

CASE 4634: Application of TEXACO
FOR A WATERFLOOD EXPANSION, LEA
COUNTY, NEW MEXICO.

Case Number
4634

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. 4634
Order No. R-4234

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

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9 a.m. on December 15, 1971, at Santa Fe, New Mexico, before Examiner Elvis A. Utz.

NOW, on this 4th day of January, 1972, 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 expand the West Vacuum Unit Waterflood Project in the West Vacuum Unit Area, Vacuum Pool, by the injection of water into the Grayburg-San Andres formation through eleven additional injection wells located in Sections 23, 33, and 34 of Township 17 South, Range 34 East, and Sections 3 and 4 of Township 18 South, Range 34 East, NMPM, Lea County, New Mexico, as follows:

-2-

CASE NO. 4634

Order No. R-4234

<u>Well No.</u>	<u>Unit</u>	<u>Section</u>	<u>Township and Range</u>
Well No. 4	K	28	17 South, 34 East
Well No. 7	C	33	17 South, 34 East
Well No. 16	G	33	17 South, 34 East
Well No. 18	E	34	17 South, 34 East
Well No. 20	G	34	17 South, 34 East
Well No. 23	K	33	17 South, 34 East
Well No. 32	O	33	17 South, 34 East
Well No. 34	M	34	17 South, 34 East
Well No. 36	O	34	17 South, 34 East
Well No. 40	C	4	18 South, 34 East
Well No. 48	G	3	18 South, 34 East

(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 expansion of the West Vacuum Unit Waterflood Project should result in the recovery of otherwise unrecoverable oil, thereby preventing waste.

(5) That an administrative procedure should be adopted whereby the Secretary-Director of the Commission may authorize additional injection wells within said waterflood project as may be necessary to complete an efficient injection pattern.

(6) That the subject application should be approved and the expanded 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 should 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 expand its West Vacuum Unit Waterflood Project, Vacuum Pool, by the injection of water into the Grayburg-San Andres formations through the following-described wells at locations in Sections 28, 33, and 34 of Township 17 South, Range 34 East, and Sections 3 and 4 of Township 18 South, Range 34 East, NMPM, West Vacuum Unit, Lea County, New Mexico:

-3-

CASE NO. 4634

Order No. R-4234

<u>Well No.</u>	<u>Unit</u>	<u>Section</u>	<u>Township and Range</u>
Well No. 4	K	28	17 South, 34 East
Well No. 7	C	33	17 South, 34 East
Well No. 16	G	33	17 South, 34 East
Well No. 18	E	34	17 South, 34 East
Well No. 20	G	34	17 South, 34 East
Well No. 23	K	33	17 South, 34 East
Well No. 32	O	33	17 South, 34 East
Well No. 34	M	34	17 South, 34 East
Well No. 36	O	34	17 South, 34 East
Well No. 40	C	4	18 South, 34 East
Well No. 48	G	3	18 South, 34 East

(2) That the expanded waterflood project 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 such additional injection wells within said project area as may be necessary to complete an efficient injection pattern, and 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.

(3) That monthly progress reports of the expanded 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


Bruce King
BRUCE KING, Chairman

Alex J. Armijo
ALEX J. ARMILLO, Member

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

dr/



OIL CONSERVATION COMMISSION

STATE OF NEW MEXICO
P. O. BOX 2088 - SANTA FE
87501

GOVERNOR
BRUCE KING
CHAIRMAN
LAND COMMISSIONER
ALEX J. ARMIJO
MEMBER
STATE GEOLOGIST
A. L. PORTER, JR.
SECRETARY - DIRECTOR

January 4, 1972

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

Re: Case No. 4634
Order No. R-4234
Applicant:
Texaco Inc.

Dear Sir:

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

Very truly yours,

A. L. PORTER, Jr.
Secretary-Director

ALP/ir

Copy of order also sent to:

Hobbs OCC X
Artesia OCC
Aztec OCC
State Engineer X

Other _____

OIL CONSERVATION COMMISSION

P. O. BOX 2088
SANTA FE, NEW MEXICO 87501

March 1, 1972

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

Dear Mr. Kelly:

O
Reference is made to Commission Order No. R-4234, recently entered in Case No. 4634, approving the expansion of the West Vacuum Unit Waterflood Project.

P
Additional injection is to be through the 11 newly authorized water injection wells, each of which shall be equipped with plastic-coated tubing set in a packer at approximately 4350 feet. The casing-tubing annulus shall be loaded with an inert fluid and equipped with a pressure gauge at the surface.

Y
As to allowable, our calculations indicate that when all of the authorized injection wells have been placed on active injection, the maximum allowable which this project will be eligible to receive under the provisions of Rule 701-E-3 is 1974 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

-2-

Mr. Booker Kelly
White, Koch, Kelly & McCarthy
Attorneys at Law
Santa Fe, New Mexico

March 1, 1972

C
O
P
Y

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/DSM/lr

cc: Oil Conservation Commission
Hobbs, New Mexico

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

dearnley-meier reporting service, inc.

SPECIALIZING IN: DEPOSITIONS, HEARINGS, STATEMENTS, EXPERT TESTIMONY, DAILY COPY, CONVENTIONS
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FIRST NATIONAL BANK BLDG. EAST • ALBUQUERQUE, NEW MEXICO 87108

PAGE 1

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

December 15, 1971

EXAMINER HEARING

IN THE MATTER OF:

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

Case No. 4634

BEFORE: Elvis A. Utz, Examiner

TRANSCRIPT OF HEARING

1 MR. HATCH: 4634. Application of Texaco, Inc., for
2 a waterflood expansion, Lea County, New Mexico.

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7
8 CURTIS COOK

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

11 EXAMINATION

12 BY MR. KELLY:

13 Q Would you state your name, employer, and occupation.

14 A Curtis Cook with Texaco in Hobbs as district production
15 engineer.

16 Q And you have previously qualified as an expert witness
17 in the field of petroleum engineering before this
18 Commission?

19 A Yes, I have.

20 Q Now, referring to Exhibits 1 and 2, would you briefly
21 state what Texaco seeks by this application.

22 A Yes. Texaco would like to expand the operations in the
23 West Vacuum Unit to a five-spot pattern.

24 We would do so by converting the eleven wells
25 listed in statement one of Exhibit 1.

1 Secondly, we would like to set up an administrative
2 system for future conversions in this unit.

3 Q Now, as to your second point in your application, what
4 you want here is administrative approval for a direct
5 injection well prior to response, is that correct?

6 A That is correct.

7 Exhibit 2 --

8 Q Go on with Exhibit 2.

9 A -- is a plat showing all operators in two directions and
10 the wells that we want to convert are circled in red.
11 The existing injection wells are indicated with a
12 diagonal arrow and they are in an inverted nine-spot
13 pattern. Expansion will be a full-scale five-spot
14 pattern.

15 We are not converting at this time along the east
16 and west lines because we do not yet have cooperating
17 agreements with the other operators.

18 When the cooperating agreements are in effect, we
19 would like to have administrative approval or we will
20 request -- would like to be able to request administrative
21 approval to convert certain lease line wells.

22 Q Could you give the Examiner a brief summary of the
23 history of this waterflood project?

24 A Project went into effect in 1965 with an inverted nine-
25 spot pilot pattern. We had six wells. The pilot has

1 responded favorably.

