

CASE 3537: Application of TEXACO  
INC. for a waterflood project,  
San Juan County, New Mexico.

CASE No.  
3532

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. 3537  
Order No. R-3201

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

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9 a.m. on March 8, 1967,  
at Santa Fe, New Mexico, before Examiner Daniel S. Nutter.

NOW, on this 14th day of March, 1967, 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 Bisti Lower-Gallup Oil Pool  
by the injection of water into the Lower Gallup formation through  
its Northeast Bisti Unit Well No. 3, located in Unit O of Section  
15, Township 25 North, Range 11 West, NMPM, San Juan County, New  
Mexico.

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

(4) That the proposed waterflood project should result in  
the recovery of otherwise unrecoverable oil, thereby preventing  
waste.

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CASE No. 3537  
Order No. R-3201

(5) 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.

IT IS THEREFORE ORDERED:

(1) That the applicant, Texaco Inc., is hereby authorized to institute a waterflood project in the Bisti Lower-Gallup Oil Pool by the injection of water into the Lower Gallup formation through its Northeast Bisti Unit Well No. 3, located in Unit O of Section 15, Township 25 North, Range 11 West, NMPM, San Juan County, New Mexico.

(2) That the subject waterflood project is hereby designated the Northeast Bisti Waterflood Project and shall be governed by the provisions of Rules 701, 702, and 703 of the Commission Rules and Regulations.

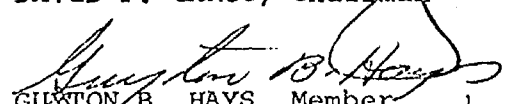
(3) That monthly progress reports of the waterflood project herein authorized shall be submitted to the Commission in accordance with Rules 704 and 1120 of the Commission Rules and Regulations.

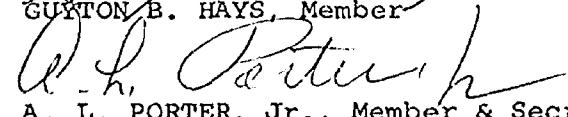
(4) That jurisdiction of this cause is retained for the entry of such further orders as the Commission may deem necessary.

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

STATE OF NEW MEXICO  
OIL CONSERVATION COMMISSION

  
DAVID F. CARGO, Chairman

  
GUXTON B. HAYS, Member

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

S E A L

esr/

State of New Mexico  
Oil Conservation Commission



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

Re: Case No. 3537  
Order No. R-3201  
Applicant:  
**Texaco Inc.**

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.

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

Hobbs OCC       x        
 Artesia OCC                     
 Aztec OCC       x        
 State Engineer       x      

Other \_\_\_\_\_

TEXACO  
INC.

PETROLEUM PRODUCTS



P. O. Box 810  
Farmington, New Mexico  
87401

APR 8 AM 10 05

April 7, 1967

Mr. A. L. Porter, Jr.  
State of New Mexico  
Oil Conservation Commission  
P. O. Box 2088  
Santa Fe, New Mexico 87501

Dear Sir:

Reference to your letter of March 28, 1967 to Mr. Booker Kelly of White, Gilbert, Koch and Kelly concerning our Northeast Bisti Waterflood Project.

This is to advise you our Northeast Bisti Unit Well No. 3 was placed on water injection status at 9:15 PM on April 5, 1967.

Yours very truly,

*C. P. Farmer*  
C. P. Farmer  
District Superintendent

WJK-LC

cc: Oil Conservation Commission  
Aztec, New Mexico

OIL CONSERVATION COMMISSION

P. O. BOX 2088

SANTA FE, NEW MEXICO

March 28, 1967

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

Dear Sir:

Reference is made to Commission Order No. R-3201, recently entered in Case No. 3537, approving the Texaco Northeast Bisti Waterflood Project.

Injection is to be through the one authorized water injection well, which shall be equipped with 2 3/8-inch tubing set in a packer at 4870 feet.

