

CASE 2008: Application of GULF OIL CORP.
for an order authorizing salt water disposal
well (Lea-State "CR" (NCT-A) Well No. 3.)

Casa No.

2008

Application, Transcript,
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. 2008
Order No. R-1719

APPLICATION OF GULF OIL CORPORATION
FOR AN ORDER AUTHORIZING A SALT WATER
DISPOSAL WELL IN SECTION 2, TOWNSHIP
16 SOUTH, RANGE 32 EAST, LEA COUNTY,
NEW MEXICO.

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9 o'clock a.m. on July 6, 1960, at Santa Fe, New Mexico, before Elvis A. Utz Examiner duly appointed by the Oil Conservation Commission of New Mexico, hereinafter referred to as the "Commission," in accordance with Rule 1214 of the Commission Rules and Regulations.

NOW, on this 15th day of July, 1960, the Commission, a quorum being present, having considered the application, the evidence adduced, and the recommendations of the Examiner, Elvis A. Utz, 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 seeks an order authorizing the disposal of produced salt water into the lower Wolfcamp formation through its Lea-State "CR" (NCT-A) Well No. 3, located in Lot 14 of Section 2, Township 16 South, Range 32 East, NMPM, Lea County, New Mexico, with the proposed injection interval from 9,911 feet to 10,200 feet.
- (3) That 2-7/8 inch internally plastic coated tubing should be set at approximately 9,911 feet and the casing-tubing annulus filled with sweet oil.
- (4) That the applicant's proposed salt water disposal program will not jeopardize the production of oil, gas or fresh water in the area, provided that the casing is tested with 2000 pounds surface pressure prior to utilization of the well for salt water disposal purposes.

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CASE No. 2008
Order No. R-1719

IT IS THEREFORE ORDERED:

(1) That the applicant be and the same is hereby authorized to dispose of produced salt water into the lower Wolfcamp formation through its Lea-State "CR" (NCT-A) Well No. 3, located in Lot 14, 3300 feet from the South line and 1980 feet from the West line of Section 2, Township 16 South, Range 32 East, BHPM, Lea County, New Mexico, with the injection interval from 9,911 feet to 10,200 feet.

PROVIDED HOWEVER, That 2-7/8 inch internally plastic coated tubing shall be set at approximately 9,911 feet and the casing-tubing annulus filled with sweet oil.

PROVIDED FURTHER, That the casing shall be tested with 2000 pounds surface pressure with the hole full of water prior to utilization of the well for salt water disposal purposes.

(2) That the applicant shall submit monthly reports of its disposal operations in accordance with Rules 704 and 1119 of the Commission Rules and Regulations.

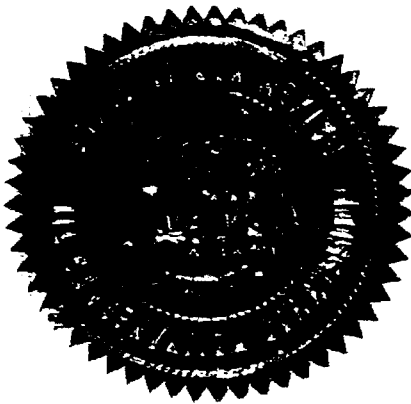
DONE at Santa Fe, New Mexico, on the day and year hereinabove designated.

STATE OF NEW MEXICO
OIL CONSERVATION COMMISSION

John T. Burroughs
JOHN BURROUGHS, Chairman

Murray E. Morgan
MURRAY E. MORGAN, Member

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



esr/

GOVERNOR
JOHN BURROUGHS
CHAIRMAN

State of New Mexico
Oil Conservation Commission

LAND COMMISSIONER
MURRAY E. MORGAN
MEMBER



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

P. O. BOX 871
SANTA FE

July 15, 1960

Mr. Bill Kastler
Box 669
Roswell, New Mexico

Re: Case No. 2008
Order No. R-1719
Applicant:
Gulf Oil Corporation

Dear Sir:

Enclosed herewith are two copies of the above-referenced Commission order recently entered in the subject case.

Very truly yours,

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

ir/

Carbon copy of order also sent to:

Hobbs OCC ☒
Artesia OCC ☐
Aztec OCC ☐

Other ☐

OIL CONSERVATION COMMISSION
SANTA FE, NEW MEXICO

Date 7-7-60

Hearing Date 7-6-60

CASE 2008

My recommendations for an order in the above numbered cases are as follows:

1. Grant Gulf's request for a SWD well conversion for its Lea St. "CR" (NCT-A) #3 3300/5, 1980/W-2, 16-32.
2. Salt water is to be injected into the Lower Wolfcamp between the 9911-10,200 interval which is below the water oil contact for the Anderson Ranch-Wolfcamp Oil Pool.
3. S. Water shall be injected thru 2 7/8" tubing ~~set @~~ internally plaster coated, set @ 9911. the 5 1/2 x 2 7/8 annulus shall be filled with sweet oil or naphtha.
4. The casing shall be tested with 2000# pressure at the surface with the hole full of water.

