

Union Oil Company of California

205 EAST WASHINGTON AVENUE

LOVINGTON, NEW MEXICO

UNIT OPERATOR
SOUTH CAPROCK QUEEN UNIT

March 15, 1963

1963 MAR 12 AM 11:14
WFX-134
*New upon receipt of waiver
of objection from St Engr.*

Mr. A. L. Porter, Jr.
Secretary-Director
New Mexico Oil Conservation Commission
P. O. Box 871
Santa Fe, New Mexico

Re: Expansion of Waterflood Project Area,
South Caprock Queen Unit, Chaves
County, New Mexico (Case No. 2032,
Orders R-1729 and R-1729-A)

Dear Mr. Porter:

The Union Oil Company of California, as Operator of the South Caprock Queen Unit in Chaves County, hereby requests administrative approval for the expansion of the waterflood project area and approval to convert an additional three wells in the project area to water injection service. In addition permission is sought to drill a new well for the purpose of completion as a water injection well. This request is submitted pursuant to the provisions of Rule 701-E, paragraph 5, of the Rules and Regulations of the New Mexico Oil Conservation Commission.

The wells proposed for conversion to water injection service are as follows:

1. Tract 43, Well No. 14-19 located in SE $\frac{1}{4}$, SW $\frac{1}{4}$ section 19, T-15-S, R-31-E, NMPM.
2. Tract 39, Well No. 2-30 located in NW $\frac{1}{4}$, NE $\frac{1}{4}$ section 30, T-15-S, R-31-E, NMPM.
3. Tract 67, Well No. 13-33 located in SW $\frac{1}{4}$, SW $\frac{1}{4}$ section 33, T-14-S, R-31-E, NMPM.

The new well proposed for completion as a water injection well is:

Tract 17, Well 9-A-32 located in NE $\frac{1}{4}$, SE $\frac{1}{4}$ section 32, T-14-S, R-31-E, NMPM.

Water injection commenced in the South Caprock Queen Unit on May 23, 1961. Ten wells situated along the contact between the gas cap and the oil zone were placed on injection at that time. The purpose of this initial pattern was to prevent the migration and loss of recoverable secondary oil into the gas cap. Since May, 1961, the project area has been expanded four times. These expansions are listed below:

1. April, 1962 - Administrative Order No. WFX-102. (Seven new injection wells).
2. August, 1962 - Administrative Order No. WFX-116. (Five new injection wells)

Porter - 2

3. December, 1962 - Administrative Order No. WFX-124. (Six new injection wells).
4. January, 1963 - Administrative Order No. WFX-127. (Three new injection wells).

As of March 1, 1963, 6,468,895 barrels of water have been injected into 31 wells.

Stimulation from the water injection program has recently been observed in two additional wells. The four proposed injection wells are offsets to these stimulated wells. The location of the subject wells is shown on the attached plat (Exhibit I). These wells are a part of the master plan of operation for the project as presented at the hearing on Case No. 2032. This was Union's application for authority to institute a waterflood project in the South Caprock Queen Unit.

In support of this application, the following are attached:

Exhibit I: A plat of the South Caprock Queen Unit showing the present project area, the proposed expansion of the project area and the location of all injection and producing wells. The two newly stimulated wells, the three wells to be converted to injection service and the new well proposed for completion as an injector are identified on the plat. Because this is a Unit operation, there are no offset operators who will be affected by this proposed expansion.

Exhibit II: Commission Form C-116 showing production tests of the two stimulated wells both before and after being affected by the waterflood.

Exhibit III: A table showing the casing program of the three proposed injectors (conversions).

Exhibit IV: A table outlining the proposed drilling program for Tract 17, Well 9-A-32.

Conversion of the three wells and drilling of the fourth well is recommended in order to continue to maintain proper control of the advancing flood front. This will permit a more efficient sweep of the reservoir in the project area.

By copy of this application, the State Engineer is being advised of the proposed conversions. Attached is a copy of our transmittal letter to the State Engineer's Office.

Three copies of this letter and supporting data are transmitted herewith, as requested in Rule 701-E. Please contact me if any additional information is required for this application.

