Union Oil Company of California

205 EAST WASHINGTON AVENUE LOVINGTON, NEW MEXICO 88260

October 20, 1964

WFX 187

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

Re: Conversion of Two Project Area Producing Wells To Injection Service, South Caprock Queen Unit, Chaves County, New Mexico (Case 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 place two waterflood project area producing wells on water injection service. This request is submitted persuant to the provisions of Rule 701 of the Rules and Regulations of the New Mexico Oil Conservation Commission.

The proposed injection wells are as follows:

1. Tract 11, Well 13-5 located in the SW/4 of the SW/4, Section 5, T-15-S, R-31-E, N.M.P.M.

2. Tract 47, Well 1-19 located in the NE/4 of the NE/4, Section 19, T-15-S, R-31-E, N.M.P.M.

The proposed injection wells have reached the secondary economic limit and their conversion will improve the pattern sweep efficiency in the surrounding portion of the reservoir. Both wells are directly offset by stimulated producing wells at various stages of secondary depletion. A regular five-spot will be created around producing well 14-5 and the pattern configuration around producing well 4-8 will be improved by the conversion of well 13-5. It is predicted that an additional 30,600 barrels of secondary oil can be recovered by the conversion of well 13-5. Pattern efficiency in the vicinity of wells 16-18, 4-20, and 5-20 will be greatly improved by the conversion of well 1-19. It is anticipated that an additional 120,000 barrels of secondary oil can be recovered by converting this well to injection service.

In support of this application, the following are attached:

[illegible]

[illegible]
[illegible]
[illegible]
[illegible]
[illegible]

Re: Conver[illegible]
Produc[illegible]
Servic[illegible]
Chavez[illegible]
2052, Cr[illegible]

[illegible]:

[illegible] Union Oil Company [illegible] Director of the North [illegible]
[illegible] Chaves County, [illegible] for a discretionary approval [illegible]
[illegible] injection producing [illegible] injection service. [illegible]
[illegible] pertinent to the [illegible] and R[illegible] the N [illegible]
Oil Conservation Commission.

[illegible]
1. [illegible]
[illegible]

2. [illegible] in the NE/4 [illegible]
[illegible]

[illegible] injection well [illegible] secured the secondary economic limit
[illegible] production will [illegible] stem steep [illegible] in the surrounding
[illegible] zone will [illegible] directly offset by [illegible] producing
[illegible] [illegible] solution. A [illegible] five-spot [illegible]
[illegible] producing well [illegible] the pertinent [illegible]
well [illegible] pattern [illegible] wells 15-19, 4-20, [illegible]
be greatly improved by the conversion of well 4-19. [illegible]
additional 120,000 barrels of secondary [illegible] [illegible]
to injection [illegible].

In [illegible] this application, the [illegible] are [illegible]

EXHIBIT I: A plat of the South Caprock Queen Unit showing the present project area and the location of all injection and producing wells. The proposed injection wells are identified on the plat.

EXHIBIT II: Production performance curves for the two proposed injection wells. These curves indicate that both wells are currently at the economic limit.

EXHIBIT III: Production performance tabulation for the offset producing wells to the proposed injection wells.

EXHIBIT IV: Casing programs for the proposed injection wells.

EXHIBIT V: Diagrammatic sketches of the proposed injection wells showing casing strings, casing diameters, setting depths, tops of cement and perforations. Also shown are the proposed tubing strings including depth, diameter, and packer. The proposed injection wells are perforated in the Queen Sand as shown on the diagrams. 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 rates and pressures are shown on the diagrams.

Water injection at the South Caprock Queen Unit commenced on May 23, 1961, into ten wells located along the gas-oil contact. 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 fifteen times. As of October 1, 1964, 22,328,976 barrels of water have been injected into 74 wells.

Conversion of the two proposed wells is recommended in order to improve pattern efficiency in the portions of the reservoir surrounding the wells.

