

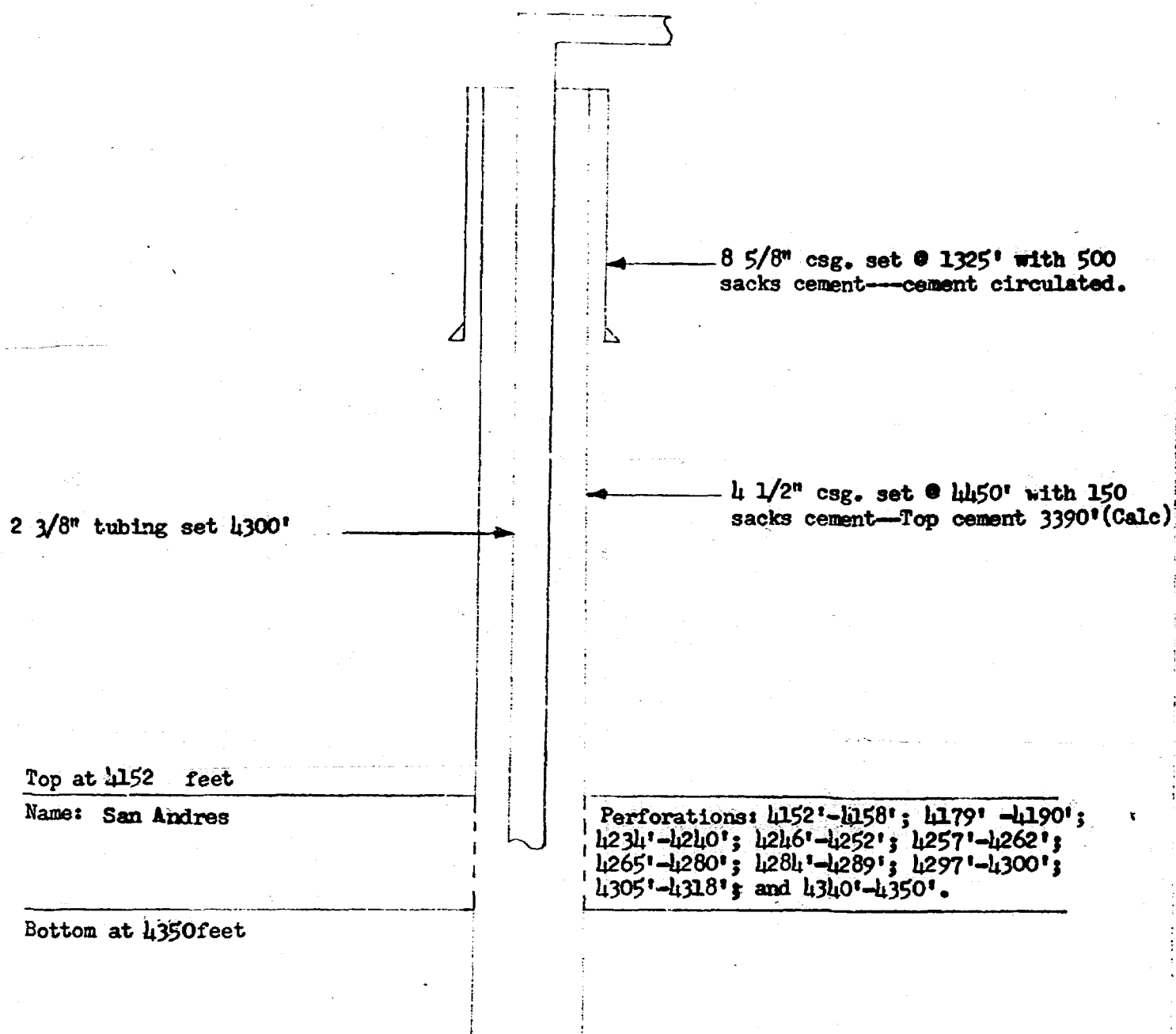
CASE 3053: Application of TEXACO
for a waterflood project, Lea
County, New Mexico.

12/1/64
12/1/64
12/1/64

CASE No.
3053

Application,
Transcripts,
Small Exhibits
ETC.

DIAGRAMMATIC SKETCH SHOWING COMPLETION INSTALLATION



COMPANY: TEXACO Inc.

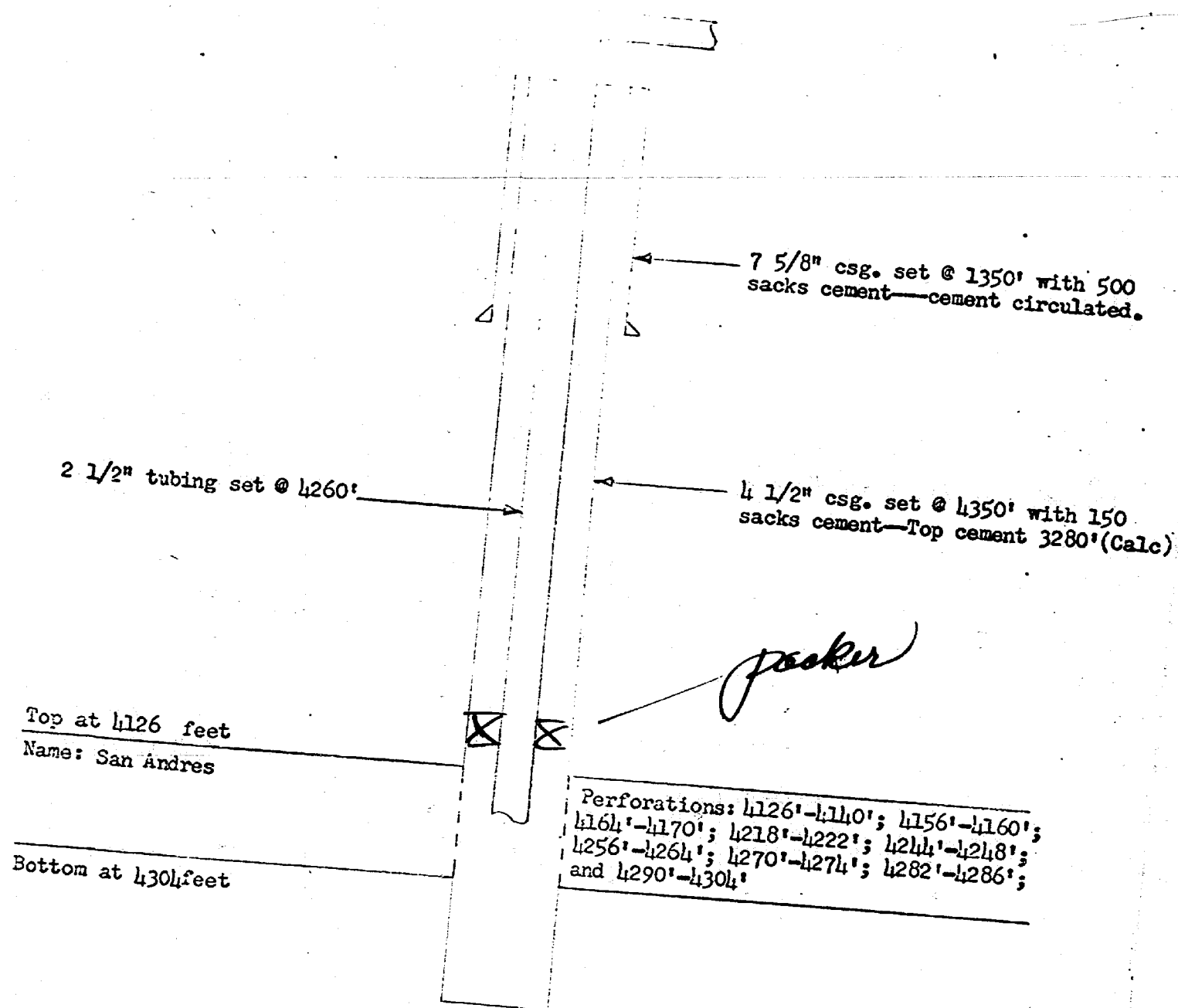
LEASE: State of New Mexico "O" (NCT-3) Well No. 20

FIELD: Maljamar Grayburg S. A. Lea County, N.M.

DATE: April 27, 1964

BEFORE EXAMINER UTZ	
OIL CONSERVATION COMMISSION	
EXHIBIT NO.	2-a
CASE NO.	3053

DIAGRAMMATIC SKETCH SHOWING COMPLETION INSTALLATION



COMPANY: TEXACO Inc.

LEASE: State of New Mexico "O" (NCT-3) Well No. 22

FIELD: Maljamar Grayburg S. A. Lea County, N.M.

DATE: April 27, 1964

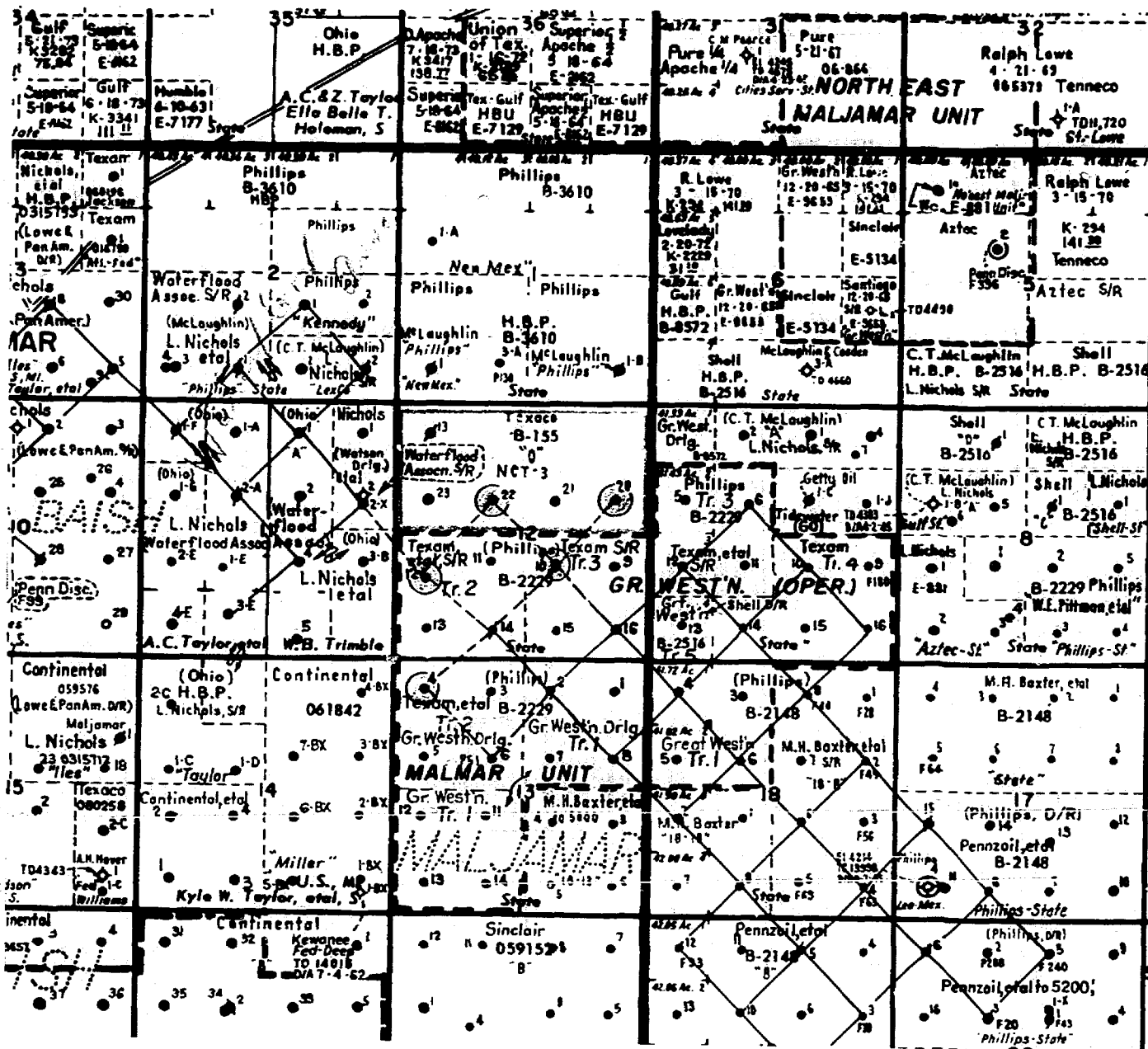
BEFORE EXAMINER UTZ

OIL CONSERVATION COMMISSION

EXHIBIT NO. 2-6

CASE NO. 3053

T
17
S



R-32-E

R-33-E



PROPOSED INJECTION WELLS

BEFORE EXAMINER UTZ
OIL CONSERVATION COMMISSION
Tepaco EXHIBIT NO. 1
CASE NO. 3053

TEXACO Inc.
Hobbs District
FIGURE NO. _____
STATE OF NEW MEXICO "ON" (NCT-3) LSE
MALJAMAR (GRAYBURG - S.A.) FIELD
LEA COUNTY, NEW MEXICO
Drawn By: _____ Date: 4/28/64

BEFORE THE
NEW MEXICO OIL CONSERVATION COMMISSION
Santa Fe, New Mexico
May 27, 1964

EXAMINER HEARING

IN THE MATTER OF:

Application of Texaco Inc. for a water-
flood project, Lea County, New Mexico.
Applicant, in the above-styled cause,
seeks authority to institute a water-
flood project in the Maljamar Pool by
the injection of water into the Grayburg-
San Andres formation through two wells
located in Section 12, Township 17
South, Range 32 East, Lea County, New
Mexico.

Case No. 3053

BEFORE: Elvis A. Utz, Examiner

TRANSCRIPT OF HEARING

DEARNLEY-MEIER REPORTING SERVICE, Inc.

FARMINGTON, N. M.
PHONE 325-1182

SANTA FE, N. M.
PHONE 963-3971

ALBUQUERQUE, N. M.
PHONE 243-6691

AFTERNOON SESSION

MR. UTZ: The hearing will come to order. Case 3053.

MR. DURRETT: Application of Texaco Inc for a water-flood project, Lea County, New Mexico.

MR. KELLY: Booker Kelly of Gilbert, White and Gilbert, Santa Fe, appearing on behalf of Texaco. We have one witness and ask that he be sworn.

(Witness sworn.)

(Whereupon, Texaco's Exhibits Nos. 1 through 3 marked for identification.)

CARL L. WHIGHAM, JR.

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

DIRECT EXAMINATION

BY MR. KELLY:

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

A I'm Carl L. Whigham, Jr., employed by Texaco Inc. as division proration engineer in Midland, Texas.

Q You have previously testified before this Commission, haven't you?

A Yes, sir.

MR. KELLY: Are the witness' qualifications acceptable?

MR. UTZ: Yes, sir.



DEARNLEY-MEIER REPORTING SERVICE, Inc.

FARMINGTON, N. M.
PHONE 325-1162

SANTA FE, N. M.
PHONE 983-3971

ALBUQUERQUE, N. M.
PHONE 243-6691

Q (By Mr. Kelly) Would you state what Texaco seeks by this application?

A Texaco Inc. respectfully requests approval of the New Mexico Oil Conservation Commission to conduct waterflood operations on Texaco's State of New Mexico "O" (NCT)-3 lease, consisting of the North Half of Section 12 in Township 17 North, Range 32 East in Lea County, New Mexico. That's in the Maljamar Field.

Q Referring to what has been marked Exhibit 1, would you point out the pertinent information to the Examiner?

A Exhibit No. 1 is a plat of the project area and it shows all other wells completed within a two and a half mile radius of the proposed injection wells which are Texaco's State of New Mexico "O" (NCT)-3 Well No. 20 and Well No. 22. This plat also shows a waterflood project called the Maljamar Unit which is operated by Great Western Drilling Company located immediately southeast of our proposed project area.

It also shows another waterflood project immediately west of Texaco's "O" lease which is operated by Waterflood Associates. All of the wells in the immediate vicinity, all of the wells in these two floods as well as the proposed operation are producing from the Maljamar Oil Pool.

Q And the injection wells and your two producing wells are in the defined horizontal and vertical limits of the Maljamar Pool?

A Yes, sir, that's correct.



Q And the proposed waterflood project then would be merely an extension of the existing waterfloods that are now west and south of you, is that right?

A Yes, sir, that's correct. That will fill out the pattern and cause complete operation all the way across this area from northwest down southeast.

Q You have received from the State Engineer's Office a letter, haven't you, approving -- showing no objection on their part as long as your cementing and packer program meets with their approval?

A Yes. We sent them a copy of the entire application and they wrote a letter date May 12, 1964, to Mr. A. L. Porter, Jr., stating that they had no objection to this proposal.

