

CASE 6226: BARBER OIL, INC. FOR
A WATERFLOOD PROJECT, EDDY
COUNTY, NEW MEXICO

~~Cont to June 7~~
~~Cont to June 21~~
~~Cont to August 2~~
Continue to August 2

#146

CASE NO.

6226

APPLICATION,
TRANSCRIPTS,
SMALL EXHIBITS,

ETC.

STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT
OIL CONSERVATION DIVISION

IN THE MATTER OF THE HEARING
CALLED BY THE OIL CONSERVATION
DIVISION FOR THE PURPOSE OF
CONSIDERING:

CASE NO. 6226
Order No. R-5939

APPLICATION OF BARBER OIL, INC.
FOR A WATERFLOOD PROJECT, EDDY
COUNTY, NEW MEXICO.

ORDER OF THE DIVISION

BY THE DIVISION:

This cause came on for hearing at 9 a.m. on August 2, 1978, at Santa Fe, New Mexico, before Examiner Daniel S. Nutter.

NOW, on this 28th day of February, 1979, the Division Director, 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 Division has jurisdiction of this cause and the subject matter thereof.
- (2) That the applicant, Barber Oil, Inc., seeks authority to institute a waterflood project on its Saladar Lease, Saladar-Yates Pool, by the injection of water into the Yates formation through five injection wells located in Units K, L, N and O of Section 33, Township 20 South, Range 28 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.
- (5) That the operator should take all steps necessary to ensure that the injected water enters only the proposed injection interval and is not permitted to escape to other formations or onto the surface from injection, production, or plugged and abandoned wells.

-2-

Case No. 6226
Order No. R-5939

(6) That the Unit Operator should immediately notify the supervisor of the Artesia District Office of the Division of the failure of the tubing, casing, or packer of any well in the Unit Area or of the leakage of water from or around any well within one-half mile of the Saladar Unit Area, including wells which have been plugged and abandoned.

(7) That upon such failure of any well within one-half mile of an injection well in the Saladar Unit Area, the Division Director should be authorized to limit injection pressure in the Yates formation in such injection well to no more than hydrostatic pressure, and to maintain such pressure limitation until such time as workover operations (including re-plugging, if necessary) have been completed correcting such failure.

(8) That the injection wells or system should be equipped with a pressure control device or other acceptable substitute which will limit the surface injection pressure to no more than 557 psi. Provision should be made for the Division Director to administratively authorize a pressure limitation in excess of said 557 psi upon a showing by the Unit Operator that such higher pressure is necessary to effectively and efficiently waterflood the Saladar Unit Area and that such higher pressure limitation will not result in fracturing of the confining strata.

(9) That the subject application should be approved subject to the above conditions, and the project should be governed by the provisions of Rules 701, 702, and 703 of the Division Rules and Regulations.

IT IS THEREFORE ORDERED:

(1) That the applicant, Barber Oil, Inc., is hereby authorized to institute a waterflood project on its Saladar Lease, Saladar-Yates Pool, by the injection of water into the Yates formation through the following-described wells in Section 33, Township 20 South, Range 28 East, NMPM, Eddy County, New Mexico:

<u>Original Well Name and No.</u>	<u>Unit Well No.</u>	<u>Unit Letter</u>
Riggs Hughes Fed No. 3	1-3	K
Riggs Hughes Fed No. 5	1-5	K
Riggs Hughes Fed No. 7	1-7	N
Conley Mayfield Fed No. 2	2-2	O
Riggs Malco-Keystone No. 1	3-1	L

-3-

Case No. 6226

Order No. R-5939

(2) That injection into each of said wells shall be through internally coated tubing, set in a packer which shall be located as near as practicable to the casing shoe; that the casing-tubing annulus of each injection well shall be loaded with an inert fluid and equipped with an approved pressure gauge or attention-attracting leak detection device.

(3) That the operator shall immediately notify the supervisor of the Division's Artesia district office of the failure of the tubing or packer in any of said injection wells, the leakage of water or oil from around any producing well, or the leakage of water or oil from any plugged and abandoned well within the project area or within one-half mile of the Saladar Unit Area.

(4) That upon such failure of any well within one-half mile of an injection well in the Saladar Unit Area, the Division Director is hereby authorized to limit injection pressure in the Yates formation in such injection well to no more than hydrostatic pressure, and to maintain such pressure limitation until such time as workover operations (including re-plugging, if necessary) have been completed, successfully correcting such failure.

(5) That the injection wells or system shall be equipped with a pressure control device or other acceptable substitute which will limit the surface injection pressure to no more than 557 psi. The Division Director may administratively authorize a pressure limitation in excess of said 557 psi upon a showing by the Unit Operator that such higher pressure is necessary to effectively and efficiently waterflood the Saladar Unit Area and that such higher pressure limitation will not result in fracturing of the confining strata.

(6) That the subject waterflood project is hereby designated the Saladar Unit Waterflood Project and shall be governed by the provisions of Rules 701, 702, and 703 of the Division Rules and Regulations.

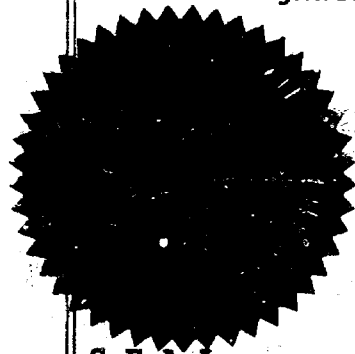
(7) That monthly progress reports of the waterflood project herein authorized shall be submitted to the Division in accordance with Rules 704 and 1120 of the Division Rules and Regulations.

(8) That jurisdiction of this cause is retained for the entry of such further orders as the Division may deem necessary.

-4-

Case No. 6226
Order No. R-5939

DONE at Santa Fe, New Mexico, on the day and year herein-
above designated.



S E A L

STATE OF NEW MEXICO
OIL CONSERVATION DIVISION

Joe D. Kamey
JOE D. KAMEY
Director

fd/

BEFORE THE
NEW MEXICO OIL CONSERVATION COMMISSION
SANTA FE, NEW MEXICO

MAY 17, 1978

COMMISSION HEARING .

-----)
)
IN THE MATTER OF:)
)

Application of Barber Oil, Inc.)
for a waterflood project, Eddy)
County, New Mexico.)
-----)

CASE 6226

BEFORE: Richard L. Stamets, Examiner

TRANSCRIPT OF HEARING

A P P E A R A N C E S

For the New Mexico Oil Conservation Commission:

Joe Ramey, Chairman
Emory Arnold, Commissioner
Phil Lucero, Commissioner
Richard L. Stamets, Staff Member

Lynn Teschendorf, Esq., Legal Counsel

LANPHERE REPORTING SERVICE

P.O. BOX 449
58 SOUTH FEDERAL PLACE
SANTA FE, NEW MEXICO 87501

MR. STAMETS: We'll call the next case, 6226.

MS. TESCHENDORF: Case 6226, Application of Barber Oil, Inc. for a waterflood project, Eddy County, New Mexico.

The Applicant has requested that the case be continued to the June 7th Examiner Hearing.

MR. STAMETS: This case will be so continued.

(WHEREUPON, hearing on this case concluded.)

LANPHERE REPORTING SERVICE

P.O. BOX 449
58 SOUTH FEDERAL PLACE
SANTA FE, NEW MEXICO 87501

REPORTER'S CERTIFICATE

I, BETTY J. LANPHERE, a Court Reporter with offices in Santa Fe, New Mexico, do hereby certify that the foregoing transcript is a complete and accurate record of said proceedings as the same were recorded by me stenographically and reduced to typewritten transcript by me or under my supervision.

DATED at Santa Fe, New Mexico, this 23rd day of October, 1978.

Betty J. Lanphere
BETTY J. LANPHERE, Court Reporter

I do hereby certify that the foregoing is a complete record of the proceedings in the Examiner hearing of Case No. 6226 heard by me on 5-12 1978.
Richard L. Smith Examiner
Oil Conservation Division

LANPHERE REPORTING SERVICE

P. O. BOX 449
58 SOUTH FEDERAL PLACE
SANTA FE, NEW MEXICO 87501

BARBER OIL, INC.

901 WEST PIERCE

PHONE 687-2566

BOX 1658

CARLSBAD, NEW MEXICO

August 31, 1978

Oil Conservation Commission Division
Energy and Minerals Department
State of New Mexico
Santa Fe, NM

Re: Case Nos. 6226 & 6238 combined into
Case No. 6238, Order No. R-5788

Atten: Dan Nutter

Gentlemen:

As requested on August 2, 1978 I enclose in duplicate the following:

- 1) Water analysis of produced water and fresh water in the vicinity of the Barber Oil, Inc., Saladar Unit, Eddy County, New Mexico.
- 2) Tabulation Summary - Well Data
This tabulation involves all wells near the proposed injection wells for the Barber Oil, Inc., Saladar Unit, Eddy County, New Mexico.
- 3) Schematic diagram of all plugged and abandoned wells within a one-half mile radius of the proposed injection wells for the Saladar Unit.
- 4) A letter dated August 14, 1978 to Barber Oil, Inc. from Stephens Engineering concerning the pressure limitation placed on the Saladar Unit by the Oil Conservation Commission and requesting an exemption to this limitation.

As requested in Order R-5788, subparagraph 3, I enclose a fully executed original copy of UNIT AGREEMENT for the development and operation of the Saladar Unit. This agreement is executed by all parties having a working interest.

Please be advised I will be out of the office September 3 - September 29 and would appreciate your contacting Mr. George H. Hunker, Jr., P.O. Box 1837 Roswell, NM for any additional requirements under the above captioned Case and Order.

Very truly yours,


Robert S. Light

Enclosures: 3

CC: George H. Hunker, Jr.
P.O. Box 1837
Roswell, NM 88201
CC: Joe L. Johnson
P.O. Box 2249
Wichita Falls, TX 76307



REPORT OF WATER ANALYSIS

Company Barber Oil Company
Saladar Lease

Date December 26, 1977
Analysis No.
Sampling Date
Date Sample Rec'd.

