

Case Number

4409

Application
Transcripts.

Small Exhibits

ETC.

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

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BEFORE THE
NEW MEXICO OIL CONSERVATION COMMISSION
Santa Fe, New Mexico
August 19, 1970

EXAMINER HEARING

IN THE MATTER OF:

Application of Anadarko
Production Company for
two waterflood expansions,
Eddy County, New Mexico.

Case No. 4409

BEFORE: Daniel S. Nutter, Examiner

TRANSCRIPT OF HEARING



MR. NUTTER: Case 4409.

MR. HATCH: Application of Anadarko Production Company for two waterflood expansions, Eddy County, New Mexico.

MR. KELLAHIN: Jason Kellahin, Kellahin and Fox, Santa Fe, appearing for the Applicant in association with Mr. Robert E. Anderson, a member of the Texas Bar who will present the case.

MR. ANDERSON: We will have one witness, Mr. Stumhoffer. Mr. Examiner, before proceeding, we wish to file an amended application, the purpose of which is to clarify the position of Stallworth oil and gas, the operating agent for waterflood Associates, Inc., which will be conducting a cooperative flood on lands adjacent to the lands for which Anadarko is making application. There was some doubt created by the language of our original application as to whether the Stallworth operations were previously authorized. We have found that it was authorized by previous order, and we have cited that in our amended application and that is essentially the purpose of it, to make the factual background a little clearer than it was in the original application.

MR. NUTTER: These applications filed in July will be superceded by amended application.

MR. ANDERSON: And we would ask that the exhibits attached to the original application become exhibits attached to the amended application.



MR. NUTTER: All right.

C. W. STUMHOFFER,

a witness, being first duly sworn according to law, upon his oath, testified as follows:

DIRECT EXAMINATION

BY MR. ANDERSON:

Q Mr. Stumhoffer, would you state your name, address and employment for the record?

A My name is C. W. Stumhoffer, S-t-u-m-h-o-f-f-e-r. I live in Fort Worth, Texas and employed by Anadarko Production Company as Superintendent, Secondary Recovery Division.

Q Have you previously qualified and testified as an expert witness before the Commission?

A Yes, I have.

MR. ANDERSON: Are Mr. Stumhoffer's qualifications acceptable?

MR. NUTTER: Yes, they are, please proceed.

Q (By Mr. Anderson) Mr. Stumhoffer, will you refer to Exhibits 1, 2 and 3, which are attached to the application and are now attached to the amended application which is being heard?

A Do you have the exhibits for the record?

Q Noting particularly Exhibit 1.

A Exhibit 1 is the plat of the area in question showing the



Anadarko operated properties in the area plus the offset operations of other operators.

Q Was that exhibit prepared by you or under your supervision?

A Yes, it was.

Q And does it accurately and correctly represent the well locations, property lines, operators, in the property lines?

A Yes, it does. It shows our Federal "Q" lease which is an authorized project located in the northwest quarter of Section 3, Township 17 South, Range 30 East.

Q All right, would you then turn to Exhibit 2 and explain that?

A Exhibit 2 is a diagrammatic sketch of a typical water injection completion we propose for this project.

Q If permission is granted by this Commission, will all the injection wells for which application is made here be completed substantially as shown in the schematic diagram?

A Yes, they will except for -- we have had a change in plans since this exhibit was made. We have found we have Lovington sand present in the San Andres and we will propose to dually complete and inject into the Grayburg sand down the annulus between the tubing and the casing and into the Lovington sand down the tubing under a



packer. This exhibit only shows a single completion.

MR. NUTTER: In other words, your Metex and Premier here you would have injection through the annulus?

A That is right.

MR. NUTTER: And into the upper San Andres the Lovington-Sand would be down the tubing?

A We have had other completions in this area very similar. At the time we prepared this exhibit we did not know the Lovington was potentially productive in this area. We have drilled two wells since that time and found the Lovington to be present in this area.

MR. NUTTER: This application is for three wells, being your "JJ" 2 and your "KK" 1 and "KK" 3?

A That is right.

MR. NUTTER: And this schematic diagram is for "KK" 3?

A That is right.

MR. NUTTER: Could you give us the surface pipe and the amount of cement that was used in that surface pipe on those other two wells?

A I do not have that with me.

MR. NUTTER: You could furnish those for all wells?

A Yes, I can.

MR. NUTTER: Including the Stallworth Well?

A Yes, I can.

Q (By Mr. Anderson) And turning to Exhibit 3, which is the



log of the typical injection well, would you identify that more completely and tell briefly what is depicted in Exhibit 3?

A Exhibit 3 is a gamma-ray neutron log of our Federal "KK" 3 located in the northwest quarter of the southeast quarter of Section 3, Township 17 South, Range 30 East and it shows the producing formation to the approximate top of the San Andres.

Q All of the information shown on all of these exhibits with the exception of Exhibit 2 and the changed plans is correct insofar as you know?

A Yes.

MR. ANDERSON: We move the acceptance of all of these exhibits which previously have been attached to our application.

MR. NUTTER: Anadarko's Exhibits 1, 2, 3, in Case 4409 will be admitted in evidence.

Q (By Mr. Anderson) Mr. Stumhoffer, would you very briefly explain the waterflood operations which are now being conducted pursuant to the authority previously given in Order R-2571?

A Waterflood operations were commenced on Anadarko's -- at the time it was Ambassador Oil Corporation Federal "Q" lease during 1963. At the time the waterflood was placed in operation two of the four wells on lease were converted to water injection, the No. 1 and 4 wells and two were



completed for production. The waterflood response has occurred on this lease and as of January 1st, 1969, we had recovered approximately 70,000 barrels of waterflood oil from the two producing wells. Primary production from the lease was a hundred and thirty-six thousand barrels.

Q Are there other waterflood operations being conducted in the immediate vicinity?

A Yes.

Q Would you tell the Examiner what those are?

A Newmont Oil Company operates an active waterflood project to the north of the Federal "Q" lease and Stallworth Oil and Gas operates an active waterflood on their Park lease located in the northeast quarter of Section 3, Township 17 South, Range 30 East. Stallworth Oil and Gas Company is agent for Gas and Water Associates, Inc.

Q Are those the same zones Anadarko is here applying for permission to flood?

A Metex and Premier zones, not the Lovington.

Q Is that true of both the Newmont operation and Waterflood Associates?

A Newmont has some completion in the Lovington but not offsetting our property.

Q Now in the application Anadarko has alleged that subject to the consent of this Commission, Anadarko and Stallworth



operating agent for Waterfloods, have agreed cooperatively to conduct some operations. Would you explain briefly the intent of those operations?

A In the cooperative agreement between Anadarko and Stallworth Oil and Gas, we plan to convert our Federal "KK" No. 3, Federal "KK" No. 3, to injection and Stallworth will convert its Park No. 4 to water injection.

Q Mr. Examiner, it is our understanding that Stallworth Oil and Gas has sent a telegram to the Commission indicating its agreement to conduct cooperatively the waterflood. I believe that has arrived.

MR. NUTTER: I believe that is correct. You might read that into the record.

MR. ANDERSON: This is a telegram, "State of New Mexico, Oil Conservation Commission, Santa Fe, New Mexico." It is dated August 17th, 1970, at 4:07 P.M. Text of telegram, "We are agreeable to a cooperative waterflood of acreage in Section 3, Township 17 South, Range 30 East, Square Lake Field, Eddy County, New Mexico and will convert Stallworth Oil and Gas No. 4 Park Well to water injection." Signed by Stallworth Oil and Gas by Mr. Stallworth, Jr., Operator.

Q (By Mr. Anderson) Insofar as you know, Mr. Stumhoffer, do you anticipate to encounter approximately the same operating conditions and productive characteristics in the

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area of the cooperative waterflood as has been encountered in the Federal "Q" waterflood previously conducted?

A Yes, all operating problems will be very similar.

Q Upon what is that anticipation based?

A It is based on the fact that the formations we will be working will be the same as Federal "Q" project.

Q Now, then, with respect to the south half of southeast quarter, the southeast to the southwest and west half of the southwest quarter of Section 3, Anadarko is asking for consent to drill certain injection wells. Would you explain briefly the operating plan in the acreage sometimes referred to as General American Oil Company acreage?

A General American Oil Company acreage that we are referring to in the south half of Section 3, we propose to -- at the present time there are three producing wells on this acreage, two wells in the north half of the southeast quarter and one well in the northeast quarter of the southwest quarter. We have drilled and have not completed for injection a well in the northwest quarter of the southwest quarter of Section 3 and a well in the southeast quarter of the southeast quarter of Section 3 that will be used for water injection and this will constitute our waterflood development for this area at the present time.



There maybe a possibility after further study and evaluation that we may want to drill additional wells on undeveloped portions of the acreage but at the present time no definite plans.

Q In the application it is alleged that as to the south half of the southwest quarter and southwest quarter of the southeast quarter, Section 3, and the northwest-northeast quarter, the south half of the northeast quarter and southwest quarter of Section 10, there are waterflood possibilities. Is that the additional acreage you would anticipate considering for waterflooding in the future?

A Yes, there are two producing wells on the north half of Section 10 that we have not included in the waterflood area at this time. Actually, the No. 2 Well in the northeast quarter of the northeast quarter of Section 10 is included but we did not include No. 3 -- there is Anadarko's Federal "R" lease. The No. 3 Well on the northwest quarter of the northwest quarter of Section 10 is not included in the waterflood area requested pending further development in the area.

Q Does that well produce now?

A Yes.

Q From what formation?

A Grayburg.

Q Based upon present information available, would you anticipate that in this additional area you have just discussed you would encounter the same formations and same producing acreages as in the area you are now waterflooding or asking consent to waterflood?

A Yes.

Q And is it your thought that without waiting for actual response to injection you would have sufficient information to make application for waterflooding and have this application treated on an administrative basis rather than formal hearing?

A Yes.

Q And you are so requesting by administrative procedure mechanics be set up to accomplish this?

A We request administrative approval for additional development in this area.

MR. ANDERSON: I believe that's all the questions I have, Mr. Examiner.

CROSS EXAMINATION

BY MR. NUTTER:

Q Mr. Stumhoffer, you indicated that you found you had this Lovington sand present. Is this going to be present in all wells?

A We had the Lovington sand present in the two wells we

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drilled. We have not completed the Federal 1 "KK" located southeast, southeast of Section 3 and the No. 2 Federal "JJ" located in the northwest to the southwest of Section 3. These two wells both encounter Lovington-Sand with porosity that we plan to complete in.

Q What about "KK" No. 3?

A It is not deep enough for a Lovington.

Q You plan to look at it?

A Yes, we plan to deepen this well.

Q It is possible you have Lovington-Sand in those three wells of yours. How about Stallworth-Park 4?