[Signature]

[Signature]

Staff Member



PETROLEUM AND ITS PRODUCTS

MAIN OFFICE GOC
ROSWELL DISTRICT

GULF OIL CORPORATION

W. A. SHELLSHEAR
District Manager

P. O. DRAWER 669 • ROSWELL, NEW MEXICO

F. O. MORTLOCK
District Exploration Manager

M. I. TAYLOR
District Production Manager

G. A. PRICE
District Services Manager

June 14, 1960

Oil Conservation Commission
State of New Mexico
Post Office Box 871
Santa Fe, New Mexico

Gentlemen:

Re: Application for Permission to Dispose
of Salt Water Produced from Wells in
the Anderson Ranch Devonian and Wolf-
Camp Pools, into the Lower Wolfcamp
Zone of Gulf's Lea-State "CR" (NCT-A)
Well No. 3, Located in Section 2,
Township 16 South, Range 32 East, Lea
County, New Mexico

In compliance with Oil Conservation Commission Rule 701, Gulf Oil Corporation herewith makes application for a hearing to obtain authority to inject salt water for disposal purposes, into the Lower Wolfcamp zone of Gulf's Lea-State "CR" (NCT-A) Well No. 3, in the interval between 9,911 feet and 10,200 feet.

In support of the application, Gulf Oil Corporation submits the following:

- (1) A plat is attached showing the location of the proposed salt water disposal well and all other wells and leases within a radius of two miles.
- (2) Gulf's Lea-State "CR" (NCT-A) Well No. 3, located in Lot 14, 3300 feet from the south line and 1980 feet from the west line of Section 2, T-16-S, R-32-E, is a temporarily abandoned Anderson Ranch Wolfcamp well which has not been produced since May, 1957.
- (3) A log of the well is not available, inasmuch as applicant proposes to deepen this well to include the proposed injection interval.
- (4) The casing program in subject disposal well is as follows:

13-3/8" casing @ 626 feet - cemented with 650 sacks - circulated.

8-5/8" casing @ 4204 feet - cemented with 2150 sacks. Top of cement @ 85 feet.

5-1/2" casing @ 9911 feet - cemented with 275 sacks. Top of cement @ 8470 feet.

June 14, 1960

- (5) Present depth of the above described well is 9779 feet, plugged back from a total depth of 9912 feet.
- (6) Applicant proposes to deepen the above described well to a total depth of 10,200 feet, and inject salt water through tubing into the zone between the 5-1/2" casing seat at 9911 feet and total depth of 10,200 feet.
- (7) The water proposed for disposal into this well is produced from wells in the Anderson Ranch Wolfcamp and Devonian Pools. Present volume of this water is 600 BPD.
- (8) By copy of this letter, all offset operators are notified of this application.

Gulf Oil Corporation respectfully requests that this matter be set for Examiner Hearing at an early date.