MR. KELLY: We ask that the Commission take note of that.

MR. UTZ: Yes, sir, it's a matter of record in the file.

Q (By Mr. Kelly) Also you filed with your application the logs on the two injection wells, is that correct?

A That's correct, we supplied the Commission with a copy of the log, and also the State Engineer.

Q Referring to what has been marked Texaco Exhibit 2-A and 2-B, would you explain that to the Commission?

A Exhibit 2-A and 2-B are diagrammatic sketches of the proposed injection wells. They're very similar. Both of them have 4-1/2 inch casing set through the producing interval. Surface



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PHONE 243-6691

casing in each of the two wells was cemented to the surface and the producing string of casing in Well No. 20 was cemented with 150 sacks of cement which indicates a calculated top of the cement of 3,390 feet. Similarly, Well No. 22 is cemented with 150 sacks of cement and the calculated top of the cement for this well would be 3,280 feet.

These sketches show that the Grayburg-San Andres formation is perforated at the approximate interval of 4100 feet down to approximately 4300 feet. It is proposed to inject water into these same perforations through tubing beneath the packer.

Q In your opinion, the installation that you have described would sufficiently protect against the water going into any other zone?

A Yes.

Q Is this pool a solution gas drive pool?

A Yes, it is.

Q Referring to what has been marked Texaco's Exhibit 3, would you briefly explain that to the Commission?

A Exhibit 3 is the production performance representation for this lease. It shows the monthly gas production, monthly oil production, and monthly water production for the first four wells located on the State of New Mexico "O" (NCT)-3 lease. It is noted that the monthly oil production has declined to approximately 350 to 400 barrels of oil per month, which averages about three barrels



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PHONE 243-6691

per well per day. The water production averages out to be at approximately the same rate. The monthly gas production has declined to approximately 2,000 Mcf per month.

These curves are drawn to show December, 1963 production. It may be noted that the May issue of the gas-oil ratio schedule for District 1 shows that Well No. 20 tested three barrels of oil per day with a gas-oil ratio of 1938. Well No. 21 tested three barrels of oil per day with a gas-oil ratio of 1680. Well No. 22 tested three barrels of oil per day with a gas-oil ratio of 1,010; and Well No. 23 tested at a rate of eight barrels of oil per day with a gas-oil ratio of 1,648, so it is noted that the monthly gas production has declined somewhat since the last date shown on the production performance curves.

Q Are the subject wells here in advance stages of depletion?

A Yes, sir, they are.

Q You are going to be injecting water into the wells; is that fresh or salt water?

A Fresh water.

Q What is your source of water?

A We have entered into an agreement with Great Western Drilling Company to purchase water from their Maljamar Unit, which in turn is obtained from Yucca Water Company's water supply well located in the Northwest Northwest Quarter of Section 6, Township 17, 33 East in Lea County, New Mexico.



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PHONE 243-6691

Q How many barrels a day do you think you will be injecting?

A We will be injecting between 200 and 300 barrels of water per day into each of these two proposed injection wells.

Q Is that in line with what the other waterfloods are injecting?

A Yes, sir.

Q In other words, this is just a tie-in into the existing waterflood?

A Yes, it is.

Q What would be the effect if this application wasn't granted as far as Texaco is concerned?

A As far as Texaco is concerned, these wells are approaching the economic limit, and unless the producing rate can be stimulated by waterflood operations, it will be necessary to abandon these wells in the near future. Of course, it's also recognized that in the interest of conservation, additional oil recovery will be obtained from this particular lease.

Q So it would be premature abandonment?

A That is correct.

Q In your opinion, the granting of this application would protect correlative rights and prevent waste?

A Yes, sir.

Q Were Exhibits 1, 2-A and 2-B and 3 prepared by you or



under your supervision?

A Yes, sir.

MR. KELLY: We move the introduction of the exhibits.

MR. UTZ: Without objection, Exhibits 1, 2-A through 3-B will be accepted into the record in this case.

MR. KELLY: There's just 1, 2-A and B, and 3, for the record.

(Whereupon, Texaco's Exhibits Nos. 1, 2-A, 2-B, and 3 received in evidence.)

MR. KELLY: I have no further questions at this time.

CROSS EXAMINATION

BY MR. UTZ:

Q Is it your intention to fill the annulus with inert fluid in those two injection wells?

A Yes, it's planned to inject through tubing. The tubing will be plastic coated, injection will be below a packer, and the fluid in the annulus will be an inhibited fluid to prevent corrosion to the internal surface of the casing.

Q Are the two waterfloods on either side of you operating under Rule 701?

A As far as I know, they are.

Q It's your intention to operate under that Rule 701?

A Yes, it certainly is.

MR. UTZ: Any questions of the witness? He may be

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PHONE 243-6591



excused.

(Witness excused.)

MR. UTZ: Any other statements in this case? The case will be taken under advisement.

* * *

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 hearing to the best of my knowledge, skill and ability.

WITNESS my Hand and Seal this 10th day of June, 1964.

Ada Dearnley
NOTARY PUBLIC

My Commission Expires:

June 19, 1967.

hereby certify that the foregoing is a complete record of the proceedings in the Examiner hearing of Case No. 3053, heard by me on May 27, 1964.
Thurman D. [Signature]
Examiner
New Mexico Oil Conservation Commission

DEARNLEY-MEIER REPORTING SERVICE, Inc.

FARMINGTON, N. M.
PHONE 328-1182

SANTA FE, N. M.
PHONE 983-3271

ALBUQUERQUE, N. M.
PHONE 243-6691



DRAFT
JMD/esr

*Jda - need spec ltr of
wli fld trans.
Jee*

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:

Jee
CASE No. 3053

Order No. R- 2710

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

JMD

ASP

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9 o'clock a.m. on May 27, 1964, at Santa Fe, New Mexico, before Examiner Elvis A. Utz. ~~Examiner duly appointed by the Oil Conservation Commission of New Mexico, hereinafter referred to as the "Commission," in accordance with Rule 1214 of the Commission Rules and Regulations.~~

NOW, on this day of June, 1964, the Commission, a quorum being present, having considered the ~~application, the~~ testimony, ~~the record, evidence adduced,~~ and the recommendations of the Examiner, , and being fully advised in the premises,

FINDS:

- (1) That due public notice having been given as required by law, the Commission has jurisdiction of this cause and the subject matter thereof.
- (2) That the applicant, Texaco Inc., seeks authority to institute a waterflood project in the Maljamar Pool by the injection of water into the Grayburg-San Andres formation through two wells located in Section 12, Township 17 South, Range 32 East, NMPM, Lea County, New Mexico.
- (3) That the wells in the proposed project area are in an advanced state of depletion and should properly be classified as "stripper" wells.

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

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

IT IS THEREFORE ORDERED:

(1) That the applicant, Texaco Inc., is hereby authorized to institute a waterflood project in the Maljamar Pool by the injection of water into the Grayburg-San Andres formation through the following-described two wells located in Section 12, Township 17 South, Range 32 East, NMPM, Lea County, New Mexico:

(a) Texaco Inc. State of New Mexico "O" (NCT-3) well no 20 located 1980 feet from the North line and 660 feet from the East line.
(b) Texaco Inc. State of New Mexico "O" (NCT-3) well no 22 located 1980 feet from the North line and 1982 feet from the West line.

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

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

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

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

TEXACO
INC.

PETROLEUM PRODUCTS



MAIN OFFICE OCC

1964 APR 24 AM 8:17

DOMESTIC PRODUCING DEPARTMENT
MIDLAND DIVISION

Code 3053

P. O. BOX 2100
MIDLAND, TEXAS

April 23, 1964

REQUEST FOR HEARING
SECONDARY RECOVERY PROJECT
MALJAMAR FIELD
LEA COUNTY, NEW MEXICO

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

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

Gentlemen:

Texaco Inc. respectfully requests that an Examiner hearing be set on May 7, 1964, at Santa Fe, New Mexico, to consider its application for approval of a secondary recovery project in the Maljamar Field of Lea County, New Mexico. Approval will be requested to conduct secondary recovery operations by waterflooding on Texaco's State of New Mexico "O" NCT-3 Lease consisting of the N/2 of Section 12, T-17-N, S R-32-E. It is proposed to convert Well Nos. 20 and 22 from producing status to injection status. Well Nos. 21 and 23 will remain as producing wells. The only other well on this lease is a plugged and abandoned well in Unit D of Section 12. The producing reservoir underlying this lease in which secondary recovery operations by waterflooding is proposed is the Grayburg-San Andres Formation encountered at an approximate depth of 4100'. In support of our application we wish to state the following facts:

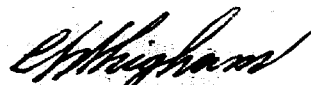
1. Texaco Inc. is the operator and the only working interest owner in the subject lease and the State of New Mexico is the only royalty interest owner.
2. There are presently four producing wells on the subject lease producing from the Grayburg-San Andres Formation in the Maljamar Oil Pool.

April 23, 1964

3. The proposed secondary recovery project will be in cooperation with a secondary recovery project, the Malmar Unit, operated by Great Western Drilling Company and adjoining Texaco's State of New Mexico "O" NCT-3 Lease on the south and southeast. The proposed project will also be cooperative with a similar secondary recovery project operated by Waterflood Associates adjoining Texaco's State of New Mexico "O" NCT-3 Lease on the west.

It is requested that this hearing be scheduled for May 7, since Texaco's representative will be in Santa Fe on that date in connection with another hearing. It is realized that this is short notice for requesting the hearing on that date but it would be greatly appreciated if the hearing could be expedited.

Yours very truly,



C. L. Whigham
Division Proration Engineer

CLW-MM

Docket No. 15-64

DOCKET: EXAMINER HEARING - WEDNESDAY - MAY 27, 1964

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

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

- CASE 3033:** (Continued from April 29, 1964 Examiner Hearing)
Application of Cherry Brothers and Cabot Corporation for the creation of a new oil pool and for special temporary 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 Austin State Well No. 1, located in Unit F of Section 19, Township 14 South, Range 36 East, Lea County, New Mexico, and for the establishment of temporary pool rules therefor, including a provision for 80-acre oil proration units.
- CASE 3046:** Application of Marathon Oil Company for a triple completion and a non-standard oil proration unit, Lea County, New Mexico. Applicant, in the above-styled cause, seeks approval of the triple completion (tubingless) of its State Warn A/c 1 Well No. 3, located in Unit F of Section 31, Township 17 South, Range 35 East, to produce oil from the Glorieta, Wolfcamp, and Abo formations, Vacuum Field, Lea County, New Mexico. Applicant further seeks the approval of a non-standard 80-acre proration unit comprising the SE/4 NW/4 and NE/4 SW/4 of said Section 31 to be dedicated to the aforesaid Wolfcamp and Abo zones in said well.
- CASE 3047:** Application of El Paso Natural Gas Company for three non-standard gas proration units and one unorthodox well location, San Juan County, New Mexico. Applicant, in the above-styled cause, seeks the approval of the following three non-standard gas proration units:
A 376.88-acre unit comprising the SE/4 and E/2 SW/4 and Lots 1, 2 and 3 of Section 9 and Lots 3 and 4 and the NW/4 SW/4 of Section 10;
A 357.84-acre unit comprising the SE/4, S/2 SW/4, and NE/4 SW/4 and Lots 1 and 2 of Section 10 and Lots 3 and 4 of Section 11;
A 359.20-acre unit comprising the S/2 and Lots 1 and 2 of Section 11, all in Township 32 North, Range 7 West, Blanco Mesaverde Pool, San Juan County, New Mexico. Applicant further seeks the approval of an unorthodox location for a well to be dually completed in the Mesaverde and Dakota formations at a point 1650 feet from the South line and 825 feet from the East line of said Section 9.
- CASE 3048:** Application of E. L. Fundginsland for compulsory pooling, San Juan County, New Mexico. Applicant, in the above-styled cause, seeks an order force-pooling all mineral interests in the Basin Dakota Gas Pool underlying the S/2 of Section 3, Township 29 North, Range 13 West, San Juan County, New Mexico.
- CASE 3049:** Application of Sohio Petroleum Company for a unit agreement, Lea County, New Mexico. Applicant, in the above-styled cause, seeks approval of the Littman San Andres Unit Area comprising 661 acres, more or less, of State and Federal lands in Sections 8, 9, 16, and 17, Township 21 South, Range 38 East, Lea County, New Mexico. The Unit Area also includes 1280 acres of fee land in Sections 5, 6, 7, 14, and 15, Block A-29, PSL, Andrews County, Texas.

CASE 3050: Application of Sohio Petroleum Company for a waterflood project, Lea County, New Mexico. Applicant, in the above-styled cause, seeks authority to institute a waterflood project in the Littman-San Andres Pool by the injection of water into the San Andres formation through 4 wells in Sections 8, 9 and 16, Township 21 South, Range 36 East, Lea County, New Mexico. Said project is to be operated in Lea County, New Mexico. Said project is to be operated in conjunction with applicant's proposed waterflood project in the Littman San Andres Unit in Andrews County, Texas.

CASE 3051: Application of Pan American Petroleum Corporation to amend Order No. R-2026, San Juan County, New Mexico. Applicant, in the above-styled cause, seeks amendment of Rules 7 and 10 of Order No. R-2026 to permit the production of more than two times top allowable from wells in its Northeast Hogback Unit Pressure Maintenance Project even though they offset wells outside the project area.

CASE 3052: Application of The Atlantic Refining Company to amend Order No. R-2210, San Juan County, New Mexico. Applicant, in the above-styled cause, seeks amendment of Rules 7 and 10 of Order No. R-2210 to permit the production of more than two times top allowable from wells in its Horseshoe Gallup Unit Pressure Maintenance Project even though they offset wells outside the project area.

CASE 3053: 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 the Maljamar Pool by the injection of water into the Grayburg-San Andres formation through two wells located in Section 12, Township 17 South, Range 32 East, Lea County, New Mexico.

CASE 3055: Application of Texas Pacific Oil Company for a dual completion, Lea County, New Mexico. Applicant, in the above-styled cause, seeks approval of the dual completion (conventional) of its J. P. Collier Well No. 1 located in Unit F of Section 10, Township 11 South, Range 33 East, Lea County, New Mexico, to produce oil from the North Bagley Upper and Lower Pennsylvanian Pools through parallel strings of tubing.

CASE 3056: Application of Texas Pacific Oil Company for a dual completion, Lea County, New Mexico. Applicant, in the above-styled cause, seeks approval of the dual completion (conventional) of its State "AF" Well No. 3, located in Unit L of Section 8, Township 18 South, Range 36 East, Lea County, New Mexico, to produce oil from the Abo and Wolfcamp formations, Vacuum Field, through parallel strings of tubing.

CASE 3057: Application of Charles O. Trimble for an oil treating plant permit, Lea County, New Mexico. Charles O. Trimble, dba Trimble Mud Service, in the above-styled cause, seeks authority pursuant to Rule 312 to install and operate an oil treating plant approximately one mile South and West of Eunice, New Mexico, for the purpose of processing and treating sediment oil.

CASE 3058: Application of Cities Service Oil Company to establish a special GOR limit, Lea County, New Mexico. Applicant, in the above-styled cause, seeks the establishment of a special gas-oil ratio limit of 6000 cubic feet of gas for each barrel of oil produced in the Reeves-Pennsylvanian Pool, Lea County, New Mexico.

CASE 3059: Application of Frank Darden for a unit agreement, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks approval of the Cowntown Unit Area comprising 280 acres, more or less, of State land in Sections 13 and 24, Township 18 South, Range 28 East, Eddy County, New Mexico.

CASE 3060: Application of Frank Darden for a waterflood, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks authority to institute a waterflood project in the Artesia Pool in his Cowntown Unit Area, by the injection of water into the Grayburg formation through two injection wells in Sections 13 and 24, Township 18 South, Range 28 East, Eddy County, New Mexico.

CASE 3061: Application of Kewanee Oil Company for a waterflood project, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks authority to institute a waterflood project in the Dayton Grayburg Pool by the injection of water into the Grayburg formation through one well in Section 25, Township 18 South, Range 26 East, Eddy County, New Mexico.

CASE 3062: Application of Kewanee Oil Company for a waterflood project, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks authority to institute a waterflood project in the Atoka Grayburg Pool by the injection of water into the Grayburg formation through one well in Section 13, Township 18 South, Range 26 East, Eddy County, New Mexico.



60-2023
MAIN OFFICE OCC

STATE OF NEW MEXICO MAY 13 AM 8:22
STATE ENGINEER OFFICE
SANTA FE

S. E. REYNOLDS
STATE ENGINEER

May 12, 1964

ADDRESS CORRESPONDENCE TO:
STATE CAPITOL
SANTA FE, N. M.

