this water?

A No, we don't.

Q Now, refer to Exhibit 7 and explain what that is, please.

A Exhibit 7 is a production performance curve of the proposed unit. This is production for four wells in the unit, showing the barrels of oil per month, the gas-oil ratio and the barrels of water produced per month.

You will notice that the water production is almost nil in the unit. Our current average production is approximately six barrels per day per well of oil and two to three barrels of water per day.

Q In your opinion, has this pool reached advance stage of depletion?

A Yes, it has.

Q How long would it take to get response from these injection wells; in your opinion?

A We estimate at twelve months.

Q And how much increased production do you anticipate?

A We think we will recover as much on secondary as we have on primary.

Q Is it your opinion in this case as well as the former, that you ask for administrative approval to expand the project, even though there is no response?

A Yes, sir. We would request that.

Q Would the granting of this application allow the recovery of hydrocarbons that would otherwise remain in place?

A Yes, sir, it sure would.

Q Were Exhibits 1 through 7 prepared by you or under your supervision?

A Yes, they were.

MR. WHITE: At this time Mr. Examiner, we offer Exhibits 1 through 7, and that completes our direct examination.

MR. UTZ: Without objection, Applicant's Exhibits 1 through 7 will be entered into the record of these cases,

4268 and 4269.

CROSS EXAMINATION

BY MR. UTZ:

Q Referring to Exhibit No. 7, did I interpret this graph to show that your GOR is around seven thousand?

A Yes, sir, that's right.

Q And you are still producing substantial quantities of gas in addition to the six or seven barrels of oil?

A Right.

Q Which would be around forty-two hundred a day per well; wouldn't it?

A I believe that's what it would figure.

Q Now, referring to Exhibit No. 5, does this show the manner in which you intend to complete both injection wells?

A Yes, sir. That's the program we will use in both wells.

Q Including the slaughter liner?

A Yes, sir. It will probably be Fiberglas in both wells.

Q Now, you don't show on your Exhibit No. 6 what the packer and tubing set will be; do you have that?

A It will be fifty to one hundred feet above the

top of the liner, which will be up into the casing there just a few feet.

Q Well, the casing shoe on the five and half, thirty-one fifteen; would you say the liner would go up into the casing, say, five feet?

A Probably fifteen or twenty feet up into the casing.

Q Well, that would be thirty-one hundred then, or less fifty to a hundred feet, would be where the packer would be?

A Yes, sir.

Q So, if we say approximately three thousand fifty feet, that would be pretty close --

A That is what I was going to say -- three thousand fifty feet, yes, sir.

Q Now, are these injection wells located in the performance of the offsetting conformity of the waterflood --

A Yes. That would be compatible with the other flood in the area that we are proposing.

Q Let me get clear in what you asked for administrative approval. Is that to put more injection wells on without benefit of response?

A Yes, sir. If we expand the unit.

MR. UTZ: Any further questions of the witness?

You may be excused.

(Witness excused).

MR. UTZ: Statements in this case? The case  
will be taken under advisement.

I N D E X

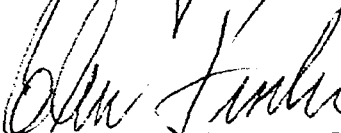
<u>WITNESS</u>	<u>PAGE</u>
BILLY R. HENSON	
Direct Examination by Mr. White	2
Cross Examination by Mr. Utz	12