As to allowable, our calculations indicate that when the injection well has 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 420 barrels per day when the normal unit allowable is 70 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

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Mr. Booker Kelly  
March 28, 1967

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. POSTER, Jr.  
Secretary-Director

ALP/DSM/ir

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

Oil Conservation Commission  
Albuquerque, New Mexico

U. S. Geological Survey  
Farmington, New Mexico

C  
O  
P  
Y





STATE OF NEW MEXICO

STATE ENGINEER OFFICE

SANTA FE

S. E. REYNOLDS  
STATE ENGINEER

March 2, 1967

ADDRESS CORRESPONDENCE TO:  
STATE CAPITOL  
SANTA FE, NEW MEXICO 87501

*Case  
3537*

Mr. A. L. Porter, Jr.  
Secretary-Director  
Oil Conservation Commission  
Santa Fe, New Mexico

Dear Mr. Porter:

Reference is made to the application of Texaco, Inc., which seeks authority for a secondary recovery unit and the injection of water into the Gallup formation in connection therewith. The one injection well is proposed in the SW $\frac{1}{4}$  of the SE $\frac{1}{4}$  Sec. 15, T. 25 N., R. 11 W., San Juan County, Utah. It is assumed that the typing of the state is an error, since at all other places in the application the location is referred to as San Juan County, New Mexico.

Applicant's Exhibit C, which is a diagrammatic sketch of the proposed injection well, indicates that the packer on the end of the 2  $\frac{3}{8}$  inch tubing be set well below the top of the cement surrounding the 5 $\frac{1}{2}$  inch casing and therefore, this office offers no objection to the granting of the application, provided the well is completed, equipped and operated in the manner indicated by Exhibit C in the application.

FEI/ma  
cc-W. B. Kelly

Yours truly,

S. E. Reynolds  
State Engineer

By: *Frank E. Irby*  
Frank E. Irby  
Chief  
Water Rights Div.

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EXAMINER HEARING

IN THE MATTER OF:

Application of Texaco Inc. for a water-flood project, San Juan County, New Mexico.

) Case No. 3537

BEFORE: DANIEL S. NUTTER, Examiner

TRANSCRIPT OF HEARING

MR. NUTTER: Call Case 3537.

MR. HATCH: Application of Texaco, Incorporation for a waterflood project, San Juan County, New Mexico.

(Whereupon, Applicant's Exhibits 1, 2, and 3 marked for identification.)

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

(Witness sworn.)

H. F. S T R A W, called as a witness herein, having been first duly sworn, was examined and testified as follows:

DIRECT EXAMINATION

BY MR. KELLY:

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

A My name is H. F. Straw, S-t-r-a-w, employed by Texaco, Incorporated as District Engineer, Farmington District.

Q Have you previously testified before this Commission?

A Not in this State.

Q Would you briefly give us your education background and experience?

A I graduated from the University of Texas in 1951 with a degree in Petroleum Engineering. At that time, I started my

permanent employment with Texaco and have been with them since that date. I spent approximately thirteen years along the Texas Gulf Coast in various capacities for Texaco, with the majority of this time being spent in reservoir work, with the latter two years in the Division Office for Property Acquisition and Evaluations.

Q As a part of your professional experience, have you been familiar with the subject application?

A Yes, sir, I have.

MR. KELLY: Are the witness' qualifications acceptable?

MR. NUTTER: They are.

A I have spent some time in the Northern Rockies as District Engineer in our Billings District.

Q (By Mr. Kelly) What, basically, does Texaco seek in this application?

A It seeks a request for approval or an order from the Commission authorizing waterflood operations in our Northeast Bisti Unit and the main purpose of the hearing is to designate Texaco as operator of the injection well which is now known as the Northeast Bisti Unit Well Number 3, which will be used for water injection. This well was approved for injection by Order Number R-2524, I believe, dated July 16th, 1963, but with Skelly as the operator of the well.

Q So actually, what we have here is an existing and

approved waterflood project with the particular well already approved, and the only thing that is actually different is that Texaco will be the operator other than Skelly?

A Yes, sir.

Q Now, referring to what has been marked Exhibit Number 1, would you locate the injection in the area which will be in this waterflood project?

A The project area will actually consist of the south half of the southeast quarter of Section 15 in 25 North, 11 West, and that well which is shown on that exhibit as Number 3 will be the injection well, and also the project area will encompass the west half of the northwest quarter of Section 23 in the same Township and Range.

