CASE 3330: Application of ANADARKO PROD. CO. for a waterflood project Eddy County, New Mexico

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10Application, Transcripts, SMALL Exhibits ETC.

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 IN-) JECTION WELLS, ALL OF SUCH WELLS BEING LOCATED) WITHIN THE BOUNDARIES OF THE GRAYBURG-JACKSON UNIT) IN EDDY COUNTY, NEW MEXICO.

<u>A P P L I C A T I O N</u>

Case No. 7.330

MAIN OFFICE OF

765 Oct 13 PH 1

COMES NOW Anadarko Production Company, in its capacity as Operator of the Grayburg-Jackson Unit, Eddy County, New Mexico, hereinafter referred to as "Applicant", and makes application for authority to convert or recomplete the below-described wells as water injection wells into the Grayburg Premier Sand Formation in and under said Grayburg-Jackson Unit, and in support of this Application alleges the following:

1. The wells to be recompleted or converted to water injection wells and the locations thereof within the Grayburg-Jackson Unit are described as

	n Station and Station			
Location_	N. M. Unit Letter <u>Designation</u>	Sec.	Town- <u>Ship</u>	Range
SE/4 NE/4	H	26	175	30E
NW/4 SE/4	J	26	175	30E
SE/4 SE/4	P	26	175	30E
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ALL LOCATED WITHIN EDDY COUNTY, NEW MEXICO.

Wells No. 13-4 and 13-8 have previously been plugged and abandoned, but will be recompleted as water injection wells in the Grayburg-Jackson Premier Sand located at an approximate depth of 3,250 feet, and all the other wells above listed will be converted from producing wells to water injection wells in said Formation at the same depth.

2. That the original order number which originally authorized the waterflood project known as the Grayburg-Jackson Unit is Order No. R-2323; the formation to be flooded by the injection of water in the before-mentioned wells will be the Grayburg Premier Sand located at an approximate depth of 3,250 feet; the fluid to be used for injection is water, and it is anticipated that there will be injected in each well a volume of Five Hundred (500) barrels per day. The source of the injection water will be local commercial water companies.

3. That the conversion or recompletion of the above-mentioned five (5) wells as water injection wells will aid in a more efficient and orderly development and operation of the Grayburg-Jackson Unit and Waterflood Project and is, in fact, necessary to allow the Applicant to completely develop and operate the Grayburg-Jackson Unit and Waterflood Project. In addition thereto, Applicant is in the process of entering into a Cooperative Line Agreement with the operator of leases covering land in Sections 24 and 25 in said township and range, which land directly offsets the Grayburg-Jackson Unit. It is anticipated that the formal agreement will be fully executed by the time of the hearing on this Application and, if so, a fully executed copy of such agreement will be exhibited and furnished to this Commission.

4. That there are attached hereto the following exhibits as indicated, or such exhibits, as indicated, will be furnished to the Commission within ten (10) days from date hereof:

- (a) A plat showing the location of the proposed injection wells and all other wells within a two-mile radius, such plat being marked Exhibit "A"; and
- (b) Fully completed and executed by Anadarko Production Company, a New Mexico Oil Conservation Commission Form, No. C-116 (Gas-Oil Ratio Report), such form being marked Exhibit "B"; and
- (c) A diagrammatic sketch showing casing and tubing data for the above-mentioned five injection wells, such sketch being marked Exhibit "C"; and
- (d) Waterflood application data sheet with pertinent reservoir and lease data, such application being marked Exhibit "D"; and
- (e) Fully completed and executed by Anadarko Production Company, a New Mexico Oil Conservation Commission Form, No. C-102 (Miscellaneous Notice), giving notice of intention to recomplete Wells No. 13-8 and 13-4 above, such form being marked Exhibit "E"; and

(f) A map of the Unit area showing the proposed injection wells marked in red, such map being marked Exhibit "F".

6. That a copy of this Application, together with all Exhibits,

has been forwarded to the following parties:

- (a) The State Engineer, State of New Mexico, Capitol Building, Santa Fe, New Mexico; and,
- The First National Bank of Fort Worth, Texas, and Anne (b) Burnette Windfohr, in their capacity as Independent Executors of the Estate of R. F. Windfohr, Deceased, as Operator of the offset acreage located in Section 25, Township 17 South, Range 30 East, NMPM, Eddy County, New Mexico, addressed to 1202 First National Bank Building, Fort Worth, Texas 76102; and,
- (c) Franklin, Aston & Fair, Inc., as Operator of the offset acreage located in the NE/4, Section 35, Township 17 South, Range 30 East, NMPM, Eddy County, New Mexico, addressed to P. O. Box 1090, Roswell, New Mexico 88201.

7. That Applicant is filing this Application in accordance with the provisions of Rule 701 B, and Applicant requests and prays that an order be entered by this Commission allowing the recompletion and conversion of the above-mentioned wells as water injection wells and the injection of water

into the above-mentioned formation underlying the land above-described

within the Grayburg-Jackson Unit, all as provided under Rule 701 B.

WHEREFOR, Applicant requests a hearing before an examiner and requests

that after a hearing thereon the above-mentioned order be entered by the

Commission.

ANADARKO PRODUCTION COMPANY

Bonnette, Attorney Box 9317, Fort Worth,Texas P.0/

CERTIFICATE

I, Irley Bonnette, do hereby certify that on the $\frac{12^{-2}}{2}$ day of October, 1965, I mailed a true and complete copy of this Application, together with all Exhibits, to the following parties: The State Engineer, State of New Mexico, Capitol Building, Santa Fe, New Mexico; The First National Bank of Fort Worth, Texas, and Anne Burnett Windfohr, Independent Executors of the Estate of R. F. Windfohr, Deceased, 1202 First National Bank Building, Fort Worth, Texas 76102; and Franklin, Aston & Fair, Inc., P. O. Box 1090, Roswell, New Mexico 88201.

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NEW MEXICO OIL CONSERVATION COMMISSION GAS-OIL RATIO TESTS

C-116 Revised 1-1-65

P.O. Box 9317 FORT WOR	TH, TLX	AS				ין	EST	г - {X}	Sct	ieduled 🗌		·····	letion			
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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 Oli Conservation Commission in accordance with Rule 301 and appropriate pool rules.

EXHIBIT "B"

Ŀ E. A. RIVEY (Signature) SUPERINTENDENT SECONDARY REC.DIV. RIVEY OCTOBER 12, 1965

(Date)

ledge and belief.

GRAYBURG-JACKSON UNIT (R 2323)

OCTOBER 11, 1965

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EXHIBIT "C"

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

ield <u>Gra</u>	<u>ybur</u>	g-Jackson	County <u>Eddy</u>	Distriöt
perator <u>An</u>	bass	ador Oil Corporation	Date	October 11,1965
\ddress	P.0.	Box 9338, Ft. Worth, Texas		
lease (s)	& Nun	ber (s) Grayburg-Jackson	Unit (R-2323)	
leservolr	Pı	emier	Discovery Date	April, 1930
· · ·	IF AH	E ANY INJECTION PERMITS BEEN GRANTED SWER TO ABOVE QUESTION IS "NO", ALL OPE FIED OF THIS APPLICATION, AND COPIES OF	RATORS IN THE RESER'	VOIR MUST BE
. Reserv	oir and	fluld characteristics		·
Ä.	Inform	ation on entire reservoir		· · ·
ан 1919 - Алтан	1.	Name of formation Grayburg - Jacks	n-Premier Zone	
•	2.	Estimated productive area of cotine reservo	<u>anknown</u>	
	3.	Composition (sand, limestone, listinite, etc) sand	
	4,	Type of structure Strail Scapele	drap	
•	Ē	(include cr Subsea depth of oil-water contact <u>none</u>	oss-section and structu Ges-oil contact	
	5. 6	Type drive during primary production <u>SOL</u>		
<i>i</i>	6. 7.	Original BHP 1,300	Current BHP 0	
e en la calendaria	8.	Was gas cap present originally? <u>no</u>	At present?	no
	9.	Ratio of gas cap volume to oil zone volume		· · · · · · · · · · · · · · · · · · ·
	10.	Saturation pressureF		r <u>1.28</u>
В.	Inform	ation on proposed project area	· · · · · · · · · · · · · · · · · · ·	
·	1,	Number of productive acres in ecces (s) with	hin project area160	00
	2.	Average denth to ton of nev 3100		- · · · · · · · · · · · · · · · · · · ·
4	3.	Average effective pay thickness (200)	1.3	
	4.	Average porosity (%)		
	5.	Average horizontal permeability (mais.)	Range	5-60
·-	6.	Connate water content (% of $\mu = \mu nc\epsilon$)		
والمراجع فليقلح	7.	Gravity of oll (API) 37	viscosity cst.	<u>1,5.02</u>
tt meter		and the second		
II. Primar	y Proc	uction history		
	1.	Date first well completed on (s)	May 1930	
	2.	Oil, gas, water production by months since		ly as well as in
•	-	tabular form.)		-
and the structure of the	3.	Stage of depletion of project areaSt	ripper	
	4.	Number of producing wells on each lease i	n project area <u>35</u>	
	5.	Average daily oil production per well at pr	esent time <u>2.2</u>	
•	6.	Average gas-oil ratio	Yater production (%)	none
en en angelen ar en e	7.	Cumulative oil production to date from leas	se (s) <u>1,745,000</u>	· · · · · · · · · · · · · · · · · · ·
III. Resul	ts exp	cted		
	_		a	2
	1.	Estimated original oil in place (bbls.)		
	2.	Estimated oil saturation at present time (%		<u> </u>
		Estimated residual oil saturation at aband	onment	· · · ·
	3.			4 1 4
		Estimated ultimate additional oil that will injection (bbls.) <u>1,750,000</u>		ct result of
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IV. Inject	3. 4. ion 1.	Estimated ultimate additional oil that will injection (bbls.) <u>1,750,000</u> Type of Injection Fluid (water, gas, LPG	be recovered as a direct	
IV. Inject	3. 4. ion 1. 2.	Estimated ultimate additional oil that will injection (bbls.) <u>1,750,000</u> Type of Injection Fluid (water, gas, LPG Source of injected fluid (formation, depths)	be recovered as a direct Water Commercial W	ater Supplier
IV. Inject	3. 4. ion 1. 2. 3.	Estimated ultimate additional oil that will injection (bbls.) <u>1,750,000</u> Type of Injection Fluid (water, gas, LPG Source of injected fluid (formation, depths) Injection pattern and spacing	be recovered as a direct Water Commercial W 5 spot 80	
IV. Inject	3. 4. ion 1. 2.	Estimated ultimate additional oil that will injection (bbls.) <u>1,750,000</u> Type of Injection Fluid (water, gas, LPG Source of injected fluid (formation, depths)	be recovered as a direct Water Commercial W 5 spot 80 1) 1,200	ater Supplier acres