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

Richard H. Butler

Richard H. Butler
Unit Engineer

RHB/jj

CC: Mr. Frank Irby,
State Engineer's Office

EXHIBIT II
Page 1

UNION OIL CO. OF CALIFORNIA
CENTRAL DIVISION

SOUTH CAPROCK QUEEN UNIT
TRACT 11 , WELL 13-5

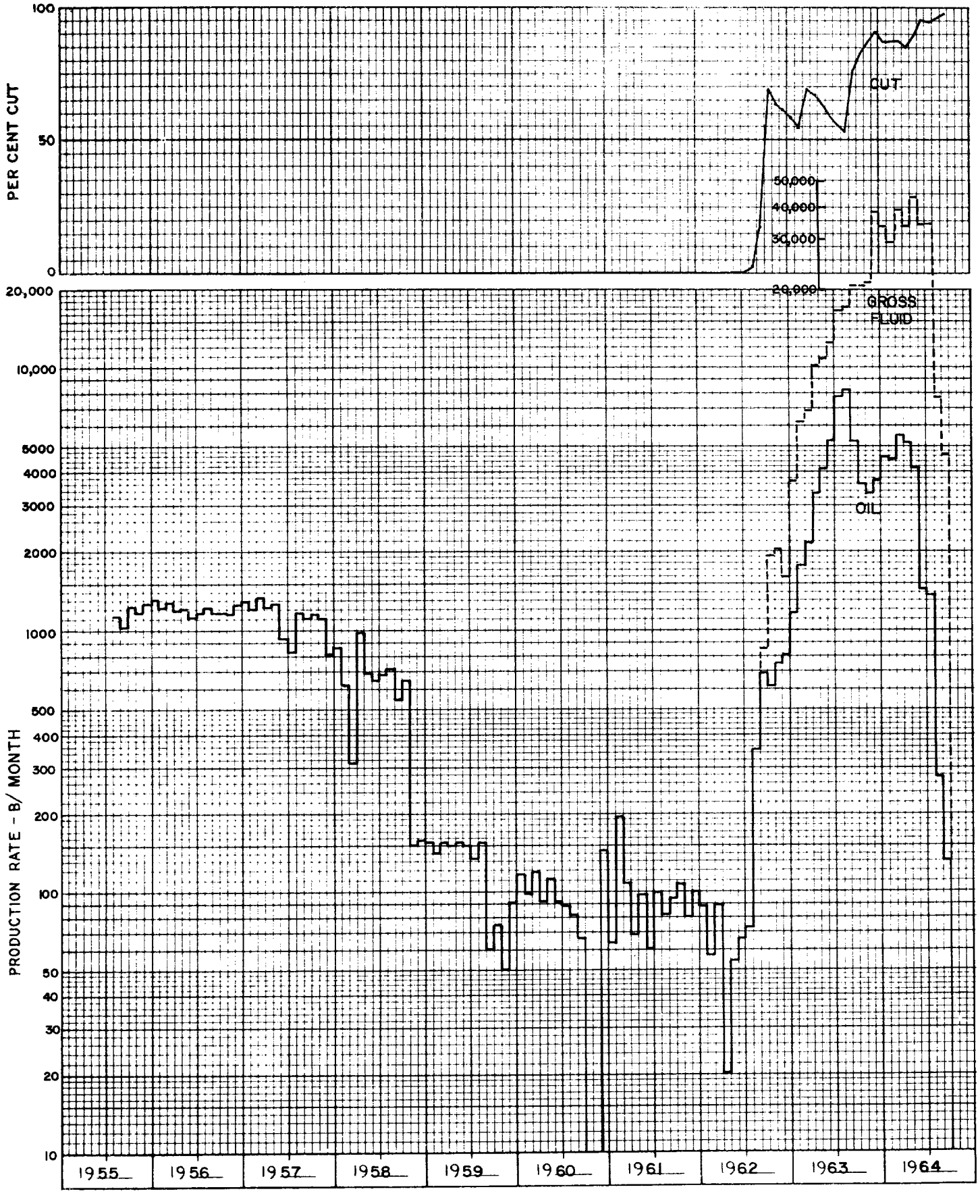


EXHIBIT II

Page 2

UNION OIL CO. OF CALIFORNIA
CENTRAL DIVISION

SOUTH CAPROCK QUEEN UNIT

TRACT 47 , WELL 1-19

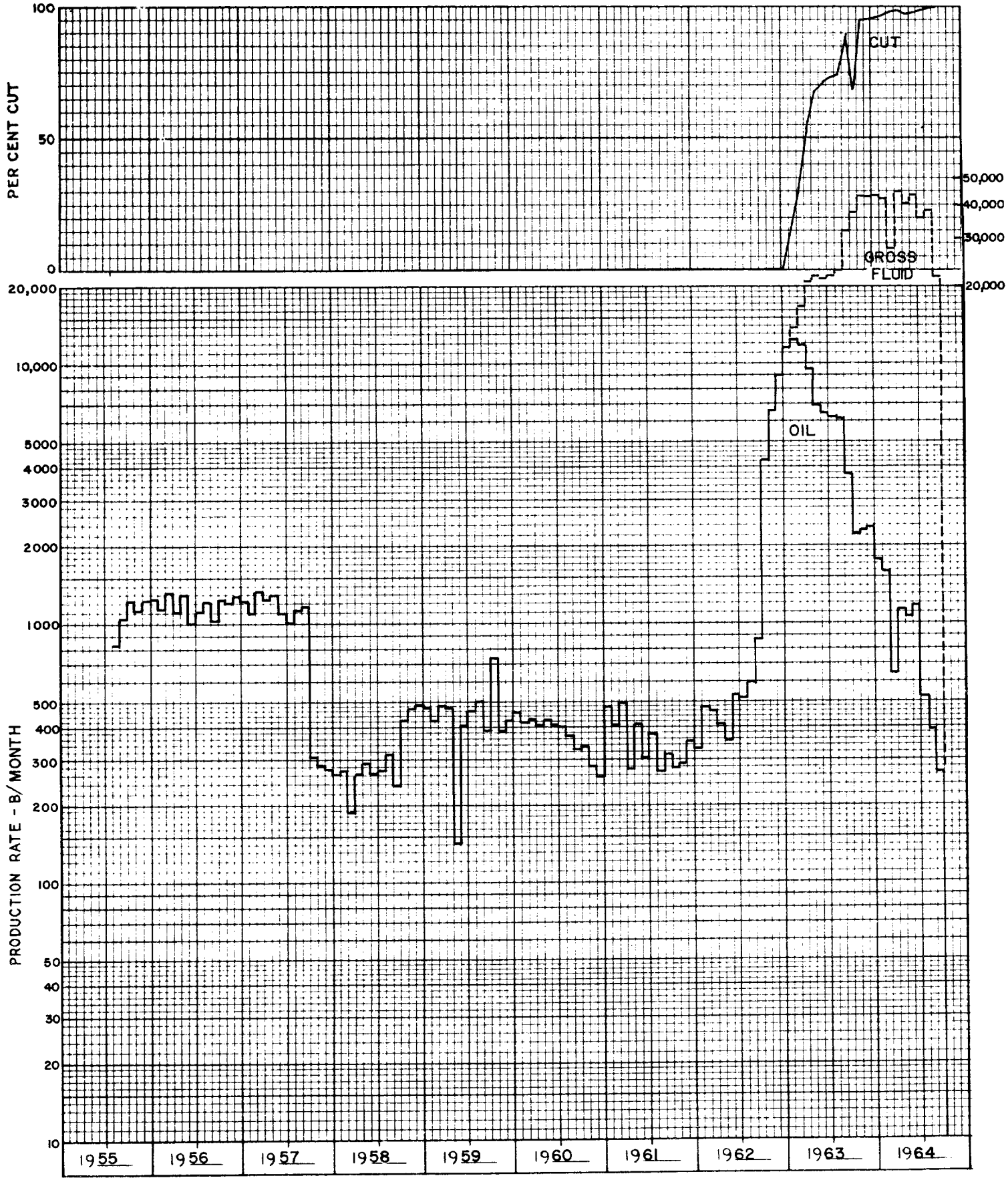


EXHIBIT III

SOUTH CAPROCK QUEEN UNIT

PRODUCTION PERFORMANCE OF OFFSETTING WELLS

Proposed Injection Well	Offsetting Producing Well	Recent Production Test 24-Hours Date	Oil, Bbls	Cut, %	Production Test Before Stimulation (24 Hrs) Date	Oil, Bbls	Cut, %	Cumulative Oil Production On 10-1-64	Peak Oil Rate B/D	Date Of Peak Oil Rate
11-13-5	11-14-5	9-19-64	55	97%	6-29-62	11	2%	288,250	790	8-63
11-13-5	57-4-8	10-17-64	54	95%	1-10-62	10	1%	79,732	57	5-64
47-1-19	64-16-18	10-15-64	84	10%	6-10-62	7	27%	33,945	84	10-64
47-1-19	25-4-20	10-17-64	317	1%	2-21-63	5	3%	116,116	317	10-64
47-1-19	40-5-20	10-16-64	256	20%	7-3-63	9	1%	157,076	280	7-64

