

1. *Chrysomelidae*
 2. *Curculionidae*
 3. *Chrysomelidae*
 4. *Chrysomelidae*
 5. *Chrysomelidae*
 6. *Chrysomelidae*
 7. *Chrysomelidae*
 8. *Chrysomelidae*
 9. *Chrysomelidae*
 10. *Chrysomelidae*
 11. *Chrysomelidae*
 12. *Chrysomelidae*
 13. *Chrysomelidae*
 14. *Chrysomelidae*
 15. *Chrysomelidae*
 16. *Chrysomelidae*
 17. *Chrysomelidae*
 18. *Chrysomelidae*
 19. *Chrysomelidae*
 20. *Chrysomelidae*
 21. *Chrysomelidae*
 22. *Chrysomelidae*
 23. *Chrysomelidae*
 24. *Chrysomelidae*
 25. *Chrysomelidae*
 26. *Chrysomelidae*
 27. *Chrysomelidae*
 28. *Chrysomelidae*
 29. *Chrysomelidae*
 30. *Chrysomelidae*
 31. *Chrysomelidae*
 32. *Chrysomelidae*
 33. *Chrysomelidae*
 34. *Chrysomelidae*
 35. *Chrysomelidae*
 36. *Chrysomelidae*
 37. *Chrysomelidae*
 38. *Chrysomelidae*
 39. *Chrysomelidae*
 40. *Chrysomelidae*
 41. *Chrysomelidae*
 42. *Chrysomelidae*
 43. *Chrysomelidae*
 44. *Chrysomelidae*
 45. *Chrysomelidae*
 46. *Chrysomelidae*
 47. *Chrysomelidae*
 48. *Chrysomelidae*
 49. *Chrysomelidae*
 50. *Chrysomelidae*
 51. *Chrysomelidae*
 52. *Chrysomelidae*
 53. *Chrysomelidae*
 54. *Chrysomelidae*
 55. *Chrysomelidae*
 56. *Chrysomelidae*
 57. *Chrysomelidae*
 58. *Chrysomelidae*
 59. *Chrysomelidae*
 60. *Chrysomelidae*
 61. *Chrysomelidae*
 62. *Chrysomelidae*
 63. *Chrysomelidae*
 64. *Chrysomelidae*
 65. *Chrysomelidae*
 66. *Chrysomelidae*
 67. *Chrysomelidae*
 68. *Chrysomelidae*
 69. *Chrysomelidae*
 70. *Chrysomelidae*
 71. *Chrysomelidae*
 72. *Chrysomelidae*
 73. *Chrysomelidae*
 74. *Chrysomelidae*
 75. *Chrysomelidae*
 76. *Chrysomelidae*
 77. *Chrysomelidae*
 78. *Chrysomelidae*
 79. *Chrysomelidae*
 80. *Chrysomelidae*
 81. *Chrysomelidae*
 82. *Chrysomelidae*
 83. *Chrysomelidae*
 84. *Chrysomelidae*
 85. *Chrysomelidae*
 86. *Chrysomelidae*
 87. *Chrysomelidae*
 88. *Chrysomelidae*
 89. *Chrysomelidae*
 90. *Chrysomelidae*
 91. *Chrysomelidae*
 92. *Chrysomelidae*
 93. *Chrysomelidae*
 94. *Chrysomelidae*
 95. *Chrysomelidae*
 96. *Chrysomelidae*
 97. *Chrysomelidae*
 98. *Chrysomelidae*
 99. *Chrysomelidae*
 100. *Chrysomelidae*

- ASE No.

3398

Application,
Transcripts,

Mail Exhibits

ETC.

PETROLEUM PRODUCTS



DRAWER 728
HOBBS, NEW MEXICO 88240

June 9, 1967

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

Re: Skaggs Grayburg Unit

Gentlemen:

The Skaggs Grayburg Unit Waterflood was authorized by Commission Order R-3062. This is to advise that water injection commenced on May 17, 1967 into Unit Wells No. 1, 3, 7, 12, 14, 21 and 22.

Yours very truly,

J.G. Blevins, Jr.
Assistant District Superintendent

EDMc-bh

WDH

NMOCC - Hobbs

MAIN OFFICE, 001

'67 JUN 12 AM 8 19

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

May 5, 1966

C
O
P
Y

Mr. Booker Kelly
White, Gilbert, Koch & Kelly
Attorneys at Law
Post Office Box 797
Santa Fe, New Mexico

Dear Sir:

Reference is made to Commission Order No. R-3063, recently entered in Case No. 3398, approving the Texaco Skaggs Grayburg Unit Water-flood Project.

Injection is to be through the eleven authorized water injection wells, each of which shall be equipped with internally plastic-coated tubing and a packer, which shall be set as near as is practicable to the casing shoe. In the case of Weir "A" Well No. 1, the packer shall be set in the liner at an approximate depth of 3775 feet.

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 924 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

OIL CONSERVATION COMMISSION

P. O. BOX 871

SANTA FE, NEW MEXICO

-2-

Mr. Booker Kelly

May 5, 1966

C
O
P
Y

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

ALP/DSN/ir

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

Oil Conservation Commission
Box 1980
Hobbs, New Mexico

GOVERNOR
JACK M. CAMPBELL
CHAIRMAN

State of New Mexico
Oil Conservation Commission



LAND COMMISSIONER
GUYTON B. HAYS
MEMBER

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

P. O. BOX 2088
SANTA FE

May 4, 1966

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

Re: Case No. 3398

Order No. R-3063

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

Carbon copy of order also sent to:

Hobbs OCC x
Artesia OCC
Aztec OCC

Other Mr. Frank Irby

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. 3398
Order No. R-3063

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

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9 a.m. on April 27, 1966,
at Santa Fe, New Mexico, before Examiner Elvis A. Utz.

NOW, on this 4th day of May, 1966, the Commission, a
quorum being present, having considered the testimony, the record,
and the recommendations of the Examiner, and being fully advised
in the premises,

FINDS:

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

(2) That the applicant, Texaco Inc., seeks permission to
institute a waterflood project in the Skaggs Grayburg Unit Area,
Skaggs-Grayburg Pool, by the injection of water into the Grayburg
formation through eleven injection wells in Sections 12 and 13,
Township 20 South, Range 37 East, and Sections 7 and 18, Township
20 South, Range 38 East, NMPM, Lea County, New Mexico.

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

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

-2-

CASE No. 3398
Order No. K-3063

(5) That the subject application should be approved and the project should be governed by the provisions of Rules 701, 702, and 703 of the Commission Rules and Regulations.

IT IS THEREFORE ORDERED:

(1) That the applicant, Texaco Inc., is hereby authorized to institute a waterflood project in the Skaggs Grayburg Unit Area, Skaggs-Grayburg Pool, by the injection of water into the Grayburg formation through the following-described wells in Lea County, New Mexico:

TOWNSHIP 20 SOUTH, RANGE 37 EAST, NMPM

Texaco-C. H. Weir 'A' Well No. 1 - NE/4 SW/4 of Section 12
Texaco-C. H. Weir 'A' Well No. 3 - NE/4 SE/4 of Section 12
Texaco-M. B. Weir 'B' Well No. 3 - SW/4 SE/4 of Section 12
Texaco-M. B. Weir 'B' Well No. 6 - SW/4 SW/4 of Section 12
Texaco-L. R. Kershaw Well No. 1 - NE/4 NE/4 of Section 13
Texaco-L. R. Kershaw Well No. 4 - NE/4 NW/4 of Section 13
Texaco-L. R. Kershaw Well No. 5 - NE/4 SW/4 of Section 13
Texaco-L. R. Kershaw Well No. 6 - SW/4 NW/4 of Section 13

TOWNSHIP 20 SOUTH, RANGE 38 EAST, NMPM

Texaco-M. B. Weir 'B' Well No. 2 - SW/4 SW/4 of Section 7
Texaco-M. B. Weir 'A' Well No. 2 - SW/4 NW/4 of Section 18
Sweet-Trickey Well No. 2 - NW/4 NE/4 of Section 18

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

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

-3-

CASE No. 3398
Order No. R-3063

(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

Guston B. Hays

GUSTON B. HAYS, Member

A. L. Porter, Jr.

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

esr/

DOCKET: EXAMINER HEARING - WEDNESDAY - APRIL 27, 1966

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 3394: Application of Shell Oil Company for a non-standard gas proration unit, Lea County, New Mexico. Applicant, in the above-styled cause, seeks approval of a 160-acre non-standard gas proration unit comprising the N/2 SW/4, SE/4 SW/4, and NW/4 SE/4 of Section 22, Township 21 South, Range 37 East, Blinebry Gas Pool, Lea County, New Mexico, said unit to be dedicated to applicant's Turner Well No. 13 located in Unit N of said Section 22.
- CASE 3395: Application of E. W. Warner for down-hole commingling, San Juan County, New Mexico. Applicant, in the above-styled cause, seeks authority to commingle in the well-bore marginal oil production from undesignated Gallup and Dakota Pools in his Warner-Federal Well No. 1 located in Unit A of Section 10, Township 22 North, Range 8 West, San Juan County, New Mexico.
- CASE 3396: Application of Texaco Inc. for a non-standard oil proration unit and a non-standard location, Lea County, New Mexico. Applicant, in the above-styled cause, seeks the approval of a 40-acre non-standard oil proration unit comprising the NE/4 SW/4 of Section 14, Township 12 South, Range 34 East, Ranger Lake-Pennsylvanian Pool, Lea County, New Mexico, said unit to be dedicated to its State of New Mexico "DA" Well No. 2 to be located 1980 feet from the South and West lines of said Section 14.
- CASE 3397: Application of Texaco Inc. for a unit agreement, Lea County, New Mexico. Applicant, in the above-styled cause, seeks approval of its Skaggs-Grayburg Unit Area comprising 880 acres, more or less, of Fee land in Sections 12 and 13, Township 20 South, Range 37 East, and Sections 7 and 18, Township 20 South, Range 38 East, Lea County, New Mexico.
- CASE 3398: 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 by the injection of water into the Grayburg formation, Skaggs-Grayburg Pool, through eleven wells in its Skaggs-Grayburg Unit, Lea County, New Mexico.
- CASE 3399: Application of Tenneco Oil Company for two non-standard gas proration units, San Juan County, New Mexico. Applicant, in the above-styled cause, seeks approval of two non-standard gas proration units which would comprise all lands in the W/2 of Section 30, Township 30 North, Range 9 West, adjacent to a Blanco-Pictured Cliffs Pool, San Juan County, New Mexico.
- CASE 3400: Application of Pan American Petroleum Corporation for creation of a new pool and special pool rules, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks the creation of a new oil pool for its Big Eddy Unit Well No. 7 located in Unit O of Section 19, Township 20 South, Range 31 East, Eddy County, New Mexico, and for the promulgation of special rules therefor, including a provision for 160-acre oil proration units.