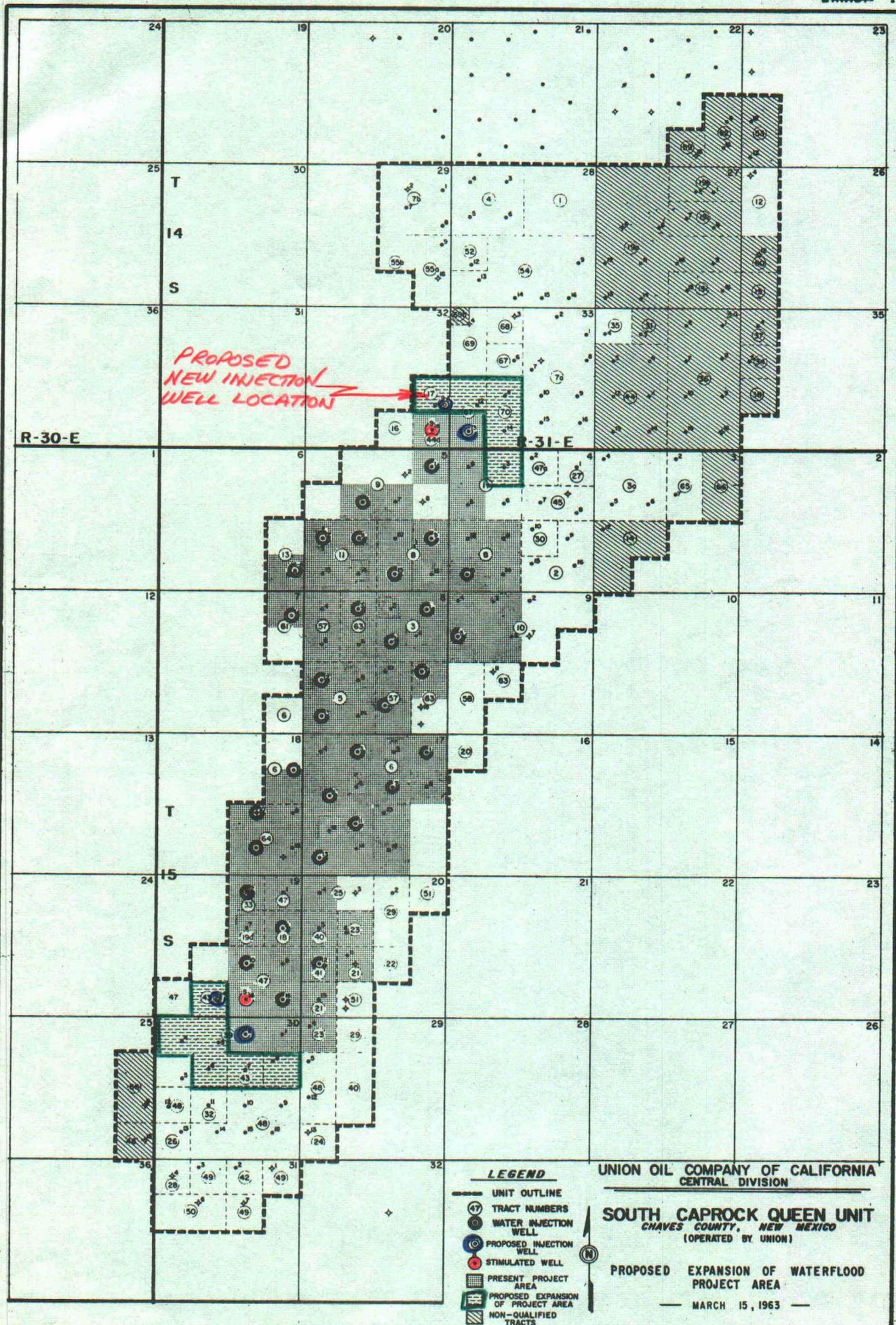
Very truly yours,

Richard H. Butler
Richard H. Butler
Unit Engineer

RHB:am

Enclosures (4)

cc: Mr. Frank Irby
State Engineer's Office



*PROPOSED
NEW INJECTION
WELL LOCATION*

R-30-E

R-31-E

LEGEND

- UNIT OUTLINE
- ① TRACT NUMBERS
- ⊙ WATER INJECTION WELL
- ⊙ PROPOSED INJECTION WELL
- STIMULATED WELL
- ▨ PRESENT PROJECT AREA
- ▧ PROPOSED EXPANSION OF PROJECT AREA
- ▩ NON-QUALIFIED TRACTS