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LEASE	NAME & NO. L NUMBER	74-2	13-1	13-4	13-5	13-8	
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	DEPTH THRU CASING OR TUBING?	TUBING	TUBING	TUBING	TUBING	TUBING	

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GRAYEURG-JACKSON UNIT (R 2323)

INJECTION WELL DATA

(Form C-102) (Revised 7/1/02)

NEW MEXICO OIL CONSERVATION COMMISSION Santa Fe, New Mexico

MISCELLANEOUS NOTICES

Submit this notice in TRIPLICATE to the District Office, Oil Conservation Gommission, 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 addi-tional instructions in the Rules and Regulations of the Commission.

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19	Indicate Nature of No	tice by Checking Below		
NOTICE OF INTENTION TO CHANOE PLANS	NOTICE OF INTENTION T TEMPORARILY ABANDO		CE OF INTENTION RILL DEEPER	
NOTICE OF INTENTION TO PLUG WELL	NOTICE OF INTENTION TO PLUG BACK		ice of Intention et Liner	
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OIL CONSERVATION COMMI SANTA FE, NEW MEXICC	FORT WORT	H, TEXAS	21 AZEOTIO	1965
Gentlemen:		• m		
(Company SE. 1/ SW 1/4 of Se (40-acre Bubdivision)	CARON UNIT (R 2323) or Operator) c. 25	Lesse 30E NMPM., GRAY	IBURG-JACKBON	(Unit)
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Approved, 19, 19	ANADARKO PRODINCTION COMPANY
Approved OIL CONSERVATION COMMISSION	E. A. RILEY Position Supreshy Condition and AuguAnt General DIV.
By	Nems ANADARXO PACEUGTION CO.
Title	Addres
EXHIBIT "B"	(Vell 13-8)

(Form C-103) (Revised 1/1/03)

Santa Fe, New Mexico

NEW MEXICO OIL CONSERVATION COMMISSION

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 Oil Conserva	tion difications	considereu	bern	ų,

NEW	MEXICO OIL OSA New Mexico Santa Fe, New Mexico		all be
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NOTICE OF INTENTION	TEXA	S	÷ 1
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OIL CONSERVATION COMM		PRODUCTION	1 COMPANY
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1	a certain work as described -	Well No.	NC
Gentlemen:	Itention to do certa (R 2323)	GRAYBURG	
Following is a Notice	JACKSON UNIT	ANADARKO PRODUCTION ANADARKO PRODUCTION I3-4 Wel' No. 30E JACKSO GRAYBURG-JACKSO OPOSED PLAN OF WORK THE RULES AND REGULATIONS)	
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	COLLOW INSTRUCTION	ND CLEANOUT TO CASING OPPOSI	DER NO. R 234
	GOL WELL	TACE PERFORATE COMMISSION VI	
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EXHBIT "E"

ANADARKO PRODUCTION COMPANY Super Intendent Secondary Recovery DIV. Super Intendent Secondary Recovery DIV. Send Communications regarding well to:

Α.

By E.

Position....

Approved..... Except as follows:

Approved OIL CONSERVATION COMMISSION

By Title

P.O. Box 9317, FORT WORTH, TEXAS Name

Address.

(Well 13-4)



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			INJECTION RAYBURG-JACKSO	WELL DATA N UNIT (R 2323)	
ł	1	Well 7A-2	Well 13-1	Well 13-4	Well 13-5	Well 13-8
	i		J	ce Casing		<u></u>
	5	Size 8" Length 508'	8" 510'	8" 510'	8'' 495'	8'' 515'
	V	Sacks of Cement 50	50	50	50	50
					s. Alternation	
					<u> </u>	
		•				
		8. 				
			r 1	ubing		
		Size 2"	2"	2''	2"	2"
		Length 3010'	3050'	3070'	30801	3130'
		Packer Depth 3010'	30501	30701	30801	3130'
	1.0	and An an	Pro	duction Casing		
		Size 7" Length 3030'	7" 3070'	4 1/2" 3090'	7" 3100'	4 1/2" 3150'
		Sacks of Cement 100	100	100	100	100

EXHIBIT "C"

(Forta C-102) (Revised 7/1/82)

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 Netice by Checking Delow

NOTICE OF INTENTION TO CHANGE PLANS	Notice of Invention to Temporarily Adandon Well	Notice of Intention to Drul Deeper	
NOTICE OF INTENTION TO PLUG WELL	NOTICE OF INTENTION TO PLUG BACK	Notice of Intention to Set Linea	
Notice of Intention to Squzzze	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 (7449)

Gentlemen:

Following is a Notice of Intention to do certain work as described below at the Anadarko Production Company

. •	operated	Graybu	rg-Jackson Unit	(R ² 2323)		Well No.	13-8	N
	SE	SW	(Company or Operator)	17S	10030			(Unit)
				T	, <u>r</u> 30E	NMPM, Grayb	urg-Jackso	n Pool -

County.

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

Re-enter this plugged and abandoned well and cleanout to T. D. of approximately 3370'. Set 41/2" casing to T.D. and perforate opposite the Premier zone of the Grayburg . Install tubing and packer and complete as a water injection well.

Approved		Anadarko Production Co.
Except as follows:		By
	÷	Superintendent, Secondary Recovery Div.
Approved		Send Communications regarding well to:
OIL CONSERVATION CO	MMISSION	Anadarko Production Co.
Ву	• • • • • • • • • • • • • • • • • • • •	Name P.O. Box 9317, Fort Worth, Texas
Title		Address
· .	Robbilde	11 pli

(Forts C-102) (Revised 7/1/82)

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 advirable, 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 Cheeling Below

NOTICE OF INTENTION TO CHANGE PLANS	ŝ.	Notice of Intention to Temporarily Adandon Well	NOTION OF INTENTION TO DRILL DEEPER	
NOTICE OF INTENTION TO PLUG WELL		Notice of Intention to Pluo 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

Eddy

Fort Worth, Texas

October 12, 1965 (Data)

Gentlemen:

 Anadarko Production Company

 Anadarko Production Company

 Operated Grayburg-Jackson Unit (R 2323)
 13-4
 P

 (Company or Operator)

 Lesse

 (Unit)

 SE
 1/4
 SE
 175
 R
 30E
 NMPM., Grayburg-Jackson
 P

 (Unit)

 (Unit)

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, 19	ANADARKO PRODUCTION COMPANY
Except as follows:	By Corpany or Operator E. A. Riley
	Superintendent Secondary Recovery Div.
Approved	Send Communications regarding well to:
OIL CONSERVATION COMMISSION	Anadarko Production Co.
By	Name
. Tike	F.O. Box 9317 Ft. Worth, Texas

EXHIBIT "E"



dil -Xelex List A

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(Form C-102) (Revised 7/1/83)

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.

