

Union Oil Company of California

205 EAST WASHINGTON AVENUE

LOVINGTON, NEW MEXICO 88260

MAIL OFFICE 000

'64 SEP 24 AM 8 15

September 21, 1964

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 to expand the Waterflood Project area and place one additional well on water injection. This request is submitted pursuant to the provisions of Rule 701 of the Rules and Regulations of the New Mexico Oil Conservation Commission.

The new well proposed for injection service is as follows:

1. Tract 24, Well 13-29 located in the SW/4 of SW/4, Section 29
T-15-S, R-31-E, N.M.P.M.

Water injection at the South Caprock Queen Unit commenced on May 23, 1961, into ten wells situated along the contact between the gas cap and the oil zone. 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 has been expanded 14 times. The expansion orders are tabulated below:

<u>Expansion No.</u>	<u>Date</u>	<u>Administrative Order No.</u>	<u>No. of New Injection Wells</u>
1	4-62	WFX-102	7
2	8-62	WFX-116	5
3	12-62	WFX-124	6
4	1-63	WFX-127	3
5	3-63	WFX-134	4
6	5-63	WFX-136	1
7	6-63	WFX-138	7
8	9-63	WFX-152	9
9	10-63	WFX-158	2
10	12-63	WFX-163	7
11	2-64	WFX-164	3
12	3-64	R-2660	9
13	7-64	WFX-176	2
14	7-64	WFX-177	2

Porter - SCQU Expansion of Waterflood Project - 2

As of September 1, 1964, 21,172,548 barrels of water have been injected into 74 wells.

Stimulation from the water injection program has recently been observed in one additional producing well in the project. The proposed injection well is a direct offset to the stimulated well. The location of the subject well is shown on the attached plat (Exhibit I). The proposed injection well is 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 exhibits 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 newly stimulated well and the well to be converted to injection service are identified on the plat.

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

Exhibit III: The Casing Program for the proposed injection well.

Exhibit IV: A Diagrammatic sketch of the proposed injection well showing casing string, casing diameter, setting depth, top of cement and perforations. Also shown is the proposed tubing string including depth, diameter and packer. The proposed injection well is perforated in the Queen Sand as shown on the diagram. The water used for injection is either fresh water produced from the Ogallala Sand or a mixture of this fresh water and produced Queen Sand brine. Anticipated injection rate and pressure is shown on the diagram.

Conversion of this 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 this portion of the Unit.

By copy of this application, the State Engineer is being advised of the proposed conversion. Attached is a copy of our transmittal letter to Mr. Irby of the State Engineer's office.

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

Very truly yours,

Lon H. Pardue
Lon H. Pardue
Production Engineer

LHP/jj
Attachments - 5
cc: Mr. Frank Irby
State Engineer's Office

NEW MEXICO OIL CONSERVATION COMMISSION

MAIN OFFICE
 EXHIBIT #1
 AM O I E
 '64 SEP 21

GAS-OIL RATIO REPORT

OPERATOR.....Union Oil Company of California POOL Caprock Queen - South Caprock Queen
 ADDRESS.....205 East Washington, Lovington, N.M. MONTH OF....., 19..... Unit
 SCHEDULED TEST..... COMPLETION TEST..... SPECIAL TEST...XXX.....(Check One)
 (See Instructions on Reverse Side) Tests to verify waterflood stimulation

Lease	Well No.	Date of Test	Producing Method	Choke Size	Test Hours	Daily Allowable Bbls.	Production During Test			GOR Cu. Ft. Per Bbl.
							Water Bbls.	Oil Bbls.	Gas MCF	
		1964								
Tract 48	16-30	8-26	P	-	24	5	57	3	TSTM	-
Tract 48	16-30	9-4	P	-	24	5	63	30	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.....September 21, 1964..... Union Oil Company of California
 By.....Lon H. Pardue.....
 Title.....Production Engineer.....

SOUTH CAPROCK QUEEN UNIT
Chaves County, New Mexico

CASING DATA FOR PROPOSED
INJECTION WELL

WELL:	Tract 24, <u>Well 13-29</u>
T. D. :	3235'
E. T. D.:	3206'
PERFORATIONS:	3188 - 3203
<u>SURFACE CASING:</u>	
Size	12 3/4"
Setting Depth	302'
Cement, Sacks	150
Circulated?	Yes
Grade Pipe	J-55
Weight, Lbs/ft	48
Age, Years	10
Condition	Good
<u>OIL STRING:</u>	
Size	4 1/2
Setting Depth	3235'
Cement, Sacks	300
Grade Pipe	J-55
Weight, Lbs/ft	9.5
Age, Years	2 Months
Condition	New

SOUTH CAPROCK QUEEN UNIT
PROPOSED INJECTION WELL
TRACT 24, WELL 13-29

Anticipated Injectivity:
2000 B/D at 1000 psig

12 3/4" C 302'
w/150 sacks
(circulated)