- 2 -

APRIL 27, 1966, EXAMINER HEARING

CASE 3002 (Reopened):

In the matter of Case No. 3002 being reopened pursuant to the provisions of Order No. R-2684-A, which order continued the original order for an additional year, establishing 320-acre spacing for the Fowler-Lower Paddock Gas Pool, Lea County, New Mexico. All interested parties may appear and show cause why said pool should not be developed on 160-acre spacing units.

339 P

APR 12 1966

April 12, 1966

Texaco, Inc.
P. O. Box 3109
Midland, Texas 79704

Attn. Mr. C. L. Whigham
Division Proration Engineer

Gentlemen:

Your letter of March 25, 1966 pertaining to your application of the next previous date to the Oil Conservation Commission seeking approval of a secondary recovery project in the Skaggs (Grayburg) Oil Pool is hereby acknowledged. Attachments include a copy of your application, copy of Working Interest Owners, copy of Offset Operators, diagrammatic sketch of proposed injection well, being L. R. Kershaw Well No. 1 and Exhibit "B" small scale plat of area to be unitized in the Skaggs Grayburg Unit.

The application does not state that the Kershaw well No. 1 is the well to be converted for injection service, but I am assuming this is a fact. Please advise whether my assumption is correct. Please give the footage location of the proposed injection well.

FBI/ma
cc-A. L. Porter, Jr.
L. C. White

Yours truly,

S. E. Reynolds
State Engineer

By:

Frank E. Irby
Chief
Water Rights Div.

B. L. Sweet, Operator

Trickey Well No. 2 - NW/4 NE/4 Section 18
T-20-S, R-38-E

TEXACO Inc., Operator

L.R. Kershaw Well No. 1 - NE/4 NE/4 Section 13
T-20-S, R-37-E

L.R. Kershaw Well No. 4 - NE/4 NW/4 Section 13
T-20-S, R-37-E

L.R. Kershaw Well No. 5 - NE/4 SW/4 Section 13
T-20-S, R-37-E

L.R. Kershaw Well No. 6 - SW/4 NW/4 Section 13
T-20-S, R-37-E

C.H. Weir 'A' Well No. 1 - NE/4 SW/4 Section 12
T-20-S, R-37-E

C.H. Weir 'A' Well No. 3 - NE/4 SE/4 Section 12
T-20-S, R-37-E

M.B. Weir 'B' Well No. 3 - SW/4 SE/4 Section 12
T-20-S, R-37-E

M.B. Weir 'B' Well No. 6 - SW/4 SW/4 Section 12
T-20-S, R-37-E

M.B. Weir 'B' Well No. 2 - SW/4 SW/4 Section 7
T-20-S, R-38-E

M.B. Weir 'A' Well No. 2 - SW/4 NW/4 Section 18
T-20-S, R-38-E

Case 3388

Reard. 4-27-66

Rec. 4-28-66

approve Texaco's Skaggs Waterflood
project, and the following wells
for injection, all in the Skaggs unit.

Thurston

TEXACO
INC.

PETROLEUM PRODUCTS

DOMESTIC PRODUCING DEPARTMENT
MIDLAND DIVISION



P. O. BOX 3109
MIDLAND, TEXAS

March 25, 1966

62-3397

UNITIZATION AND SECONDARY RECOVERY
SKAGGS (GRAYBURG) OIL POOL
LEA COUNTY, NEW MEXICO

State Engineer's Office
Capitol Building
Santa Fe, New Mexico

Dear Sir:

In compliance with New Mexico Oil Conservation Commission Rule 701, Texaco Inc. requests your approval of a proposed secondary recovery project in the Skaggs (Grayburg) Oil Pool of Lea County, New Mexico. Attached hereto is a copy of our letter of March 24, 1966 to the New Mexico Oil Conservation Commission requesting that a hearing be scheduled to consider this application. Also included herewith are plat of the project area, log of one of the proposed injection wells and a diagrammatic sketch of the subsurface installation of one of the proposed injection wells. If any additional information is required, please advise this office. It is expected that the hearing will be scheduled for the second examiner hearing in April, 1966.

Yours very truly,

C. L. Whigham

C. L. Whigham
Division Proration Engineer

CLW:jl
Attach.

TEXACO
INC.

PETROLEUM PRODUCTS



DOMESTIC PRODUCING DEPARTMENT
MIDLAND DIVISION

March 24, 1966

REQUEST FOR HEARING
UNITIZATION AND SECONDARY RECOVERY
SKAGGS (GRAYBURG) OIL POOL
LEA COUNTY, NEW MEXICO

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

Dear Sir:

As provided by Rule 1203, Texaco Inc. hereby submits in triplicate a request for an Examiner Hearing in Santa Fe, New Mexico, to consider an application for unitizing and waterflooding ten tracts comprising a total area of approximately 880 acres in the Skaggs (Grayburg) Oil Pool in Lea County, New Mexico. The Unit Agreement has currently been ratified by 92.1 percent of the total working interest and 75.0 percent of the total royalty interest in the unit. It is planned to convert ten of the twenty-two producing wells on these tracts to injectors, as shown by the attached plat. Injection will be into the Grayburg formation of Permian Age at an average depth of 3700 feet to 3950 feet. It is anticipated that initial injection rates will be approximately 200 to 500 barrels of water per day per well.

Fresh water is to be used for the injection fluid which is available from a fresh water supply well located 745' FNL and 300' FEL of Section 13, T-20-S, R-37-E. This well was drilled under Texaco's Water Permit L-4412 approved by the State Engineer in the Lea County Shallow Underground Basin in April, 1964 and is designated as Water Source Well No. L-4412. Upon completion, it tested for 200 gallons per minute. Two more water source wells are to be drilled and they will be positioned on a line running North-South through the existing well. The location of Water Supply Well No. L-4412-S has been filed with and approved by the State Engineer.

Oil Conservation Commission of New Mexico Order No. 4-1710, effective June 10, 1960, authorizes Continental Oil Company to waterflood the Grayburg formation on its Southeast Monument Unit, Skaggs Pool, Lea County, New Mexico, immediately to the south of the subject area. The subject waterflood project will be in cooperative agreement with Continental.

DOCKET MAILED

Date

4-15-66

In compliance with Rule 701 of the New Mexico Oil Conservation Commission rules, we are including with this application for Examiner Hearing, a plat of the project area, a representative radioactive log, a diagrammatic sketch of a proposed injection well showing all information relevant to its current completion and proposed conversion to injection, a list of the fourteen working interest owners with addresses and a list of the six offset operators with addresses. Detailed information as required under this rule is being compiled at this time and will be furnished at the hearing.

A copy of this application and all attachments are being forwarded under separate cover on this date to the State Engineer's Office, Capitol Building, Santa Fe, New Mexico, requesting the approval of that office for this proposed waterflood project. A copy of this letter and all attachments except the well log are also being mailed this date to all offset operators and working interest owners.

Yours very truly,



C. L. Whigham
Division Proration Engineer

CLW:j1

Attachments

NMOCC - Hobbs
State Engineer
LCW JSR HDR
Offset Operators

Mr. John Thompson, Jr.
Houston, Texas
Houston, Texas

Case 3398
2-2-66 TFR

ORIGINAL OPERATORS
PROPOSED SKAGGS GRAYBURG UNIT
SKAGGS (GRAYBURG) OIL POOL
LEA COUNTY, NEW MEXICO

Amerasia Petroleum Corporation
P. O. Box 668
Hobbs, New Mexico

Cities Service
P. O. Box 69
Hobbs, New Mexico

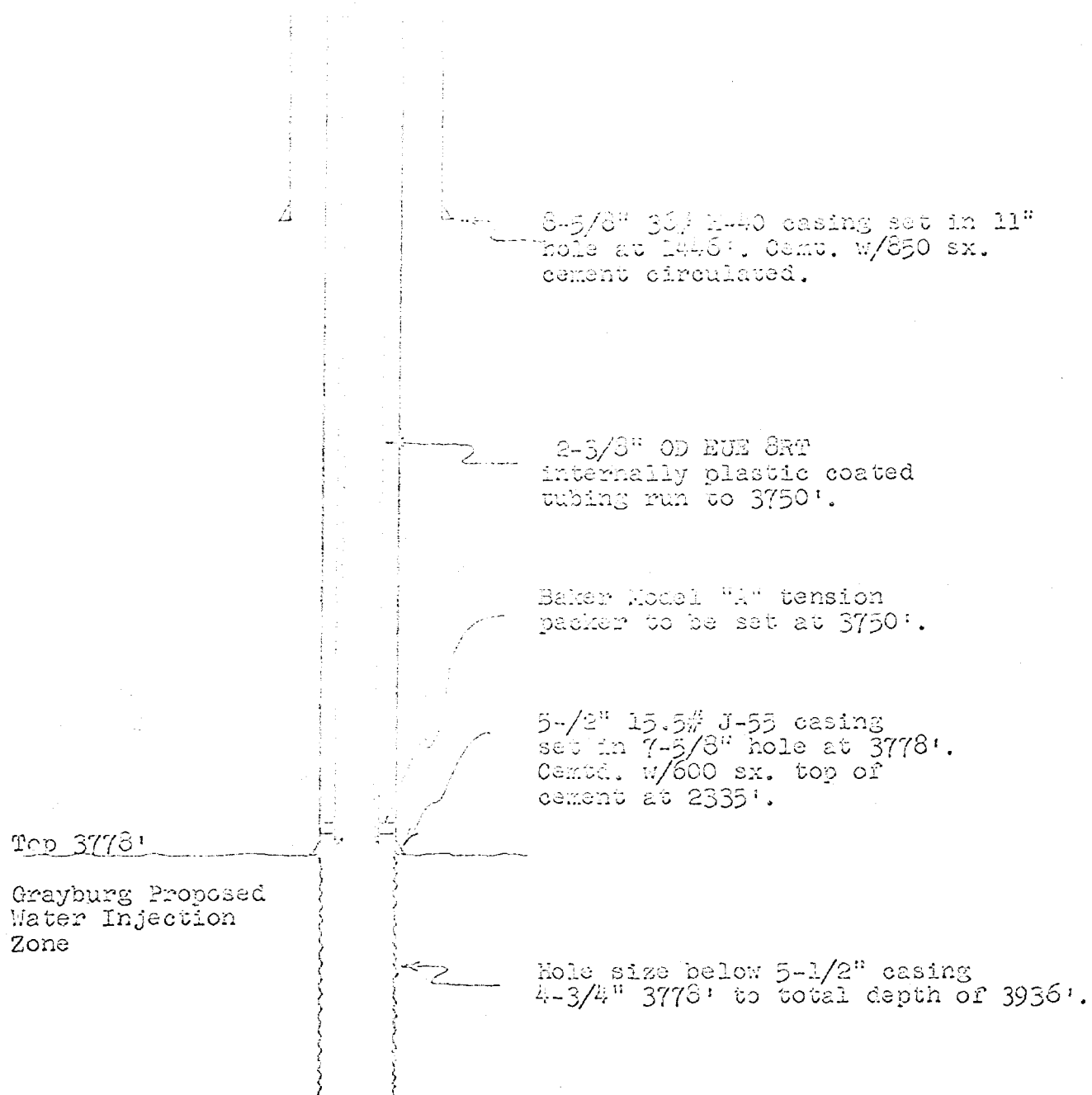
Continental Oil Company
P. O. Box 427
Hobbs, New Mexico