E X H I B I T S

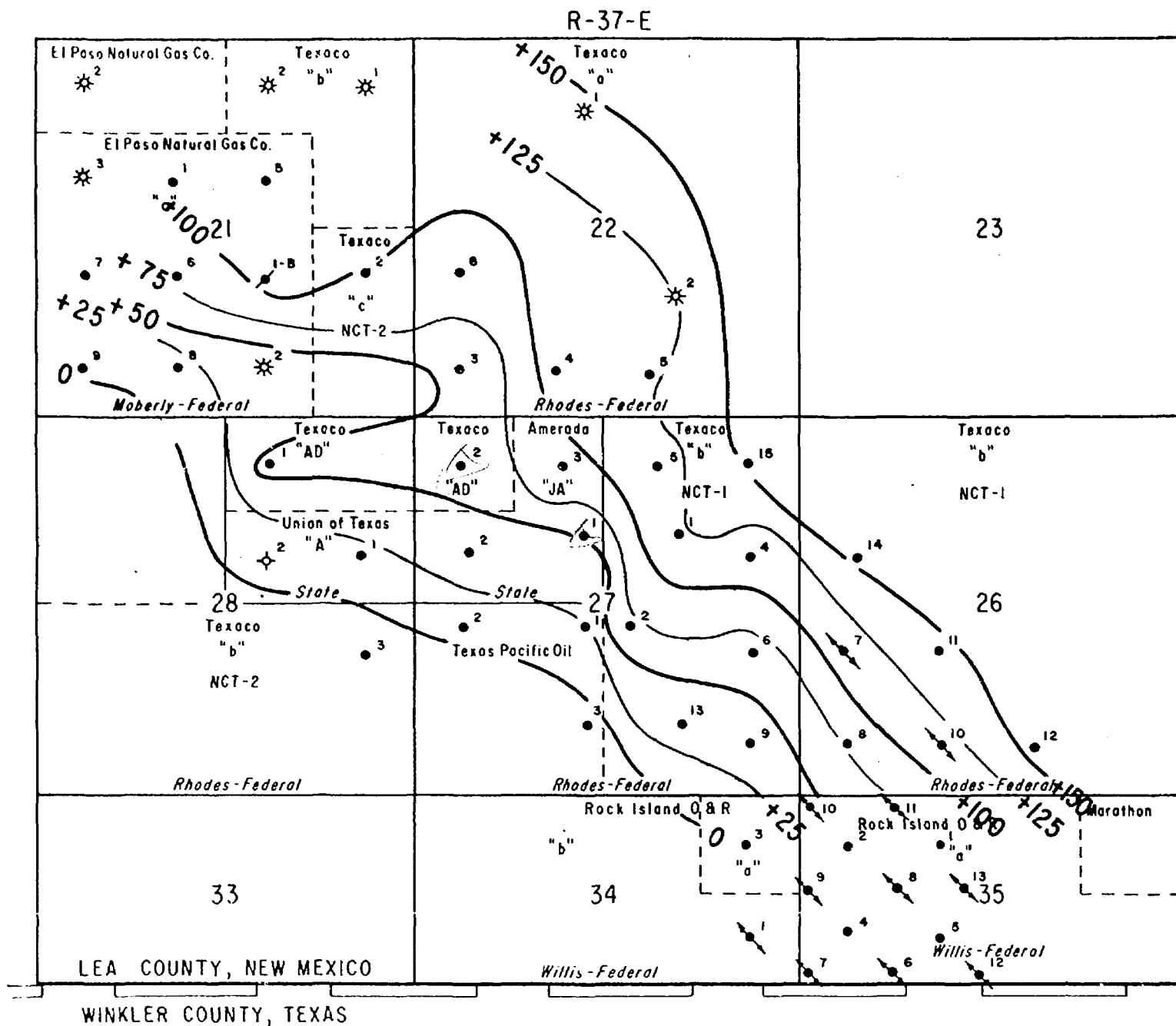
Applicant's Exhibits 1 through 7	2
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STATE OF NEW MEXICO )  
 ) ss  
COUNTY OF BERNALILLO )

I, CA FENLEY, 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.