A The cooperative agreement we have submitted to him for consent requests that Lovington-Sand be proven or disproven as being productive under his location.

Q There is possibility that all four wells could have this Lovington-Sand and be completed as dual completion. You will furnish us with schematic diagrams for all four wells?

A This was an oversight. We did have a change in this completion of the proposed injection wells. This was the original plan. Subsequent to drilling the well, we found we had to change our plans.

MR. NUTTER: Any further questions of Mr. Stumhoffer?

You may be excused. Do you have anything further, Mr. Anderson?

MR. ANDERSON: That completes our presentation,
Mr. Examiner.

MR. NUTTER: I don't know if we got your exhibits.
Anadarko's Exhibits 1, 2 and 3 are admitted in evidence. Does
anyone else have anything they wish to offer in Case 4409?
The case will be taken under advisement.

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I N D E X

WITNESS

PAGE

C. W. STUMHOFFER

Direct examination by Mr. Anderson

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Cross examination by Mr. Nutter

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E X H I B I T S

OFFERED
AND
ADMITTED

Applicant's Exhibits Nos. 1, 2 and 3

13

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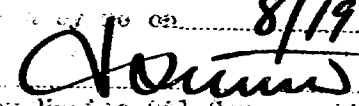
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STATE OF NEW MEXICO)
COUNTY OF BERNALILLO) S

I, SOVEIDA GONZALES, Court Reporter in and for the County of Bernalillo, State of New Mexico, do hereby certify that the foregoing and attached Transcript of Hearing before the New Mexico Oil Conservation Commssion was reported by me; and that the same is a true and correct record of the said proceedings, to the best of my knowledge, skill and ability.


COURT REPORTER

I do hereby certify that the foregoing is a complete record of the proceedings in the hearing held before the New Mexico Oil Conservation Commission on 8/19/70.

New Mexico Oil Conservation Commission

OIL CONSERVATION COMMISSION

P. O. BOX 2088
SANTA FE, NEW MEXICO 87501

March 27, 1973

Case # 4409

Anadarko Production Company
Two Greenway Plaza East, Suite 410
Houston, Texas 77046

Attention: Mr. D. G. Kernaghan

Re: Anadarko's Federal "R"
Waterflood Project

Gentlemen:

New Mexico Oil Conservation Commission Order No. R-4049 established an administrative procedure whereby the Secretary-Director may approve the institution of a waterflood project on Anadarko's R lease in Section 10, Township 17 South, Range 30 East, NMPM, upon completion of an injection well on said lease. Inasmuch as Anadarko Production Company has complied with the terms of Order R-4049 by the completion of Federal "R" Well No. 7, located 660 feet FNL and 1980 feet FEL of said Section 10 as a water injection well, I hereby grant approval of a waterflood project designated the Anadarko Square Lake R Waterflood Project. The subject waterflood project shall be governed by the provisions of Rules 701, 702, and 703 of the Commission Rules and Regulations.

Very truly yours,

A. L. PORTER, Jr.
Secretary-Director

ALP/JEK/og
cc: Oil Conservation Commission
Drawer DD
Artesia, New Mexico

cc: WEX 214

C
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P
Y



OIL CONSERVATION COMMISSION

STATE OF NEW MEXICO
P. O. BOX 2088 - SANTA FE
87501

GOVERNOR
DAVID F. CARGO
CHAIRMAN

LAND COMMISSIONER
ALEX J. ARMIGO
MEMBER

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

November 2, 1970

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

Re: Case No. 4409
Order No. R-4049
Applicant:
Anadarko Production Co.

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,

very truly yours,
A. L. Carter, Jr.

A. L. PORTER, Jr.
Secretary-Director

ALP/ir

Copy of order also sent to:

Hobbs OCC x
 Artesia OCC x
 Aztec OCC
 State Engineer x

Other _____

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 OR CONSIDERING:

CASE No. 4409
Order No. R-4049

APPLICATION OF ANADARKO PRODUCTION
COMPANY FOR TWO WATERFLOOD EXPANSIONS,
EDDY COUNTY, NEW MEXICO.

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9:30 a.m. on August 19, 1970,
at Santa Fe, New Mexico, before Examiner Daniel S. Nutter.

NOW, on this 2nd day of November, 1970, 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, Anadarko Production Company, seeks
permission to expand the waterflood operation it is presently
conducting on its Federal "Q" Lease, Section 3, Township 17 South,
Range 30 East, NMPM, Square Lake Pool, Eddy County, New Mexico,
by the conversion to water injection of three wells in Units J,
L, and P of said Section 3 on its Federal "JJ" and Federal "KK"
Leases.

(3) That the applicant further seeks an administrative
procedure whereby it may further expand its waterflood opera-
tions to permit the institution of a waterflood project on
its "R" Lease in Section 10 of said Township and Range, if and
when an injection well is completed on said lease.

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CASE No. 4409

Order No. R-4049

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

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

(6) That the subject application should be approved and the projects should be governed by the provisions of Rules 701, 702, and 703 of the Commission Rules and Regulations; provided however, that the showing of well response as required by Rule 701 E-5 should not be necessary before obtaining administrative approval for the conversion of additional wells to water injection.

IT IS THEREFORE ORDERED:

(1) That the applicant, Anadarko Production Company, is hereby authorized to institute the following additional waterflood projects in the Square Lake Pool by the injection of water into the Grayburg and San Andres formations through the following-described wells in Township 17 South, Range 30 East, NMPM, Eddy County, New Mexico:

Anadarko Square Lake JJ Waterflood Project

Injection Well:

Anadarko Federal "JJ" Well No. 2, (to be drilled), Unit L, Section 3

Anadarko Square Lake KK Waterflood Project

Injection Wells:

Anadarko Federal "KK" Well No. 1, (to be drilled), Unit P, Section 3

Anadarko Federal "KK" Well No. 3, Unit J, Section 3

(2) That the Secretary-Director of the Commission may approve the institution of an additional Square Lake waterflood

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CASE No. 4409

Order No. R-4049

project on the applicant's "R" Lease located in Section 10, Township 17 South, Range 30 East, NMPM, Eddy County, New Mexico, upon the completion of a water injection well for said pool on said lease.

(3) That the above-described waterflood projects shall be governed by the provisions of Rules 701, 702, and 703 of the Commission Rules and Regulations;

PROVIDED HOWEVER, that the Secretary-Director of the Commission may approve expansion of the above-described waterflood projects to include such additional injection wells in the areas of said projects as may be necessary to complete efficient injection patterns and that the showing of well response as required by Rule 701 E-5 shall not be necessary before obtaining administrative approval for the conversion of additional wells to water injection.

(4) That monthly progress reports of the waterflood projects herein authorized shall be submitted to the Commission in accordance with Rules 704 and 1120 of the Commission Rules and Regulations.

(5) 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


ALEX J. ARMIJO, Member


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



OIL CONSERVATION COMMISSION

P. O. BOX 2088

SANTA FE, NEW MEXICO 87501

November 3, 1970

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

Dear Sir:

Reference is made to Commission Order No. R-4049, recently entered in Case No. 4409, approving the Anadarko Square Lake JJ Waterflood Project and the Square Lake KK Waterflood Project.

Injection is to be through the three authorized water injection wells, each of which is to be equipped with a string of plastic-lined tubing set in a packer located between the Grayburg and San Andres zones. Injection into the San Andres shall be through the tubing while injection into the Grayburg shall be through the casing-tubing annulus. Surface casing in all injection wells shall be set at a minimum of 400 feet beneath the surface with cement circulated.

As to allowable, our calculations indicate that when all of the authorized injection wells have been placed on active injection, the maximum allowable which the JJ project will be eligible to receive under the provisions of Rule 701-E-3 is 84 barrels per day when the Southeast New Mexico normal unit allowable is 42 barrels per day or less and the maximum for the KK project is 126 barrels per day.

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.

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 aforesaid 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.

OIL CONSERVATION COMMISSION

P. O. BOX 2088

SANTA FE, NEW MEXICO 87501

-2-

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

November 3, 1970

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/DSN/ir

cc: Oil Conservation Commission
Hobbs and Artesia, New Mexico

Mr. D. E. Gray, State Engineer Office
Santa Fe, New Mexico

ROUGH DRAFT FOR WATERFLOOD LETTERS

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

Reference is made to ^{recently} Commission Order No. R-4049, entered in Case No. 4409, approving the Quadrado Square Lake JJ Waterflood Project and the Square Lake KK Waterflood Project.

Injection is to be through the three authorized water injection wells, each of which is to be equipped with a string of plastic-lined tubing set in a packer located between the Grayburg and San Andres zones. Injection into the San Andres shall be through the tubing annulus, while injection into the Grayburg shall be through the casing tubing annulus. Surface casing in all injection wells shall be set at 10' 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 84 barrels per day when the Southeast New Mexico normal unit allowable is 42 barrels per day or less and the maximum for the KK project is 126 barrels per day. 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.

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

cc: OCC: Hobbs x
Artesia x
Aztec

USGS

~~MR. FRANK IRBY~~, State Engineer Office, Santa Fe, New Mexico

Mr. D. E. Gray

a minimum of 400 feet diameter and 5' diameter

Docket No. 19-70

DOCKET: REGULAR HEARING - WEDNESDAY - AUGUST 19, 1970

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

- ALLOWABLE:
- (1) Consideration of the oil allowable for September and October, 1970;
 - (2) Consideration of the allowable production of gas for September, 1970 from fifteen prorated pools in Lea, Eddy, Roosevelt and Chaves Counties, New Mexico. Consideration of the allowable production of gas from nine prorated pools in San Juan, Rio Arriba and Sandoval Counties, New Mexico, September, 1970.

THE FOLLOWING CASES WILL BE HEARD BEFORE DANIEL S. NUTTER, EXAMINER, OR ELVIS A. UTZ, ALTERNATE EXAMINER, IN THE OIL CONSERVATION COMMISSION CONFERENCE ROOM ON THE SECOND FLOOR OF SAID BUILDING AT 9:30 a.m.