Q Now, what is the meaning of the area shaded in blue there?

A That is the Northeast Bisti Unit.

Q As previously created?

A As previously created.

Q And Texaco is not participating in that unit?

A Texaco is the operator of the Northeast Bisti Unit but are not participating in the East Bisti Unit. The blue signifies the East Bisti Unit.

Q Now, where is your supply well?

A The proposed water supply well is marked here as a

Northeast Bisti Unit Number 4, which is in the southwest quarter of 14.

Q What's the present status of both your injection well and your supply well?

A The proposed water supply well is presently shut-in, uneconomical, and Well Number 3, which is the proposed water injection well, is presently an oil producing well.

Q And what's its current rate of production?

A Approximately three barrels a day.

MR. NUTTER: Which one is that, the proposed injection well?

A Yes.

Q (By Mr. Kelly) How about your Well Number 1, which will be the proration unit that will get the advantage of the injection allowable?

A That is approximately ten barrels a day.

Q Would you say that this area of the Bisti Field is in the advance stage of depletion?

A Yes, sir, I would.

Q Now, referring to what has been marked Exhibit Number 2, would you show the interval that you are going to be injecting into and explain that to the Examiner?

A Exhibit Number 2 is an induction electric log on Texaco's Navajo A Lottie's Number 1, which is now called the

dearnley-meier

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Northeast Bisti Unit Well Number 3. This portion of the log shows the Gallup zone that we propose to inject into and also shows the perforated interval.

Q Referring to Exhibit Number 3, which is a diagrammatic sketch?

A Exhibit 3 is the proposed diagrammatic sketch of the injection well. This diagram shows the casing, the diameter and seating depth, and hole size, the cement and the estimated cement tops, the perforation and open hole interval of this well, the tubing strings and depths and the type and location of the injection packer.

Q Has this been approved by the State Engineer's Office?

A Yes, it has. This diagram also signified both to us and I think to the State Engineer, that the injection of the water into the Gallup zone will be contained to this formation.

Q In your opinion, there will be no migration of fluids to other zones?

A No, sir, there will not be, in my opinion.

Q What is the type of water that will be injected.

A The water will be Mesaverde water, which is the same water source that is used in the East Bisti Unit.

Q Has the flood project in the East Bisti Unit been as successful as predicted?

A In my opinion, it has not, in looking back at the original engineering committee reports which projected an apparent response from the waterflood, the actual production since injection has not followed this trend.

Q Now, in your opinion, will the granting of this application and the subsequent injection of fluid into your Well Number 3 probably increase the production from your acreage there?

A It's my opinion that will in effect create a greater sweep by the injection in this Well Number 3, both for the North Bisti Unit and East Bisti Unit.

Q So you will be not only actually helping yourself but helping adjoining other operators?

A Correct.

Q In that sense, the application will be a positive benefit to correlative rights?

A Yes, sir, it should offer protection of correlative rights and also prevention of any waste.

Q Were Exhibits 1 through 3 prepared by you or under your supervision?

A Yes, sir.

MR. KELLY: Just in closing, Mr. Examiner, I would like to state that when this was initially brought up to the Commission, I discussed this with Mr. Utz and he was a little



dearley meier

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unsure of the procedure we should follow, but since the only change was a designation of a new operator, he felt that the best thing would be just to come into a hearing so there would be no confusion with the designation as a waterflood, so actually, the only change is an existing --

MR. NUTTER: I discussed this with Mr. Utz.

MR. KELLY: That's all we have of Mr. Straw.

#### CROSS EXAMINATION

BY MR. NUTTER:

Q You mentioned that your well was producing ten barrels a day. What is the Number 2 doing?

A It's approximately three barrels a day, also.

Q So neither of the wells has received any benefit from the water injection in that Well 29 to the south?

A No. We have not noticed any benefit at all from the injection in the Bisti Unit.

Q When you start injecting into your Number 3, the wells south should receive assistance from the injection?

A Yes.

Q Do you think that the injection in Number 3 will migrate southeast and help the Well Number 3?

A Yes. This will back up and help the peripheral drive that is in existence in the southeast Bisti Unit.