Respectfully submitted,

GULF OIL CORPORATION

BY

W. A. Sheelshear
District Manager

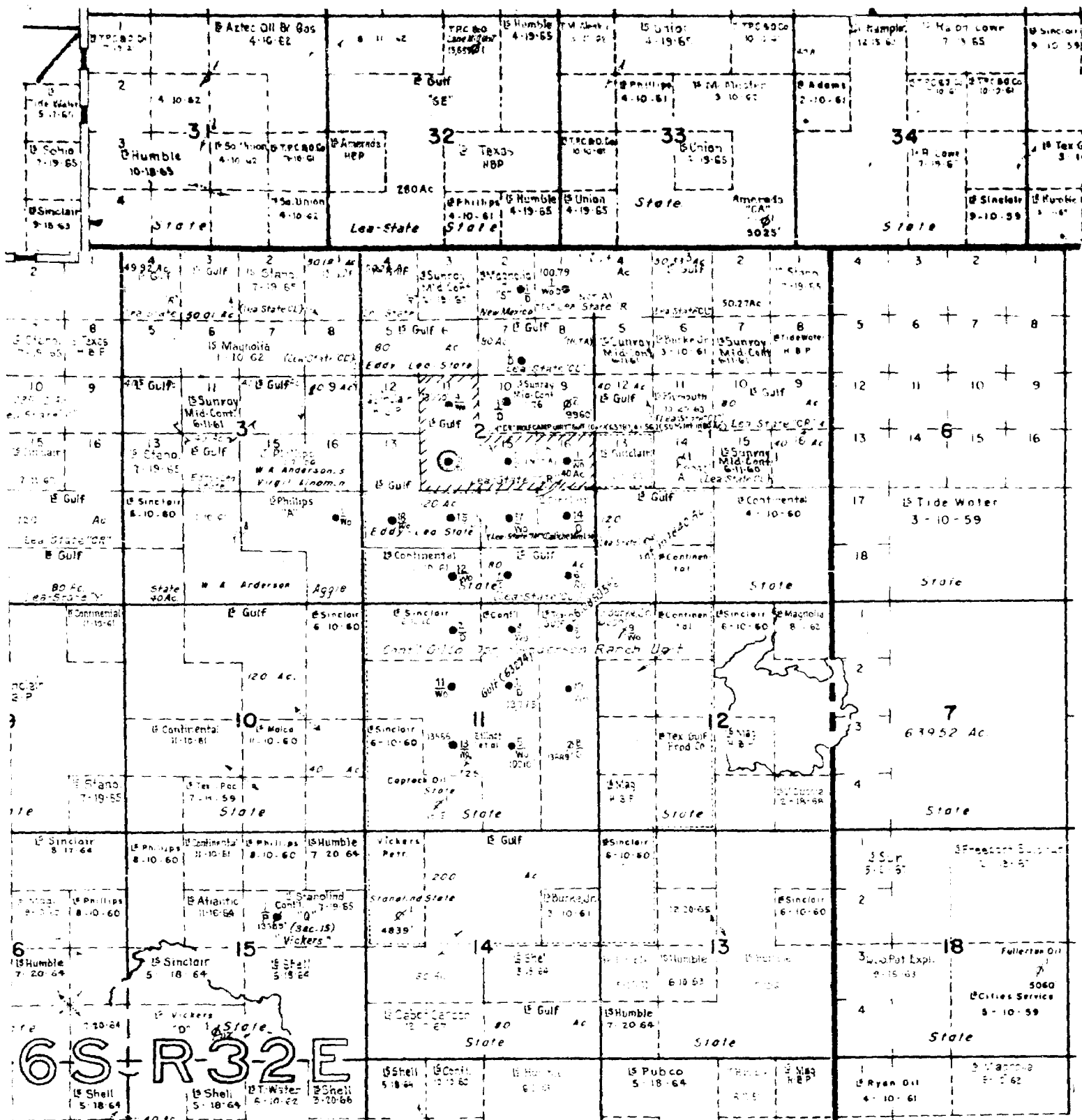
JCG:dd

cc: Oil Conservation Commission
Post Office Box 2045
Hobbs, New Mexico

Continental Oil Company
Post Office Box 427
Hobbs, New Mexico

Sinclair Oil & Gas Company
Post Office Box 1470
Hobbs, New Mexico

Sunray Mid-Continent Oil Company
1101 Wilco Building
Midland, Texas



T-16-S R-32-E

LEASE PLAT
LEA STATE "CR" (NCT-A)
LEA COUNTY, NEW MEXICO

-LEGEND-

□ Pertinent Gulf Lease

⊙ Proposed Salt Water Disposal Well

Gulf Oil Corporation

DOCKET: EXAMINER HEARING JULY 6, 1960

Oil Conservation Commission - 9 a.m., State Corporation Commission Hearing Room, Basement, Capitol Building, Santa Fe, New Mexico.

The following cases will be heard before Elvis A. Utz, Examiner, or Oliver E. Payne, Attorney, as alternate Examiner:

- CASE 2002: Application of Rice Engineering & Operating, Inc. for an order authorizing a salt water disposal well. Applicant, in the above-styled cause, seeks an order authorizing the disposal of produced salt water through its Skelly State "D" Well No. 3, located 2310 feet from the South line and 660 feet from the East line of Section 1, Township 20 South, Range 36 East, Lea County, New Mexico, with injection to be in the lower San Andres formation with the injection interval from 4,450 feet to 4,950 feet.
- CASE 2003: Application of El Paso Natural Gas Company for a gas-gas dual completion. Applicant, in the above-styled cause, seeks an order authorizing the dual completion of its Warren Well No. 1-A (PM) located in Unit K, Section 25, Township 28 North, Range 9 West, San Juan County, New Mexico, in such a manner as to permit the production of gas from the South Blanco-Pictured Cliffs Pool and the production of gas from the Blanco Mesaverde Pool through the casing-tubing annulus and 2 inch tubing respectively.
- CASE 2004: Application of La Plata Gathering System, Inc., for the establishment of a 345.59 acre non-standard gas proration unit in the Blanco Mesaverde Gas Pool, Rio Arriba County, New Mexico, and for an unorthodox gas well location. Applicant, in the above-styled cause, seeks the establishment of a 345.59 acre non-standard gas proration unit in the Blanco Mesaverde Gas Pool, consisting of all of partial Sections 30 and 31, Township 32 North, Range 5 West, Rio Arriba County, New Mexico. Applicant proposes to dedicate said unit to a well to be drilled on an unorthodox location 990 feet from the North line and 713 feet from the East line of said Section 31.
- CASE 2005: Application of Argo Oil Corporation for an order force-pooling the interests in a 160-acre non-standard gas proration unit in the Jalmat Gas Pool. Applicant, in the above-styled cause, seeks an order force-pooling all mineral interests within the vertical limits of the Jalmat Gas Pool in a 160-acre non-standard gas proration unit consisting of the E/2 NE/4 of Section 21 and the W/2 NW/4 of Section 22, both in Township 25 South, Range 37 East, Lea County, New Mexico.

Docket No. 18-60

CASE 2006:

Application of Pan American Petroleum Corporation for an extension of the no-flare exception granted by Order No. R-1451. Applicant, in the above-styled cause, seeks an extension of the one-year exception to the no-flare provision of the rules for the Otero Gallup Oil Pool, Rio Arriba County, New Mexico, for its Jicarilla 35 Well No. 1, which exception was granted by Order R-1451.

CASE 2007:

Application of Otto Reynolds and John R. Yarbrough for the promulgation of special rules governing gas wells drilled in the Bloomfield-Farmington Oil Pool. Applicant, in the above-styled cause, seeks an order promulgating special rules governing, among other things, the definition, spacing and location of gas wells in the Bloomfield-Farmington Oil Pool, San Juan County, New Mexico. Applicant further seeks approval of unorthodox gas well locations for three wells in said pool.

CASE 2008:

Application of Gulf Oil Corporation for an order authorizing a salt water disposal well. Applicant, in the above-styled cause, seeks an order authorizing the disposal of produced salt water through its Lea-State "CR" (NCT-A) Well No. 3, located 3300 feet from the South line and 1980 feet from the West line of Section 2, Township 16 South, Range 32 East, Lea County, New Mexico, with injection to be in the lower Wolf-camp formation in the interval from 9,911 feet to 10,200 feet.

