

CASE 3669: Application of AMERADA
FOR A WATERFLOOD PROJECT, LEA
COUNTY, NEW MEXICO.

CASE No.
3669

Application,
TRANSCRIPTS,
SMALL Exhibits
ETC.

AMERADA PETROLEUM CORPORATION

P. O. BOX 2040

TULSA, OKLAHOMA 74102

LEGAL DEPARTMENT

November 20, 1967

Mr. A. L. Porter, Jr.
Secretary Director
Oil Conservation Commission
P. O. Box 2088
Santa Fe, New Mexico 87501

File
Re: Order No. R-3345 (Case No. 3669)
Amerada VA Vacuum Waterflood
Lea County, New Mexico

Dear Mr. Porter:

Your calculation of the allowable for the captioned waterflood is correct as you stated it in your letter of November 14, 1967.

Very truly yours,

Thomas W. Lynch
Thomas W. Lynch

TWL:cb

cc: Mr. Jason W. Kellahin
P. O. Box 1769
Santa Fe, New Mexico 87501

OIL CONSERVATION COMMISSION

P. O. BOX 2088

SANTA FE, NEW MEXICO

November 14, 1967

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Mr. Jason Kellahin
Kellahin & Fox
Attorneys at Law
Post Office Box 1769
Santa Fe, New Mexico

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Dear Mr. Kellahin:

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Reference is made to Commission Order No. R-3335, recently entered in Case No. 3669, approving the Amerada VA Vacuum Waterflood Project.

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Injection is to be through the two authorized water injection wells, each of which shall be equipped with cement-lined tubing and a packer, with said packers being set not more than 100 feet above the uppermost perforation or, in the case of the open hole completion, not more than 100 feet above the casing shoe. The casing-tubing annulus shall be filled with an inert fluid and left open or equipped with a pressure gauge to facilitate detection of tubing or packer leakage.

As to allowable, our calculations indicate that when all of the authorized injection wells have been placed on active injection, the maximum allowable which this project will be eligible to receive under the provisions of Rule 701-E-3 is 168 barrels per day when the Southeast New Mexico normal unit allowable is 42 barrels per day or less.

Please report any error in this calculated maximum allowable immediately, both to the Santa Fe office of the Commission and the appropriate district proration office.

OIL CONSERVATION COMMISSION

P. O. BOX 2088

SANTA FE, NEW MEXICO

-2-

Mr. Jason Kellahin
Kellahin & Fox
Attorneys at Law
Post Office Box 1769
Santa Fe, New Mexico

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In order that the allowable assigned to the project may be kept current, and in order that the operator may fully benefit from the allowable provisions of Rule 701, it behooves him to promptly notify both of the aforementioned Commission offices by letter of any change in the status of wells in the project area, i.e., when active injection commences, when additional injection or producing wells are drilled, when additional wells are acquired through purchase or unitization, when wells have received a response to water injection, etc.

Your cooperation in keeping the Commission so informed as to the status of the project and the wells therein will be appreciated.

Very truly yours,

A. L. PORTER, Jr.
Secretary-Director

ALP/DSH/ir

cc: Oil Conservation Commission - Hobbs, New Mexico

Mr. Frank Irby, State Engineer Office, Santa Fe, N. M.
Mr. George E. Erickson, Amerada Petroleum Corporation,
Post Office Box 2040 - Tulsa, Oklahoma

GENERAL OFFICE
Box 2040
TULSA, OKLA. 74102

AMERADA PETROLEUM CORPORATION
Box 668
HOBBS, NEW MEXICO 88240

October 27, 1967

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

OCT 30 PM 8 20

Attention: Mr. Elvis A. Utz

Re: Vacuum Pool, Waterflood
Authority Requested.
(Case No. 3669)

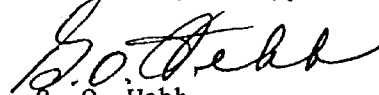
Dear Sir:

In an application by the Amerada Petroleum Corporation for waterflood authority, Case No. 3669, Exhibits B and C indicated that we would utilize 2-7/8" plastic lined tubing in our State V"A" No. 3, Unit K and State V"A" No. 6, Unit M, both in Section 23, T-17-S, R-34-E, Lea County, New Mexico. In the Examiner Hearing October 25, 1967, at Santa Fe, the exhibits were made a part of the testimony.

We would like to correct the size and coating material that is to be utilized in the two wells. Due to the quantity of water to be injected into each well we found it expedient to use 2-3/8" tubing rather than the 2-7/8" as indicated by the diagrammatic sketches of the proposed injection wells which are required by Statewide Rule 701-B-3. Also, due to operational problems witnessed in other injection wells, we found it necessary to change our coating from plastic lined to cement lined.

We respectfully request that the records reflect these changes.

