ANADARKO PRODUCTION COMPANY

3109 WINTHROP AVENUE P. O. BOX 9317 FORT WORTH, TEXAS 76107

CABLE ADDRESS: ANDARK

December 20, 1965

State of New Mexico
Oil Conservation Commission
Santa Fe, New Mexico

Attention: Mr. A. L. Porter, Jr.

Gentlemen:

In response to your letter of December 10 relative to the calculated allowable for the Grayburg-Jackson Unit when all of the authorized injection wells have been activated, we calculate the maximum allowable to be 1610 barrels per day based on the following well count:

36 wells on normal 40 acre proration units	-36 x 42 =	1,512 BPD
7 wells on normal 40 acre proration units which already have a well count	-7 x 14 =	98 BPD
		1,610 BPD

We are not sure, but it appears you did not give an allowable to the well on Tract 14 (14-1). This well will qualify for a 42 BPD allowable following conversion of Tract 13 wells 4 and 8 (13-4 and 13-8).

This would account for the difference between your calculated allowable of 1,568 and our figure of 1,610 barrels per day.

Please let us know if you agree. Also we will be pleased to report to you on the change of status of any well (s) in the project area.

Yours very truly,

E. A. Riley
Superintendent
Secondary Recovery Div.

EAR/hb

OIL CONSERVATION COMMISSION
P. O. BOX 2088
SANTA FE, NEW MEXICO

January 4, 1966

Mr. E. A. Riley
Superintendent
Secondary Recovery Division
Anadarko Production Company
P. O. Box 9317
Fort Worth, Texas 76107

Dear Mr. Riley:

Reference is made to your letter of December 20, 1965, and to our telephone conversation of December 29, 1965, regarding the calculated maximum allowable which your Grayburg Jackson Unit Waterflood Project will be eligible to receive as set forth in our letter of December 10, 1965.

Your calculation of 1610 barrels per day maximum allowable is correct. When we computed the maximum allowable of 1568 barrels per day, we did not include your Well No. 5-1 which is located in the SE/4 SW/4 of Section 22, Township 17 South, Range 30 East, as it did not appear on Exhibit F offered in Case No. 3330. This exhibit was the basis for determining the maximum allowable as set forth in our letter of December 10.

Very truly yours,

DANIEL S. NUTTER
Chief Engineer

DSN:sg

cc: Oil Conservation Commission - Hobbs
Oil Conservation Commission - Artesia
Case File 3330

COPY

OIL CONSERVATION COMMISSION
P. O. BOX 2088
SANTA FE. NEW MEXICO

December 10, 1965

Mr. Irley Bonnette
Anadarko Production Company
Post Office Box 9317
Fort Worth, Texas

Dear Mr. Bonnette:

Reference is made to Commission Order No. R-2995, entered in Case No. 3330, authorizing the expansion of Anadarko Production Company's Grayburg-Jackson Unit Area Waterflood Project.

Injection is to be through the five authorized water injection wells, which shall be equipped with tubing and packers, with the casing-tubing annulus loaded with an inert fluid.

As to allowable, 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 1568 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

ALP/DSN/ir

cc: Mr. Frank Irby

Oil Conservation Commission - Artesia, New Mexico

NEW MEXICO OIL CONSERVATION COMMISSION

GAS-OIL RATIO TESTS

C-116
Revised 1-1-65

Operator	Pool	County
ANADARKO PRODUCTION COMPANY	GRAYBURG-JACKSON	EDDY

Address: P.O. Box 9317 FORT WORTH, TEXAS

TYPE OF TEST - (X): Scheduled [ ] Completion [ ] Special [X]

LEASE NAME	WELL NO.	LOCATION U	LOCATION S	LOCATION T	LOCATION R	DATE OF TEST	STATUS	CHOKE SIZE	TBG. PRESS.	DAILY ALLOWABLE	LENGTH OF TEST HOURS	PROD. DURING TEST WATER BBLS.	PROD. DURING TEST GRAV. OIL	PROD. DURING TEST OIL BBLS.	PROD. DURING TEST GAS M.C.F.	GAS - OIL RATIO CU.FT./BBL.
GRAYBURG-JACKSON	7A-1	G	26	17	30E	10-2-65	P				24	0		75	NIL	NIL

No well will be assigned an allowable greater than the amount of oil produced on the official test.