Q Are there any plans for the East Bisti Unit to put

any wells on water injection around your unit?

A I have no direct knowledge that they will, now, at this time. We have approached them, of course, on a cooperative type agreement but have been unable to negotiate any type of agreement with the East Bisti Unit concerning the injection.

Q And this acreage, while it is included within the boundary of the East Bisti Unit, was not committed to the unit?

A True.

Q And has been unitized into its own unit area?

A Yes, it has, known as the Northeast Bisti Unit.

Q Are all of these lands involved here Federal lands?

A Yes, sir.

Q Has the USGS approved the Northeast Bisti Unit?

A Yes, sir, they have.

MR. NUTTER: Are there any other questions of Mr. Straw? He may be excused.

(Witness excused.)

MR. KELLY: I move the introduction of Exhibits 1 through three.

MR. NUTTER: Texaco's Exhibits 1 through 3 will be admitted in evidence.

(Whereupon, Applicant's Exhibits 1 through 3 offered and admitted in evidence.)

MR. NUTTER: Do you have anything further, Mr. Kelly?

MR. KELLY: That's all.

MR. NUTTER: Does anyone have anything they wish to offer in Case 3537?

MR. HATCH: I have a letter from the State Engineer dated March 2, 1967. "This office offers no objection to the granting of the application, provided the well is completed, equipped and operated in the manner indicated by Exhibit C in the Application." Signed Frank K. Irby.

MR. NUTTER: If there's nothing further in Case 3537, we will take the case under advisement and the hearing is adjourned.

(Whereupon, the Hearing was adjourned.)



I N D E X

WITNESS	PAGE
H. F. STRAW	
Direct Examination by Mr. Kelly	2
Cross Examination by Mr. Nutter	8

E X H I B I T S

NUMBER	MARKED FOR IDENTIFICATION	OFFERED	ADMITTED
App. Ex. 1 - 3	2	9	9

dearnley-meier reporting service, inc.

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STATE OF NEW MEXICO )  
 ) SS  
COUNTY OF BERNALILLO )

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

Witness my Hand and Seal this 10th day of March, 1967.

*Ada Dearnley*  
NOTARY PUBLIC

My Commission Expires:

June 19, 1967.

I do hereby certify that the foregoing is a complete and correct transcript of the hearing held by me on 3/8 3537

*Ada Dearnley*  
Notary Public

Docket No. 7-67

DOCKET: EXAMINER HEARING - WEDNESDAY - MARCH 8, 1967

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 3533: 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 in the Devonian formation in its Continental Nix Well No. 24-1, located 330 feet from the North line and 660 feet from the West line of Section 24, Township 18 South, Range 35 East, Reeves-Devonian Pool, Lea County, New Mexico.
- CASE 3534: Application of Newmont Oil Company for a waterflood expansion and unorthodox well locations, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks authority to expand its West Grayburg No. 4 Sand Waterflood Project, Loco Hills Pool, by drilling a water injection well at an unorthodox location 175 feet from the South line and 1500 feet from the East line of Section 10, and further, to drill two production wells at unorthodox locations 2600 feet from the North line and 1200 feet from the West line of Section 10, and 1190 feet from the North line and 150 feet from the East line of Section 11, all in Township 18 South, Range 29 East, Eddy County, New Mexico.
- CASE 3531 (Readvertised) Application of Texas Pacific Oil Company for a waterflood project, Lea County, New Mexico. Applicant, in the above-styled cause, seeks authority to institute a waterflood project in the South Eunice Pool by the injection of water into the Seven Rivers-Queen formations through six wells in Sections 5, 8 and 9, Township 22 South, Range 36 East, Lea County, New Mexico.
- CASE 3535: Application of Pennzoil Company for the creation of a new pool and for special pool rules, Lea County, New Mexico. Applicant, in the above-styled cause, seeks the creation of a new oil pool for Lower Wolfcamp production for its Gallagher State Well No. 1, located in Unit A of Section 3, Township 17 South, Range 34 East, Lea County, New Mexico, and for the promulgation of special pool rules therefor, including a provision for 80-acre spacing.

aminer Hearing March 8, 1967

CASE 3536: Application of Tenneco Oil Company for two unorthodox gas well locations, San Juan and Rio Arriba Counties, New Mexico. Applicant, in the above-styled cause, seeks approval for the unorthodox Blanco-Mesaverde Gas Pool location of its Dawson Federal Well No. 1, located 835 feet from the North line and 1150 feet from the West line of Section 26, Township 27 North, Range 8 West, San Juan County, and its Jicarilla "C" Well No. 8, located 1850 feet from the North line and 790 feet from the West line of Section 13, Township 26 North, Range 5 West, Rio Arriba County, New Mexico.