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.,
for secondary recovery project in the Maljamar Field
in Lea County in the N $\frac{1}{2}$ of Sec. 12, T. 17 S., R. 32 E.

This office offers no objection to the granting of
this application provided injection is through tubing
under packer.

Very truly yours,

S. E. Reynolds
State Engineer

FEI/ma
cc-Texaco, Inc.
F. H. Hennighausen

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

TEXACO
INC.

PETROLEUM PRODUCTS

DOMESTIC PRODUCING DEPARTMENT
MIDLAND DIVISION



P. O. BOX 3109
MIDLAND, TEXAS

May 6, 1964

REQUEST FOR HEARING
SECONDARY RECOVERY PROJECT
MALJAMAR FIELD
LEA COUNTY, NEW MEXICO

New Mexico Oil Conservation Commission (3)
P. O. Box 2088
Santa Fe, New Mexico 87501

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

Gentlemen:

By letter dated April 23, 1964, under the above subject, Texaco Inc. requested that an Examiner hearing be set on May 7, 1964, at Santa Fe, New Mexico, to consider its application for approval of the secondary recovery project in the above subject field. We have since been advised that the hearing could not be scheduled that quickly and we hereby request that the hearing, therefore, be scheduled for May 27, 1964. In addition to the information presented in Texaco's letter of April 23, 1964, we hereby forward additional data in support of this request. As stipulated by Rule 701 of the New Mexico Oil Conservation Commission, we submit a plat showing Texaco's State of New Mexico "O" NCT-3 Lease under which secondary recovery operations will be conducted. This plat also shows the Malmar Unit where waterflood operations are conducted by Great Western Drilling Company adjacent to and southeast of the Texaco State of New Mexico "O" Lease. The plat shows the waterflood project operated by Waterflood Associates adjacent to and northwest of Texaco's State of New Mexico "O" Lease. The two proposed injection wells covered by this application are shown on this plat as well as three proposed injection wells in the Malmar Unit which have already been approved but in which injection of water has not yet been initiated.

As specified by Rule 701, we also include a copy of the Lane Wells Acoustic log for both of the proposed injection wells with the formation tops marked thereon. A diagrammatic sketch of

DOCKET MAILED

Date 5-15-64
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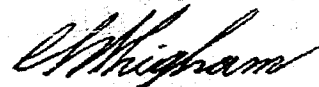
May 6, 1964

both injection wells is submitted which shows the installation of casing and tubing, amount of cement used in the installation of casing and the perforated interval from which the wells presently produce and into which water will be injected.

We submit with this application production performance curves for the subject lease which shows the monthly gas, oil, and water production from the Texaco State of New Mexico "O" NCT-3 lease. As stated in the previously mentioned letter, it is proposed to conduct secondary recovery operations by waterflooding in the Grayburg-San Andres reservoir encountered at an approximate depth of 4100'. It is anticipated that approximately 300 barrels of water per day will be injected into the subject wells at pressures ranging up to 2200 psi. These rates and pressures are based upon the performance of the Malmar Unit operated by Great Western Drilling Company under authority granted by Oil Conservation Commission Order No. R-2155. Arrangements have been made to purchase water under pressure from Great Western Drilling Company who in turn purchases the water from Yucca Water Company's water supply well located in the NW/4 of the NW/4 of Section 6, T-17-S, R-33-E, Lea County, New Mexico.

On this date a copy of this application with all attachments as mentioned above and a copy of our original letter dated April 23, 1964, requesting a hearing are being forwarded to the State Engineer's office requesting the approval of this project by the State Engineer. A copy of both of these letters are also being sent to the offset operators appearing on the attached list.

Yours very truly,

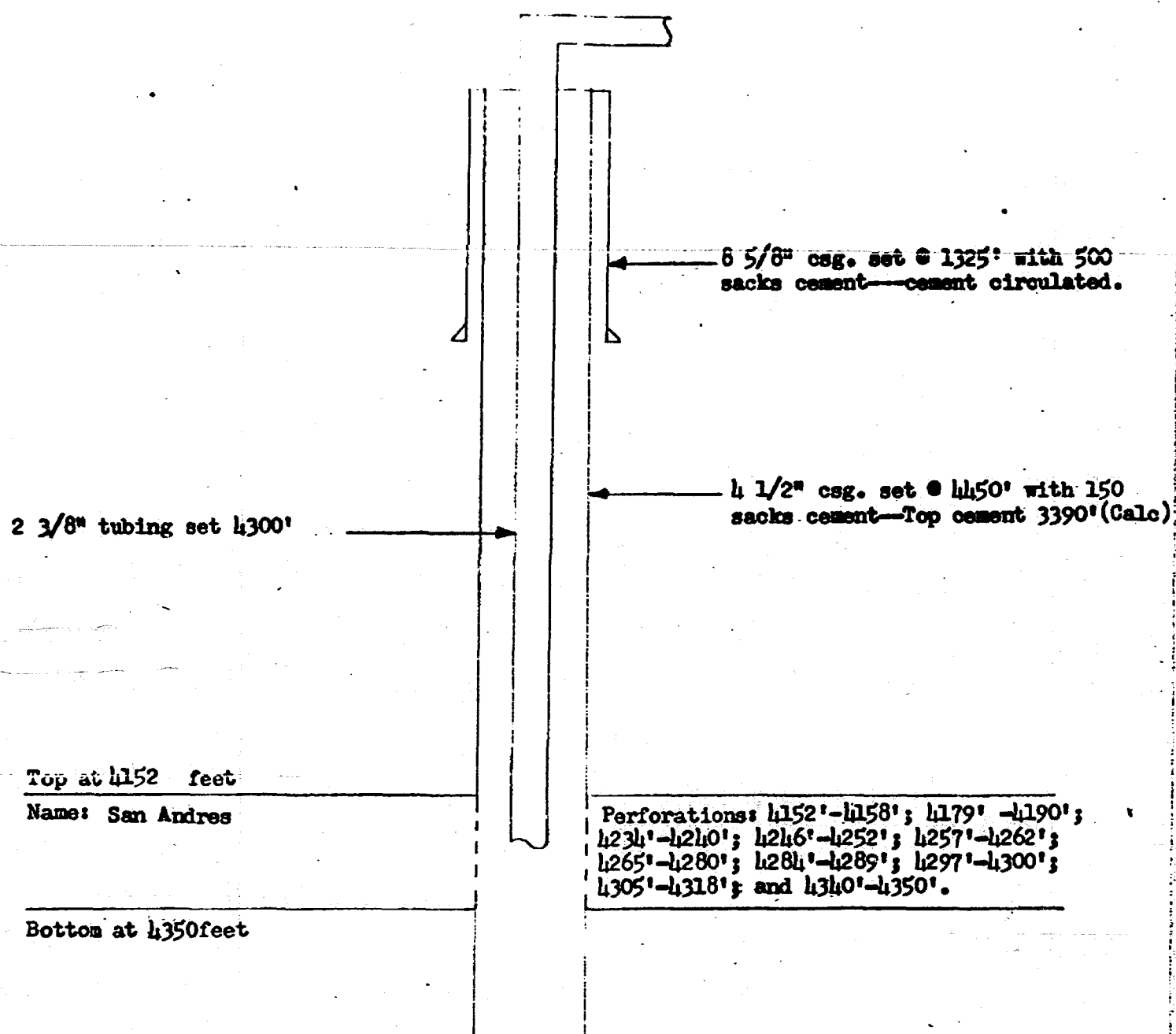


C. L. Whigham
Division Proration Engineer

CLW-MM
Attach.

cc: State Engineer's office - Santa Fe
NMOCC - Hobbs
Offset Operators
Mr. L. C. White
Mr. J. S. Rowe
Mr. W. B. Hubbard

DIAGRAMMATIC SKETCH SHOWING COMPLETION INSTALLATION



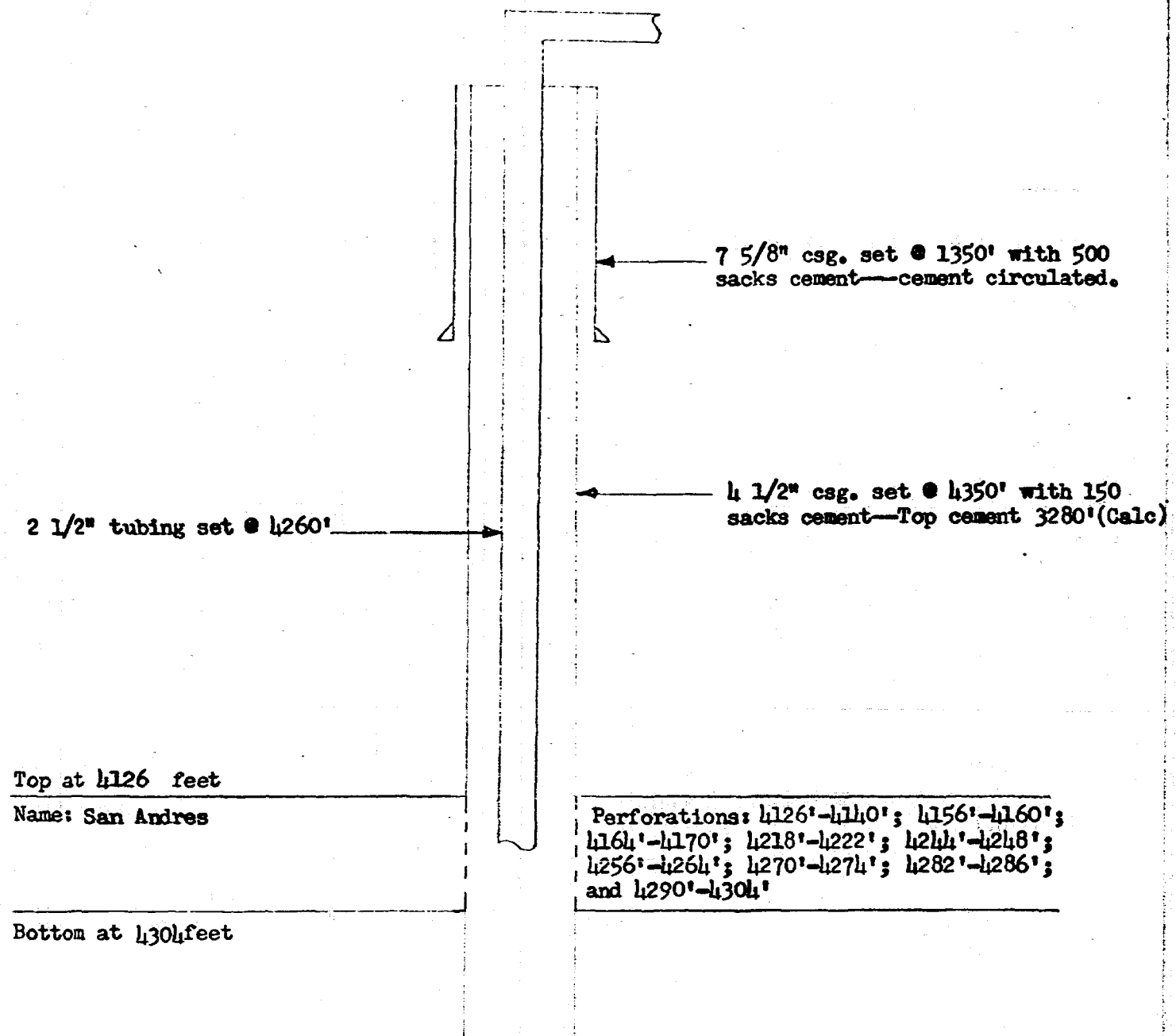
COMPANY: TEXACO Inc.

LEASE: State of New Mexico "O" (NCT-3) Well No. 20

FIELD: Maljamar Grayburg S. A. Lea County, N.M.

DATE: April 27, 1964

DIAGRAMMATIC SKETCH SHOWING COMPLETION INSTALLATION



COMPANY: TEXACO Inc.

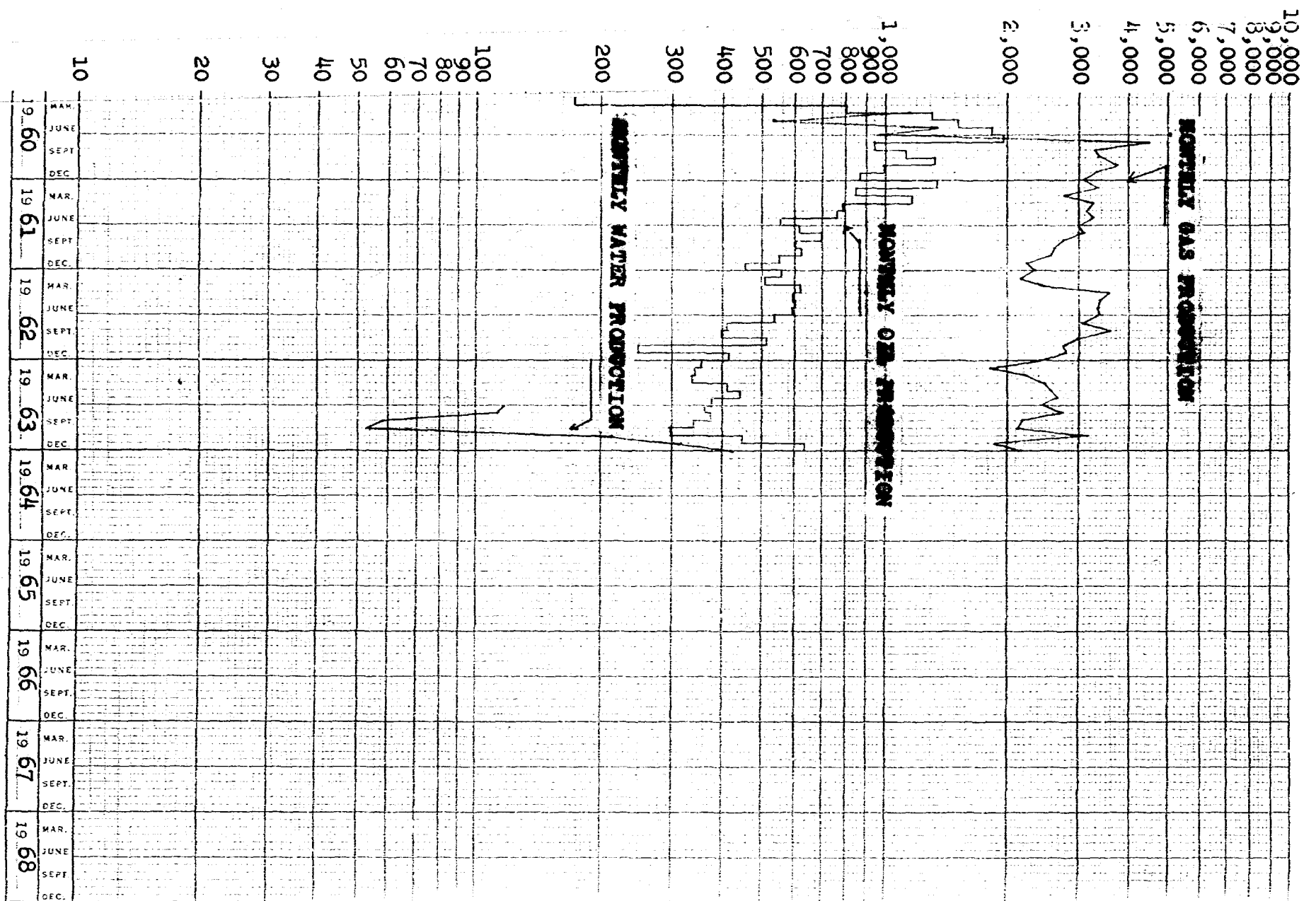
LEASE: State of New Mexico "O" (NCT-3) Well No. 22

FIELD: Maljamar Grayburg S. A. Lea County, N.M.

DATE: April 27, 1964

Case 3053

MONTHLY OIL PRODUCTION - Bbls.
 MONTHLY GAS PRODUCTION - MCF
 MONTHLY WATER PRODUCTION - Bbls.



TEXACO
INC.