Calculated Top
of Cement
1915'

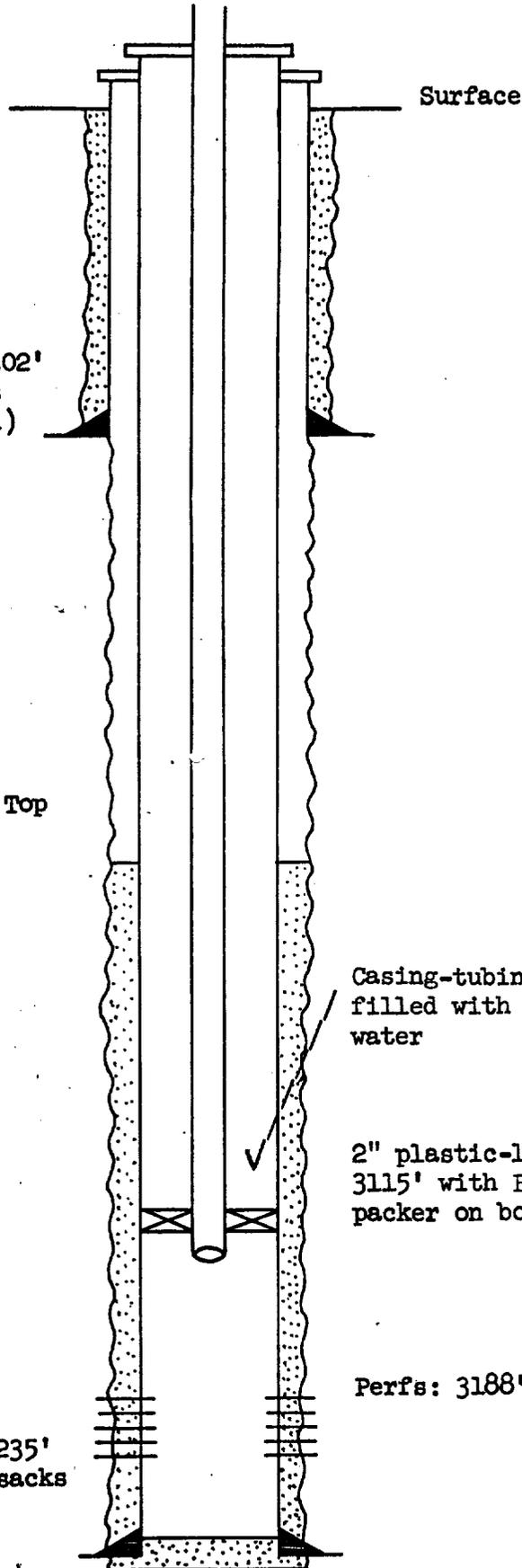
Casing-tubing annulus
filled with inhibited
water

2" plastic-lined tubing at
3115' with Baker tension
packer on bottom.

Perfs: 3188'-3203'

4 1/2" C 3235'
w/300 sacks

TD 3235'



Union Oil Company of California

205 EAST WASHINGTON AVENUE



LOVINGTON, NEW MEXICO 88260

September 21, 1964

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

Re: Casing Data for Proposed Water
Injection Well, 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 one more well to water injection service. The application is in accordance with the provisions of Rule 701 of the Rules and Regulations of the New Mexico Oil Conservation Commission.

Exhibits III and IV of the attached application include a summary of casing information on the well to be converted to injection service. This well will be completed with plastic lined tubing and tension packer set just above the perforations 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 well will be 1000 psig.

Data on the age, grade and condition of the casing string in this well is 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 of this matter.

Very truly yours,

Lon H. Pardue
Lon H. Pardue
Production Engineer

LHP/jj
Attachments (5)
CC: Mr. A. L. Porter, Jr. (3)

MAIN OFFICE 000

SEP 25 AM 7 52



STATE OF NEW MEXICO

STATE ENGINEER OFFICE

SANTA FE

September 24, 1964

S. E. REYNOLDS
STATE ENGINEER

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 the application of Union Oil Company of California which seeks approval of a proposed water injection well in their South Caprock Queen Unit designated as being in Tract 24, Well No. 13-29.

From a review of the application and the diagrammatic sketch of the casing program, which indicates that injection will be through plastic-lined tubing and tension packer with the packer set just below the perforations, which will be well above the cement surrounding the production string and the tubing casing annulus will be filled with inhibited water, it appears that no threat of contamination to the fresh waters which may exist in the area will occur. Therefore, this office offers no objection to the granting of the application.

Yours truly,

S. E. Reynolds
State Engineer

By:

A handwritten signature in black ink, appearing to read "Frank E. Irby".

Frank E. Irby
Chief
Water Rights Div.

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