CASE 4414: Southeastern New Mexico nomenclature case calling for an order for the creation and extension of certain pools in Lea, Chaves, and Eddy Counties, New Mexico:

- (a) Create a new pool in Lea County, New Mexico, classified as a gas pool for Morrow production and designated as the Townsend-Morrow Gas Pool. The discovery well is the Avance Oil & Gas Company State ETA No. 2 located in Unit I of Section 8, Township 16 South, Range 35 East, NMPM. Said pool would comprise:

TOWNSHIP 16 SOUTH, RANGE 35 EAST, NMPM
SECTION 8: SE/4

- (b) Extend the Allison-Pennsylvanian Pool in Lea County, New Mexico, to include therein:

TOWNSHIP 9 SOUTH, RANGE 36 EAST, NMPM
SECTION 12: S/2

- (c) Extend the Baum-Upper Pennsylvanian Pool in Lea County, New Mexico, to include therein:

TOWNSHIP 13 SOUTH, RANGE 32 EAST, NMPM
SECTION 36: NW/4

August 19, 1970 - Regular Hearing
-2-

Docket No. 19-70

(d) Extend the Drinkard Pool in Lea County, New Mexico, to include therein:

TOWNSHIP 21 SOUTH, RANGE 36 EAST, NMPM
SECTION 24: E/2 NE/4

(e) Extend the EK Yates-Seven Rivers-Queen Pool in Lea County, New Mexico, to include therein:

TOWNSHIP 18 SOUTH, RANGE 34 EAST, NMPM
SECTION 19: SE/4
SECTION 20: SW/4

(f) Extend the Hobbs-Blinebry Pool in Lea County, New Mexico, to include therein:

TOWNSHIP 18 SOUTH, RANGE 38 EAST, NMPM
SECTION 19: S/2

(g) Extend the Indian Basin-Upper Pennsylvanian Gas Pool in Eddy County, New Mexico, to include therein:

TOWNSHIP 22 SOUTH, RANGE 23 EAST, NMPM
SECTION 21: N/2 and N/2 N/2 N/2 S/2

(h) Extend the Paduca-Morrow Gas Pool in Eddy County, New Mexico, to include therein:

TOWNSHIP 25 SOUTH, RANGE 31 EAST, NMPM
SECTION 1: W/2
SECTION 12: W/2

(i) Extend the Springs-Upper Pennsylvanian Gas Pool in Eddy County, New Mexico, to include therein:

TOWNSHIP 21 SOUTH, RANGE 25 EAST, NMPM
SECTION 3: Lots 1, 2, 7, 8, 9, 10,
15 and 16

(j) Extend the Sulimar-Queen Pool in Chaves County, New Mexico, to include therein:

TOWNSHIP 15 SOUTH, RANGE 29 EAST, NMPM
SECTION 26: SW/4 NE/4

August 19, 1970 - Regular Hearing
-3-

Docket No. 19-70

(k) Extend the Tres Papalotes-Pennsylvanian Pool in Lea County, New Mexico, to include therein:

TOWNSHIP 14 SOUTH, RANGE 34 EAST, NMPM
SECTION 33: NW/4

(l) Extend the Northwest Vacuum-Wolfcamp Pool in Lea County, New Mexico, to include therein:

TOWNSHIP 17 SOUTH, RANGE 34 EAST, NMPM
SECTION 5: SW/4

CASE 4413: In the matter of the hearing called by the Oil Conservation Commission upon its own motion to permit Stanley Leonard Jones dba Francisca Corporation and all other interested parties to appear and show cause why the Francisca Corporation Beeman Well No. 1 located 1980 feet from the South and West lines of Section 2, Township 24 South, Range 28 East, Eddy County, New Mexico, should not be plugged and abandoned in accordance with a Commission-approved plugging program.

CASE 4172: (Reopened)

In the matter of Case No. 4172 being reopened pursuant to the provisions of Order No. R-3816, which order established 80-acre spacing units for the Northeast Lovington-Pennsylvanian Pool, Lea County, New Mexico. All interested parties may appear and show cause why the said pool should not be developed on 40-acre spacing units.

CASE 4399: Application of Pan American Petroleum Corporation for downhole commingling, Lea County, New Mexico. Applicant, in the above-styled cause, seeks authority to commingle in the wellbore production from the Blinebry, Tubbs, and Drinkard Oil Pools in its Southland Royalty "A" Well No. 8 located in Unit O of Section 4, Township 21 South, Range 37 East, Lea County, New Mexico.

CASE 4400: Application of David C. Collier for an exception to Order No. R-3221, as amended, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks an exception to Order No. R-3221, as amended, which order prohibits the disposal of water produced in conjunction with the production of oil on the surface of the ground in Lea, Eddy, Chaves and Roosevelt Counties, New Mexico. Said exception would be for applicant's Southern Federal Lease in Units A, C, E, G, I, K, and M of Section 30, Township 19 South, Range 31 East, North Hackberry Yates-Seven Rivers Pool, Eddy County, New Mexico.

- CASE 4401: Application of Read and Stevens, Inc. for salt water disposal, Lea County, New Mexico. Applicant, in the above-styled cause, seeks authority to dispose of produced salt water into the Queen, San Andres, Glorieta, and Delaware formations in the open-hole interval between the 8 5/8 inch casing shoe at 3998 feet and the top of the cement at 6109 feet in its Getty State "B.G." Well No. 1 located in Unit K of Section 12, Township 19 South, Range 34 East, Quail-Queen Pool, Lea County, New Mexico.
- CASE 4402: Application of Reserve Oil and Gas Company for a unit agreement, Lea County, New Mexico. Applicant, in the above-styled cause, seeks approval for the Cooper-Jal Unit Area comprising 2581 acres, more or less, of Federal and fee lands in Township 24 South, Ranges 36 and 37 East, Lea County, New Mexico.
- CASE 4403: Application of Reserve Oil and Gas Company for a waterflood project, Lea County, New Mexico. Applicant, in the above-styled cause, seeks authority to institute a waterflood project by water injection through 26 wells into the Lower Seven-Rivers and Queen formations underlying its Cooper-Jal Unit Area, Langlie-Mattix Pool, Lea County, New Mexico.
- CASE 4404: Application of Reserve Oil and Gas Company for a waterflood project, Lea County, New Mexico. Applicant, in the above-styled cause, seeks authority to institute a waterflood project by water injection through 23 wells into the Tansill, Yates, and Upper and Middle Seven-Rivers formations underlying its Cooper-Jal Unit Area, Jalmat Pool, Lea County, New Mexico.
- CASE 4405: Application of Reserve Oil and Gas Company for a unit agreement, Lea County, New Mexico. Applicant, in the above-styled cause, seeks approval of the South Langlie-Jal Unit Area comprising 1080 acres, more or less, of fee lands in Township 25 South, Range 37 East, Lea County, New Mexico.
- CASE 4406: Application of Reserve Oil and Gas Company for a waterflood project, Lea County, New Mexico. Applicant, in the above-styled cause, seeks authority to institute a waterflood project by water injection through 13 wells into the Seven Rivers and Queen formations underlying its South Langlie-Jal Unit Area, Langlie-Mattix Oil Pool, Lea County, New Mexico.
- CASE 4407: Application of Tenneco Oil Company for an unorthodox oil well location, McKinley County, New Mexico. Applicant, in the above-styled cause, seeks approval for an unorthodox Dakota oil well location 1980 feet from the South and East lines of Section 13, Township 17 North, Range 9 West, Hospah Field, McKinley County, New Mexico, said location being closer than 330 feet to an inner boundary line.

- CASE 4408: Application of Keohane and Westall for an exception to Order No. R-3221, as amended, Eddy County, New Mexico. Applicants, in the above-styled cause, seek an exception to Order No. R-3221, as amended, which order prohibits the disposal of water produced in conjunction with the production of oil on the surface of the ground in Lea, Eddy, Chaves, and Roosevelt Counties, New Mexico. Said exception would be for applicants' State Well No. 1, located in Unit D of Section 2, Township 19 South, Range 31 East, Shugart Pool, Eddy County, New Mexico.
- CASE 4409: Application of Anadarko Production Company for two waterflood expansions, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks the expansion of its Federal Q Waterflood Project by the conversion to water injection of three additional wells in Units J, L, and P of Section 3, Township 17 South, Range 30 East, Square Lake Pool, Eddy County, New Mexico. Applicant further seeks the expansion of the Stallworth Oil and Gas Company Parke Waterflood Project by the conversion to water injection of one additional well in Unit H of said Section 3.
- CASE 4410: Application of Major, Giebel & Forster for compulsory pooling, Lea County, New Mexico. Applicant, in the above-styled cause, seeks an order pooling all mineral interests underlying the SE/4 of Section 28, Township 25 South, Range 37 East, Crosby-Devonian Pool, Lea County, New Mexico, said acreage to be dedicated to a well to be drilled in said quarter section. Also, to be considered will be the cost of drilling said well, a charge for the risk involved, a provision for the allocation of actual operating costs, and the establishment of charges for supervision of said well.
- CASE 4411: Application of Continental Oil Company for an exception to Rule 104 C I, Lea County, New Mexico. Applicant, in the above-styled cause, seeks an exception to Rule 104 C I of the Commission Rules and Regulations to permit the completion within 660 feet of another producing well in the same formation of its State H-35 Well No. 10 located 2030 feet from the North line and 1780 feet from the East line of Section 35, Township 17 South, Range 34 East, Vacuum Pool, Lea County, New Mexico.
- CASE 4412: Application of Continental Oil Company for a pressure maintenance project, Lea County, New Mexico. Applicant, in the above-styled cause, seeks authority to institute a pressure maintenance project by the injection of water into the Yates and Seven Rivers formations through two wells on its McCallister "A" lease in Section 24, Township 26 South, Range 36 East, Scarborough Yates-Seven Rivers Pool, Lea County, New Mexico.



Telegram

KA105 PB239

P APA232TF PDF=AP PAOLI PENN 17 442PEDT=
STATE OF NEWMEXICO OIL CONSERVATION COMM=
SANTEFE NMEX=

1970 AUG 17 PM 4 07

WE ARE AGREEABLE TO A COOPERATIVE WATERFLOOD OF ACREAGE
IN SECTION 3 TOWNSHIP 17SOUTH RANGE 30 EAST SQUARE LAKE
FIELD EDDY COUNTY NEWMEXICO AND WILL CONVERT STALLWORTH
OIL AND GAS #4 PARKE WELL TO WATER INJECTION=
STALLWORTH OIL AND GAS BY MR STALLWORTH JR OPERATOR.

A handwritten signature in dark ink, appearing to be 'Jen' or similar, written over the typed text.



ANADARKO PRODUCTION COMPANY

3109 WINTHROP AVENUE P. O. BOX 9317 FORT WORTH, TEXAS 76107
CABLE ADDRESS: ANDARK

September 3, 1970

Mr. D.S. Nutter
New Mexico Oil Conservation Commission
P.O. Box 2088
Santa Fe, New Mexico 87501

70 SEP 8 AM 8 36

RE: Case 4409 - August 19, 1970
Regular Hearing - Application
Anadarko Production Company
for Expansion Federal "Q"
Waterflood Project, Square Lake
Field, Eddy County, New Mexico

Dear Mr. Nutter:

As per your request at the August 19, 1970 Regular Hearing of the New Mexico Oil Conservation Commission pertaining to Case 4409 - Anadarko Production Company's application for expansion of its Federal "Q" Waterflood Project, Square Lake Field, Eddy County, New Mexico, we respectfully submit herewith three (3) corrected Exhibit IIs - diagrammatic sketches of typical water injection well completions on the proposed waterflood expansion:

Of the two diagrammatic sketches, one shows the proposed downhole completion for water injection of Anadarko's Federal KK Well No. 1, a newly drilled water injection well. The second diagrammatic shows the proposed downhole completion for water injection of Anadarko's Federal KK Well No. 3, a producing well to be converted to water injection service.