During gas-oil ratio test, each well shall be produced at a rate not exceeding the top unit allowable for the pool in which well is located by more than 25 percent. Operator is encouraged to take advantage of this 25 percent tolerance in order that well can be assigned increased allowables when authorized by the Commission.

Gas volumes must be reported in MCF measured at a pressure base of 15.025 psia and a temperature of 60° F. Specific gravity base will be 0.60.

Report casing pressure in lieu of tubing pressure for any well producing through casing.

Mail original and one copy of this report to the district office of the New Mexico Oil Conservation Commission in accordance with Rule 301 and appropriate pool rules.

EXHIBIT "B"

I hereby certify that the above information is true and complete to the best of my knowledge and belief.

E. A. Riley (Signature)

E. A. RILEY

SUPERINTENDENT SECONDARY REC. DIV. (Title)

OCTOBER 12, 1965 (Date)

R. F. WINDFOHR ESTATE
1212 FIRST NATIONAL BANK BUILDING
FORT WORTH, TEXAS 76102

October 29, 1965

EDISON 2-5108

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

Attention: Mr. A. L. Porter, Jr.

Gentlemen:

Re: Case No. 3330
November 3, 1965

With reference to the subject case concerning the application of Anadarko Production Company to expand their Grayburg Jackson Unit (R-2323), please be notified that the R. F. Windfohr Estate, operator of Nash, Windfohr & Brown leases which offset Anadarko's project, concur with Anadarko in their application and urge that it be granted.

As stated in our hearing, Case No. 3322 before the Conservation Commission on October 19, 1965, it is our intention to cooperate across the lease line with Anadarko, and furthermore, the water for our project will be furnished at cost by Anadarko.

Yours very truly,

R. F. WINDFOHR ESTATE

John Rush Vann

John Rush Vann

JRV:gc

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

October 12, 1965 Case 3330

New Mexico Oil Conservation Commission
P.O. Box 871
Santa Fe, New Mexico

Re:Grayburg-Jackson Unit (R 2323)
Eddy County, New Mexico

Gentlemen:

We have no objection to Anadarko Production Company's request to convert wells Numbers 7A-2, 13-1, 13-4, 13-5, and 13-8 to water injection status.

Yours very truly,

E. A. Riley
Superintendent
Secondary Recovery Div.

BGW/hb

Approved:

Franklin Aston & Fair, Inc.
P. O. Box 1090
Roswell, New Mexico

By _____ President

Date October 14, 1965

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

October 12, 1965

New Mexico Oil Conservation Commission
P.O. Box 871
Santa Fe, New Mexico

Re: Grayburg-Jackson Unit (R 2323)
Eddy County, New Mexico

Gentlemen:

We have no objection to Anadarko Production Company's request to convert wells Numbers 7A-2, 13-1, 13-4, 13-5, and 13-8 to water injection status.

Yours very truly,

E. A. Riley
Superintendent
Secondary Recovery Div.

BGW/hb
Approved:
The First National Bank of Fort Worth, Texas &
Anne Burnett Windfohr, Independent Executors of the
Estate of R. F. Windfohr, Deceased
1202 First National Bank Bldg.
Fort Worth, Texas 76102

By John Rusk Vann

Date 10-13-65

Case 3330

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

October 27,1965

State Engineer Office
State Capitol
Santa Fe, New Mexico 87501

Attention: Mr. Frank E. Irby

Gentlemen:

In response to your October 25 letter concerning our application dated October 12, 1965 covering our request to convert five (5) wells to water injection status in the Grayburg-Jack Unit (R 2323), please find enclosed the following corrected data:

1. Exhibit "C" Diagramtic Sketch showing casing and tubing on the five (5) injection wells.

2. Exhibit "E" (Well 13-8) Form No. C-102 showing proposed method of recompletion of well.

3. Exhibit "E" (Well 13-4) Form No. C-102 showing proposed method of recompletion of well.

The corrected data will be supplied the Commission at the hearing. Also, it is being supplied the offset operator by copy of this letter.