2 We know that we can build an oil bank and we are
3 certain, or fairly confident that the remaining part
4 of reservoir will waterflood and we are ready at this
5 time to expand our operations and to waterflood the
6 entire unit.

7 We are fairly confident that we can expect about
8 2.8 million additional barrels satisfactorily off the
9 operations that we are proposing now.

10 Q Exhibit Number 3 is a plat showing the actual five-spot
11 installation, is that correct?

12 A Yes, sir. This is just a smaller plat than the other
13 and it does show how the five-spot will set in the unit.

14 Q In the circled well?

15 A Yes, we propose to convert the eleven wells which are
16 circled.

17 Q Are those eleven injection wells currently producers?

18 A Yes, except well number 48 which is currently shut-in.
19 The others are producing oil at this time.

20 Q I think Exhibit 1 shows the average daily production,
21 doesn't it?

22 A This exhibit?

23 Q Exhibit 3.

24 A Yes, shows it under the well. It is the average daily
25 production of each of the producing wells in the unit.

- 1 This is test data. This is not monthly production, but
2 24-hour test data.
- 3 Q Now, you have prepared a sketch of the proposed
4 installation for one of the wells, is that correct?
- 5 A That is correct.
- 6 Q That is Exhibit Number 4?
- 7 A Yes.
- 8 Q Which well is that?
- 9 A This is well number 32. This is the well you can see
10 there. It is in the south part of the Section AE 33.
- 11 It is a typical well. It has an open-hole interval.
12 It is well-cased and well-cemented. We will inhibit the
13 annulus and put a pressure gauge on the annulus.
- 14 Q You are using plastic-coated tubes, is that correct?
- 15 A That is correct.
- 16 Q Now, Exhibit Number 5 shows the same casing and cementing
17 program for each of the other injection wells, is that
18 correct?
- 19 A That is correct. They are all well-cased, well-cemented.
- 20 Q Is this the basic installation you have used in your
21 pilot project?
- 22 A Yes.
- 23 Q What is the water that you are injecting?
- 24 A It is from the Lea County Water Basin. Texaco has rights
25 to 2100 acre feet per annum and we have two wells, one

1 of which is supplying water for the pilot.

2 It has the capacity for supplying water for the
3 entire project.

4 We do not propose at this time to drill an
5 additional water supply well.

6 Q You are also injecting your produced water?

7 A That is correct.

8 Q In your opinion, does the installation you have shown on
9 Exhibit 1, and is the information -- I mean, Exhibit 4 --
10 and the information on Exhibit 5, will it protect other
11 zones?

12 Will the installation you have shown on Exhibit
13 Number 4 protect other zones from migration of your
14 injecting fluids?

15 A Yes, the wells will contain the injecting fluid and
16 they will go into the desired interval.

17 Q You haven't had any problem with injection in your
18 other wells?

19 A No, not substantial.

20 Q What volumes do you anticipate injecting into these wells?

21 A About 400 barrels a well.

22 Q How about pressure?

23 A Zero to about 1200 pounds.

24 Q You have an exhibit which shows the performance of the
25 unit to date?

1 A Yes. It simply shows that we -- when we started
2 injecting water and the fact that the pilot response
3 has offset the primary decline of the remaining unit;
4 pilot response has been encouraging and we are ready to
5 expand and we expect a substantial increase in producing
6 rate.

7 Q Yes.

8 MR. UTZ: That is shown on Exhibit 6?

9 THE WITNESS: Yes, that is the unit performance.
10 The pilot performance has simply offset primary decline and
11 leveled out the performance of the unit.

12 Q (By Mr. Kelly) As I understand, in the original hearing
13 in this case back in, I think, December of '65. At
14 that time performance and curves and structure maps
15 were furnished to the Examiner.

16 A Yes, they were.

17 Q This Exhibit Number 6 would bring it up to date, is that
18 correct?

19 A That is correct.

20 Q Your Exhibit Number 7 is a log of the same well that
21 you have the diagrammatic sketch on?

22 A That is correct. It shows the 5½ inch casing set and
23 well being injected into the open-hole interval below
24 that casing.

25 MR. KELLY: Mr. Examiner, I note that the rule

1 call for other log locations if available. This is a
2 typical log. We might have some others available, but some
3 we don't. Would the Commission want any more information
4 on logs?

5 MR. UTZ: I don't think that is necessary.
6 The initial case probably has logs to take care of it.

7 Q (By Mr. Kelly) In your opinion, would the granting of
8 this application prevent waste and protect the
9 correlative rights of all operators in the area?

10 A Yes.

11 Q Were Exhibits 1 through 7 prepared by your office?

12 A Yes.

13 MR. KELLY: I move the introduction of Texaco
14 Exhibits 1 through 7.

15 MR. UTZ: Texaco Exhibits 1 through 7 will be
16 entered into the record of this case.

17 (Exhibits 1 through 7 admitted.)

18 MR. KELLY: We have no further direct examination
19 testimony, Mr. Examiner.

20 EXAMINATION

21 BY MR. UTZ:

22 Q Mr. Cook, on Exhibit Number 3, the chart figures under
23 each well indicates what, now?

24 A That is the test data, oil and water.

25 The first number is oil; the second number is

1 water on 24 four-hour tests.

2 It should be indicated on the bottom of your --

3 Q You have given us an Exhibit 1 which listed all of the
4 wells. Where in your exhibit, or your application, do
5 you show is the application of these wells?

6 A They are indicated accurately on this plat. We do not
7 have the legal descriptions of the locations anywhere
8 in the exhibit, but this plat.

9 Q Can you supply us with the actual footage location
10 on these wells?

11 A Yes.

12 MR. KELLY: You mean you don't have it now?

13 THE WITNESS: I don't. I will have to provide it
14 from Hobbs.

15 MR. UTZ: Would you do that right away, please, so
16 we can go ahead and write an order on this. We have to have
17 the exact location.

18 THE WITNESS: Yes, I have those numbers available.

19 MR. UTZ: Any other questions of the witness?

20 MR. HATCH: I have one question.

21 Mr. Cook, you asked for provision for administrative
22 approval. This would be just for to convert wells to
23 injection?

24 THE WITNESS: Yes, to convert the remaining lease line
25 wells which will complete the pattern without coming back

1 for a third hearing on this unit.

2 MR. UTZ: Any other questions?

3 Witness may be excused.

4 Statements in the case?

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I N D E XWITNESSPAGE

CURTIS COOK

Examination by Mr. Kelly

2

Examination by Mr. Utz

8

E X H I B I T SOffered and Admitted

Exhibits 1 through 7

8

1 STATE OF NEW MEXICO)
2 COUNTY OF BERNALILLO) SS

3 I, RICHARD STURGES, Court Reporter in and for the
4 County of Bernalillo, State of New Mexico, do hereby certify
5 that the foregoing and attached Transcript of Hearing before
6 the New Mexico Oil Conservation Commission was reported by
7 me and that the same is a true and correct record of the said
8 proceedings, to the best of my knowledge, skill and ability.