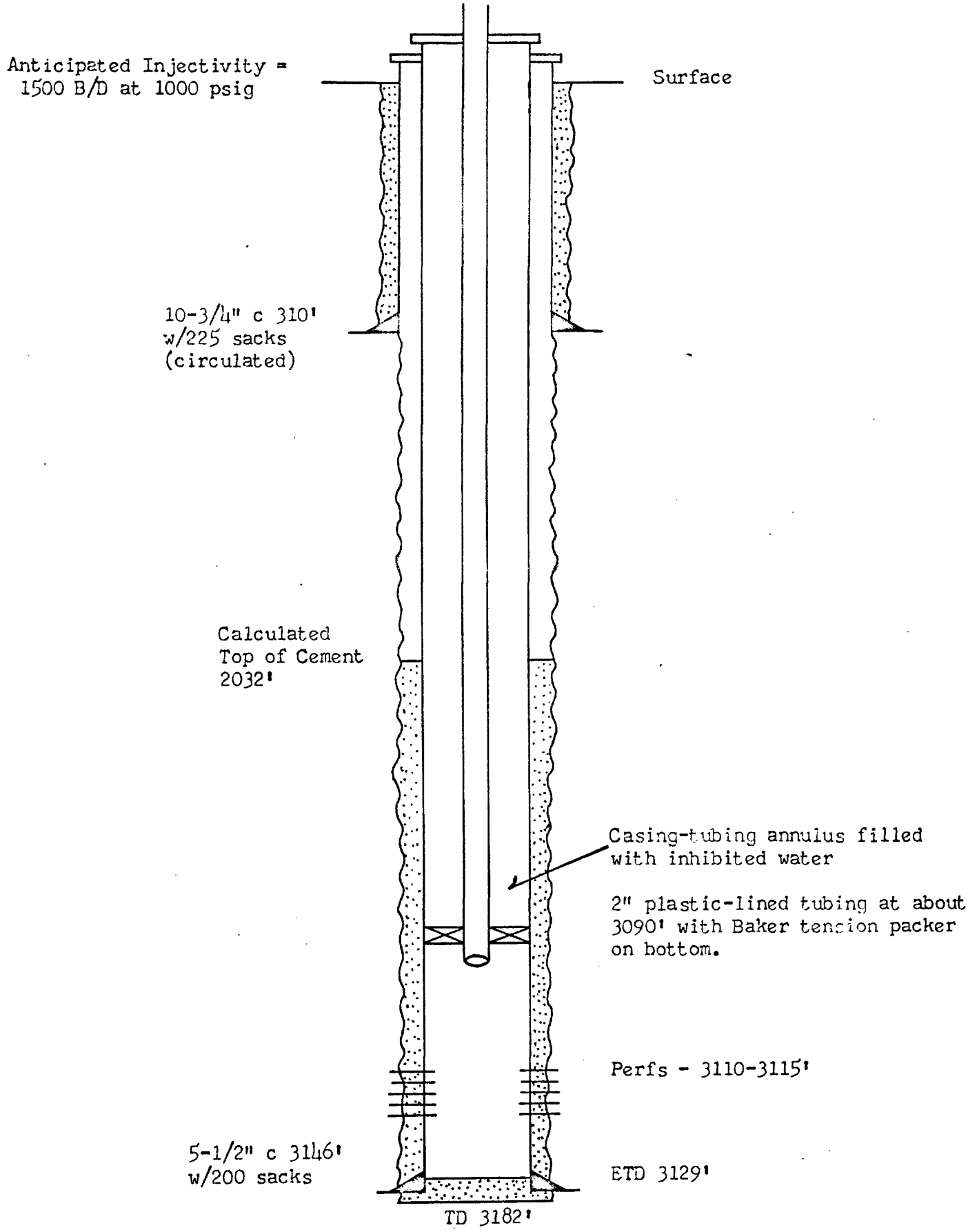
EXHIBIT IV

SOUTH CAPROCK QUEEN UNIT