These diagrammatic sketches are for two of the three wells proposed for water injection in the proposed waterflood expansion. The third

Mr. S.D. Nutter
New Mexico Oil Conservation Commission

Page 2
September 3, 1970

proposed water injection well is Federal JJ Well No. 2 located NW/4 SW/4 Section 3-T17S-R30E, a newly drilled well with a drilled total depth of 3114 feet.

8-5/8" O.D. surface casing in Federal JJ Well No. 2 was set at 443 feet and cemented with 200 sacks, and 4 1/2" O.D. long string was set at 3105 feet and cemented with 250 sacks. Completion will be through perforations in the Grayburg-San Andres in a manner comparable to that shown on the diagrammatic sketch for Federal KK Well No. 1.

Should additional data be required to assist you in granting approval of this application, please advise this office.

Respectfully yours,

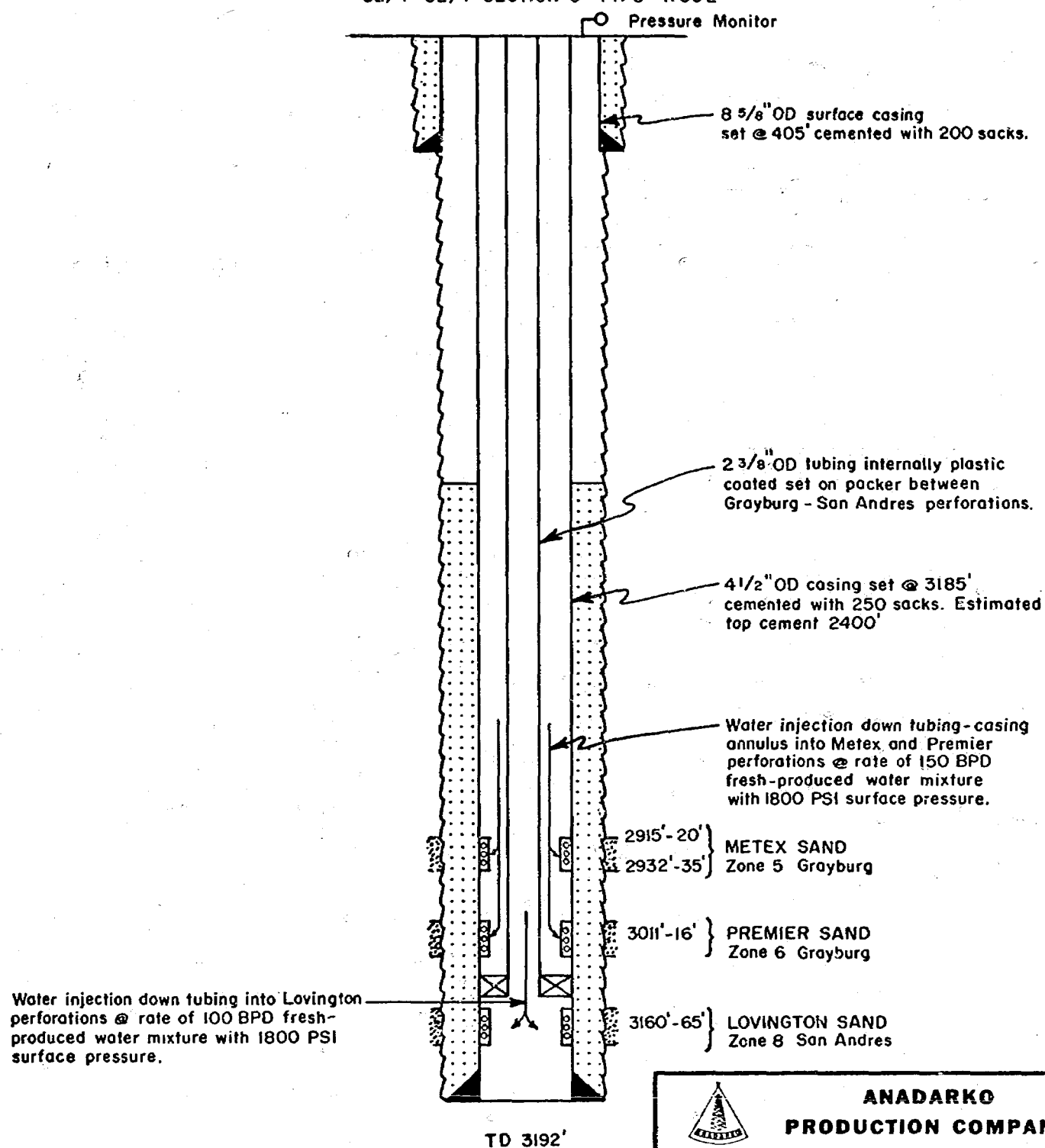
ANADARKO PRODUCTION COMPANY

C. W. Stumhoffer

C.W. Stumhoffer
Superintendent
Secondary Recovery Division

CWS/nl
Encl:

FEDERAL "KK" WELL NO.1
SE/4 SE/4 SECTION 3 - T17S - R30E



**ANADARKO
PRODUCTION COMPANY**

DIAGRAMMATIC SKETCH
OF
TYPICAL WATER INJECTION WELL COMPLETION
NEW WELL
WEST SQUARE LAKE WATERFLOOD PROJECT

SQUARE LAKE FIELD
EDDY COUNTY, NEW MEXICO

Exhibit - 2

FEDERAL "KK" WELL NO. 3
NW/4 SE/4 SECTION 3-T17S - R30E

Pressure Monitor

10 3/4" O.D. surface casing set at 570' cemented with 50 sacks.

7" O.D. casing set at 2827' cemented with 100 sacks. Estimated top of cement 2576'

Water injection down tubing-liner annulus into Metex and Premier perforations at rate of 150 B.P.D. fresh-produced water mixture with 1800 P.S.I. surface pressure.

2880' - 90' } METEX SAND
Zone 5 Grayburg

2974' - 90' } PREMIER SAND
Zone 6 Grayburg

Water injection down tubing into open hole Lovington at rate of 100 B.P.D. fresh-produced water mixture with 1800 P.S.I. surface pressure.

4 1/2" O.D. liner cemented from 2782' to 3010'
2 3/8" O.D. tubing internally coated with plastic, set on Packer in open hole between Grayburg - San Andres zones.

(Est.) 3134' - 39' } LOVINGTON SAND
Zone 8 San Andres

WELL WILL BE DEEPEND
THRU LOVINGTON SAND BELOW
4 1/2" O.D. LINER TO 3190'
(EST. T.D.)



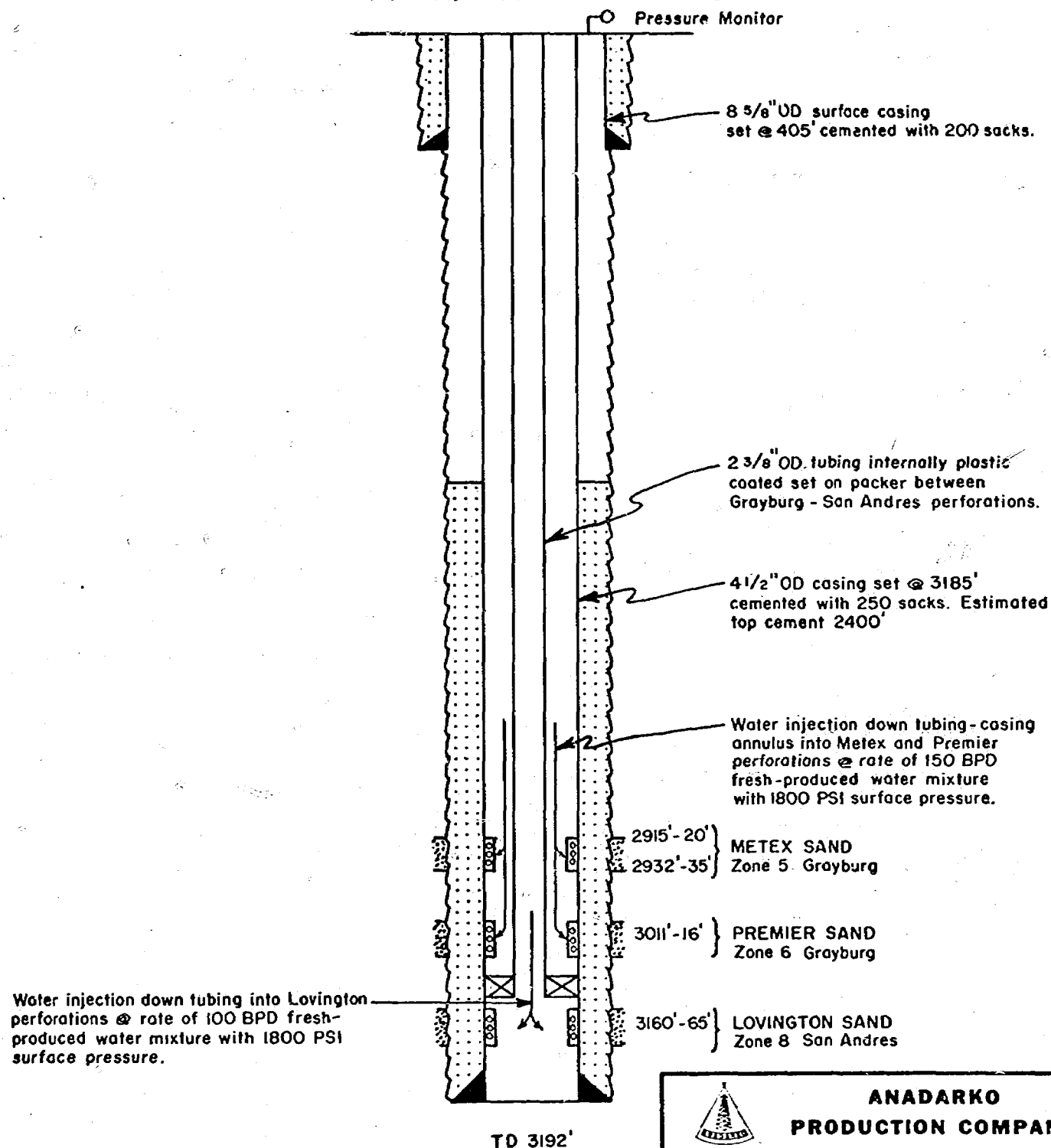
**ANADARKO
PRODUCTION COMPANY**

DIAGRAMMATIC SKETCH
OF
TYPICAL WATER INJECTION WELL COMPLETION
CONVERSION OF EXISTING WELL
WEST SQUARE LAKE WATER FLOOD PROJECT