9
10 Richard Sturges
11 Court Reporter

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21
22 I do hereby certify that the foregoing is
23 a complete record of the proceedings in
24 the Bernalillo hearing of Case No. 4634
25 heard by me on 12-15-1971.
_____, Recorder
New Mexico Oil Conservation Commission



PETROLEUM PRODUCTS

December 16, 1971

TEXACO INC.
DRAWER 728
HOBBS, NEW MEXICO 88240

RECEIVED

DEC 22 1971

OIL CONSERVATION COMM.
SANTA FE

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

Re: Examiner Hearing
West Vacuum Unit Waterflood
Expansion
Lea County, New Mexico

Attention: Mr. Elvis Utz

Case 4634

Gentlemen:

Attached as per request is a tabulation of the exact locations
of the wells proposed for conversion to injection in Texaco's West
Vacuum Unit waterflood expansion.

Your cooperation in this matter is appreciated.

Yours very truly,

W. E. Morgan

W. E. Morgan
District Superintendent

CPC-dh

cc-W.B.Kelly

Attachment

RECEIVED

DEC 22 1971

OIL CONSERVATION COMM.
SANTA FE

WELL LOCATIONS
WEST VACUUM UNIT
LEA COUNTY, NEW MEXICO

WELL NO.

4	1980' FSL & 1980' FWL of Sec. 28, T-17-S, R-34-E
7	990' FNL & 2310' FWL of Sec. 33, T-17-S, R-34-E
16	1980' FNL & 1980' FEL of Sec. 33, T-17-S, R-34-E
18	1980' FNL & 660' FWL of Sec. 34, T-17-S, R-34-E
20	2310' FNL & 1650' FEL of Sec. 34, T-17-S, R-34-E
23	1980' FSL & 1980' FWL of Sec. 33, T-17-S, R-34-E
32	660' FSL & 1980' FEL of Sec. 33, T-17-S, R-34-E
34	660' FSL & 660' FWL of Sec. 34, T-17-S, R-34-E
36	2000' FNL & 900' FEL of Sec. 25, T-17-S, R-34-E
40	660' FNL & 1980' FWL of Sec. 4, T-18-S, R-34-E
48	1980' FNL & 1980' FEL of Sec. 3, T-18-S, R-34-E

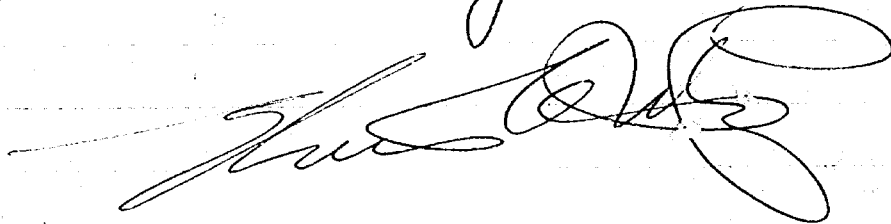
Case 4634
Dated 12-15-71
Recd 12-28-71

Grant Texaco permission to
expand their hydroflood in
Mat Vacauna

Approve the 11 - 5 spot wells
requested.

Those requested locations for
these wells be held up until
you receive it.

Grant administration procedure
for further injection wells.

A handwritten signature in cursive script, appearing to read "J. W. [unclear]".

Docket No. 28-71

DOCKET: REGULAR HEARING - WEDNESDAY - DECEMBER 15, 1971

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

- ALLOWABLE: (1) Consideration of the oil allowable for January and February, 1972;
- (2) Consideration of the allowable production of gas for January, 1972, from fifteen prorated pools in Lea, Eddy, Roosevelt and Chaves Counties, New Mexico. Consideration of the allowable production of gas from nine prorated pools in San Juan, Rio Arriba and Sandoval Counties, New Mexico for January, 1972; consideration of purchaser's nominations for the six-month period beginning February 1, 1972 for that area.

CASE 4575: (De Novo) (This case, previously continued from its October 13, 1971, hearing, will be continued to the February 16, 1972, regular hearing)

Application of Anadarko Production Company for the amendment of the special pool rules for an existing pool, Lea County, New Mexico. Applicant, in the above-styled cause, seeks the amendment of the special rules and regulations governing the South Eunice-San Andres Pool to provide for the classification of oil and gas wells, spacing and well location requirements, and an allocation formula for withdrawals by oil and gas wells.

Upon application of Anadarko Production Company, this case will be heard De Novo under the provisions of Rule 1220.

CASE 4557: (De Novo) (This case, previously continued from its October 13, 1971, hearing, will be continued to the February 16, 1972, regular hearing)

Application of Continental Oil Company for transfer of allowable, Lea County, New Mexico. Applicant, in the above-styled cause, seeks authority to transfer allowable across boundaries of the participating area and the leases outside said area, but within the Maljamar Co-operative Area, MCA Unit Area, Maljamar Grayburg-San Andres Pool, Lea County, New Mexico.

Upon application of Continental Oil Company, this case will be heard De Novo under the provisions of Rule 1220.

* * * * *

THE FOLLOWING CASES WILL BE HEARD BEFORE ELVIS A. UTZ, EXAMINER,
OR DANIEL S. NUTTER, ALTERNATE EXAMINER, IN THE OIL CONSERVATION
COMMISSION CONFERENCE ROOM ON THE SECOND FLOOR OF THE LAND OFFICE
BUILDING AT 10 O'CLOCK A.M.

* * * * *

CASE 4625: (Continued from the November 17, 1971, Examiner Hearing)
Application of Texaco Inc. for downhole commingling,
Eddy County, New Mexico. Applicant, in the above-styled
cause, seeks authority to commingle production from the
Paduca-Morrow and Paduca-Wolfcamp Gas Pools in the well-
bore of its Cotton Draw Unit Well No. 65 located in Unit
G of Section 2, Township 25 South, Range 31 East, Eddy
County, New Mexico.

CASE 4633: Application of El Paso Natural Gas Company for the suspension
of certain provisions of Rules 14 (A) and 15 (A) of the
General Rules and Regulations for the prorated gas pools
of Southeastern New Mexico, promulgated by Order No. R-1670,
as amended. Applicant, in the above-styled cause, seeks
suspension for a period of one year from January 1, 1972,
of those provisions of Rules 14 (A) and 15 (A) of the
General Rules and Regulations for the prorated gas pools
of Southeastern New Mexico that provide, respectively,
for the cancellation of unproduced allowable and the shutting-
in of overproduced wells. Applicant seeks said suspension
for the Blinbry, Crosby (Devonian), Eumont, Jalmat, Justis,
Monument (McKee), and Tubb Gas Pools, all in Lea County.

CASE 4634: Application of Texaco Inc. for a waterflood expansion,
Lea County, New Mexico. Applicant, in the above-styled
cause, seeks authority to expand its West Vacuum Unit Water-
flood Project, Vacuum Pool, by the conversion to water
injection of eleven wells located in Sections 28, 33, and
34 of Township 17 South, Range 34 East, and Sections 3 and
4 of Township 18 South, Range 34 East, Lea County, New
Mexico.

CASE 4635: Application of Continental Oil Company for multiple comple-
tion and down-hole commingling, Lea County, New Mexico.
Applicant, in the above-styled cause, seeks authority to
complete its Lockhart A-17 Well No. 4, located in the NE/4
NE/4 of Section 17, Township 21 South, Range 37 East, Lea
County, New Mexico, in such a manner as to produce oil
from the Tubb and Drinkard Pools through a single string
of tubing and oil from the Penrose Skelly (Grayburg) Pool
through a parallel string of tubing.