Sample Marked Fresh Water

DISSOLVED SOLIDS

Cations	mg/l	meq/l
Sodium, Na (Calc.)	1567	68.16
Calcium, Ca	640	32
Magnesium, Mg	947	78
Barium, Ba	3.5	.05

Cations Total 3166.5 178.21

Anions

Chloride, Cl	1396	39
Sulfate, SO ₄	39	.81
Carbonate, CO ₃		
Bicarbonate, HCO ₃	170	2.8

Anions Total 1605 41.89

Total Dissolved Solids (Calc.) 4771.5
Total Iron, Fe .15
Acidity to phenolphthalein, CO₂ 79.2

OTHER PROPERTIES

pH 7.2
Specific Gravity
Turbidity (JTU)

RESULTS AS COMPOUNDS

	mg/l
as NaCl	5500
as CaCO ₃	1600
as CaCO ₃	3900
as BaSO ₄	6

as NaCl	2300
as Na ₂ SO ₄	58
as CaCO ₃	
as CaCO ₃	140

as Fe .15
as CaCO₃ 180

CaCO₃ STABILITY INDEX

@ 70° F.
@ 120° F.
@ 160° F.
Method of Stiff & Davis

Remarks:

NALCO CHEMICAL COMPANY
VISCO CHEMICALS
P. O. BOX 87 • SUGAR LAND, TEXAS 77478

trademarks of Nalco Chemical Company.



REPORT OF WATER ANALYSIS

Company Barber Oil Company
Saladar Lease

Date December 26, 1977.
Analysis No.
Sampling Date
Date Sample Rec'd.

Sample Marked Produced Water

DISSOLVED SOLIDS

Cations	mg/l	meq/l
Sodium, Na (Calc.)	11306	491.57
Calcium, Ca	1200	60
Magnesium, Mg	1458	119
Barium, Ba	2.3	.03

Cations Total 13966.3 670.60

Anions

Chloride, Cl	23673	667
Sulfate, SO ₄	28	.5
Carbonate, CO ₃	96	3.1
Bicarbonate, HCO ₃		

Anions Total 23797 670.60

Total Dissolved Solids (Calc.) 37763.3
Total Iron, Fe .10
Acidity to Phenolphthalein, CO₂

OTHER PROPERTIES

pH 7.0
Specific Gravity
Turbidity (JTU)

RESULTS AS COMPOUNDS

	mg/l
as NaCl	9000
as CaCO ₃	3000
as CaCO ₃	6000
as BaSO ₄	4

as NaCl	39000
as Na ₂ SO ₄	42
as CaCO ₃	160
as CaCO ₃	

as Fe .10
as CaCO₃

CaCO₃ STABILITY INDEX
@ 70° F.
@ 120° F.
@ 160° F.

Method of Stiff & Davis

Remarks: Sulfide, as H₂S is 3.0

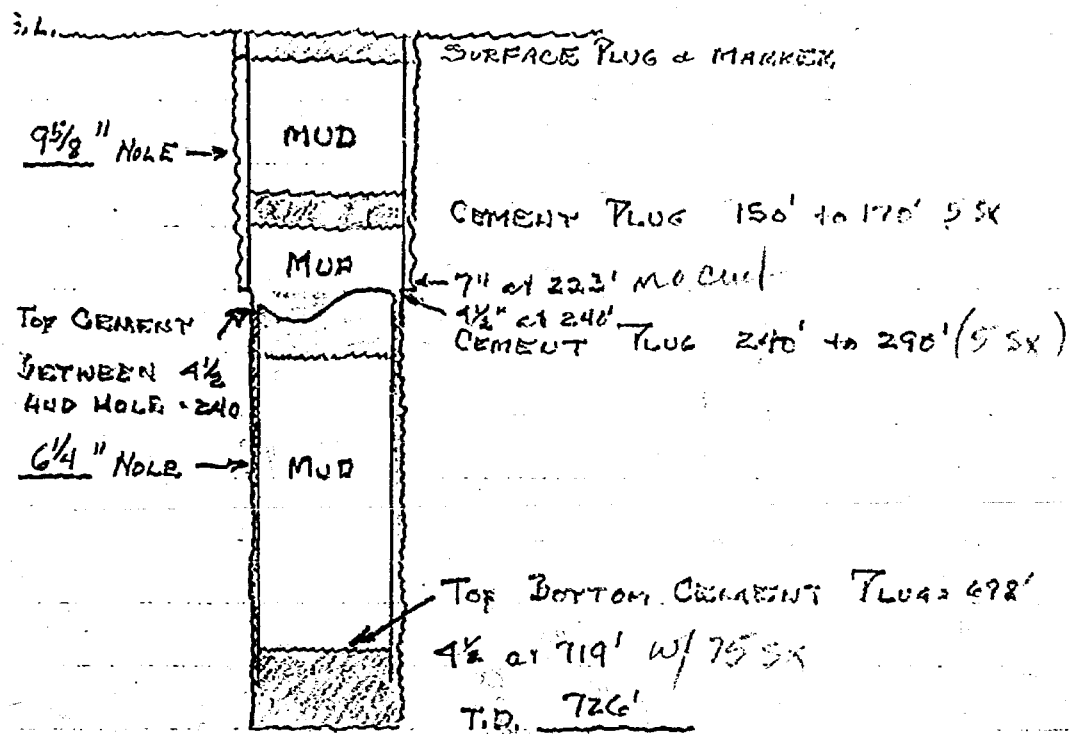
trademarks of Nalco Chemical Company.

NALCO CHEMICAL COMPANY
VISCO CHEMICALS
P. O. BOX 87 • SUGAR LAND, TEXAS 77478

BARBER OIL, INC.
SALADAR UNIT
EDDY COUNTY, NEW MEXICO

TABULAR SUMMARY - WELL DATA
ALL WELLS NEAR PROPOSED INJECTION

Operator Lease & Well No.	Location	Compl. Date	Initial Prod.	Surface Casing	Production Casing	Original T.D. Feet	Plug Back T.D. Feet	Original Completion Feet	Subsequent Treatments Workovers or Remarks
<u>G. E. Conley</u> Conley No. 1	J-33-20-28	8-8-56	P & A	7" #141' w/10' sks	5 1/2" #655' w/2' sks	737	-	655-737	P & A
Mayfield No. 1	0-33-20-28	7-8-57	P & A	7" #100' w/10' sks	None	699	-	-	Lost Hole @ 699'. P & A
Mayfield No. 1-X	0-33-20-28	11-25-57	.5 BOPD	7" #100' w/10' sks	4" #700' w/18 sks	716	-	700-716	None
Mayfield No. 2	0-33-20-28	10-30-57	15 BOPD	7" #123' w/7' sks	4" #625' w/35 sks	675	-	625-675	Fraced w/8,000 Gals.
Mayfield No. 3	0-33-20-28	6-19-61	P & A	7 5/7" #177' w/7' sks	4 1/2" #637' w/10 sks	662	-	637-662	P & A - 6-19-61
<u>G. D. Riggs</u> Mayfield No. 4	0-33-20-28	7-28-64	30 BOPD	7" #441' w/7' sks	5 1/2" #640' w/100' sks	730	660	640-660	Fraced w/11,000#
<u>Malco Ref. Inc.</u> Keystone No. 1	I-32-20-28	7-18-56	P & A	8 5/8" #236' w/0' sks	None	715	-	-	Dry Hole
<u>Monsanto Company</u> Burton Flat Deep Unit No. 7	I-33-20-28	11-19-73	5.4 MCF	13 3/8" #603' w/750' sks 9 5/8" #2950' w/1250' sks	5 1/2" #16,540' w/800' sks	11,540	11,475	11,221-11,475	4,000 Gals. 7 1/2 % Acid
<u>R. L. Bunnell</u> Coons No. 1	A-4-21-27	5-5-56	P & A	8 5/8" #252' w/2' sks	None	668	-	-	P & A
Coons No. 2	C-3-21-27	5-8-58	P & A	10 3/4" #62' w/2' sks 8 5/8" #183' w/7' sks	None	715	-	-	P & A
<u>Neil S. Salsich</u> Malco No. 1-X	E-33-20-28	5-15-57	P & A	7" #223' w/none	4 1/2" #719' w/75' sks	726	-	692-704	Fraced w/20,000# No Prod. P & A
<u>G. D. Riggs</u> Mayfield No. 1	0-33-20-28	5-22-56	P & A	8 5/8" #366' w/7' sks	5 1/2" #702' w/7' sks	748	-	702-748	No Prod. P & A
Malco Ref. No. 1	L-33-20-28	3-30-56	10 BOPD	8 5/8" #237' w/none	7" #650' w/70 sks	690	-	650-690	Producing - No Workovers
Malco Ref. No. 2	L-33-20-28	9-26-56	0 BOPD	7 1/2" #153' w/10' sks	5 1/2" #670' w/45 sks	732	-	670-732	T.A.
Hughes Fed. No. 1	K-33-20-28	6-20-56	25 BOPD	none	5 1/2" #590' w/25 sks	673	-	590-673	Nitro (43 Qts.) Producing - No Workovers
Hughes Fed. No. 2	M-33-20-28	7-4-56	P & A	7" #80' w/ none	5 1/2" #608' w/20 sks	666	-	608-666	P & A - 7-26-56
Hughes Fed. No. 3	K-33-20-28	8-27-56	44 BOPD	7" #236' w/none	5 1/2" #642' w/40 sks	700	-	642-700	Fraced w/15,000# Producing - No Workovers
Hughes Fed. No. 4	F-33-20-28	9-10-56	52 BOPD	7" #187' w/8 sks	5 1/2" #641' w/45 sks	707	-	641-707	Fraced w/10,000# Producing
Hughes Fed. No. 5	K-33-20-28	8-4-62	18 BOPD	7" #460' w/0 sks	5 1/2" #658' w/100' sks	682	-	658-682	Fraced w/15,000# Producing
Hughes Fed. No. 6	N-33-20-28	11-9-62	40 BOPD	7" #440' w/100' sks	5 1/2" #628' w/35 sks	664	-	628-664	Fraced w/12,000# Producing
Hughes Fed. No. 7	N-33-20-28	3-29-65	5 BOPD	7" #424' w/0 sks	5 1/2" #602' w/100 sks	633	-	602-633	Fraced w/11,000# T.A.
<u>R. S. Light</u> Wills Fed. No. 1	B-3-21-27	12-17-62	P & A	7" #407' w/0 sks	None	642	-	-	P & A 12-20-62