DeKalb Petroleum Corp.
404 W. Illinois
Midland, Texas

Texaco Inc.
P. O. Box 728
Hobbs, New Mexico
Attn: Mr. W. S. Bouldin

Tidewater Oil Company
P. O. Box 1231
Midland, Texas

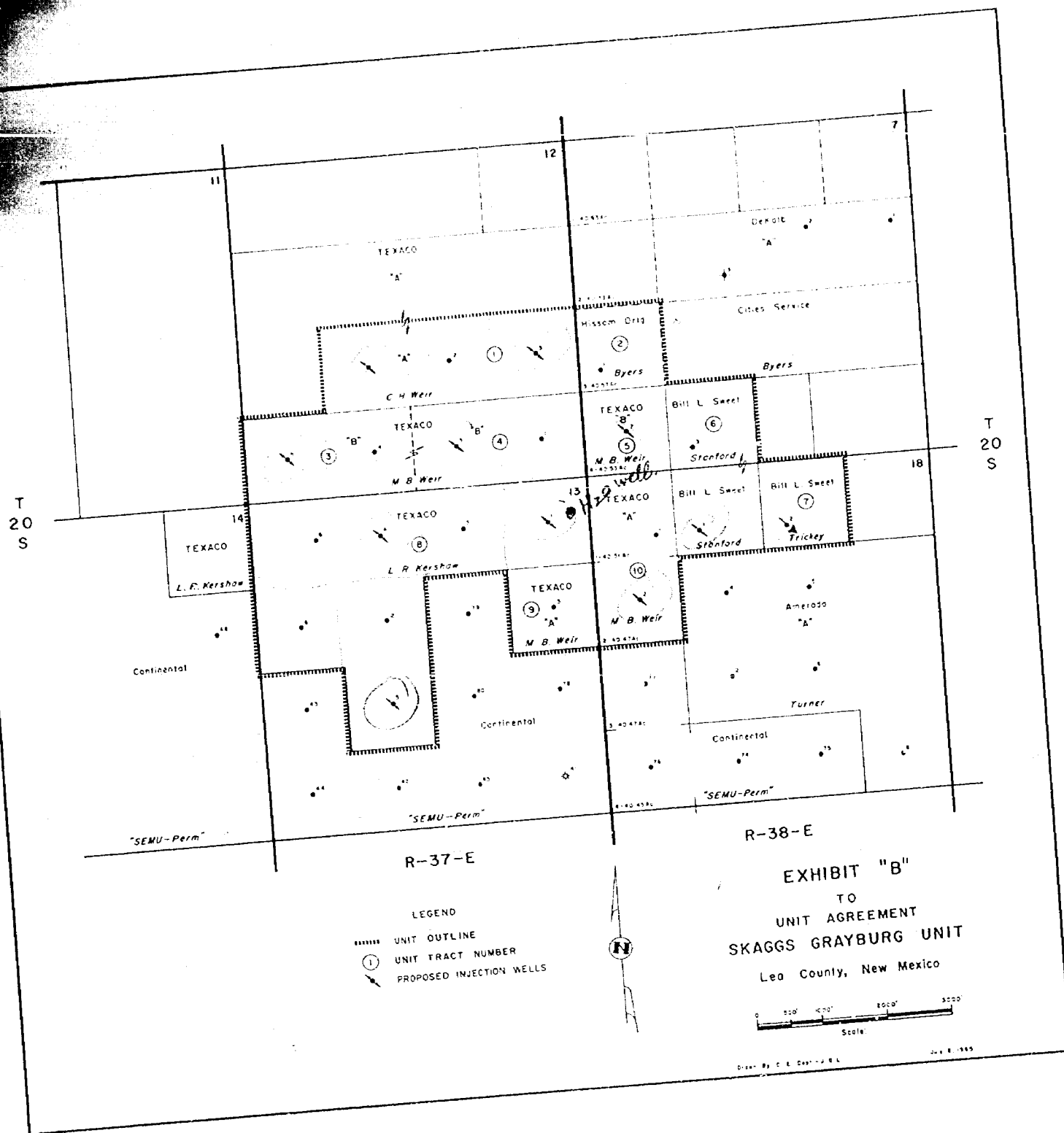
3348



DIAGRAMMATIC SKETCH OF
PROPOSED INJECTION WELL

Texaco Inc., L. R. Kershaw Well No. 1
Skaggs Grayburg Oil Pool
Lea County, New Mexico

Case 2398

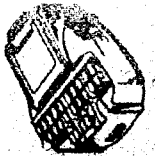


Case 3398

dearnley-meier

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

1120 SIMMAS BLDG. • P. O. BOX 1002 • PHONE 243-6601 • ALBUQUERQUE, NEW MEXICO



BEFORE THE
NEW MEXICO OIL CONSERVATION COMMISSION
Santa Fe, New Mexico
April 27, 1966

EXAMINER

HEARING

IN THE MATTER OF:

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

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

Case No. 3357
3398

BEFORE:

Elvio A. Clark, Cae Engineer

TRANSCRIPT OF HEARING

MR. UTZ: The hearing will come to order. The next case on the Docket will be Case 3397, Application of Texaco Inc., for a unit agreement, Lea County, New Mexico; and 3398, Application of Texaco Inc., for a waterflood project, Lea County, New Mexico. We'll consolidate both cases and save a little record.

MR. KELLY: Booker Kelly appearing on behalf of the applicant, Texaco Inc., we have one witness and he was previously sworn.

MR. PORTER: Let the record show that he was sworn in the previous case.

(Whereupon, Applicant's Exhibits 1-9 marked for identification.)

J. T. JOHNAPELUS, a witness, having been first duly sworn, was examined and testified as follows:

DIRECT EXAMINATION

BY MR. KELLY:

Q Would you state your name, position and employer?

A J. T. Johnapelus, employed by Texaco, Incorporated as a Proration Conservation Engineer, located in Midland, Texas.

Q You have testified before this Commission before?

A Yes, I have.

Q Would you state what Texaco seeks?



A Mr. Examiner, Texaco, Inc., requests the permission to unitize an area in the Skaggs-Grayburg Pool to be known as the Skaggs-Grayburg Unit, which is to consist of the Southeast Quarter, East half of the Southwest Quarter and Southwest Quarter of the Southwest Quarter of Section 12, the East half of the Northeast Quarter, Northwest Quarter of the Northeast Quarter, Northwest Quarter and Northeast Quarter of the Southwest Quarter of Section 13, West half of the Southwest Quarter and Southeast Quarter of the Southwest Quarter of Section 18 and the West half of the Northwest Quarter, Northeast Quarter of the Northwest Quarter and Northwest Quarter of the Northeast Quarter of Section 19 all in Township 20 South, Range 37 East, Lea County, New Mexico, units in the unitized area; and third, a permit to use 11 existing wells and the injection wells and a basic five spot pattern flood with variations.

Q The unit is shown on what we have marked Exhibit 6 and is outlined in dark -- it's the last exhibit in the little booklet; is that correct?

A Yes, sir, the last exhibit on the right-hand side would be Exhibit 6.

Q Would you give the Examiner a description of the reservoir characteristics and the production history?

A The Skaggs-Grayburg Field was discovered in March

14, 1937 by Continental Oil Company. This field produces from the Grayburg formation of Permian Age, Upper Guadalupe or Capitan series at an average depth of 3700 feet to 3950 feet.

The Physical Properties of the Reservoir Rock, the Average Porosity (Net Pay) is 6 percent. This was derived from a core analysis on the Continental Oil Company well.

The Average Permeability of net pay is 8.3 millidarcies.

The average connate water saturation is approximately 30 percent.

There is no known oil-water contact, nor a gas-oil contact.

The structure is a trap, primarily, structurally, with some stratigraphic control, and dips to the Northeast at approximately 50 feet per mile. Permeability is also a controlling factor.

Directing your attention to Exhibit 1 which appears on the right-hand side of the brochure, this is a structure map contoured on the top of the Penrose (Lower Queen), and the contour interval is at 50 foot.

The average net effective oil pay thickness is 35 feet. The oil gravity is 36 degrees API. The average gas gravity is .855 as compared to air being 1.0. Salinity of water is approximately 14,000 ppm Cl. The oil is over

saturated as indicated by high producing gas-oil ratios. No PVT analysis is available.

The original reservoir pressure is 1550 psi. The cumulative oil production is approximately 929,000 barrels as of January 1, 1966. The average per well production is 3.4 barrels of oil per day.

The current producing gas-oil ratio is 11,000 cubic feet.

The average water production is approximately 28 percent of the total fluid.

The well status as of February 1, 1965 for the wells encompassed by the unit is: 22 producing wells; 19 pumping wells; 3 flowing wells.

The proven oil productive acreage developed on Texaco's properties is 880 acres.

The well density in acres per well is 40 acres.

The state of depletion of the reservoir is a stripper.

The current gas is being purchased by the Warren Petroleum Corporation.

No oil or gas is injected into the upper reservoir at this time.

Q Exhibit 2 is a diagram of your production, is that right?

dearnley-meier reporting services, inc.