PETROLEUM PRODUCTS

DOMESTIC PRODUCING DEPARTMENT
MIDLAND DIVISION



P. O. BOX 2088
MIDLAND, TEXAS

April 23, 1964

REQUEST FOR HEARING
SECONDARY RECOVERY PROJECT
MALJAMAR FIELD
LEA COUNTY, NEW MEXICO

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

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

Gentlemen:

Texaco Inc. respectfully requests that an Examiner hearing be set on May 7, 1964, at Santa Fe, New Mexico, to consider its application for approval of a secondary recovery project in the Maljamar Field of Lea County, New Mexico. Approval will be requested to conduct secondary recovery operations by waterflooding on Texaco's State of New Mexico "O" NCT-3 Lease consisting of the N/2 of Section 12, T-17-N, R-32-E. It is proposed to convert Well Nos. 20 and 22 from producing status to injection status. Well Nos. 21 and 23 will remain as producing wells. The only other well on this lease is a plugged and abandoned well in Unit D of Section 12. The producing reservoir underlying this lease in which secondary recovery operations by waterflooding is proposed is the Grayburg-San Andres Formation encountered at an approximate depth of 4100'. In support of our application we wish to state the following facts:

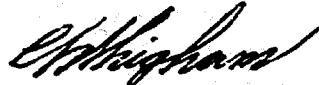
1. Texaco Inc. is the operator and the only working interest owner in the subject lease and the State of New Mexico is the only royalty interest owner.
2. There are presently four producing wells on the subject lease producing from the Grayburg-San Andres Formation in the Maljamar Oil Pool.

April 23, 1964

3. The proposed secondary recovery project will be in cooperation with a secondary recovery project, the Malmar Unit, operated by Great Western Drilling Company and adjoining Texaco's State of New Mexico "O" NCT-3 Lease on the south and southeast. The proposed project will also be cooperative with a similar secondary recovery project operated by Waterflood Associates adjoining Texaco's State of New Mexico "O" NCT-3 Lease on the west.

It is requested that this hearing be scheduled for May 7, since Texaco's representative will be in Santa Fe on that date in connection with another hearing. It is realized that this is short notice for requesting the hearing on that date but it would be greatly appreciated if the hearing could be expedited.

Yours very truly,



C. L. Whigham
Division Proration Engineer

CLW-MM

LIST OF OFFSET OPERATORS
MALJAMAR OIL POOL

Phillips Petroleum Company
P. O. Box 2130
Hobbs, New Mexico

Shell Oil Company
P. O. Box 1858
Roswell, New Mexico

Great Western Drilling Company
P. O. Box 1659
Midland, Texas

Waterflood Associates, Inc.
2211 Continental National
Bank Building
Fort Worth, Texas

TEXACO
INC.

PETROLEUM PRODUCTS

DOMESTIC PRODUCING DEPARTMENT
MIDLAND DIVISION



P. O. BOX 3109
MIDLAND, TEXAS

May 6, 1964

APPLICATION FOR SECONDARY RECOVERY PROJECT
TEXACO INC. STATE OF NEW MEXICO "O"
NCT-3 LEASE
MALJAMAR POOL
LEA COUNTY, NEW MEXICO

State Engineer's Office
Box 1079
Santa Fe, New Mexico

Gentlemen:

Attached hereto are two letters to the Conservation Commission requesting that a hearing be set to consider the application by Texaco Inc. to conduct secondary recovery operations by waterflooding under the above subject lease. All attachments as specified in Statewide Rule 701 supporting this application are included herewith. It is anticipated that this application will be scheduled for hearing May 27, 1964. Approval by the State Engineer's office of this application is requested.

Yours very truly,

C. L. Whigham
Division Proration Engineer

CLW-MM
Attach.

CLW 3853

TEXACO
INC.

PETROLEUM PRODUCTS

DOMESTIC PRODUCING DEPARTMENT
MIDLAND DIVISION



P. O. BOX 8109
MIDLAND, TEXAS

May 6, 1964

SECONDARY RECOVERY PROJECT
TEXACO STATE OF NEW MEXICO
"O" NCT-3 LEASE
MALJAMAR FIELD
LEA COUNTY, NEW MEXICO

All Offset Operators

Gentlemen:

Attached hereto are copies of two recent letters to the New Mexico Oil Conservation Commission requesting that a hearing be set to consider Texaco Inc.'s application for a waterflood project in the Maljamar Pool. As offset operators to Texaco's State of New Mexico "O" NCT-3 Lease under which waterflood operations are proposed, you are hereby duly notified of this application. The two attached letters will supply all the details pertaining to the proposal and it will be noted that this project will be in cooperation with Great Western's Malmar Unit to the southeast and Waterflood Associates' project to the northwest.

Yours very truly,

C. L. Whigham
Division Proration Engineer

CLW-MM
Attach.

FILE NO	COMPANY <u>TEXACO INC.</u>	
	WELL <u>STATE OF NEW MEXICO "O" NO. 3 NO. 22</u>	
	FIELD <u>ROBERTS</u>	
	COUNTY <u>LEA</u>	STATE <u>NEW MEXICO</u>
	LOCATION: 1980 FNL & 1980 FMI.	Other Services
SEC <u>12</u>	TWP <u>12.S</u>	RGE <u>32.E</u>
		Location

Permanent Datum		GROUND LEVEL		Bor. No.		K8 4230
Log Measured from K.O.B.				U. H. Above Permanent Datum		OF 42.640
Drilling Measured from K.O.B.						G4 423.0
Date	5-11-60					
Ran No.	1					
Depth - Cullter	435.0					
Depth - Logger	435.3					
Bottom Logged Interval	43.49					
Trip Logged Interval	50					
Coring - Offiter	7.5/8 @ 135.0					
Coring - Logger						
BH Size	5 3/8"					
Type Fluid in Hole	Salt Gel Choline 230,000 PPM					
Density and Viscosity	10.5 33					
pH and Fluid Loss	A					
Source of Sample	Mud Fil					
Rn @ Mean Temp.						
Res @ Mean Temp.						
Rac @ Mean Temp.						
Source of Res and Rac						
Rn @ BHT						
Rate Stone Cnt.						
Rate, Rec. Temp. Deg. F						
Temp. Min. and Location	459.6 Hobbs					
Analyzed by	Gleason					
Intermmed by	Mr. Birch					

Reproduced By
West Texas Electrical Log Service
Dallas 2, Texas

REFERENCE W9948B

9 COMPLETION RECORD

SPUD DATE

COMP DATE

DSF RECORD

CASING RECORD

PERFORATING RECORD

ACID. FRAC SHOT

12

GÖR

Y P

GP

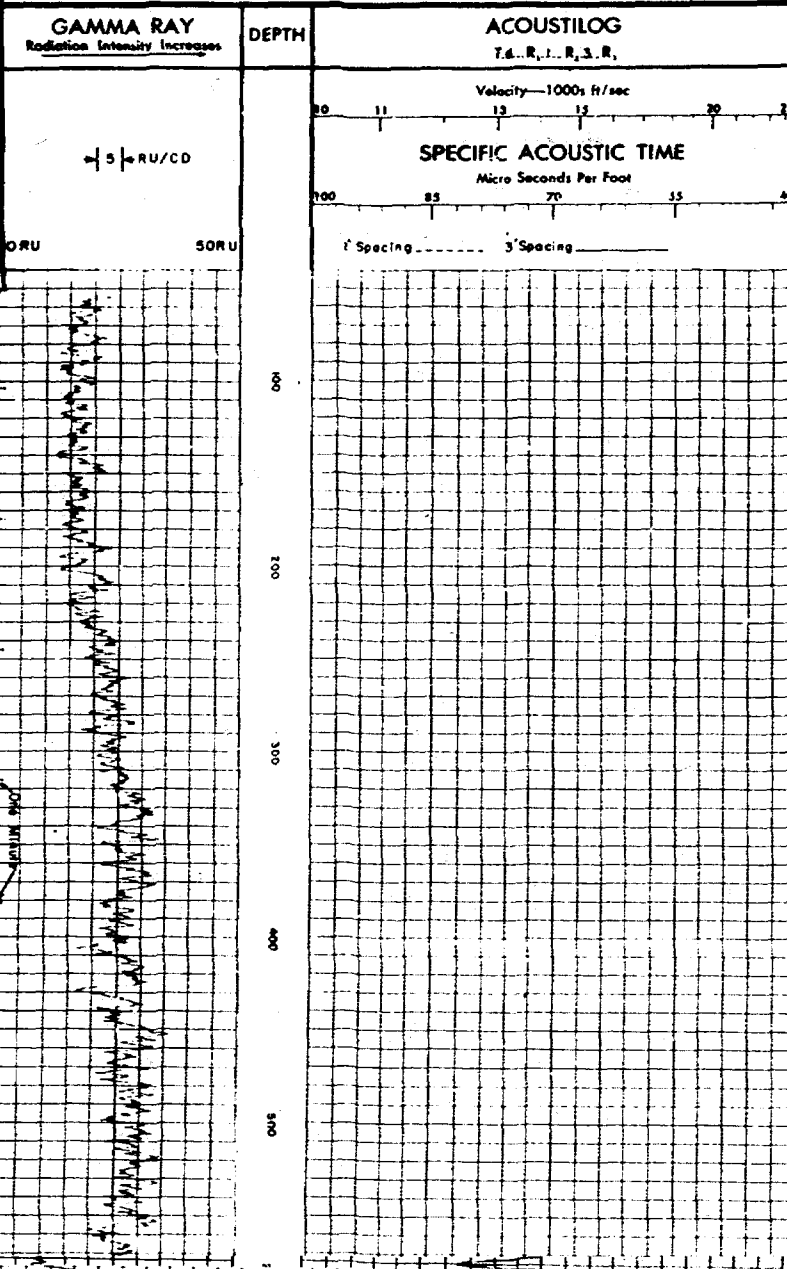
C. P.

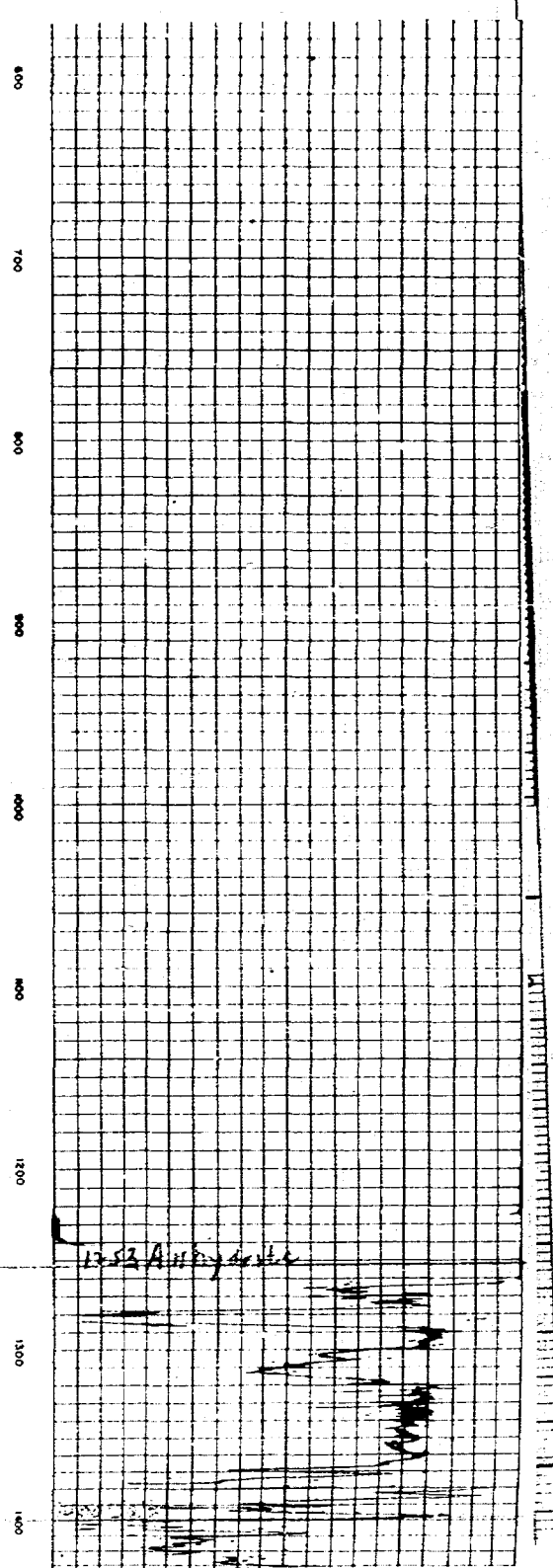
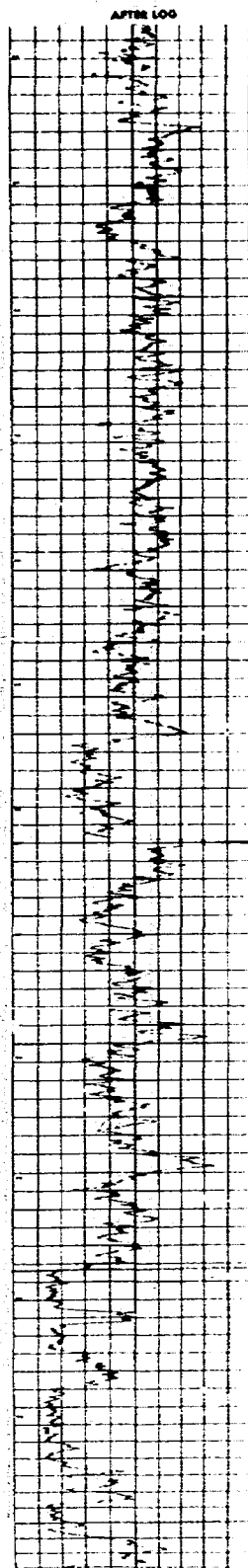
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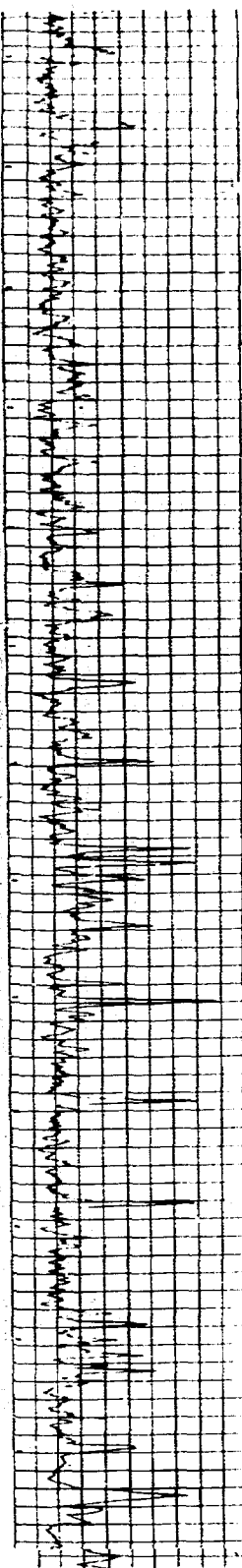
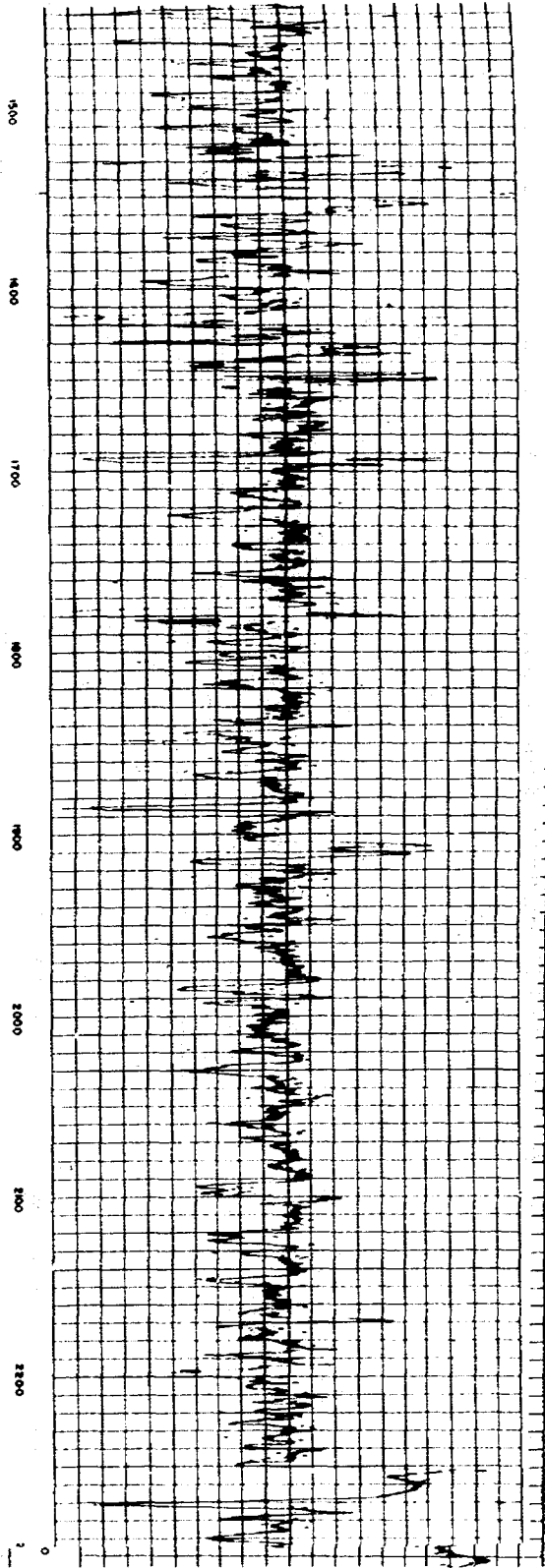
THIS RECORDING AND LOG CONTAINED HEREIN ARE THE PROPERTY OF THE U.S. GOVERNMENT AND ARE LOANED TO YOU BY THE U.S. GOVERNMENT. IT IS TO BE RETURNED TO THE U.S. GOVERNMENT AT THE END OF THE LOAN PERIOD.