OPERATOR: N.S. SALSICH

LEASE: MALCO

WELL No.: 1-X

LOCATION: E-33-20-28

COMP. DATE: 5-15-57

I.P.: PA

PA: 6-24-57

SALSICH MALCO 1

E 33-20-28

TD 200

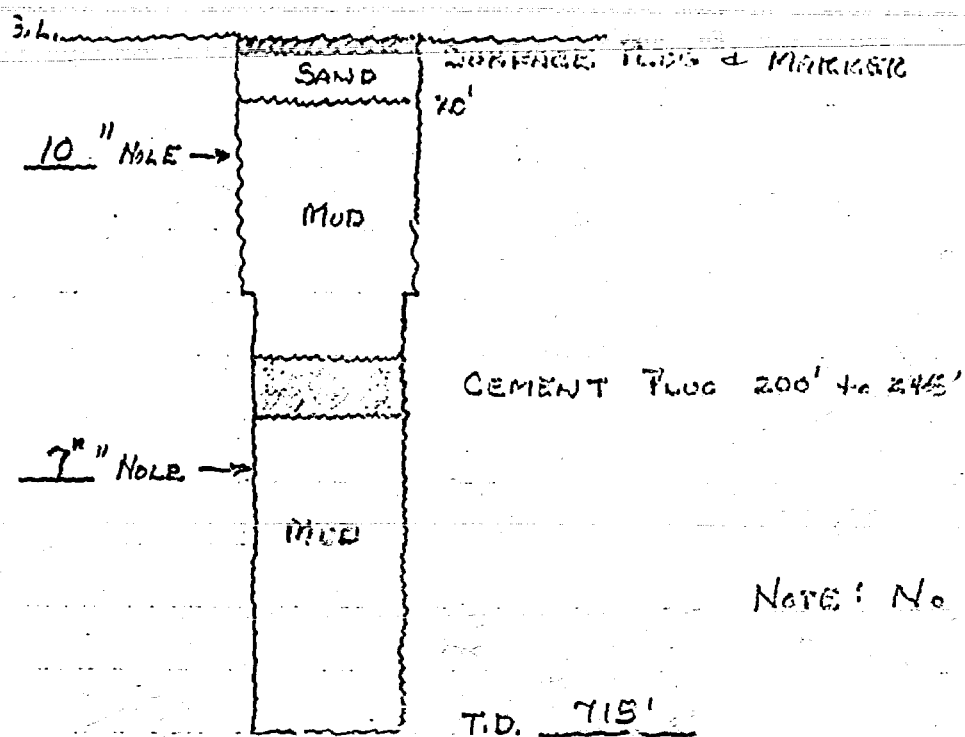
lost tools

spaced 5 SX on btm

filled hole w/ mud

placed cut plug on top





NOTE: No FLUID IN SAND 704' - 14'

OPERATOR: B. L. BUNNEL

LEASE: COONS

WELL No.: 2

LOCATION: C-3-21-57

COMP. DATE: 5-8-58

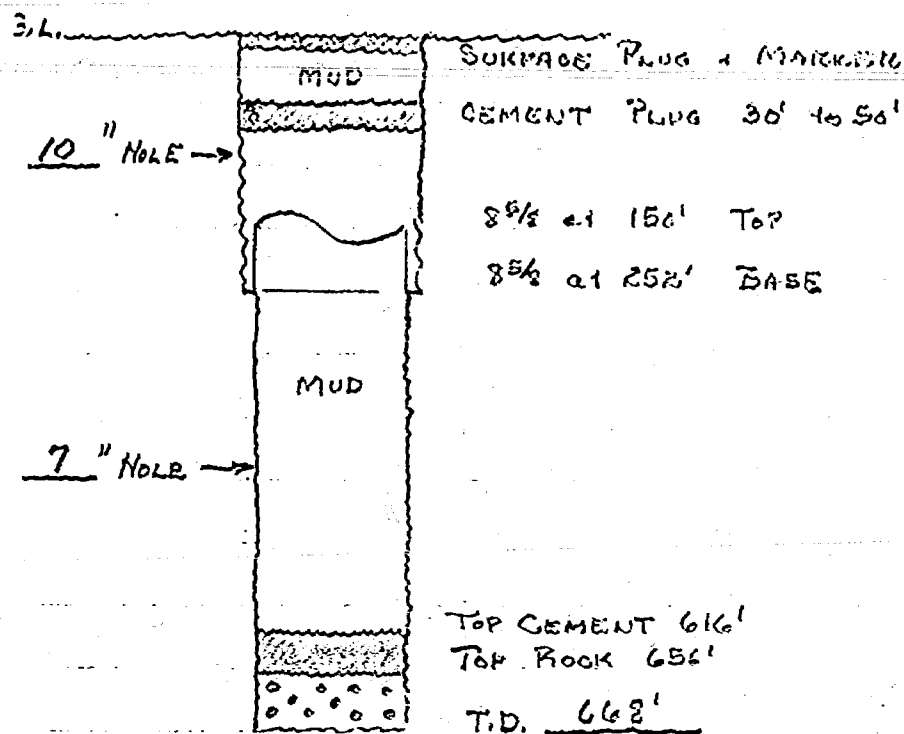
I.P.: JaA

P.A.: 5-23-58

wt reported
34' to 48'

10 3/4" @ 62'
8 5/8" @ 183'
hole filled w/ mud
from TD to 245'
10 1/4" plug 245'
pulled all way
mud is 20'
sand to top





8 5/8 at 150' TOP
8 5/8 at 252' BASE
cut & pulled
from 152'

W.C. reported
33' to 35'
667' to 668'
10' rock @ bottom of hole
10' plug on top of rock
10' plug @ 50'
measured between
plugs

OPERATOR: ROBERT L. BONNEL

LEASE: COONS

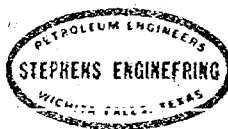
WELL No.: 1

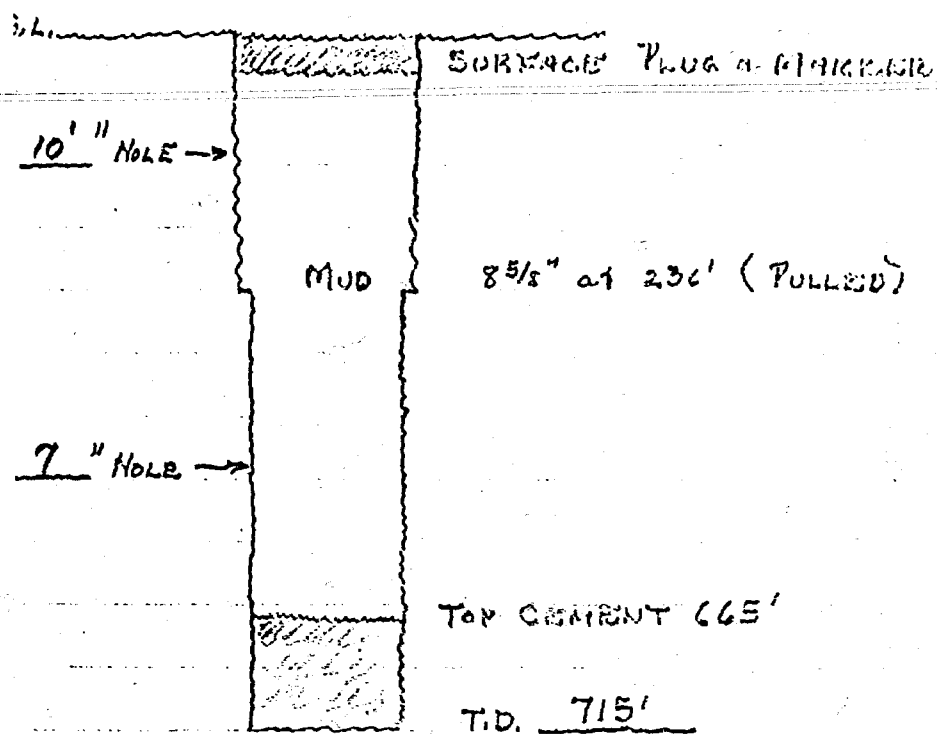
LOCATION: A-4-21-27

COMP. DATE: 5-5-56

I.P.: D4A

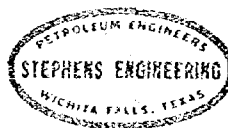
P.A.: 5-15-56





OPERATOR: MALCO REF. INC.
 LEASE: KEYSTONE CORP.
 WELL No.: 1
 LOCATION: I-32-20-28
 COMP. DATE: 7-18-56
 I.P.: P.A.
 P.A.: NOT KNOWN

TD 715
 wtr reported 60-65'
 8 5/8" @ 244 w/ 105K
 cut & pulled from 236
 40' cement plug placed
 on bottom
 hole filled w/ mud
 marker cement @ surface



3.4.

8 3/4" HOLE →

MUD

SURFACE PLUS 4 MARKER

7 1/2" at 142' (cut to 142')

7 5/8" at 177'

CEMENT Plug 275' to 300'

6 3/4" HOLE →

CEMENT Plug 500' - 510'
4 1/2" (TOP) at 537'

4 1/2" at 637'

T.D. 662'

plug
w/ 10 SK @ 537
5 SK @ 300
3 SK @ surf
mud between
plugs

OPERATOR: BASIC MATERIALS, INC.