CASE 2009:

Application of Gulf Oil Corporation for a 200-acre non-standard gas proration unit and for an order force-pooling the interests therein. Applicant, in the above-styled cause, seeks the establishment of a 200-acre non-standard gas proration unit in the Blinebry Gas Pool, consisting of the SW/4 and the SW/4 SE/4 of Section 23, Township 22 South, Range 37 East, Lea County, New Mexico, to be dedicated to the O. I. Boyd Well No. 3, located 1980 feet from the South and West lines of said Section 23. Applicant further seeks an order force-pooling the interests of those in said non-standard gas proration unit who have gas rights within the vertical limits of the Blinebry Gas Pool, including the following named persons or parties who have not consented to the pooling agreement:

W. B. Trammel; Mrs. Carrie Gidwitz; Harry L. Jones and Isabel Jones; Heirs, Devisees and Personal Representatives of William T. Pitt, Deceased; Peter M. Smith; Adam F. Arnold; Cranfill Fowler; George W. Clark; Charles W. Hastings; John E. McConnell, Jr.; Lionel L. Shatford; Ernest O. Knapp, J. Paul Knapp, Gertrude K. Schrecengost, Mildred K. Stoneburner,

Evelyn Neel, and Maude S. Knapp, Jointly; Robert R. McKee; and all other persons or parties owning oil and gas interests in the SW/4 and SW/4 SE/4 of Section 23, Township 22 South, Range 37 East, Lea County, New Mexico.

CASE 2010:

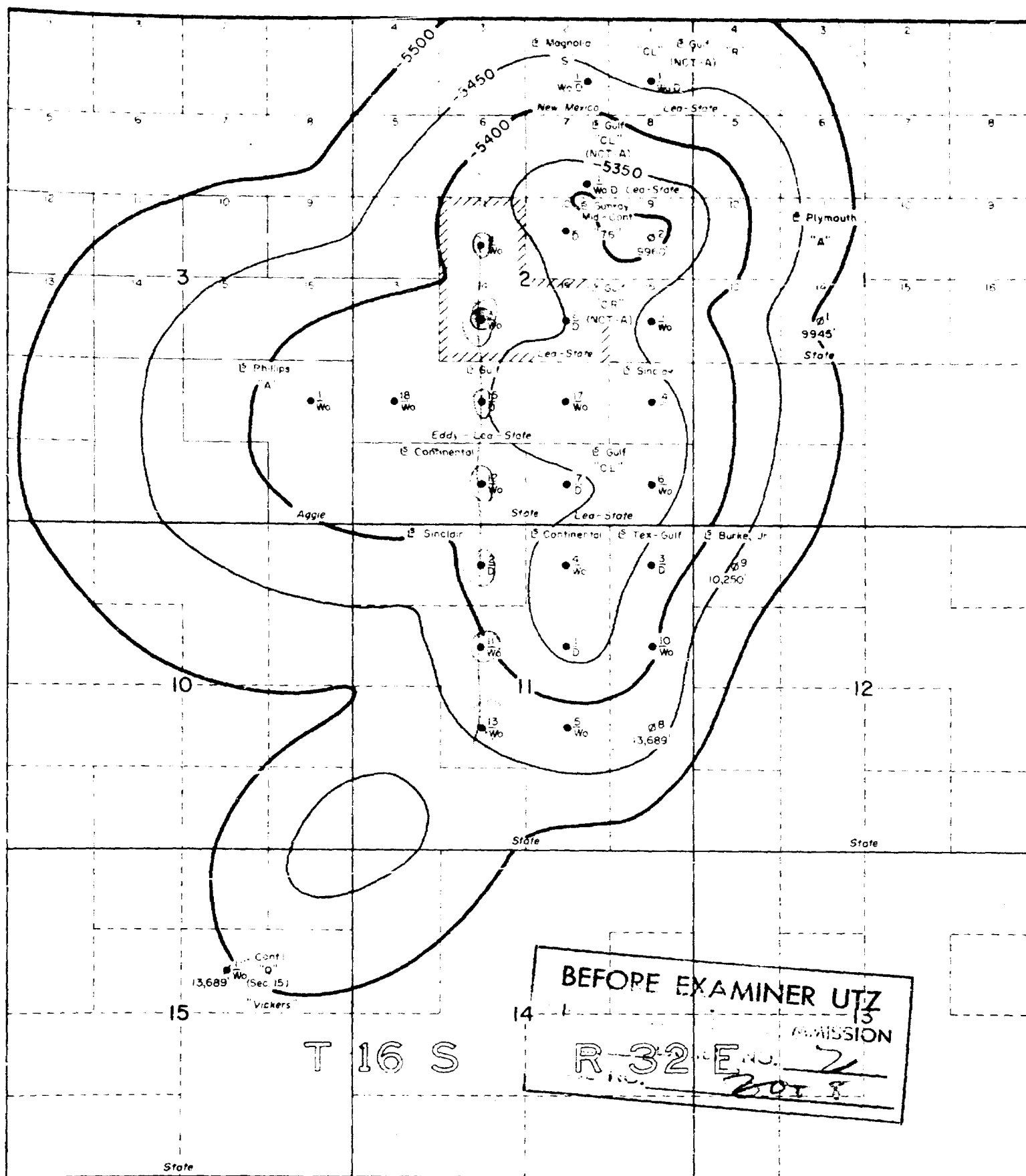
Application of Sinclair Oil & Gas Company for permission to commingle production from two separate leases. Applicant, in the above-styled cause, seeks an order authorizing it to commingle the Empire-Abo Pool production from its M. Yates "B" Lease consisting of the S/2, NE/4, S/2 NW/4 and the NE/4 NW/4, with such production from a portion of its State Eddy 32 lease consisting of the NW/4 NW/4 of Section 34 and the SE/4 NW/4 of Section 32, all in Township 17 South, Range 28 East, Eddy County, New Mexico, after separately metering the production from one lease only.