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

1120 SIMAS BLDG. • P.O. BOX 1092 • PHONE 243-6631 • ALBUQUERQUE, NEW MEXICO
1203 FIRST NATIONAL BANK EAST • PHONE 256-1294 • ALBUQUERQUE, NEW MEXICO

A Yes, sir, this is a graphic family of curves and production performance of the area in which Texaco proposed to unitize, and it is self-explanatory.

Q Go on to the individual well problems there.

A Most wells have been completed below casing in an open hole interval. Acid treatments, Nitroglycerin, were used to stimulate production prior to potential test. Fracture treatments have been conducted on several wells during the latter years.

The L. R. Kershaw Well No. 8 is a triple tubingless completion through perforations in the Skaggs (Grayburg), Weir (Blinbry) East and the Eumont formations.

General Reservoir Mechanics is a gas cap expansion and solution gas drive have been the major drive mechanisms in this field.

No effective water drive as indicated by the field performance as of this date.

Q You testified that you're proposing 11 injection wells. Would you describe those for the Examiner, referring to Exhibit 6?

A All right, sir. Referring back to Exhibit 6, in the upper portion of the plat is shown a hatched area which is the unit boundary proposed by Texaco for unitization.

We have also shown the injection wells that we

propose, except in one instance, and I direct your attention to Section 13 in the Southwest Quarter of the Northwest Quarter, being the Kershaw Well Number 6. We're asking for that to be an injection well along with the other 10.

At this time we do not know whether we will use that well as an injection well, depending on the negotiations with Continental at this time for conversion with one of their wells in the section just West of Number 13.

These wells I'll identify: This is the L. R. Kershaw Well Number 1 in the Northeast Quarter, Northeast Quarter of Section 13; the L. R. Kershaw Well Number 4 in the Northeast Quarter, Northwest Quarter of Section 13; L. R. Kershaw Well Number 5 in the Northeast Quarter, Southwest Quarter of Section 13; L. R. Kershaw Well Number 6 in the Southwest Quarter, Northwest Quarter of Section 13; C. H. Weir 'A' Well Number 1 in the Northeast Quarter, Southwest Quarter of Section 12; C. H. Weir 'A' Well Number 3 in the Northeast Quarter, Southeast Quarter of Section 12; M. B. Weir 'B' Well Number 3 in the Southwest Quarter, Southeast Quarter of Section 12; M. B. Weir 'B' Well Number 6 in the Southwest Quarter, Southwest Quarter of Section 12; M. B. Weir 'B' Well Number 2 in the Southwest Quarter, Southwest

Quarter of Section 7; M. B. Weir 'A' Well Number 2 in the Southwest Quarter, Northwest Quarter of Section 18; B. L. Sweet's Trickey Well Number 2 in the Northwest Quarter, Northeast Quarter of Section 18.

Q Would you describe your injection procedure?

MR. UTZ: Excuse me just a moment. All these wells are described in detail on the left-hand side of your brochure?

THE WITNESS: Yes, sir.

MR. UTZ: Those are correct descriptions?

THE WITNESS: Yes, sir, those are correct descriptions.

A The producing wells in the project area to be waterflooded have reached an advanced state of depletion and are properly to be classified as 'stripper' wells.

Water is to be injected in an open hole interval through plastic coated tubing below a packer. Anticipated injection rate is 500 barrels of water per day per injection well at a maximum pressure of approximately 2000 psi.

Provision for expansion by administrative approval is requested if the developed acreage underlying the above leases appear prospective for economic development after flood response is observed.

It is requested that the proposed waterflood

dearnley-meier reporting service, inc.

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

1120 SIMMS BLDG. • P.O. BOX 1092 • PHONE 243-6691 • ALBUQUERQUE, NEW MEXICO
1203 FIRST NATIONAL BANK EAST • PHONE 256-1244 • ALBUQUERQUE, NEW MEXICO

project should be authorized and should be governed by the provisions of Rule 701 of the Commission Rules and Regulations, including those provisions regarding allocation of allowables and their transfer and credits.

Immediately to the South of the subject area, Oil Conservation Commission of New Mexico Order No. R-1710 authorizes Continental Oil Company to waterflood the Grayburg formation on its Southeast Monument Unit, Skaggs Pool, Lea County, New Mexico, effective June 10, 1960. The subject waterflood project will be in cooperative agreement with Continental.

As a result of Texaco's waterflood project, it is anticipated that from 950,000 to 1,050,000 barrels of oil will be recovered over primary production. Eighty percent fillup is expected within two years after commencement of injection.

Q You've been producing water out of these wells, now, is that right?

A Yes, sir, we have.

Q And what kind of water is it, is it fresh water?

A No, sir, it's salt water.

Q And what have you been doing with the water up to now?

A Texaco has been disposing of this water into its

dearnley-meier recording service, inc.

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

1120 SIMMS BLDG. • P.O. BOX 1092 • PHONE 243-6691 • ALBUQUERQUE, NEW MEXICO
1203 FIRST NATIONAL BANK EAST • PHONE 256-1794 • ALBUQUERQUE, NEW MEXICO



M. B. Weir Number 2 located in the Southwest Quarter, Southwest Quarter of Section 7, Township 20 South, Range 38 East. The water is being injected into the lower San Andres formation at an interval of 4105 to 4128.

Q Texaco doesn't plan to use this water as an injection source?

A No, sir.

Q What is the water source?

A Water source is; fresh water is to be used for the injection fluid which is available from a fresh water supply well located 745' from the North Line and 330' from the East Line of Section 13, Township 20 South, Range 37 East. This well was drilled under Texaco's water permit L-4412 approved by the State Engineer in the Lea County Shallow Underground Basin in April, 1964 and is designated as water source Well Number L-4412. The fresh water is from the Ogallala formation Pliocene epoch, Tertiary period, and consists of pinkish-gray calcareous sand usually with a thick basal gravel. It is anticipated that one more water source well will be needed upon commencement of injection and possibly another well will be required later during the life of the flood. The wells are to be positioned on a line running North-South through the existing well. The location of Water Supply Well Number



L-4412-S has been filed with and approved by the State Engineer. It is to be located in the Southeast Quarter of the Northeast Quarter of Section 13, Township 20 South, Range 37 East. Upon completion, Water Source Well Number L-4412 tested for 200 gallons per minute or 6857 barrels per day.

Water requirements will be approximately 4500 barrels of water per day which is below the capacity of the existing water well, but to prevent excessive drawdown, the other well will be drilled and equipped to pump.

Q Now, have you prepared a diagrammatic sketch of the proposed installation for the injection wells?

A Yes.

Q Would you describe your system?

A Exhibit 3 is a diagrammatic sketch of the L. R. Kershaw Well Number 5 showing the surface casing of 8-5/8" and set at 1440' and cemented with 800 sacks of cement to the surface, and set a production string of 5-1/2" 15.5# J-55 casing set in 7-7/8" hole at 3788', and calculated the top at 1300'.

We will produce from an open hole formation from 3788' to 3930' and injection will be through 2-3/8" OD internally plastic coated tubing, and the packer will be set at 3750' which is below the top of the cement behind the



production string.

Q Do you feel that you could anticipate any type of corrosion problems?

A No, sir, and I would like to add that there will be inhibited water between the annulus and the string in the tubing. This takes care of all possibilities of corrosion.

Q Do you feel it would protect against communication in other zones?

A Yes, sir, we do.

Q What has been marked Exhibit 5 is a list of all the injection wells and their casing programs and injection intervals, is that correct?

A Yes. This is a tabulation of all the casing, cement casing size and production intervals.

Q Is there anything you would like to add to Exhibit 6 at this time?

A Only one comment I would like to make on Exhibit 6, which is the last exhibit on the right-hand side; that the shaded area to the South is a pilot area approved by the Commission on Continental's flood operations there. The area between that and Texaco's has been approved by the Commission in their expansion, and this is to show the tie-in that Texaco has with Continental.

Q Would you describe Exhibit 7 for the Examiner?

A Exhibit 7 is an electric log on the L. R. Kershaw Well Number 1 and is offered as an exhibit to show the producing interval up the hole. It is self-explanatory.

Q Turning to Exhibit 8 in the phase of the case on unitization --

MR. UTZ: Just a moment. I have a log Exhibit 8.

MR. KELLY: We'll change them.

MR. UTZ: I'll change it.

Q (By Mr. Kelly) Referring to your two mile plat, this injection program is following what is generally known as a 5 spot pattern?

A Yes, sir.

Q From the 5 spot, which is if my directions are correct, North and East, what do you feel that will change your Sweet or lessen the effectiveness of your Sweet by veering some of that 5 spot to the North?

A Up to the North?

Q That's Sweet Number 3 and Byers Number 1.

A I call your attention to our Exhibit Number 8. This is a field map of the area showing the various fields and the completions. The one that Texaco is interested in is the red colored circles. If you will notice from the unitized area going to the Northeast, there is no



Grayburg production until you get over to the Depco in Section 7, and North of that in Section 6 in the Wolfson Wells. There is apparently a permeability barrier to the Northeast of our unit, therefore there is no concern by having no injection well to the Northwest of the well to protect the B. L. Sweet Number 3. We will protect them. The same holds true for the M. B. Weir to the North. There is none beyond the unitized area. All that is Eumont and Weir (Blinebry) production.

Q This Exhibit 8 shows in dark outline the proposed injection unit, right?

A Yes, sir.

Q And the proposed unitized area?

A Yes, sir.

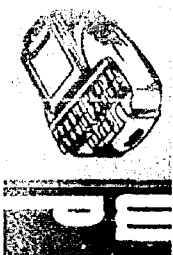
Q Have you notified all working interest owners, and have you notified royalty?

A Yes, sir, and I have on the left-hand side of our brochure a Status Sign-Up of the unitized area broken down in working and royalty interests by tract. There are 10 tracts involved. Tract 2 is a small tract in the Southwest Quarter of the Northwest Quarter, being the Hissom Drilling Company's tract in Section 1. He has a partner and Mr. Hissom has signed the unit agreement and he holds 87.5 percent of the working interest in that

dearnley-meier

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

1120 SUMMIT BLDG. • P.O. BOX 1092 • PHONE 243-6691 • ALBUQUERQUE, NEW MEXICO
1203 FIRST NATIONAL BANK EAST • PHONE 256-1294 • ALBUQUERQUE, NEW MEXICO



by the fact that we have a number of people with an interest in the property. In several instances, they have been making a good deal of effort to have the property sold or leased. These people are going around and talking to their friends and have given us no reason to think they would sign.

The total list was shown on the bottom of the exhibit, 23.6 percent of the people have signed a unit agreement, and 76.4 percent have signed as an individual.