UNION OIL COMPANY OF CALIFORNIA
CENTRAL DIVISION

SOUTH CAPROCK QUEEN UNIT
CHAVES COUNTY, NEW MEXICO
(OPERATED BY UNION)

PROPOSED EXPANSION OF WATERFLOOD
PROJECT AREA

MARCH 15, 1963

NEW MEXICO OIL CONSERVATION COMMISSION

EXHIBIT II

GAS-OIL RATIO REPORT

OPERATOR Union Oil Company of California POOL Caprock Queen (South Caprock Queen Unit)
 ADDRESS 205 E. Washington, Lovington, N.M. MONTH OF February, March, 1963
 SCHEDULED TEST..... COMPLETION TEST..... SPECIAL TEST..... X (Check One)
 (See Instructions on Reverse Side) (Tests to verify water flood stimulation)

Lease	Well No.	Date of Test 1963	Producing Method	Choke Size	Test Hours	Daily Allowable Bbls.	Production During Test			GOR Cu. Ft. Per Bbl.
							Water Bbls.	Oil Bbls.	Gas MCF	
1. Tract 47	15-19	2-24	P	-	24	8	0	2	TSTM	-
Tract 47	15-19	3-10	P	-	24	8	1	32	TSTM	-
2. Tract 44A	16-32	1-10	P	-	24	4	0	2	TSTM	-
Tract 44A	16-32	2-17	P	-	24	4	0	11	TSTM	-

No well will be assigned an allowable greater than the amount of oil produced on the official test.

During gas-oil ratio test, each well shall be produced at a rate not exceeding the top unit allowable for the pool in which well is located by more than 25 percent. Operator is encouraged to take advantage of this 25 percent tolerance in order that well can be assigned increased allowables when authorized by the Commission.

Gas volumes must be reported in MCF measured at a pressure base of 15.025 psia and a temperature of 60 degrees F. Specific gravity base will be 0.60.

Mail original and one copy of this report to the district office of the New Mexico Oil Conservation Commission. In accordance with Rule 301 and Appropriate Pool Rules.

(I certify that the information given is true and complete to the best of my knowledge.)

Date March 15, 1963

Union Oil Company of California

By Richard H. Butler

Richard H. Butler

Unit Engineer Title

SOUTH CAPROCK QUEEN UNIT
Chaves County

CASING DATA FOR PROPOSED INJECTION WELLS

<u>Tract</u>	<u>Well</u>	<u>I. D.</u>	<u>E. T. D.</u>	<u>Perforations</u>
67	13-33	3117'	3117'	Open Hole 3104' - 3117' 3118' - 3131' 3115' - 3120'
39	2-30	3138'	3137'	
43	14-19	3134'	3125'	

SURFACE CASING

<u>Tract</u>	<u>Well</u>	<u>Size</u>	<u>Setting Depth</u>	<u>Cement, Sacks</u>	<u>Circ.</u>	<u>Grade Pipe</u>	<u>Weight Lbs/Ft</u>	<u>Age, Years</u>	<u>Condition</u>
67	13-33	9"	315'	175	Yes	J-55	40	10	Good
39	2-30	8 5/8"	315'	175	Yes	J-55	24	8	New
43	14-19	8 5/8"	330'	150	Yes	J-55	22.7	8	New

OIL STRING

<u>Tract</u>	<u>Well</u>	<u>Size</u>	<u>Setting Depth</u>	<u>Cement, Sacks</u>	<u>Grade Pipe</u>	<u>Weight Lbs/Ft</u>	<u>Age, Years</u>	<u>Condition</u>
67	13-33	5 1/2"	3104'	100	J-55	17	10	Good
39	2-30	5 1/2"	3138'	200	J-55	14	8	New
43	14-19	5 1/2"	3134'	150	J-55	14	8	New

SOUTH CAPROCK QUEEN UNIT
PROPOSED DRILLING PROGRAM
INJECTION WELL
NO. 9-A-32 ON TRACT 17

REASON FOR DRILLING:

Well is a direct offset to a stimulated project area producing well (Tract 44-A, Well 16-32). An abandoned dry hole is already located on this 40 acre tract (Ex-J. I. O'Neill, State F, No. 1). This well was cased and tested in 1958. When the well was abandoned the casing was shot-off and pulled leaving 879' of casing in the lower portion of the hole. The well was then plugged as follows in accordance with the Rules and Regulations of the New Mexico Oil Conservation Commission:

25 sacks at 3118' (Queen Sand)
 20 sacks at 2330' (Base of Salt)
 20 sacks at 1400' (Top of Salt)
 20 sacks at 300' (Bottom of Surface Casing)
 10 sacks at Surface (Top of Surface Casing)

Re-entry and completion of this abandoned well would be difficult with the old casing in the lower portion of the well. Therefore the subject new well is proposed.

APPROXIMATE LOCATION OF NEW WELL:

100 feet due East of the old abandoned well. This would be 230' from the East line and 1650' from the South line, Section 32, T-14-S, R-31-E, NMPM.

PROPOSED TOTAL DEPTH: 3140'ESTIMATED TOP OF QUEEN: 3100'PROPOSED CASING PROGRAM: (All new pipe)

8 5/8" c 320' with 350 sacks (to circulate)
 4 1/2" c 3140' with 200 sacks

ESTIMATED E.T.D.: 3115'ESTIMATED PERFORATIONS: 3105' - 3112'PROPOSED TUBING:

2" J-55 plastic lined tubing with tension packer on bottom, set just above the perforations. Annulus to be filled with inhibited water for corrosion protection.

Union Oil Company of California

205 EAST WASHINGTON AVENUE



LOVINGTON, NEW MEXICO

UNIT OPERATOR
SOUTH CAPROCK QUEEN UNIT

March 15, 1963

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

Re: Casing Data on Proposed Injection
Wells, South Caprock Queen Unit,
Chaves County, New Mexico

Dear Mr. Irby:

Attached please find a copy of an application submitted by the Union Oil Company of California to the New Mexico Oil Conservation Commission requesting administrative approval to expand our waterflood project in the South Caprock Queen Unit. This expansion will include the conversion of an additional three producing wells to water injection service and drilling one new water injection well. The application is in accordance with the provisions of Rule 701-E of the Rules and Regulations of the New Mexico Oil Conservation Commission.

Exhibit III of the attached application is a table of casing information on the three wells to be converted to injection service. Exhibit IV is a summary of the completion techniques to be used in the proposed new injection well. All four wells will be completed with plastic-lined tubing and tension packers set just above the perforations or open hole in the Queen Sand. The annulus between the casing (oil string) and the tubing will then be filled with an inhibited water for protection against corrosion. The maximum anticipated surface injection pressure for the four wells will be 1000 PSIG.

Data on the age, grade and condition of the various casing strings in the three wells to be converted are tabulated in Exhibit III.

If you are in agreement with this proposal, we would appreciate your so notifying the Secretary-Director of the New Mexico Oil Conservation Commission as soon as possible. Thank you for your consideration to this matter.

Very truly yours,

Richard H. Butler
Unit Engineer

Attachments (4)

cc: Mr. A. L. Porter, Jr. (3)

RHB:am



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STATE OF NEW MEXICO

STATE ENGINEER OFFICE

SANTA FE

S. E. REYNOLDS
STATE ENGINEER

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

March 20, 1963

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

Dear Mr. Porter:

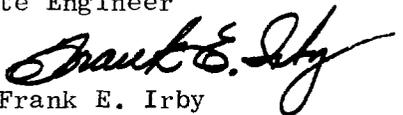
Reference is made to the application of Union Oil Company of California submitted on March 15, 1963 which seeks administrative approval to expand their waterflood project in the South Caprock Queen Unit, Chaves County, New Mexico.

In view of the statement in the second paragraph of Mr. Butler's letter to me, a copy of which was sent to you, "All four wells will be completed with plastic-lined tubing and tension packers set just above the perforations or openhole in the Queen Sand. The annulus between the casing (oil string) and the tubing will then be filled with an inhibited water for protection against corrosion," this office offers no objection to the granting of this application.

Yours truly,

S. E. Reynolds
State Engineer

FEI/ma
cc-Mr. R. H. Butler
F. H. Hennighausen

By: 
Frank E. Irby
Chief
Water Rights Division