CASE 2011

Application of Socony Mobil Oil Company for a "slim-hole" oil-oil dual completion. Applicant, in the above-styled cause, seeks an order authorizing the dual completion of its E. O. Carson Well No. 22, located 1880 feet from the South line and 660 feet from the West line of Section 28, Township 21 South, Range 37 East, Lea County, New Mexico, in such a manner as to permit the production of oil from the Paddock Pool and the production of oil from the Wantz-Abo Pool using parallel strings of 2 7/8 inch tubing cemented in a common well-bore.

CASE 2012:

Application of Max Pray for the creation of a new oil pool for Devonian production and for the promulgation of special rules and regulations for said pool. Applicant, in the above-styled cause, seeks an order creating a new oil pool for Devonian production consisting of the W/2 of Section 27, E/2 of Section 28, NE/4 of Section 33 and the NW/4 of Section 34, Township 12 South, Range 57 East, Lea County, New Mexico. Applicant further seeks the promulgation of special rules and regulations governing said pool including a provision for temporary 80-acre oil proration units



STRUCTURE PLAT
 ANDERSON RANCH FIELD
 Contoured on: Wolfcamp Pay Marker
 CI: 50'
 Pertinent Gulf Lease
 Proposed Salt Water Disposal Well

Gulf Oil Corporation

July 6, 1960

Case No. 2008
 Exhibit No. 2

BEFORE THE
OIL CONSERVATION COMMISSION
SANTA FE, NEW MEXICO
JULY 6, 1960

IN THE MATTER OF:

CASE 2008 Application of Gulf Oil Corporation for a
order authorizing a salt water disposal
well. Applicant, in the above-styled
cause, seeks an order authorizing the dis-
posal of produced salt water through its
Lea-State "CR" (NCT-A) Well No. 3, loca-
ted 3300 feet from the South line and
1980 feet from the West line of Section
2, Township 16 South, Range 32 East, Lea
County, New Mexico, with injection to be
in the lower Wolfcamp formation in the
interval from 9,911 feet to 10,200 feet.

BEFORE:

Elvis A. Utz, Examiner.

T R A N S C R I P T O F P R O C E E D I N G S

MR. UTZ: Case 2008.

MR. PAYNE: Case 2008, Application of Gulf Oil Corporation
for an order authorizing a salt water disposal well.

MR. CASTLER: If the Commission please, my name is
Bill Castler from Roswell, New Mexico, and I am appearing on behalf
of Gulf Oil Corporation. I have two witnesses that will testify
in case 2008, Mr. G. J. Savage and Mr. Jim Gibson, in that order.

(Witnesses sworn in.)

GERALD J. SAVAGE

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



DIRECT EXAMINATION

BY MR. CASTLER:

Q Mr. Savage, will you please state your name and what company you are employed by and what your present position is?

A Gerald J. Savage, I am employed by the Gulf Oil Corporation as a production geologist in Roswell, New Mexico.

Q Have you previously qualified as an expert witness in giving testimony on behalf of the Gulf Oil Corporation before the New Mexico Oil Conservation Commission?

A Yes sir, I have.

MR. CASTLER: Mr. Examiner, I submit Mr. Savage's qualifications.

MR. UTZ: He's qualified.

Q (By Mr. Castler) Mr. Savage, are you familiar with Gulf's application in Case Number 2008?

A Yes sir, I am.

Q Would you please briefly state what it involves and why, in your opinion, it is necessary for a hearing today?

A Gulf requests permission to deepen their Lea-State "CR" Number 3 Well located in Section 2 of Township 16 South, Range 32 East of Lea County to inject salt water produced from wells in the Devonian and Wolfcamp wells in the Anderson Ranch Field into the interval below the casing, five and a half inch casing, at a depth of 9,911 feet in the new projected total depth of 10,200 feet. There are two other salt water disposal wells in the



field, but their capacity for salt water is not sufficient for Gulf to join their system.

MR. UTZ: Pardon me, Mr. Savage, do you have a schematic diagram of this application?

A Mr. Utz, as a geological witness, I do not, but our engineering witness does.

MR. UTZ: I wonder if you would submit that exhibit now so we can follow it?

MR. CASTLER: Yes, sir.

MR. GIBSON: That will be Exhibit Number Four.

(Thereupon, the document was marked as Exhibit Number Four for identification.)

MR. CASTLER: If the Examiner please, I would like to introduce Exhibit Number One, which is the lease plat, and then proceed with the further testimony at this time concerning the well and the well's history.

(Thereupon, the document was marked as Exhibit Number One for identification.)

Q (By Mr. Castler) Mr. Savage, I call your attention to the lease plat which has been labeled Exhibit Number One in Case Number 2008, showing Lea-State "CR" NCT-A, Lea County, New Mexico, general layout. Referring to Exhibit Number One, would you please state the location of the well in question which Gulf proposes to deepen and convert to a water injection well?

A This lease plat shows the location of Gulf's Lea-State



"CR" Number 3 Well to be 3300 feet from the south and 1980 feet from the west line of Section 2, Township 16 South, Range 32 East, outlined in red. This lease plat also shows all producing wells within a radius of two miles and all other operators within a radius of two miles.