Q Has Texaco been in contact with the royalty owner for tract 1, where you indicate there is no?

A Yes, this is a 1 interest party of Mrs. Mary and she has not given us a "no", and she has taken a number of advisement with her attorney as we do not see any problems in getting her to sign the unit agreement.

Q Is the unit agreement that Texaco has proposed and offered to the working and royalty interest owners, a standard type unit that has been approved by this Commission?

A Yes, it is.

MR. BERRY: We have a copy of the proposed unit agreement if the Commission would like to have it. I just wasn't sure of your practice on that.

MR. BRY: Usually we accept it as an exhibit in



the unit case.

MR. KELLY: Mark this as Exhibit Number 10.

(Whereupon, Applicant's Exhibit 10 marked for identification.)

MR. UTZ: The map on this has the tract -- yes, it has.

THE WITNESS: Right.

Q (By Mr. Kelly) In your opinion would the granting of these two applications promote the efficient production of oil underneath this tract?

A Yes, I believe it will.

Q And prevent waste by preventing having oil left in place?

A That's correct.

Q Were Exhibits 1 through -- all of them except the log and unit agreement prepared by you or under your direction?

A Yes.

Q And the unit agreement was prepared by Texaco's attorneys?

A Yes, and our Legal Department.

MR. KELLY: We move the introduction of Exhibits 1 through 10.

(Whereupon, Applicant's Exhibits 1 through 10 offered into evidence.)

MR. UTZ: Without objection the exhibits will be admitted.

(Whereupon, Applicant's Exhibits 1 through 10 admitted into evidence.)

MR. KELLY: I have nothing further at this time.

MR. UTZ: Are there any questions of the witness?

MR. IRBY: Yes, sir.

CROSS-EXAMINATION

BY MR. IRBY:

Q This Kershaw Number 8 --

A Yes, sir.

Q -- is it the well to the Northwest Northwest of 13, it's a triple completion?

A Yes, sir, that's correct.

Q And it's to be continued as a producer and not converted to injection?

A That is correct.

Q You stated in your testimony that the produced water would not be recycled through the injection wells. Did you state what would be done with this water?

A We will continue use of Order Number 23 to dispose of that water into the M. B. Weir 'B' Number 5.

MR. IRBY: Thank you, that's all the questions I have.



CROSS-EXAMINATION

BY MR. UTZ:

Q Where is that well located, again?

A Southwest Quarter, Southwest Quarter, Section 7.

Q Southwest, Southwest of 7?

A Yes, sir. If you will notice there, it has Texaco's 'B' 2. That's an M. B. Weir 2, and offsetting that is a symbol for a dry hole, being Number 5. Do you note that in the Southwest, Southwest of Section 7? If you will excuse me, I'll come over and point it out to you. This is a better place to find it right here. See where the dry hole symbol is there on 5, that well has been conditioned and permitted to be a disposal well.

MR. IRBY: But there is a Number 2 there, also. That will be used as an injection well?

THE WITNESS: Let me look at my Exhibit 7.

MR. IRBY: According to Exhibit 6 --

THE WITNESS: Yes, sir, it will be an injection well.

MR. IRBY: But the disposal well doesn't show on Exhibit 6?

A No, sir, because we're disposing in the lower San Andres and not the Grayburg.

MR. IRBY: Thank you.

Q (By Mr. Utz) How far below the production string cement are you setting the packer; what is the range?

A The packers are being set approximately -- well, in the Kershaw Number 5 will be 38 feet above the shoe of the production string which is 2400 feet or more below the top of the cement.

Q Will they all run approximately that depth?

A I will have to make reference back to our Exhibit Number 6. Yes, sir, that would be approximate. There are 2 wells, that is the top of the cement is at, being the Weir 'A' Number 1, is 2,020 feet, and for the Weir 'B' Number 2, is 2160 feet, in those particular casings, then it would be some 1500 feet below the tops of the cement in the production string.

Q Do you plan to pressure test this casing at all in view of the fact you're injecting through tubing?

A Mr. Examiner, I don't know what our production people had planned to do there and I can't answer your question. I will be more than happy to find out. We will be putting inhibitive fluid behind the tubing; we will be running some pressure tests. Whether they would satisfy the Commission or not I can't answer. If you want to make that a part of the order, then Texaco will be happy to do it.

dearnley-meier reporting service, inc.

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

1120 SIMMS BLDG. • P.O. BOX 1092 • PHONE 243-6691 • ALBUQUERQUE, NEW MEXICO
1203 FIRST NATIONAL BANK EAST • PHONE 256-1294 • ALBUQUERQUE, NEW MEXICO

Q At any rate, you have inhibitive fluid behind the tubing?

A Yes, sir.

Q With a pressure gauge at the surface?

A Yes, sir.

Q That ought to be satisfactory.

A Fine.

MR. UTZ: Any other questions? The witness may be excused. Are there any statements in this case? The case will be taken under advisement.

I N D E X

<u>WITNESS</u>	<u>PAGE</u>
J. T. JOHNAPELUS	
Direct Examination by Mr. Kelly	2
Cross-Examination by Mr. Irby	17
Cross-Examination by Mr. Utz	18

E X H I B I T S

<u>NUMBER</u>	<u>MARKED FOR IDENTIFICATION</u>	<u>OFFERED</u>	<u>ADMITTED</u>
Applt's. 1	2	16	17
Applt's. 2	2	16	17
Applt's. 3	2	16	17
Applt's. 4	2	16	17
Applt's. 5	2	16	17
Applt's. 6	2	16	17
Applt's. 7	2	16	17
Applt's. 8	2	16	17
Applt's. 9	2	16	17
Applt's. 10	16	16	17

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

11120 SIMMS BLDG. • P.O. BOX 1092 • PHONE 243-6691 • ALBUQUERQUE, NEW MEXICO
1202 FIRST NATIONAL BANK EAST • PHONE 256-1294 • ALBUQUERQUE, NEW MEXICO

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

Witness my Hand and Seal this 14th day of May, 1966.

Bobby J. Davis
NOTARY PUBLIC

My Commission Expires:

March 13, 1969.

I do hereby certify that the foregoing is a complete record of the proceedings in the Ex parte hearing of Case No. 338D-88 heard by me on Apr. 27, 1966.

Thos. L. Goff, Examiner
New Mexico Oil Conservation Commission

TEXACO INC.
SKAGGS (GRAYBURG) UNIT
SKAGGS (GRAYBURG) FIELD
LEA COUNTY, NEW MEXICO

APRIL 27, 1966

RECOMMENDATIONS

Texaco Inc. requests:

1. A permit to unitize an area in the Skaggs (Grayburg) Pool to be known as the Skaggs (Grayburg) Unit which is to consist of the SE/4, E/2 of SW/4 and SW/4 of SW/4 of Section 12, the E/2 of NE/4, NW/4 of NE/4, NW/4 and NE/4 of SW/4 of Section 13, W/2 of SW/4 and SE/4 of SW/4 of Section 18 and the W/2 of NW/4, NE/4 of NW/4 and NW/4 of NE/4 of Section 19 all in T-20-S, R-37-E, Lea County, New Mexico.
2. A permit to waterflood the Grayburg reservoir underlying the unitized area.
3. A permit to use 11 existing wells as injection wells as a basic 5-spot pattern flood with variations.

RESERVOIR DESCRIPTION

The Skaggs (Grayburg) Field was discovered March 14, 1937 by Continental Oil Company. This field produces from the Grayburg formation of Permian Age, Upper Guadalupe or Capitan series at an average depth of 3700 feet to 3950 feet.

I. The Physical Properties of the Reservoir Rock.

- a. Average Porosity (Net Pay) - 6 percent.
(Core Data Continental Oil Company Well)
- b. Average Permeability (Net Pay) - 8.3 millidarcies.
(Core Data Continental Oil Company Well)
- c. Average Connate Water Saturation (Net Pay) - Approximately 30 percent.
(Core Data Continental Oil Company Well)

II. The Structural Features of the Reservoir

- a. Oil-Water Contact - Unknown.
- b. Gas-Oil Contact - Unknown.
- c. Structure - Trap is primarily structural with some stratigraphic control and dips to the Northeast at approximately 50 feet per mile. Permeability is also a controlling factor.
- d. Average Net Effective Oil Pay Thickness - Approximately 35 feet.

III. Characteristics of the Reservoir Fluids

- a. Average Oil Gravity - 36.0° API.
- b. Average Gas Gravity - .855 (Air = 1.0).
- c. Salinity of water - Approximately 14,000 ppm Cl.
- d. Oil - Over saturated as indicated by high producing gas-oil ratios. No PVT analysis available.

IV. Pressure

- a. Original Reservoir Pressure - 1550 psi.
- b. Productivity Index - None Available.

V. Statistical Data

- a. Cumulative Oil Production - Approximately 929,000 barrels as of January 1, 1966.
Average per well production is 3.4 barrels of oil per day.
- b. Current Producing Gas-Oil Ratio - 11,000 cubic feet.
- c. Average water production - Approximately 28 percent of the total fluid.
- d. Well status as of February 1, 1965
 - 22 Producing Wells
 - 19 Pumping Wells
 - 3 Flowing Wells
- e. Proven oil productive acreage developed on TEXACO's properties - 880 acres.
- f. Well density in acres per well - 40 acres.
- g. State of depletion of reservoir - stripper.
- h. Current gas disposition - Purchased by Warren Petroleum Corporation.
- i. Volumes of gas, air, or water injected into reservoir - None.

VI. Individual Well Problems

- a. Most wells have been completed below casing in an open hole interval. Acid treatments, Nitroglycerin, were used to stimulate production prior to potential test. Fracture treatments have been conducted on several wells during the latter years.
- b. The L.R. Kershaw Well No. 8 is a triple tubingless completion through perforations in the Skaggs (Grayburg), Weir (Blinberry) East and the Eumont formations.

VII. General Reservoir Mechanics

- a. Gas cap expansion and solution gas drive have been the major drive mechanisms.
- b. Effectiveness of water drive - none indicated by field performance.

SKAGGS (GRAYBURG) FIELD
Lea County, New Mexico

TEXACO Inc. requests approval to conduct waterflood operations in the Skaggs (Grayburg) Field. The project area is identified as follows:

1. Township 20 South, Range 37 East, SW/4 SW/4, E/2 SW/4, SE/4 Section 12, NW/4, E/2 NE/4, NW/4 NE/4, NE/4 SW/4 Section 13.
2. Township 20 South, Range 38 East, W/2 SW/4, SE/4 SW/4 Section 7, W/2 NW/4, NE/4 NW/4, NW/4 NE/4 Section 18.