Yours very truly,


G. O. Webb

GOW/jrr

cc: Mr. Joe D. Ramey - N.M.O.C.C.
Mr. J. O. Hathaway
Mr. R. L. Hocker
Mr. B. J. Sinex
File

GOVERNOR
DAVID F. CARGO
CHAIRMAN

State of New Mexico
Oil Conservation Commission



LAND COMMISSIONER
GUYTON B. HAYS
MEMBER

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

P. O. BOX 2088
SANTA FE

October 31, 1967

Mr. Jason Kellahin
Kellahin & Fox
Attorneys at Law
Post Office Box 1769
Santa Fe, New Mexico

Re: Case No. 2662
Order No. R-3335
Applicant:
Amerada Petroleum Corp.

Dear Sir:

Enclosed herewith is a copy of the above-referenced Commission order recently entered in the subject case. Letter pertaining to conditions of approval and maximum allowable to follow.

Very truly yours,

A. L. Porter, Jr.
A. L. PORTER, Jr.
Secretary-Director

ALP/ir

Carbon copy of order also sent to:

Hobbs OCC x
Artesia OCC
Aztec OCC
State Engineer x

Other Mr. George E. Erickson

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. 3669
Order No. R-3335

APPLICATION OF AMERADA PETROLEUM
CORPORATION FOR A WATERFLOOD PROJ-
ECT, LEA COUNTY, NEW MEXICO.

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9 a.m. on October 25, 1967, at Santa Fe, New Mexico, before Examiner Elvis A. Utz.

NOW, on this 31st day of October, 1967, 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, Amerada Petroleum Corporation, seeks permission to institute a waterflood project on its State "VA" Lease, Vacuum Pool, by the injection of water into the Grayburg-San Andres formations through two injection wells in Units K and M of Section 23, Township 17 South, Range 34 East, NMPM, Lea County, New Mexico.

(3) That the wells in the project area are in an advanced state of depletion and should properly be classified as "stripper" wells.

(4) That the proposed waterflood project should result in the recovery of otherwise unrecoverable oil, thereby preventing waste.

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CASE No. 3669
Order No. R-3335

(5) That the subject application should be approved and the project should be governed by the provisions of Rules 701, 702, and 703 of the Commission Rules and Regulations.

IT IS THEREFORE ORDERED:

(1) That the applicant, Amerada Petroleum Corporation, is hereby authorized to institute a waterflood project on its State "VA" Lease, Vacuum Pool, by the injection of water into the Grayburg-San Andres formations through the following-described wells in Section 23, Township 17 South, Range 34 East, NMPM, Lea County, New Mexico:

OPERATOR	LEASE	WELL No.	UNIT
Amerada	State "VA"	3	K
Amerada	State "VA"	6	M

(2) That the subject waterflood project is hereby designated the Amerada VA Vacuum Waterflood Project and shall be governed by the provisions of Rules 701, 702, and 703 of the Commission Rules and Regulations.


(3) That monthly progress reports of the waterflood project herein authorized shall be submitted to the Commission in accordance with Rules 704 and 1120 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


DAVID F. CARGO, Chairman


GUYTON B. HAYS, Member


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

Rush

Case 3669.

Send 10-25-67

Rec. 10-30-67

Grant Amerada a waterflood
project & permission to convert
the following wells to water injection
wells.

Amerada - 3rd 'UA' # 3, 1280/SW line 23-17S34E.

St. L # 6, 66054W

Injection to be thru $2\frac{3}{8}$ plastic coated
tubing, under a packer at approx.
4300 in # 3 & 4500 in the # 6.

Annulus to be filled with inert
fluid (treated water).

Thos. L. R.

JASON W. KELLAHIN
ROBERT E. FOX

KELLAHIN AND FOX
ATTORNEYS AT LAW
54½ EAST SAN FRANCISCO STREET
POST OFFICE BOX 1769
SANTA FE, NEW MEXICO 87501

TELEPHONE 982-4315
AREA CODE 505

October 25, 1967

Dut

*Oct. 25th
Heard OK*

New Mexico Oil Conservation Commission
Post Office Box 2088
Santa Fe, New Mexico

Attention: Mr. George Hatch, Attorney

OCT 26 AM 10 40

Gentlemen:

The purpose of this letter is to enter my appearance in New Mexico Oil Conservation Commission Cases nos. 3669, 3670 and 3671 on behalf of Amerada Petroleum Corporation, and in association with Mr. George E. Erickson, Jr., a member of the Oklahoma Bar, who will present the cases.

Yours very truly,

Jason W. Kellahin

JASON W. KELLAHIN

jwk;peg
cc Mr. Thomas W. Lynch

10 MIN 4 AM 10 1967

BEFORE THE OIL CONSERVATION COMMISSION
OF THE STATE OF NEW MEXICO

APPLICATION OF AMERADA PETROLEUM CORPORATION)
TO INSTITUTE A LEASE WATERFLOOD PROJECT IN)
THE VACUUM GRAYBURG-SAN ANDRES POOL, LEA)
COUNTY, NEW MEXICO.)