LEASE: MAYFIELD

WELL No.: 3

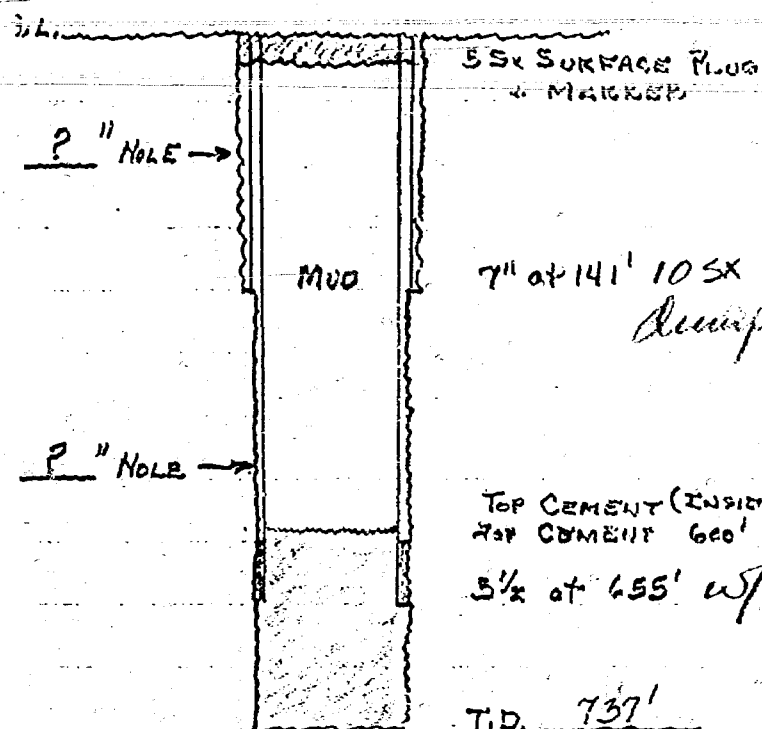
LOCATION: 0-33-20-28

COMP. DATE: 6-19-61

I.P.: T+A

P&A: 6-19-61





NOTE: No Record of Pipe

RECOVERY
surf plug 0-15'
mud from 15' to
top of plug

TOP CEMENT (INSIDE) 527
TOP CEMENT 600'

5 1/2' at 655' w/ 50 SX

T.D. 737'

OPERATOR: G. E. CONLEY

LEASE: CONLEY

WELL No.: 1

LOCATION: J-33-20-28

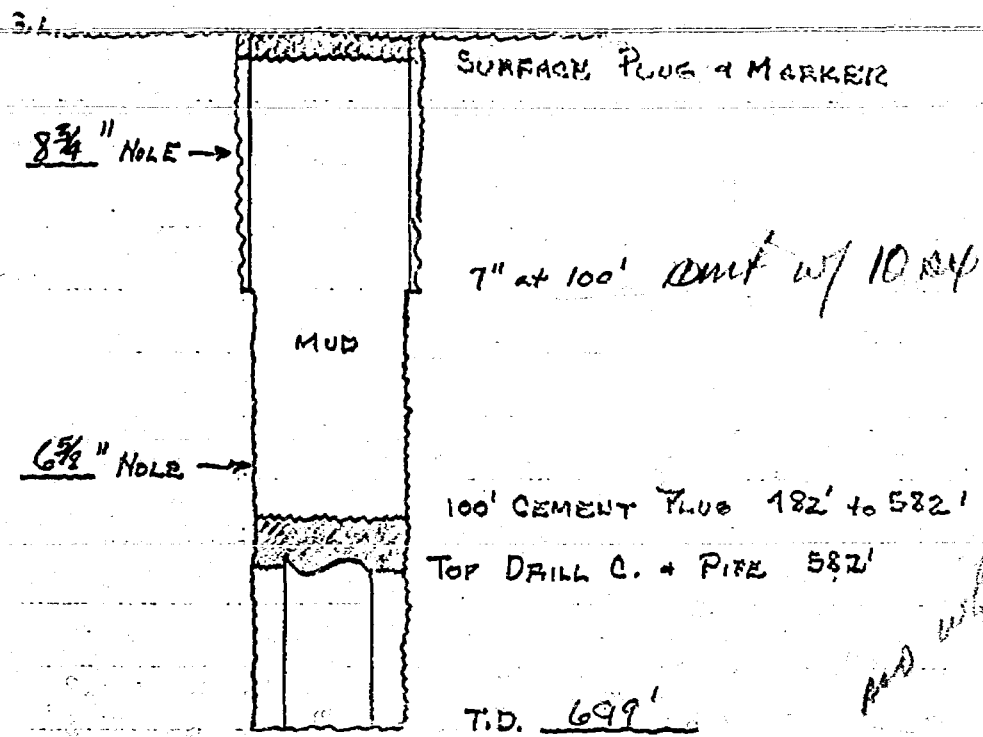
COMP. DATE: 8-8-56

I.P.: PaA

PaA: 10-8-63

whi sand
reported 52'-60'





and with reported
 112' of drill collars
 & pipe left in hole
 top of tools 582'
 top of plug on top
 60' of tools
 3' surf plug

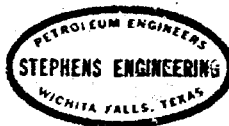
OPERATOR: G.E. CONLEY
 LEASE: MAYFIELD
 WELL NO.: 1
 LOCATION: O-33-20-28
 COMP. DATE: 7-8-57
 I.P.: P.A.
 P.A.: 11-15-57

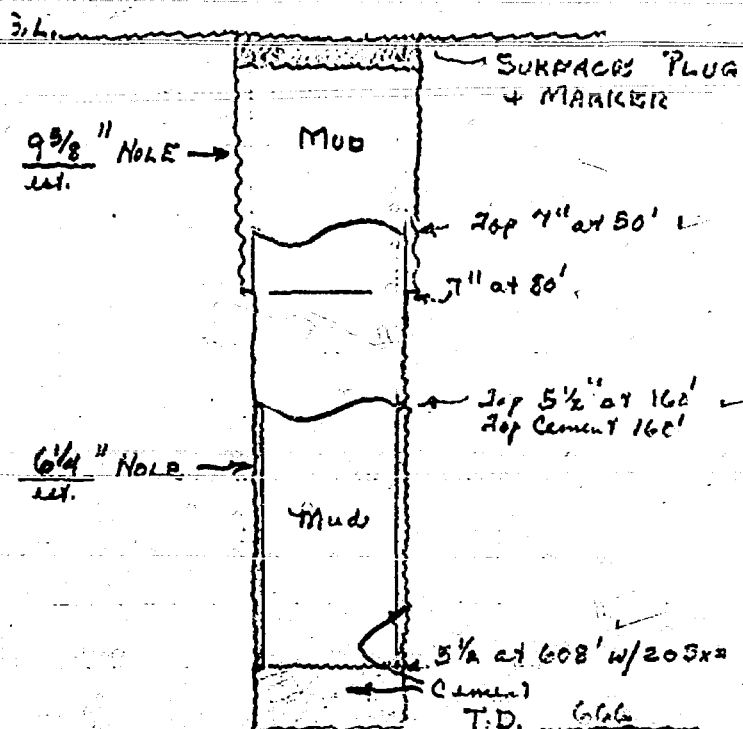
CONLEY
 MAYFIELD IX-0
 O 33-20S-28E

left 100' of 7"
 and 580' of 4" in hole
 10 sep 600-688
 5 sep 300-345
 3 sep surf
 mud between plugs



700
 580
 120





OPERATOR: G.D. RIGGS

LEASE: HUGHES FEDERAL

WELL NO.: 2

LOCATION: M-33-20-28

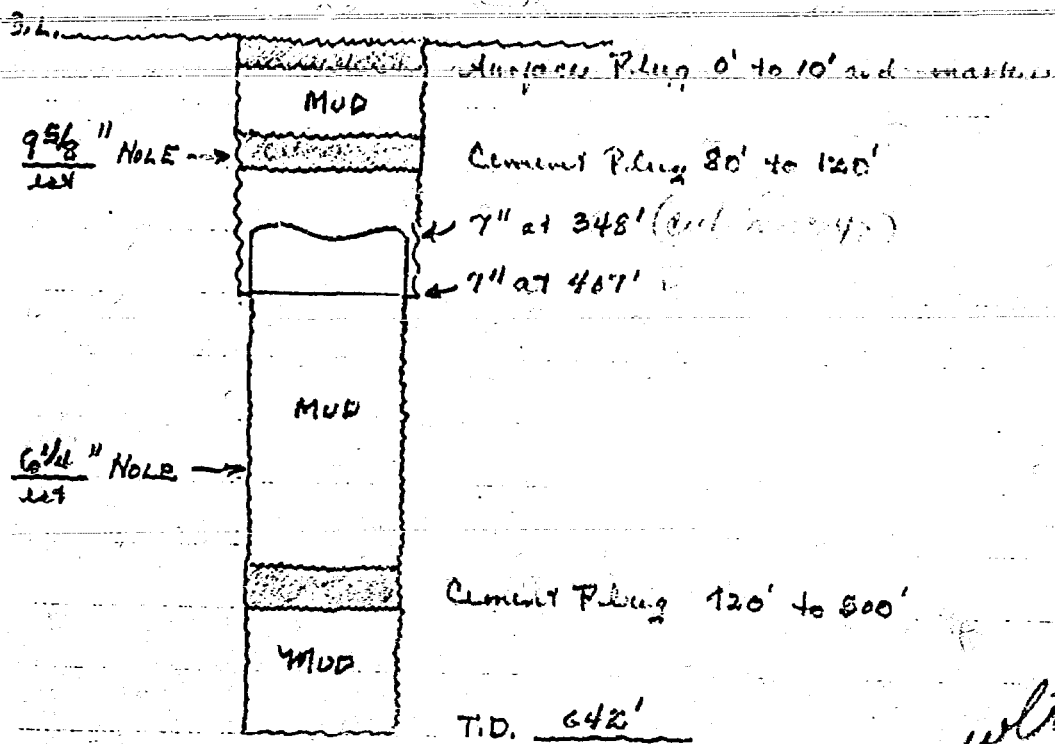
COMP. DATE: 7-4-56

I.P.: P.A.