  
Court Reporter

I do hereby certify that the foregoing is  
a complete record of the proceedings in  
the Boarding hearing of Case No. 4268  
heard by me on Nov. 25, 1969.  
\_\_\_\_\_  
New Mexico Oil Conservation Commission



BEFORE EXAMINER UTZ  
OIL CONSERVATION COMMISSION  
EXHIBIT NO. 4  
CASE NO. 4269

## STRUCTURE MAP

CONTOURS ON  
TOP OF  
YATES

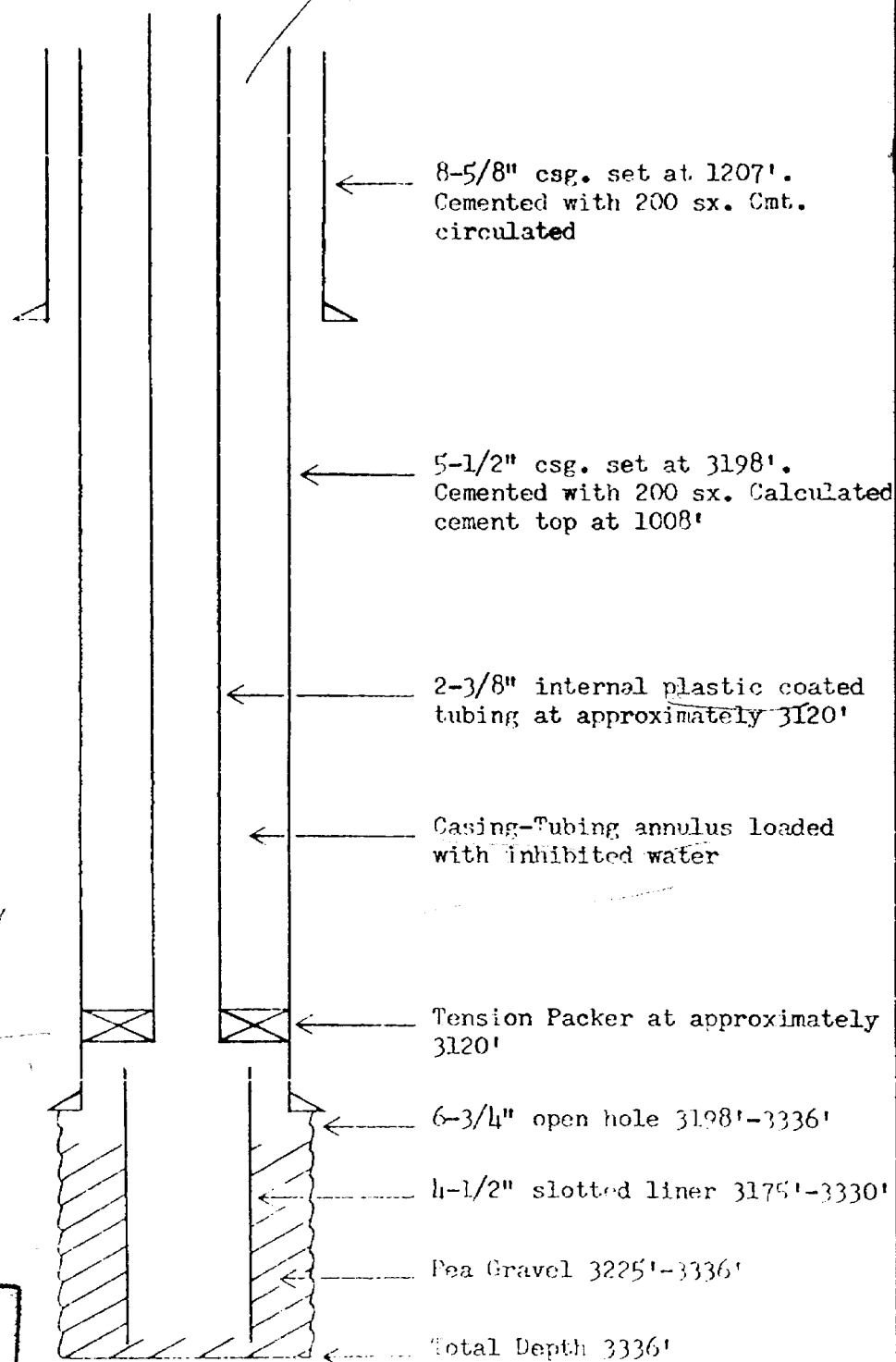
CONTOUR INTERVAL - 25'  
DLH 2-20-67

RHODES FIELD  
LEA COUNTY, NEW MEXICO  
SCALE: 1" = 2000'



