3082: Application of UNION OIL CO. of CALIF. for salt water disposal, Lea County, New Mexico.

CASE NO.
3082

Application,
Transcripts,
Small Exhibits
ETC.

MAIN OFFICE OCC
1964 JUL 17 PM 1:24

SHELL OIL COMPANY

P. O. Box 1858
Roswell, New Mexico

July 15, 1964

Subject: NMOCC Case 3082, Salt Water Disposal, East Caprock (Devonian) Field, Lea County, New Mexico.

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

Attention: Mr. A. L. Porter

Gentlemen:

Shell Oil Company has no objection to Union Oil Company's application to dispose of salt water in Union's State-Gross No. 2, Unit G, Section 2, T-12-S, R-32-E, in the East Caprock (Devonian) field, providing water injection does not commence until after Shell's State ECA, Well Nos. 1 and 2, located in the N/2 SE/4 Section 2 have reached the economic limit.

Very truly yours,

T. H. Dwyer
Division Production Manager

cc: Union Oil Company of California
619 West Texas
Midland, Texas

R-360 authorizes
wlo stacking

MAIN OFFICE OCC

1964 JUN 30 PM 2 BEFORE THE OIL CONSERVATION COMMISSION

STATE OF NEW MEXICO

IN THE MATTER OF THE APPLICATION OF UNION OIL COMPANY OF CALIFORNIA FOR AN ORDER AUTHORIZING THE DISPOSAL OF SALT WATER INTO THE DEVONIAN ZONE OF THE EAST CAPROCK FIELD IN SECTION 2, TOWNSHIP 12 SOUTH, RANGE 32 EAST, LEA COUNTY, NEW MEXICO.	)	No. 3082

APPLICATION

COMES NOW Union Oil Company of California by its attorney, John F. Russell, and states:

1. Applicant Union Oil Company of California is the owner and operator of its Union State-Gross No. 2 Well located in the center of the SW¼NE¼ of Section 2, Township 12 South, Range 32 East, Lea County, New Mexico.

2. Applicant proposes to commence the disposal of produced salt water from the Devonian Zone of the East Caprock Field produced from its State-Gross No. ~~2~~ 1 Well located in the NW¼SW¼ of Section 11, Township 12 South, Range 32 East, using the above-described Gross No. 2 Well as an injection well with injection intervals of 11,246 feet--11,252 feet and 11,270 feet--11,285 feet.

3. The water being disposed of is not suitable for domestic or agricultural purposes and the disposal of said water will not impair production of oil, gas or fresh water from the reservoir, nor will it impair correlative rights.

4. Applicant attaches hereto, as Exhibit 1, a plat showing the location of the proposed injection well and the loca-

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Date 7-8-64

tion of all other wells within a radius of two miles from said proposed injection well and the formation from which said wells are producing or have produced. The plat also indicates the lessees within said two-mile radius.

5. Applicant attaches hereto, as Exhibit 2, a diagrammatic sketch of the proposed injection well showing all casing strings, including diameters and setting depths, quantities used and tops of cement, perforated or open hole intervals, tubing strings, including diameters and setting depths, and the type and location of the packer.

6. The log covering the proposed injection well will be furnished as soon as available.

7. It is anticipated that initially 4,000 barrels of water per day will be injected into the disposal well, which rate may ultimately rise to approximately 10,000 barrels per day.

8. A copy of this Application, complete with all attachments, has been delivered to Mr. Frank Irby in the office of the State Engineer, Santa Fe, New Mexico.

WHEREFORE, Applicant requests that the Commission set this matter down for hearing before its examiner, publish notice as required by law, and, after hearing, issue its order authorizing the disposal of salt water as aforesaid.

Respectfully submitted,

UNION OIL COMPANY OF CALIFORNIA

By John F. Russell

P. O. Drawer 640
Roswell, New Mexico 88201

Applicant's Attorney

June 30, 1964

SHELL OIL COMPANY
P. O. Box 1858
Roswell, New Mexico

July 15, 1964

Subject: NMOCC Case 3082, Salt Water Disposal, East Caprock (Devonian) Field, Lea County, New Mexico.

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

Attention: Mr. A. L. Porter

Gentlemen:

Shell Oil Company has no objection to Union Oil Company's application to dispose of salt water in Union's State-Gross No. 2, Unit G, Section 2, T-12-S, R-32-E, in the East Caprock (Devonian) field, providing water injection does not commence until after Shell's State ECA, Well Nos. 1 and 2, located in the N/2 SE/4 Section 2 have reached the economic limit.

Very truly yours,

Original Signed By
T. H. DWYER

T. H. Dwyer
Division Production Manager

cc: Union Oil Company of California FOR
619 West Texas
Midland, Texas

147

Union Oil Company of California

M I D L A N D 76 T E X A

SHELL
RECEIVED
JUL 13 1964
ROSWELL
Div. Mgr.
Adm.
E. Eng.
M. Eng.
P-S Supv.
Drlg.
Prod. Supv.
Discus
Field File
Geol.
Land
Geol. Sp.
File
Secy.
Gen. Cor.

July 9, 1964

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

Attn: Mr. T. H. Dwyer

Re: Salt Water Disposal
Union's State-Gross No. 2
East Caprock (Devonian) Field
Lea County, New Mexico

Gentlemen:

We have previously advised you orally of our desire to convert our State-Gross No. 2 well, located in the SW NE Section 3, T-12S, R-32E, Lea County, New Mexico, to a salt water disposal well. Water produced from Union's State-Gross No. 1, NW SW Section 11, T-12S, R-32E, will be injected into the Devonian formation in the No. 2 well. You have stated that Shell had no objection to use of the State-Gross No. 2 as a disposal well, provided that water injection did not commence until Shell's two wells located in the N/2 SE/4, Section 2, reached the economic limit.

Union has now applied to the New Mexico Oil Conservation Commission for permission to convert its State-Gross No. 2 to disposal service, and the Commission has set the matter for hearing on July 22, 1964.

Union hereby agrees that, if the New Mexico Oil Conservation Commission approves Union's application, Union will not commence disposal operations in the subject well without first obtaining Shell's written consent or until production from the Devonian on Shell's lease has ceased for a period of at least 30 days, whichever comes first.

If this meets with your approval, please sign one copy in the space provided below and return to the undersigned. Also, we will appreciate your advising the Commission that Shell has no objection to the granting of our application.

Very truly yours,

H. E. Keegan

H. E. Keegan
Manager of Operations

APPROVED:
SHELL OIL COMPANY

By T. H. Dwyer

Date 7-15-64

RSC:bn

FORM 401 MT 9/63

CASE 3087: Application of William A. and Edward R. Hudson for an unorthodox location, Eddy County, New Mexico. Applicants, in the above-styled cause, seek authority to drill their Puckett "A" Well No. 26 at an unorthodox location 1295 feet from the North and West lines of Section 24, Township 17 South, Range 31 East, Eddy County, New Mexico. Said well would be projected to the Paddock formation at approximately 5400 feet.

CASE 3088: Application of Phillips Petroleum Company for a unit agreement, Lea County, New Mexico. Applicant, in the above-styled cause, seeks approval of the Ranger Lake Unit Area comprising 2,680 acres, more or less, of State land in Township 12 South, Range 34 East, Lea County, New Mexico.

CASE 3089: Application of Phillips Petroleum Company for a waterflood project, Lea County, New Mexico. Applicant, in the above-styled cause, seeks authority to institute a waterflood project in the Ranger Lake-Pennsylvanian Pool in its Ranger Lake Unit Area by the injection of water into the Pennsylvanian formation through nine wells in Sections 14, 23, 24, 25, 26, 27, 34 and 35, Township 12 South, Range 34 East, Lea County, New Mexico.

CASE 3090: Application of Tenneco Oil Company for salt water disposal, San Juan County, New Mexico. Applicant, in the above-styled cause, seeks authority to dispose of produced salt water in the Pictured Cliffs formation through its Callow Well No. 2 located in Unit B, Section 33, Township 29 North, Range 13 West, West Kutz-Pictured Cliffs Pool, San Juan County, New Mexico.