NOTICE OF INTENTION TO CHANGE PLANS	Notice of Intention to Temporarily Adandon Well	Notice of Intention to Drill Deeper	
NOTICE OF INTENTION TO PLUG WELL	NOTIOZ OF INTENTION TO PLUO BACK	Notice of Intention to Set Liner	
NOTICE OF INTENTION TO SQUEEZE	Notice of Intention to Acidize	Notice of Intention to Shoot (Nitro)	
Votice of Intention o Gun Perforate	Notios of Intention (Other)	Notice of Intention (Other)	- X
SANTA FE, NEW MEXICO	Fort Worth, Texa (Place)	as October 12, 19	0.0
Gentlemen:			
Following is a Notice of Intention	a to do certain work as described below at the	Anadarko Production Com	
Following is a Notice of Intention	a to do certain work as described below at the	Anadarko Production Com	
Following is a Notice of Intention operated Grayburg (Company or C SE 1/4 SE 1/4 of Sec (40-acre Subdivision)	n to do certain work as described below at the -Jackson Unit (R-2323 -) 	Anadarko Production Com	P
Following is a Notice of Intention operated Grayburg	n to do certain work as described below at the -Jackson Unit (R-2323 -) 	Anadarko Production Com	P

Install tubing and packer and c omplete as water injection well. BEFORE EXAMINER UTZ CIL CONSERVI MON COMMISSION ASE NC

Set 4 1/2" casing to T.D. and perforate casing opposite Premier Zone of Grayburg.

Approved ... Except as follows:

Ъy.

Title.

Approved

OIL CONSERVATION COMMISSION

ANADARKO PRODUCTION COMPANY E. A. Riley

Superintendent Secondary Recovery Div. Position., Send Communications regarding well to:

Anadarko Production Co.

Name. P.O. Box 9317 Ft. Worth, Texas Addres

EXHIBIT "B"

By

RAHARQARX COMMISSION (IIX REXAS

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

perat	tor{	inada	rko Production Company Date	
ddre	ss F	·.0.	Box 9317, Fort Worth, Texas	
			Grayburg-Jackson Unit (R 2323)	
				2
eser	voir	Prem	ier Zone of Grayburg Discovery Date April 1930	
		HAŸ	E ANY INJECTION PERMITS BEEN GRANTED PREVIOUSLY IN THIS RESERVOIR?Yes	
	•		IN WERMANNAN DUIESTIDMIN MATXXXX NOBERATORS IN THE DETSER NOI BANDARRE IN DETARTICS ARACKAR AND NXANUX DE DETSER AND AND ATAL CHERY MERETOR UTZ	
/	· · · · · ·		ON CONCEPTION CONNECTION	
F	leservo	oir and	I fluid characteristics OIL CONSERVATION COMMISSION	٠.
	A. 1	Inform	nation on entire reservoir $CASE NO. 3330$	75
•		1.	Name of formation Crayburg-Jackson Premier-Zone	
		2.	Estimated producting area of antira reconvoir Unknown	
		3.	Composition (sand, limestone, dolomite, etc.) <u>Sand</u> Type of structure <u>Stratigraphic Trap</u>	
		4.	Type of structure Stratigraphic Trap	
		 r	(include cross-section and structural maps)	
		5.	Subsea depth of oil-water contact <u>None</u> Gas-oil contact <u>None</u>	
		6. 7	Type drive during primary production <u>Solution gas</u> Criginal BHP <u>1,300 Est.</u> Current BHP <u>0-(non_flood_area)ptese</u> (A	ę-
		7.	Was gas cap present originally? <u>No</u> At present? <u>No</u>	IL G S
		8.	Ratio of gas cap volume to oil zone volume At present?	
		9.		
		10.	Saturation pressure Formation Volume Factor 1.28	
	· •			
	в.	intorn	nation on proposed project area	
	ç		1,600	
		1.	Number of productive acres in lease (s) within project area	
		2.	Average depth to top of pay 3,250 Average effective pay thickness (feet) 13	
	4	3.	Average porosity (%)	
		4.		
		5.	stronge i enteenter permeability (maer)	
		6. S	Connate water content (% of pore space)	
		7.	Gravity of oil (API) 37 Viscosity Est. 1.5 CP	•
. I	Primary	Prod	uction history	
	·		Date first well completed on lease (s) April 1930	
		1. 2.	Oil, gas, water production by months since discovery. (Graphically as well as in	
		4.		
		0	tabular form.) Stage of depletion of project area Stripper - except it repressured area	
		3. 4		
		4. 5.	Number of producing wells on each lease in project area $\frac{30}{4}$ Average daily oil production per well at present time 2.66 (con-flood area & 35.1(resp	~~ ~
			Average gas-cil ratio <u>nil</u> Water production ($\%$) <u>30.5%</u> ar	
	<u> </u>	6. 7	Cumulative oil production to date from lease (s) 1,7-5,000	ca)
		7.	Cummative on production to date from lease (s)	
I. 1	Results	2 proc	cted	
1		, ovhe		
		1.	Estimated original oil in place (bbls.)	
		2.	Estimated original off in place (bols.)	1
		3.	Estimated on saturation at present time (% of pole space)30	
		4.	Estimated residual of saturation at abandonment	
		. .	injection (bbls.) 1,937,998	
v. 1	Injectio	n		
		- -		
		1.	Type of Injection Fluid (water gas LPG) Water	÷
		2.	Type of Injection Fluid (water, gas, LPG) Water Source or injected fluid (formation, depths) Connergial water supplier & produced w	ate
		2. 3.	Injection pattern and spacing 5 spot; 80 acres	
		ა. 4.	Province and obvious	
			international infection pressure to be used (pst)	
		5. e	Estimated maximum per well rate of injection (nois.)	
		6.	List complete injection well data on reverse side of this sheet. (See Exhibit "C")	
			(AP PELICANY SYN USY EX X FLYX AIYYY FIE THE THE THE THE THE THE THE THE THE TH	

INJECTION WELL DATA GRAYBURG-JACKSON UNIT (R 2323) Well Well Well Well 13-8 Well 7A-2 13-5 13-4 13-1 Surfice Casing 8" 8" 81 8¹¹ -515' 8" 4951 Size 510' 510' 5081 Length Sacks of Cement 50 50 50 50 50 Tubing 2" 2" 2" 2" 24 Size 3130' 30801 30701 3010[°] 30501 Length 3130' Packer 3080' 3070' 3050' 3010' Depth . Production Casing 4 1/2" 3150' 7" 4 1/2" 3090**'** 7" 7" 3100' Size 3070' 30301 Length 100 Sacks of Cement 100 100 100 100 BEFORE EXAMINER UTZ OIL CONSERVATION COMMISSION EXHIBIT "C"

Source for Corporation Control Corporation <th c<="" th=""><th></th><th>0</th><th></th><th></th><th></th><th>C</th><th>)</th><th></th><th> </th><th>· · · · · ·</th><th>1</th><th>2</th><th>ត្តា</th></th>	<th></th> <th>0</th> <th></th> <th></th> <th></th> <th>C</th> <th>)</th> <th></th> <th> </th> <th>· · · · · ·</th> <th>1</th> <th>2</th> <th>ត្តា</th>		0				C)		 	· · · · · ·	1	2	ត្តា
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BEFORE EXAMINER UTZ BIL CONSERVATION COMMISSION CASE NO.

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

October 29, 1965



14 A 174 -01

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

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. 2634 Order No. R-2323

APPLICATION OF AMBASSADOR OIL CORPORATION FOR APPROVAL OF THE GRAYBURG-JACKSON UNIT AGREEMENT AND FOR AN ORDER AUTHORIZING A WATERFLOOD PROJECT IN THE GRAYBURG-JACKSON POOL, EDDY COUNTY, NEW MEXICO.

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9 o'clock a.m. on September 11, 1962, at Santa Fe, New Mexico, before Elvis A. Utz, Examiner duly appointed by the Oil Conservation Commission of New Mexico, hereinafter referred to as the "Commission," in accordance with Rule 1214 of the Commission Rules and Regulations.

NOW, on this <u>3rd</u> day of October, 1962, the Commission, a quorum being present, having considered the application, the evidence adduced, and the recommendations of the Examiner, Elvis A. Utz, 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, Ambassador Oil Corporation, seeks approval of the Grayburg-Jackson Unit Agreement covering 1600 acres, more or less, of Federal and State lands in Township 17 South, Range 30 East, NMPM, Eddy County, New Mexico.

(3) That the applicant proposes to institute a waterflood project in the proposed Grayburg-Jackson Unit Area with the initial injection of water into the Grayburg formation to be through six wells located therein.

(4) That approval of the proposed Grayburg-Jackson Unit Agreement will in principle tend to promote the conservation of oil and gas and the prevention of waste.

(5) That the wells in the proposed waterflood project have reached an advanced stage of depletion and are properly classified as "stripper" wells. -2-CASE No. 2634 Order No. R-2323

(6) That the proposed waterflood project should be authorized and the operation thereof should be governed by the provisions of Rule 701 of the Commission Rules and Regulations.