3050 R. J. A. 1

BEFORE EXAMINER UTZ  
OIL CONSERVATION COMMISSION  
EXHIBIT NO. 5  
CASE NO. 4269



TEXACO INC.  
STATE OF NEW MEXICO "AD" WELL NO.2  
RHODES POOL  
LEA COUNTY, NEW MEXICO

DIAGRAMMATIC SKETCH OF TYPICAL INJECTION WELL.

INJECTION WELL DATA

Well Name: New Mexico "AD" State No. 2  
Current Operator: TEXACO Inc.

Surface Casing: 8-5/8" @ 1,207'  
Cement: 200 Sx - Circulated

Intermediate Casing: None

Production Casing: 5-1/2" @ 3,198'  
Cement: 200 Sx - Top cement @ 979' (calculated)

Total Depth: 3,336'  
Injection Interval: 3,198' - 3,336'

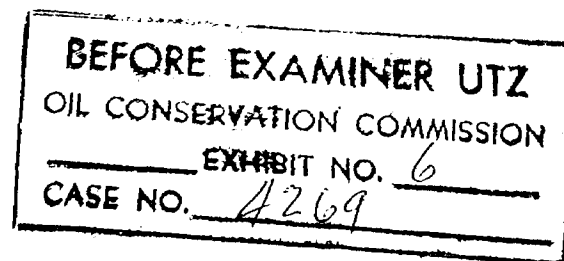
Well Name: New Mexico "JA" State No. 1  
Current Operator: Amerada Petroleum Corporation

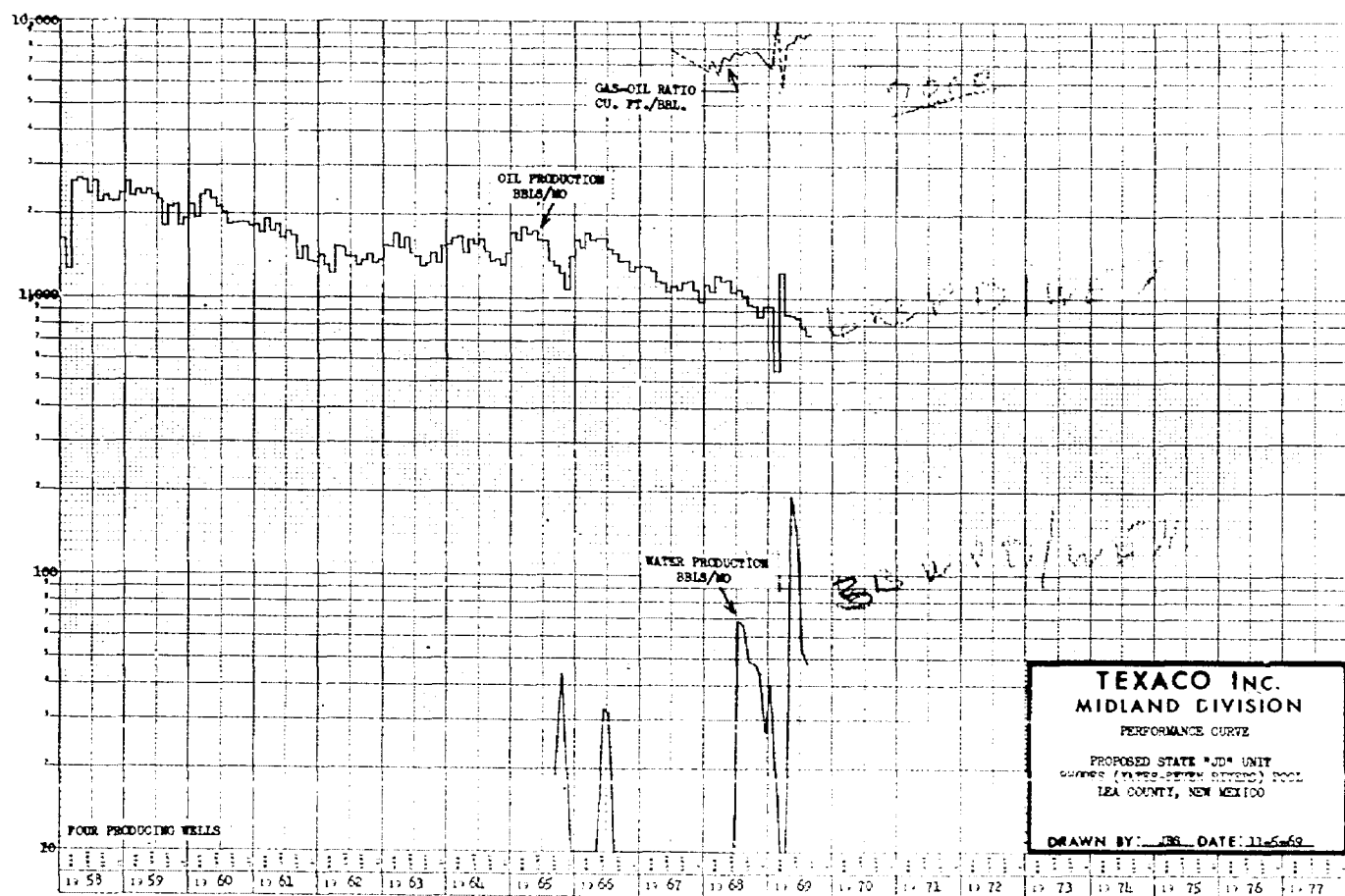
Surface Casing: 7-5/8" @ 676'  
Cement: 175 Sx - Circulated