These revised Exhibits should clarify the situation and answer all but one of your questions. The answer to this question is "the water injected into the five (5) proposed wells in this application will be fresh water processed through our Plant No. 2 whereas the produced water from the entire unit will be collected, and processed through Plant No. 1, and reinjected into the original pilot wells approved by the Commission following the hearing of Case 2634 on September 11, 1962".

We trust this satisfies your needs. We will be pleased to answer any other questions by return mail or at the hearing if you are planning to be in attendance.

Yours very truly,

E. A. Riley, Superintendent
Secondary Recovery Division

EAR/nb
CC:Franklin,Aston & Fair
Roswell, New Mexico
Co-Executors of R.F.Windfohr Estate
(John Rush Vann) Fort Worth, Texas

'65 Oct 26 AM 11

October 25, 1965

Mr. E. A. Riley, Supt.
Secondary Recovery Division
Anadarko Production Company
P. O. Box 9317
Fort Worth, Texas 76107

Dear Mr. Riley:

Reference is made to your application dated October 12, 1965 to the Oil Conservation Commission which seeks authority to recomplete or convert 5 wells to water injection. The wells are in the Grayburg-Jackson Unit, Eddy County, New Mexico. Your letter to this office dated October 12th states "fresh water purchased from Caprock Water Company will be injected through tubing and below a packer in wells Nos. 7A-2, 13-1 and 13-5. Wells Nos. 13-4 and 13-8 will be re-entered and cleaned out to total depth and new 4½" casing will be set to total depth." Your Exhibit C which is the diagrammatic sketch showing casing and tubing data for the 5 wells indicates that all wells will have 7" casing set at total depth and will be cemented with 100 sacks of cement. A short sheet between your Exhibits D and E submitted with the application is labled Injection Well Data and shows that injection in each of the 5 wells will be through tubing. Your Exhibit D (Well 13-8) states "re-enter this plugged and abandoned well and cleanout to T.D. of approximately 3370'. Set 4½" casing to T.D. and perforate opposite the Premier Zone of the Grayburg-and complete as a water injection well under Commission Order No. R-2323." Your Exhibit E (Well 13-4) states "re-enter this plugged and abandoned well and cleanout to T.D. of approximately 3250'. Set 4½" casing to T.D. and cement to surface, perforate casing opposite Premier Zone of Grayburg and complete as a water injection well under Commission Order No. R-2323."

My notes taken at the hearing in Case 2634 on September 11, 1962 which resulted in Order No. R-2323 indicate that you testified that injection into the wells would be through tubing under packer set immediately above the pay-zone. You also testified that the water to be injected would be fresh water from Caprock Water Company. You further testified that your produced water would be re-injected.

It appears to me that there are conflicting statements in your present application. It also appears that some of the statements in this application conflict with your testimony regarding well construction and equipment given at the hearing on September 11, 1962 which resulted in Oil Conservation Commission Order No. R-2323.

It will be necessary to reconcile the conflicting statements before I can waive objection to the granting of your application. If the wells are to be constructed and equipped as indicated in your testimony of September 11, 1962, I will be willing to waive objection to the granting of your application.

FEI/ma
cc-A. L. Porter, Jr.,
F. H. Hennighausen

Yours truly,

S. E. Reynolds
State Engineer

By:
Frank E. Irby
Chief
Water Rights Div.

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

October 12, 1965

3330

AIR MAIL

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

Attention: Mr. A. L. Porter, Jr.

Gentlemen:

Enclosed please find, in triplicate, Application of Anadarko Production Company, as Operator of the Grayburg-Jackson Unit, for authority to recomplete or convert five (5) wells as water injection wells, all of such wells being located within the boundaries of the Grayburg-Jackson Unit, Eddy County, New Mexico.

We are also sending a copy of this Application to the following parties: The State Engineer, State of New Mexico; The First National Bank of Fort Worth, Texas, and Anne Burnette Windfohr, Independent Executors of the Estate of R. F. Windfohr, Deceased, offset operator in Sections 24 and 25; and Franklin, Aston and Fair, Inc., offset operator in Section 35. It is anticipated that these offset operators will sign waivers, and such waivers will be forwarded to you prior to the hearing.