SQUARE LAKE FIELD
EDDY COUNTY, NEW MEXICO

Exhibit - 2

FEDERAL "KK" WELL NO. 1
SE/4 SE/4 SECTION 3-T17S-R30E



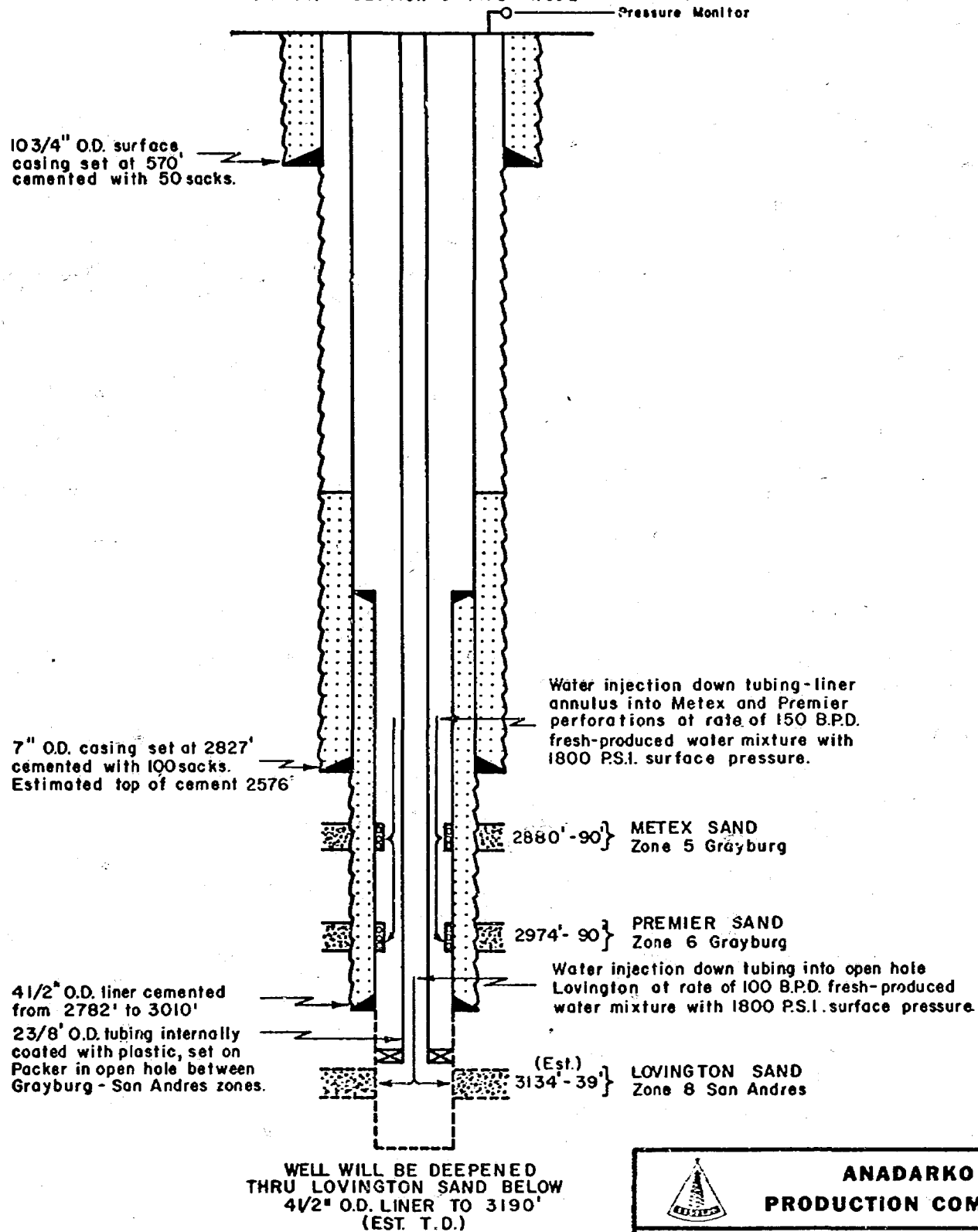
**ANADARKO
PRODUCTION COMPANY**

DIAGRAMMATIC SKETCH
OF
TYPICAL WATER INJECTION WELL COMPLETION
NEW WELL
WEST SQUARE LAKE WATERFLOOD PROJECT

SQUARE LAKE FIELD
EDDY COUNTY, NEW MEXICO

Exhibit - 2

FEDERAL "KK" WELL NO. 3
NW/4 SE/4 SECTION 3-T17S - R30E



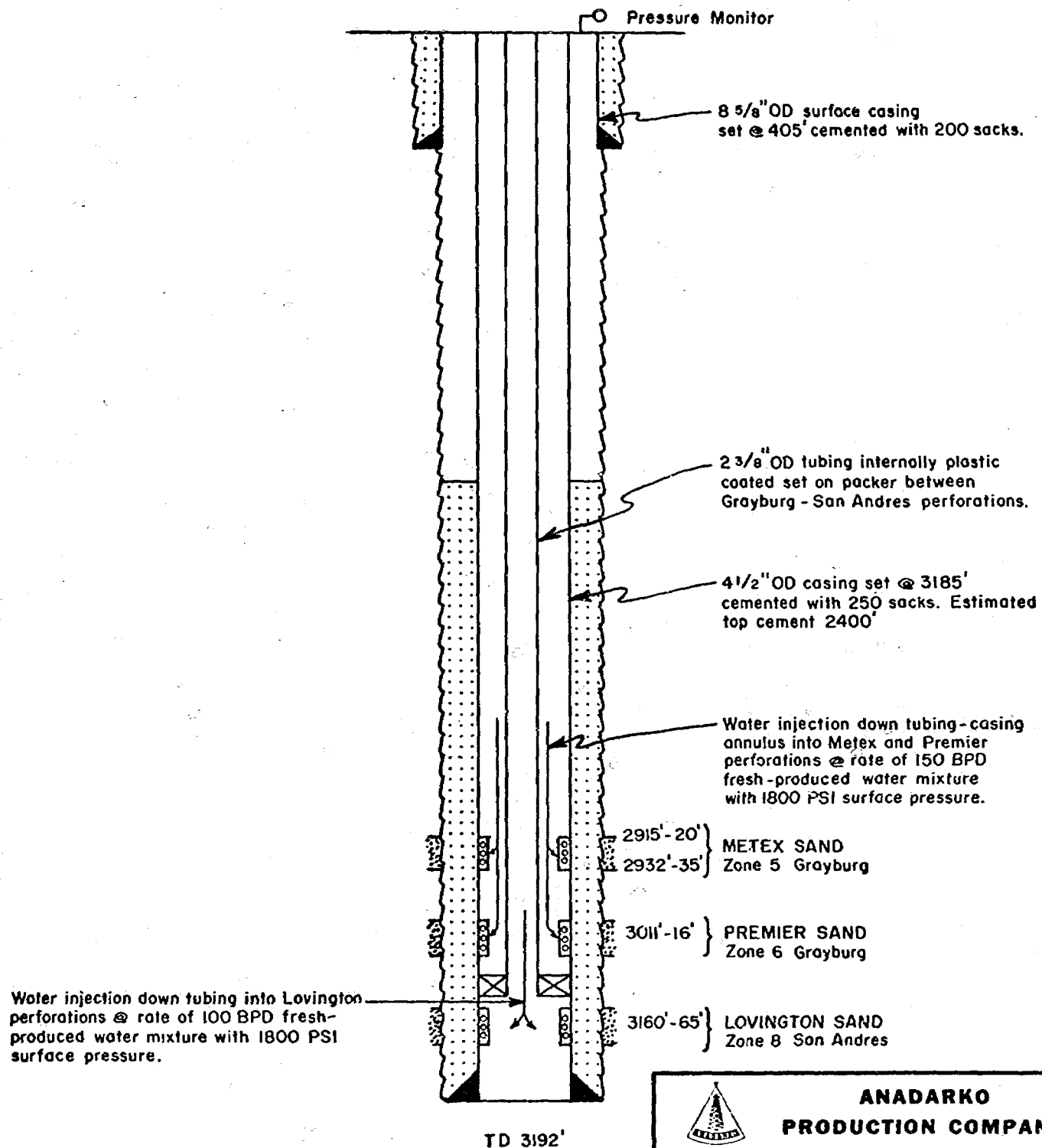
**ANADARKO
PRODUCTION COMPANY**

DIAGRAMMATIC SKETCH
OF
TYPICAL WATER INJECTION WELL COMPLETION
CONVERSION OF EXISTING WELL
WEST SQUARE LAKE WATERFLOOD PROJECT