CASE 4637: In the matter of the hearing called by the Oil Conservation Commission on its own motion to permit Luttrell Oil Company and all other interested persons to appear and show cause why the following-described wells in New Mexico should not be plugged and abandoned in accordance with a Commission-approved plugging program:

Luttrell Oil Company State Well No. 1 - Unit M,
Section 28, Township 2 South, Range 26 East,
De Baca County;

Luttrell Oil Company Corn Well No. 1 - Unit A,
Section 5, Township 8 South, Range 24 East,
Chaves County.

CASE 4636: Southeastern nomenclature case calling for an order for the creation and extension of certain pools in Lea, Eddy and Roosevelt Counties, New Mexico.

(a) Create a new pool in Eddy County, New Mexico, classified as a gas pool for Atoka production and designated as the West Sand Dunes-Atoka Gas Pool. The discovery well is the El Paso Natural Gas Company Arco State No. 1 located in Unit K of Section 16, Township 23 South, Range 31 East, NMPM. Said pool would comprise:

TOWNSHIP 23 SOUTH, RANGE 31 EAST, NMPM
SECTION 16: S/2

(b) Extend the North Allison-San Andres Pool in Roosevelt County, New Mexico, to include therein:

TOWNSHIP 8 SOUTH, RANGE 37 EAST, NMPM
SECTION 18: SE/4
SECTION 19: NE/4

(c) Extend the North Bagley-Pennsylvanian Pool in Lea County, New Mexico, to include therein:

TOWNSHIP 12 SOUTH, RANGE 33 EAST, NMPM
SECTION 9: SE/4

(d) Extend the South Carlsbad-Morrow Gas Pool in Eddy County, New Mexico, to include therein:

TOWNSHIP 22 SOUTH, RANGE 27 EAST, NMPM
SECTION 19: S/2

(Case 4636 continued)

- (e) Extend the South Carlsbad-Strawn Gas Pool in Eddy County, New Mexico, to include therein:

TOWNSHIP 22 SOUTH, RANGE 27 EAST, NMPM
SECTION 30: S/2

- (f) Extend the Catclaw Draw-Morrow Gas Pool in Eddy County, New Mexico, to include therein:

TOWNSHIP 21 SOUTH, RANGE 25 EAST, NMPM
SECTION 23: All

- (g) Extend the Cerca-Upper Pennsylvanian Pool in Lea County, New Mexico, to include therein:

TOWNSHIP 14 SOUTH, RANGE 34 EAST, NMPM
SECTION 2: SW/4
SECTION 3: S/2

- (h) Extend the Eagle Creek-San Andres Pool in Eddy County, New Mexico, to include therein:

TOWNSHIP 17 SOUTH, RANGE 25 EAST, NMPM
SECTION 15: S/2 S/2
SECTION 21: S/2 NE/4 and SW/4
SECTION 27: S/2 NW/4
SECTION 28: S/2 NE/4 and NW/4

- (i) Extend the Grayburg Jackson Pool in Eddy County, New Mexico, to include therein:

TOWNSHIP 17 SOUTH, RANGE 30 EAST, NMPM
SECTION 10: S/2 SW/4

- (j) Extend the Grayburg-Morrow Gas Pool in Eddy County, New Mexico, to include therein:

TOWNSHIP 17 SOUTH, RANGE 29 EAST, NMPM
SECTION 21: S/2
SECTION 22: NW/4 NE/4, N/2 SW/4, and SW/4 SW/4

- (k) Extend the Justis-Blinebry Pool in Lea County, New Mexico, therein:

(Case 4636 continued)

(k) TOWNSHIP 25 SOUTH, RANGE 37 EAST, NMPM
SECTION 12: SE/4

(l) Extend the North Lynch Yates-Seven Rivers Pool in Lea County, New Mexico, to include therein:

TOWNSHIP 20 SOUTH, RANGE 34 EAST, NMPM
SECTION 17: SW/4
SECTION 20: NW/4

(m) Extend the Malaga-Delaware Pool in Eddy County, New Mexico, to include therein:

TOWNSHIP 24 SOUTH, RANGE 28 EAST, NMPM
SECTION 24: NW/4 SW/4

(n) Extend the Power Grayburg-San Andres Pool in Eddy County, New Mexico, to include therein:

TOWNSHIP 18 SOUTH, RANGE 30 EAST, NMPM
SECTION 1: SE/4 NE/4

(o) Extend the Shugart Pool in Eddy County, New Mexico, to include therein:

TOWNSHIP 18 SOUTH, RANGE 31 EAST, NMPM
SECTION 23: W/2 SW/4

(p) Extend the Tres Papalotes-Pennsylvanian Pool in Lea County, New Mexico, to include therein:

TOWNSHIP 14 SOUTH, RANGE 34 EAST, NMPM
SECTION 28: SW/4
SECTION 29: S/2

(q) Extend the Weir-Blinebry Pool in Lea County, New Mexico, to include therein:

TOWNSHIP 20 SOUTH, RANGE 37 EAST, NMPM
SECTION 15: SE/4

SUMMARY OF RECOMMENDATIONS

WEST VACUUM UNIT

1. That Texaco be permitted to convert the following wells to injection, in order to expand the West Vacuum Unit inverted nine spot pilot to a full scale five spot waterflood project.

West Vacuum Unit Well No. 4	K	28	} 17 S 34 E
West Vacuum Unit Well No. 7	C	33	
West Vacuum Unit Well No. 16	G	33	
West Vacuum Unit Well No. 18	E	34	
West Vacuum Unit Well No. 20	G	34	
West Vacuum Unit Well No. 23	K	33	
West Vacuum Unit Well No. 32	O	33	
West Vacuum Unit Well No. 34	M	34	} 18 S 34 E
West Vacuum Unit Well No. 36	O	34	
West Vacuum Unit Well No. 40	C	4	
West Vacuum Unit Well No. 48	G	3	

2. That Texaco be granted administrative approval to convert additional wells to water injection when proper lease line injection agreements are obtained.