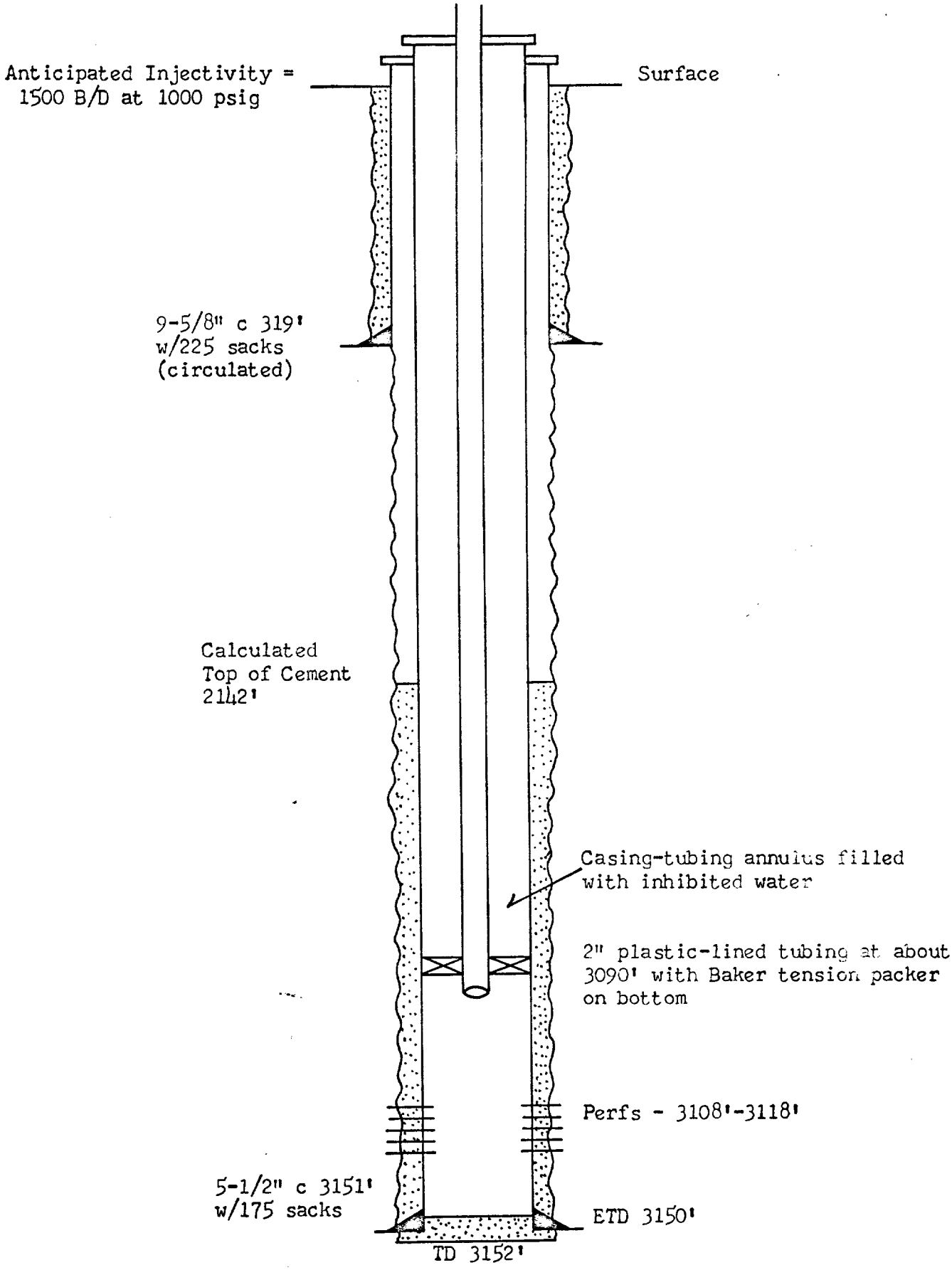
Casing Programs For
Proposed Injection Wells