CASE NO. 3669

APPLICATION

Applicant Amerada Petroleum Corporation states that:

1. Applicant hereby requests authority under Statewide Rule 701 to institute a waterflood project in the Vacuum Grayburg-San Andres Pool for that portion of its State "VA" Lease consisting of the SW/4 Section 23-17S-34E, Lea County, New Mexico, by injecting water into two wells in said Section 23:

Amerada State "VA" Well No. 3 (in Unit K)
Amerada State "VA" Well No. 6 (in Unit M)

2. Attached hereto as Exhibit A is a plat showing the location of the proposed injection wells, the location of all other wells within a radius of two miles from the proposed injection well, and the names of all known lessees within that radius.

3. Attached hereto as Exhibits B and C are diagrammatic sketches of the proposed injection wells, showing the information required by Statewide Rule 701-B-3.

4. Applicant proposes initially to inject fresh water from the Ogallala Formation into the Grayburg-San Andres Zone found at an approximate depth of 4566 feet, at an anticipated rate of 500 barrels per injection well per day.

5. A copy of this application, complete with all attachments, has been mailed to the State Engineer's Office, Capitol Building, Santa Fe, New Mexico.

AMERADA PETROLEUM CORPORATION

By

Thomas W. Lynch
Thomas W. Lynch, Attorney
P. O. Box 2040
Tulsa, Oklahoma 74102

Resident Counsel:

Date 10-11-67

Jason W. Kellahin
Kellahin and Fox
P. O. Box 1769
Santa Fe, New Mexico 87501

DOCKET MAILED

Date 10-11-67

DOCKET: EXAMINER HEARING - WEDNESDAY - OCTOBER 25, 1967

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

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

CASE 3668: Application of Mobil Oil Corporation for a triple completion, Lea County, New Mexico. Applicant, in the above-styled cause, seeks approval for the triple completion (conventional) of its Bridges State Well No. 121 located in Unit L of Section 13, Township 17 South, Range 34 East, Lea County, New Mexico, to produce oil from the North Vacuum-Abo, Vacuum-Upper Pennsylvanian, and Vacuum-Middle Pennsylvanian Pools, through parallel strings of tubing.

CASE 3669: Application of Amerada Petroleum Corporation for a waterflood project, Lea County, New Mexico. Applicant, in the above-styled cause, seeks authority to institute a waterflood project on its State "VA" Lease by the injection of water into the Graybury-San Andres formation through two wells located in Units K and M of Section 23, Township 17 South, Range 34 East, Vacuum Pool, Lea County, New Mexico.

CASE 3670: Application of Amerada Petroleum Corporation for a dual completion, Lea County, New Mexico. Applicant, in the above-styled cause, seeks approval for the dual completion (combination) of its State "MA" Well No. 3 located in Unit M of Section 24, Township 11 South, Range 32 East, Lea County, New Mexico, in such a manner as to permit the production of gas from the Moore-Wolfcamp Gas Pool and oil from the Moore-Pennsylvanian Pool through tubing installed in parallel strings of 2 7/8 inch and 3 1/2 inch casing, respectively, cemented in a common well bore.

CASE 3671: Application of Amerada Petroleum Corporation for salt water disposal, Lea County, New Mexico. Applicant, in the above-styled cause, seeks authority to dispose of produced salt water into the Pennsylvanian formation, Bagley Field, Lea County, New Mexico, through the following three wells, all located in Township 12 South, Range 33 East:

L. H. Chambers Well No. 2, Unit C of
Section 11; Disposal Interval - 9005
to 9393 feet;

State BT "D" Well No. 4, Unit N of
Section 2; Disposal Interval - 8979
to 9291 feet;

J. T. Caudle Well No. 1, Unit H of
Section 10; Disposal Interval - 9001 to
9326 feet;

CASE 3672: Application of Charles B. Read and Len Mayer for back allowable, Eddy County, New Mexico. Applicants, in the above-styled cause, see the assignment of back allowable for the period from

April 7, 1967, to August 3, 1967, to their Irene Brainard Well No. 1 located in Unit E of Section 20, Township 18 South, Range 26 East, Atoka-Pennsylvanian Pool, Eddy County, New Mexico, said period being from the date of completion of the well to the date of approval by the Federal Power Commission for the sale of gas from said well.