CASE 3091: Application of The British-American Oil Producing Company for a dual completion and pool commingling, Lea County, New Mexico. Applicant, in the above-styled cause, seeks approval of the dual completion (conventional) of its North Wilson Deep Unit Well No. 1, located in Unit O of Section 31, Township 20 South, Range 36 East, Lea County, New Mexico, to produce oil from the Upper Bone Spring formation and the Lower Bone Spring formation through parallel strings of tubing. Applicant further seeks authority to commingle the production from said pools after separately metering the Lower Bone Spring production.

CASE 3092: Application of The British-American Oil Producing Company for the creation of a new oil pool and special pool rules, Lea County, New Mexico. Applicant, in the above-styled cause, seeks the creation of a new oil pool for Upper Bone Spring production for its North Wilson Deep Unit Well No. 1, located in Unit O of Section 31, Township 20 South, Range 36 East, Lea County, New Mexico, which well is perforated from 7888 to 7901 feet. Applicant further seeks the promulgation of special rules for said pool, including a provision for 80-acre proration units.

CASE 3093: Application of The British-American Oil Producing Company for the creation of a new oil pool and special pool rules, Lea County, New Mexico. Applicant, in the above-styled cause, seeks the creation of a new oil pool for Lower Bone Spring production for its North Wilson Deep Unit Well No. 1, located in Unit O of Section 31, Township 20 South, Range 36 East, Lea County, New Mexico, which well is perforated from 10,094 to 10,122 feet. Applicant further seeks the promulgation of special rules for said pool, including a provision for 80-acre proration units.

Docket No. 20-64

DOCKET: EXAMINER HEARING - WEDNESDAY - JULY 22, 1964

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

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

CASE 3081: Application of Shell Oil Company for a waterflood project, Lea County, New Mexico. Applicant, in the above-styled cause, seeks authority to institute a waterflood project in the Langlie-Mattix Pool by the injection of water through four wells at unorthodox locations in Section 21, Township 24 South, Range 37 East, Lea County, New Mexico.

CASE 3082: Application of Union Oil Company of California for salt water disposal, Lea County, New Mexico. Applicant, in the above-styled cause, seeks authority to dispose of produced salt water into the Devonian formation through perforations from 11,246 feet to 11,285 feet in its State-Gross Well No. 2 located in Unit L of Section 11, Township 12 South, Range 32 East, East Caprock Field, Lea County, New Mexico.

CASE 3083: Application of General American Oil Company of Texas for a waterflood project, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks authority to institute a waterflood project by the injection of water into the Premier Sand through twelve wells located in Sections 27, 28, 33 and 34, Township 17 South, Range 30 East, Eddy County, New Mexico. Certain of the aforesaid injection wells would be drilled at unorthodox locations.

CASE 3084: Application of Fair Oil Company for a buffer zone extension and pool redelineation, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks an amendment of Order No. R-2033 to extend the waterflood buffer zone authorized by said order to include the SE/4 NE/4 of Section 36, Township 17 South, Range 29 East, Eddy County, New Mexico. Applicant further seeks the extension of the Loco Hills Pool to include said quarter-quarter section, and the associated deletion of said acreage from the Grayburg-Jackson Pool.

CASE 3085: Application of Humble Oil & Refining Company for two non-standard oil proration units, Lea County, New Mexico. Applicant, in the above-styled cause, seeks approval of two non-standard 80-acre oil proration units in Section 7, Township 19 South, Range 35 East, Scharb Bone Springs Pool, Lea County, New Mexico. The first unit would comprise the NW/4 NE/4 and the NE/4 NW/4 of Section 7 and be dedicated to applicant's Alves Well No. 1 located in Unit B of said Section 7. The second unit would comprise the SW/4 NE/4 and the SE/4 NW/4 of Section 7 and be dedicated to applicant's Alves Well No. 2, which would be drilled in Unit G of said Section 7.

CASE 3086: Application of Texaco Inc. for a waterflood project, Lea County, New Mexico. Applicant, in the above-styled cause, seeks authority to institute a waterflood project in the Rhodes Yates Oil Pool by the injection of water into the Yates and Seven Rivers formations through two wells in Section 26, Township 26 South, Range 37 East, Lea County, New Mexico.

LAW OFFICES OF
JOHN F. RUSSELL
SUITE 1010 SECURITY NATIONAL BANK BUILDING
P. O. DRAWER 640
ROSWELL, NEW MEXICO 88201

TELEPHONE 622-4641
AREA CODE 505

MAIN OFFICE OCC
1964 JUN 30 PM 2:52

June 30, 1964

Oil Conservation Commission
Box 2088
Santa Fe, New Mexico 87501

Case 3082

Gentlemen:

I transmit herewith in triplicate the application of Union Oil Company of California for an order authorizing the disposal of salt water.

Very truly yours,

John F. Russell
John F. Russell

JFR:np

Enclosures

DOCKET MAILED
Date 8-12-64

GOVERNOR
JACK M. CAMPBELL
CHAIRMAN

State of New Mexico
Oil Conservation Commission

LAND COMMISSIONER
E. S. JOHNNY WALKER
MEMBER

P. O. BOX 2088
SANTA FE

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

September 9, 1964

Mr. John Russell
Attorney at Law
Post Office Drawer 640
Roswell, New Mexico

Re: CASE NO. 3082
ORDER NO. R-2767
APPLICANT UNION OIL COMPANY

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.

A. L. PORTER, Jr.
Secretary-Director

ir/

Carbon copy of order also sent to:

Hobbs OCC x

Artesia OCC

Aztec OCC

OTHER Mr. T. H. Dwyer, Shell Oil Co. - P. O. Box 1858, Roswell, N.M.
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. 3082
Order No. R-2767

APPLICATION OF UNION OIL COMPANY
OF CALIFORNIA FOR SALT WATER DIS-
POSAL, LEA COUNTY, NEW MEXICO.

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9 o'clock a.m. on August 26, 1964, at Santa Fe, New Mexico, before Examiner Elvis A. Utz.

NOW, on this 8th day of September, 1964, the Commission, a quorum being present, having considered the testimony, the record, and the recommendations of the Examiner, and being fully advised in the premises,

FINDS:

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

(2) That the applicant, Union Oil Company of California, is the owner and operator of the State-Gross Well No. 2, located in Unit G of Section 2, Township 12 South, Range 32 East, NMPM, East Caprock Field, Lea County, New Mexico.

(3) That the applicant proposes to utilize said State-Gross Well No. 2 to dispose of produced salt water into the Devonian formation, with injection interval from 11,246 to 11,285 feet.

(4) That the injection should be accomplished through 3-inch internally plastic-coated tubing installed in a packer set at approximately 11,200 feet.

(5) That the applicant stipulated at the hearing that disposal in the subject well would not commence until Shell Oil

Company's State ECA Wells Nos. 1 and 2, located in Units J and I, respectively, of Section 2 have reached their economic limit.

(6) That approval of the subject application will prevent the drilling of unnecessary wells and otherwise prevent waste and protect correlative rights.

IT IS THEREFORE ORDERED:

(1) That the applicant, Union Oil Company of California, is hereby authorized to dispose of produced salt water into the Devonian formation through its State-Gross Well No. 2, located in Unit G of Section 2, Township 12 South, Range 32 East, NMPM, East Caprock Field, Lea County, New Mexico, injection to be accomplished through 3-inch internally plastic-coated tubing installed in a packer set at approximately 11,200 feet, with injection interval from 11,246 to 11,285 feet.

(2) That injection shall not commence until Shell Oil Company has notified the applicant that its State ECA Wells Nos. 1 and 2, located in Units J and I, respectively, of Section 2, Township 12 South, Range 32 East, NMPM, Lea County, New Mexico, have reached their economic limit, and a copy of such letter of notification has been filed with the Commission.