It is requested that notice be given of this Application and that a hearing be set for as early as possible, but in no event later than November 3, 1965.

DOCKET MAILED

Date

If there is any additional information you desire, please call the undersigned collect, Area Code 817, PE 2-1411, Fort Worth, Texas.

Yours very truly,

ANADARKO PRODUCTION COMPANY

By Irley Bonnette
Irley Bonnette, Attorney

IAB:jc
Enclosures

cc: The State Engineer, State of New Mexico,
Capitol Building, Santa Fe, New Mexico

The First National Bank of Fort Worth,
Texas, and Anne Burnette Windfohr,
Independent Executors of the Estate of
R. F. Windfohr, Deceased
1202 First National Bank Building
Fort Worth, Texas 76102

Franklin, Aston & Fair, Inc.
P. O. Box 1090, Roswell, New Mexico 88201

(Form C-102)
(Revised 7/1/52)

NEW MEXICO OIL CONSERVATION COMMISSION

Santa Fe, New Mexico

MISCELLANEOUS NOTICES

Submit this notice in TRIPLICATE to the District Office, Oil Conservation Commission, before the work specified is to begin. A copy will be returned to the sender on which will be given the approval, with any modifications considered advisable, or the rejection by the Commission or agent, of the plan submitted. The plan as approved should be followed, and work should not begin until approval is obtained. See additional instructions in the Rules and Regulations of the Commission.

Indicate Nature of Notice by Checking Below

Notice of Intention to Change Plans		Notice of Intention to Temporarily Abandon Well		Notice of Intention to Drill Deeper	
Notice of Intention to Plug Well		Notice of Intention to Plug Back		Notice of Intention to Set Liner	
Notice of Intention to Squeeze		Notice of Intention to Acidize		Notice of Intention to Shoot (Nitro)	
Notice of Intention to Gun Perforate		Notice of Intention (Other)		Notice of Intention (Other)	X

OIL CONSERVATION COMMISSION
SANTA FE, NEW MEXICO

Fort Worth, Texas (Place) October 12, 1965 (Date)

Gentlemen:

Following is a Notice of Intention to do certain work as described below at the Anadarko Production Company operated Grayburg-Jackson Unit (R 2323) (Company or Operator) Well No. 13-4 in P (Unit) Lease

SE ¼ SE ¼ (40-acre Subdivision) of Sec. 26, T. 17S, R. 30E, NMPM., Grayburg-Jackson Pool

Eddy County.

FULL DETAILS OF PROPOSED PLAN OF WORK
(FOLLOW INSTRUCTIONS IN THE RULES AND REGULATIONS)

Re-enter this plugged and abandoned well a nd cleanout to T.D. of approximately 3250'
Set 4 1/2" casing to T.D. and perforate casing opposite Premier Zone of Grayburg.
Install tubing and packer and c omplete as water injection well.

Approved ....., 19.....
Except as follows:

Approved
OIL CONSERVATION COMMISSION

By.....

Title.....

ANADARKO PRODUCTION COMPANY
Company or Operator

By E. A. Riley
E. A. Riley

Position Superintendent Secondary Recovery Div.

Send Communications regarding well to:

Name Anadarko Production Co.

Address P.O. Box 9317 Ft. Worth, Texas

EXHIBIT "E"

INJECTION WELL DATA
GRAYBURG-JACKSON UNIT (R 2323)

	Well 7A-2	Well 13-1	Well 13-4	Well 13-5	Well 13-8
		Surface Casing			
Size	8"	8"	8"	8"	8"
Length	508'	510'	510'	495'	515'
Sacks of Cement	50	50	50	50	50
		Tubing			
Size	2"	2"	2"	2"	2"
Length	3010'	3050'	3070'	3080'	3130'
Packer Depth	3010'	3050'	3070'	3080'	3130'
		Production Casing			
Size	7"	7"	4 1/2"	7"	4 1/2"
Length	3030'	3070'	3090'	3100'	3150'
Sacks of Cement	100	100	100	100	100

EXHIBIT "C"

ANADARKO PRODUCTION COMPANY
3109 WINTHROP AVENUE BOX 9317 FORT WORTH, TEXAS 76107
CABLE ADDRESS: ANDARK

[illegible]

[illegible]

New Mexico Oil Conservation Commission
P. O. Box [illegible]
Santa Fe, New Mexico

Attention: Mr. A. R. Kuykendall, [illegible]

Gentlemen:

Enclosed please [illegible]
Anadarko Production [illegible]
Mile, New Mexico [illegible]
water injection wells, [illegible]
the [illegible] of the [illegible]
Mexico.