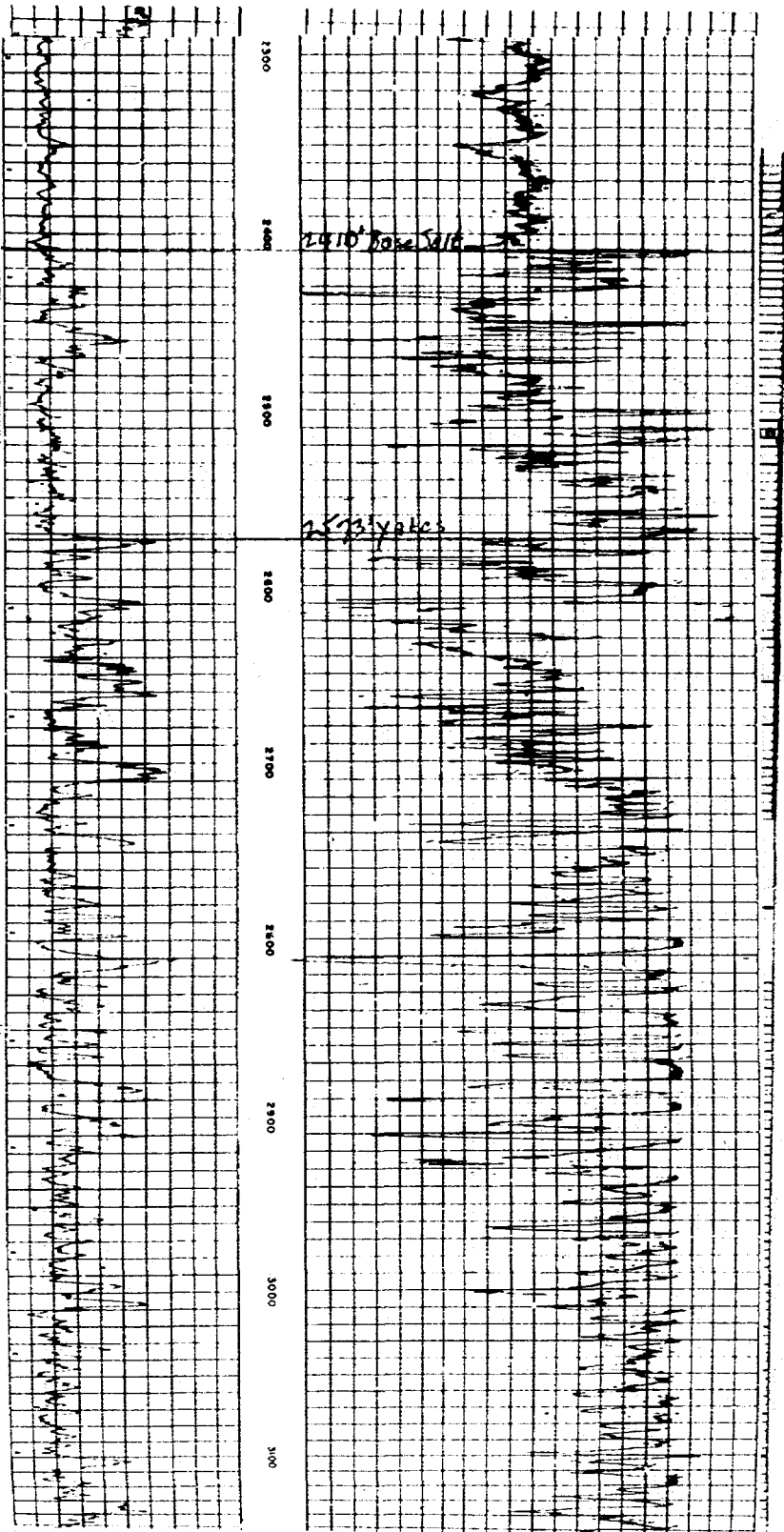
REMARKS:

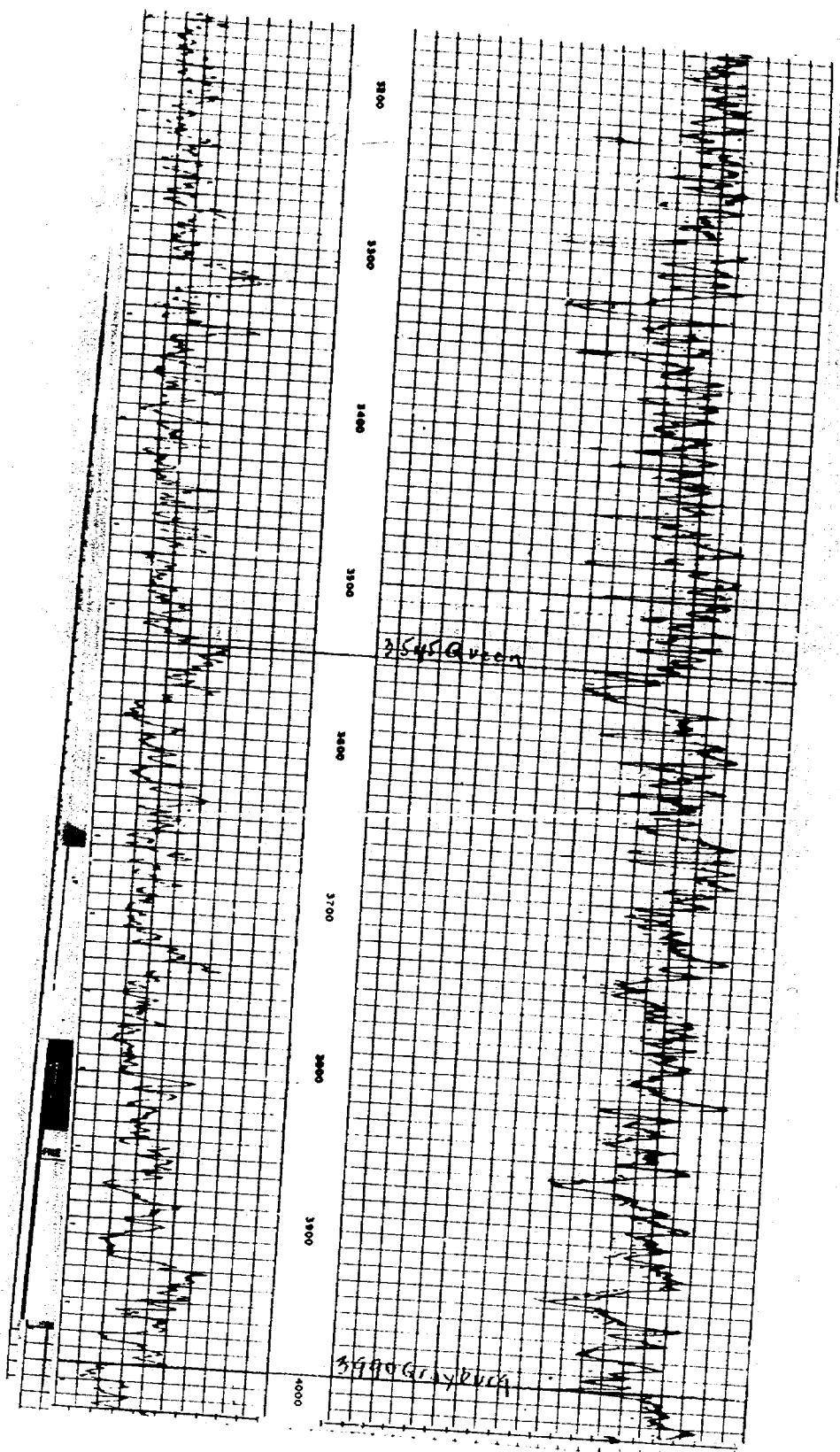
DETECTOR TYPE DAG
DETECTOR LENGTH 5'