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

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

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

STATE OF NEW MEXICO
OIL CONSERVATION COMMISSION

Jack M. Campbell

JACK M. CAMPBELL, Chairman

E. S. Walker

E. S. WALKER, Member

A. L. Porter, Jr.

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

esr/

Docket No. 23-64

DOCKET: EXAMINER HEARING - WEDNESDAY - AUGUST 26, 1964

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

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

CASE 3095: Application of Continental Oil Company for an amendment to Order No. R-2564, San Juan County, New Mexico. Applicant, in the above-styled cause, seeks an amendment to Order No. R-2564 to provide, among other things, the substitution of two wells in Units N and O for the presently authorized injection well in Unit K of Section 34, Township 28 North, Range 17 West, Table Mesa-Dakota Pressure Maintenance Project, Table Mesa Pool, San Juan County, New Mexico.

CASE 3096: Application of Continental Oil Company for special pool rules, Lea County, New Mexico. Applicant, in the above-styled cause, seeks the establishment of special pool rules, including a provision for 80-acre spacing and a gas-oil ratio of 6000 to 1 for the Maljamar-Abo Pool in Township 17 South, Range 32 East, Lea County, New Mexico.

CASE 3097: Application of Continental Oil Company for special pool rules, Lea County, New Mexico. Applicant, in the above-styled cause, seeks the establishment of special pool rules including a provision for 80-acre proration units for the Baish-Wolfcamp Pool in Sections 21 and 22, Township 17 South, Range 32 East, Lea County, New Mexico.

CASE 3082: (Continued from the July 22, 1964 Examiner Hearing)
Application of Union Oil Company of California for salt water disposal, Lea County, New Mexico. Applicant, in the above-styled cause, seeks authority to dispose of produced salt water into the Devonian formation through perforations from 11,246 feet to 11,285 feet in its State-Gross Well No. 2 located in Unit G of Section 2, Township 12 South, Range 32 East, East Caprock Field, Lea County, New Mexico.

CASE 3098: In the matter of the hearing called by the Oil Conservation Commission upon its own motion to consider a revision of Rule 701-E-4. In the above-styled cause, the Commission proposes to consider an amendment to Rule 701-E-4 of the Rules and Regulations to provide a more current area allowable factor for waterfloods in Northwest New Mexico. The proposed factor would be approximately 70 barrels per day.

Case 3082

STATE OF NEW MEXICO

STATE ENGINEER OFFICE

SANTA FE

S. E. REYNOLDS
STATE ENGINEER

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

July 21, 1964

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

Dear Mr. Porter:

Reference is made to the application of Union Oil Company of California which seeks an order authorizing disposal of salt water into the Devonian Zone of East Caprock Field in Sec. 2, T. 12 S., R. 32 E.

I have reviewed the application, the attached exhibits and additional information furnished at my request by Mr. John F. Russell and it now appears that the proposed construction will eliminate any threat of contamination to the fresh waters which may occur in the area. Therefore, this office offers no objection to the granting of the application.

Yours truly,

S. E. Reynolds
State Engineer

By: Frank E. Irby
Frank E. Irby
Chief
Water Rights Division

FEI/ma
cc-John F. Russell
Union Oil Co.
F. H. Hennighausen

MAIN OFFICE
'64 SEP 13 PM 12

SHELL OIL COMPANY
P. O. Box 1858
Roswell, New Mexico

September 11, 1964

Subject: N.M.O.C.C. Case 3082
Salt Water Disposal
East Caprock (Devonian) Field
Lea County, New Mexico

~~Union Oil Company~~
~~619 West Texas~~
~~Midland, Texas~~

Gentlemen:

This is Shell Oil Company's concurrence for you to commence disposal of salt water into your State-Gross No. 2, Unit G, Section 2, T-12-S, R-32-E, at your earliest convenience. Our State ECA Well Nos. 1 and 2, located in the N/2 SE/4 Section 2, have now reached the economic limit and are currently shut-in. Both wells will be plugged and abandoned in the very near future.

Very truly yours,

Original Signed By
S. B. DEAL

for

T. H. Dwyer
Division Production Manager

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

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

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

November 9, 1964

COPY

Mr. John F. Russell
Attorney at Law
P. O. Drawer 640
Roswell, New Mexico

Re: Case No. 3082
Order No. R-2767

Dear Jack:

I have your letter of November 6, 1964, concerning the above case and order. Mr. Frank E. Irby, Chief, Water Rights Division, State Engineer's Office, and Mr. Daniel S. Nutter, Chief Engineer, Oil Conservation Commission, have examined our case file and the exhibits presented at the hearing and have no objection to the installation of a packer at approximately 9500 feet in lieu of the 11,200-foot depth set out in the above order.

Your letter of November 6, 1964, and a copy of this letter will be placed in the Commission's case file.

Very truly yours,

J. M. DURRETT, Jr.
Attorney

JMD/esr

cc: Mr. Frank E. Irby
Chief, Water Rights Division
State Engineer's Office
Capitol Building
Santa Fe, New Mexico

LAW OFFICES OF
JOHN F. RUSSELL
SUITE 1010 SECURITY NATIONAL BANK BUILDING
P. O. DRAWER 640
ROSWELL, NEW MEXICO 88201

TELEPHONE 622-4641
AREA CODE 505

November 6, 1964

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

RE: Case No. 3082
Order No. R-2767

Dear Jim:

Reference is made to our recent conversation in connection with the injection by Union Oil Company of California of salt water into their State-Gross Well No. 2 located in Unit G of Section 2, Township 12 South, Range 32 East, N.M.P.M., East Caprock Field, Lea County, New Mexico.

It is my understanding that Frank Irby of the State Engineer's office and Mr. Nutter have discussed the problem raised and have agreed that they will approve a change in Paragraph 4 of Order No. R-2767 to substitute the depth of 9500 feet for 11200 feet.

Union Oil Company of California is agreeable to their recommendations and it will be appreciated if you will furnish me with a letter authorizing the change in the depth to which the plastic coated tubing is to be installed in a packer.

Very truly yours,

John F. Russell

John F. Russell

JFR:np

cc: Mr. Frank Irby, State Engineer's Office
Mr. Bob Cooke, Union Oil Company of California

file
Case 3082

STATE OF NEW MEXICO
STATE ENGINEER OFFICE
SANTA FE

S. E. REYNOLDS
STATE ENGINEER

November 9, 1964

ADDRESS CORRESPONDENCE TO:
STATE CAPITOL
SANTA FE, N. M.
87501

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

Dear Mr. Porter:

Reference is made to Mr. John F. Russell's letter of November 6, 1964 referring to Case No. 3082 and Order R-2767. With reference to Finding of Fact No. 4 in this Order and paragraph 1 of the Order itself, this office offers no objection to changing the figure 11,200 feet to 9,500 feet.