We are also [illegible]
following penalties: [illegible]
the Direct [illegible]
Mexico, Duly [illegible]
Bureau, Office [illegible]
Moab and Duly, [illegible]
established [illegible]
and each [illegible]

We do [illegible]
and that a [illegible]
every [illegible] [illegible]

ILLEGIBLE

[illegible]

[illegible]

Case 3330

[illegible]
please call the undersigned, [illegible] Fort Worth, Texas.

[illegible]

[illegible]

By [illegible]

[illegible]
Enclosures

cc: [illegible]

[illegible]

[illegible]

[illegible]

bcc: Mr. John Rash Vann, c/o R. F. Wi[illegible] Estate,
1212 First National Bank Building, Fort Worth, Texas 76102

ILLEGIBLE

GOVERNOR
JACK M. CAMPBELL
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

November 9, 1965

Re: Case No. 3330
Order No. R-2995
Applicant:
Anadarko Production Company

Mr. Irley Bonnette, Attorney
Anadarko Production Company
3109 Winthrop Avenue
P. O. Box 9317
Fort Worth, Texas 76107

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 x
Aztec OCC

Other **Mr. Clarence Hinkle**

BEFORE THE NEW MEXICO OIL CONSERVATION COMMISSION

SANTA FE, NEW MEXICO

IN RE: APPLICATION OF ANADARKO PRODUCTION COMPANY, AS OPERATOR OF THE GRAYBURG-JACKSON UNIT, ORIGINALLY AUTHORIZED BY ORDER NO. R-2323, FOR AUTHORITY TO RECOMPLETE OR CONVERT FIVE (5) WELLS AS WATER INJECTION WELLS, ALL OF SUCH WELLS BEING LOCATED WITHIN THE BOUNDARIES OF THE GRAYBURG-JACKSON UNIT IN EDDY COUNTY, NEW MEXICO.	Case No. 3330

ENTRY OF APPEARANCE

COMES NOW the undersigned attorneys, duly licensed to practice law in the State of New Mexico, and enter their appearance in this cause in behalf of the applicant, Anadarko Production Company.

The undersigned attorneys have associated in this case with Mr. Irley Bonnette, an attorney licensed to practice law in the State of Texas, and request that the Commission permit Mr. Bonnette to present evidence in behalf of the applicant at the hearing in this cause.

Respectfully,

HINKLE, BONDURANT & CHRISTY

By S. B. Christy IV

S. B. Christy IV,
as a member of the firm

(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, Anadarko Production Company, is hereby authorized to ~~institute a~~ expand the Grayburg-Jackson Unit Area waterflood project ~~in the~~ ~~Unit Area,~~ in the Grayburg-Jackson Pool by the injection of water into the Grayburg formation through the following-described wells in Township 17 ~~North~~ South, Range 30 ~~West~~ East, NMPM, Eddy County, New Mexico:

well No.	Unit	Section
13-8	N	25
13-5	L	25
13-4	P	26
13-1	J	26
7A-2	H	26

~~is hereby designated the~~ _____ ~~and~~

(2) That the subject waterflood project 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.

DRAFT

JMD/esr

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. 3330

Order No. R-2995

APPLICATION OF ANADARKO PRODUCTION COMPANY
FOR A WATERFLOOD PROJECT, EDDY COUNTY,
NEW MEXICO.

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9 o'clock a.m. on November 3, 1965, at Santa Fe, New Mexico, before Examiner Elvis A. Utz.