IT IS THEREFORE ORDERED:

(1) That the Grayburg-Jackson Unit Agreement is hereby approved.

(2) That the plan under which the unit area shall be operated shall be embraced in the form of a unit agreement for the development and operation of the Grayburg-Jackson Unit Area, and such plan shall be known as the Grayburg-Jackson Unit Agreement Plan.

(3) That the Grayburg-Jackson Unit Agreement Plan is hereby approved in principle as a proper conservation measure; provided, however, that notwithstanding any of the provisions contained in said unit agreement, this approval shall not be considered as waiving or relinquishing, in any manner, any right, duty, or obligation which is now, or may hereafter be, vested in the Oil Conservation Commission of New Mexico by law relative to the supervision and control of operations for the exploration and development of any lands committed to the Grayburg-Jackson Unit, or relative to the production of oil and gas therefrom.

(4) (a) That the unit area shall be:

NEW MEXICO PRINCIPAL MERIDIAN

TOWNSHIP 17 SOUTH, RANGE 30 EAST <u>EDDY COUNTY, NEW MEXICO</u> Section 22: SE/4, NE/4 SW/4, and S/2 SW/4 Section 23: SW/4 NW/4, SW/4, and S/2 SE/4 Section 25: SW/4 Section 26: All Section 27: NE/4 and NE/4 SE/4 Section 36: NW/4 NW/4

comprising 1600 acres, more or less.

(b) That the unit area may be enlarged or contracted as provided in said plan; provided, however, that administrative approval for expansion or contraction of the unit area must also be obtained from the Secretary-Director of the Commission.

(5) That the unit operator shall file with the Commission an executed original or executed counterpart of the Grayburg-Jackson Unit Agreement within 30 days after the effective date thereof. In the event of subsequent joinder by any party or -3-CASE No. 2634 Order No. R-2323

expansion or contraction of the unit area, the unit operator shall file with the Commission within 30 days thereafter counterparts of the unit agreement reflecting the subscription of those interests having joined or ratified.

(6) That the portion of this order relating to the approval of the Grayburg-Jackson Unit Agreement shall become effective upon the approval of said unit agreement by the Commissioner of Public Lands for the State of New Mexico and the Director of the United States Geological Survey, and shall terminate <u>ipso</u> <u>facto</u> upon the termination of said unit agreement. The last unit operator shall notify the Commission immediately in writing of such termination.

(7) That the applicant is hereby authorized to institute a waterflood project in the Grayburg-Jackson Unit Area with the initial injection of water into the Grayburg formation through the following-described wells:

TRACT AND WELL NUMBER

LOCATION

3-3	NW/4-SW/4, Section 23-
7-3	SE/4 SW/4, Section 23
9-1	NW/4 NE/4, Section 26
12-1	SE/4 NW/4, Section 26 NW/4 NW/4, Section 26
10-2 7-2	SE/4 $SE/4$, Section 20 $SE/4$ $SE/4$, Section 22

all in Township 17 South, Range 30 East, NMPM.

(8) That the operation of the waterflood project shall be governed by the provisions of Rule 701 of the Commission Rules and Regulations.

(9) 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

EDWIN L. MECHEM, Chairman

sualh Member XIN ar. PORTER, Jr., Member & Secretary L. Α.

SEAL

esr/



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

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.

Gentlemen:

Yours very truly,

G E. A. Riley

Superintendent Secondary Recovery Div.

BGW/hb

Approved:

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

62 By_ **6**2 7-9 President

Date_ <u>October 14, 1965</u>



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,

0. V

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 Date

3330 Veard: 11-3-65 Grant Cencelarco an extention Rec. 11-3-65 to the Grayburg Jackson wale flood approve the fire wells lester on front page of application for hearing as injector. all fine wells shall be completed to inject water them tubiling and to inject water them tubiling and ender aparter set as close impossible above the injection zone. Anonulus shall be filled with interest inert Thursto Def. fluid.

Docket No. 31-65

DOCKET: EXAMINER HEARING - WEDNESDAY - NOVEMBER 3, 1965

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 3327: Application of Texaco Inc. for an allowable increase; Lea County, New Mexico. Applicant, in the above-styled cause, seeks an exception to statewide Rule 505 (a) and 505 (b) to increase the 40-acre proportional factor from 1.33 to 1.77 for the Vacuum-Glorieta Pool, Lea County, New Mexico.

CASE 3328:

Application of Texaco Inc. for force pooling, San Juan County, New Mexico. Applicant, in the above-styled cause, seeks an order force pooling all mineral interests in the Basin-Dakota Pool underlying the N/2 of Section 36, Township 30 North, Range 12 West, San Juan County, New Mexico.

CASE 3329:

Application of Tenneco Oil Company for directional drilling, San Juan County, New Mexico. Applicant, in the above-styled cause, seeks authority to recomplete by means of directional drilling the following wells:

> Township 29 North, Range 9 West Florance No. 24, Unit A, Section 23

> Township 30 North, Range 8 West Florance No. 36, Unit H, Section 3 Florance No. 35, Unit A, Section 18

> Township 30 North, Range 9 West Florance No. 5, Unit A, Section 22 Mansfield No. 1, Unit P, Section 19

All of the above wells are presently completed in the Blanco-Mesaverde Pool. Applicant proposes to set a whipstock above the Mesaverde producing interval and to directionally drill, recompleting said wells in the Mesaverde formation, and in some instances, to further drill to the Dakota producing interval thereby permitting dual completion of the wells to produce gas from the Blanco-Mesaverde and Basin-Dakota Gas Pools. Applicant further proposes to conduct appropriate deviation tests to ensure that none of the wells is completed nearer than 200 feet to the outer boundaries of its proration unit.

CASE 3330;

Application of Anadarko Production Company for a waterflood project, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks authority to institute a waterflood project in its Grayburg Premier Sand formation through five wells in Sections 25 and 26, Township 17 South, Range 30 East, Grayburg Jackson Pool, Eddy County, New Mexico. NOVEMBER 3, 1965 EXAMINER HEARING

- 2 -

CASE 3331: Application of Marathon Oil Company for salt water disposal, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks authority to dispose of produced salt water into the Paddock-Yeso formation in its Federal Well No. 1 in Unit K of Section 24, Township 21 South, Range 23 East, Eddy County, New Mexico.

CASE 3323: (Continued from the October 19, 1965, Examiner Hearing) Application of David Fasken for a dual completion, Lea County, New Mexico. Applicant, in the above-styled cause, seeks approval of the dual completion (conventional) of his Felmont-Collier Well No. 1 located in Unit H of Section 9, Township 11 South, Range 33 East, Lea County, New Mexico, to produce oil from the North Bagley Upper and Lower Pennsylvanian Pools through parallel strings of tubing.

2

Case 3330

PRODUCTION COMPANY ANADARKO FORT WORTH, TEXAS 76107 P. 0. 80X 9317 3109 WINTHROP AVENUE

CABLE ADDRESS: ANDARK

October 27,1965

State Engineer Office State Capitol Santa Fe, New Mexico 87501

Attention: Mr. Frank E. Irby

Gentlemen:

ANADARK

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 offact 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,

1 Auty E. A. Riley, Superintendent Secondary Recovery Division

EAR/hb

 $\langle \cdot, \cdot \rangle$

CC:Franklin, Aston & Fair

Roswell, New Mexico Co-Executors of R.F.Windfohr Estate (John Rush Vann) Fort Worth, Texas

r Ant 330

October 25, 1965

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65 BCT

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 packet in wells Nos. 7A-2, 13-1 and 13-5. Wells Nos. 13-4 and 13-8 will be reentered and cleaned out to total depth and new 43" 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 43" 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 42" casing to T.D. and coment 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 <u>September 11, 1962</u> which resulted ip 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.

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 IN-JECTION WELLS, ALL OF SUCH WELLS BEING LOCATED WITHIN THE BOUNDARIES OF THE GRAYBURG-JACKSON UNIT IN EDDY COUNTY, NEW MEXICO.

3320 Case No.

<u>A P P L I C A T I O N</u>

65 Oct 13 PH 1 CH

HATH OFFICE (B);

COMES NOW Anadarko Production Company, in its capacity as Operator of the Grayburg-Jackson Unit, Eddy County, New Mexico, hereinafter referred to as "Applicant", and makes application for authority to convert or recomplete the below-described wells as water injection wells into the Grayburg Premier Sand Formation in and under said Grayburg-Jackson Unit, and in support of this Application alleges the following:

1. The wells to be recompleted or converted to water injection wells and the locations thereof within the Grayburg-Jackson Unit are described as follows:

Grayburg-Jackson Unit Well No.	Location	N. M. Unit Letter <u>Designation</u>	Sec.	Town- Ship	Range
7A-2	SE/4 NE/4		26	175	30E
13-1	NW/4 SE/4	J	26	17S	30E
13-4	SE/4 SE/4	Р	26	178	30E
13-5	NW/4 SW/4	L	25	175	30E
13-8	SE/4 SW/4	N	25	175	30E

ALL LOCATED WITHIN EDDY COUNTY, NEW MEXICO.