ORE EXAMINER UTZ

NSERVATION COMMISSION

Texaco EXHIBIT NO. 1

4634

**BEFORE EXAMINER UTZ
OIL CONSERVATION COMMISSION**

EXHIBIT NO. 3
CASE NO. 9637

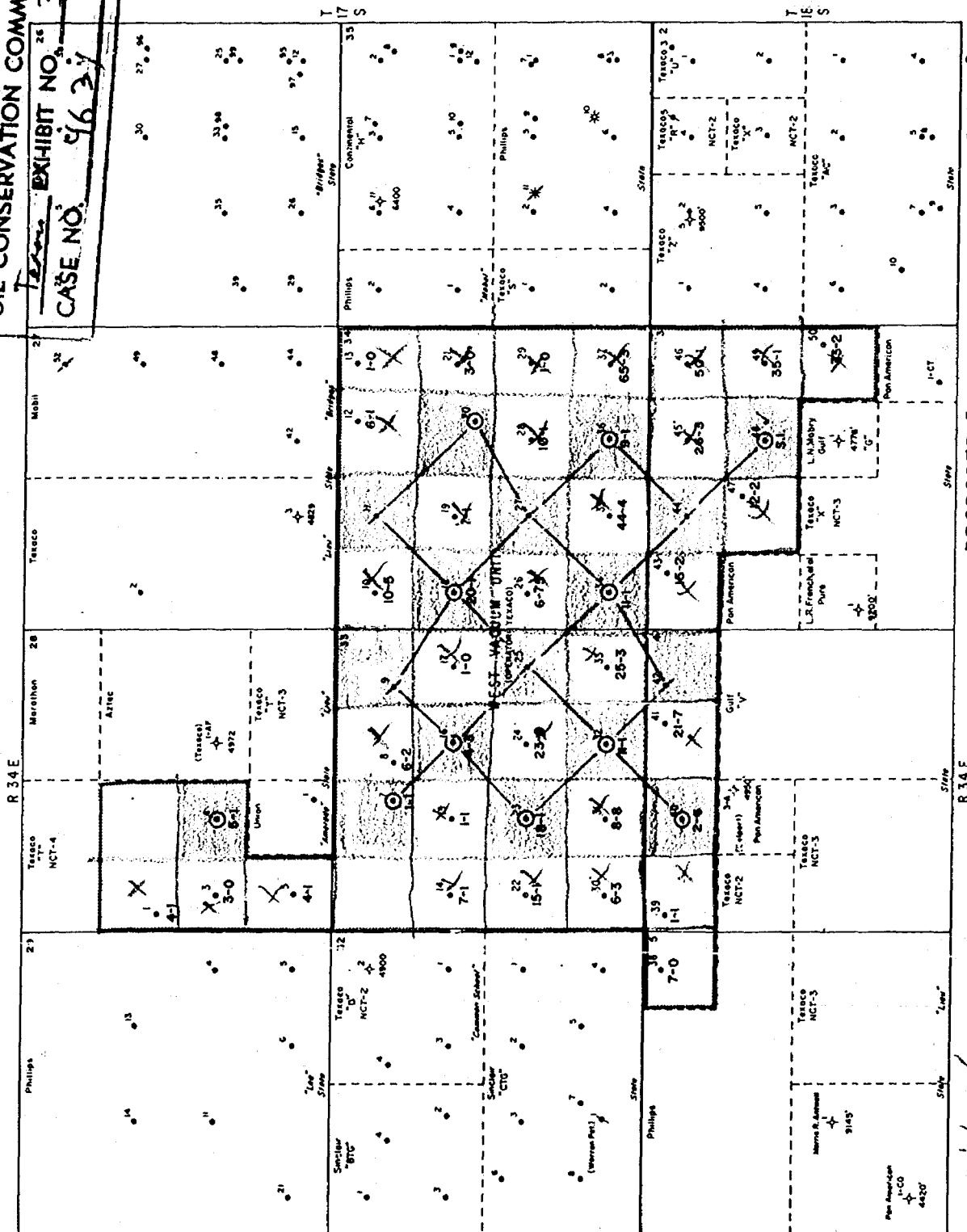


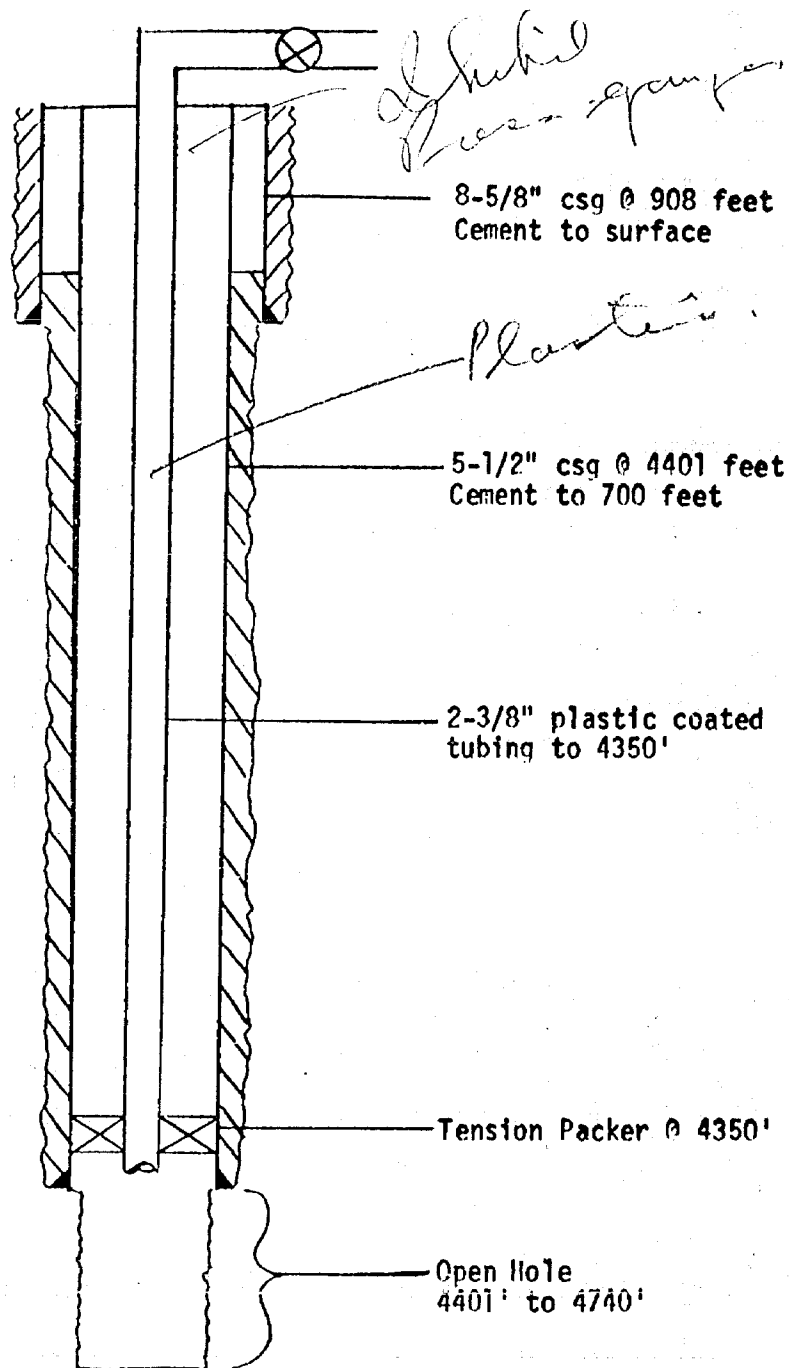
FIGURE NO. 2
TEXACO INC.
MIDLAND DIVISION
WEST VACUUM UNIT
LEA COUNTY, NEW MEXICO
SCALE: 0 1000 2000
DRAWN BY: JMB. DATE: 11-9-68

PROPOSED 5-SPOT PLAN

LEGEND
PRESENT INJECTORS
PROPOSED INJECTORS
12-2 WELL TEST, OIL-WATER

CPC 12-8-71

47
42
94
188
1974
17 inj 40's
30 prod 40's
47



TEXACO Inc.