Very truly yours,

S. E. Reynolds
State Engineer

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

FEI/ma
cc-John F. Russell
Bob Cook
F. H. Hennighausen

EXHIBIT NO. 6

BEFORE EXAMINER NUTTER
OIL CONSERVATION COMMISSION
APPN EXHIBIT NO. 5
CASE NO. 3082

PRODUCTION HISTORY
UNION STATE-GROSS NO. 2
EAST CAPROCK DEVONIAN FIELD
LEA COUNTY, NEW MEXICO

Year	Month	Oil Bbls.	Water Bbls.	Cut %
1953	Jan.			
	Feb.			
	Mar.			
	Apr.			
	May			
	June			
	July	5,734	6	
	Aug.	5,682	6	
	Sept.	8,188	548	6
	Oct.	6,742	1,417	17
	Nov.	6,202	2,666	30
	Dec.	6,943	3,585	34
TOTAL		39,491	8,228	
CUM. TOTAL		39,491	8,228	
1954	Jan.	6,007	3,532	37
	Feb.	4,402	2,409	35
	Mar.	2,661	20	
	Apr.	4,708	162	
	May	8,769	16,285	65
	June	7,359	14,608	67
	July	8,333	16,176	66
	Aug.	6,292	12,775	67
	Sept.	7,701	18,672	71
	Oct.	5,026	8,935	64
	Nov.	5,292	10,260	66
	Dec.	5,422	10,260	66
TOTAL		71,972	114,094	
CUM. TOTAL		111,463	122,322	
1955	Jan.	5,623	11,780	68
	Feb.	4,992	9,500	66
	Mar.	6,277	12,140	66
	Apr.	5,833	11,070	65
	May	5,915	12,300	68
	June	7,149	18,791	72
	July	7,461	22,950	75
	Aug.	5,975	19,550	77
	Sept.	3,446	10,338	75
	Oct.	8,144	24,432	75
	Nov.	6,941	20,823	75
	Dec.	7,484	22,452	75
TOTAL		75,240	196,126	
CUM. TOTAL		186,703	318,448	

Year	Month	Oil Bbls.	Water Bbls.	Cut %
1956	Jan.	7,603	22,809	75
	Feb.	6,184	18,552	75
	Mar.	6,682	20,046	75
	Apr.	5,998	17,994	75
	May	6,330	18,990	75
	June	5,783	17,349	75
	July	5,452	16,356	75
	Aug.	6,374	19,122	75
	Sept.	5,013	15,039	75
	Oct.	5,082	27,705	85
	Nov.	4,696	25,601	85
	Dec.	4,018	21,905	85
TOTAL		69,215	241,468	
CUM. TOTAL		255,918	559,916	
1957	Jan.	4,098	22,341	85
	Feb.	3,691	19,670	84
	Mar.	4,180	22,276	84
	Apr.	4,300	22,915	84
	May	3,996	21,785	85
	June	3,562	19,419	85
	July	3,722	20,291	85
	Aug.	2,958	16,126	85
	Sept.	3,600	19,626	85
	Oct.	2,075	11,312	85
	Nov.	2,246	12,244	85
	Dec.	2,215	12,075	85
TOTAL		40,643	220,080	
CUM. TOTAL		296,561	779,996	
1958	Jan.	2,085	11,367	85
	Feb.	4,281	23,338	85
	Mar.	5,158	28,119	85
	Apr.	5,578	37,330	87
	May	5,680	38,012	87
	June	5,796	38,789	87
	July	6,010	40,221	87
	Aug.	6,157	41,205	87
	Sept.	5,957	39,866	87
	Oct.	5,184	34,693	87
	Nov.	5,877	39,331	87
	Dec.	5,865	39,250	87
TOTAL		63,628	411,521	
CUM. TOTAL		360,189	1,191,517	

PRODUCTION HISTORY
UNION STATE GROSS NO. 2
EAST CAPROCK DEVONIAN FIELD
LEA COUNTY, NEW MEXICO

Year	Month	Oil Bbls.	Water Bbls.	Cut %
1959	Jan.	5,838	39,070	87
	Feb.	5,363	35,891	87
	Mar.	5,572	37,290	87
	Apr.	5,954	39,846	87
	May	6,114	40,917	87
	June	6,201	41,499	87
	July	5,971	39,960	87
	Aug.	5,756	38,521	87
	Sept.	5,520	36,942	87
	Oct.	6,203	41,512	87
	Nov.	5,889	39,411	87
	Dec.	6,357	42,543	87
TOTAL		70,738	473,402	
CUM. TOTAL		430,927	1,664,919	
1960	Jan.	6,467	43,279	87
	Feb.	5,598	37,464	87
	Mar.	5,478	36,660	87
	Apr.	4,610	30,852	87
	May	5,152	34,479	87
	June	5,571	37,283	87
	July	5,955	59,485	91
	Aug.	6,559	65,518	91
	Sept.	5,613	56,068	91
	Oct.	5,415	54,090	91
	Nov.	5,706	56,997	91
	Dec.	1,004	10,029	91
TOTAL		63,128	522,204	
CUM. TOTAL		494,055	2,187,123	
1961	Jan.	198	1,978	99
	Feb.	1,457	62,943	98
	Mar.	2,374	68,936	97
	Apr.	2,374	66,626	97
	May	2,078	69,226	97
	June	1,577	36,423	96
	July	5,897	112,043	95
	Aug.	6,128	116,432	95
	Sept.	5,498	73,045	93
	Oct.	6,211	82,518	93
	Nov.	4,393	58,364	93
	Dec.	5,976	90,411	94
TOTAL		44,151	838,941	
CUM. TOTAL		538,206	3,026,064	
1962	Jan.	3,373	56,859	95
	Feb.	5,728	79,765	93
	Mar.	5,982	102,782	95
	Apr.	6,063	80,551	93
	May	5,889	97,427	94
	June	4,742	90,098	95
	July	5,097	114,520	96
	Aug.	4,760	107,730	96
	Sept.	4,918	111,720	96
	Oct.	6,095	119,700	95
	Nov.	4,767	107,730	96
	Dec.	4,527	111,720	96
TOTAL		61,941	1,180,602	
CUM. TOTAL		600,147	4,206,666	
1963	Jan.	2,863	105,000	98
	Feb.	941	84,880	99
	Mar.	1,758	131,564	99
	Apr.	1,814	127,200	99
	May	1,517	96,600	98
	June	3,211	105,000	97
	July	3,300	165,000	98
	Aug.	2,253	123,047	98
	Sept.	1,309	134,400	99
	Oct.	573	100,800	99
	Nov.	0	0	
	Dec.	0	0	
TOTAL		19,539	1,173,491	
CUM. TOTAL		619,686	5,380,157	

EXHIBIT NO. 3

DIRECTIONAL DRILLING

BEFORE EXAMINER NUTTER
OIL CONSERVATION COMMISSION
APPN EXHIBIT NO. 3
CASE NO. 3082

DATE JULY 1, 1953

COMPANY UNION OIL COMPANY OF CALIFORNIA
WELL STATE GROSS NO. 2
FIELD EAST CAPITAN PEAK
LOCATION

COUNTY CHAVES
STATE NEW MEXICO
MAGNETIC DECLINATION

REG. PAT. OFF.

HOUSTON OIL FIELD MATERIAL COMPANY, INC.

DIRECTIONAL DRILLING

COMPANY: UNION OIL COMPANY OF CALIFORNIA
WELL NO.: STATE GROSS NO. 2 **LOCATION:** EAST CAPROCK FIELD, CHAVES COUNTY, NEW MEXICO

DATE: JULY 7, 1953
PAGE: 1 OF 3

DISC NO.	MEASURED DEPTH	COURSE LENGTH	DRIFT ANGLE	TRUE VERTICAL DEPTH	COURSE DEVIATION	DIRECTION OF DEVIATION	TOTAL COORDINATES NORTH	SOUTH	EAST	WEST
	Coordinates at 9613 feet taken from HONCO Multiple Shot Survey									
	9613'			9612.23'				3.32'	12.38'	
	9679	66'	1 30	9678.21	1.73	N 71 E		2.75	14.02	
	9690	11	4 45	9689.17	.91	S 76 E		2.97	14.90	
	9702	12	5 00	9701.12	1.05	S 77 E		3.20	15.92	
	9724	22	5 15	9723.03	2.01	S 75 E		3.72	17.86	
	9760	36	5 15	9758.88	3.29	S 75 E		4.58	21.04	
	9795	35	4 45	9793.76	2.90	S 72 E		5.48	23.80	
	9823	28	5 15	9821.64	2.56	S 72 E		6.27	26.23	
	9857	34	4 45	9855.52	2.82	S 72 E		7.14	28.91	
	9889	32	4 15	9887.43	2.37	S 78 E		7.64	31.23	
	9895	6	3 30	9893.42	.37	S 36 E		7.94	31.45	
	9924	29	3 30	9922.37	1.77	S 30 E		9.48	32.34	
	9949	25	3 30	9947.32	1.53	S 26 E		10.86	33.01	
	10020	71	4 15	10018.12	5.26	S 23 E		15.70	35.06	
	10063	43	5 15	10060.94	3.93	S 25 E		19.26	36.72	
	10116	53	6 45	10113.57	[illegible]	S 29 E		24.71	39.74	
	10141	25	7 00	10139.[illegible]	3.0[illegible]	S 31 E		27.32	41.32	
	10195	54	7 45	101[illegible].89	7.28	S 33 E		33.42	45.28	
	10226	31	8 30	10222.55	4.58	S 35 E		37.18	47.90	
	10287	61	9 15	10282.76	9.81	S 36 E		45.12	53.67	
	10314	27	7 15	10309.54	3.41	S 27 E		48.16	55.22	
	10341	27	6 45	10336.35	3.17	S 26 E		51.01	56.61	
	10382	41	6 15	10377.11	4.46	S 25 E		55.06	58.49	
	10441	59	6 15	10435.76	6.42	S 19 E		61.13	60.58	
	10505	64	7 00	10499.28	7.80	S 24 E		68.25	63.76	

(Cont. Page 2)

HOUSTON OIL FIELD MATERIAL COMPANY, INC.