- CASE 3673: Application of Ralph Lowe for salt water disposal, Lea County, New Mexico. Applicant, in the above-styled cause, seeks authority to dispose of produced salt water into the Yates formation in the interval 2964 feet to 2982 feet in his Humble State Well No. 1 located in Unit G of Section 36, Township 25 South, Range 36 East, Jalmat Pool, Lea County, New Mexico.
- CASE 3674: Application of Robert N. Enfield for the amendment of Order No. R-3189, Chaves County, New Mexico. Applicant, in the above-styled cause, seeks the amendment of Order No. R-3189 which pooled all mineral interests in the Chaveroo-San Andres Pool underlying the NW/4 NW/4 of Section 11, Township 8 South, Range 33 East, Chaves County, New Mexico. Applicant specifically seeks the amendment of paragraph (9) of Order No. R-3189 to fix \$125.00 per month as a reasonable charge for supervision and operational overhead for the subject well and to authorize the applicant to withhold from production the proportionate share of said \$125.00 and the proportionate share of actual operating costs of said well attributable to each non-consenting working interest.
- CASE 3675: Application of Gulf Oil Corporation for a unit agreement, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks approval of the North Hackberry Yates Unit Area comprising 720 acres, more or less, of Federal Lands in Sections 23 and 24, Township 19 South, Range 30 East, Eddy County, New Mexico.
- CASE 3676: Application of Gulf Oil Corporation 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 Yates formation through eight wells in Sections 23 and 24, Township 19 South, Range 30 East, North Hackberry-Yates Pool, Eddy County, New Mexico.
- CASE 3677: Application of Dugan Production Corporation for special pool rules, San Juan County, New Mexico. Applicant, in the above-styled cause, seeks the promulgation of special pool rules for the Salt Creek-Dakota Oil Pool, San Juan County, New Mexico, to permit the drilling of wells on 2 1/2 acre spacing provided that no well be located nearer than 165 feet to the outer boundary of the quarter-quarter section and no nearer than 200 feet to another well producing from the same pool, and provided further, that a 40-acre proration unit would be subject to a 40-acre allowable regardless of the number of wells on the unit.
- CASE 3678: Application of Ryder Scott Management Company for a waterflood expansion, waterflood buffer zone, and several unorthodox locations, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks the expansion of its Artesia-Nichols Waterflood Project,

Township 18 South, Range 28 East, Artesia Pool, Eddy County, New Mexico, by the conversion of its Western-Yates Collier State Well No. 1 located in Unit F of Section 20 and its Mershon State Well No. 2 located in Unit D of Section 21. Applicant further proposes to drill three additional water injection wells at the following unorthodox locations in Section 20: 2650 feet from the North and West lines; 2650 feet from the North line and 1330 feet from the East line; and 1310 feet from the North line and 1330 feet from the East line. Applicant further seeks the designation of the W/2 NW/4 of Section 21 and the SW/4 NW/4, E/2 NW/4, NE/4, and W/2 SE/4 of Section 20 and the NW/4 NE/4 of Section 22 as a waterflood buffer zone with capacity allowables, or as an area wherein transfer of allowable between leases would be permitted.

CASE 3679: Application of Sinclair Oil & Gas Company for the amendment of Order No. R-2854, Lea County, New Mexico. Applicant, in the above-styled cause, seeks the amendment of Order No. R-2854, which order established a 160-acre non-standard gas proration unit comprising the W/2 SW/4, SE/4 SW/4, and SW/4 SE/4 of Section 26, Township 21 South, Range 37 East, Tubb Gas Pool, Lea County, New Mexico, to be dedicated to applicant's J. R. Cone "A" Well No. 2 located in Unit L of said Section 26. Applicant now seeks the dedication of said unit to its J. R. Cone "B" Well No. 1 located in Unit N of said Section 26.

CASE 3680: Application of Texaco Inc. for an unorthodox location, Roosevelt County, New Mexico. Applicant, in the above-styled cause, seeks authority to recomplete its State "CT" Well No. 4 at an unorthodox location 660 feet from the North line and 1980 feet from the West line of Section 35, Township 7 South, Range 35 East, in the Todd-Upper San Andres Pool, Roosevelt County, New Mexico, in exception to the pool rules which require wells to be located in the NE/4 or the SW/4 of the Section.

October 9, 1967

Amerada Petroleum Corporation
P. O. Box 2040
Tulsa, Oklahoma 74102

Attn. Mr. Jason Kellahin

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Gentlemen:

Receipt of copies of your applications to the Oil Conservation Commission, as follows, are gratefully acknowledged:

A. Seeks authority to dispose of salt water into its Bagley SWD well #2 in the NE $\frac{1}{4}$ of Sec. 11, T. 12 S., R. 33 E., at a depth of 9005' to 9303'.

B. Seeks authority to dispose of salt water into its Bagley SWD Well #1 in the SE $\frac{1}{4}$ SW $\frac{1}{4}$ of Sec. 2, T. 12 S., R. 33 E. at depths of 8979' to 9090' and 9100' to 9291'.

C. Seeks authority to dispose of salt water into its J. T. Caudle Well #1 in the SE $\frac{1}{4}$ NE $\frac{1}{4}$ of Sec. 10, T. 12 S., R. 33 E., at a depth of 9001' to 9326'.

D. Seeks authority to institute a waterflood project by injecting water into its Amerada State "VA" well #3 and into its Amerada State "VA" well #6 at depths of 4311' to 4662' and 4565' to 4625', respectively.

FEI/ma
cc-OCC

Yours truly,

S. E. Reynolds
State Engineer

By:
Frank E. Irby
Chief
Water Rights Div.

dearnley-meier reporting service, inc.