NOW, on this _____ day of November, 1965, 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,

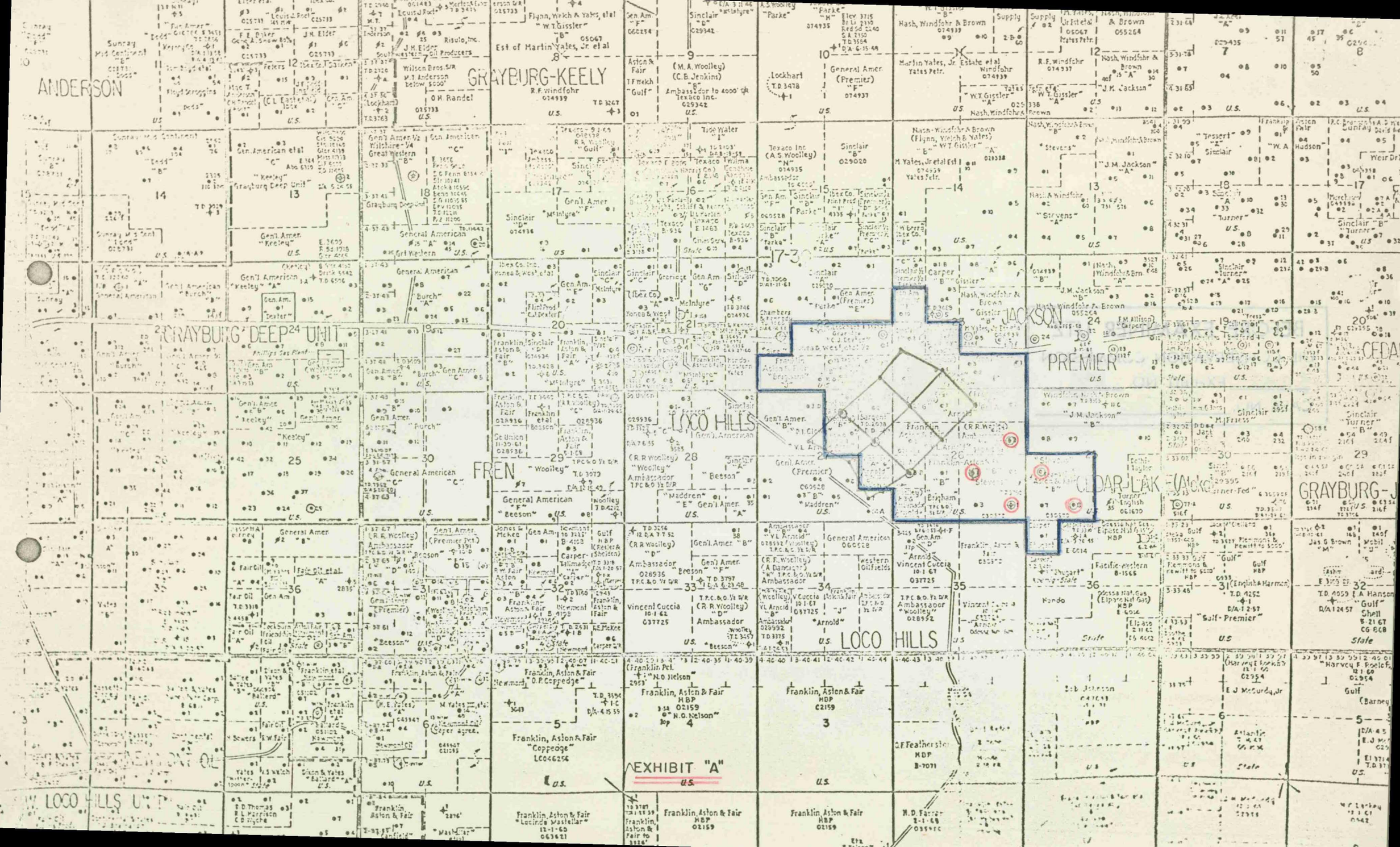
FINDS:

(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 ~~institute a~~ expand the Grayburg-Jackson Unit Area waterflood project ~~in the~~ _____ ~~in the~~ _____ ~~Unit Area,~~ in the Grayburg-Jackson Pool by the injection of water into the Grayburg ~~Premier Sand~~ formation through five injection wells in Sections 25 and 26, Township 17 ~~North~~ South, Range 30 ~~West~~ East, NMPM, Eddy 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.