DIRECTIONAL DRILLING

DATE: JULY 7, 1953

PAGE: 2 OF 3

COMPANY: UNION OIL COMPANY OF CALIFORNIA

WELL NO.: STATE GROSS NO. 2

LOCATION: EAST CAPROCK FIELD, CHAVES COUNTY, NEW MEXICO

DISC NO.	MEASURED DEPTH	COURSE LENGTH	DRIFT ANGLE	TRUE VERTICAL DEPTH	COURSE DEVIATION	DIRECTION OF DEVIATION	TOTAL COORDINATES NORTH	SOUTH	EAST	WEST
	Continued from page no. 1									
	10505	64	7 00	10499.28	7.80	S 24 E		68.25	63.76	
	10563	58	7 15	10556.82	7.32	S 24 E		74.95	66.75	
	10595	32	7 45	10588.53	4.32	S 26 E		78.84	68.64	
	10617	22	8 15	10610.30	3.16	S 26 E		81.68	70.08	
	10634	17	10 30	10627.02	3.10	S 27 E		84.44	71.44	
	10665	31	11 00	10657.45	5.92	S 27 E		89.72	74.13	
	10698	33	11 15	10689.52	6.44	S 27 E		95.46	77.05	
	10738	40	12 15	10728.91	8.49	S 29 E		102.89	81.17	
	10772	34	12 45	10762.07	7.50	S 30 E		109.39	84.92	
	10835	63	13 30	10823.33	14.71	S 33 E		121.73	92.93	
	10876	41	14 00	10863.11	9.92	S 34 E		129.95	98.47	
	10920	44	14 45	10905.66	11.20	S 35 E		139.12	104.89	
	10997	77	16 00	10979.68	21.22	S 36 E		156.29	117.36	
	11037	40	16 00	11018.13	11.03	S 36 E		165.21	123.85	
	11090	53	16 30	11068.95	15.05	S 36 E		177.39	132.70	
	11170	80	17 15	11145.35	23.72	S 35 E		196.82	146.30	
	11208	38	18 00	11181.49	11.74	S 36 E		205.32	153.21	
	11261	53	18 45	11231.68	17.04	S 35 E		220.28	162.98	
	11290	29	19 15	11259.05	9.56	S 35 E		228.11	168.46	
	Continued on page no. 3									

HOUSTON OIL FIELD MATERIAL COMPANY, INC.

DIRECTIONAL DRILLING

COMPANY: UNION OIL COMPANY OF CALIFORNIA — EAST CAPROCK FIELD — DATE: JULY 7, 1953

WELL NO.: STATE GROSS NO. 2 — LOCATION: CHAVES COUNTY, NEW MEXICO — PAGE: 3 OF 3

DISC NO.	MEASURED DEPTH	COURSE LENGTH	DRIFT ANGLE	TRUE VERTICAL DEPTH	COURSE DEVIATION	DIRECTION OF DEVIATION	TOTAL COORDINATES NORTH	SOUTH	EAST	WEST
	Continued from page no. 3									
	11290'	29'	19 15	11259.06	9.56'	S 35 E		228.11	168.46	

CLOSURE: Direction - South 26° 27' East
Deflection - 283.58 feet

HOMCO OPERATOR: H. C. HARRIS, JR.

I certify that this is a true and correct report and that it affords a true and correct representation of the nature and conditions of the well at the time the survey was made.

Lim H. Calcener

Lim H. Calcener
Superintendent
DIRECTIONAL DRILLING DEPARTMENT

Subscribed and sworn to before me this 6th day of July, 1953, A.D. at Houston Harris County, Texas.