SQUARE LAKE FIELD
EDDY COUNTY, NEW MEXICO

Exhibit - 2

FEDERAL "KK" WELL NO. 1
SE/4 SE/4 SECTION 3 - T17S - R30E

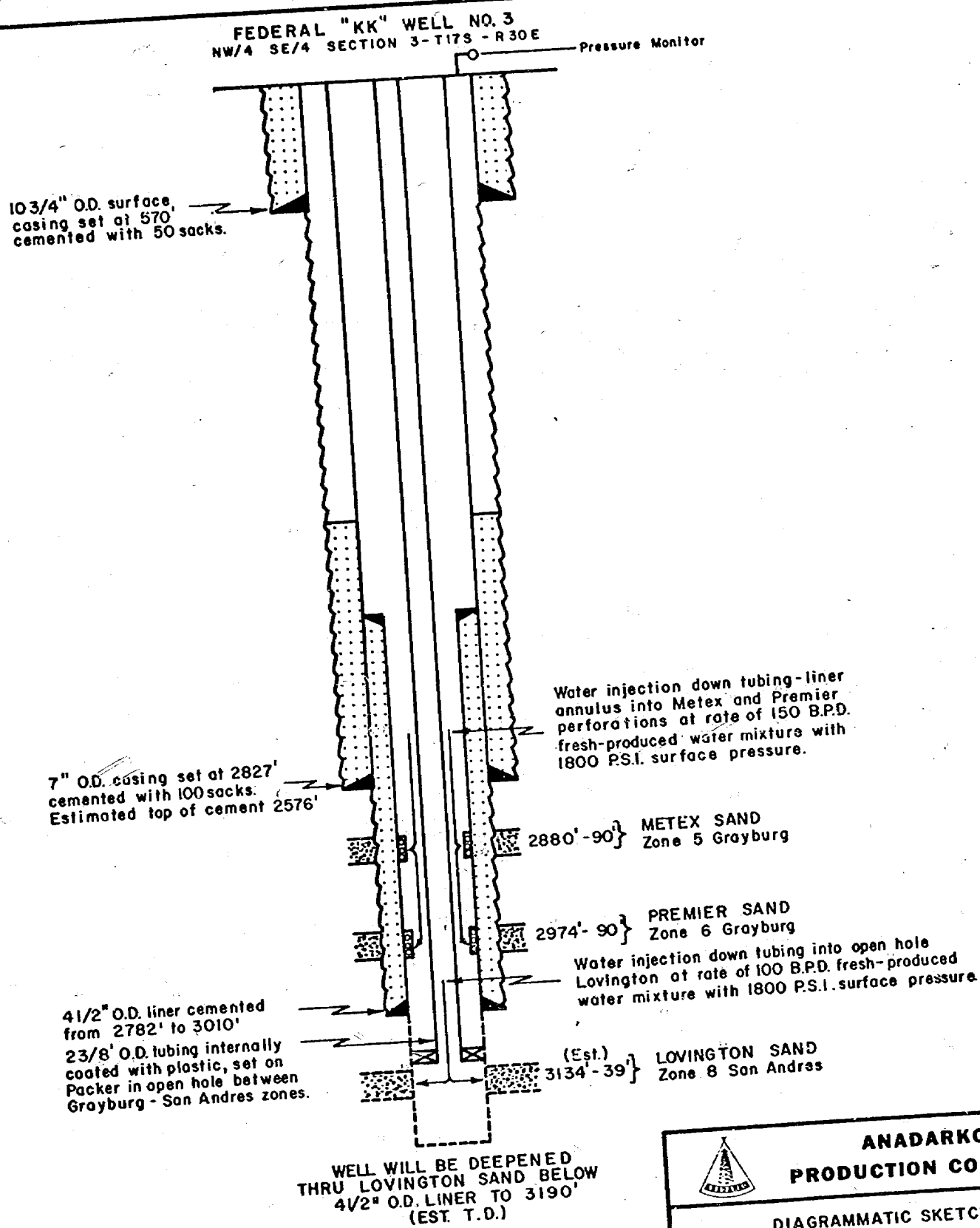


**ANADARKO
PRODUCTION COMPANY**

DIAGRAMMATIC SKETCH
OF
TYPICAL WATER INJECTION WELL COMPLETION
NEW WELL
WEST SQUARE LAKE WATERFLOOD PROJECT

SQUARE LAKE FIELD
EDDY COUNTY, NEW MEXICO

Exhibit - 2

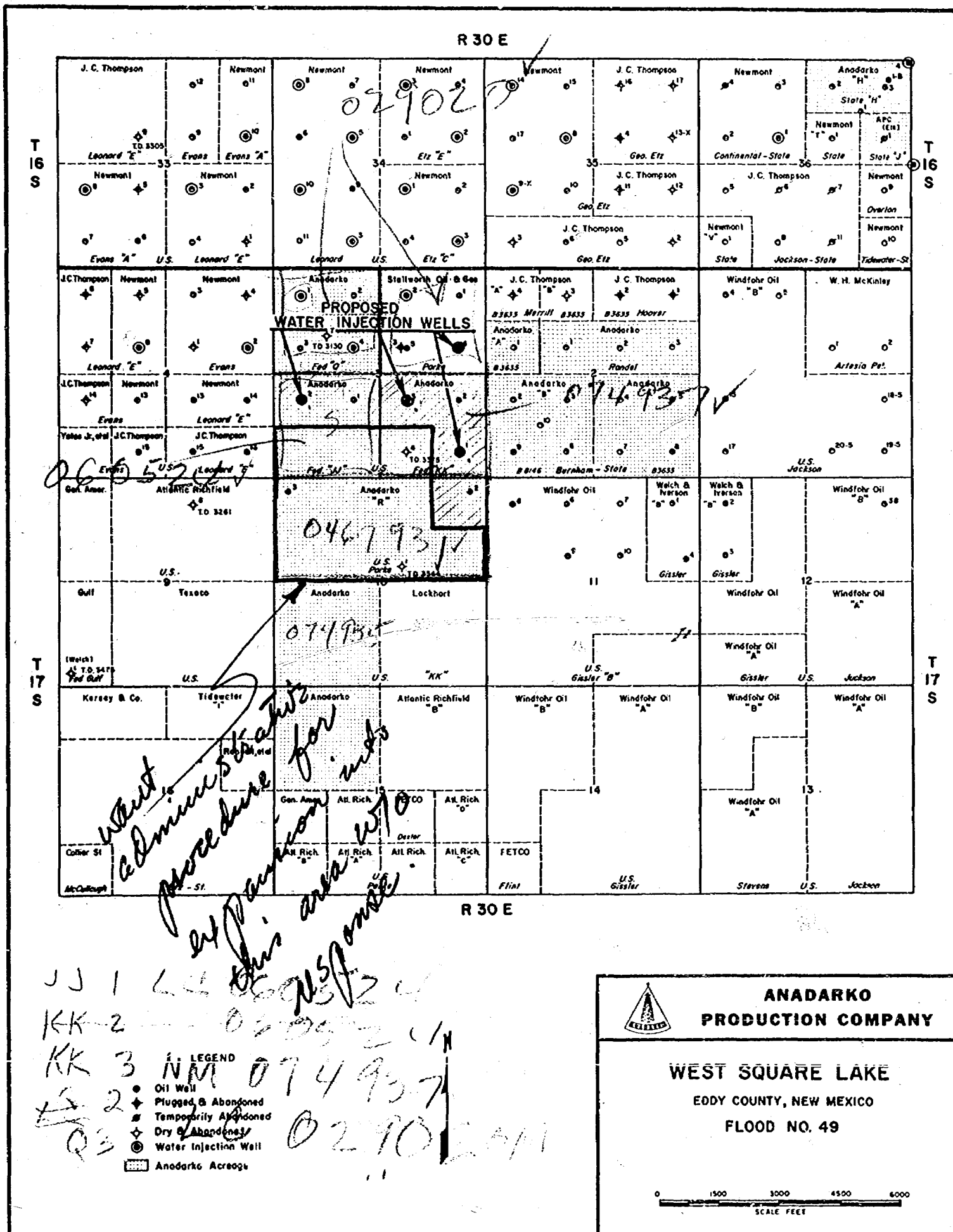


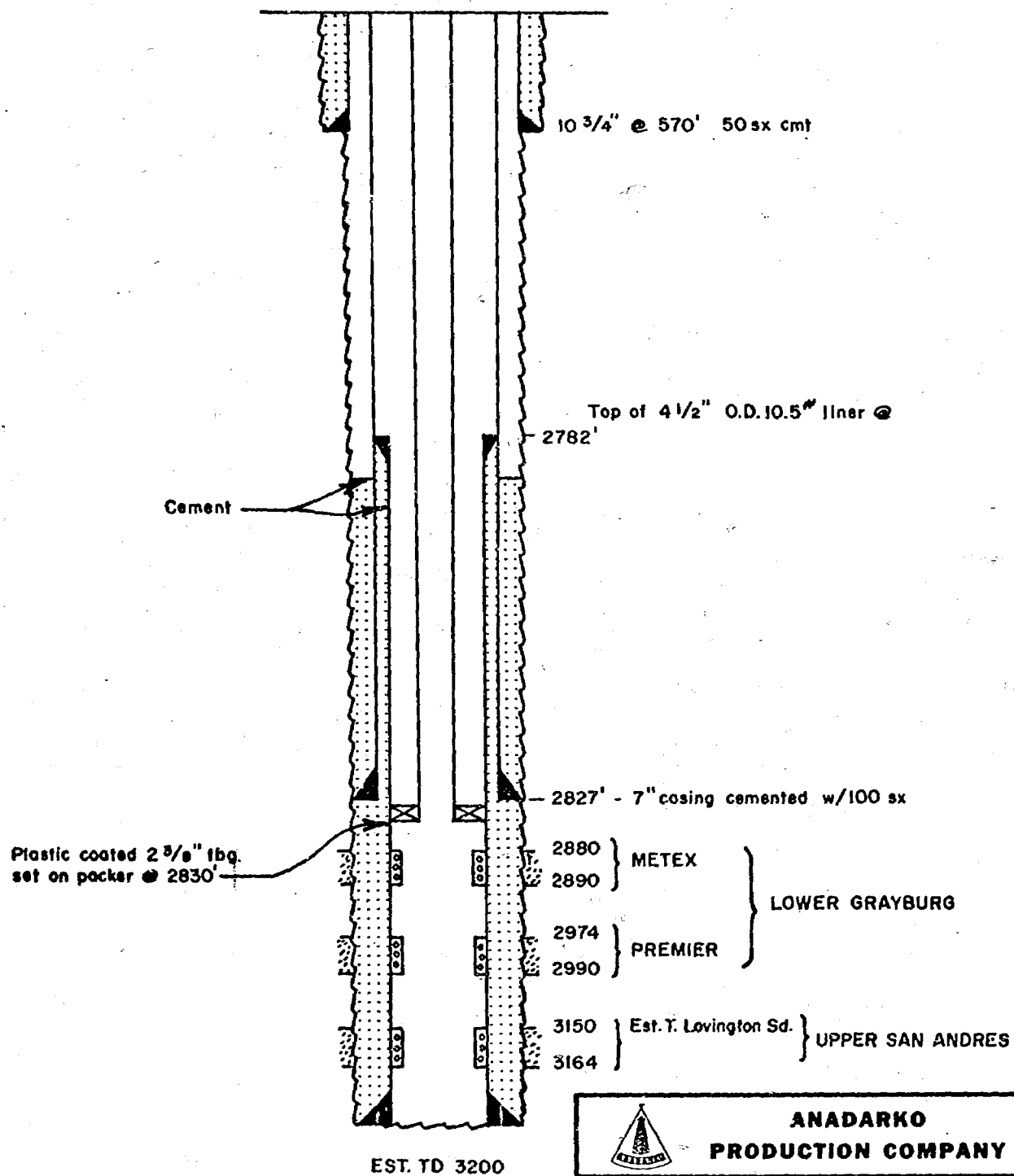
**ANADARKO
PRODUCTION COMPANY**

DIAGRAMMATIC SKETCH
OF
TYPICAL WATER INJECTION WELL COMPLETION
CONVERSION OF EXISTING WELL
WEST SQUARE LAKE WATERFLOOD PROJECT

SQUARE LAKE FIELD
EDDY COUNTY, NEW MEXICO

Exhibit - 2





**ANADARKO
PRODUCTION COMPANY**

FEDERAL KK WELL NUMBER 3
SQUARE LAKE FIELD
EDDY COUNTY, NEW MEXICO
DIAGRAMMATIC SKETCH
OF
TYPICAL WATER INJECTION WELL

Case 4409

*Amended appl
(to be used w/ exhibits
attached to orig)*

BEFORE THE NEW MEXICO OIL CONSERVATION COMMISSION

SANTA FE, NEW MEXICO

IN THE MATTER OF THE APPLICATION OF)
ANADARKO PRODUCTION COMPANY FOR AN)
ORDER AUTHORIZING THE EXPANSION OF)
THE WEST SQUARE LAKE WATERFLOOD)
PROJECT TO INCLUDE THE N/2 SW/4,)
THE N/2 SE/4 AND THE SE/4 SE/4 OF)
SECTION 3 AND THE NE/4 NE/4 OF)
SECTION 10, TOWNSHIP 17 SOUTH,)
RANGE 30 EAST, EDDY COUNTY, NEW)
MEXICO AND PROVIDING PROCEDURES FOR)
SUCH EXPANSION AND FOR FURTHER)
EXPANSION.)