It is planned to convert eleven of twenty-two producing wells to water injection. These wells are described as follows:

TEXACO Inc., Operator

- L.R. Kershaw Well No. 1 - NE/4 NE/4 Section 13
T-20-S, R-37-E
- L.R. Kershaw Well No. 4 - NE/4 NW/4 Section 13
T-20-S, R-37-E
- L.R. Kershaw Well No. 5 - NE/4 SW/4 Section 13
T-20-S, R-37-E
- L.R. Kershaw Well No. 6 - SW/4 NW/4 Section 13
T-20-S, R-37-E
- C.H. Weir 'A' Well No. 1 - NE/4 SW/4 Section 12
T-20-S, R-37-E
- C.H. Weir 'A' Well No. 3 - NE/4 SE/4 Section 12
T-20-S, R-37-E
- M.B. Weir 'B' Well No. 3 - SW/4 SE/4 Section 12
T-20-S, R-37-E
- M.B. Weir 'B' Well No. 6 - SW/4 SW/4 Section 12
T-20-S, R-37-E
- M.B. Weir 'B' Well No. 2 - SW/4 SW/4 Section 7
T-20-S, R-38-E
- M.B. Weir 'A' Well No. 2 - SW/4 NW/4 Section 18
T-20-S, R-38-E

B. L. Sweet, Operator

Trickey Well No. 2 - NW/4 NE/4 Section 18
T-20-S, R-38-E

The producing wells in the project area to be water-flooded have reached an advanced state of depletion and are properly to be classified as 'stripper' wells.

Water is to be injected in an open hole interval through plastic coated tubing below a packer. Anticipated injection rate is 500 barrels of water per day per injection well at a maximum pressure of approximately 2000 psi.

Provision for expansion by administrative approval is requested if the undeveloped acreage underlying the above leases appear prospective for economic development after flood response is observed.

It is requested that the proposed waterflood project should be authorized and should be governed by the provisions of Rule 701 of the Commission Rules and Regulations, including those provisions regarding allocation of allowables and their transfer and credits.

Immediately to the South of the subject area, Oil Conservation Commission of New Mexico Order No. R-1710 authorizes Continental Oil Company to waterflood the Grayburg formation on its Southeast Monument Unit, Skaggs Pool, Lea County, New Mexico, effective June 10, 1960. The subject waterflood project will be in cooperative agreement with Continental.

As a result of TEXACO's waterflood project, it is anticipated that from 950,000 to 1,050,000 barrels of oil will be recovered over primary production. Eighty percent fillup is expected within two years after commencement of injection.

WATER SOURCE

Fresh water is to be used for the injection fluid which is available from a fresh water supply well located 745' FNL and 330' FEL of Section 13, T-20-S, R-37-E. This well was drilled under Texaco's water permit L-4412 approved by the State Engineer in the Lea County Shallow Underground Basin in April, 1964 and is designated as water source Well No. L-4412. The fresh water is from the Ogallala formation Pliocene epoch, Tertiary period, and consists of pinkish-gray calcareous sand usually with a thick basal gravel. It is anticipated that one more water source well will be needed upon commencement of injection and possibly another well will be required later during the life of the flood. The wells are to be positioned on a line running North-South through the existing well. The location of Water Supply Well No. L-4412-S has been filed with and approved by the State Engineer. It is to be located in the SE 1/4 of the NE 1/4 of Section 13, T-20-S, R-37-E. Upon completion, Water Source Well No. L-4412 tested for 200 gallons per minute or 6857 barrels per day.

Water requirements will be approximately 4500 barrels of water per day which is below the capacity of the existing water well, but to prevent excessive drawdown, the other well will be drilled and equipped to pump.

STATUS OF SIGN-UP
SKAGGS GRAYBURG UNIT
LEA COUNTY, NEW MEXICO

<u>Tract</u>	<u>Percent Working Interest (%)</u>	<u>Percent Royalty Interest (%)</u>
1	100.0	95.3
2	87.5	88.4
3	100.0	0
4	100.0	61.3
5	100.0	50.0
6	100.0	66.2
7	100.0	52.3
8	100.0	92.6
9	100.0	49.7
10	100.0	83.1
Total Unit	99.6	75.0

Effective April 25, 1966

SKAGGS (GRAYBURG) FIELD

Offset Operators Mailing List

Amerada Petroleum Corporation
P. O. Box 668
Hobbs, New Mexico

Cities Service
P. O. Box 69
Hobbs, New Mexico

Continental Oil Company
P. O. Box 427
Hobbs, New Mexico

DeKalb Petroleum Corporation
404 W. Illinois
Midland, Texas

Fluor Corporation, Ltd.
Midland Tower Building
Midland, Texas

Gilbert, White, & Gilbert
P. O. Box 787
Santa Fe, New Mexico
Attn: Mr. L. C. White

Hissom Drilling Company
901 W. Missouri
Midland, Texas

Humble Oil & Refining Company
P. O. Box 2100
Hobbs, New Mexico

New Mexico Oil Conservation Comm. (2)
P. O. Box 2088
Santa Fe, New Mexico

New Mexico Oil Conservation Comm.
P. O. Box 1980
Hobbs, New Mexico

Texaco Inc.
P. O. Box 3109
Midland, Texas
Attn: Mr. J. S. Rowe

Texaco Inc.
P. O. Box 3109
Midland, Texas
Attn: Mr. J. M. Williams (1)
Mr. C. L. Whigham (1)

Texaco Inc.
P. O. Box 728
Hobbs, New Mexico
Attn: Mr. W. S. Bouldin

Tidewater Oil Company
P. O. Box 1231
Midland, Texas

B. L. Sweet
P. O. Box 51
Hobbs, New Mexico

State Engineers Office
P. O. Box 1079
Santa Fe, New Mexico

Wolfson Oil Company
504 Midland Nat'l Bank Bldg.
Midland, Texas

SKAGGS GRAYBURG UNIT
LEA COUNTY, NEW MEXICO
ROYALTY OWNERS

Eugene B. Adkins
c/o Nicholson, Reyborn & Co.
1107 Phil Tower Bldg.
Tulsa 3, Oklahoma

Doris M. Anderson
308 Roosevelt
Topeka, Kansas 66606

Warren D. Anderson
P. O. Box 136
Midland, Texas

Jane Andres
P. O. Box 307
Hagerman, New Mexico

J. M. Armstrong
P. O. Box 990
Midland, Texas

Charles F. Bedford
No. 7 Westover Road
Ft. Worth 7, Texas

Edwin M. Bedford
964 Westchester Place
Los Angeles 19, Calif.

Henry de G. Bedford
P. O. Box 572
San Clemente, Calif.

Lena Mae Biel
710 Furman Ave.
Corpus Christi, Texas

W. R. Biggs
110 South 23rd
Muskogee, Oklahoma

Lois Birge
2708 N.W. 44th St.
Oklahoma City, Okla.

Claudine Brady
1514 S. Carson St.
Tulsa, Oklahoma

H. T. Brady
Route 3
Springdale, Arkansas

M. H. Brady
P. O. Box 539
Midland, Texas

Randi Brekke
Alkla Randi Foss
Parkreien 51
Oslo, Norway

Joyce Ann Brown
909 N. Alameda
Las Cruces, N. M.

Joyce C. Brown
909 N. Alameda
Las Cruces, N. M.

Rachel B. Brown
P. O. Box 572
San Clemente, Calif.

Dawson C. Bryan
330 W. Friar Tuck
Houston, Texas

Robert E. Byers
P. O. Box 4554
Austin 51, Texas

Ronald J. Byers
P. O. Box 4554
Austin, 51, Texas

Ruth Calkins
c/o Bank of America
La Jolla Branch
La Jolla, Calif.

Ruth B. Carroon
2106 S. Cincinnati, Apt. B
Tulsa, Oklahoma

Effie Carter
P. O. Box 1296
Roswell, New Mexico

Lee Carter
Portales, New Mexico

Christian Science
Pleasant View Home
115 E. 83rd St.
Kansas City, Mo.

B. A. Christmas, Jr.
Chico Road
Rotan, N. M.

Cities Service Oil Co.
Bartlesville, Oklahoma.

Josephine Orr Compton
404 Eastwood
Ft. Worth, Texas

J. R. Cone
Room 1706
Great Plains Life Bldg.
Lubbock, Texas

Robert Maurice Cowden
2610 9th St.
Wichita Falls, Texas

DeKalb Agricultural Assoc.
404 W. Illinois
Midland, Texas

Caroline C. Dewey
2004 W. Golf Course Rd.
Midland, Texas

Frankie T. Easley
1105 North Green Acres
Hobbs, New Mexico

First Nat'l Bank of Portland
6th Morrison Branch
A/C James Arthur Hayes
Portland, Oregon

First Nat'l Bank, Trustee
Allie M. Lee
Reno, Nevada

Frank E. Foulk
c/o Trust Dept.
Republic Nat'l. Bank
P. O. Box 241
Dallas, Texas 75221

Lizzie Garwood
2222 Washington
Amarillo, Texas

Eunice Cone Gibson
2514 Ahura
El Paso, Texas

Charles B. Gonsales
9105 Aspen NE
Albuquerque, New Mexico 87112

Sue S. Graham
Drawer 2158
Roswell, N. M.

Eunice J. Gray
77 Truce Blvd.
Nyack, N. Y. 10960

Great Oaks, Inc.
115 E. 83rd St.
Kansas City, Mo.