CASE 3206 (Reopened)

In the matter of Case No. 3206 being reopened pursuant to the provisions of Order No. R-2874-A which continued the special rules and regulations for the High Plains-Pennsylvanian Pool, Lea County, New Mexico, for an additional year. All interested parties may appear and show cause why the pool should not be developed on 80-acre or 40-acre spacing units.

CASE 3537: Application of Texaco Inc. for a waterflood project, San Juan County, New Mexico. Applicant, in the above-styled cause, seeks authority to institute a waterflood project in the Bisti Lower-Gallup Oil Pool by the injection of water into the Lower Gallup formation through its Northeast Bisti Unit Well No. 3 located in Unit O of Section 15, Township 25 North, Range 11 West, San Juan County, New Mexico.

ir/

BEFORE THE OIL AND GAS CONSERVATION COMMISSION  
OF THE STATE OF NEW MEXICO

IN THE MATTER OF THE APPLICATION OF )  
TEXACO INC. FOR AN ORDER APPROVING )  
INJECTION OF WATER INTO THE GALLUP )  
FORMATION FOR THE PURPOSES OF SECON- )  
DARY RECOVERY AND DESIGNATION OF A )  
WATERFLOOD PROJECT AREA IN THE NORTH- )  
EAST BISTI UNIT, SAN JUAN COUNTY, )  
NEW MEXICO )

*Case 2537*

APPLICATION

COMES NOW, the applicant, TEXACO Inc., a Delaware Corporation, duly authorized to do business in the State of New Mexico, and respectfully presents this application to the New Mexico Oil Conservation Commission, and in support of this application alleges that:

1. Applicant will be the operator of the Northeast Bisti Unit located in San Juan County, New Mexico.

2. The Northeast Bisti Unit, which comprises 480 acres more or less, is delineated as shown on Exhibit "A", attached hereto, and is described as follows:

San Juan County, New Mexico  
Township 25 North, Range 11 West  
Section 14: SW $\frac{1}{4}$   
Section 15: SE $\frac{1}{4}$   
Section 23: NW $\frac{1}{4}$

3. Exhibit "A" shows the location of the proposed injection well, all other wells within a radius of two miles from the proposed injection well, the formation from

*Robert M. Muel*  
*2-24-67 R*



which said wells are producing or have produced, and the lessees within a two-mile radius.

4. The proposed injection well is the Northeast Bisti Unit Well No. 3, located in the SW $\frac{1}{4}$ SE $\frac{1}{4}$ , Section 15, Township 25 North, Range 11 West, San Juan County, Utah.

5. Applicant has attached hereto as Exhibit "B" a log of the proposed injection well.

6. Applicant has attached hereto as Exhibit "C" a diagrammatic sketch of the proposed injection well showing all casing strings, including diameters and setting depths, quantities used and tops of cement, perforated or open hole intervals, tubing strings, including diameters and setting depths, and the type and location of packers.

7. The formation into which injection will be made is the Gallup Formation at a depth of approximately 5,000 feet. The fluid to be injected initially will be water obtained from the Mesaverde Formation in Northeast Bisti Unit Well No. 4 (SW $\frac{1}{4}$ SW $\frac{1}{4}$  Sec. 14, T25N, R11W), at a depth ranging from 2,092 feet to 2,535 feet. The anticipated daily injection rate is 700 barrels of water per day.

8. The proposed area for waterflood project designation is the S $\frac{1}{2}$ SE $\frac{1}{4}$ , Section 15, and the W $\frac{1}{2}$ NW $\frac{1}{4}$ , Section 23, Township 25 North, Range 11 West, San Juan County, New Mexico.