Lillian Robles
LILLIAN ROBLES
Notary Public in and for Harris County, Texas

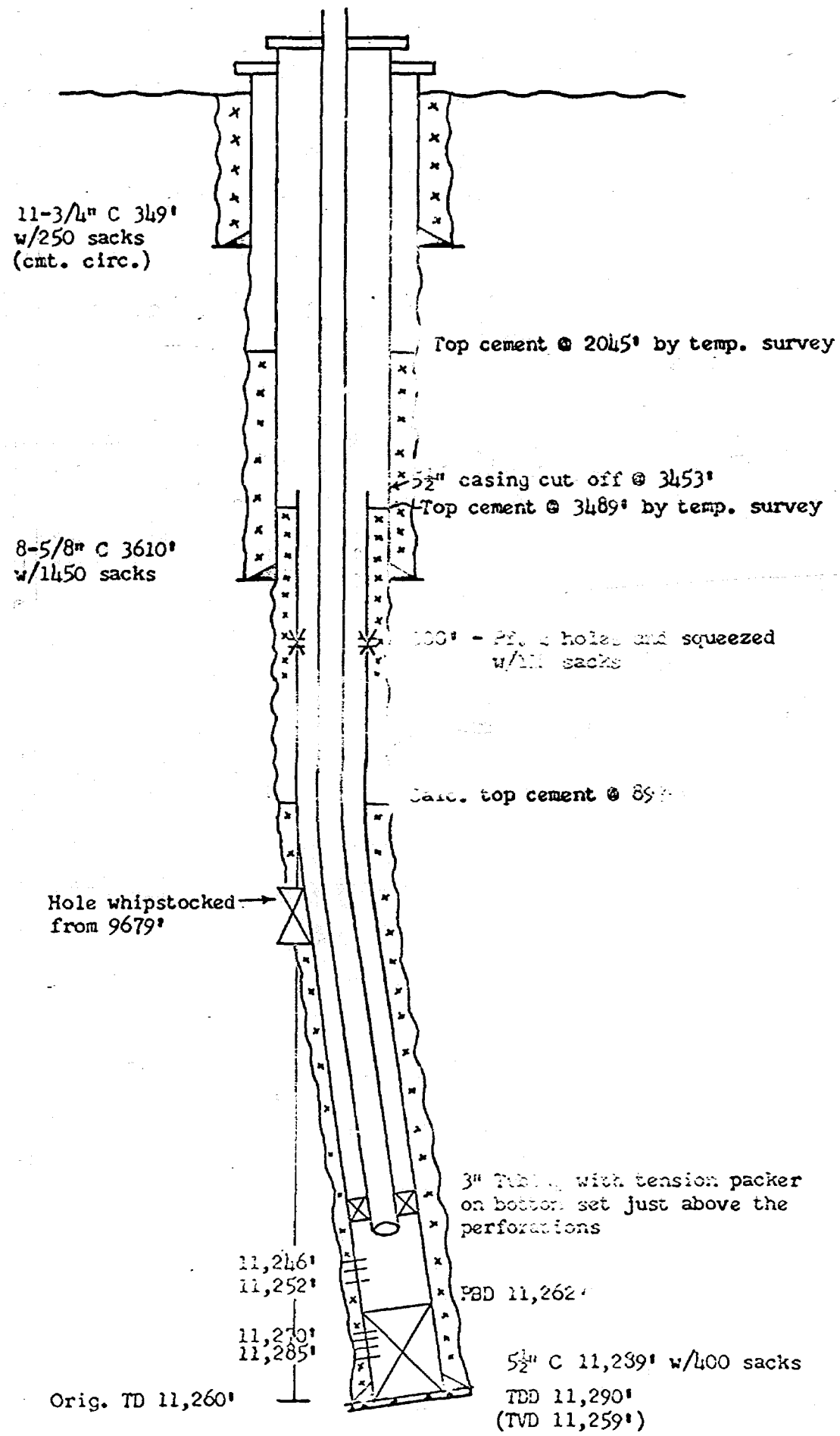
EXHIBIT 2

EAST CAPROCK FIELD

DIAGRAMMATIC SKETCH
OF
STATE GROSS NO. 2

UNION OIL CO. OF CALIFORNIA

BEFORE EXAMINER NUTTER
OIL CONSERVATION COMMISSION
APPN EXHIBIT NO. 2
CASE NO. 3082



BEFORE THE
NEW MEXICO OIL CONSERVATION COMMISSION
Santa Fe, New Mexico
July 22, 1964

EXAMINER HEARING

IN THE MATTER OF:

Application of Union Oil Company of California for salt water disposal, Lea County, New Mexico. Applicant, in the above-styled cause, seeks authority to dispose of produced salt water into the Devonian formation through perforations from 11,246 feet to 11,285 feet in its State-Gross Well No. 2 located in Unit L of Section 11, Township 12 South, Range 32 East, East Caprock Field, Lea County, New Mexico.

Case No. 3082

BEFORE: DANIEL S. NUTTER, Examiner.

TRANSCRIPT OF HEARING

MR. NUTTER: We will take up Case 3082.

MR. DURRETT: Application of Union Oil Company of California for salt water disposal, Lea County, New Mexico.

MR. RUSSELL: John F. Russell, Roswell, New Mexico, representing the Applicant, Union Oil Company of California.

(Whereupon, Applicant's Exhibits 1 through 8 were marked for identification.)

MR. RUSSELL: I have one witness in this case.

(Witness sworn.)

MR. RUSSELL: At the outset, Mr. Examiner, I would like to state that the application in this case in paragraph number 2, the well from which the salt water is to be produced from was inadvertently named as the State-Gross No. 2. It should have been State-Gross No. 1. The publication showed the location of the disposal well as being in the Northwest, Southwest of 11, whereas it's shown in the application it should be No. 1, but through that error of mine it was erroneously located and what we would like to do, with your permission, is to put our case on at this time, have it continued to next month and republished to correct the description, and then if no objection is entered, to have the order entered.

MR. NUTTER: In other words, the well in which the injection is to be made is the State-Gross No. 2?

MR. RUSSELL: Right.

MR. NUTTER: But this well is located in the Southwest, Northeast of Section 2, 12, 32?

MR. RUSSELL: That is right.

MR. NUTTER: And the notice is for the Gross No. 2, located in the Northwest, Southwest of 11, 12, 32?

MR. RUSSELL: That's right.

MR. NUTTER: We'll hear the case at this time, readvertise it correctly, ~~strike~~ as to the location and we will recall this case at the second Examiner Hearing in August, which will be approximately a month from now, at which time anyone who desires to may present whatever they have in the case and we'll withhold writing an order until after that date.

R. S. COOKE

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

DIRECT EXAMINATION

BY MR. RUSSELL:

Q Will you please state your name, residence, by whom you are employed and in what capacity?

A My name is R. S. Cooke, C-o-o-k-e. I am employed by Union Oil Company of California and I reside in Midland, Texas, and I am Division Engineer for Union Oil Company.

Q Have you previously qualified to testify before this Commission?

A No, sir, I haven't.

Q Will you give a brief resume of your educational background and actual work in the field?

A I attended Rice University and graduated in 1939 with a degree of Bachelor of Science in chemical engineering, and from 1939 until 1952 was employed by the Carter Oil Company in a multitude of petroleum engineering assignments throughout the mid continent area. Since 1952 I've been employed by Union Oil Company of California, and since April, '61 have been Division Engineer in Union's Central Division. I'm a registered professional engineer in Texas, Colorado and Montana.

MR. RUSSELL: Are the witness's qualifications acceptable?

MR. NUTTER: They are.

Q Mr. Cooke, are you familiar with the application filed in Case No. 3082?

A Yes, sir, I am.

Q What do you propose to do under this application?

A We propose to convert our State-Gross No. 2 well, which is a depleted Devonian oil well, to a salt water disposal well. Water produced from our State-Gross No. 1 will be injected

into the Devonian zone in the No. 2 well.

Q Mr. Cooke, I refer you to what has been identified as Exhibit No. 1 and ask you what that shows.

A Exhibit No. 1 is a plat of the area in and around the East Caprock Devonian field. It shows lease ownership, surface well locations, producing horizons, method of production, that is flow or pump, and it also shows in the Southwest of the Northeast of Section 2 our State-Gross No. 2 circled in red.

I might point out that the State-Gross No. 1 from which the produced water will come is in the Northwest, Southwest of Section 11, about a mile and a quarter to the Southwest of the proposed disposal well.

Q Is that State-Gross No. 1 well producing salt water at this time?

A Yes, sir, it is.

Q How has it been disposed of up to the present time?

A Well, the field is served by a salt water disposal system operated by Amerada and jointly owned by all the operators in the field. The produced brine is gathered to a central point and injected into the Amerada R. C. Posey No. 4 well in the south part of the field located in the Northwest, Northeast of Section 14.

I would like to say that the current field water production

has risen so much in recent months that this disposal system is now loaded to capacity, and this is the reason that we're asking for an additional facility, an additional disposal facility in order that we will be able to produce our well at its allowable.

Q I refer you to Exhibit No. 2 and ask you what that shows.

A Exhibit No. 2 is a diagrammatic sketch of the State-Gross No. 2, the proposed disposal well. This shows casing sizes, setting depths, quantities of cement, top of cement, perforated intervals, and it also shows the way that we would propose to equip the well for disposal service with tubing set on a packer a short distance above the present perforations.

Q What is Exhibit No. 3?

A Exhibit No. 3 is a directional survey of the State-Gross No. 2. If I may give a little bit of the history of this well, the State-Gross No. 2 was drilled in 1953 in a conventional manner to total depth of 11,260 feet. However, at that depth indications were that a commercial completion could not be obtained from the thin interval of Devonian above water, so the permission of this Commission was obtained to directionally drill the well to a more favorable structural location, so the well was plugged back to 9,679 feet, a whip stock set, and the well drilled in a general southeast direction.

This Exhibit No. 3 is the directional survey run during the

directional drilling of this hole, and it shows the angle of the hole from vertical, the course of the hole in the horizontal plane, the true vertical depth of the hole and so forth. It's shown both in tabular form and also graphically.

Q That was not included originally as an exhibit to the application?

A No, sir, it was not.

Q But a copy of it has been furnished to the State Engineer?

A Yes, sir. I might finish a little bit of dissertation on this well by saying that the sidetracked hole encountered the Devonian about 28 feet higher than the original well. It was perforated from 11,270 feet to 11,285, and completed for a flowing potential of 334 barrels per day through a 1-inch choke.

Q I'll refer you to what's been identified as Exhibit No. 4 and ask you to explain that exhibit.

A Exhibit No. 4 is a group of logs on this well, the electric and radioactivity logs for both the original hole and also for the sidetracked portion of the hole. These logs are marked to show the tops of the formations penetrated in the drilling of the well.

Q Is there anything shown in those logs which has not already been covered by you, that is, that is pertinent to this

hearing?

A No, sir, I do not believe so.

Q I refer you now to Exhibit No. 5 and Exhibit No. 6 and ask you what they are.