SPECIALIZING IN: DEPOSITIONS, HEARINGS, STATEMENTS, EXPERT TESTIMONY, DAILY COPY, CONVENTIONS

1120 SIMMS BLDG. • P. O. BOX 1092 • PHONE 243-6691 • ALBUQUERQUE, NEW MEXICO

BEFORE THE
NEW MEXICO OIL CONSERVATION COMMISSION
Santa Fe, New Mexico
October 25, 1967

IN THE MATTER OF:

Application of Amerada
Petroleum Corporation
for a waterflood project,
Lea County, New Mexico.

Case No. 3669

BEFORE: Elvis A. Utz, Examiner

TRANSCRIPT OF HEARING

MR. UTZ: The next case will be Case 3669.

MR. HATCH: Application of Amerada Petroleum Corporation for a waterflood project, Lea County, New Mexico.

MR. ERICKSON: At this time, I would like to enter my appearance. My name is George E. Erickson, Jr., Attorney for Amerada, address, Post Office Box 2040, Tulsa, Oklahoma, associated with Mr. Jason Kellahin. I have one witness, Mr. Jack Evans.

(Witness sworn.)

(Whereupon, Applicant's Exhibits 1 through 4 were marked for identification.)

MR. UTZ: Are there any other appearances?

You may proceed.

J A C K E V A N S, called as a witness,
having been first duly sworn, was examined and testified as follows:

DIRECT EXAMINATION

BY MR. ERICKSON:

Q Mr. Evans, will you state your name, residence and place of employment?

A My name is A. Jack Evans, from Tulsa, Oklahoma, where I am employed by Amerada Petroleum Corporation as Petroleum Engineer, Petroleum Conservation Engineer.

Q You are presently serving in that capacity in Tulsa: Have you done any work in this area during your employment with Amerada?

A Yes, sir, I have.

Q Would you describe, very briefly, for the Examiner the length of time that you served? I believe you served in Hobbs; is not that correct?

A Yes, sir. I graduated from Texas A & M with a Bachelor of Science degree in Petroleum Engineering in 1960. I went to work for Amerada at that time, and have been employed by Amerada since then, and I have worked in Hobbs for three years.

MR. ERICKSON: Mr. Examiner, Mr. Evans has not previously testified before the Commission. I move that his qualifications be accepted.

MR. UTZ: He is considered qualified to testify in this case.

Q (By Mr. Erickson) Are you familiar with the subject matter of this application, Mr. Evans?

A Yes, sir, I am.

Q I would like to direct your attention now to what has been marked for identification as Exhibit 1 and ask you to describe that exhibit.

A Exhibit 1 is a portion of a map of the Vacuum Pool in Lea County, New Mexico with special reference to Section 23 of Township 17 South, Range 34 East. The Amerada State "VA" Lease in the Southwest Quarter of Section 23.

Q That is shown in Unit K, is that not correct? It would be in Unit K?

A The Southwest quarter would be the Amerada Lease where we are concerned. Units K and M are the two well units, or location units, where we're concerned, or applying for water injection permission. The two wells are indicated with a red triangle.

Q These are the proposed injection wells that are the subject matter of the application, is that correct?

A Yes, they are.

Q Shown as number 3 and number 6?

A Yes, sir.

Q The names of the leases and locations of neighboring wells are shown on this plat, is that correct?

A Yes, sir.

Q Mr. Evans, are there any waterflood projects being conducted in the immediate area?

A Mobil Oil Corporation is currently operating a waterflood in this area on their State-Bridges Lease on

Exhibit 1. You'll notice a series of triangles which indicate water injection wells for the Vacuum-Grayburg-San Andres zone. Mobil has been operating this waterflood for some time.

Q Mr. Evans, if this application is granted, where do you propose to obtain your water for this project?

A We propose to buy from Mobil, water from their injection system, pressured water, which is from the Ogallalla Fresh Water Sand.

Q In the event that in the future you obtain production from this project, what would you expect to do with the water produced?

A The produced water we would expect to reinject.

Q How many barrels do you propose to inject per day per well?

A We propose a maximum of 500 barrels per day per well, with a maximum of 1500 to 1600 pounds surface pressure.

Q Now, Mr. Evans, I invite your attention to what has been marked as Exhibit No. 2 and ask you to describe that exhibit please.

Q Exhibit No. 2 is a performance curve on the Amerada State "VA" Lease which is the subject lease, southwest quarter of Section 23, the lease was drilled in 1938 with the exception of well number 6. Now, number 1, 2 and 3 were

drilled in 1938. Number 6 has just recently been drilled. This curve shows the marginal status of the three producing wells on the lease.

Q What is the production from well number 3?

A Well number 3, which is one of the wells to be converted to injection, produced 4 barrels of oil, and no water, for September of 1967.

Q And if this application is approved, that would be the only injection well that is not producing oil, is that correct?

A That is correct.

MR. UTZ: These are all monthly. That's all right.