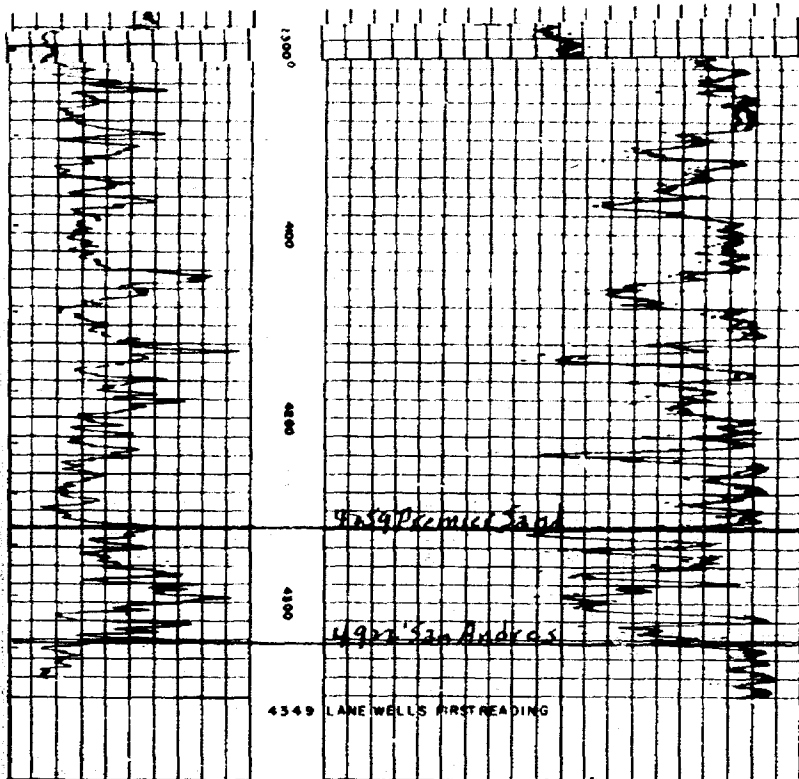




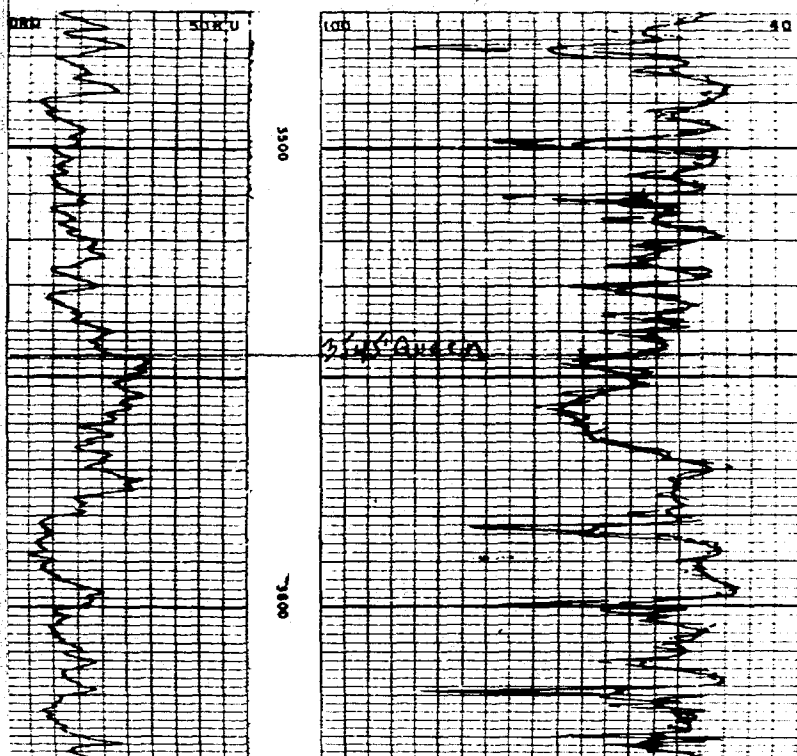


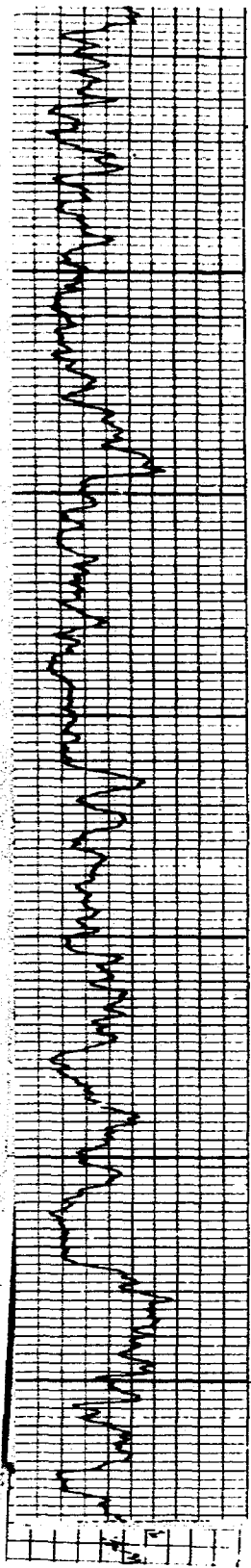






TEXACO INC.
STATE OF NEW MEXICO OCT-3 NO-22

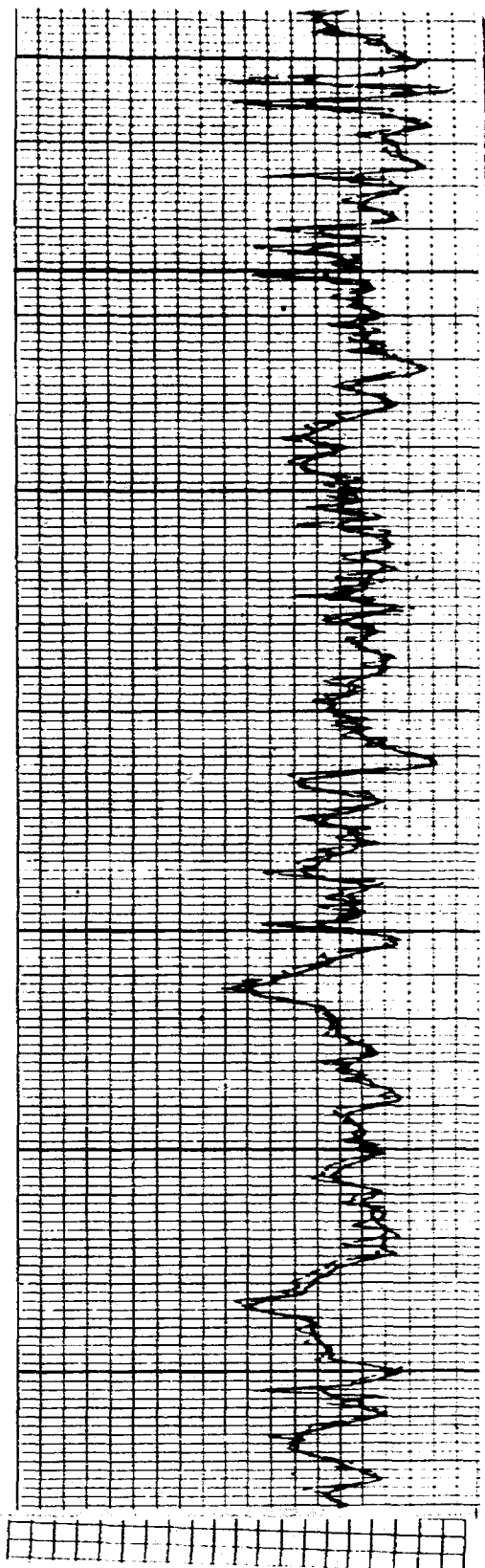


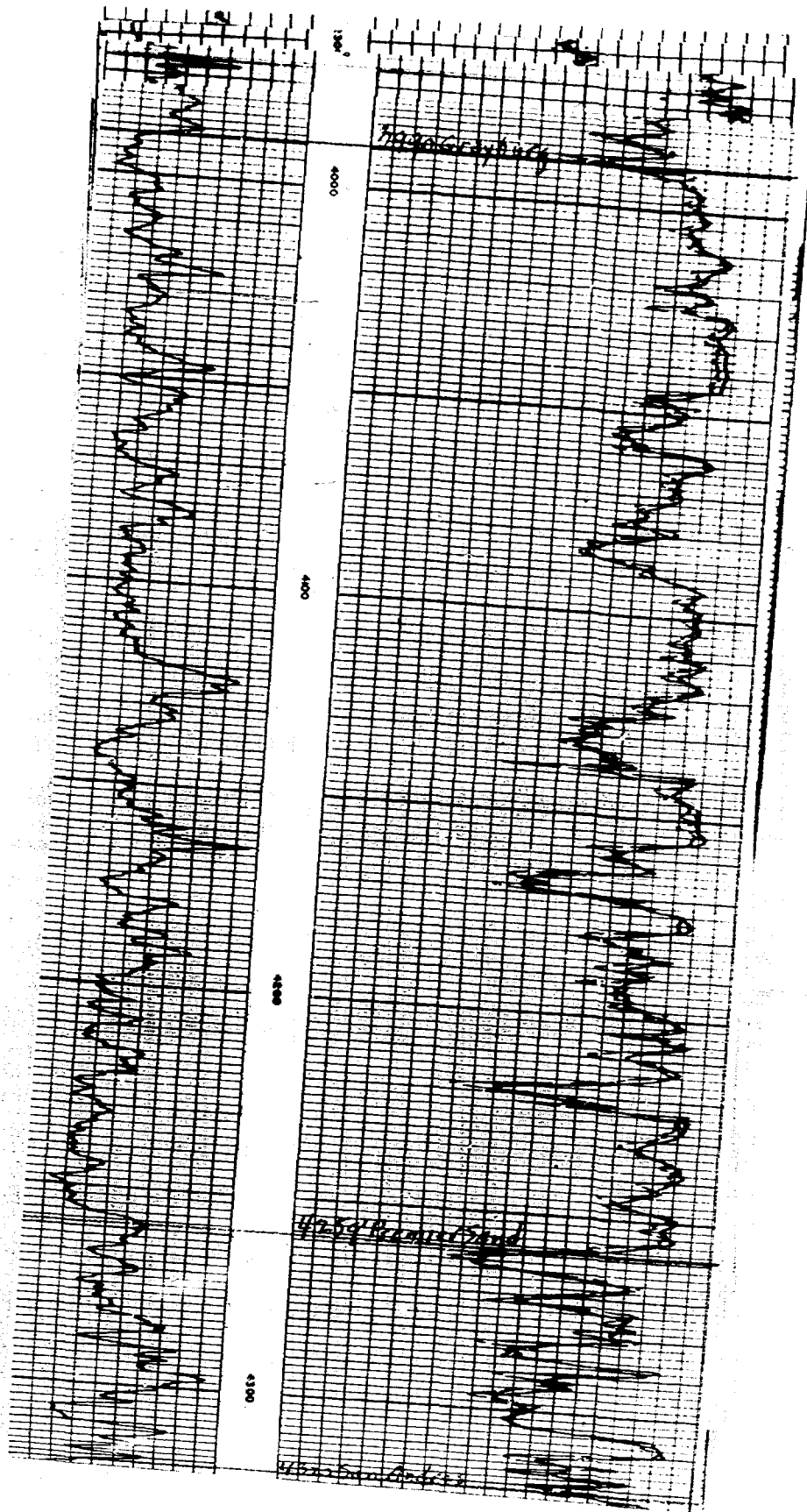


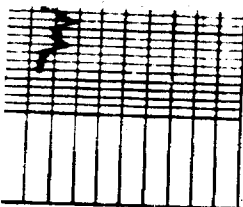
3700

3600

3500



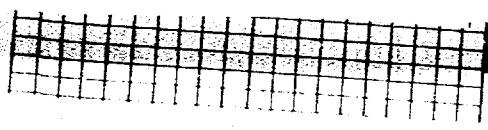
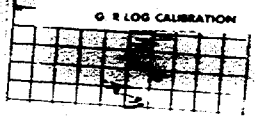
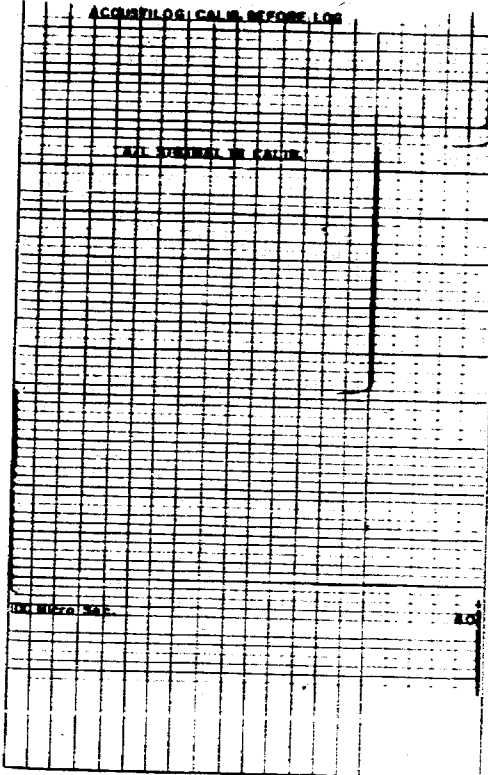
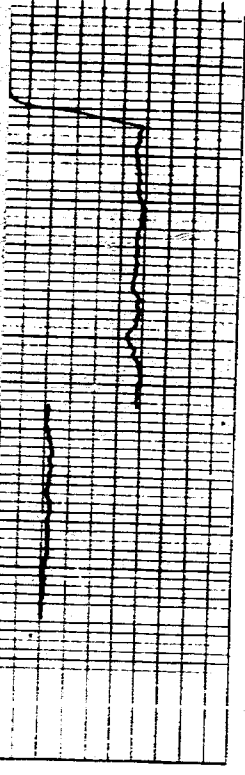


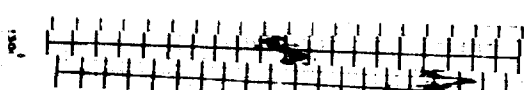
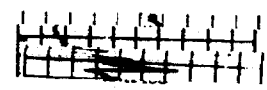


4348	LANE WELLS FIRST READING
4353	LANE WELLS TOTAL DEPTH
4350	DRIERS TOTAL DEPTH

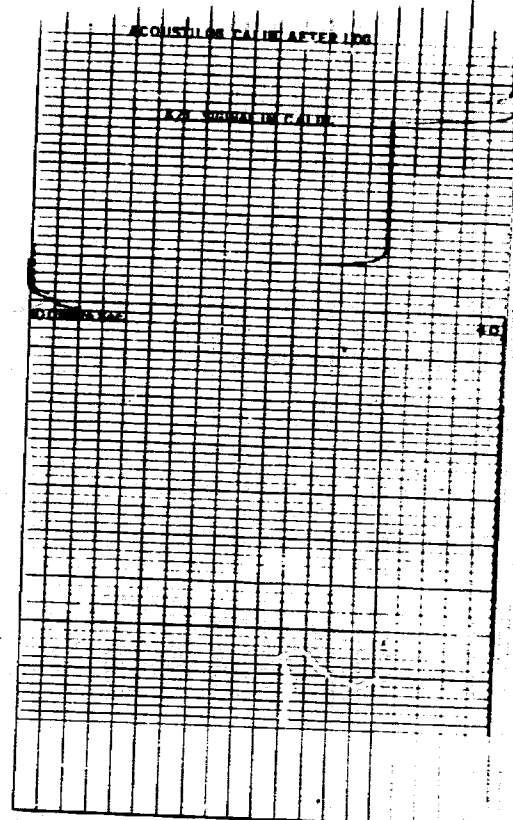
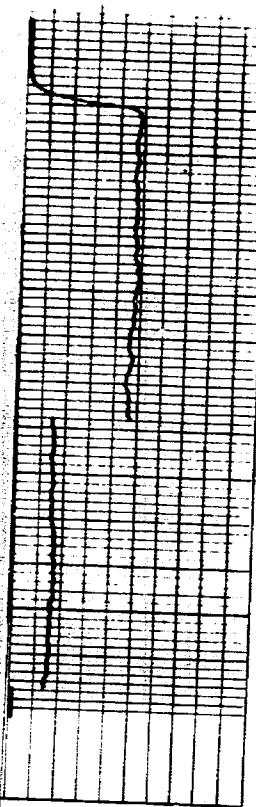
TEXACO INC.
STATE OF NEW MEXICO DISTRICT-3 NO.22
ROBERTS FIELD
LEA COUNTY, NEW MEXICO

G R LOG CALIBRATION
BEFORE LOG
RADIATION UNITS OF CALIB STD 100
SENSITIVITY READING 200
MULTIPLIER X1
ZERO SUPPRESSION 0
TIME CONSTANT 4
MEASURED CHART DIVISIONS 3.5

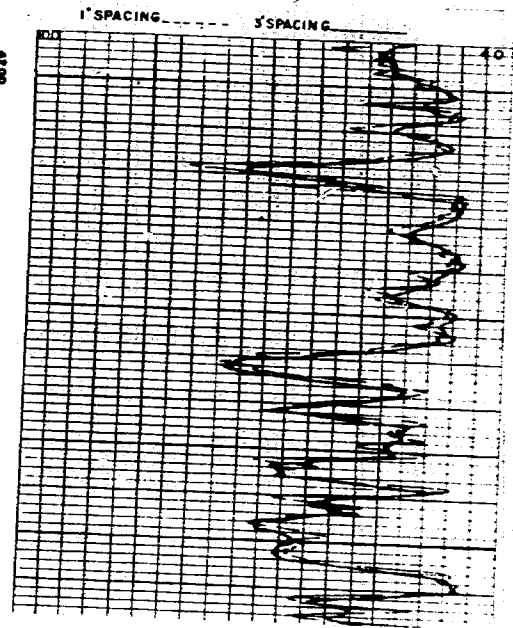
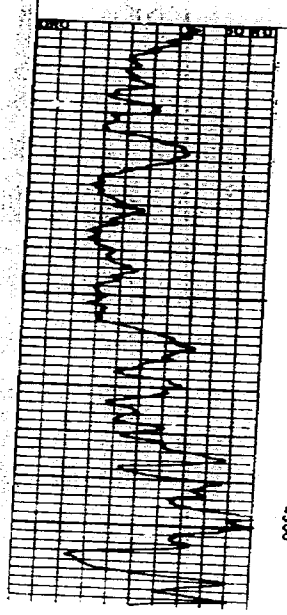




RADIATION UNITS OF CALIB. STD. 100
 SENSITIVITY READING 200
 MULTIPLIER XI
 ZERO SUPPRESSION 0
 TIME CONSTANT 4
 MEASURED CHART DIVISIONS 3.2



REPEAT SECTION



WELLS *Accountlog*

FILE NO.	COMPANY TEXACO, INC.	
	WELL STATE OF NEW MEXICO OCT 31 1962	
	FIELD ROBERTS	
	COUNTY LEA STATE NEW MEXICO	
	LOCATION 1960' FNL 660' FEL	Other Services
	SEC 12 TWP 17 S RGE 32 E	
Permanent Datum	GROUND Elev	KB 4280
Log Measured from	KB	11 ft Above Permanent Datum
Drilling Measured from	KB	CS
Date	2-8-60	
Run No.	ONE - NW	
Depth - Driller	4450	
Depth - Logger	4453	
Bottom Logged Interval	4449	
Trap Logged Interval	100	
Casing - Driller	85/8 @ 1350	
Casing - Logger		
Bit Size	6 3/4	
Type Fluid in Hole	SALT GEL	
	FULL	
Density and Viscosity	1.2 .31	
pH and Fluid Loss	9.2 CC	
Source of Sample	PIT	
Rm @ Meas. Temp	2 F 3 F 3 F 3 F 3 F	
Rm @ Meas. Temp	2 F 3 F 3 F 3 F 3 F	
Rm @ Meas. Temp	2 F 3 F 3 F 3 F 3 F	
Source of Bore and Rec	3 F 3 F 3 F 3 F 3 F	
Rm @ BHT	3 F 3 F 3 F 3 F 3 F	
Time Since Circ		
Max. Rec Temp. Deg. F		
Equip. No. and Location	4555 ODESSA	
Recorded By	WALLACE	
Witnessed By	MR. YOST	