A Exhibit No. 5 is a graph of the production history of Union State-Gross No. 2 showing monthly oil and water production and percent water production. Exhibit No. 6 is the same production history in tabular form.

Q Referring to Exhibit No. 7, what does it show?

A Exhibit No. 7 is a water percentage map of the East Caprock Devonian field showing again circled in red the proposed disposal well and showing underlined in red the current water percentage of each producing well in the field. That is the percentage for the month of May, 1964. This map is contoured in intervals of 20 percent.

This Exhibit shows that all the direct and diagonal offsets to our proposed disposal well are either plugged or abandoned, shut-in or producing 99 percent water. You will note to the southwest of the proposed disposal well, the Texas Pacific Oil Company State "E" No. 1 was plugged and abandoned in 1961, and at that time it was producing 95 percent water. To the east of our well, the Skelly Mexico "T" No. 1 ceased production in December, 1962. During the month of December this well produced

an average of 1,540 barrels of water per day with no oil.

The south offset to Union's No. 2 State-Gross is the Shell State ECA No. 1, which is producing 99 percent water, and during June this well tested at the rate of 21 barrels of oil and 2,787 barrels of water per day.

MR. NUTTER: What well was that?

A The Shell ECA No. 1 immediately south. To the southeast the Shell No. 2 ECA tested during June 22 barrels of oil and 2806 barrels of water. Again, a 99 percent cut. Actual production for these two wells during May was about 28 or 30 barrels per day for the two wells; whether or not this suggests that they have some limitation due to the crowded capacity of the disposal system or not, I'm not sure.

Exhibit 7 also shows that only three wells in the field currently produce no water, and these three are all structurally high wells.

Q I don't believe you previously stated, but will you give the intervals into which you expect to inject this salt water? It's probably shown on Exhibit 2.

A We propose to prepare this well for water disposal to run, as I previously indicated, 3-inch tubing with a packer to about 11,100 or 11,200 feet, and inject into the existing perforations which are from 11,246 to 11,252. If we find that these

present perforations will not accept adequate volumes of water, we would propose to drill out the plug at 11,262 and expose the original perforations. I think I neglected to mention that this well, in its early life, about six or nine months after completion water production had reached a point where it was necessary to go back, plug off the original perforations and perforate higher in the section. In the event that when we expose this second set of perforations the well still will not take adequate volumes, then we would consider drilling the well deeper, although the economics of this are somewhat questionable.

Q Now, referring to Exhibit 8, what does it show?

A Exhibit No. 8 shows in the right-hand portion a structure map of the top of the Devonian with a contour interval of 50 feet. Our estimate of the original oil-water contact is marked in blue on this structure map and the red line is the line of the cross section which comprises the balance of this exhibit.

This structure map shows that the State-Gross No. 2 is an edge well and is structurally one of the lower wells in the field. I might also comment that there is a considerable similarity in the contour pattern between this structure map and the water percentage map of Exhibit No. 7. The rest of Exhibit No. 8 is a north-south log cross section running from Union State-Gross No. 2, the proposed disposal well on the north over the crest of the

structure and to the Amerada operated disposal well on the south.

This cross section shows the top of the Devonian, and near the bottom it has a line which represents our estimate of the original oil-water contact at minus 6930. Drill stem test data are shown where available to the right of each log, and in the center of each log tract the portions colored in solid green are present producing intervals, and the cross-hatched green are previous producing intervals.

At the extreme left side of the cross section there are two logs pretty close together. The one on the left is the log of Union's original oil and just to the right of it the log of the sidetracked hole. This cross section illustrates the fact that most wells currently produce from intervals considerably higher structurally than the open interval in Union State-Gross No. 2, and since most of these wells are producing water, this suggests that the present oil-water interface has risen considerably above the open interval in State-Gross No. 2, which we propose to inject.

If I might cite just one example, referring to the Shell 1 ECA State, which is the well immediately to the right of the Union No. 2 State-Gross, this well is cutting 99 percent water and the base of its perforations are 88 feet structurally above the top of the perforated interval in Union's well. Without

going into detail, the same thing is true for most of the wells on the section. If I may go to the right side of this and talk about the Amerada disposal well, I would like to point out that the top of the open interval in this well is structurally eight feet above the top of the perforations in Union's well.

I might also comment that of the 16 wells currently producing in the field, 15 have the base of their present producing interval located structurally higher than the top of the perforations in Union's well. The one exception is the Texaco State BB No. 2, located in the Southeast, Southwest of Section 11. This well, which produces 97 percent water, has the base of its perforations one foot above the top or one foot below the top of the perforations in Union's well.

MR. NUTTER: That well is a mile and a half away from your disposal well?

A Yes, sir. And of the total 16 wells, the vertical distance again between the top of the perforations in Union's well and the base of the presently supposed interval in the other wells of these 16 wells there are only four that have vertical distance less than 50 feet and nine wells the vertical distance is over a hundred feet. Most of that four to which I referred are in the western and southern part of the field.

Q This well which you propose to use as a salt water

disposal well has been drilled at considerable expense to Union Oil Company, has it not?

A Yes, sir.

Q If it's not going to be used as a salt water disposal well, it would result in your having to drill an additional well or spend additional money to provide a system for the disposing of this water, is that correct?

A That is correct. I would like to add, Mr. Russell, that we do not consider that the reserves are adequate to justify the drilling of a disposal well, because we feel that the Devonian is the only zone that will take adequate volumes of water, and while there is a substantial remaining reserve in our well, if we can dispose of the water yet we do not consider that that reserve is enough to justify the expense of drilling a new hole.

Q Mr. Cooke, have you been in contact with Shell Oil Company in regard to this application?

A Yes, sir, we have been in contact with Shell and the other operators in the field.

Q Did you send a letter to Shell Oil Company indicating when you might put this well on disposal if permission is granted?

A Yes, sir, we did.

Q Did you receive a copy of a letter from Shell Oil Company to the New Mexico Oil Conservation Commission in regard to

this letter?

A Yes, sir.

MR. RUSSELL: I don't know whether Shell sent the original letter of Union's or not, but we'll be glad to supply a copy for your files.

MR. NUTTER: We would like a copy of that letter. We have the original reply from Shell.

Q (By Mr. Russell) Were these exhibits prepared by you or under your direction?

A Yes, sir.

MR. RUSSELL: I offer Applicant's Exhibits 1 through 8, inclusive, into the record.

MR. NUTTER: Applicant's Exhibits 1 through 8 will be admitted into the record.

(Whereupon, Applicant's Exhibits 1 through 8 were offered and admitted in evidence.)

MR. RUSSELL: I have no further questions of Mr. Cooke.

MR. NUTTER: Does anyone have any questions of Mr. Cooke?

CROSS EXAMINATION

BY MR. NUTTER:

Q On your cross section, the green hashered areas are former producing areas and the solid green is the present interval

in the well?

A Yes.

Q So the Amerada ECC No. 2, which is on the zero contour line of water cut is perforated way up here at 11,000, whatever that is, that one little green interval?

A Yes, sir, 11,004 to 11,014.

Q By your tabulation down below here it has been a heavy producer at times, but has been plugged back?

A Yes. It was most recently plugged back in May of 1963. Prior to that time the perforations were, well, there were a group of perforations the top of which was 11,064, the base was 11,138, the time of that remedial work the well was cutting about 80 percent water.

Q Do you happen to know the order number that authorized the whip stock and the directional drilling of this well?

A Yes, sir, Order R-360, Case 564.

Q Shell Oil Company, in their reply to your letter, when they addressed it to the Commission, stated that they had no objection to the use of your No. 2 well in G of Section 2 as an injection well providing that water injection does not commence until after Shell's ECA No. 1 and No. 2 have reached their economic limit. One of these wells is making 23 barrels of oil and the other is making 22 barrels of oil, I believe you stated on

the most recent tests, and rather large quantities of water as well. How will we know when these wells have reached their economic limit and when you will start injection into your well?