Diagrammatic Sketch
West Vacuum Unit
Well No. 32

BEFORE EXAMINER UTZ	
OIL CONSERVATION COMMISSION	
<u>Texas</u>	EXHIBIT NO. <u>4</u>
CASE NO. <u>4637</u>	

CPC 11-17-71

WELLS PROPOSED FOR INJECTION

WEST VACUUM UNIT

Well No.	Surface Casing				Production Casing				Total	
	Size	Depth	Sx. Cement	Top Cement	Size	Depth	Sx. Cement	Top Cement	Depth	Injection Interval
4	8-5/8"	404'	250	Surface	5-1/2"	4,744'	200	3,744'	4,735'	4505' - 4708'
7	8-5/8"	822'	400	Surface	5-1/2"	4,542'	900	Surface	4,681'	4542' - 4675'
16	8-5/8"	1,566'	150	Surface	5-1/2"	4,195'	300	2,428'	4,700'	4159' - 4700'
18	8-5/8"	864'	300	Surface	5-1/2"	4,136'	300	548'	4,705'	4138' - 4705'
20	8-5/8"	1,578'	650	Surface	5-1/2"	4,289'	275	2,550'	4,710'	4289' - 4710'
23	8-5/8"	900'	450	Surface	5-1/2"	4,240'	300	2,509'	4,703'	4240' - 4703'
32	8-5/8"	908'	500	Surface	5-1/2"	4,401'	900	700'	4,740'	4401' - 4740'
34	8-5/8"	893'	300	Surface	5-1/2"	4,181'	300	1,900'	4,700'	4181' - 4700'
36	7-5/8"	1,623'	820	Surface	5-1/2"	4,230'	200	1,500'	4,585'	4230' - 4685'
40	8-5/8"	1,485'	1000	Surface	5-1/2"	4,397'	500	1,509'	4,750'	4397' - 4750'
48	8-5/8"	1,654'	1000	Surface	5-1/2"	4,340'	500	3,800'	4,670'	4340' - 4670'

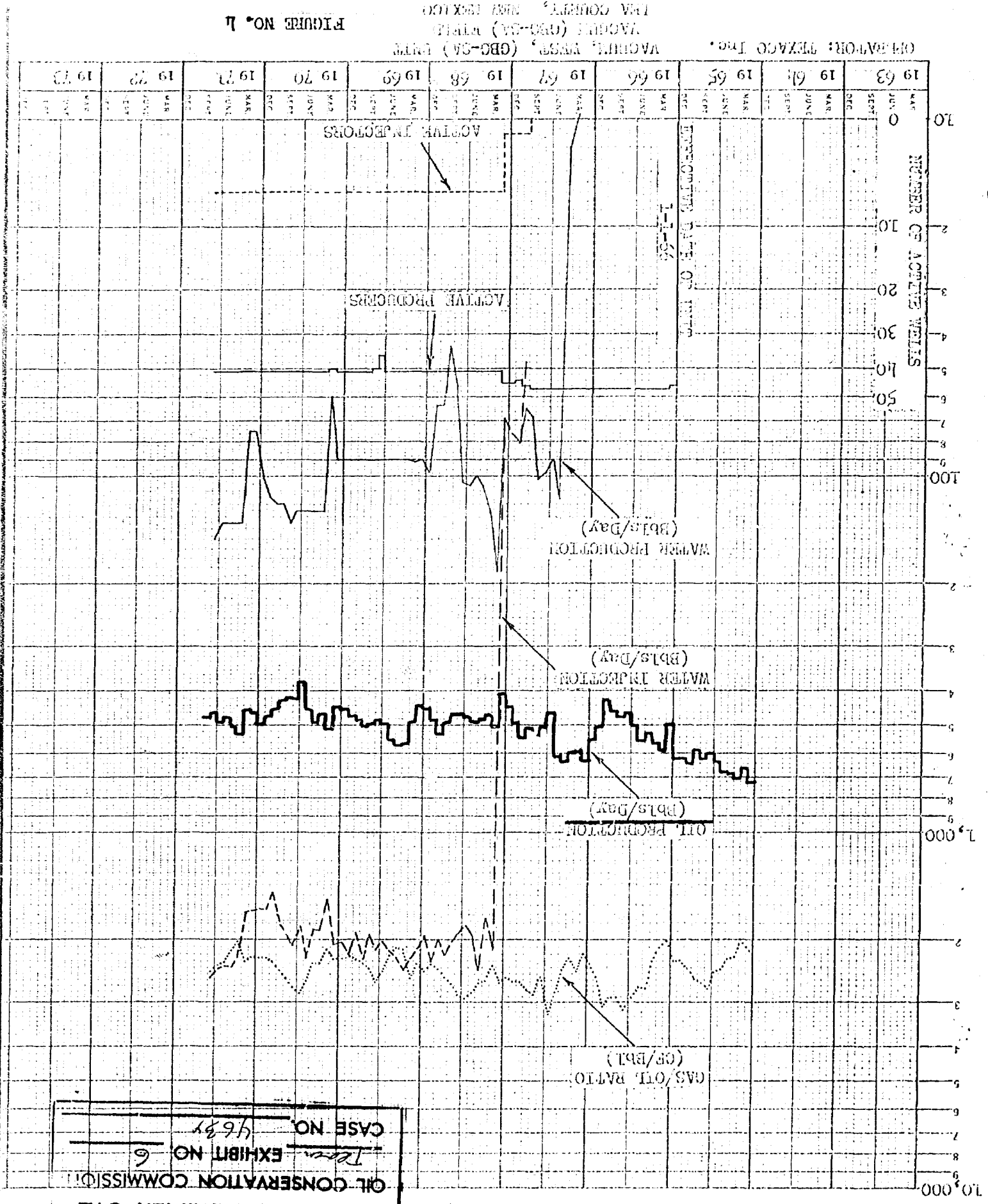
BEFORE EXAMINER UTZ

OIL CONSERVATION COMPANY

Exhibit NO. 5

CASE NO. 9637

BEFORE EXAMINER UTZ
OIL CONSERVATION COMMISSION
EXHIBIT NO. 6
CASE NO. 4681





PETROLEUM PRODUCTS

November 17, 1971

TEXACO INC.
DRAWER 728
HOBBS, NEW MEXICO 88240

RECEIVED

NOV 15 1971

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

OIL CONSERVATION COMM.
SANTA FE

Case 4634

REQUEST FOR HEARING

West Vacuum Unit

Vacuum (Grayburg-San Andres) Field
Lea County, New Mexico

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

Gentlemen:

TEXACO Inc. respectfully requests that an examiner hearing be scheduled to consider its application to expand the pilot waterflood project in the West Vacuum Unit to a full scale waterflood. TEXACO proposes to expand the inverted nine spot pilot to a full scale five spot pattern by converting Unit Well Nos. 4, 7, 16, 18, 20, 23, 32, 34, 36, 40 and 48 to water injection.

As the result of pilot performance, expansion is now attractive. The wells proposed for conversion will be used to inject approximately 400 barrels of fresh water per day into the Grayburg-San Andres reservoir at well head pressures from 0 to 2750 psig. The fresh water will come from the Ogallala formation in the Vacuum Field area.

Attached are a log and schematic diagram of a type well and a plat of the unit area and offset leases as specified in New Mexico Statewide Rule 701. Offset operators are being notified of TEXACO's request by copy of this letter.