P.A.: 8-9-56

*Small amt
of gas
reported @ 70-78'*





OPERATOR: B.S. LIGHT

LEASE: WILLS - FEDERAL

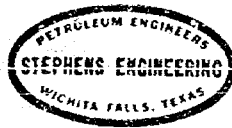
WELL No.: 1

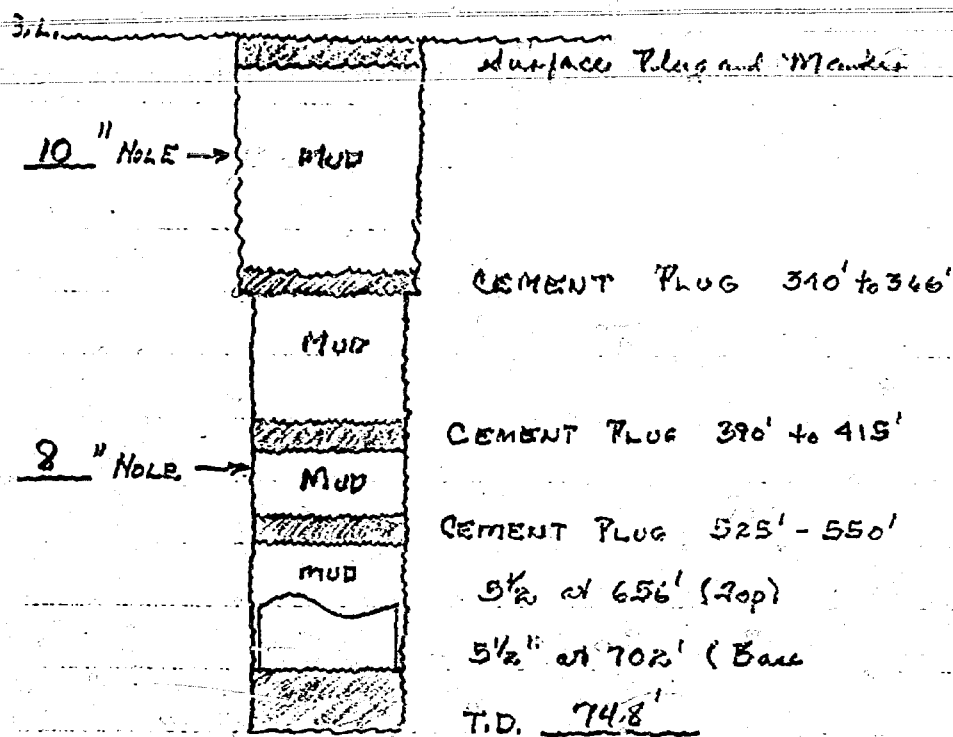
LOCATION: B-3-21-27

COMP. DATE: 12-17-62

I.P.: D & A

P.A.: 12-20-60





OPERATOR: G. D. FIGGS

LEASE: MAYFIELD

WELL No.: 1

LOCATION: G-33-20-28

COMP. DATE: 5-22-56

I.P.: P-A

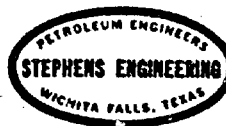
P.A.: 5-30-56

*Small amount of
gas water
reported 158-170
387-390*

*no plugging
report in
our file
OK*



TELEPHONE - 817-723-2186



POST OFFICE BOX - 2249

WICHITA FALLS, TEXAS
76307

August 14, 1978

Barber Oil Company, Inc.
P. O. Box 1658
Carlsbad, New Mexico 88220

Attn: Mr. Robert S. Light

Re: Pressure Limitation
Saladar Unit
Eddy County, New Mexico

Dear Mr. Light:

Reference is made to Mr. George H. Hunker, Jr.'s letter of August 3, 1978 which contained additional information required in the New Mexico Oil Conservation Division Cases 6238 and 6226. Also contained with Mr. Hunker's letter was a memorandum from the Oil Conservation Commission dated August 24, 1977 and referred to as Memo No. 3-77.

As engineer on this project, I must object to the Oil Conservation Commission ruling in their memorandum which in effect places a pressure limitation on the injection program planned for use in the Saladar Unit. In the memorandum it is indicated that "no surface injection pressure greater than 0.2 psi per foot of depth to the top of the injection zone will be permitted unless there is strong evidence that the strata confining injection fluid has a fractured gradient which would support a higher pressure." In effect, this limitation places an approximate 130 psi surface pressure limitation on the Saladar Unit project since the top of the injection zone is at a depth of 660'. Information available in the area not only support the use of additional pressure, but also virtually guarantees that without additional pressure a successful flooding of the Saladar Unit cannot be accomplished.

For the past 25 years, Stephens Engineering has supplied Neil H. Wills and/or Barber Oil Company with consulting engineering


in one of the first water flood programs initiated in New Mexico. This program was initiated in 1953 in the Russell Pool located approximately two miles northeast of the Saladar Unit. Initially, pressures were held to a minimum of approximately 400 psi in this 800' depth project. Later, it became apparent that greater pressures and therefore greater injection rates could be sustained without creating channeling conditions, therefore the pressure was gradually raised to a 700 psi surface pressure reading. Even with this .875 psi per foot of depth gradient, the Barber Oil Company, Russell Pool project has dated approximately 25 years and has several additional years of commercial production still available. Based on this information, it is apparent that if the Oil Conservation Commission continues to restrict injection in the vicinity of the Saladar Unit to the 0.2 psi per foot of depth, it will require a tremendous number of years to completely water flood the zone planned for flooding, if a successful project could be sustained and held in a commercial range at all.

Based on the past performance of the Russell Pool, which is flooding a similar zone as is planned to be flooded in the Saladar Unit, it is strongly recommended that Barber Oil Company request an exemption to the 0.2 psi per foot of depth ruling and request that the Oil Conservation Commission allow use of a 0.875 psi per foot of depth restriction instead. Again, it must be emphasized that with a lower than planned pressure, not only will a large amount of time be necessary to successfully flood and obtain the oil available from the Saladar Unit, but a large question exists as to the commercial ability of installing the project until such a pressure limitation is removed.

Should you desire any additional information concerning the necessity for a greater injection pressure, please do not hesitate to contact us.

Yours very truly,

STEPHENS ENGINEERING


Joe L. Johnson, Jr.

JLJjr/bw





STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT
OIL CONSERVATION DIVISION

JERRY ARODACA

GOVERNOR

NICK FRANKLIN
SECRETARY

March 6, 1979

POST OFFICE BOX 2088
STATE LAND OFFICE BUILDING
SANTA FE, NEW MEXICO 87501
(505) 827-2434

Mr. George Hunker
Hunker - Fedric
Attorneys at Law
Post Office Box 1837
Roswell, New Mexico 88201

Re: CASE NO. 6226
ORDER NO. R-5939

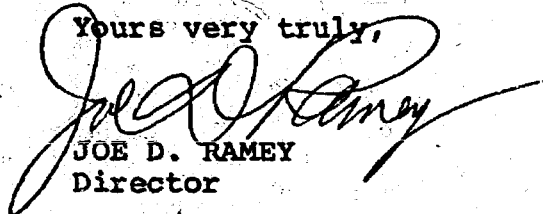
Applicant:

Barber Oil, Inc.

Dear Sir:

Enclosed herewith are two copies of the above-referenced
Division order recently entered in the subject case.