WELL:	TRACT 11, WELL 13-5	TRACT 47, WELL 1-19
TD:	3182'	3152'
ETD:	3129'	3150'
PERFORATIONS:	3110'-3115'	3108'-3118'
SURFACE CASING:		
SIZE:	10 3/4"	9 5/8"
SETTING DEPTH:	310'	319'
CEMENT, SACKS:	225	225
CIRCULATED?:	Yes	Yes
GRADE PIPE:	H-40	H-40
WEIGHT, LBS./ FT.:	41	36
AGE, YEARS:	9	12
CONDITION:	New	Good
OIL STRING:		
SIZE:	5½"	5½"
SETTING DEPTH:	3146	3151
CEMENT, SACKS:	625	175
GRADE PIPE:	J-55	J-55
WEIGHT, LBS./FT:	15.5	14
AGE, YEARS:	9	9
CONDITION:	New	New

SOUTH CAPROCK QUEEN UNIT
PROPOSED INJECTION WELL
TRACT 11, WELL 13-5



SOUTH CAPROCK QUEEN UNIT
PROPOSED INJECTION WELL
TRACT 47, WELL 1-19



Union Oil Company of California

205 EAST WASHINGTON AVENUE LOVINGTON, NEW MEXICO 88260

October 20, 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 convert two wells to injection service in the South Caprock Queen Unit. The application is in accordance with the provisions of Rule 701 of the Rules and Regulations of the New Mexico Oil Conservation Commission.

Exhibit IV of the attached application is a table of casing information on the two wells to be converted to injection service. The two 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 two wells will be 1000 psig.

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

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/jj
Attachment (1)
CC: Mr. A. L. Porter, Jr. (3)

RHB/jj
Attachment (3)
cc: Mr. A. J. Porter, Jr. (3)

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

'64 Nov 13 PM

November 12, 1964

87501

Mr. Richard H. Butler
Unit Engineer
Union Oil Company of California
205 E. Washington Avenue
Lovington, N. M. 88260

Dear Mr. Butler:

Reference is made to your letter dated October 20, 1964 and the enclosed application to the Oil Conservation Commission bearing the same date which was postmarked November 5th and received November 9th.

It is noted on Ex. IV that the cement used on the 5½ inch oil string was 625 sacks for well 13-5. It is noted on Ex. V that only 200 sacks of cement were used on the oil string.

