Union Oil Company of California

205 EAST WASHINGTON AVENUE LOVINGTON, NEW MEXICO

UNIT OPERATOR
SOUTH CAPROCK QUEEN UNIT

January 15, 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 Co.,
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 additionalthree wells in the project area to water injection service. This request is submitted pursuant to the provisions of Rule 701 of the Rules and Regulations of the New Mexico Oil Conservation Commission.

The wells proposed for conversion are as follows:

1. Tract 45, Well 7-4 located in SE/4 of NE/4, Section 4, T-15-S, R-31-E, N.M.P.M.

2. Tract 48, Well 12-30 located in NW/4 of SW/4, Section 30, T-15-S, R-31-E, N.M.P.M.

3. Tract 48, Well 14-30 located in SE/4 of SW/4, Section 30, 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 area has been expanded ten times. These expansions are tabulated below:

1. April, 1962 - Administrative Order WFX-102 (7 new injectors)
2. August, 1962- Administrative Order WFX-116 (5 new injectors)
3. December, 1962- Administrative Order WFX-124 (6 new injectors)
4. January, 1963 - Administrative Order WFX-127 (3 new injectors)
5. March, 1963 - Administrative Order WFX-134 (4 new injectors)
6. May, 1963 - Administrative Order WFX-136 (1 new injector)
7. June, 1963 - Administrative Order WFX-138 (7 new injectors)
8. September, 1963 - Administrative Order WFX-152 (9 new injectors)
9. October, 1963 - Administrative Order WFX-158 (2 new injectors)
10. December, 1963 - Administrative Order WFX-163 (7 new injectors)

As of January 1, 1964, 13,096,746 barrels of water have been injected into 53 wells.

Stimulation from the water injection program has recently been observed in two more producing wells. The three 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 newly stimulated wells and the three wells to be converted to injection service 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 for the stimulated wells both before and after being affected by the waterflood.

Exhibit III: A table showing the casing program of the three wells proposed for conversion to injection service.

Exhibit IV: Diagrammatic sketches of the three proposed injection wells showing casing strings, casing diameters, setting depths, tops of cement and perforations. Also shown in the sketches are proposed tubing strings including diameters, depths and packers. All of the proposed injection wells are perforated or open in the Queen Sand at an approximate depth of 3150'. The water used for injection is either fresh water produced from the Ogalalla Sand or a mixture of this fresh water and produced Queen Sand brine. Anticipated injection rates and pressures are shown with the sketch for each well.

Conversion of the three wells 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 Mr. Irby of the State Engineer's office.

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

Very truly yours,

Richard H. Butler

Richard H. Butler,
Unit Engineer

RHB/rhb
Attachments (5)
cc: Mr. Frank Irby,
State Engineer's Office

EXHIBIT II

Form C- 116
Revised (12/1/55)

NEW MEXICO OIL CONSERVATION COMMISSION

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 December, 1963 & January, 19 64

SCHEDULED TEST ..... COMPLETION TEST ..... SPECIAL TEST XX (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	
1. Tract 32	11-30	12-8-63	P	-	24	12	0	8	TSTM	-
Tract 32	11-30	1-8-64	P	-	24	12	0	30	TSTM	-
2. Tract 11	6-4	12-10-63	P	-	24	4	0	3	TSTM	-
Tract 11	6-4	1-1-64	P	-	24	4	0	41	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 Jan. 15, 1964

Union Oil Company of California
Company

By Richard H. Butler
Richard H. Butler,
Unit Engineer
Title

EXHIBIT III

SOUTH CAPROCK QUEEN UNIT
Chaves County

CASING DATA FOR PROPOSED INJECTION WELLS

TRACT	WELL	TD	ETD	PERFORATIONS
45	7-4	3154	3154	Open hole 3141-3154
48	12-30	3010	3006	2982-2989
48	14-30	3186	3181	3148-3160

SURFACE CASING

TRACT	WELL	SIZE	SETTING DEPTH	CEMENT, Sacks	CIRCULATE?	GRADE OF PIPE	WEIGHT, Lbs/Ft	AGE, Years	CONDITION
45	7-4	8-5/8"	294	250	Yes	J-55	28	9	New
48	12-30	8-5/8"	282	185	Yes	J-55	32	9	New
48	14-30	9-5/8"	322	200	Yes	J-55	36	12	GOOd

OIL STRING

TRACT	WELL	SIZE	SETTING DEPTH	CEMENT, Sacks	GRADE OF PIPE	WEIGHT, Lbs/Ft	AGE, Years	CONDITION
45	7-4	5½"	3141	100	J-55	14	9	New
48	12-30	5½"	3009	175	J-55	14	9	New
48	14-30	5½"	3185	175	J-55	14	9	New