J. W. Greening
1117 W. 4th
Winston Salem, N. C.

Mrs. Dora Haley
Route 1, Box 280
Sheridan, Ark. 72150

Mrs. B. B. Harris
800 Claton St.
Orlando, Florida

Martha W. Harris
100 S. Highway 79
Henderson, Texas

Frank Haynes, Guardian
James R. Haynes
Grantville, Kansas

Edna H. Healy
917 Locust, Apt. 331
Des Moines, Iowa

W. C. Hentzler
2714 Kansas Ave.
Topeka, Kansas

W. J. Hoene
1101 E. Kerhey Ave
El Paso, Texas

SKAGGS GRAYBURG UNIT
LEA COUNTY, NEW MEXICO
ROYALTY OWNERS

Clarence W. Hoit 4474 Yosemite Way Los Angeles 41, Calif.	Birdie Loyd 1508 W. Imoore Dr. Albuquerque, N. M.	Mary Margaret Parr c/o A. S. Parr 1501 Gage Blvd. Topeka, Kansas
Jessie A. Hutchison 6007 Ridgeway Houston, Texas	J. F. Maddox P. O. Box 2317 Hobbs, New Mexico	Elyse S. Patterson 6444 Indian Lane Shawnee Mission, Kansas
Mattie H. James 1506 Congress Ave. Austin, Texas	Kataryn Gregory May, Executrix Estate of C. L. Gregory 162 Anita Circle El Paso, Texas	Effie H. B. Phillips P. O. Box 4 Bent, New Mexico
Nelson H. James 5 West Rivercrest Houston 27, Texas	B. L. McGee 112 E. Andres Drive, NW Atlanta, Georgia	J. E. Pinney 854 Lewis Salina, Kansas
Edna Mae Johnson 3441 Clayton Road East Ft. Worth, Texas	Fannie M. McIntire c/o Lillard, Eidson, Lewis & Porter New England Bldg. Topeka, Kansas	Lee Roberts Route 2 Garfield, Ark.
Frances G. Johnson P. O. Box 1557 Roswell, N. M.	Arni J. Maki P. O. Box 1202 Denver 1, Colo.	H. Dillard Schenick P. O. Box 1225 Lovington, New Mexico
Lloyd W. Johnson 2809 E. 39th St. Tulsa 5, Oklahoma	Mercantile Nat'l. Bank, Trustee P. H. Stanford Trust TA/2481 Dallas 22, Texas	Sixth Church of Christ Scientist 401 W. 66th Terr. Kansas City, Mo.
S. P. Johnson, Jr., Executor Estate of S. P. Johnson P. O. Box 1713 Roswell, N. M.	Me-Tex Supply Co. Hobbs, New Mexico	June D. Speight P. O. Drawer 1687 Lovington, New Mexico
Vicki Anderson Jones P. O. Box 1884 Midland, Texas	Charles P. Miller P. O. Box 385 Hobbs, New Mexico	Glen Staley 12170 Stanaway Loop Rd. Tacoma, Washington
Robertta Kelly 112 E. Sanger Hobbs, New Mexico	Mrs. Clyde W. Miller 222 S. Justin Dallas, Texas	Tenie Stoll RFD #1 Topeka, Kansas
L. R. Kershaw 505 W. Broadway Muskogee, Oklahoma	Mr. & Mrs. E. B. Miller 902 N. Shipp Hobbs, New Mexico	Tenneco Oil Co. Wilco Bldg. Midland, Texas
E. W. Kimball 5400 Valerie St. Bellaire, Texas	Irma Mills Pearsall, Texas	Don R. Sturgeon 724 N. Ave. B Canton, Ill.
Marjorie Cone Kustman Estate of S. E. Cone 2806 34th St. Lubbock, Texas	J. Hiram Moore 201 Wall Bldg. Suite 517 Midland, Texas	The Home Stalse Oil & Gas Co. 507 Phil Tower Bldg. Tulsa 3, Oklahoma
Bess Adkins Lacy 2407 - 27th Place Tulsa, Oklahoma	A. E. Neudauer, Jr. 4003 North Peunte Baldwin Park, Calif.	The Home Stalse Royalty Corp. 507 Phil Tower Bldg. Tulsa 3, Oklahoma
Lois R. Linam P. O. Box 1898 Hobbs, New Mexico	New Mexico Bank & Trust Co. Trustee of Carlin Trust Hobbs, New Mexico	The Mother Church The First Church of Christ Scientist c/o R. G. Watson, Treasurer 107 Falmouth St. Boston, 15, Mass.
Thelma A. Linam P. O. Box 743 Hobbs, New Mexico	New Mexico Bank & Trust Co. Trustee of Klein Trust Hobbs, New Mexico	

SKAGGS GRAYBURG UNIT
LEA COUNTY, NEW MEXICO
ROYALTY OWNERS

Astri Udness Thomk
Halvdan Srartes GT 2-A
Oslo, Norway

Tidewater Oil Co.
P. O. Box 1404
Houston, Texas

Sally S. Toles
P. O. Box 1300
Roswell, N. M.

William R. Tomlinson
P. O. Box 66
Lovington, New Mexico

Flora Dupree Trickory
4310 NE 22nd Ave.
Lighthouse Point
Pompano Beach, Florida

Charles R. Turner
P. O. Box 2016
Hobbs, New Mexico

Craig H. Walker
1109 Granada
Casper, Wyoming

Myrtis D. Watkins
322 East St.
Henderson, Texas

Charles H. Weir
P. O. Box 1617
Hobbs, New Mexico

George W. Weir
P. O. Box 1794
Hobbs, New Mexico

Mary B. Weir
P. O. Box 1023
Pecos, Texas

Sofie Helene Wigert
Hans Jorgen Huitfeldt
Alexandria Helena Huitfeldt
Wells Fargo Bank
464 California St.
Acct. 01-312933
San Francisco 4, Calif.

Margaret Wiggins
1510 Missouri No. 2
Houston, Texas

Ellen Ann W. Williams
c/o Hawaiian Airlines Inc.
10420 Burbank Blvd.
North Hollywood, Calif.

Hattie Cone Williams
Room 1706
Great Plains Life Bldg.
Lubbock, Texas

Johnie Windsor
P. O. Box 71
Aspermont, Texas

Verna D. Wirtjes
1202 East Ovid
Des Moines, Iowa

Louisa Orr Wise
c/o W. F. Weeks
812 Fair Foundation Bldg.
Tyler, Texas

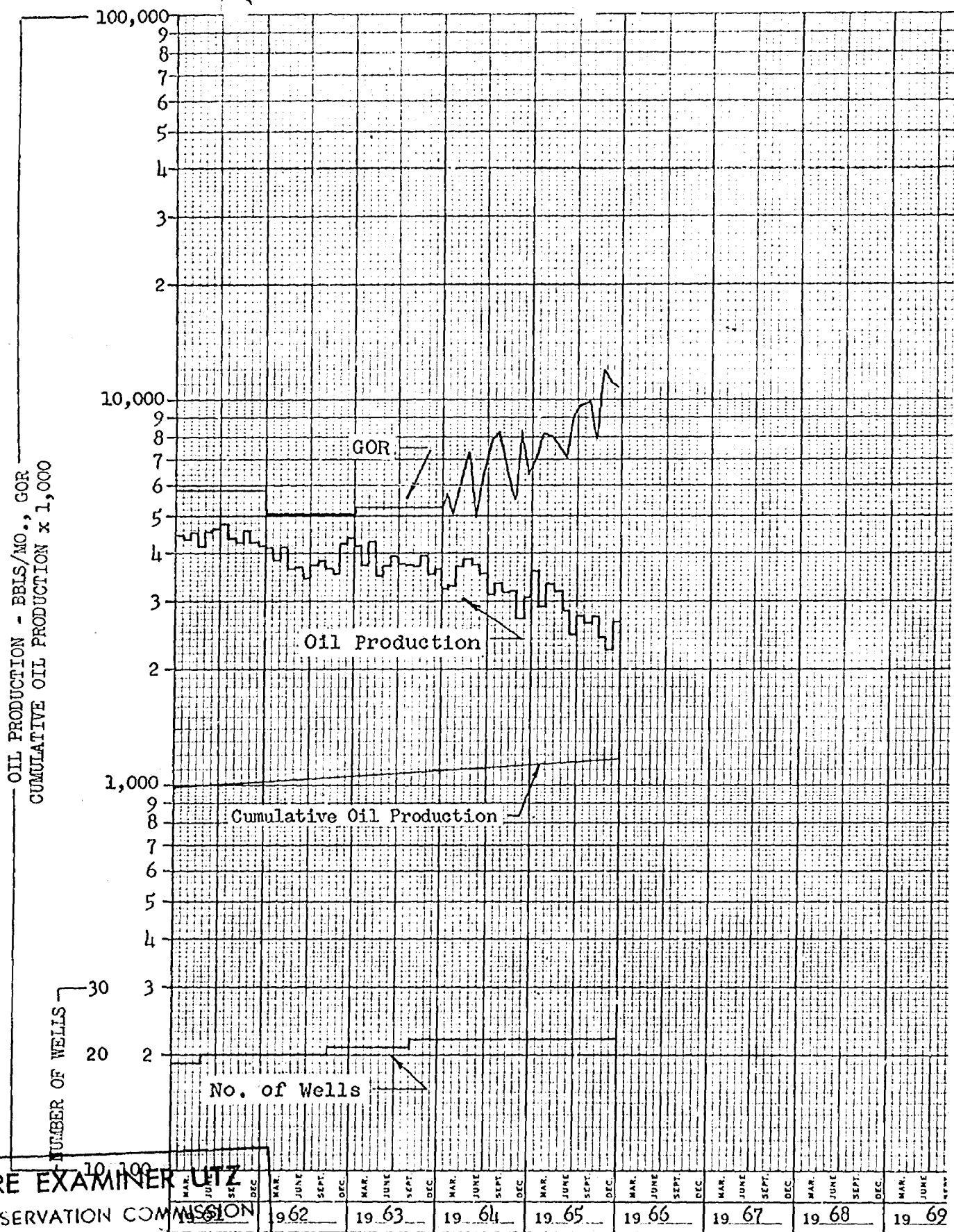
J. L. Wood
233 N. Riverside Ave.
Rialto, Calif.

Mary Beth Wood
P. O. Box 272
Lovington, N. M.