Case No. 4409

A M E N D E D A P P L I C A T I O N

COMES NOW Anadarko Production Company, hereinafter referred to as "Applicant", and makes its amended application for the expansion by this Commission of Applicant's West Square Lake Waterflood Project, Eddy County, New Mexico to include the N/2 SW/4, the N/2 SE/4 and the SE/4 SE/4 of Section 3 and the NE/4 NE/4 of Section 10, Township 17 South, Range 30 East, Eddy County, New Mexico, and in support of this application states:

1. Order No. R-2571 entered August 21, 1963, authorized Applicant to institute a waterflood project in the Square Lake Pool, Eddy County, New Mexico by injecting water into the Lower Grayburg and Upper San Andres formations in and under the NW/4 of Section 3, Township 17 South, Range 30 East.

2. The operation of Applicant's waterflood project pursuant to said Order No. R-2571 and the operation of the Newmont Oil Company and the Water Flood Associates, Inc. Square Lake Waterflood projects in the immediate vicinity have established the feasibility of waterflooding said formations in said pool and has further established that such flooding will

result in increased ultimate recovery of oil and will, therefore, prevent waste.

3. Applicant and Stallworth Oil & Gas, operating agent for Water Flood Associates, Inc., have agreed cooperatively to waterflood the said formations in and under the S/2 NE/4 and the N/2 SE/4 of Section 3, Township 17 South, Range 30 East. Pursuant to said agreement, Applicant's Federal "KK" Well No. 3 located in the NW/4 SE/4 of Section 3 and Stallworth Oil & Gas' Federal Parke Well No. 4 located in the SE/4 NE/4 of Section 3 are proposed to be converted to injection wells. The proposed action of Stallworth Oil & Gas, as operating agent for Water Flood Associates, Inc., was heretofore authorized by this Commission by Order No. R-2271, entered June 7, 1962. Applicant intends to produce from its Federal "KK" No. 2 Well located in the NE/4 SE/4 of Section 3 and Applicant is authorized to state that Stallworth Oil & Gas intends to produce from its Federal Parke Well No. 5 located in the SW/4 of NE/4 of Section 3.

4. Applicant has entered into an Agreement with General American Oil Company of Texas whereby Applicant will be entitled to receive an assignment of the operating rights in and under the S/2 SE/4, the SE/4 SW/4 and the W/2 SW/4 of Section 3 upon the completion of two injection wells and the commencement of the injection of water thereinto. Applicant therefore proposes to drill injection wells as follows: Federal "JJ" Well No. 2 located in the NW/4 SW/4 of Section 3 and Federal "KK" Well No. 1 located in the SE/4 SE/4 of Section 3.

5. Further, Applicant alleges that the said formations in and under the S/2 SW/4 and the SW/4 SE/4 of Section 3 and the NW/4 NE/4, the S/2 NE/4 and the NW/4 of Section 10 are

properly subject to waterflooding but that the exact number and location of injection and producing wells can best be determined only after the commencement of waterflooding of the N/2 S/2 and the SE/4 SE/4 of Section 3 and the NE/4 NE/4 of Section 10 and the observance of the results thereof.

6. The data required by Rule 701B of this Commission are attached hereto as Exhibits I through III, respectively.

WHEREFORE, Applicant requests a hearing before an examiner, notice of hearing to be given according to law, and requests that after notice and hearing, this Commission issue its Order:

(a) expanding the limits of Applicant's West Square Lake Waterflood Project to include the Lower Grayburg and Upper San Andres formations in and under the N/2 SW/4, the N/2 SE/4 and the SE/4 SE/4 of Section 3 and the NE/4 NE/4 of Section 10, Township 17 South, Range 30 East, Eddy County, New Mexico;

(b) establishing rules for the expansion of the waterflood within the area described in subparagraph (a) above; and

(c) authorizing the further expansion of the waterflood, by administrative approval, to include the Lower Grayburg and the Upper San Andres formations in and under all or any parts of the S/2 SW/4 and the SW/4 SE/4 of Section 3 and the NW/4 NE/4, the S/2 NE/4 and the NW/4 of Section 4, Township 17 South, Range 30 East, Eddy County, New Mexico, without the necessity of a showing that a proposed injection well or producing well within said area has experienced an actual response to water injection.

ROBERT E. ANDERSON
P. O. Box 9317
Fort Worth, Texas 76107

KELLAHIN & FOX

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

Attorneys for Applicant

BEFORE THE NEW MEXICO OIL CONSERVATION COMMISSION

SANTA FE, NEW MEXICO

*Superseded by
Amended
appl*

IN THE MATTER OF THE APPLICATION OF)
ANADARKO PRODUCTION COMPANY FOR AN)
ORDER AUTHORIZING THE EXPANSION OF)
THE WEST SQUARE LAKE WATERFLOOD)
PROJECT TO INCLUDE THE N/2 SW/4, THE)
N/2 SE/4 AND THE SE/4 SE/4 OF SEC-)
TION 3 AND THE NE/4 NE/4 OF SECTION)
10, TOWNSHIP 17 SOUTH, RANGE 30 EAST,)
EDDY COUNTY, NEW MEXICO AND PROVID-)
ING PROCEDURES FOR SUCH EXPANSION)
AND FOR FURTHER EXPANSION.)

Case No. 4409

A P P L I C A T I O N

COMES NOW Anadarko Production Company, hereinafter referred to as "Applicant", and makes its application for the expansion by this Commission of Applicant's West Square Lake Waterflood Project, Eddy County, New Mexico to include the N/2 SW/4, the N/2 SE/4 and the SE/4 SE/4 of Section 3 and the NE/4 NE/4 of Section 10, Township 17 South, Range 30 East, Eddy County, New Mexico, and in support of this application states:

1. Order No. R-2571 entered August 21, 1963, authorized Applicant to institute a waterflood project in the Square Lake Pool, Eddy County, New Mexico by injecting water into the Lower Grayburg and Upper San Andres formations in and under the NW/4 of Section 3, Township 17 South, Range 30 East.

2. The operation of Applicant's waterflood project pursuant to said Order No. R-2571 and the operation of Newmont Oil Company's Square Lake Waterflood project in the immediate vicinity has established the feasibility of waterflooding said formations in said pool and has further established that such flooding will result in increased ultimate recovery of oil and will, therefore, prevent waste.

3. Applicant has entered into a Cooperative Waterflood Agreement with Stallworth Oil & Gas providing for the waterflooding of the said formations in and under the S/2 NE/4 and the N/2 SE/4 of Section 3, Township 17 South, Range 30 East. Pursuant to said Agreement, Applicant's Federal "KK" Well No. 3 located in the NW/4 SE/4 of Section 3 and Stallworth Oil & Gas' Federal Parke Well No. 4 located in the SE/4 NE/4 of Section 3 are proposed to be converted to injection wells. Applicant proposes to produce from its Federal KK No. 2 Well located in the NE/4 SE/4 of Section 3 and Stallworth Oil & Gas is presumed to intend to continue to produce from its Federal Parke Well No. 5 located in the SW/4 of NE/4 of Section 3.

4. Applicant has entered into an Agreement with General American Oil Company of Texas whereby Applicant will be entitled to receive an assignment of the operating rights in and under the S/2 SE/4, the SE/4 SW/4 and the W/2 SW/4 of Section 3 upon the completion of two injection wells and the commencement of the injection of water thereinto. Applicant therefore proposes to drill injection wells as follows: Federal JJ Well No. 2 located in the NW/4 SW/4 of Section 3 and Federal KK Well No. 1 located in the SE/4 SE/4 of Section 3.

5. Further, Applicant alleges that the said formations in and under the S/2 SW/4 and the SW/4 SE/4 of Section 3 and the NW/4 NE/4, the S/2 NE/4 and the NW/4 of Section 10 are properly subject to waterflooding but that the exact number and location of injection and producing wells can best be determined only after the commencement of waterflooding of the N/2 S/2 and the SE/4 SE/4 of Section 3 and the NE/4 NE/4 of Section 10 and the observance of the results thereof.

6. The data required by Rule 701B of this Commission are attached hereto as Exhibits I through III, respectively.

WHEREFORE, Applicant requests a hearing before an examiner, notice of hearing to be given according to law, and requests that after notice and hearing, this Commission issue its Order:

a. expanding the limits of Applicant's West Square Lake Waterflood Project to include the Lower Grayburg and Upper San Andres formations in and under the N/2 SW/4, the N/2 SE/4 and the SE/4 SE/4 of Section 3 and the NE/4 NE/4 of Section 10, Township 17 South, Range 30 East, Eddy County, New Mexico;

b. establishing rules for the expansion of the waterflood within the area described in subparagraph a above; and