A Yes, sir.

Q (By Mr. Erickson) Now, I invite your attention to what has been marked for identification as Exhibit No. 3, and also what has been marked as Exhibit No. 4 for identification and ask you to describe them.

A Exhibits 3 and 4 are schematic diagrams, subsurface schematics, of the State "VA" Number 3 and the State "VA" Number 6, located in Units K and M, in Section 23, proposed, or the intent of this exhibit is to show that the water injection will be confined to the Grayburg-San Andres zone on the State "VA" Number 3 which is the Exhibit No. 3. We

show 13 inch surface casing set at 227 feet, 9-5/8 inch intermediate set at 1641 feet, and 7 inch casing producing strings set at 4311 feet. Total depth of the well is 4662 feet.

Q With respect to Exhibit 4, I believe this has been changed very slightly from the attachment to the application, is that correct?

A Yes, sir. At the time the application was mailed in, the well had not been drilled. Since then the well has been drilled and although it has not been perforated nor had the tubing set, at least we have the total depth, and the casing seats, they have been altered, as you'll notice on the exhibit. The surface casing is set at 1594 feet, the long string set at 4700 feet, with the total depth of 4700 feet.

Q Mr. Evans, what formation do you propose to inject fluids into, if this application is approved?

A We propose to inject water into the Grayburg-San Andres zone.

Q Where is the fresh water strata penetrated by these wells, located?

A The fresh water strata would be up behind the surface casing, as shown on the exhibits.

Q Will the injected fluids be isolated from this fresh water strata?

A Yes, sir, they will.

Q Will there be any inert fluid filling the annulus if this project is continued?

A Yes, sir, we would expect to put Kontol treated water in the casing tubing annulus.

Q Would you expect to use pressure gauges?

A On the casing annulus, yes.

Q What type of injection tubing will be used?

A We will use new 2-7/8 inch plastic-lined tubing.

Q In your opinion will the proposal that you have outlined here protect the fresh water strata?

A Yes, sir, it will.

Q Do you have any opinion concerning the effect of this waterflood, if it is permitted, on future production from wells 1 and 2, and if so, what is your opinion?

A We would expect to stimulate production up from its marginal position now, and recover substantial additional oil that would otherwise go unrecovered.

Q Mr. Evans, were Exhibits 1 through 4 prepared either by you, or under your supervision?

A Yes, sir, they were.

MR. ERICKSON: At this time, I would move the acceptance of Exhibits 1 through 4 into evidence.

MR. UTZ: Without objection, Exhibits 1 through 4 will be entered into the record of this case.

(Whereupon, Applicant's Exhibits 1 through 4 were admitted in evidence.)

MR. ERICKSON: Do you have any questions for the witness, sir.

MR. UTZ: Yes, I do.

CROSS EXAMINATION

BY MR. UTZ:

Q In regard to the open areas behind your pipe where there is no cement, what sort of formation is there? I think you have already stated that the fresh water was behind the surface casing.

A Yes, sir.

Q What would you have behind these open places on your number 3 and the 856 feet behind the 5-1/2 inch casing on number 6?

A Well, sir, we would have nonpermeable formations that would not be giving up fluid nor taking fluid. We would anticipate no damage nor contribution of fluid into the

well from these formations.

Q And you feel that this casing will be protected by the inert treated water?

A Yes, sir, we do.

Q What type of packer do you intend to put around the tubing?

A Well, as far as the name, I wouldn't be --

Q You don't know?

A No, sir, I don't know.

Q It will be retrievable?

A Yes, sir, it will be a retrievable, approved packer.

Q Do you favor using a packer rather than just floating oil, say, on top of the water?

A Yes, sir.

Q You think it's a better engineering situation?

A Yes, sir.

Q You stated that you plan to reinject your produced water. Do you know whether this water will be saline or not after it's produced?

A It would be contaminated as far as, it wouldn't be potable; it would be brackish, more than likely, and have some sulphur content.

Q Do you anticipate any problem in treating this water?

A Not at the present time, no, sir.

Q It would follow then, that you don't anticipate any problem in cleaning up your produced water so that it wouldn't damage your formation on injection?

A That's right. If chemical analysis shows that the injected waters are not compatible, we would separate them and inject fresh supply of water into one well and the produced water into the other well. In other words, we would not mix the waters at the surface so that they would be detrimental to the formation if they could not be treated.

Q If they could not be treated?

A Yes, sir.

Q But you don't anticipate any problems?

A No, sir.

Q Are you using produced water for injection in other floods that you have?

A Yes, sir.

Q No problem?

A No problem.

Q Do you have any figures on how much oil you intend to recover by secondary method?

A No, sir.

Q Would it be approximately the same as your primary, as it is in most cases?

A I would anticipate possibly a little less than primary.

Q Do you know what your primary is?

A Approximately 90,000 barrels per well.

MR. UTZ: Thank you. Are there any other questions of the witness? The witness may be excused.

(Witness excused.)