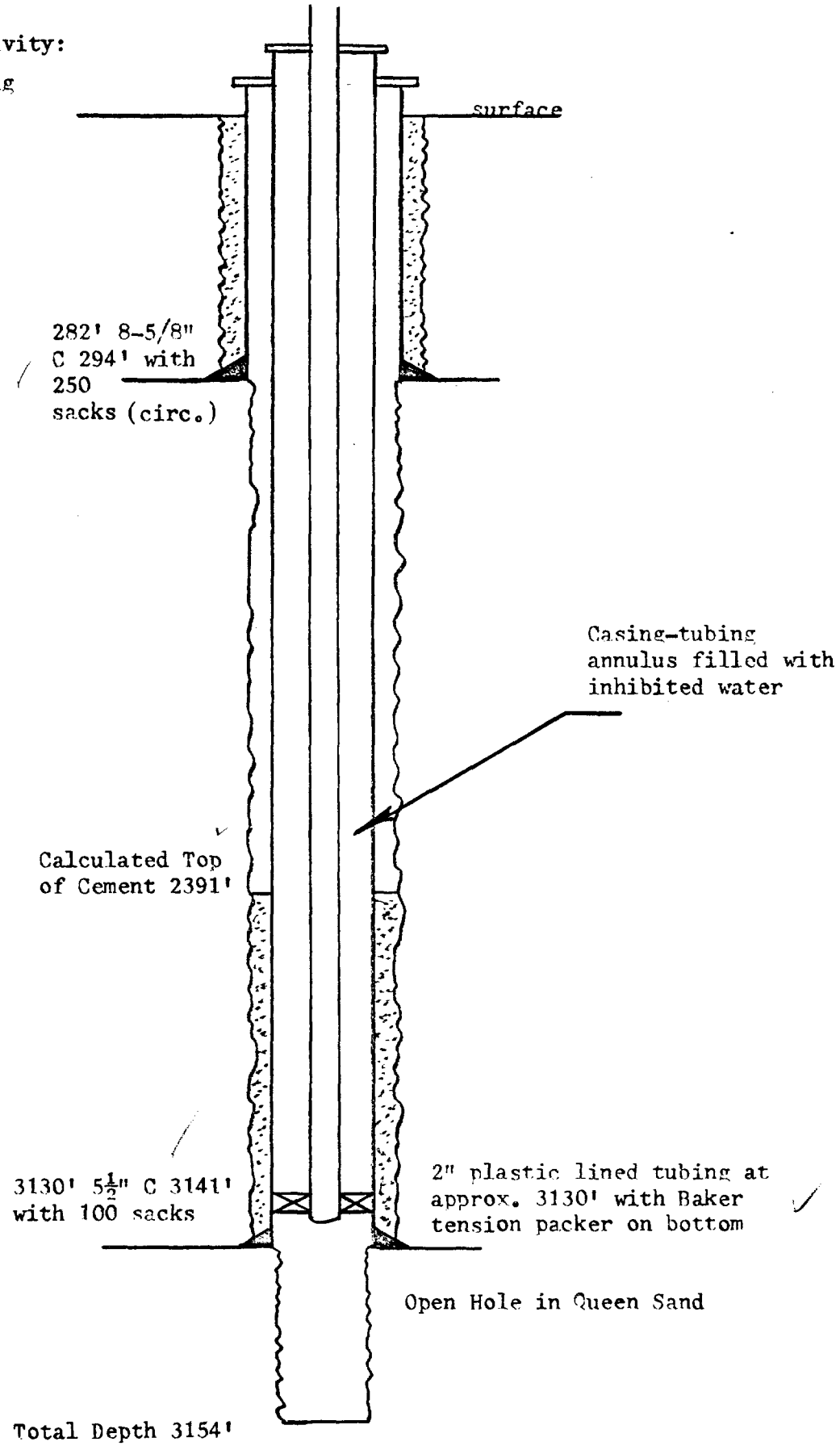
SOUTH CAPROCK QUEEN UNIT

PROPOSED INJECTION WELLS

1. TRACT 45, WELL 7-4

Anticipated Injectivity:

300 B/D at 1000 psig



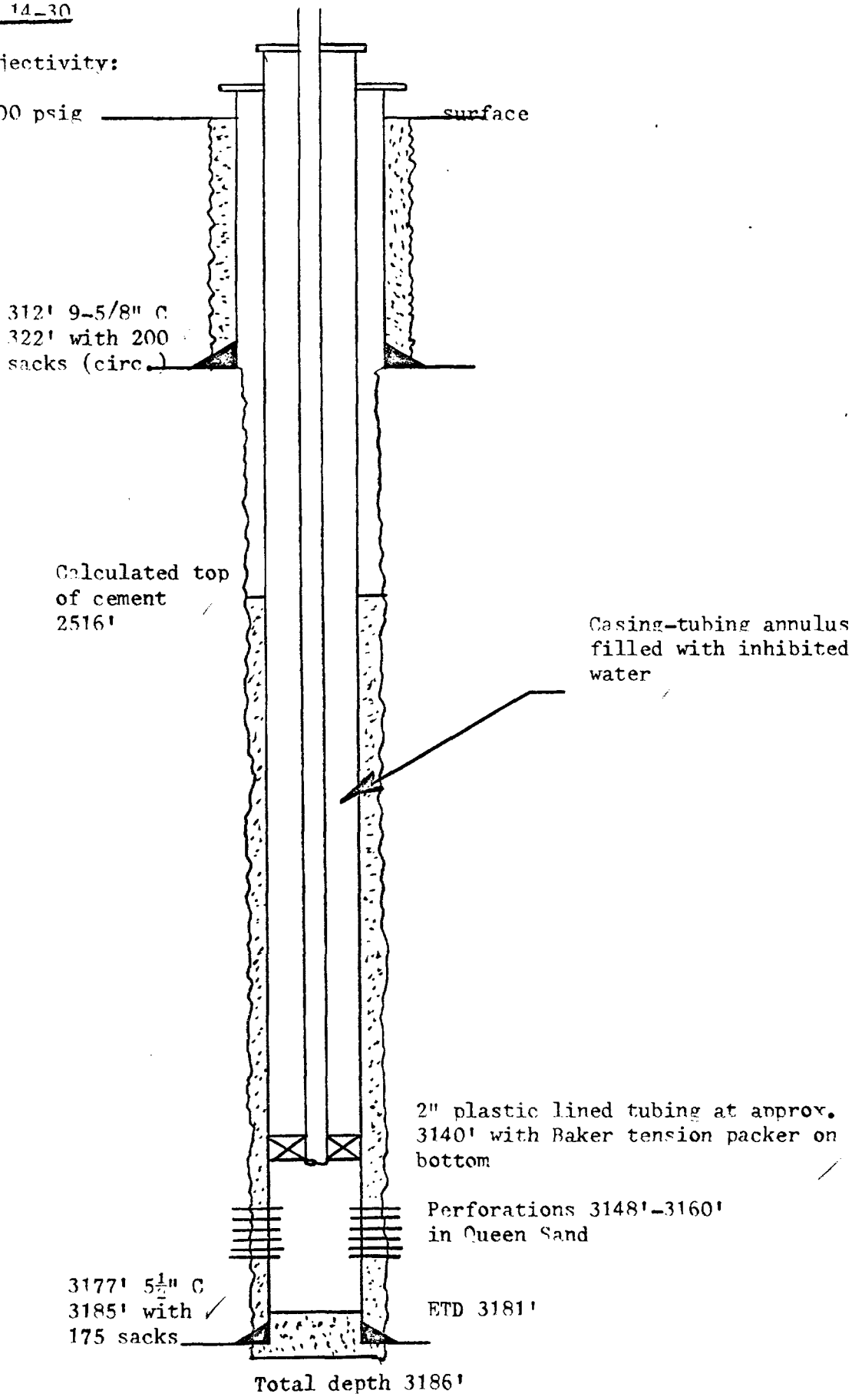
SOUTH CAPROCK QUEEN UNIT

PROPOSED INJECTION WELLS

2. TRACT 48, WELL 14-30

Anticipated Injectivity:

1200 B/D at 1000 psig



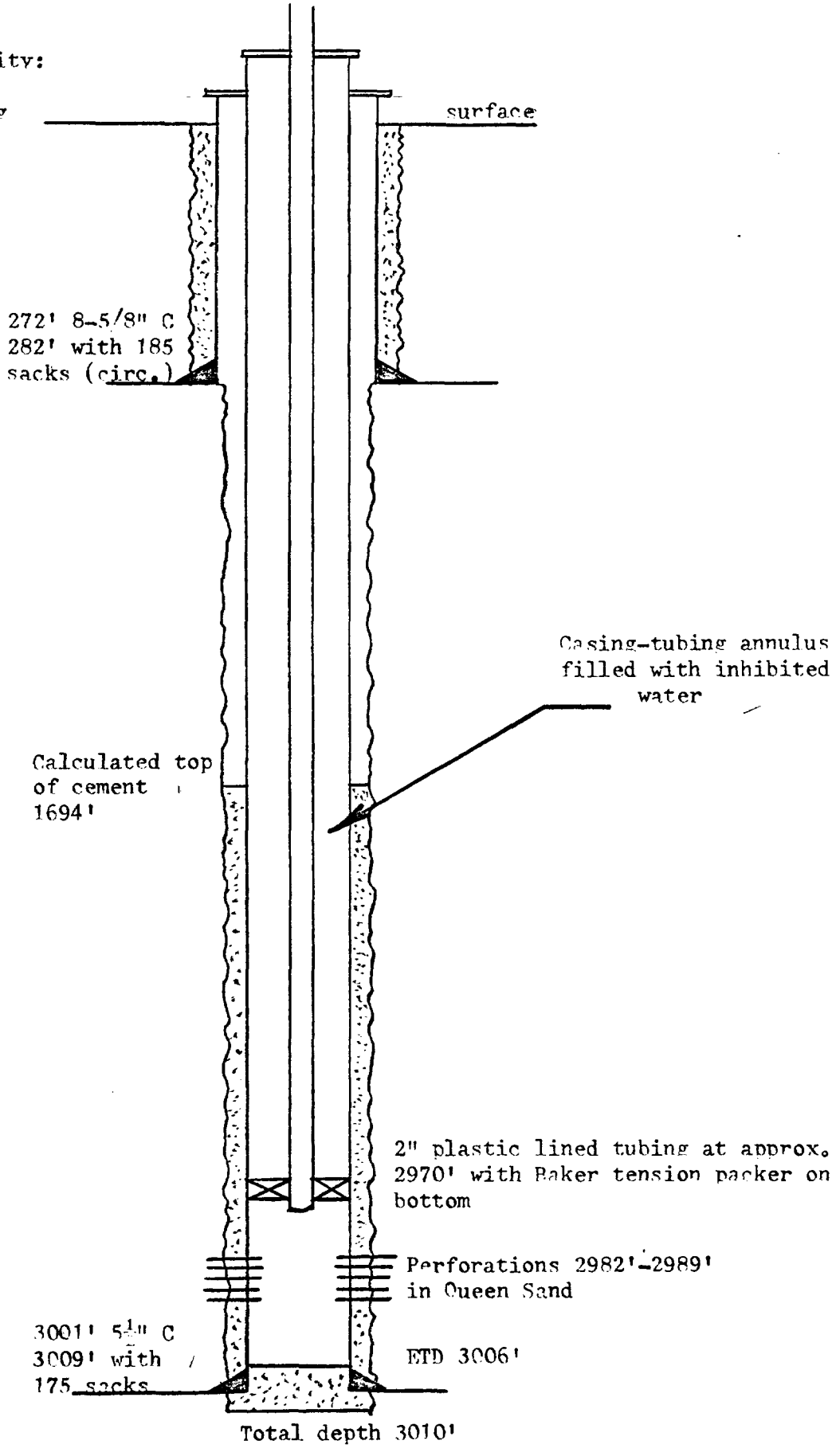
SOUTH CAPROCK QUEEN UNIT

PROPOSED INJECTION WELLS

3. TRACT 48, WELL 12-30

Anticipated Injectivity:

1200 B/D at 1000 psig



Union Oil Company of California

205 EAST WASHINGTON AVENUE LOVINGTON, NEW MEXICO

UNIT OPERATOR
SOUTH CAPROCK QUEEN UNIT

January 15, 1964

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

Re: Casing Data on Proposed Water 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 three more producing wells 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 three wells to be converted to injection service. All three wells will be completed with plastic lined tubing and tension packers 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 three 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 of this matter.

Very truly yours,

Richard H. Butler

Richard H. Butler,
Unit Engineer

RHB/rhb
Attachments (4)
cc: Mr. A.L. Porter, Jr. (3)

STATE OF NEW MEXICO

STATE ENGINEER OFFICE

SANTA FE

S. E. REYNOLDS
STATE ENGINEER

January 27, 1964

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

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 January 15, 1964 which seeks administrative approval for the expansion of their South Caprock Queen Unit, Chaves County, New Mexico waterflood project.

In view of Mr. Butler's statement in his letter "All three wells will be completed with plastic lined tubing and tension packers 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 three wells will be 1000 psig," 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 this application.

Yours truly,

S. E. Reynolds
State Engineer

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

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

LARGE FORMAT EXHIBIT HAS BEEN REMOVED AND IS LOCATED IN THE NEXT FILE