Intermediate Casing: None

Production Casing: 5-1/2" @ 3,115'  
Cement: 200 Sx - Top cement @ 852' (calculated)

Total Depth: 3,279'  
Injection Interval: 3,115' - 3,279'





BEFORE EXAMINER UTZ  
 OIL CONSERVATION COMMISSION  
 EXHIBIT NO. 7  
 CASE NO. 4269



PETROLEUM PRODUCTS

PRODUCING DEPARTMENT - UNITED STATES  
MIDLAND DIVISION

TEXACO INC.  
P. O. BOX 3109  
MIDLAND, TEXAS 79701

NOV 6 RECD

November 5, 1969

REQUEST FOR HEARING  
PROPOSED STATE "JD" UNIT  
WATERFLOOD PROJECT  
RHODES YATES OIL POOL  
LEA COUNTY, NEW MEXICO

*Case 4269*

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

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

Gentlemen:

It is respectfully requested that a hearing be scheduled at Santa Fe, New Mexico, November 25, 1969 to consider the application of Texaco Inc., as proposed unit operator, for approval of the proposed State "JD" Unit and the Unit Agreement. The application will include a request for authority to conduct secondary recovery operations on the proposed unit by waterflooding.

The Unit Area will be comprised of the northwest quarter of Section 27, Township 26 South, Range 37 East, Lea County, New Mexico, containing a total of 160 acres. This area consists of Amerada Petroleum Corporation's 120-acre State "JA" Lease with three wells and Texaco Inc.'s 40-acre State "AD" Lease with one well. Amerada and Texaco are the only working interest owners and the State of New Mexico is the only royalty interest owner.

The four wells in the proposed unit produce from the Yates-Seven Rivers formation in the Rhodes Yates Oil Pool and this is the formation to be unitized and waterflooded. The two wells in the northwest and southeast quarters of the Unit Area will be injection wells and the two wells in the northeast and southwest quarters of the Unit Area will be producers. This unitized project will be operated in cooperation with adjacent waterflood projects.