Q And as well, does it show all offset operators?

A It shows all offset operators.

Q And the only wells that are now producing within a radius of two miles are those that are in either the Anderson Ranch-Wolfcamp Pool or the Anderson Ranch-Devonian Pool as defined by the Oil Conservation Commission of New Mexico?

A That is correct.

Q Is Gulf's Lea-State "CR" Lease, is that a State lease?

A Yes sir, it is.

Q With what as the beneficiary institution?

A The common school fund is the beneficiary institution.

Q Would you please describe the outlines of the lease and also tie them into Exhibit Number One?

A Gulf's Lea-State "CR" Lease consists of Lots 11, 14, 15 and 16. The hundred and twenty acres outlined by means of hashered lines is the lease interest that is pertinent in this case, inasmuch as the well on Lot 16 is part of a Wolfcamp unit with Sinclair Oil and Gas Corporation, which includes that Lot 16 and also Lot 13 or Section 1, of the same township and range.

Q Would you please state the present status of Gulf's



DEARNLEY-MEIER REPORTING SERVICE, Inc.
ALBUQUERQUE, NEW MEXICO

PHONE CH 3-6691

PAGE 5

Lea-State "CR" Well Number 3?

A The current status of that well is that it is presently abandoned. It has not been plugged, but it has not been produced since May of 1957 from the Wolfcamp zone.

Q Has it ever produced from any zone other than the Wolfcamp zone?

A No sir, it has not.

Q And now I wish to call your attention to Exhibit Number Two, which is entitled, "Structure plat, Anderson Ranch Field contoured on Wolfcamp Pay Marker.)

(Thereupon, the document was marked as Exhibit Number Three for identification.)

Q (By Mr. Castler) Referring to Exhibit Number Two, Mr. Savage, would you please state what can be seen on this exhibit?

A This is a structure plat contoured on top of the Wolfcamp paying marker, just at the top of the Wolfcamp pay zone, contoured with intervals of fifty feet, and also shows specifically the location of Gulf's Lea-State "CR" Number 3, and the state lease that is concerned in this case.

Q Have you correlated Well Number 3 with other wells bearing directly north and south that are completed in the Wolfcamp pay zone?

A Yes, sir.

Q Now, I wish to call your attention to what is labeled as Exhibit Number 3 --



(Thereupon, the Document was marked as Exhibit Number Three for identification.)

Q (By Mr. Castler) --entitled "North-south cross section, Anderson Ranch Field." Was Exhibit Number Three prepared by you or at your direction and under your supervision, Mr. Savage?

A Yes sir, it was.

Q Will you please refer now to Exhibit Number 3 and explain what is shown on here pertinent to this case?

A This cross section was chosen for our north-south line passing through, or including Gulf's Lea-State Number 3 Well. It shows that the producing wells in this line of cross section are all producing above the original oil-water contact of a minus 5570-foot datum plus or minus ten, and I wish to state that all Wolfcamp producing wells in this field are producing above that original oil-water contact. Gulf proposes to squeeze the existing perforations in this abandoned well and test perforations and drill out to a total depth of 10,200 feet to inject water into a zone that is anticipated to be found at a depth of 10,000 feet. This zone can be correlated across, between Continental Oil Company Number 15, Anderson Ranch to the south of the Number 3 and Gulf Oil Corporation's Lea-State "CR" Number 4 to the north. Gulf encountered a lost circulation zone which gave them trouble at a depth of 9,997 feet to 10,020 feet. I believe that this cross section will show that Gulf's proposed salt water disposal zone will be below the producing zone of all Wolfcamp producers in the



field, and --

Q Mr. Savage--pardon me.

A --it is necessary that this hearing be held, inasmuch as the Wolfcamp is an oil-producing zone, otherwise we would have requested administrative approval.

Q Then is it correct that you are proposing to inject salt water into the lower extremity of the Wolfcamp, into an area where there has been encountered lost circulation?

A That is correct. The water has been recovered from these several zones below the original oil-water contact and there have been no producing wells, and there are not at the present time any producing wells from the zone into which Gulf proposes to inject salt water.

Q Mr. Savage, has the oil-water contact zone been identified on Exhibit Number Three at minus 5570 feet plus or minus ten feet --

A Yes, it has.

Q --as the horizontal line?

A Yes sir, that's right.

Q And has the Wolfcamp pay marker also been shown on this cross section map on Exhibit Number Three?

A Yes sir, this marker has been chosen as a correlation point, and it exhibits the structure of the field as well as the top of the Wolfcamp formation would.

Q Correlating Exhibit Number Three with Exhibit Number Two,



how is the Wolfcamp pay marker shown on Exhibit Number Two?

A I am not sure I understand what you mean by the question.

Q Exhibit Number Two is a structure plat on top of the Wolfcamp pay marker, is that correct?

A That is correct.

Q And in Exhibit Number Three, you have shown the Wolfcamp pay marker?

A That's right, sir.

Q Which one of the contours is correlative with the Wolfcamp pay marker as shown on Exhibit Number Three?

A The Wolfcamp pay marker is found just--in the Lea-State "CR" Number 3 just above 9700 feet, and the subsea datum of that point puts Gulf's Lea-State "CR" Number 3 between the minus 5350 and the minus 5400 feet datum, sir.

Q Further correlating Exhibit Number Three with Exhibit Number Two, Gulf's Number 4 Lea-State well is shown at the top in Lot 11, Section 2, is that correct?