Yours very truly,

W. E. Morgan
W. E. Morgan
District Superintendent

CPC-cr
MAS, Jr.
Offset Operators

DOCKET MARKED

Date 12-3-71

OFFSET OPERATORS

Atlantic Richfield Company
P. O. Box 1710
Hobbs, New Mexico 88240

Amoco Producing Company
P. O. Box 68
Hobbs, New Mexico 88240

Aztec Oil & Gas Company
P. O. Box 847
Hobbs, New Mexico 88240

Gulf Oil Company
P. O. Box 670
Hobbs, New Mexico 88240

Mobil Oil Company
P. O. Box 1800
Hobbs, New Mexico 88240

Phillips Petroleum Company
Phillips Building
4th & Washington
Odessa, Texas 79760

Union Oil Company of California
P. O. Box 3100
Midland, Texas 79701

LEGEND
PRESENT INJECTORS
PROPOSED INJECTORS

PROPOSED 5-SPOT PLAN

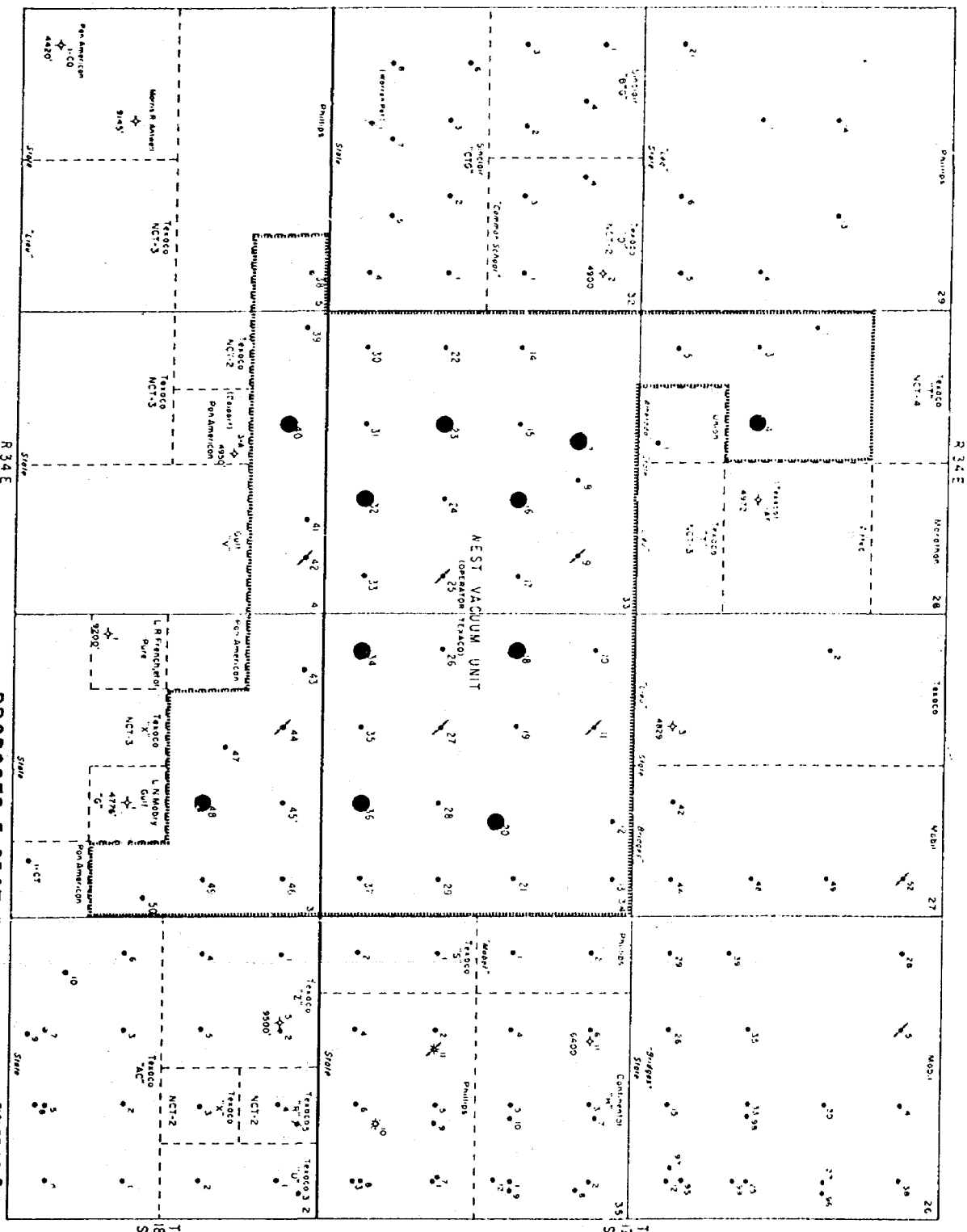


FIGURE NO. 2
 TEXACO INC.
 MIDLAND DIVISION
 WEST VACUUM UNIT
 LEA COUNTY, NEW MEXICO
 SCALE 1" = 1000'
 DRAWN BY JMS DATE 11-10-68

Case 4634

DRAFT

GMH/dr

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. 4634

Order No. R-4234

APPLICATION OF TEXACO INC. FOR

A WATERFLOOD EXPANSION, LEA
COUNTY, NEW MEXICO.

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9 a.m. on December 15, 19 71
at Santa Fe, New Mexico, before Examiner Elvis A. Utz.

NOW, on this Jan. day of 1972, 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
expand the West Vacuum Unit Waterflood Project in the West
Vacuum Unit Area, Vacuum Pool, by the injection of
water into the Hayling-San Andres formations through eleven additional
injection wells located in Sections 28, 33, and 34 of Township 17
South, Range 34 East, and Sections 3 and 4 of Township 18 South, Range
34 East, NMPM, Lea County, New Mexico, as follows:

DRAFT

GMH/dr

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. 4634

Order No. R- 4234

APPLICATION OF TEXACO INC. FOR

A WATERFLOOD EXPANSION, LEA
COUNTY, NEW MEXICO.

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9 a.m. on December 15, 19 71
at Santa Fe, New Mexico, before Examiner Elvis A. Utz.

NOW, on this 15 day of Dec., 1972, 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
expand the West Vacuum Unit Waterflood Project in the West
Vacuum Unit Area, Vacuum Pool, by the injection of
water into the Brayley - La Cumbre formations through eleven additional
injection wells located in Sections 28, 33, and 34 of Township 17
South, Range 34 East, and Sections 3 and 4 of Township 18 South, Range
34 East, NMPM, Lea County, New Mexico, as follows:

CASE NO. 4634

Order No. K-

~~West Vacuum Unit~~ *Unit 4634*
~~West Vacuum Unit Well No. 4~~ - *K-28-17 South 34 East*
~~West Vacuum Unit Well No. 7~~ - *C-33-17 South 34 East*
~~West Vacuum Unit Well No. 16~~ - *G-33-17 South 34 East*
~~West Vacuum Unit Well No. 18~~ - *E-34-17 South 34 East*
~~West Vacuum Unit Well No. 20~~ - *G-34-17 South 34 East*
~~West Vacuum Unit Well No. 23~~ - *K-33-17 South 34 East*
~~West Vacuum Unit Well No. 32~~ - *O-33-17 South 34 East*
~~West Vacuum Unit Well No. 34~~ - *M-34-17 South 34 East*
~~West Vacuum Unit Well No. 36~~ - *O-34-17 South 34 East*
~~West Vacuum Unit Well No. 40~~ - *C-4-18 South 34 East*
~~West Vacuum Unit Well No. 48~~ - *G-3-18 South 34 East*

(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 expansion of the West Vacuum Unit Waterflood Project should result in the recovery of otherwise unrecoverable oil, thereby preventing waste.