MR. UTZ: Any statements? The case will be taken under advisement.

I N D E X

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STATE OF NEW MEXICO)
) SS
 COUNTY OF BERNALILLO)

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

WITNESS my hand this 24th day of November, 1967.

Ada Dearnley
 ADA DEARNLEY

I do hereby certify that the foregoing is a complete record of the proceedings in the Executive Hearing on Case No. 3669, heard by me on 10/22/67.

James L. Miller
 New Mexico Oil Conservation Commission

AMERADA - STATE VA LEASE (SW/4 23-17N-34E)
VACUUM GRAYBURG-SAN ANDRES FIELD
LEA COUNTY, NEW MEXICO
WELLS NO. 1, 2, 3

LEASE WAS DRILLED IN 1938

BEFORE EXAMINER UTZ
OIL CONSERVATION COMMISSION
CASE NO. 3669
EXHIBIT NO. 2

MONTHLY OIL PRODUCTION - BARRELS

100

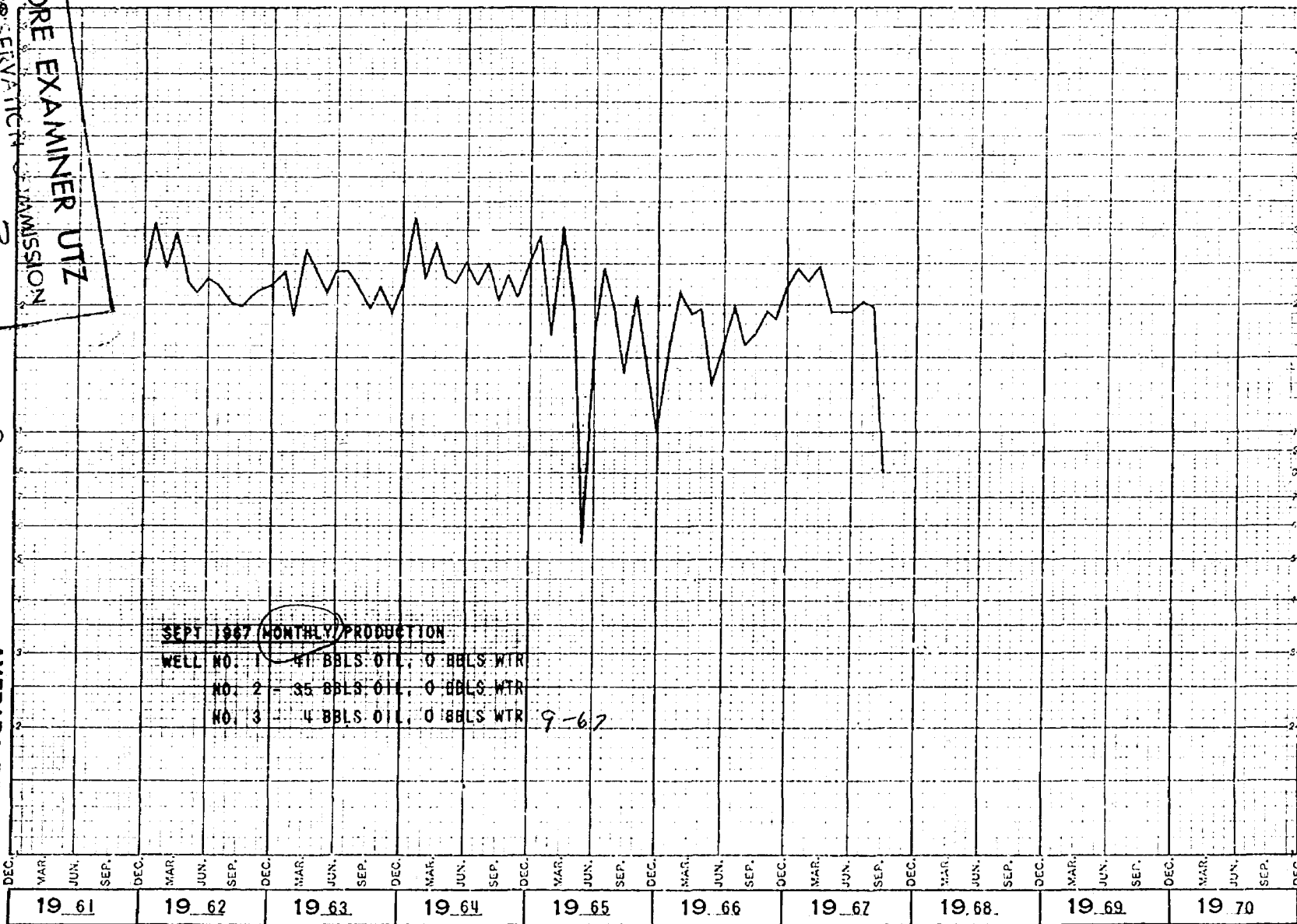
AMERADA PETROLEUM CORP.