9. Applicant has attached hereto as Exhibit "D" an affidavit showing that a complete copy of this application with all attachments has been sent to the State Engineer Office, Capitol Building, Santa Fe, New Mexico.

10. The name and address of the Unit Operator is  
Texaco Inc., P. O. Box 2100, Denver, Colorado 80201.

WHEREFORE, Applicant respectfully requests that this  
matter be set for hearing, that notice hereof be given as re-  
quired by law, and that upon evidence produced at such hearing,  
this Commission enter its order:

- a) Approving the proposed water injection project  
as set forth herein.
- b) Designating a waterflood project area as set  
forth herein.

Dated at Santa Fe, New Mexico this 17 day of February,  
1967.

Respectfully submitted,

TEXACO INC.

By WCB Kelly

WHITE, GILBERT, KOCH & KELLY  
Lincoln Building, P. O. Box 787  
Santa Fe, New Mexico

# SCHLUMBERGER WELL SURVEYING CORPORATION

HOUSTON, TEXAS



## Induction-Electrical Log

COUNTY SAN JUAN, N.M.  
FIELD or LOCATION BISTI  
WELL NAVAJO ALLOTTEES  
"0" #1  
COMPANY THE TEXAS COMPANY

COMPANY THE TEXAS  
COMPANY  
WELL NAVAJO ALLOTTEES  
"0" #1  
FIELD BISTI  
LOCATION SEC. 15-25N-11W  
COUNTY SAN JUAN  
STATE NEW MEXICO

### Other Surveys

ML

### Location of Well

660' FR S/L  
1980' FR E/L  
SEC. 15-25N-11W

Elevation: D.F.: 6400'  
K.B.: 6401'  
or G.L.: 6390'

FILING No.

RUN No. ONE  
Date 3-28-58  
First Reading 4953  
Last Reading 300  
Feet Measured 4653  
Csg. Schlum. 300  
Csg. Driller 250  
Depth Reached 4969  
Bottom Driller 4970  
Depth Datum KB  
Mud Nat. CHEM GEL  
Dens. Visc. 9.8 112  
Mud Resist. 3.2 @ 62 F  
" Res. BHT 1.8 @ 21 F  
Rmf 1.6 @ 21 F  
Rmc 1.5 @ 21 F  
pH 0.5 @  
Wtr. Loss 0.0 CC 30 min.  
Bit Size 7/8"  
Spcgs.—AM 16"  
MN 27 2"  
IND. 40"  
Opr. Rig Time 2 HRS  
Truck No. 2517 FARM  
Recorded By WOOD  
Witness TAYLOR