Wells No. 13-4 and 13-8 have previously been plugged and abandoned, but will be recompleted as water injection wells in the Grayburg-Jackson Premier Sand located at an approximate depth of 3,250 feet, and all the other wells above listed will be converted from producing wells to water injection wells in said Formation at the same depth.

2. That the original order number which originally authorized the waterflood project known as the Grayburg-Jackson Unit is Order No. R-2323; the formation to be flooded by the injection of water in the before-mentioned wells will be the Grayburg Premier Sand located at an approximate depth

of 3,250 feet; the fluid to be used for injection is water, and it is anticipated that there will be injected in each well a volume of Five Hundred (500) barrels per day. The source of the injection water will be local commercial water companies.

3. That the conversion or recompletion of the above-mentioned five (5) wells as water injection wells will aid in a more efficient and orderly development and operation of the Grayburg-Jackson Unit and Waterflood Project and is, in fact, necessary to allow the Applicant to completely develop and operate the Grayburg-Jackson Unit and Waterflood Project. In addition thereto, Applicant is in the process of entering into a Cooperative Line Agreement with the operator of leases covering land in Sections 24 and 25 in said township and range, which land directly offsets the Grayburg-Jackson Unit. It is anticipated that the formal agreement will be fully executed by the time of the hearing on this Application and, if so, a fully executed copy of such agreement will be exhibited and furnished to this Commission.

4. That there are attached hereto the following exhibits as indicated, or such exhibits, as indicated, will be furnished to the Commission within ten (10) days from date hereof:

- (a) A plat showing the location of the proposed injection wells and all other wells within a two-mile radius, such plat being marked Exhibit "A"; and
- (b) Fully completed and executed by Anadarko Production Company, a New Mexico Oil Conservation Commission Form, No. C-116 (Gas-Oil Ratio Report), such form being marked Exhibit "B"; and
- (c) A diagrammatic sketch showing casing and tubing data for the above-mentioned five injection wells, such sketch being marked Exhibit "C"; and
- (d) Waterflood application data sheet with pertinent reservoir and lease data, such application being marked Exhibit "D"; and
- (e) Fully completed and executed by Anadarko Production Company, a New Mexico Oil Conservation Commission Form, No. C-102 (Miscellaneous Notice), giving notice of intention to recomplete Wells No. 13-8 and 13-4 above, such form being marked Exhibit "E"; and
(f) A map of the Unit area showing the proposed injection wells marked in red, such map being marked Exhibit "F".

6. That a copy of this Application, together with all Exhibits,

has been forwarded to the following parties:

- (a) The State Engineer, State of New Mexico, Capitol Building, Santa Fe, New Mexico; and,
- (b) The First National Bank of Fort Worth, Texas, and Anne Burnette Windfohr, in their capacity as Independent Executors of the Estate of R. F. Windfohr, Deceased, as Operator of the offset acreage located in Section 25, Township 17 South, Range 30 East, NMPM, Eddy County, New Mexico, addressed to 1202 First National Bank Building, Fort Worth, Texas 76102; and,
- (c) Franklin, Aston & Fair, Inc., as Operator of the offset acreage located in the NE/4, Section 35, Township 17 South, Range 30 East, NMPM, Eddy County, New Mexico, addressed to P. O. Box 1090, Roswell, New Mexico 88201.

7. That Applicant is filing this Application in accordance with the provisions of Rule 701 B, and Applicant requests and prays that an order be entered by this Commission allowing the recompletion and conversion of the above-mentioned wells as water injection wells and the injection of water into the above-mentioned formation underlying the land above-described within the Grayburg-Jackson Unit, all as provided under Rule 701 B.

WHEREFOR, Applicant requests a hearing before an examiner and requests

that after a hearing thereon the above-mentioned order be entered by the Commission.

ANADARKO PRODUCTION COMPANY

n Attorney

Irley Bonnette, P.O. Box 9317, Fort Worth, Texas

CERTIFICATE

I, Irley Bonnette, do hereby certify that on the 2 day of October, 1965, I mailed a true and complete copy of this Application, together with all Exhibits, to the following parties: The State Engineer, State of New Mexico, Capitol Building, Santa Fe, New Mexico; The First National Bank of Fort Worth, Texas, and Anne Burnett Windfohr, Independent Executors of the Estate of R. F. Windfohr, Deceased, 1202 First National Bank Building, Fort Worth, Texas 76102; and Franklin, Aston & Fair, Inc., P. O. Box 1090, Roswell, New Mexico 88201.

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NEW MEXICO OIL CONSERVATION COMMISSION GAS-OIL RATIO TESTS

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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.

5

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

EXHIBIT "B"

ledge and belief.

C-116

Revised 1-1-65

(Signature) E.A.RILEY 1 SUPERINTENDENT SECONDARY RECOVERY (Title) DIV. OCTOBER 12, 1965 (Date)

GRAYBURG-JACKSON UNIT (R 2323)

OCTOBER 11, 1965

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EXHIBIT "C"

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- 4.
- Maximum injection pressure to be used (psi) _____,200 Estimated maximum per well rate of injection (bbls.) _____50 List complete injection well data on reverse side of this sheet. 5. 6, 500

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

INJECTION WELL DATA

				5			e
LEAS	SE NAME & NO. Ell number	74-2	13-1	13-4	13-5	13-8	3
ш.	SIZE	8"	8"	8"	. '8"	8"	
SURFACE	LENGTH	508'	510'	510'	4951	5151	
	SACKS& TYPE CEMENT	50	50	50	50	50	
	SIZE	7 "	71) 1	7"	· · · · · · · · · · · · · · · · · · ·	7"	
PRODUCTION CASING	LENGTH	3030'	3070'	3090 '	31001	3150'	
<u>د</u>	SACKS& TYPE CEMENT	100	100	100	100	100	
TUBING	LENGTH	30101	3050'	3070'	30801	31301	
10 L	PACKER DEPTH	3010'	3050 '	3070'	30801	3130' "	
INJECTION	DEPTH	32201	32201	32251	32251	3330'	
INJEC	THRU CASING OR TUBING?	TUBING	TUBING	TUBING	Tubing	TUBING	

(Form C-103) (Revised 7/1/53)

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 render on which will be given the approval with any modifications considered advisable or the mission by the Commission

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 addi-tional instructions in the Rules and Regulations of the Commission tional instructions in the Rules and Regulations of the Commission. Indicate Nature of Notice by Checking Below NOTION OF INTENTION TO DRILL DREPER NOTICE OF INTENTION TO TEMPORARILY ABANDON WELL NOTICE OF INTENTION TO SET LINER NOTICE OF INTENTION TO CHANGE PLANS NOTICE OF INTENTION TO PLUG BACK NOTICE OF INTENTION TO SHOOT (Nitro) NOTICE OF INTENTION TO PLUO WELL NOTICE OF INTENTION TO ACIDIZE NOTION OF INTENTION NOTION OF INTENTION TO SQUEEZE NOTICE OF INTENTION (OTHER) (OTHER) OCTOBER 12, 1965 NOTICE OF INTENTION TO GUN PERFORATE FORT WORTH, TEXAS (Date) OIL CONSERVATION COMMISSION (Pisce) SANTA FE, NEW MEXICO Following is a Notice of Intention to do certain work as described below at the ANADARKO PRODUCTION COMPANY. Gentlemen:in.....N....(Unit) OPERATED GRAYBURG-JACKSON UNIT (R 2323) NMPM., GRAYBURG-JAC KBON R30E 25 S₩ ...1/4 of Sec. (40-acre Subdivision) SE FULL DETAILS OF PROPOSED PLAN OF WORK 1 (FOLLOW INSTRUCTIONS IN THE RULES AND REGULATIONS) RE-ENTER THIS PLUGGED AND ABANDONED WELL AND CLEANOUT TO T.D. OF APPROXIMATELY 3370". SET 42" GASING 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) ANADARKO PRODUCTION CUMPANY Approved..... Except as follows: By E. A. RILEY Position SUPES HI Contra Mication Question Bure RY DIV. Approved OIL CONSERVATION COMMISSION Name AHADARKO PRODUCTION CO. By (Hell 13-8) EXHIBIT "E" Title

(Forth C-102) (Revised 7/1/03)

NEW MEXICO OIL CONSERVATION COMMISSION

Santa Fe, New México

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 aubmitted. The plan as approved should be followed, and work should not begin until approval is obtained. See addi-tional instructions in the Rules and Regulations of the Commission.