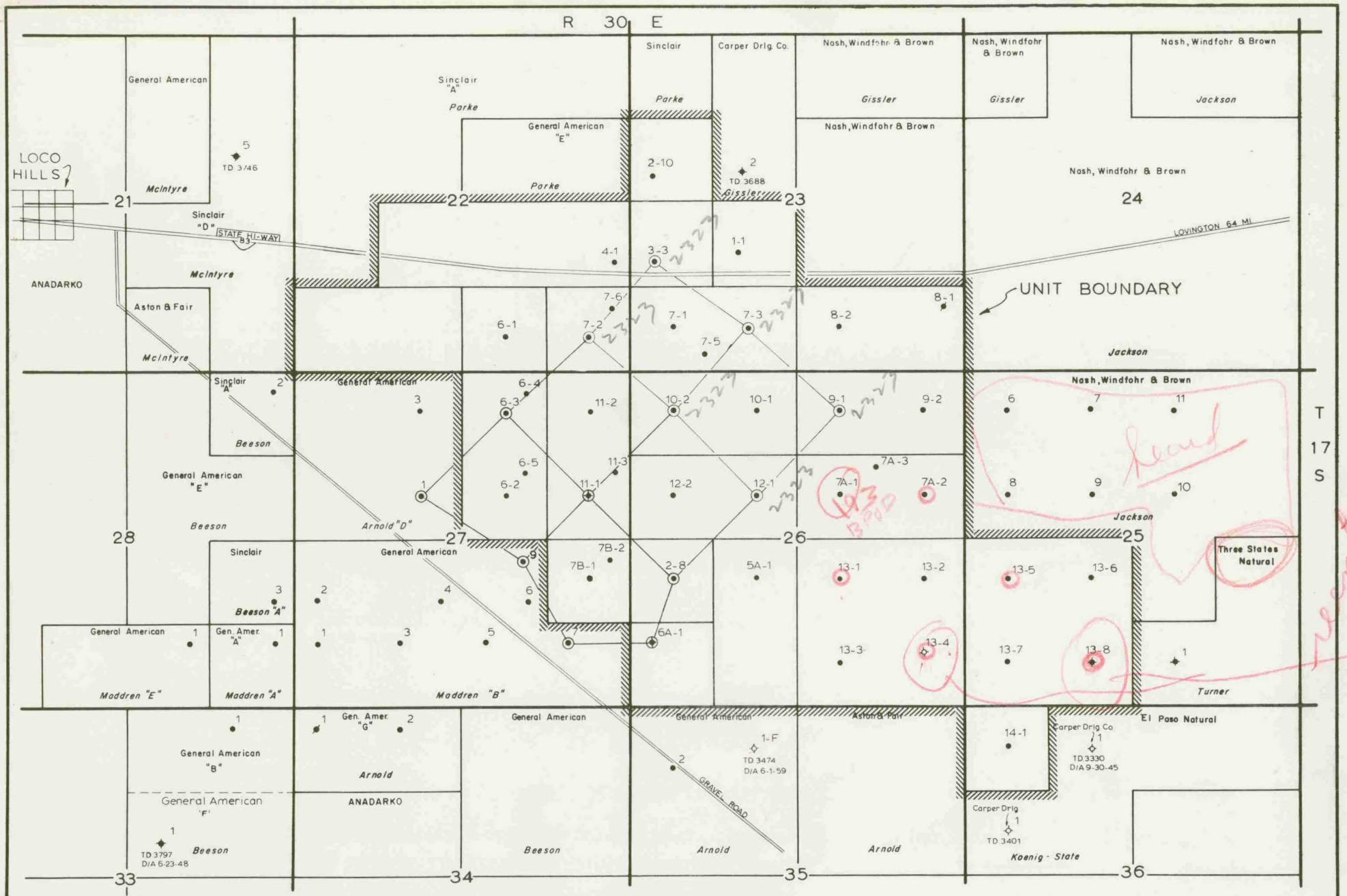

ANDERSON
GRAYBURG-KEELY
GRAYBURG DEEP UNIT
LOCO HILLS
FREN
JACKSON
PREMIER
CEDAR LAKE
GRAYBURG-J
LOCO HILLS
EXHIBIT "A"