SPONTANEOUS-POTENTIAL  
millivolts

DEPTH  
feet

CONDUCTIVITY  
millimhos/m =  $\frac{1000}{\text{ohms. m}^2/\text{m}}$

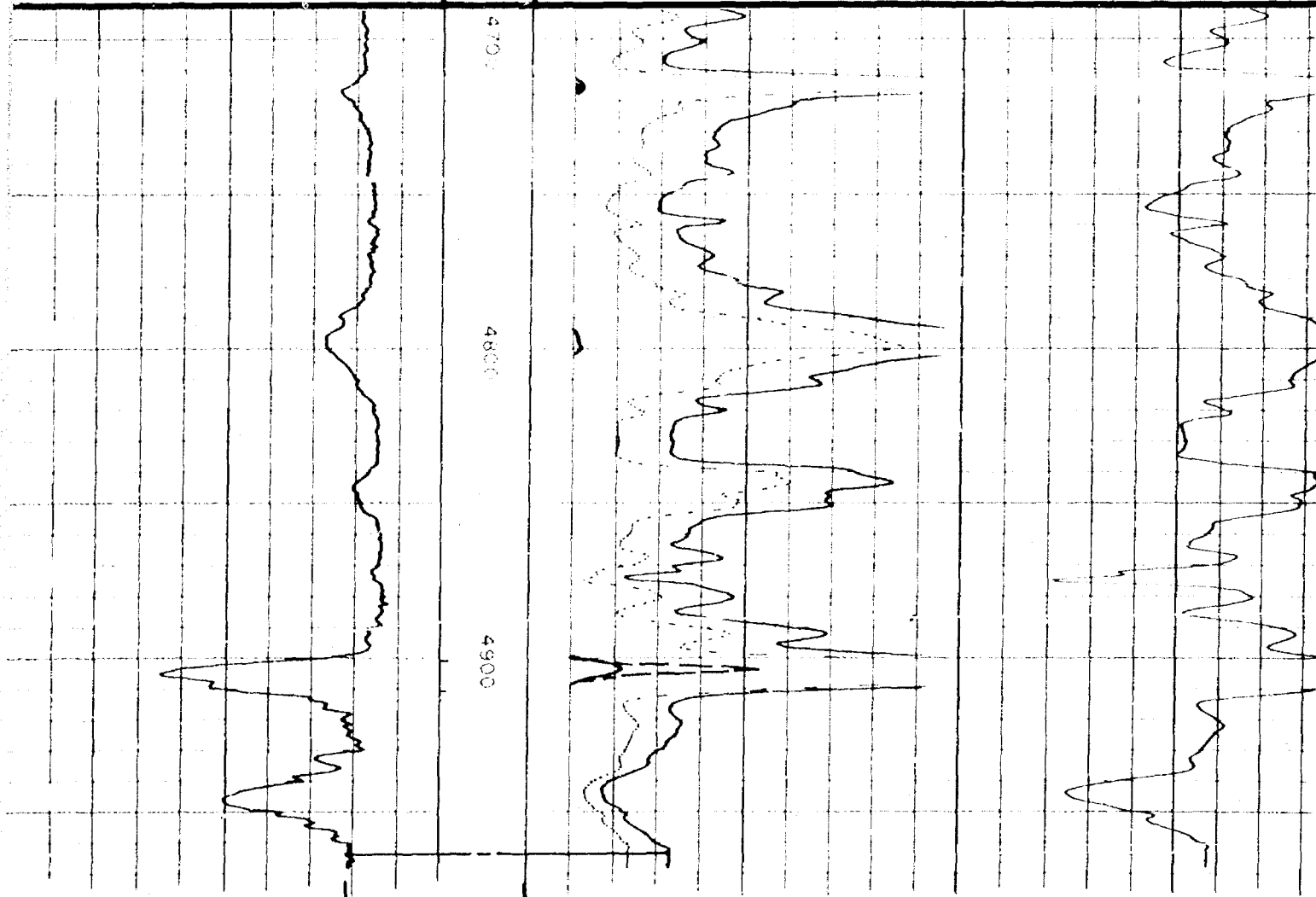


EXHIBIT "B"

TEXACO INC

INDUCTION ELECTRIC LOG  
NORTHEAST BISTI UNIT WELL NO. 3  
SAN JUAN COUNTY, NEW MEXICO  
DATE 9-29-66

All Depths D.F.  
D.F. Elev. 6385'