		NOTICE OF INTENTION	S
NOTICE OF INTENTION	NOTICE OF INTENTION TO TEMPORARILY ABANDON WELL	TO DRILL DEEPER	
TO CHANGE PLANS	NOTION OF INTENTION	NOTICE OF INTENTION TO SET LINER	
NOTICE OF INTENTION TO PLUG WELL	NOTICE OF INTENTION	NOTICE OF INTENTION TO SHOOT (Nitro)	
NOTICE OF INTENTION TO SQUEEZE	TO ACIDIZE NOTICE OF INTENTION	NOTICE OF INTENTION (OTHER)	-X
NOTICE OF INTENTION TO GUN PERFORATE	(OTHER)		
OIL CONSERVATION COMMIS SANTA FE, NEW MEXICO		OCTORES 12. 196	
Gentlemen:	that helde	at the	DMRANY
Following is a Notice of Inter	ation to do certain work as described below	Well No	(Unit)
	14653981-U#17-(H-63637	NMPM.,GBAYBURG. JAC. KO.ON	Pool
SE (40-acre Subdivillon)		Well No	
EDDY		D DIAN OF WORK	
	FULL DETAILS OF PROPOSE (FOLLOW INSTRUCTIONS IN THE R	ULES AND REGULATIONS)	2
OF GRAYBURG AND COM	APLETE AS A TRICE	LEANOUT TO T.D. OF APPROXINA PERFORATE CASING OPPOBITE PRE VELL UNDER COMMISSION ORDER N	
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	10	ANADARKO PRODUCTION COMPAN	¥
Approved Except as follows:		Afiley	
Except a tout a	ву. Ро	E. A. RILEY	DARY RECEVERY DI
Approved OIL CONSERVATION CO	MMI88ION	AMADARKO PRODUCTION CON	ANY.
		ddreu	THA TEXAS
Title	*****************	. 13-4)	





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3109 WINTHROP AVENUE P. D. DOX 9317 FORT WORTH, TEKAS 76107 CABLE ADDRESS: ANDARK

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ANADARKO

Gentlemen:

October 12, 1965

AIR MAIL

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

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

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.

Date 10-22-65 DOCKET MAILED

New Mexico Oil Conservation Commission Page 2 October 12, 1965

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

Irley

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

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.

OTICE OF INTENTION O CHANOE PLANS	NOTICE OF INTENTION TO TEMPORARILY ADANDON WELL	NOTICE OF INTENTION TO DAILL DEAPER	
IOTICE OF INTENTION O PLUG WELL	Notice of Intention to Plug Back	Notice of Intention to Set Liner	
OTIOE OF INTENTION O SQUEEZE	NOTICE OF INTENTION TO ACIDIZE	Νοτίος όγ Ικτεκτίοκ το Shoot (Nitro)	
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IL CONSERVATION COMMISS ANTA FE, NEW MEXICO	ION Fort Worth, Texa	s October 12, 1 (Date)	965
entlemen:			
Following is a Notice of Intentic	on to do certain work as described below at the.	Anadarko Production Co	mpany
	-Jackson Unit (R 2323)	13-4	Ý
	Operator) Econo 26 , T. 17S , R 30E N	MPM, Grayburg-Jackson	
(40-acro Subdivision) Eddy	County.		
	BUILT DEPILIT C OF DE OBOCEE DE		
	FUEL DETAILS OF PROPOSED PL	AN OF WORK	
Re-enter this plugged	FULL DETAILS OF PROPOSED PL DLOW INSTRUCTIONS IN THE RULES and abandoned well a nd cleano	AND REGULATIONS) out to T.D. of approximate	ely 3250'
Re-enter this plugged Set 4 1/2" casing to T	DLLOW INSTRUCTIONS IN THE RULES	AND REGULATIONS) out to T.D. of approximate ite Premier Zone of Grayb	ely 3250' burg.
Re-enter this plugged Set 4 1/2" casing to T	And abandoned well a nd cleano C.D. and perforate casing oppos	AND REGULATIONS) out to T.D. of approximate ite Premier Zone of Grayb	21y 3250' burg.
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	4	Surf	ce Casing	·	1
Size Length	8'' 508'	8" 510'	8" 510'	8'' 495'	8" 515'
Sacks of Cement	£ 50	50	50	50	50
£					
		¢			
		1	ubing		
Size	2"	2"	2"	2"	2"
Length	3010'	3050'	'3070'	3080 ¹	3130'
Packer Depth	3010'	3050' Pro	3070' duction Casing	3080 '	3130'
Size Length	7" 3030'	7" 3070'	4 1/2" 3090'	7" 3100'	4 1/2" 3150'
Sacks of Cement	100	100	100	100	100

INJECTION WELL DATA GRAYBURG-JACKSON UNIT (R 2323)

EXHIBIT "C"

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A N A D A R K O P R O D U C T I O N C O M P A N Y DID9 WINTHROP AVENUE BOX 9317 FORT WORTH, TEXAS 76107 CABLE ADDRESS: ANDARK

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bee: Mr. John Rush Venn, c/o R. F. Mindidohr Estate, 1212 First National Bank Suilding, Fort Worth, Texas 76102

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 IN-) JECTION WELLS, ALL OF SUCH WELLS BEING LOCATED) WITHIN THE BOUNDARIES OF THE GRAYBURG-JACKSON UNIT) IN EDDY COUNTY, NEW MEXICO.

Case No.

<u>APPLICATION</u>

COMES NOW Anadarko Production Company, in its capacity as Operator of the Grayburg-Jackson Unit, Eddy County, New Mexico, hereinafter referred to as "Applicant", and makes application for authority to convert or recomplete the below-described wells as water injection wells into the Grayburg Premier Sand Formation in and under said Grayburg-Jackson Unit, and in support of this Application alleges the following:

1. The wells to be recompleted or converted to water injection wells and the locations thereof within the Grayburg-Jackson Unit are described as

follows:		,	10		
Grayburg-Jackson Unit Well No.	n Location	N. M. Unit Letter <u>Designation</u>	Sec.	Town- Ship	Range
7A-2	SE/4 NE/4	n an <mark>H</mark> ailtean Itean	26	175	30E
13-1	NW/4 SE/4	J	26	175	30E
13-4	SE/4 SE/4	Р	26	175	30E
13-5	NW/4 SW/4	L	25	175	308
13-8	SE/4 SW/4	N	25	175	3ŬE
•			1	S.L.	

ALL LOCATED WITHIN EDDY COUNTY, NEW MEXICO.

Wells No. 13-4 and 13-8 have previously been plugged and abandoned, but will be recompleted as water injection wells in the Grayburg-Jackson Premier Sand located at an approximate depth of 3,250 feet, and all the other wells above listed will be converted from producing wells to water injection wells in said Formation at the same depth.

2. That the original order number which originally authorized the waterflood project known as the Grayburg-Jackson Unit is Order No. R-2323; the formation to be flooded by the injection of water in the before-mentioned wells will be the Grayburg Premier Sand located at an approximate depth



of 3,250 feet; the fluid to be used for injection is water, and it is anticipated that there will be injected in each well a volume of Five Hundred (500) barrels per day. The source of the injection water will be local commercial water companies.

3. That the conversion or recompletion of the above-mentioned five (5) wells as water injection wells will aid in a more efficient and orderly development and operation of the Grayburg-Jackson Unit and Waterflood Project and is, in fact, necessary to allow the Applicant to completely develop and operate the Grayburg-Jackson Unit and Waterflood Project. In addition thereto, Applicant is in the process of entering into a Cooperative Line Agreement with the operator of leases covering land in Sections 24 and 25 in said township and range, which land directly offsets the Grayburg-Jackson Unit. It is anticipated that the formal agreement will be fully executed by the time of the hearing on this Application and, if 30, a fully executed copy of such agreement will be exhibited and furnished to this Commission.

4. That there are attached hereto the following exhibits as indicated, or such exhibits, as indicated, will be furnished to the Commission within ten (10) days from date hereof:

- (a) A plat showing the location of the proposed injection wells and all other wells within a two-mile radius, such plat being marked Exhibit "A"; and
- (b) Fully completed and executed by Anadarko Production Company, a New Mexico Oil Conservation Commission Form, No. C-116 (Gas-Oil Ratio Report), such form being marked Exhibit "B"; and
- (c) A diagrammatic sketch showing casing and tubing data for the above-mentioned five injection wells, such sketch being marked Exhibit "C"; and
- (d) Waterflood application data sheet with pertinent reservoir and lease data, such application being marked Exhibit "D"; and

(e) Fully completed and executed by Anadarko Production Company, a New Mexico Oil Conservation Commission Form, No. C-102 (Miscellaneous Notice), giving notice of intention to recomplete Wells No. 13-8 and 13-4 above, such form being marked Exhibit "E"; and

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A map of the Unit area showing the proposed (£) injection wells marked in red, such map being marked Exhibit "F".