(5) That an administrative procedure should be adopted whereby the Secretary-Director of the Commission may authorize additional injection wells ~~and producing wells at orthodox and unorthodox locations~~ within said waterflood project as may be necessary to complete ^{an} efficient injection ~~and production~~ patterns.

(6) That the subject application should be approved and the expanded 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 should not be necessary before obtaining administrative approval for the conversion of additional wells to water injection, ~~and provided further that said injection and producing wells would be drilled no closer than 5 feet to the outer boundary of the waterflood project area nor closer than 5 feet to any quarter-quarter section or subdivision inner boundary.~~

IT IS THEREFORE ORDERED:

(1) That the applicant, Texaco Inc., is hereby authorized to expand its West Vacuum Unit Waterflood Project, Vacuum Pool, by the injection of water into the Grayburg and Anadarko Formations through the following-described wells at locations in Sections 28, 33, and 34 of Township 17 South, Range 34 East, and Sections 3 and 4 of Township 18 South, Range 34 East, ^{West Vacuum Unit,} NMPM, Lea County,

New Mexico:

<u>Well No.</u>	<u>Well Location Township and Range</u>
West Vacuum Unit Well No. 4	- K-28-17 South 34 East
West Vacuum Unit Well No. 7	- C-33-17 South 34 East
West Vacuum Unit Well No. 16	- G-33-17 South 34 East
West Vacuum Unit Well No. 18	- E-34-17 South 34 East
West Vacuum Unit Well No. 20	- G-34-17 South 34 East
West Vacuum Unit Well No. 23	- K-33-17 South 34 East

CASE NO. 4634
Order No. R-

~~West Vacuum Unit~~ Well No. 32 - *O - 33 - 17 South 34 East*

~~West Vacuum Unit~~ Well No. 34 - *M - 34 - 17 South 34 East*

~~West Vacuum Unit~~ Well No. 36 - *O - 34 - 17 South 34 East*

~~West Vacuum Unit~~ Well No. 40 - *C - 4 - 18 South 34 East*

~~West Vacuum Unit~~ Well No. 48 - *G - 3 - 18 South 34 East*

(2) That the expanded waterflood project 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 such additional injection wells ~~and producing wells at orthodox and unorthodox locations~~ within said project area as may be necessary to complete ^{for} efficient injection ~~and production patterns; provided said wells are drilled no closer than 5 feet to the outer boundary of said waterflood project area nor closer than 5 feet to any quarter-quarter section or subdivision inner boundary,~~ and provided that the application therefor has been filed in accordance with Rule 701 B of the Commission Rules and Regulations and is accompanied by evidence that the operator of any productive lease offsetting the proposed location has assented thereto. ^{and 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.

-5-

CASE NO. 4634

Order No. R-

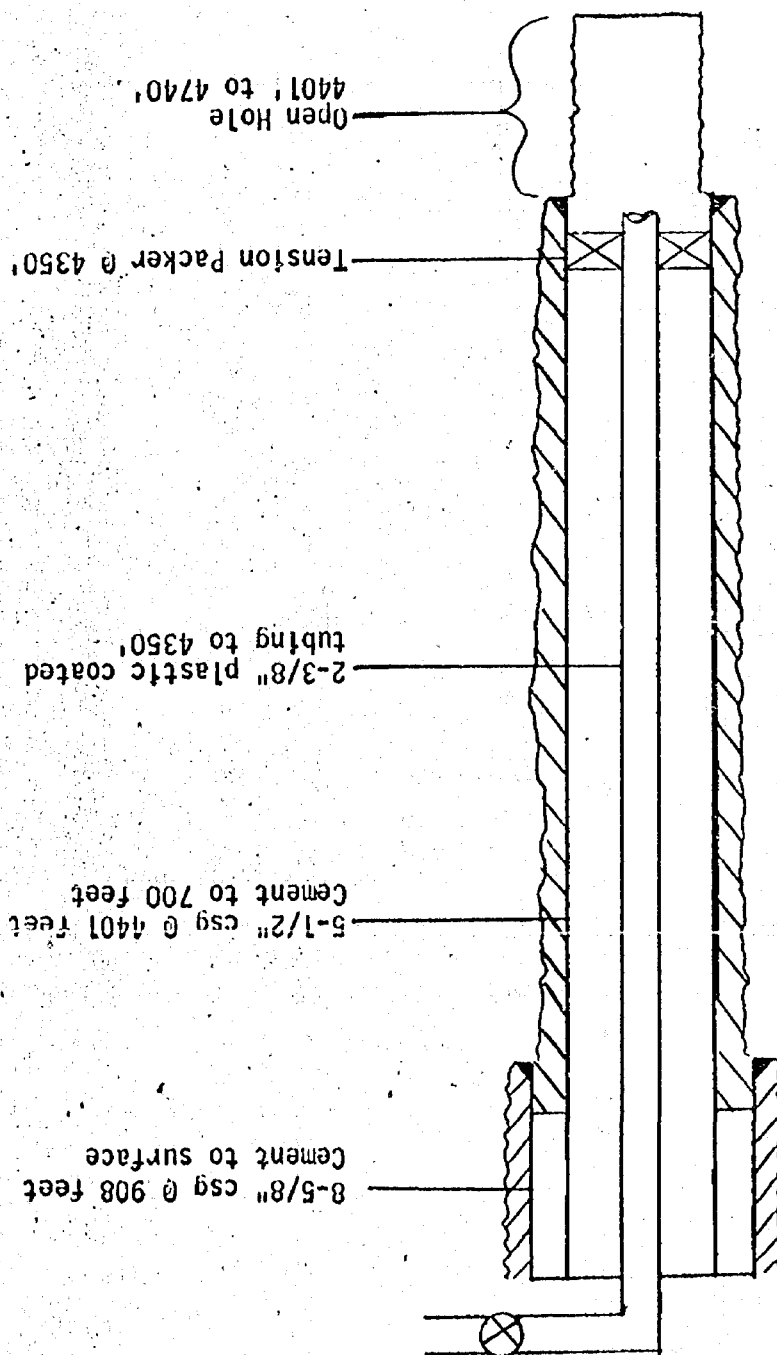
(3) That monthly progress reports of the expanded water-flood project herein authorized shall be submitted to the Commission in accordance with Rules 704 and 1120 of the Commission Rules and Regulations.

(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 herein-above designated.

Case 4634
CPC 11-17-71

TEXACO Inc.
Diagrammatic Sketch
West Vacuum Unit
Well No. 32



ROUGH DRAFT FOR WATERFLOOD LETTERS

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-4234 *recently*, entered in Case No. 4634, approving the expansion of the West Vacuum Unit Waterflood Project.

Additional injection is to be through the 11 newly authorized water injection wells, each of which had been equipped with plastic coated tubing set in a jacket at approximately 4350 feet. 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 1974 barrels per day when the Southeast New Mexico normal unit allowable is 42 barrels per day or less.

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

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

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

Very truly yours,

A. L. PORTER, Jr.
Secretary-Director

cc: OCC: Hobbs X
Artesia
Aztec

USGS

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

Mr. D. E. Gray,