A That's correct.

Q And that is also shown on Exhibit Three on the extreme right hand well, is that correct?

A That's right.

Q And the next well going south is Gulf's Number 3, the proposed water injection well?

A That's right, sir.

Q And the next well going to the left and going to the south



on Exhibit Number Two is Continental Oil Company Number 15?

A Yes, sir.

Q As you progress further, Continental Oil Company Number 12 Anderson Ranch unit is further to the south?

A Yes, sir; I believe your line of questioning is intended to bring out the fact that this cross section shows the structural position of some of the Lea-State wells on the Wolfcamp structure?

Q That's correct.

A All right, sir.

Q Would you care to elaborate any more on either of these exhibits, Exhibits Two or Three?

A I just want to point out the fact, as previously shown, that the proposed zone will be below the original oil-water contact, and there have not been and there are not at this time any producing Wolfcamp wells from this proposed salt water injection zone.

MR. CASTLER: Further testimony as to the method of completion is to be given by Gulf's engineering witness. If there's nothing further, I will move for the entry of Exhibit Numbers One, Two and Three in Case Number 2008 at this time.

MR. UTZ: Without objection, Exhibits One, Two and Three will be entered into the record.

MR. CASTLER: That concludes my questions on direct of Mr. Savage.

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



This injection zone is commonly known as the Lower Wolfcamp?

A Yes, sir.

MR. UTZ: The witness may be excused.

(Witness excused.)

JAMES C. GIBSON

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

DIRECT EXAMINATION

BY MR. CASTLER:

Q Will you please state your name, by whom you are employed, where you reside and what your present position is?

A My name is James C. Gibson, I am employed by Gulf Oil Corporation as a Petroleum Engineer in Roswell, New Mexico.

Q Have you previously qualified as an expert petroleum engineer in giving testimony before the New Mexico Oil Conservation Commission?

A No sir, I have not.

Q Would you briefly review your educational experience as a Petroleum Engineer?

A I earned my Bachelor of Science Degree in Petroleum Engineering from the University of Oklahoma in 1941; from 1941 to 1942, I was employed by Cities Service Oil Company in their junior engineer training program; from 1942 to 1946, I served in the U. S. Armed Services, and in 1946, January, I was employed by the Gulf Corporation. I have remained in their employ since



that time. During those years, I have served as petroleum engineer, working throughout the various fields, in the Permian Basin, West Texas, and in the Panhandle of Texas. During the past three years, I have worked in Gulf's mechanical engineering, production engineering section in their Fort Worth Division Office, and am now located in the Roswell District Office.

Q Have you familiarized yourself with Gulf's proposed method of completion and all other matters involving the application in Case Number 2008?

A Yes sir, I have.

MR. CASTLER: I submit the witness is qualified.

MR. UTZ: The witness is qualified.

Q (By Mr. Castler) Mr. Gibson, Exhibit Number Four has previously been introduced here, which is a schematic diagram of the proposed completion of Well Number 3 Lea-State "CR" Lease; was this exhibit prepared by you or at your direction and under your supervision?

A Yes sir, it was.

Q Calling your attention to Exhibit Number Four, would you please outline Gulf's present casing program, present casing installations, where the cement is circulated and placed and so forth --

A Yes, sir.

Q --and then go on to state what Gulf's proposal is in connection with the deeper completion of this well as a salt water



Injection well?

A The diagram shows 13 3/8 inch casing at 626 feet, that was cemented with 650 sacks and the cement is circulated; 8 5/8 inch casing is set at 4204 feet, this was cemented with 2150 sacks of cement which was not circulated, but the top of the cement was found at 85 feet by temperature survey; 5 1/2 inch casing is set at 9911 feet, this casing was cemented with 275 sacks of cement, temperature survey showed the top of the cement at 8470. The original total depth of the well was 9912 feet; at the present time, we have perforations which were squeezed with cement from 9842 to 9864 and from 9876 to 9892 with the cement retainer set in the 5 1/2 inch casing at 9789 feet. We have perforations on that at 9688 to 9707 and 9720 to 9755. Gulf proposes to squeeze off the open perforations from 9688 to 9755 with cement, drill out and test the perforations with 1,000 pounds per square inch, then drill a head through the cement retainer and the cement on the lower perforations and then test the lower perforations. If in any way the perforations do not hold, of course they will be squeezed, then we intend to drill an open hole from the original total depth of 9912 to 10,200 feet. The injection zone will be as stated, below the casing set at 9911 feet to total depth of 10,200 feet. We propose to run 2 7/8 inch OD tubing coated internally with plastic for injection of the salt water; we expect this injection to be under gravity or under low pressure. We intend to prevent corrosion to the inside of the casing and to the



outside of the tubing by loading the annulus with a light oil. If the bottomhole pressure is sufficient, we do not intend to set a packer; however, if it is not sufficient and the packer is necessary, we will set the packer and load the annulus with oil. Injection will be down the tubing and into the open hole interval.

Q Now, Mr. Gibson, calling your attention back to Exhibit Number One, which is the lease plat, can you show what production is to be served by this salt water disposal that you propose?

A Yes sir, we intend to use the disposal well for salt water produced from wells in the Anderson Ranch Devonian and Anderson Ranch Wolfcamp Field. At the present time, we have six wells which we intend to dispose of the water. They are our Lea-State "CR" Number 1 located in Lot 1 of Section 2--this well is a Wolfcamp and Devonian dual. We have the Lea-State "CL" Number 1 located in Lot 7, which is a Wolfcamp-Devonian dual; we have the Lea-State "CR" Number 4, which is a Wolfcamp well, and the Lea-State "CR" Number 2 located in Lot 15, which is a Devonian well. Those six wells at the present time are producing water which we intend to dispose of into our Number 3 disposal well.