6. That a copy of this Application, together with all Exhibits,

has been forwarded to the following parties:

- (a) The State Engineer, State of New Mexico, Capitol Building, Santa Fe, New Mexico; and,
- The First National Bank of Fort Worth, Texas, and Anne (b) Burnette Windfohr, in their capacity as Independent Executors of the Estate of R. F. Windfohr, Deceased, as Operator of the offset acreage located in Section 25, Township 17 South, Range 30 East, NMPM, Eddy County, New Mexico, addressed to 1202 First National Bank Building, Fort Worth, Texas 76102; and,
- (c) Franklin, Aston & Fair, Inc., as Operator of the offset acreage located in the NE/4, Section 35, Township 17 South, Range 30 East, NMPM, Eddy County, New Mexico, addressed to P. O. Box 1090, Roswell, New Mexico 88201.

7. That Applicant is filing this Application in accordance with the provisions of Rule 701 B, and Applicant requests and prays that an order be entered by this Commission allowing the recompletion and conversion of the above-mentioned wells as water injection wells and the injection of water into the above-mentioned formation underlying the land above-described within the Grayburg-Jackson Unit, all as provided under Rule 701 B.

WHEREFOR, Applicant requests a hearing before an examiner and requests

that after a hearing thereon the above-mentioned order be entered by the Commission.

ANADARKO PRODUCTION COMPANY

Irley Bonnette, Attorney P.O. Box 9317, Fort Worth, Texas

CERTIFICATE

I, Irley Bonnette, do hereby certify that on the 12 day of October, filed a true and complete copy of this Application togethere to 1965, I mailed a true and complete copy of this Application, together with all Exhibits, to the following parties: The State Engineer, State of New Mexico, Capitol Building, Santa Fe, New Mexico; The First National Bank of Fort Worth, Texas, and Anne Burnett Windfohr, Independent Executors of the Estate of R. F. Windfohr, Deceased, 1202 First National Bank Building, Fort Worth, Texas 76102; and Franklin, Aston & Fair, Inc., P. O. Box 1090, Roswell, New Mexico 88201.

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GOVERNOR JACK M. CAMPBELL GHAIRMAN

State of New Mexico

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LAND COMMISSIONER GUYTON B. HAYS

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

SANTA FE November 9, 1965

Re:

P. O. BOX 2088

3330 Case No. R-2995 Order No.

Applicant:

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

Anadarko Production Company

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. Secretary-Director

ALP/ir

Carbon copy of order also sent to:

Hobbs OCC X Artesia OCC X Aztec OCC_

Mr. Clarence Hinkle

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 OF CONSIDERING:

> CASE No. 3330 Order No. R-2995

APPLICATION OF ANADARKO PRODUCTION COMPANY FOR A WATERFLOOD PROJECT, BDDY 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 Blvis A. Utz.

NOW, on this <u>9th</u> 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 expand the Grayburg-Jackson Unit Area Waterflood Project in the Grayburg-Jackson Pool by the injection of water into the Grayburg formation through five injection wells in Sections 25 and 26, Township 17 South, Range 30 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.

-2-CASE No. 3330 Order No. R-2995

(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 expand the Grayburg-Jackson Unit Area Waterflood Project in the Grayburg-Jackson Pool by the injection of water into the Grayburg formation through the following-described wells in Township 17 South, Range 30 East, NMPM, Eddy County, New Mexico:

WELL NO.	UNIT	BRCTICH		
13-8	n	25		
13-5	L	25		
13-4	P	26		
13-1	J	26		
7A-2	H .	26		

(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.



STATE OF NEW NEXICO OIL CONSERVATION COMMISSION

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L. PORTER, Jr., Member & Secretary

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GOVERNOR EDWIN L. MECHEM CHAIRMAN State of New Wexico **O**il Conservation Commission STATE GEOLOGIST AND COMMISSIONER A. L. PORTER. JR. S. JOHNNY WALKER SECRETARY - DIRECTOR MEMDER P. O. BOX 2088 SANTA FE 8750) Injection is to be through the five anthoning of warn injection wrees, which share her again part with phing and packers, with the casing-tubling annulus provide with an inert phind. Irley Bonnette phong an Nr. Irley Bonnette Anadarko Production Company Post Office Box 9317 Fort Worth, Texas Gentlement 2795 Reference is made to 2775 Enclosed herewith in Commission Order No. R-2295, entered in Case No. 3330, approving the authorizing Water Flood Project. the expansion of And Anadanko Production As to aleman Associang to calculations, indicate that Associang to our calculations, 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 1562 barrels per day. Please report any error in this calculated maximum allowable immediately, both to the Senta 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 on 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 sree, 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 to informed as to the status of the project and the wells therein will be appreciated. Very truly yours, OCC -Artesia CC: Mr. Frank Irby A. L. PORTER, Jr. Clerence Hinkle Secretary-Director

ANADARKO PRODUCTION COMPANY

3109 WINTHROP AVENUE P. D. 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:

ANADARKO

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

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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

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cc: Oil Conservation Commission - Hobbs /Oil Conservation Commission - Artasia Case File 3330 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 casingtubing 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 commances, when additional injection or producing wells are drilled,

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

-2-

Mr. Irley Bonnette December 10, 1965

when additional wells are acquired through purchase or unitization, when wells have received a response to water Exjection, etc.

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

Very truly yours,

A. L. PORTER, Jr. Secretary-Director

ALP/DSN/ir co: Mr. Frank Irby

Oil Conservation Commission - Artesia, New Mexico

PAGE 1 CONVENTIONS BEFORE THE NEW MEXICO OIL CONSERVATION COMMISSION Santa Fe, New Mexico November 3, 1965 COPY, SPECIALIZING IN: DEPOSITIONS, HEARINGS, STATEMENTS, EXPERT TESTIMONY, DAILY EXAMINER HEARING MEXICO dearnley-meier reparting service, 1092 • PHONE 243-6691 • ALBUQUERQUE, NEW IN THE MATTER OF: Application of Anadarko Production Company for a waterflood project, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks authority to institute a waterflood Case No.___3330 project in its Grayburg Premier Sand formation through five wells in Sections 25 and 26, Township 17 South, Range 30 East, Grayburg Jackson Pool, 1120 SIMMS BLDG. . P. O. BOX Eddy County, New Mexico. 時間の時間 **BEFORE**: Elvis A. Utz, Examiner 57.10 TRANSCRIPT OF HEARING 1.2.3.2.2.

MR. UTZ: Case 3330.

MR. DURRETT: Application of Anadarko Production Company for a waterflood project, Eddy County, New Mexico.

MR. BONNETTE: Actually, that's a misnomer. It's an expansion of a waterflood. The waterflood is in operation but this is to recomplete wells in this, water injection wells. I would like to -- I am a Texas attorney, and there's my association. My name is Irley Bonnette.

MR. DURRETT: The entry of appearance will be entered into the record.

MR. BONNETTE: In our application, we have six exhibits attached and I would like, due to typographical errors here, I would like to substitute three exhibits. I would like to substitute for the exhibit attached to the pleading, Exhibit C, and the only change there is at the bottom line, Well 13-4 and Well 13-8, show 7-inch casing, and it should be 4-1/2 inch for those two, and this change makes that substitution. MR. DURRETT: Would you like that marked? MR. BONNETTE: Yes, I would.

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(Whereupon, Applicant's Exhibit C marked for identification.)

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MR. BONNETTE: Exhibit D, we have a little trouble in the change from Ambassador to Anadarko. They show Ambassador as the operator, and it should be Anadarko, and I would like that marked to show that change.

MR. BONNETTE: On Exhibit E, a statement was left off in the full details which says, "Re-enter this plugged and abandoned well and clean out to total depth of approximately 3250 feet. Set 4-1/2 casing to total depth and perforate casing opposite Premier Zone of Grayburg. Install tubing and packer and complete as water injection well."

None of these amendments change the basic application, the form.

MR. UTZ: That recompletion procedure will be identical to the procedure used in the injection wells in the rest of the unit?

> MR. RILEY: As to the tubing and packer installation? MR. UTZ: Right.

MR. RILEY: Yes.

MR. BONNETTE: We do have, and the Commission should now have in their files waivers from Franklin, Aston and Fair, Inc., and the Executors of the R. F. Windfohr Estate. If you do not have those, I have copies of those.

MR. UTZ: Yes, we have them.

MR. BONNETTE: In support of my application, I have one witness, and may he be sworn?

(Witness sworn.)

(Whereupon, Applicant's Exhibits D and E marked for identification.)

MR. UTZ: Are there any other appearances in this



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case?

(Whereupon, Applicant's Exhibits A, B, and F marked for identification.)

E. A. RILEY

called as a witness, having been first duly sworn on oath, was

examined and testified as follows:

DIRECT EXAMINATION

BY MR. BONNETTE:

Q Would you state your name and whether or not you have testified before this Commission?

A My name is E. A. Riley. I am Superintendent of Waterflood Production for Anadarko, Fort Worth, Texas, and I have previously testified before the Commission.

MR. BONNETTE: Would you accept Mr. Riley as a

qualified witness?

MR. UTZ: Yes, sir.

Q (By Mr. Bonnette) These exhibits which we have introduced in evidence, were they prepared by you or under your

supervision?



A Under my supervision, yes.