Reproduced By
West Texas Electrical Log Service

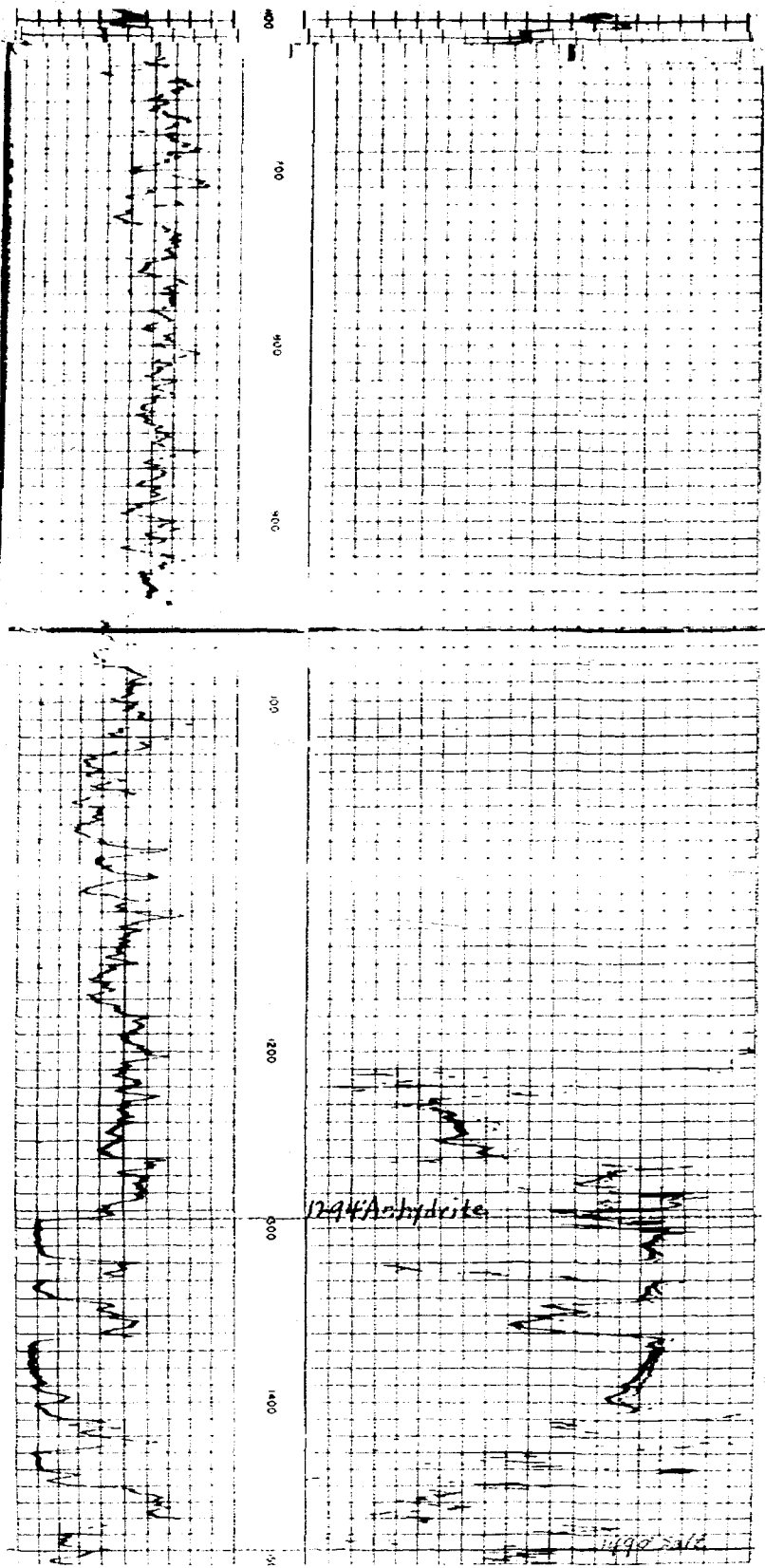
Dallas 2, Texas

REFERENCE W9699C

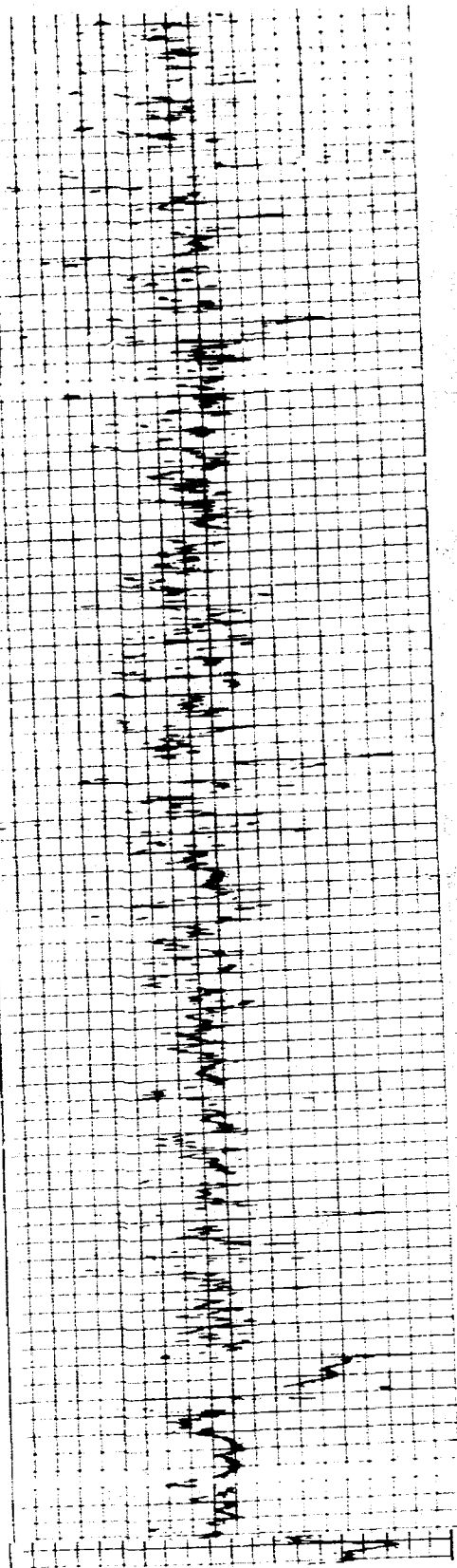
8 COMPLETION RECORD

SPUD DATE	
COMP DATE	
DST RECORD	
CASING RECORD	
PERFORATING RECORD	
ACID. FRAC SHOT	
IP	
GUR	GR
TP	CP

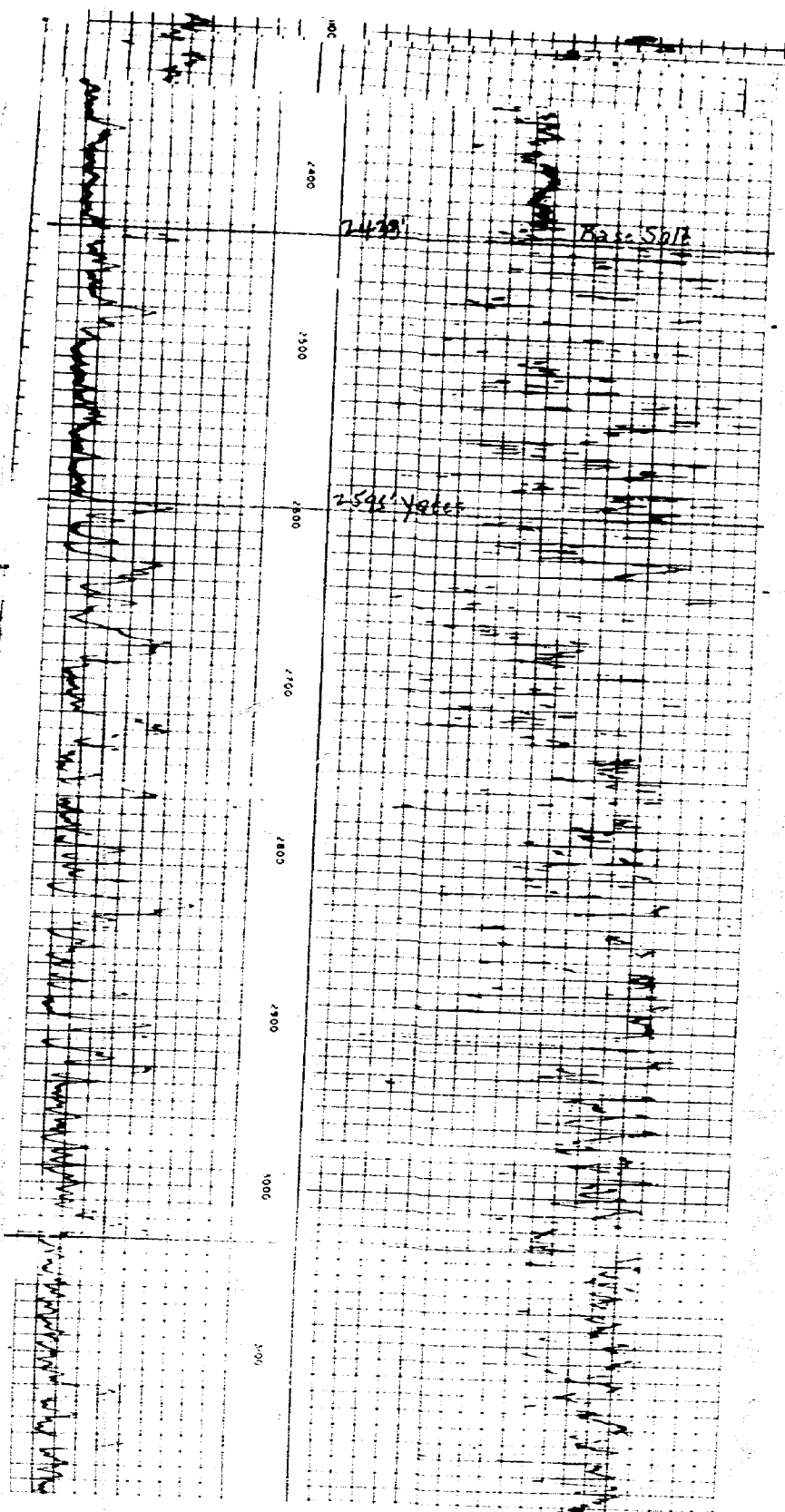
REMARKS:		
REMARKS: SALT SATURATION 85.000000 TOOL FREE IN HOLE		
DETECTOR TYPE: DS21 DETECTOR LENGTH: 5'		
GAMMA RAY Radiation Intensity Increases	DEPTH	ACOUSTILOG T. A. R. I. R. S. R.
<p>5 RU Radiation Units</p>		<p>Velocity—1000: ft/sec</p> <p>10 11 12 13 14 15 16 17 18 19 20 21</p> <p>SPECIFIC ACOUSTIC TIME Micro Seconds Per Foot</p> <p>100 85 70 55 40</p> <p>1' Spacing 3' Spacing</p>
<p>Lost Reading</p> <p>100'</p> <p>200'</p> <p>300'</p> <p>400'</p> <p>500'</p> <p>600'</p>		

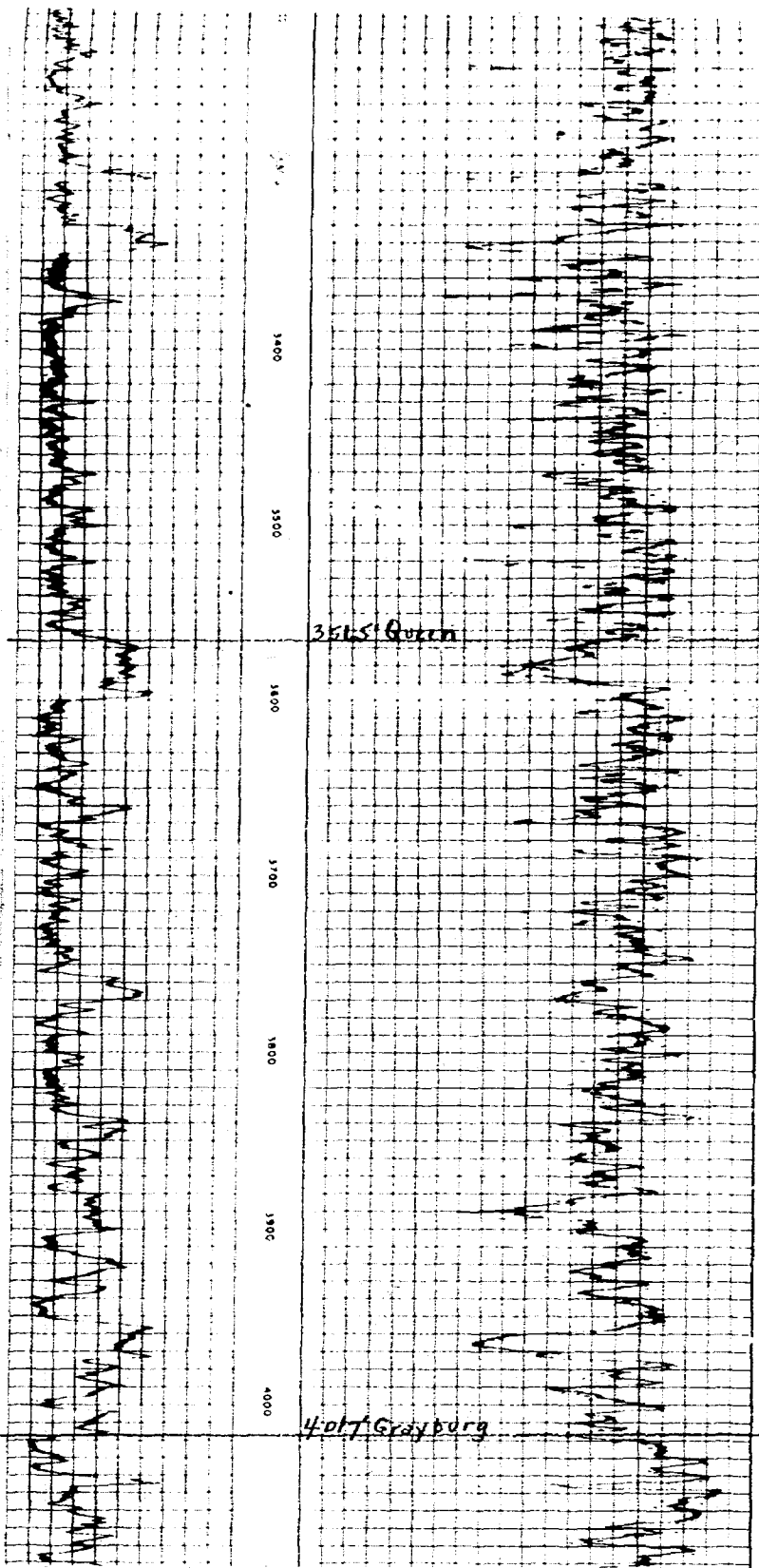


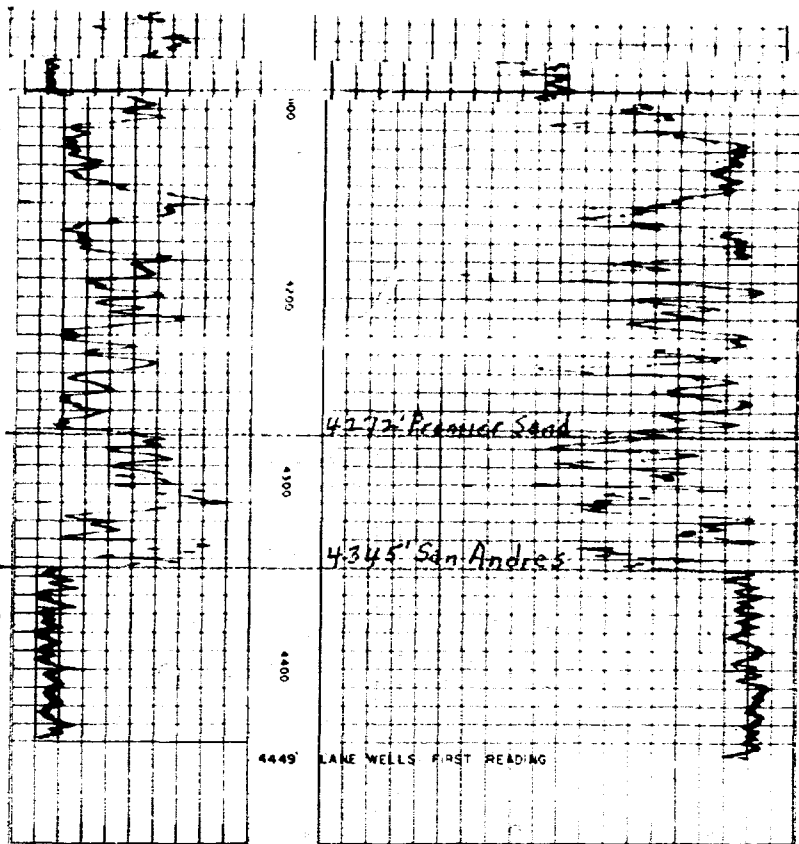
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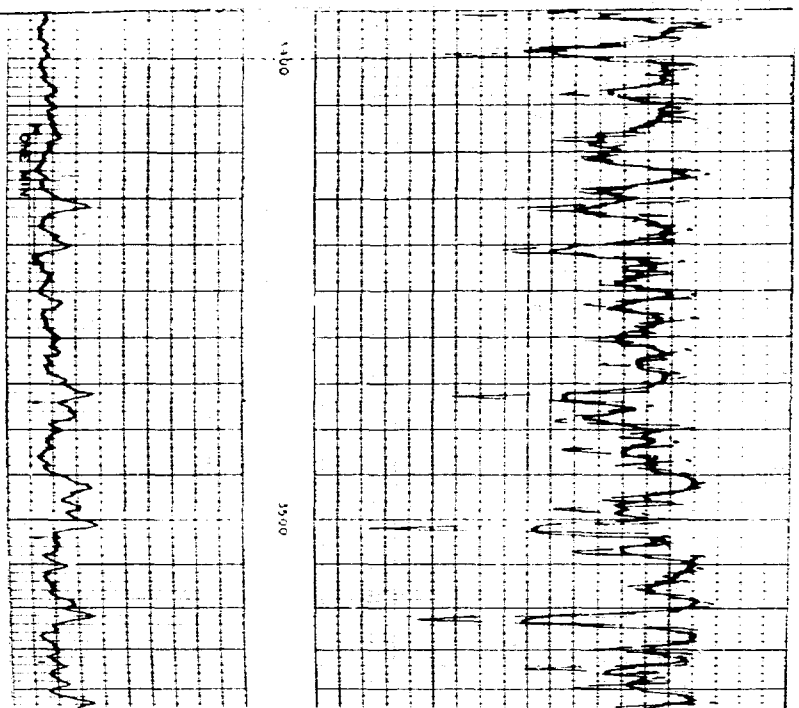
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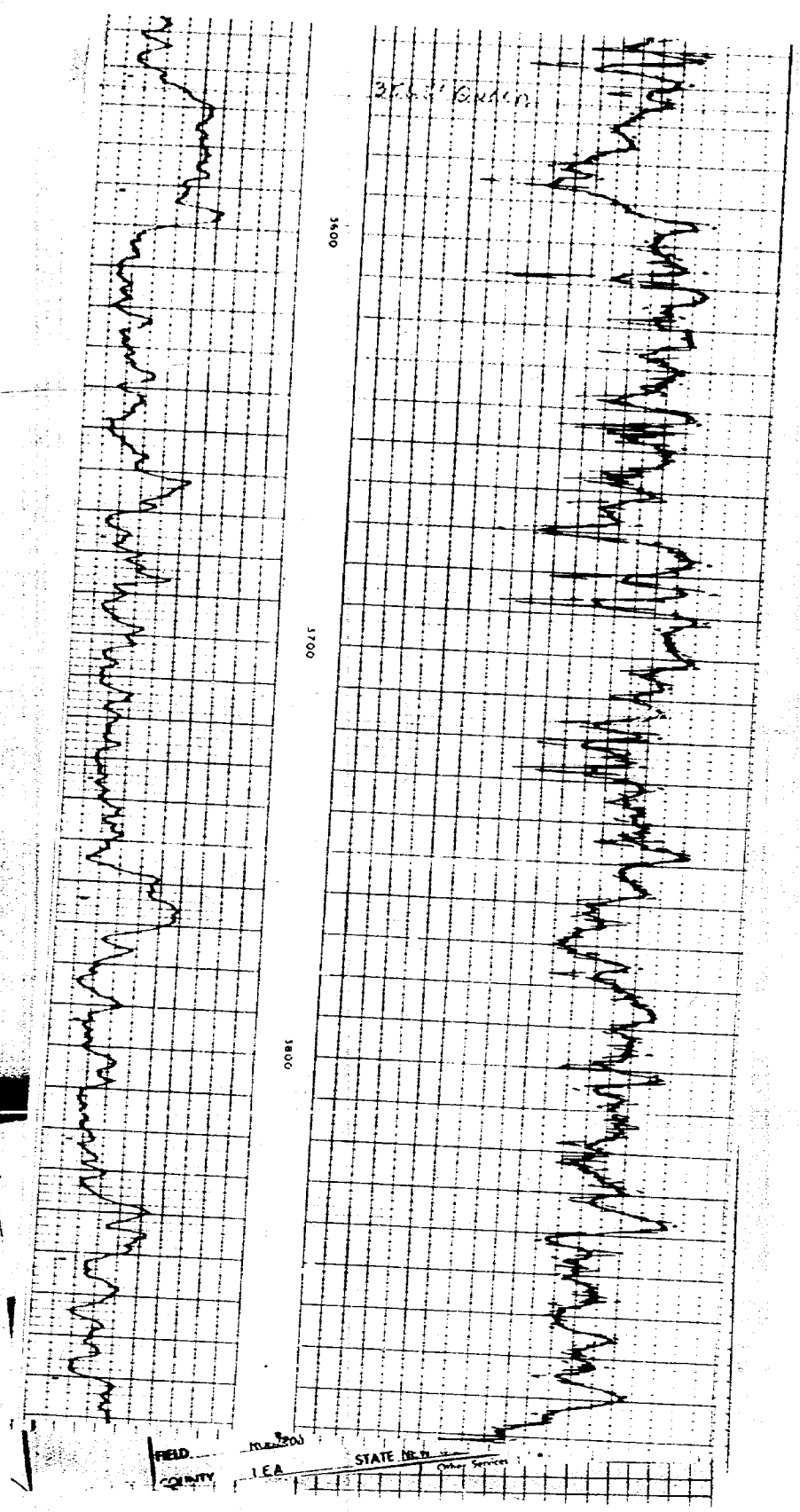