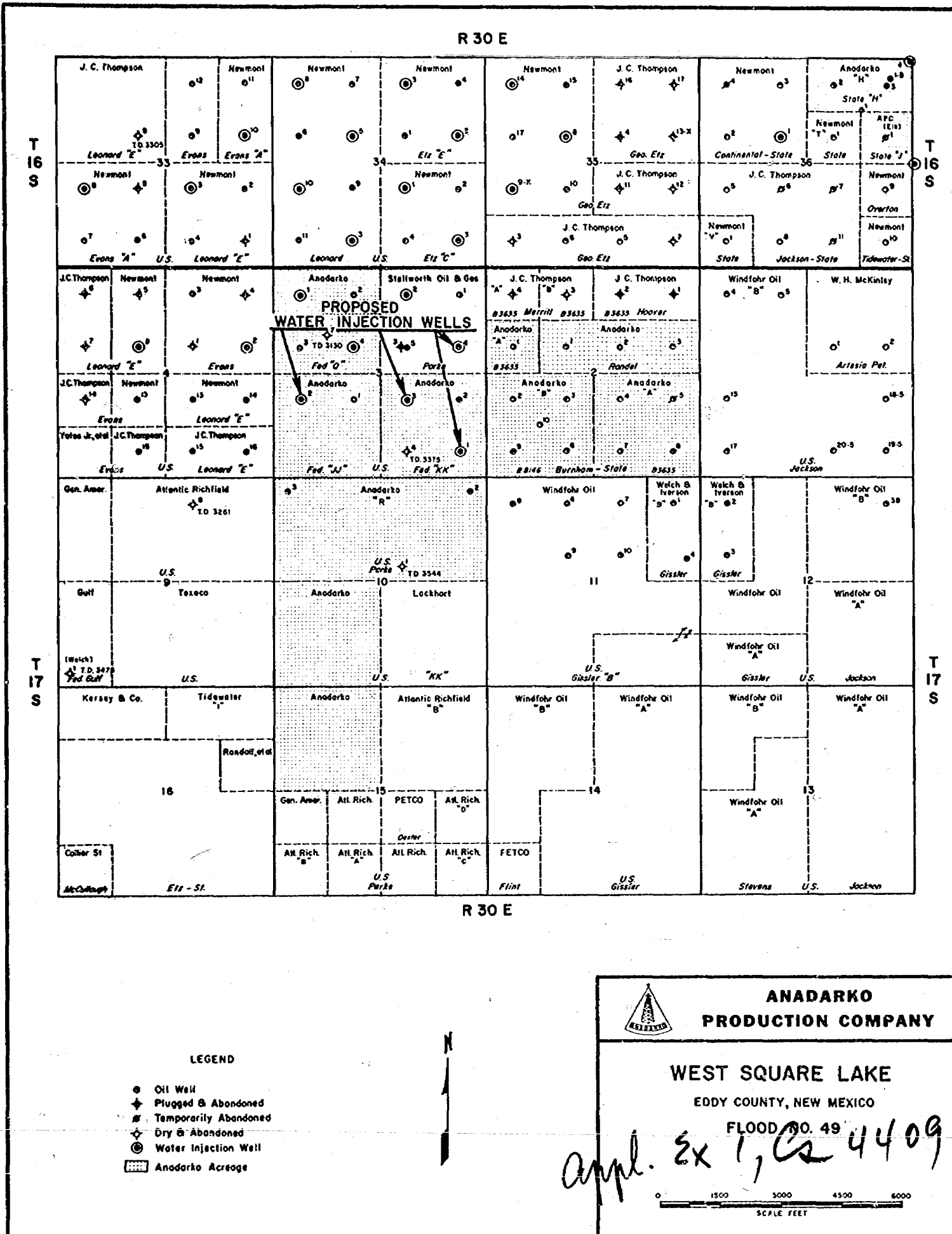
c. authorizing the further expansion of the waterflood, by administrative approval, to include the Lower Grayburg and the Upper San Andres formations in and under all or any parts of the S/2 SW/4 and the SW/4 SE/4 of Section 3 and the NW/4 NE/4, the S/2 NE/4 and the NW/4 of Section 4, Township 17 South, Range 30 East, Eddy County, New Mexico, without the necessity of a showing that a proposed injection well or producing well within said area has experienced an actual response to water injection.

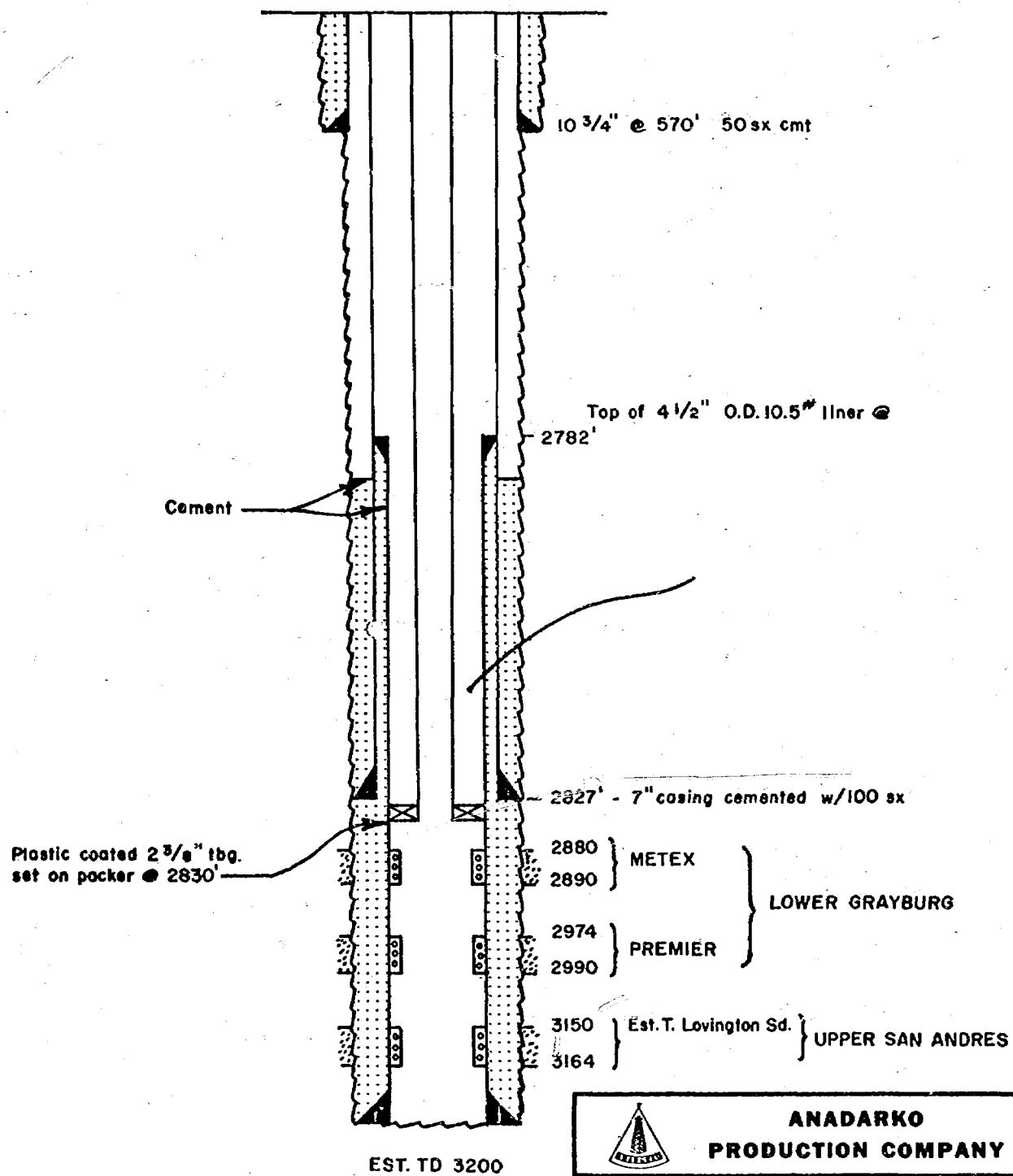
ROBERT E. ANDERSON
P.O. Box 9317
Fort Worth, Texas 76107

KELLAHIN & FOX

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

Attorneys for Applicant





**ANADARKO
PRODUCTION COMPANY**

FEDERAL KK WELL NUMBER 3
SQUARE LAKE FIELD
EDDY COUNTY, NEW MEXICO

DIAGRAMMATIC SKETCH
OF
TYPICAL WATER INJECTION WELL

Appl Ex 2 Ct 4409

DRAFT

GMH/esr
October 16, 1970

BEFORE THE OIL CONSERVATION COMMISSION
OF THE STATE OF NEW MEXICO

YMS
IN THE MATTER OF THE HEARING
CALLED BY THE OIL CONSERVATION
COMMISSION OF NEW MEXICO FOR
THE PURPOSE OF CONSIDERING:

CASE No. 4409

Order No. R- 4049

APPLICATION OF ANADARKO PRODUCTION
COMPANY FOR TWO WATERFLOOD EXPANSIONS,
EDDY COUNTY, NEW MEXICO.

ORDER OF THE COMMISSION

BY THE COMMISSION:

9:30

This cause came on for hearing at 9 a.m. on August 19, 1970,
at Santa Fe, New Mexico, before Examiner Daniel S. Nutter.

NOW, on this 10th day of October, 1970, 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, Anadarko Production Company, seeks
permission to expand the waterflood operation it is presently
conducting on its Federal "Q" Lease, Section 3, Township 17 South,
Range 30 East, NMPM, Square Lake Pool, Eddy County, New Mexico,
by the conversion to water injection of three wells in Units J,
L, and P of said Section 3 on its Federal "JJ" and Federal "KK"
Leases.

(3) That the applicant further seeks an administrative
procedure whereby it may further expand its waterflood opera-
tions to permit the institution of a waterflood project on

its "R" Lease in Section 10 of said Township and Range, if and when an injection well is completed on said lease.

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

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

(6) That the subject application should be approved and the projects should be governed by the provisions of Rules 701, 702, and 703 of the Commission Rules and Regulations; provided however, that the showing of well response as required by Rule 701 E-5 should not be necessary before obtaining administrative approval for the conversion of additional wells to water injection.

IT IS THEREFORE ORDERED:

(1) That the applicant, Anadarko Production Company, is hereby authorized to institute the following additional waterflood projects in the Square Lake Pool by the injection of water into the Grayburg and San Andres formations through the following-described wells in Township 17 South, Range 30 East, NMPM, Eddy County, New Mexico:

Anadarko Square Lake JJ Waterflood Project
Injection Well:

Anadarko Federal "JJ" Well No. 2, (to be drilled),
Unit L, Section 3

Anadarko Square Lake KK Waterflood Project
Injection Wells:

Anadarko Federal "KK" Well No. 1, (to be drilled),
Unit P, Section 3

Anadarko Federal "KK" Well No. 3, Unit J, Section 3

(2) That the Secretary-Director of the Commission may approve the institution of an additional Square Lake waterflood project on the applicant's "R" Lease located in Section 10, Township 17 South, Range 30 East, NMPM, Eddy County, New Mexico, upon the completion of a water injection well for said pool on said lease.

(3) That the above-described waterflood projects shall be governed by the provisions of Rules 701, 702, and 703 of the Commission Rules and Regulations;

PROVIDED HOWEVER, that the Secretary-Director of the Commission may approve expansion of the above-described waterflood projects to include such additional injection wells in the areas of said projects as may be necessary to complete efficient injection patterns and that the showing of well response as required by Rule 701 E-5 shall not be necessary before obtaining administrative approval for the conversion of additional wells to water injection.

(4) That monthly progress reports of the waterflood projects herein authorized shall be submitted to the Commission in accordance with Rules 704 and 1120 of the Commission Rules and Regulations.

(5) 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.