Yours very truly,

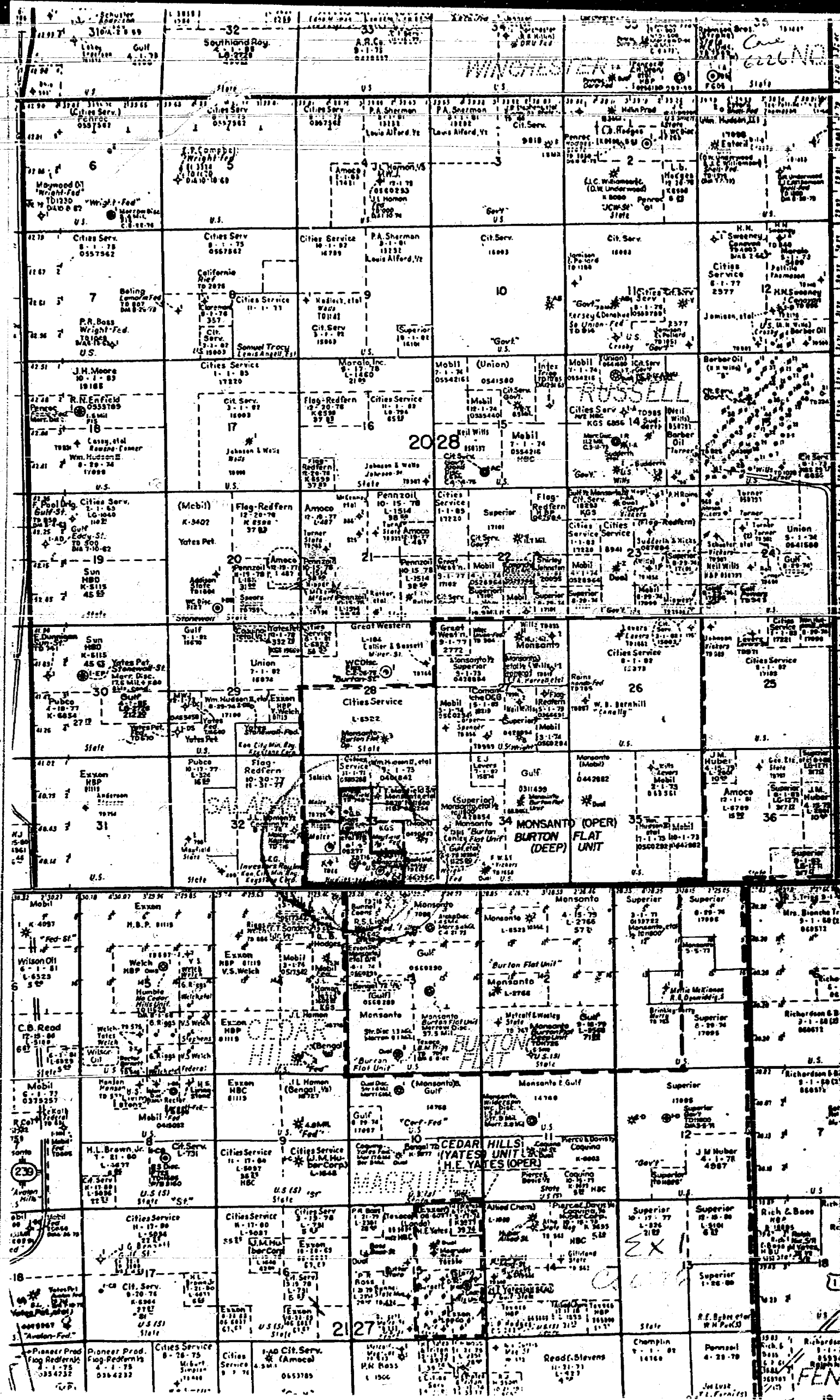

JOE D. RAMEY
Director

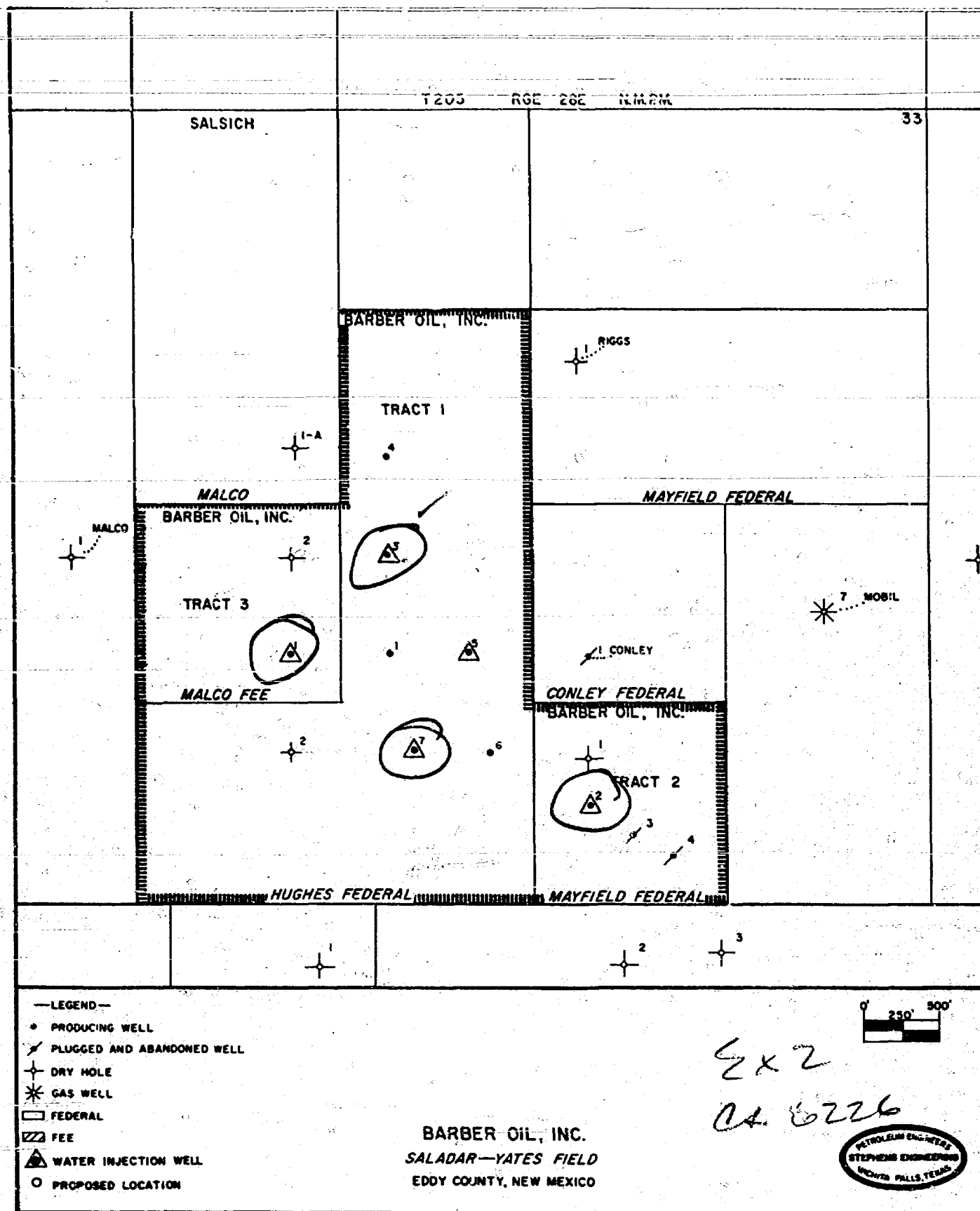
JDR/fd

Copy of order also sent to:

Hobbs OCC ☒
Artesia OCC ☐
Aztec OCC ☐

Other ☐



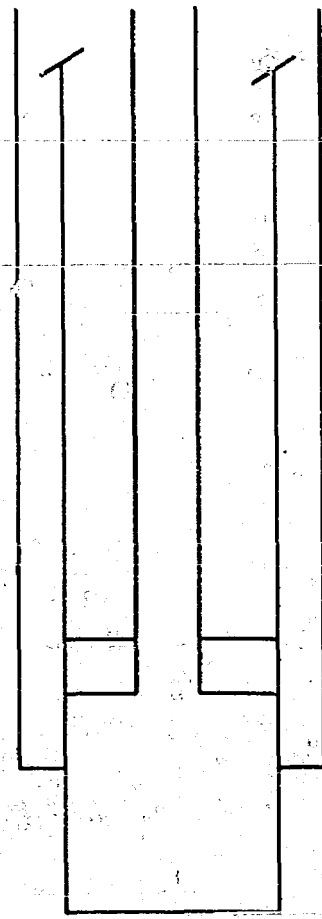


Case 6226

BARBER OIL, INC.
SALADAR UNIT
SALADAR FIELD
EDDY COUNTY, NEW MEXICO

DIAGRAMMATIC SKETCH
PROPOSED WATER INJECTION WELL
WELL NO. 1-3

TOP OF CEMENT
200' EST.



HOLE SIZE 6 1/4"

*ave inj well
809
642
660
602
625
650
5) 3179 (6358
636
636 x 700 =
800 557*

5 1/2" CASING AT 642'
WITH 40 SACKS CEMENT
TOP OF PAY AT 667'

PACKER SET AT 600'
OPEN HOLE 642' TO 700'
T.D. 700'

OTHER WELL DATA:

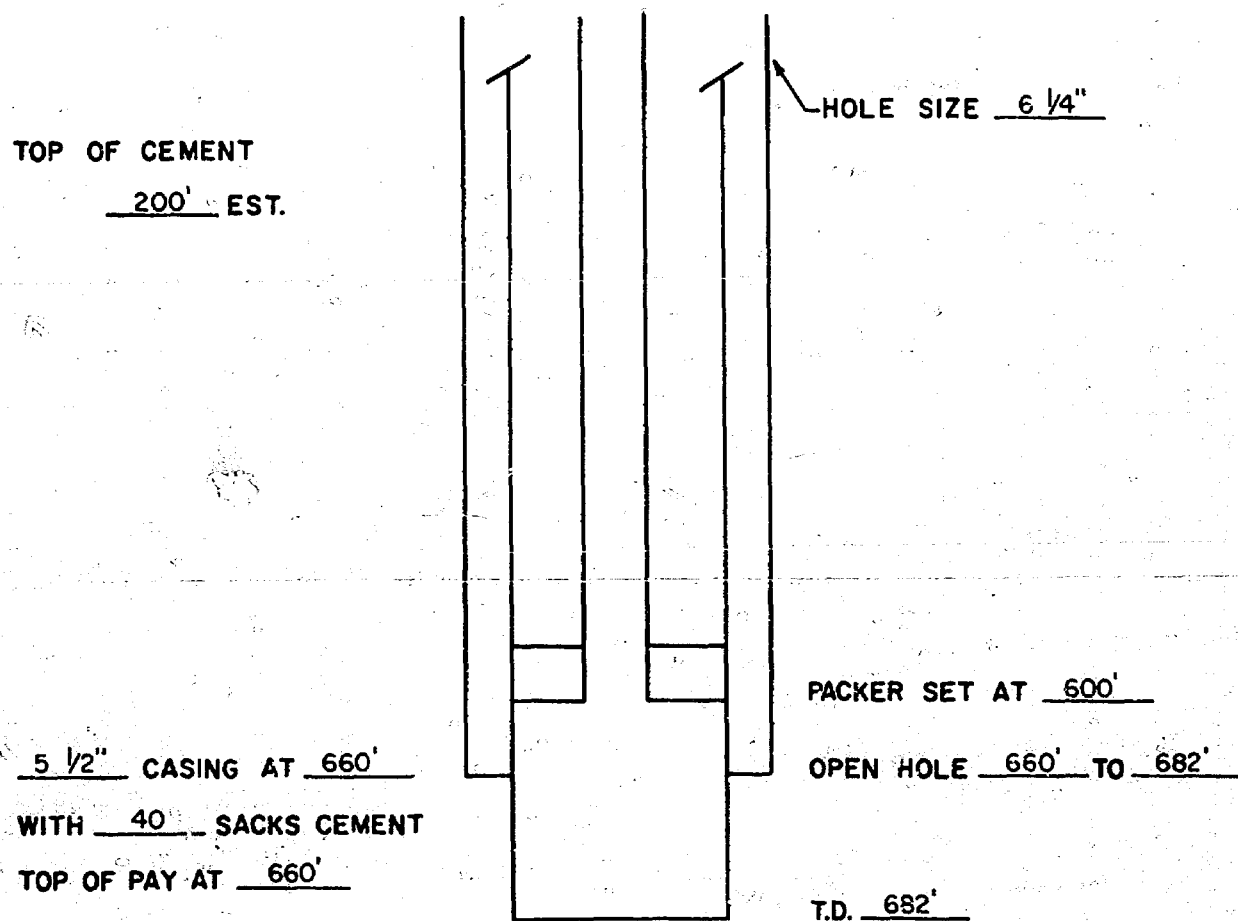
COMPLETION DATE: 8-27-56
ELEVATION: 3201'
TREATMENT: FRACED WITH 15000*
ORIGINAL OWNER, LEASE & WELL NO.: GEORGE RIGGS ET AL.
HUGHES (FEDERAL) LEASE, WELL NO. 3
INITIAL POTENTIAL: 44 BOPD

EX 3
Case 6226

Cone 60-26

BARBER OIL, INC.
SALADAR UNIT
SALADAR FIELD
EDDY COUNTY, NEW MEXICO

DIAGRAMMATIC SKETCH
PROPOSED WATER INJECTION WELL
WELL NO. 1-5



OTHER WELL DATA:

COMPLETION DATE: 9-1-62

ELEVATION: 3199'

TREATMENT: FRACED WITH 10,600^{##}

ORIGINAL OWNER, LEASE & WELL NO.: GEORGE RIGGS ET AL,
HUGHES (FEDERAL) LEASE, WELL NO. 5

INITIAL POTENTIAL: 18 BOPD & 4 BWPD

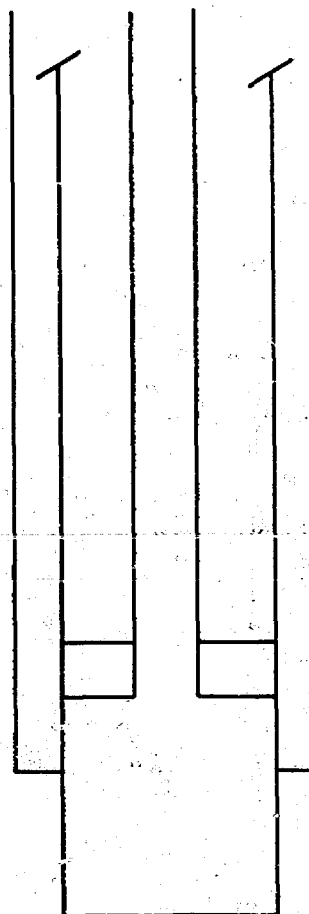
Case 6226

BARBER OIL, INC.
SALADAR UNIT
SALADAR FIELD
EDDY COUNTY, NEW MEXICO

DIAGRAMMATIC SKETCH
PROPOSED WATER INJECTION WELL
WELL NO. 1-7

TOP OF CEMENT
100' EST.