Q Mr. Riley, you are familiar with the application that's on file here in 3330?

A Yes, I am.

Q Would you explain in detail the application and the

exhibits and why we are requesting the recompletion or the conversion of these wells?

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A Yes. Referring the Commission to Exhibit F, which is the larger map than Exhibit A, it will be easier to see the specific wells I am speaking of. We're requesting permission to recomplete and/or convert five wells in the Grayburg Jackson Unit, Order 2323, to water injection status for two reasons; one, as a normal extension of our present injection pattern; and, two, to comply with the cooperative line well agreement with the east offset operator, the Windfohr Estate, so as to promote timely and orderly extension of the unit and to protect correlative rights.

The cooperative line agreement has been temporarily agreed upon between Anadarko and Windfohr, and we have received 92.79 percent approval by the unit working interest owners to enter into this agreement.

The agreement has been submitted to the United States Geological Survey and the State of New Mexico Land Commission for their approval as to form; following their approval we will execute the document, have the Windfohr group execute the document, and then submit it to the Land Commission and the United States Geological Survey for their final approval.

MR. BONNETTE: I might say the agreement is subject

to the approval of this Commission, granting this request. This agreement is very similar to the agreement previously entered into with the west offset operator, General American Oil Corporation of Texas, which we're currently operating under. The major exception is that the co-op agreement with Windfohr provides for the sale of pressured water to the Windfohr Estate for a starting price of 3.2 cents per barrel, with the price to be adjusted annually. This was the only way we could work out the cooperative line agreement so as to have orderly and timely 1120 SIMMS BLDG. . P.O. BOX 1092 1213 FIRST NATIONAL BANK EAST . development along the east border of the unit. The five wells in the application that we wish to either recomplete or convert, are Wells 7A-2, 13-1, 13-4, 13-5,

and 13-8, being currently plugged and abandoned, and will be the wells that we propose to re-enter and recomplete. The application also recites that this unit is



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operating as a unitized waterflood operation previously authorized by the Commission under Order R-2323. The first stage of expansion was approved in Commission Order WFX-169 and one additional well added by Commission Order WFX-215. The co-partner in the cooperative agreement, Windfohr and Brown, previously held it before the Commission on October 19th, and the case is under advisement for their application to conduct waterflooding on their leases.

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The application also cites the six exhibits that are included with the application. I will review those briefly Exhibit A is a map, as prescribed by the Commission, showing the unit boundaries and all leases within a two-mile radius and wells within a two-mile radius of the unit boundaries. On this map we have also shown the current injection wells connected with a black line, and the proposed injection wells encircled in red.

Exhibit B is the Commission C-116 form which shows a recent well test on producing Well 7A-2; on 10/2/65 the well showed a production capacity of 75 barrels of oil, no water and nil gas. At the current time the well is producing at a test of 193 barrels of oil per day and no water. As the Commission could see, this would allow us to seek administrative approval for the conversion of Wells 7A-2 and 13-1, but in verbal discussion with Mr. Nutter, he requested that we have a hearing and include these wells along with the other three wells on the application since the three wells, 13-4, 13-5, and 13-8, you could not grant administrative approval for their conversion without the hearing.



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> Exhibit C is an injection well data presentation with schematic showing the surface casing, production casing, and tubing scheme for the five injection wells. They indicate that injection into all five wells will be through tubing under

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Exhibit D is a general data sheet showing pertinent reservoir and production information. Most of this was previously submitted and presented to the Commission in the original application. There are two or three amendments to it that I would like to point out to the Commission. The current bottom hole pressure is shown in the non-flood area as zero surface pounds of pressure, but in the repressured area, approximately 1200 pounds. In the average daily production, in the non-flood area it is 2.66 barrels per well per day, and in the responding area, 35.1 barrels of oil per day per well. Cumulative oil production to date from the lease is 1,745,000 barrels. Source of injection fluid will be water from a commercial water supplier and produced water. However, in these five wells in this application, fresh water only or water from the Double Eagle Water Corporation will be injected into these two wells through our so-called Plant No. 2. All produced water is being collected at a central facility and will be reinjected through Plant No. 1 into the twelve wells served by that plant.

packer, with packer set immediately above the pay zone.

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Exhibit E is in two parts, the first part being Commission Form C-102. The first part gives the detail of proposed plan of work for recompletion of 13-4, and the second part gives the full details of proposed plan of work on Well 13-8.

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1120 SIMMS BLDG. • P.O. E 1213 FIRST NATIONAL BANK Exhibit F is a larger scale map of the immediate unit area, showing the unit boundaries in hashered line; the current injection wells on the unit and the offset operator to the west connected with a solid black line; and the five proposed injection wells in this application encircled in red.

The unit is responding very nicely to waterflood. At the current time, production is running approximately 750 barrels of oil per day.

Q You stated the offset operator to the west, you mean to the east?

A No, I mean to the west. Those wells are on injection, and they are connected in the solid black line.

Q You mentioned that you had 92 plus percent of the working interest owners under the unit agreement consenting. What percentage does that agreement require?

A The border agreement paragraph of the unit agreement calls for 65 or more.

MR. UTZ: Does that complete your examination? MR. BONNETTE: Yes, sir. We would like to request that the exhibits that we have introduced be accepted as part of the testimony in this case.

MR. UTZ: Exhibits A through F will be entered into the record of this case.



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PAGE 10

(Whereupon, Applicant's Exhibits A through F, both inclusive, CONVENTION were offered and admitted in evidence.) COLY. CROSS EXAMINATION ALBUQUERQUE, NEW MEXICO ALBUQUERQUE, NEW MEXICO DEPOSITIONS, HEARINGS, STATE MENTS, EXPERT TESTIMONY, DAILY dearnley-meier reporting service, inc BY MR. UTZ: Mr. Riley, let me ask if all the injection wells Q in the portion of the unit now in operation all are injecting through tubing and under a packer? 243-6691 Yes, they are. PHONE : Α How about the annulus, do you have any inert fluid Q • 1092 1120 SIMMS BLDG. • P.O. BOX 1 1213 FIRST NATIONAL BANK EAST in the annulus? It is treated water. Α SPECIALIZING IN Treated water. ÷Q Water treated to prevent corrosion. It is fresh A water. You propose that same installation in each of the Q wei18? In each of the five wells under the application. Α MR. UTZ: Any other questions? The witness may be excused. (Witness excused.) MR. UTZ: Are there other statements in this case? The case will be taken under advisement.

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11 PAGE I, ADA DEARNLEY, Court Reporter - Notary Public, do hereby STATE OF NEW MEXICO certify that the foregoing and attached Transcript of Hearing COUNTY OF BERNALILLO before the New Mexico Oil Conservation Commission was reported SPECIALIZING IN: DEPOSITIONS, HEARINGS, STATE MENTS, EXPERT TESTIMONY, DAILY COPY, CONVENTIONS 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 1120 SIMMS BLDG. P.O. BOX 1092 PHONE 243-0691 . ALBUQUERQUE, NEW MEXICO dearnley-meier reporting service, inc. WITNESS my Hand and Seal this 11th day of November, 1965. Court Reporter My Commission Expires: June 19, 1967. 1 We hereby certify that the foregoing is a ROAF lace record of the proceeding in a Roaf lace record of the process in the Fraction terming of the set Her nerver record of the prosectings in H 2020 Late record of the prosecting in H 2020 Late record of the prosecting in the Example the prosecting in the prosect Here Mexico Oli Conspirvation Commission Exuminer HH Ste IVE

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 IN-) JECTION WELLS, ALL OF SUCH WELLS BEING LOCATED) WITHIN THE BOUNDARIES OF THE GRAYBURG-JACKSON UNIT) IN EDDY COUNTY, NEW MEXICO.)

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

Case No. 3330

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

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, <u>EDDY</u> COUNTY, NEW MEXICO.

ORDER OF THE COMMISSION

BY THE COMMISSION:

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

NOW, on this ______ day of <u>November</u>, 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 seeks permission	the applicant,	Anadarko waterflood	production Co multiple and project in int	mpany,
Grayburg-Jācks	<u> </u>	n the	ction of water	-Unit Area,
forge thank Dan			ive_ injection	
Sections 25 and	26, Township	<u> </u>	sou	
30	x Wast , NMI East	PM, Eddy	County, N	ew Mexico.
(3) That	the wells in th	e project a	irea 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.

DRAFT

Æ)

JMD/esr

(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, <u>Anadarko Production Company</u> uppend the playburg - pickson Unit Chen is hereby authorized to institute of waterflood project, institute Anadarko Production Company -Unit Area Grayburg-Jackson Pool, by the injection of water into the Grandung formation through the following-described wells Nakth, Range 30 in Township <u>17</u> West, South East NMPM, <u>Eddy</u> County, New Mexico: well no. Unit Dectro. 13-8 N- 25 13-5 L- 25 13-4 P- 26 13-1 J 26 1 55 2

is hereby designated the

(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.

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