Approximately 500 barrels of water will be injected into each of the two injection wells daily at an initial surface injection pressure estimated at 600 psi. The depth of the injection interval in the Yates-Seven Rivers formation is from approximately 2900 feet to approximately 3400 feet. The injection

DOCKET MARKED

Date 11-14-69

November 5, 1969

fluid is fresh water obtained from water wells in the southwest quarter of Section 9, Township 26 South, Range 37 East, Lea County, New Mexico, approximately two miles north of the proposed State "JD" Unit. Texaco is authorized to use 450 acre-feet per annum from this source by State Engineer Permits No. CP-452, CP-452-X, CP-452-X-2, CP-452-X-3, CP-452-X-4, CP-452-X-5, CP-452-X-6, and CP-452-X-7.

Included with this application for a hearing is a plat of the project area and a copy of the Unit Agreement. Following under separate cover is a larger map of the project area, a typical well log, and a diagrammatic sketch of one of the injection wells.

Offset operators to the proposed State "JD" Unit are Texaco Inc., Union Texas Petroleum Corporation, and Texas Pacific Oil Company, as shown below, each of whom is receiving a copy of this request for a hearing. Copies are also being mailed to the New Mexico State Land Commissioner and Amerada Petroleum Corporation.

Yours very truly,

Darrell Smith  
Division Manager

By *C. L. Whigham*  
C. L. Whigham  
Division Production Engineer

CLW-MM  
Attachments

cc: Union Texas Petroleum Corp.  
Division of Allied Chemical  
1300 Wilco Bldg.  
Midland, Texas 79701

Texas Pacific Oil Company  
Box 4067  
Midland, Texas 79701



ROUGH DRAFT FOR WATERFLOOD LETTERS

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

*Enclosed herewith is* Commission Order No. R-3889, entered in Case No. 4269, approving the Texas ~~to~~ State "JD" Rhodes Waterflood Project.

*Injection is to be through the two authorized main injection wells, each of which shall be equipped with plastic-lined tubing set in a packer located as near to the top of the liner as practicable. The casing-tubing annulus shall be loaded with an inert fluid and equipped with a pressure gauge at the*  
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 156 barrels per day when the Southeast New Mexico normal unit allowable is 42 barrels per day or less. *in fact*

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         
Aztec       

USGS       

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

Mr. D. E. Gray

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. 4269

Order No. R-3889

APPLICATION OF TEXACO INC.  
FOR A WATERFLOOD PROJECT, LEA COUNTY,  
NEW MEXICO.

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9 a.m. on November 25, 1969,  
at Santa Fe, New Mexico, before Examiner Elvis A. Utz.

NOW, on this 25th day of Nov, 1969, 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, Texaco Inc.,  
seeks permission to institute a waterflood project in ~~the~~ its  
State "M" Unit Area, Rhodes (Yates-  
Seven Rivers) Pool, by  
the injection of water into the Yates-Seven Rivers formations  
located in Unit D and Unit F of  
through two injection wells ~~in~~ Section 27,  
Township 26 ~~NORTH~~ South, Range 37 ~~WEST~~ East, NMPM,  
Lea 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.

IT IS THEREFORE ORDERED:

(1) That the applicant, Texaco Inc.,  
is hereby authorized to institute a waterflood project in <sup>its</sup> ~~its~~  
State "JD" Unit Area, Rhodes (Yates-  
Seven Rivers) Pool,  
by the injection of water into the Yates-Seven Rivers formations  
Section 27,  
through the following-described wells in/Township 26  
~~North~~ South, Range 37 ~~West~~ East, NMPM, Lea  
County, New Mexico:

*Texaco New Mexico "AD" State Well No. 2 located in Unit D  
Comuda New Mexico "JA" State Well No. 1 located in Unit F*

(2) That the subject waterflood project is hereby designated  
the Texaco State "JD" Rhodes 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 Waterflood  
Project to include such additional lands and injection wells in  
the area of the 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.

(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.

CASE 4270: Application of BYRON  
MCKNIGHT FOR AN EXCEPTION TO  
ORDER NO. R-111-A, LEA COUNTY.