5 1/2" CASING AT 602'
WITH 100 SACKS CEMENT
TOP OF PAY AT 610'



HOLE SIZE 6 1/4"

PACKER SET AT 570'

OPEN HOLE 602' TO 633'

T.D. 633'

OTHER WELL DATA:

COMPLETION DATE: 12-29-65

ELEVATION: 3199'

TREATMENT: FRACED WITH 11,000*

ORIGINAL OWNER, LEASE & WELL NO.: GEORGE RIGGS ET AL,

HUGHES (FEDERAL) LEASE, WELL NO. 7

INITIAL POTENTIAL: 5 BOPD

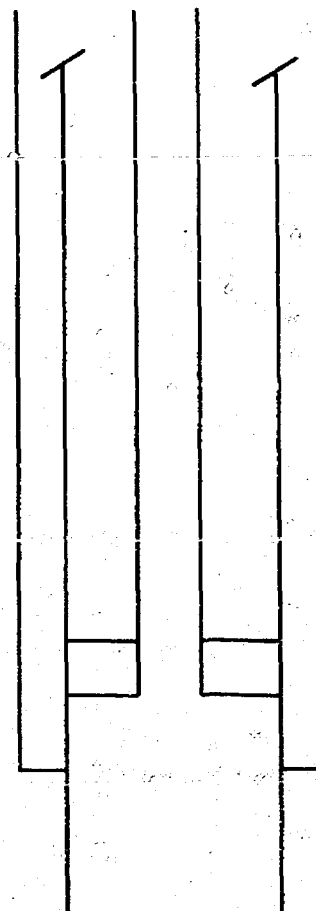
Case 6226

BARBER OIL, INC.
SALADAR UNIT
SALADAR FIELD
EDDY COUNTY, NEW MEXICO

DIAGRAMMATIC SKETCH
PROPOSED WATER INJECTION WELL
WELL NO. 2-2

TOP OF CEMENT
400' EST.

4 1/2" CASING AT 625'
WITH 35 SACKS CEMENT
TOP OF PAY AT 633'



HOLE SIZE 6 1/4"

PACKER SET AT 575'

OPEN HOLE 625' TO 675'

T.D. 675'

OTHER WELL DATA:

COMPLETION DATE: 10-24-57

ELEVATION: 3205'

TREATMENT: FRACED WITH 10,000*

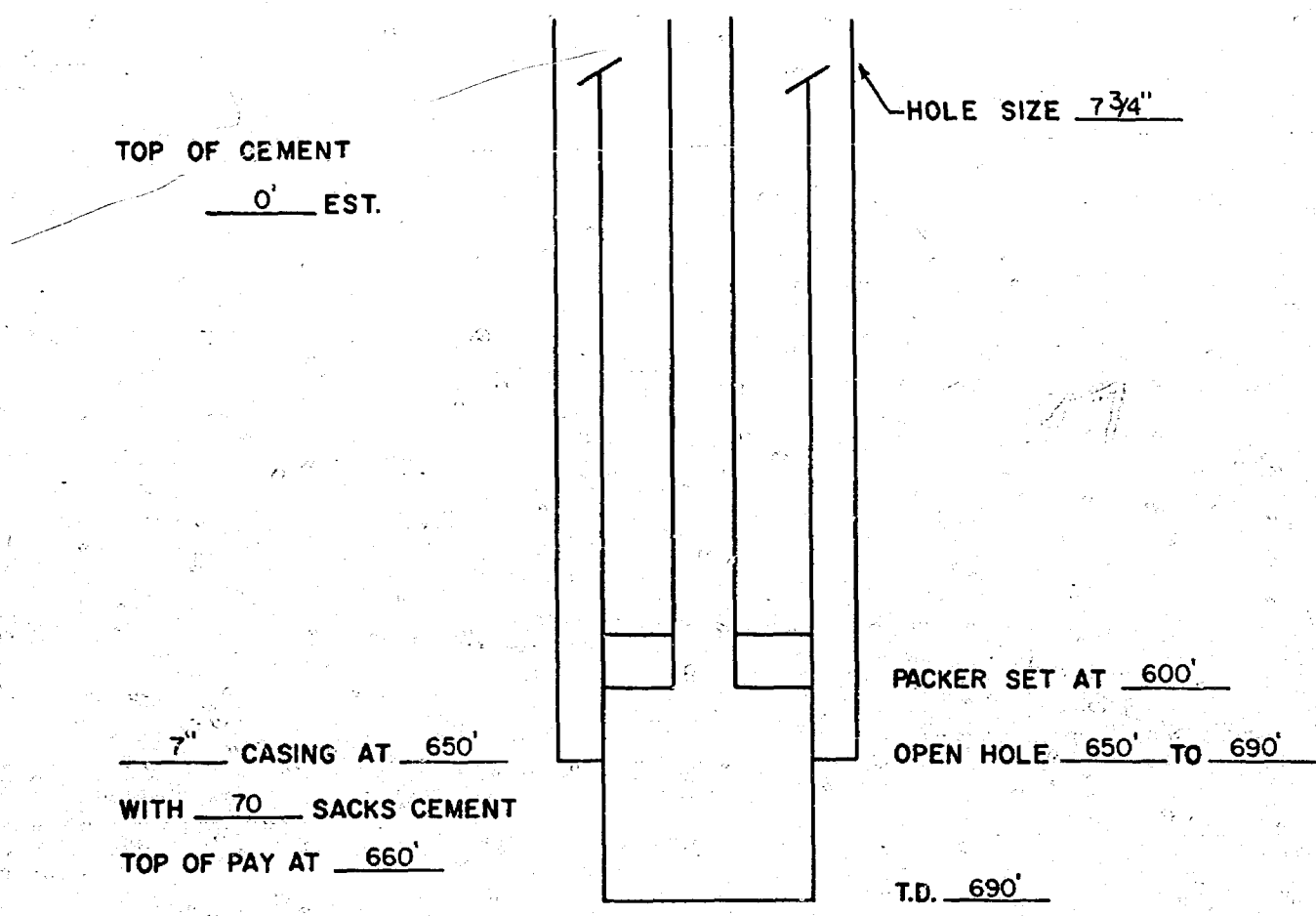
ORIGINAL OWNER, LEASE & WELL NO.: GEORGE E. CONLEY,

MAYFIELD FEDERAL LEASE, WELL NO. 2

INITIAL POTENTIAL: 4 BOPD

BARBER OIL, INC.
SALADAR UNIT
SALADAR FIELD
EDDY COUNTY, NEW MEXICO

DIAGRAMMATIC SKETCH
PROPOSED WATER INJECTION WELL
WELL NO. 3-1



OTHER WELL DATA:

COMPLETION DATE: 3-30-56

ELEVATION: 3202'

TREATMENT: SHOT 56 QTS. 657'-685'