Please advise the correct number of sacks of cement used on the 5½ inch oil string in this well.

Yours truly,

S. E. Reynolds
State Engineer

By:
Frank E. Irby
Chief
Water Rights Div.

FEI/ma
cc-A. L. Porter, Jr.

November 12, 1964

B7501

Mr. Richard H. Butler
Unit Engineer
Union Oil Company of California
700 S. Washington Avenue
Lovington, N. M. 88260

Dear Mr. Butler:

Reference is made to your letter dated October 20, 1964 and the enclosed application to the Oil Conservation Commission bearing the same date which was postmarked November 5th and received November 9th.

It is noted on Ex. IV that the cement used on the 5½ inch oil string was 625 sacks for well 13-5. It is noted on Ex. V that only 700 sacks of cement were used on the oil string.

Please advise the correct number of sacks of cement used on the 5½ inch oil string in this well.

Yours truly,

E. E. Reynolds
State Engineer

By:
Frank E. Irby
Chief
Water Rights Div.

FEI/ma
cc-A. L. Porter, Jr.

Union Oil Company of California

IN REPLY GIVE NO.

November 17, 1964

Mr. Frank Irby
Chief of Water Rights Division
State Engineer Office
State Capitol
Santa Fe, New Mexico 87501

Re: South Caprock Queen Unit
Application for Permission to Convert
Two Wells to Water Injection Service
Dated October 20, 1964

Dear Mr. Irby:

Your letter dated November 12, 1964, regarding an error in the exhibits attached to our application for permission to convert two South Caprock Queen Unit producing wells to water injection service has been received. I have checked our files and find that Exhibit V, the diagrammatic sketch for Well No. 13-5, is in error. The 5½" oil string was cemented with 625 sacks of cement and the calculated top of the cement should be 760 feet.

By copy of this letter I am informing Mr. A. L. Porter, Jr., Secretary-Director of the New Mexico Oil Conservation Commission, of the corrections to Exhibit V, page 1, for Well No. 13-5.

Thank you for pointing out this discrepancy.

Very truly yours,

Richard H. Butler

Richard H. Butler
Unit Engineer

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

Union Oil Company of California

November 17, 1961

Re: South Dagger Draw Unit
Application for Permission to Convert
Two Wells to Water Injection Service
Dated October 20, 1961

Gentlemen:

Our letter dated November 13, 1961, requesting an error in the original approval of the subject application for permission to convert two South Dagger Draw Unit producing wells to water injection service has been received.

Upon inspection our files and find that Exhibit V, the diagrammatic sketch for well No. 13-5, is in error. The 8⅝" oil string was cemented with 150 sacks of cement and the calculated top of the cement should be 7240' (+).

A new copy of this letter is being forwarded to Mr. L. Porter, Jr., Secretary-Engineer of the New Mexico Oil Conservation Commission, of the corrections on Exhibit V, Dagger Draw Well No. 13-5.

Thank you for pointing out this discrepancy.

Very truly yours,

Richard H. Hueter
Unit Engineer

cc: Mr. L. Porter, Jr. (2)

'64 Nov 24

STATE OF NEW MEXICO

STATE ENGINEER OFFICE

SANTA FE

S. E. REYNOLDS
STATE ENGINEER

November 23, 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 the application of Union Oil Company of California which seeks to convert two producing wells to injection service in the South Caprock Queen Unit submitted on October 20, 1964. Further reference is made to my letter to Union Oil Company's Unit Engineer dated November 12, 1964 and to Mr. Butler's reply to my letter dated November 17, 1964.

In view of Mr. Butler's statement in his letter of November 17, 1964 concerning the number of sacks of cement and the calculated top used in setting the 5½" oil string, it appears that no threat of contamination to any 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: Frank E. Irby
Frank E. Irby
Chief
Water Rights Div.

FEI/ma
cc-Union Oil Co.