Elizabeth Woolworth
403 Avenue D
San Angelo, Texas

May Woolworth
403 Avenue D
San Angelo, Texas

W. A. Yeager
P. O. Box 990
Midland, Texas



BEFORE EXAMINER **UTZ**

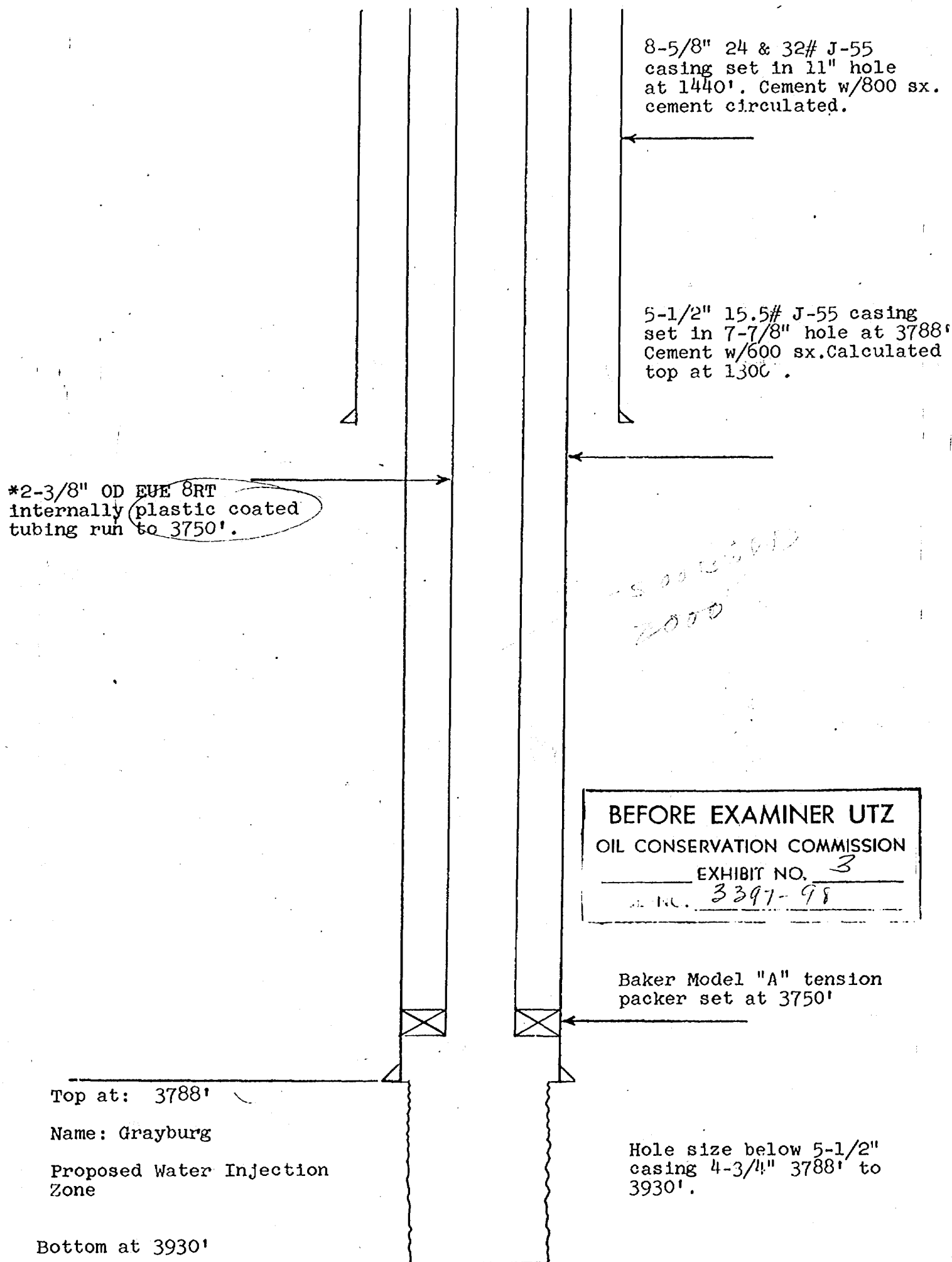
OIL CONSERVATION COMMISSION

EXHIBIT NO. _____

CASE NO. 3397-98

PROPOSED SKAGGS (GRAYBURG) UNIT
 SKAGGS GRAYBURG FIELD
 LEA COUNTY, NEW MEXICO

DIAGRAMMATIC SKETCH



Company: TEXACO Inc.

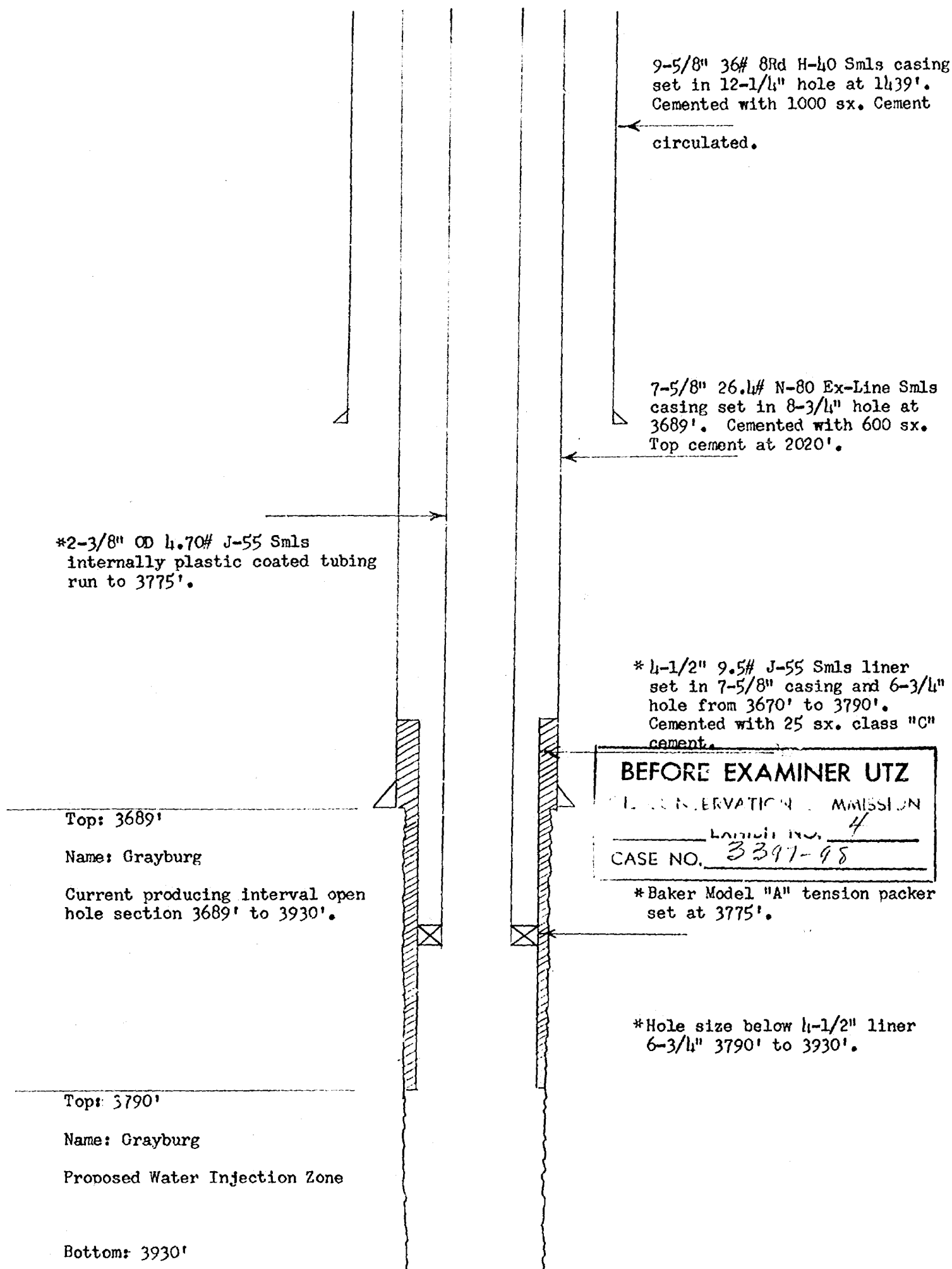
Lease: L. R. Kershaw Well No. 5

Field: Skaggs

County: Lea County, New Mexico

*NOTE: This well is currently completed in an open hole interval as shown. The diagrammatic sketch indicates a packer to be installed when converting the well to injection; therefore, packer depth and setting depth of tubing are approximate

DIAGRAMMATIC SKETCH



BEFORE EXAMINER UTZ

CONSERVATION COMMISSION

Lease No. 4

CASE NO. 3397-98

*Baker Model "A" tension packer set at 3775'.

*Hole size below 4-1/2" liner 6-3/4" 3790' to 3930'.

Company: TEXACO Inc.

Lease: C.H. Weir "A" Well No. 1

Field: Skaggs

County: Lea County, New Mexico

*Note: This well is currently completed in an open hole interval from 3689' to 3930'. The diagrammatic sketch indicates a liner and packer to be installed when converting the well to injection; therefore, liner top and bottom, packer depth and setting depth of tubing are approximate.

PROPOSED SKAGGS GRAYBURG UNIT
LIST OF INJECTION WELLS

BEFORE EXAMINER UTZ
OIL CONSERVATION COMMISSION
EXHIBIT NO. 5
CASE NO. 3397-98

Lease	Well No	Surface Casing			Production Casing			Liner		Open Hole Size	Total Depth	Injection Interval	
		Casing Size	Casing Depth	Cement Sks Top	Casing Size	Casing Depth	Cement Sks Top	Size	Top Bottom			Top	Bottom
L. R. Kershaw	1	8-5/8"	1446'	850 Circ	5-1/2"	3778'	1200 2335	-	-	4-3/4"	3936'	3778'	3936'
R. Kershaw	4	8-5/8"	1447'	800 Circ	5-1/2"	3769'	600 1166	-	-	4-3/4"	3930'	3769'	3930'
L. R. Kershaw	5	8-5/8"	1440'	800 Circ	5-1/2"	3788'	600 1300	-	-	4-3/4"	3930'	3788'	3930'
L. R. Kershaw	6	8-5/8"	1426'	800 Circ	5-1/2"	3800'	1600 Unk	-	-	4-3/4"	3920'	3800'	3920'
C. H. Weir "A"	1	9-5/8"	1439'	1000 Circ	7-5/8"	3689'	600 2020	4-1/2"	3670' 3790'	6-3/4"	3930'	3790'	3930'
C. H. Weir "A"	3	8-5/8"	1450'	700 Circ	5-1/2"	3785'	600 1506	-	-	4-3/4"	3940'	3785'	3940'
M. B. Weir "A"	2	8-5/8"	1445'	1000 Circ	5-1/2"	3759'	600 1605	-	-	4-3/4"	3930'	3759'	3930'
M. B. Weir "B"	2	9-5/8"	1494'	1000 Circ	7-5/8"	3760'	600 2160	-	-	6-3/4"	3940'	3760'	3940'
M. B. Weir "B"	3	8-5/8"	1450'	800 Circ	5-1/2"	3770'	650 1302	-	-	4-3/4"	3930'	3770'	3930'
M. B. Weir "B"	6	8-5/8"	1430'	800 Circ	5-1/2"	3780'	600 1501	-	-	4-3/4"	3940'	3780'	3940'
Trickey	2	8-5/8"	255'	150 Circ	5-1/2"	3737'	250 Unk	-	-	4-3/4"	3940'	3737'	3940'