A We will, of course, be in contact with Shell, and they expect to reach the economic limit in the matter of a very few months, Mr. Nutter. I can assure you that we will know when they cease producing those wells.

Q How would you propose that the Commission handle this in the order to set up an administrative procedure for conversion of this well to water injection upon notification of Shell?

A The letter that Mr. Russell handed you that we furnished Shell, we agree in there that we will not commence injection without Shell's written consent or unless their wells cease production for a period of at least thirty days. So I'm not sure that the order that the Commission would enter would need to consider the matter of the economic limits since we've already made a separate agreement with Shell.

Q In other words, you would propose that the Commission just enter an order authorizing this well for water injection and let it go at that?

A Yes, sir.

MR. DURRETT: May I ask one question?

MR. NUTTER: Yes.

BY MR. DURRETT:

Q Mr. Cooke, you wouldn't have any objection to a provision in the order that water injection would not be commenced until Shell had filed a written waiver with the Commission?

A No, sir, I would have no objection to that. That would be fine.

MR. DURRETT: Thank you.

MR. NUTTER: Are there any further questions of Mr. Cooke? He may be excused.

(Witness excused.)

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

MR. RUSSELL: Nothing further, Mr. Nutter.

MR. NUTTER: Does anyone have anything they wish to offer in Case 3082?

MR. SNYDER: Mr. Nutter, I would like to make a statement. A. E. Snyder, Amerada Petroleum Corporation. As Mr. Cooke mentioned, several years ago Amerada was appointed by the other operators in the pool to install the salt water disposal, and we designed it on a certain basis, and unfortunately we missed our prediction and the water production is greater than we designed the system for. As he has pointed out in his application, that is the reason for them having to go to a well of their own. Amerada supports this application.

MR. NUTTER: I am glad you are here, Mr. Snyder. As a matter of interest, I would like to know how much water you are putting in the Posey No. 2.

MR. SNYDER: It averages about 17 barrels a day.

MR. NUTTER: It's taking all the water that is being produced in the pool at the present time, but reaching its capacity or what?

MR. SNYDER: Actually, the line sizing throughout the pool is part of the bottleneck. The well itself is loaded, we are pumping into it with some 500 pounds pressure, and the collection system itself is loaded. If we put a pump on any one part of the system to pump water into that system, well, it backs up water into the treaters and the tanks in the rest of the system.

MR. NUTTER: Thank you. If there's nothing further in this case we will continue it to the last Examiner Hearing in August. It will be readvertised as stated earlier in the case. The case is taken under continuance.

STATE OF NEW MEXICO)
) ss
COUNTY OF BERNALILLO)

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

Witness my Hand and Seal this 27th day of July, 1964.

Ada Dearnley
NOTARY PUBLIC

My Commission Expires:

June 19, 1967.

I do hereby certify that the foregoing is a complete record of the proceedings in the Examiner hearing of Case No. 3082 heard by me on July 22, 1964.

Daniel S. Nutter
Examiner
New Mexico Oil Conservation Commission

BEFORE THE
NEW MEXICO OIL CONSERVATION COMMISSION
Santa Fe, New Mexico
August 26, 1964

EXAMINER HEARING

IN THE MATTER OF: (Continued)

Application of Union Oil Company of California for salt water disposal, Lea County, New Mexico. Applicant, in the above-styled cause, seeks authority to dispose of produced salt water into the Devonian formation through perforations from 11,246 feet to 11,285 feet in its State-Gross Well No. 2 located in Unit G of Section 2, Township 12 South, Range 32 East, East Caprock Field, Lea County, New Mexico.

Case No. 3082

BEFORE: ELVIS A. UTZ, Examiner.

TRANSCRIPT OF HEARING

MR. UTZ: The hearing will come to order, please. The first case on the docket will be a continued case, 3082.

MR. DURRETT: Application of Union Oil Company of California for salt water disposal, Lea County, New Mexico.

MR. UTZ: Is there anybody here who has any further testimony or any appearance to make in regard to Case 3082? If not, the case will be taken under advisement.

STATE OF NEW MEXICO)
) ss
COUNTY OF BERNALILLO)

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

Witness my Hand and Seal this 1st day of September, 1964.

Ada Dearnley
NOTARY PUBLIC

My Commission Expires:

June 19, 1964.

I do hereby certify that the foregoing is a complete record of the proceedings in the Examiner hearing of Case No. 3082, heard by me on Aug. 26, 1964.

Elmer L. Hill, Examiner
New Mexico Oil Conservation Commission

NEW MEXICO OIL CONSERVATION COMMISSION

EXAMINER HEARING

SANTA FE, NEW MEXICO

REGISTER

HEARING DATE AUGUST 26, 1964 TIME: 9 A.M.

NAME:	REPRESENTING:	LOCATION:
Fred Van Mater	Continental Oil Co	Durango, Colo.
Marshall Smith	Statehouse Reporting	Santa Fe, N. M.
J. E. Ellis	Conoco	Durango, Colo.
Jason Kellahin	Kellahin & Fox	Santa Fe
Charles P. Roberts, Atty	Continental Oil Co	Denver
Jack Marshall	Cont. Oil Co.	Hobbs
Charles W. Pickering	Cont. Oil Co	Hobbs
V. T. Lyon	"	"
A. L. Porter, Jr	O.C.C.	Santa Fe.

Xxx. copy 0

P.O. Box 1828
Roswell New Mexico
Attn: Mr. T. H. Dwyer

DRAFT

JMD/esr

BEFORE THE OIL CONSERVATION COMMISSION
OF THE STATE OF NEW MEXICO

CF Subj. _____

IN THE MATTER OF THE HEARING
CALLED BY THE OIL CONSERVATION
COMMISSION OF NEW MEXICO FOR
THE PURPOSE OF CONSIDERING:

CASE No. 3082

Order No. R-2767

APPLICATION OF UNION OIL COMPANY
OF CALIFORNIA FOR SALT WATER DIS-
POSAL, LEA COUNTY, NEW MEXICO.

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9 o'clock a.m. on August 26, 1964, at Santa Fe, New Mexico, before Examiner ~~Daniel S. Nutter~~ Elvis A. Utz

NOW, on this _____ day of ~~August~~ September, 1964, the Commission, a quorum being present, having considered the testimony, the record, and the recommendations of the Examiner, and being fully advised in the premises,

FINDS:

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

(2) That the applicant, Union Oil Company of California, is the owner and operator of the State-Gross Well No. 2, located in Unit G of Section 2, Township 12 South, Range 32 East, NMPM, East Caprock Field, Lea County, New Mexico.

(3) That the applicant proposes to utilize said State-Gross Well No. 2 to dispose of produced salt water into the Devonian formation, with injection interval from 11,246 to 11,285 feet.

(4) That the injection should be accomplished through 3 -inch internally plastic-coated tubing installed in a packer set at approximately 11,200 feet.

(6) That approval of the subject application will prevent the drilling of unnecessary wells and otherwise prevent waste and protect correlative rights.

IT IS THEREFORE ORDERED:

(1) That the applicant, Union Oil Company of California, is hereby authorized to dispose of produced salt water into the Devonian formation through its State-Gross Well No. 2, located in Unit G of Section 2, Township 12 South, Range 32 East, NMPM, East Caprock Field, Lea County, New Mexico, injection to be accomplished through 3 -inch internally plastic-coated tubing installed in a packer set at approximately 11,200 feet, with injection interval from 11,246 to 11,285 feet.

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

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

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

(5) That the applicant stipulated at the hearing that disposal in the subject well would not commence until Shell Oil Company's State ECA Wells Nos. 1 and 2, located in Units J and I, respectively, of Section 2 have reached their economic limit.

(2) That injection shall not commence until Shell Oil Company has notified the applicant that its State ECA Wells Nos 1 and 2, located in Units J and I, respectively, of Section 2, Township 12 South, Range 32 East, Lea County, New Mexico, have reached their economic limit, and a copy of such letter of notification has been filed with the Commission.