Q What facilities for disposal of salt water are presently available to these six wells?

A They are presently disposed in an open pit.

Q Is the salt water increasing or are these facilities becoming inadequate?

A Yes, the water is increasing, which is our reason for



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seeking a disposal well.

Q What is the present volume of water that you need to dispose of?

A The present volume is in excess of six hundred barrels per day.

Q All of this water is so-called waste water, it is not fresh water, is it?

A Yes sir, it is definitely brackish water.

Q In the future, do you intend, or does Gulf intend to inject additional water into this well, providing the well is capable of taking it?

A Yes sir, we do; we expect the water production to increase, and as it increases, we intend to dispose of it into this well.

Q Do you have anything to add, particularly concerning the well history of Gulf Oil Corporation's Lea-State "CR" Number 3?

A I might say that the well was originally completed in November of 1955 with an additional potential of sixty-six barrels of oil per day and forty-nine barrels of water per day, swabbing. As our previous witness has testified, that well was presently abandoned in May, 1957 with a cumulative oil production of 5,040 barrels. At the time of abandonment, the well was producing 425 barrels of oil per day and approximately two barrels of water per day, pumping.



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Q Mr. Gibson, I notice that on Exhibit Number 4, you show that there's a five and a half inch cement retainer set at 9779 feet; is this the present plug back depth of the well?

A Yes sir, it is.

Q On Exhibit Number Three, it is shown that there is a plug back depth of 9899; would you consider that figure to be in error and the 9779 to be the proper figure to substitute there?

A Yes sir, the correct figure is 9779.

Q In your opinion, would it involve waste of any oil from the oil-producing zone for the Oil Conservation Commission to grant this application and for Gulf to complete this well as proposed for salt water injection purposes?

A No, sir; as explained by the previous witness, we intend to, propose to inject the water below the oil-water contact so that no oil producing well should be damaged.

MR. CASTLER: I don't believe I have any further questions on direct.

MR. UTZ: Mr. Gibson, I believe you said the top of the cement on five and a half inch was 8470?

A Yes, sir.

MR. UTZ: So there will be no cement behind the 5 1/2 from 8478 to the bottom of the 8 5/8, which was 4204?

A Yes sir, that is correct.

MR. UTZ: And on the 4300 feet open behind the pipe, what zones are in this area?



A I do not know, sir. I may refer you to our geological witness.

MR. UTZ: Can you answer that?

MR. SAVAGE: Yes sir, the formations behind the pipe between that depth of 8470 to 4204 would be the San Andres and the Abo Formations.

MR. UTZ: Are they producing in this area at this time?

MR. SAVAGE: No sir, they are not.

MR. UTZ: Have they?

MR. SAVAGE: No sir, they have not. At the present time, Sunray-Midcontinent is using their State Land 76 Number 2 Well two locations east and one location north of the Lea-State "CR" Number 3 for salt water disposal in the openhole interval of the San Andres through the Abo Section.

MR. UTZ: Mr. Gibson, I believe you stated that you intended to load the annulus between the tubing, 5 1/2, with light oil?

A Yes, sir.

MR. UTZ: Even though you don't set a packer?

A Yes, sir.

MR. UTZ: In other words, the oil will float through the salt water column?

A Yes, sir.

MR. UTZ: How far back up the hole do you think the salt water column will be?



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A Well, we don't know yet. We'll have to determine the static bottomhole pressure of the formation, and the injecting bottomhole pressure. We intend to cover practically all the tubing in the casing, certainly below the top of the cement, with the oil.

MR. UTZ: Wouldn't it be better protection to set the packer, in any event?

A I believe Service Engineering and several other operators have used this system of using light oil without a packer. It gives you the same protection and also gives you a control, a controlling record of your injection pressure in case you have injection by gravity, because you can have a surface pressure on the annulus and watch that from that point. Now, if bottomhole pressure is inadequate to sustain that column, then certainly a packer would be provided.

MR. UTZ: Any other questions?

MR. PAYNE: No questions.

MR. UTZ: The witness may be excused.

(Witness excused.)

MR. UTZ: Any other statements in this case?

The case will be taken under advisement.



I N D E X

PAGE

WITNESS

GERALD J. SAVAGE

Direct Examination by Mr. Castler

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JAMES C. GIBSON

Direct Examination by Mr. Castler

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STATE OF NEW MEXICO)
: ss
COUNTY OF BERNALILLO)

I, JERRY MARTINEZ, Notary Public in and for the County of Santa Fe, State of New Mexico, do hereby certify that the foregoing and attached Transcript of Proceedings before the New Mexico Oil Conservation Commission was reported by me in Stenotype and reduced to typewritten transcript by me, and that the same is a true and correct record to the best of my knowledge, skill and ability.

WITNESS my Hand and Seal this, the 7th day of July, 1960, in the City of Albuquerque, County of Bernalillo, State of New Mexico.

Jerry Martinez
Notary Public

My Commission Expires:
January 24, 1962

I do hereby certify that the foregoing is a complete record of the proceedings in the Examiner hearing of Case No. 2008, heard by me on 7-6-60, 1960.
[Signature] Examiner
New Mexico Oil Conservation Commission