BEFORE EXAMINER UTZ

OIL CONSERVATION COMMISSION

Appl EXHIBIT NO. A

CASE NO. 3338



LEGEND-ONLY PREMIER SAND WELLS PLOTTED

- OIL WELL
- P&A
- TEMP ABND
- DRY & ABND
- WATER INJ. WELL
- PROPOSED WTR. INJ WELL

ANADARKO PRODUCTION COMPANY

OPERATOR

FLOOD NO. 42

GRAYBURG JACKSON UNIT (R-2323)

EDDY CO. NEW MEXICO

0 1000' 2000'

EXHIBIT "F"

C.B.M.	2-24-61
C.B.M.	3-12-63
T.B.	12-16-63

~~RAILROAD COMMISSION OF TEXAS~~

APPLICATION TO INJECT FLUID
INTO A RESERVOIR PRODUCTIVE OF OIL OR GAS

Field Grayburg-Jackson County Eddy ~~District~~

Operator Anadarko Production Company Date

Address P.O. Box 9317, Fort Worth, Texas

Lease (s) & Number (s) Grayburg-Jackson Unit (R 2323)

Reservoir Premier Zone of Grayburg Discovery Date April 1930

HAVE ANY INJECTION PERMITS BEEN GRANTED PREVIOUSLY IN THIS RESERVOIR? Yes
~~IF ANSWER TO ABOVE QUESTION IS NO, ALL OPERATORS IN THE RESERVOIR MUST BE NOTIFIED OF THIS APPLICATION BY CERTIFIED MAIL.~~

BEFORE EXAMINER UTZ
OIL CONSERVATION COMMISSION
Gapol EXHIBIT NO. D
CASE NO. 3330

I. Reservoir and fluid characteristics

A. Information on entire reservoir

1. Name of formation Grayburg-Jackson ~~Premier Zone~~
2. Estimated productive area of entire reservoir Unknown
3. Composition (sand, limestone, dolomite, etc.) Sand
4. Type of structure Stratigraphic Trap
(Include cross-section and structural maps)
5. Subsea depth of oil-water contact None Gas-oil contact None
6. Type drive during primary production Solution gas
7. Original BHP 1,300 Est. Current BHP 0-(non flood area) 1200 (Re-press. Area)
8. Was gas cap present originally? No At present? No
9. Ratio of gas cap volume to oil zone volume --
10. Saturation pressure -- Formation Volume Factor 1.28

B. Information on proposed project area

1. Number of productive acres in lease (s) within project area 1,600
2. Average depth to top of pay 3,250
3. Average effective pay thickness (feet) 13
4. Average porosity (%) 19
5. Average horizontal permeability (mds.) 36 Range 5-60
6. Connate water content (% of pore space) 25
7. Gravity of oil (API) 37 Viscosity Est. 1.5 CP

II. Primary Production history

1. Date first well completed on lease (s) April 1930
2. Oil, gas, water production by months since discovery. (Graphically as well as in tabular form.)
3. Stage of depletion of project area Stripper - except in repressured area
4. Number of producing wells on each lease in project area 36
5. Average daily oil production per well at present time 2.66 (non-flood area & 35.1(responding area)
6. Average gas-oil ratio nil Water production (%) 30.5%
7. Cumulative oil production to date from lease (s) 1,7[illegible]5,000

III. Results expected

1. Estimated original oil in place (bbls.) 9,000,000
2. Estimated oil saturation at present time (% of pore space) 50
3. Estimated residual oil saturation at abandonment 30
4. Estimated ultimate additional oil that will be recovered as a direct result of injection (bbls.) 1,937,998

IV. Injection

1. Type of Injection Fluid (water, gas, LPG) Water
2. Source of injected fluid (formation, depths) Commercial water supplier & produced water
3. Injection pattern and spacing 5 spot; 80 acres
4. Maximum injection pressure to be used (psi) 1,200
5. Estimated maximum per well rate of injection (bbls.) 500
6. List complete injection well data on reverse side of this sheet. (See Exhibit "C")

~~(APPLICANTS MUST COMPLY WITH THE INSTRUCTIONS ON REVERSE SIDE HEREOF.)~~

EXHIBIT "D"