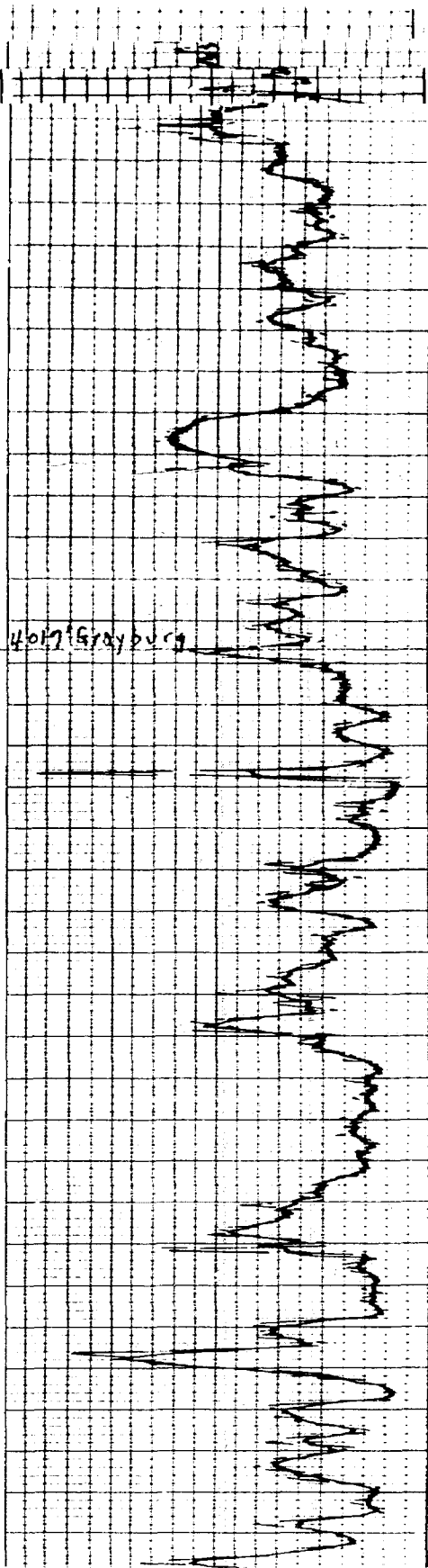




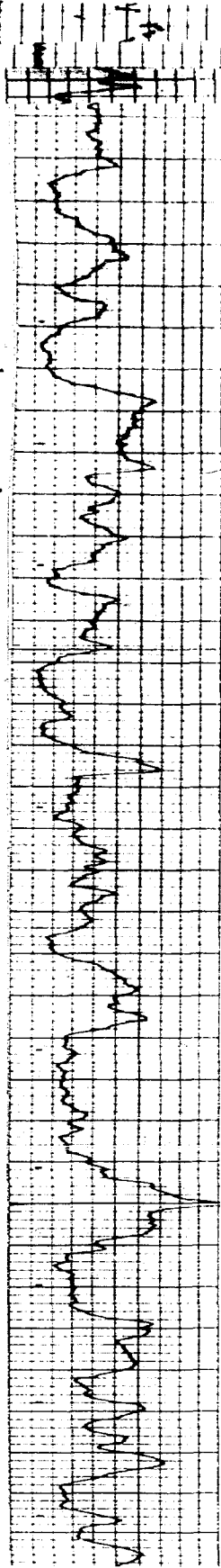
TEXACO, INC.
 STATE OF NEW MEXICO "O" (NCT-3) No 20
 1" Spacing 3" Spacing

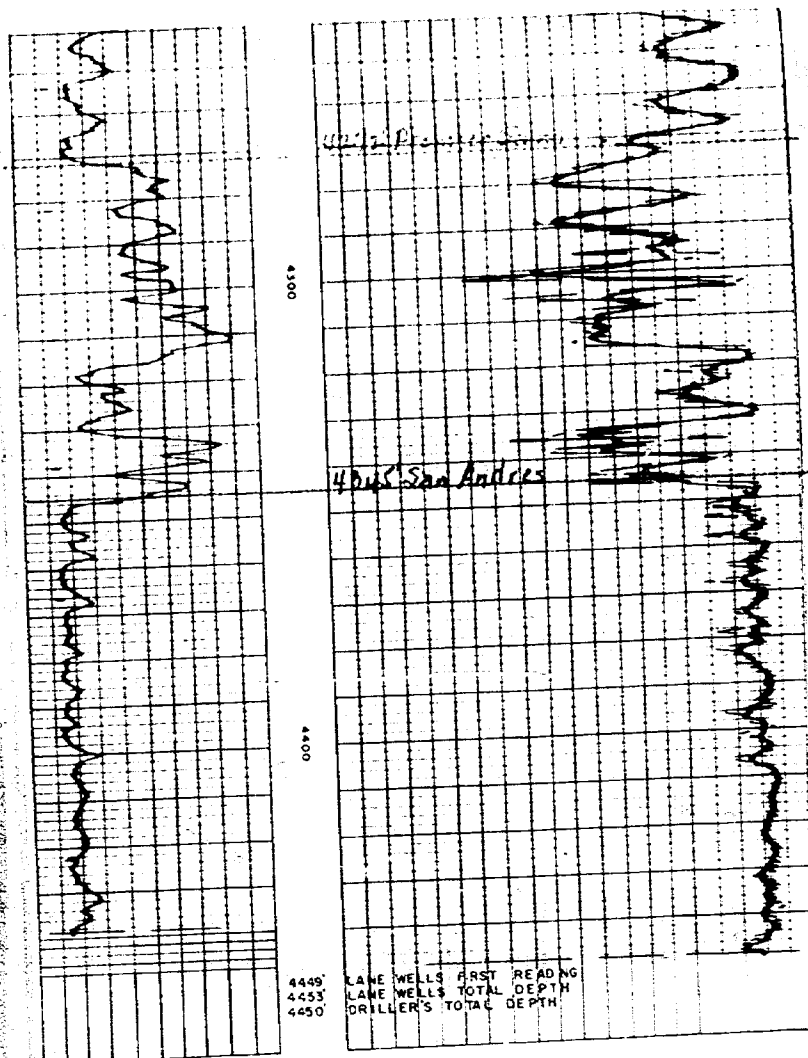






4017 Greyburg





TEXACO, INC
STATE OF NEW MEXICO "O" (NCT-3) No. 20
ROBERTS
LEA COUNTY, NEW MEXICO

G. F. LOG CALIBRATION
BEFORE LOG

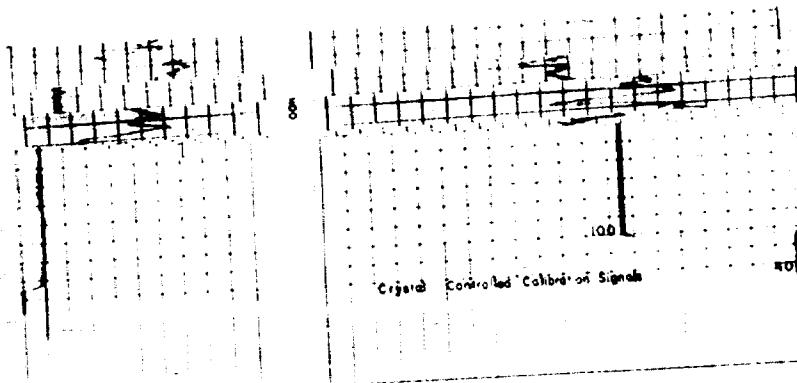
RADIATION INTENSITY READING 100
SENSITIVITY READING 300
MULTIPLIER XI
ZERO CORRECTION 0
TIME CONSTANT 4
MEASURED CHART DIVISIONS 62

ACOUSTIC LOG CALIBRATION
BEFORE LOG

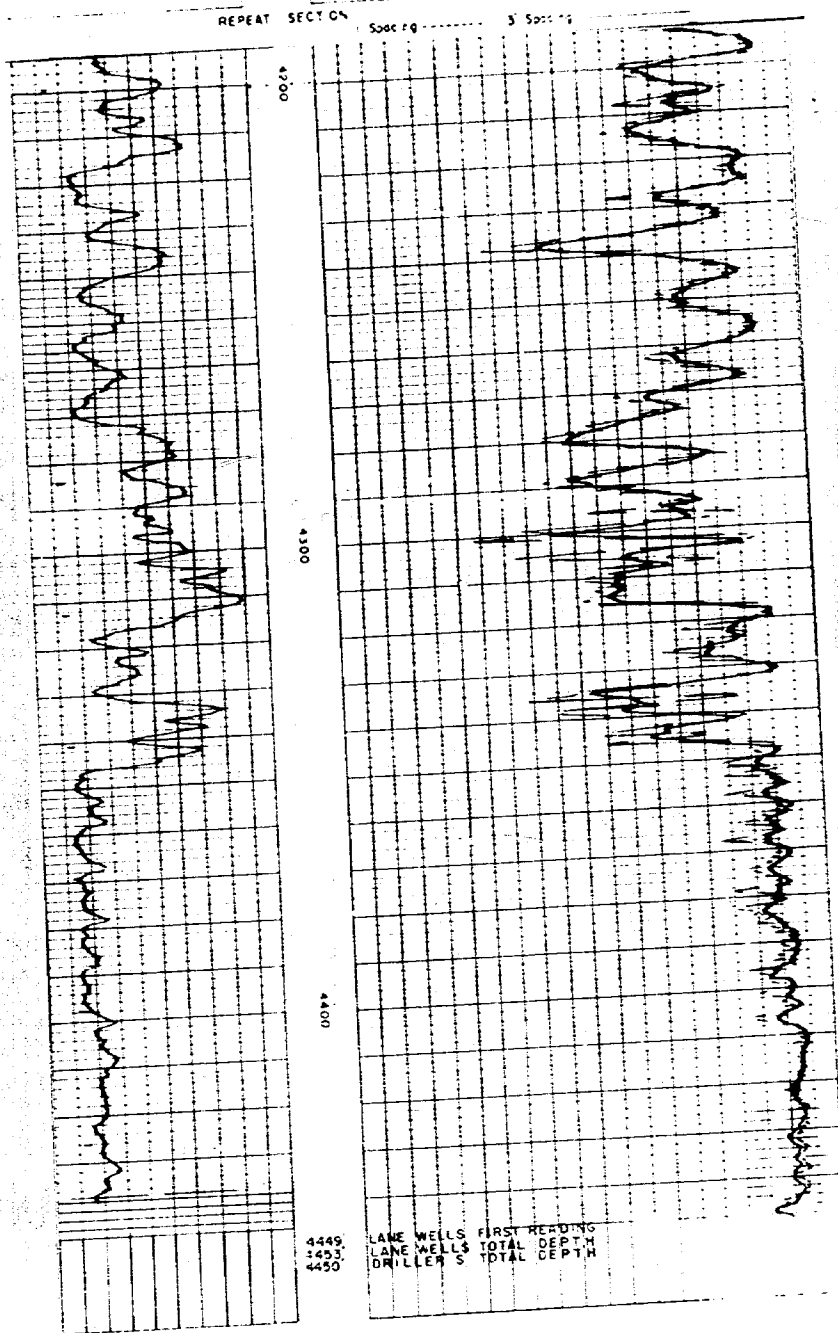
Signal in Calibrator

FILE NO.

COMPANY TEXACO 760
WELL STATE OF NEW MEXICO "O" (NCT-3) No. 20
FIELD ROBERTS
COUNTY LEA STATE NEW MEXICO



REPEAT SECTION 5000 ft 5000 ft



TEXACO, INC.
STATE OF NEW MEXICO "D" (NCT-3) No. 20

Case. 3053

Heard 5-27-64

Rec. 5-28-64

1. Grant Texaco's request for
a waterflood Project for the
1/2 sec. 12 - 175. 32E.

2. Oppose 2 injection wells as
follows:

(a) Texaco - At J. H. Mer. "O" NCT-3 #20, 1980/N, 660/E-12

(b) Texaco - At J. H. Mer. "O" NCT-3 #22, 1980/N, 1982/W
sec. 12

Frank J. [Signature]

GOVERNOR
EDWIN L. MECHEM
CHAIRMAN

State of New Mexico
Oil Conservation Commission

LAND COMMISSIONER
E. S. JOHNNY WALKER
MEMBER



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

P. O. BOX 871
SANTA FE

*Initial injection in this project is to be
through two wells equipped with tubing
and with packers set immediately above
the perforations.*

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

June _____, 19____

Dear Mr. Kelly:

~~Gentlemen:~~

Enclosed herewith is Commission Order No. R-2710, entered in Case
No. 3053, approving the Texas Maljamar "O"
Water Flood Project.

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

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

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

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

June 3, 1964

C
O
P
Y

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

Dear Sir:

Enclosed herewith is Commission Order No. R-2710, entered in Case No. 3053, approving the Texaco Maljamar "O" Water-flood Project.

Initial injection in this project is to be through two wells equipped with tubing and with packers set immediately above the perforations.

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

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

In order that the allowable assigned to the project may be kept current, and in order that the operator may fully benefit from the allowable provisions of Rule 701, it behooves him to promptly notify both of the aforementioned Commission offices by letter of any change in the status of wells in the project

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

-2-

Mr. Booker Kelly

C
O
P
Y

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

ALP/ir

cc: Oil Conservation Commission
Hobbs, New Mexico

Enclosures

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. 3053
Order No. R-2710

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 o'clock a.m. on May 27, 1964, at Santa Fe, New Mexico, before Examiner Elvis A. Utz.

NOW, on this 3rd day of June, 1964, the Commission, a quorum being present, having considered the testimony, the record, and the recommendations of the Examiner, and being fully advised in the premises,

FINDS:

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

(2) That the applicant, Texaco Inc., seeks authority to institute a waterflood project in the Maljamar Pool by the injection of water into the Crayburg-San Andres formation through two wells located in Section 12, Township 17 South, Range 32 East, NNPM, Lea County, New Mexico.

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

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

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CASE No. 3053
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(5) That the subject application should be approved and the project should be governed by the provisions of Rule 701 of the Commission Rules and Regulations.

IT IS THEREFORE ORDERED:

(1) That the applicant, Texaco Inc., is hereby authorized to institute a waterflood project in the Maljamar Pool by the injection of water into the Grayburg-San Andres formation through the following-described two wells in Section 12, Township 17 South, Range 32 East, NMPM, Lea County, New Mexico:

(a) Texaco Inc. State of New Mexico "O" (NCT-3)
Well No. 20 located 1980 feet from the North line and 660 feet from the East line.

(b) Texaco Inc. State of New Mexico "O" (NCT-3)
Well No. 22 located 1980 feet from the North line and 1982 feet from the West line.

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

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

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

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



STATE OF NEW MEXICO
OIL CONSERVATION COMMISSION

Jack M. Campbell
JACK M. CAMPBELL, Chairman

E. S. Walker
E. S. WALKER, Member

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

esr/