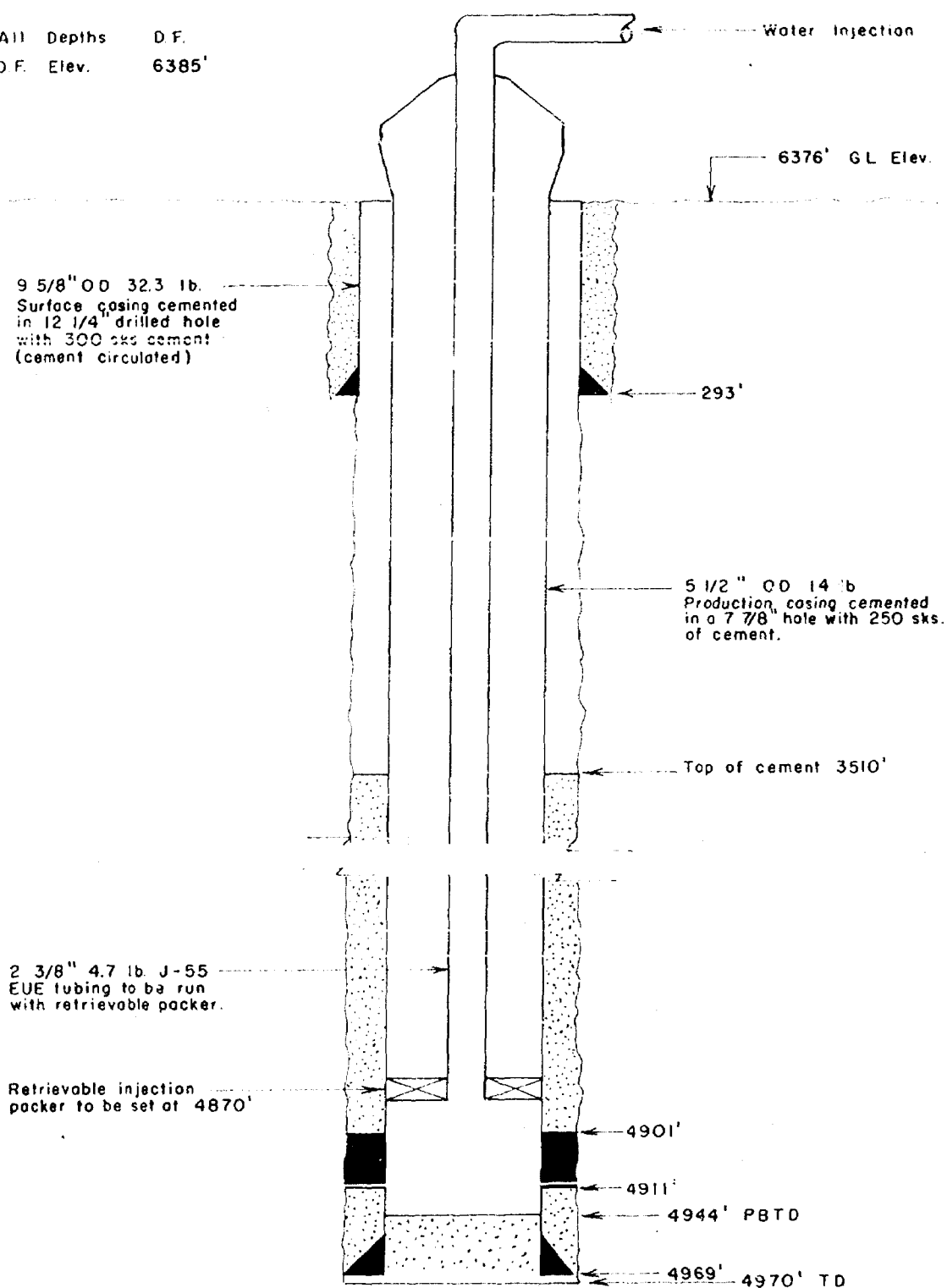


EXHIBIT "C"  
TEXACO INC.  
DIAGRAMMATIC SKETCH  
PROPOSED INJECTION WELL  
NORTHEAST BISTI UNIT WELL NO. 3  
SAN JUAN COUNTY, NEW MEXICO  
DATE: 9-29-66 J.M.G.

EXHIBIT "D"

A F F I D A V I T

W. B. KELLY, being duly sworn, deposes and says:

That he is over the age of twenty-one (21) years.

That on the 17 day of February, 1967, he deposited in the United States mail at Santa Fe, New Mexico, certified mail return receipt requested, postage thereon fully prepaid, a sealed envelope containing a copy of the Application of Texaco Inc. for an order by the New Mexico Oil Conservation Commission, approving injection of water into the Gallup Formation for the purposes of secondary recovery and designation of a waterflood project area in the Northeast Bisti Unit, San Juan County, New Mexico, dated February 17, 1967, to which this Affidavit is attached, addressed and directed to the following:

State Engineer Office  
Capitol Building  
Santa Fe, New Mexico

Further affiant saith not.

W. B. Kelly  
W. B. Kelly

STATE OF NEW MEXICO   )  
COUNTY OF SANTA FE   )

Subscribed and sworn to before me this 17 day of February, 1967.

Witness my hand and official seal.

Charles E. Cross  
Notary Public

My Commission Expires

2-26-1970