SEPT 1967 MONTHLY PRODUCTION

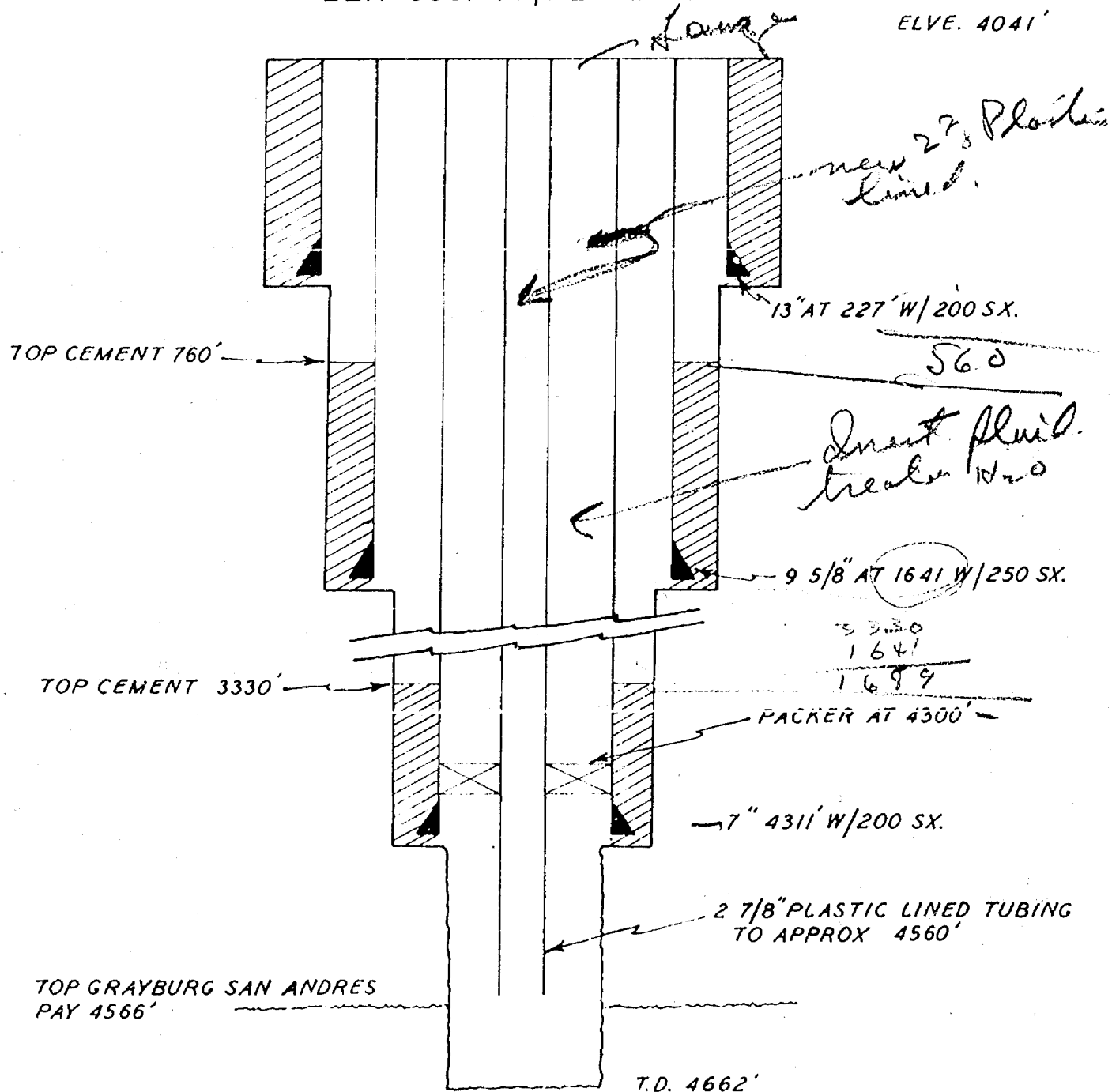
WELL NO. 1 - 41 BBLS OIL, 0 BBLS WTR
NO. 2 - 35 BBLS OIL, 0 BBLS WTR
NO. 3 - 4 BBLS OIL, 0 BBLS WTR

9-67

EXHIBIT 2
NO. 3669
DATE 10-25-67



AMERADA STATE "VA" NO. 3
 1980' FSL & FWL 23-175-34E
 VACUUM GRAYBURG - SAN ANDRES POOL
 LEA COUNTY, NEW MEXICO



BEFORE EXAMINER UTZ
 OIL CONSERVATION COMMISSION
 EXHIBIT NO. 3
 CASE NO. 3669

AMERADA PETROLEUM CORP.
 EXHIBIT 3
 NO. 3669
 DATE 10-25-67

AMERADA STATE "VA" NO.6
 660 FSL & FWL 23-17 S - 34 E
 VACUUM GRAYBURG - SAN ANDRES POOL
 LEA COUNTY, NEW MEXICO