ORIGINAL OWNER, LEASE & WELL NO.: GEORGE RIGGS ET AL,

MALCO-KEYSTONE FEE LEASE, WELL NO.1

INITIAL POTENTIAL: 10 BOPD

Case 6226

BARBER OIL, INC.
SALADAR FIELD
EDDY COUNTY, NEW MEXICO

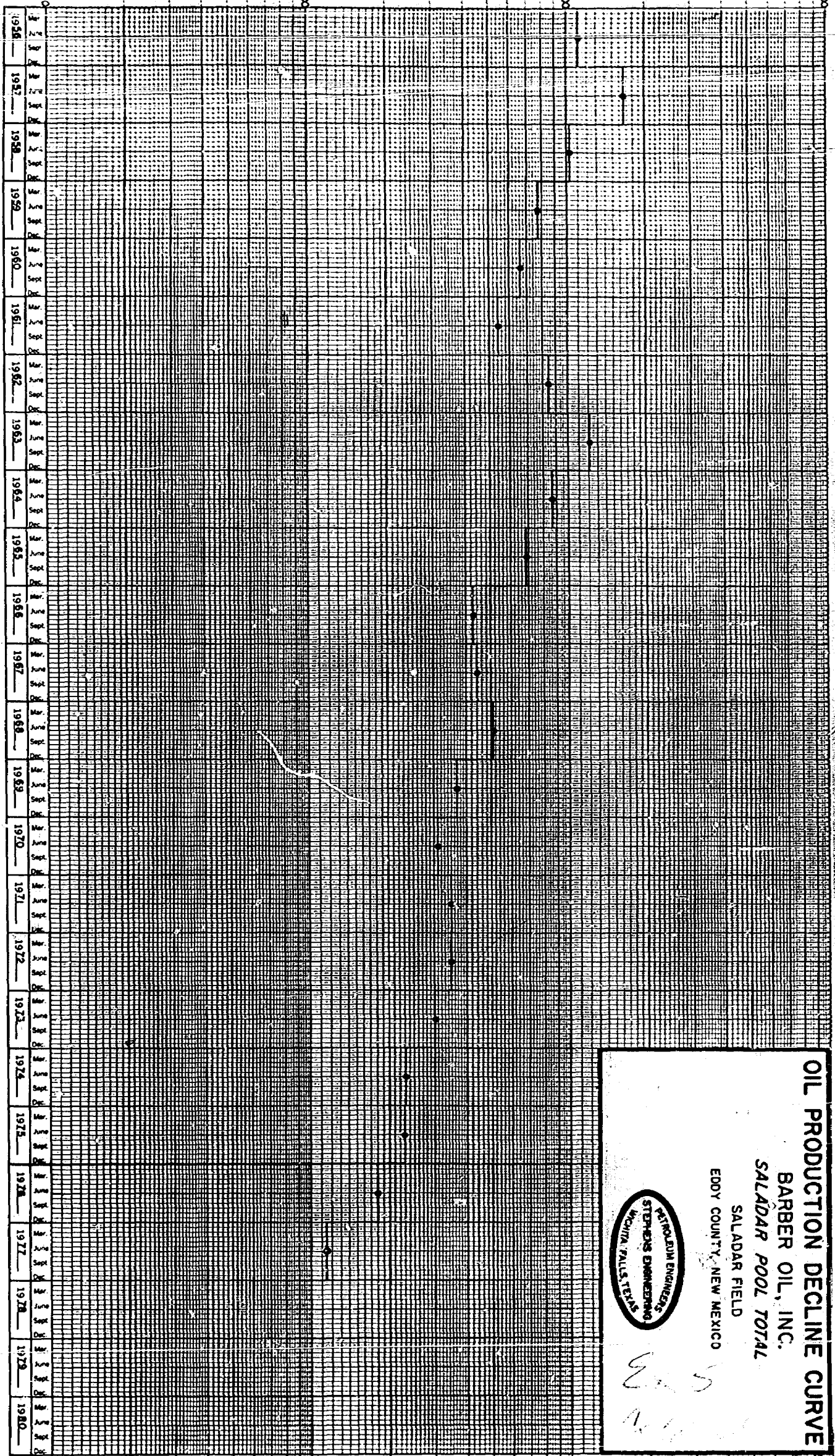
PIPELINE RUN SUMMARY

<u>Year</u>	<u>Hughes Federal</u>	<u>Malco Fee</u>	<u>Mayfield Federal</u>	<u>Field Total</u>
1956	4,257	3,426	0	7,683
1957	15,444	4,307	0	19,751
1958	8,567	3,831	0	12,398
1959	6,830	2,393	0	9,223
1960	5,810	2,103	0	7,913
1961	4,494	2,008	0	6,502
1962	7,300	1,665	1,178	10,143
1963	11,749	1,600	1,071	14,420
1964	8,311	1,380	663	10,354
1965	6,364	1,138	806	8,308
1966	3,507	1,025	605	5,137
1967	3,819	951	470	5,240
1968	4,543	1,090	470	6,103
1969	3,121	936	312	4,369
1970	2,476	775	469	3,720
1971	2,646	1,243	311	4,200
1972	3,092	931	154	4,177
1973	2,583	749	312	3,644
1974	2,094	659	0	2,753
1975	1,851	701	173	2,725
1976	1,666	331	164	2,161
1977	989	354	53	1,396
Total	111,513	33,596	7,211	152,320
% of Total	73.209690	22.056198	4.734112	100.000000

EX 1
Case 6226

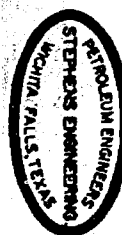
AVERAGE MONTHLY OIL PRODUCTION — BARRELS

Case
6226



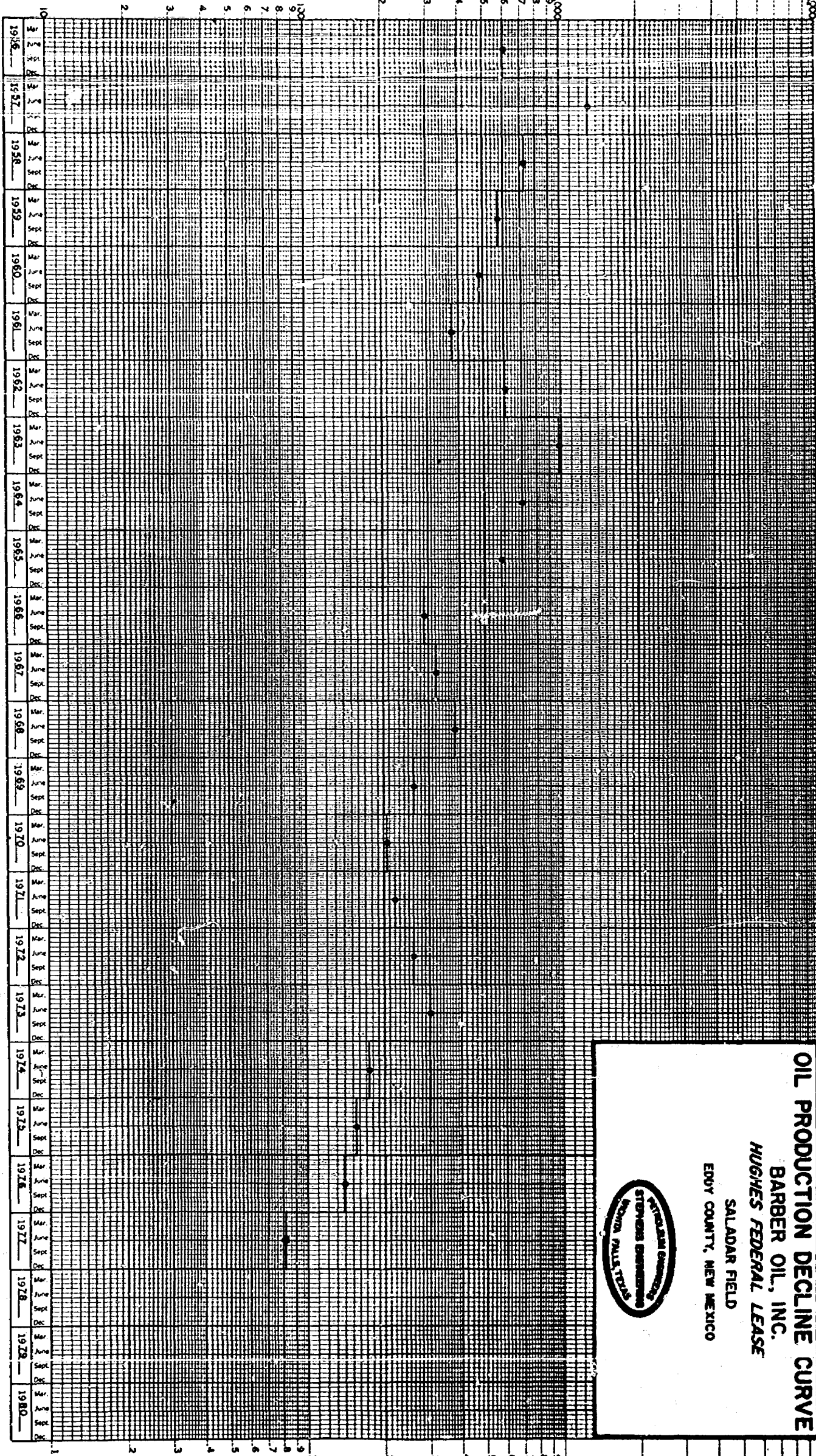
OIL PRODUCTION DECLINE CURVE

BARBER OIL, INC.
SALADAR POOL TOTAL
SALADAR FIELD
EDDY COUNTY, NEW MEXICO



325
1/1/80

6226



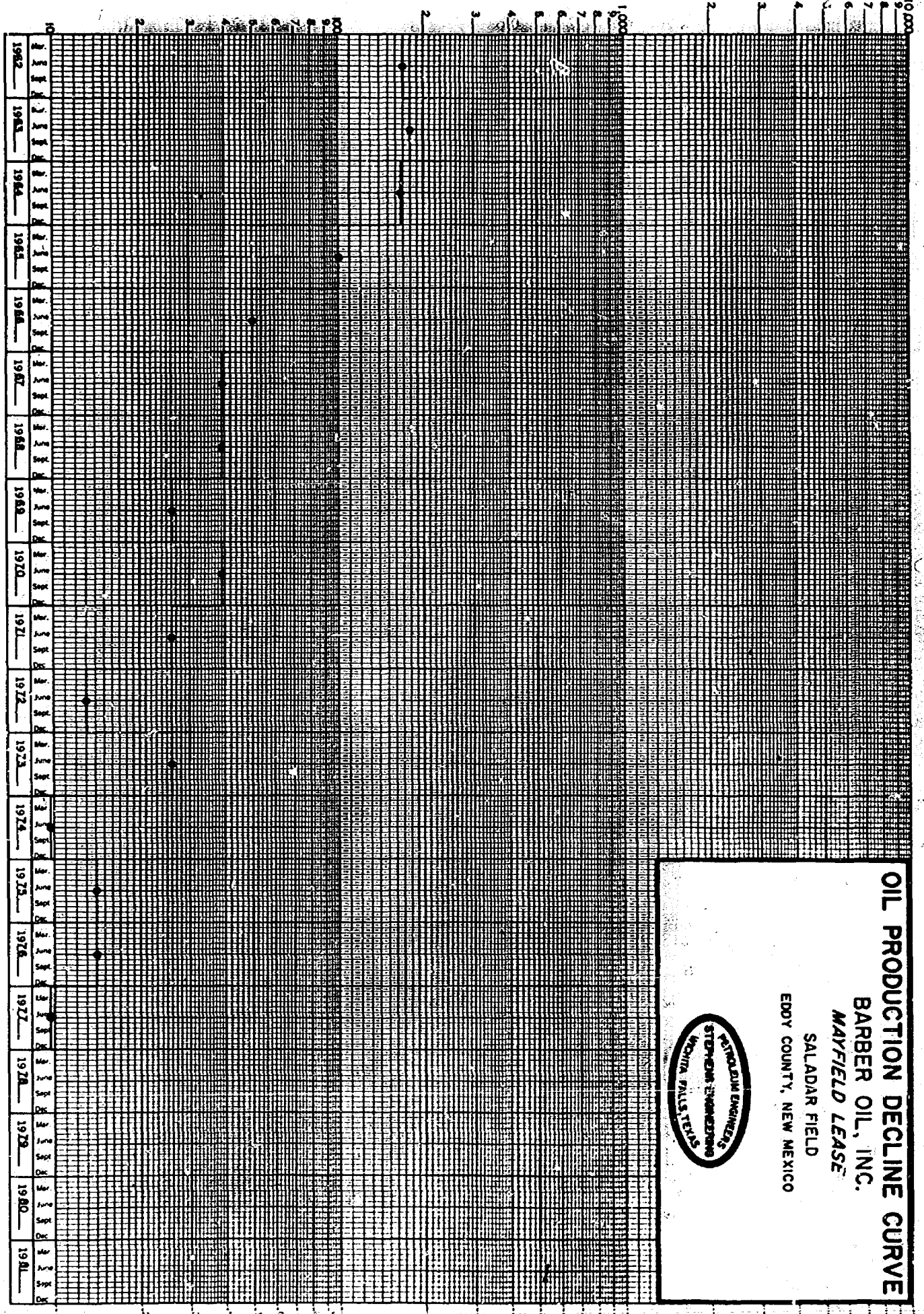
OIL PRODUCTION DECLINE CURVE
BARBER OIL, INC.
HUGHES FEDERAL LEASE
SALADAR FIELD
EDDY COUNTY, NEW MEXICO



Case
6226

47 6843

AVERAGE MONTHLY OIL PRODUCTION — BARRELS

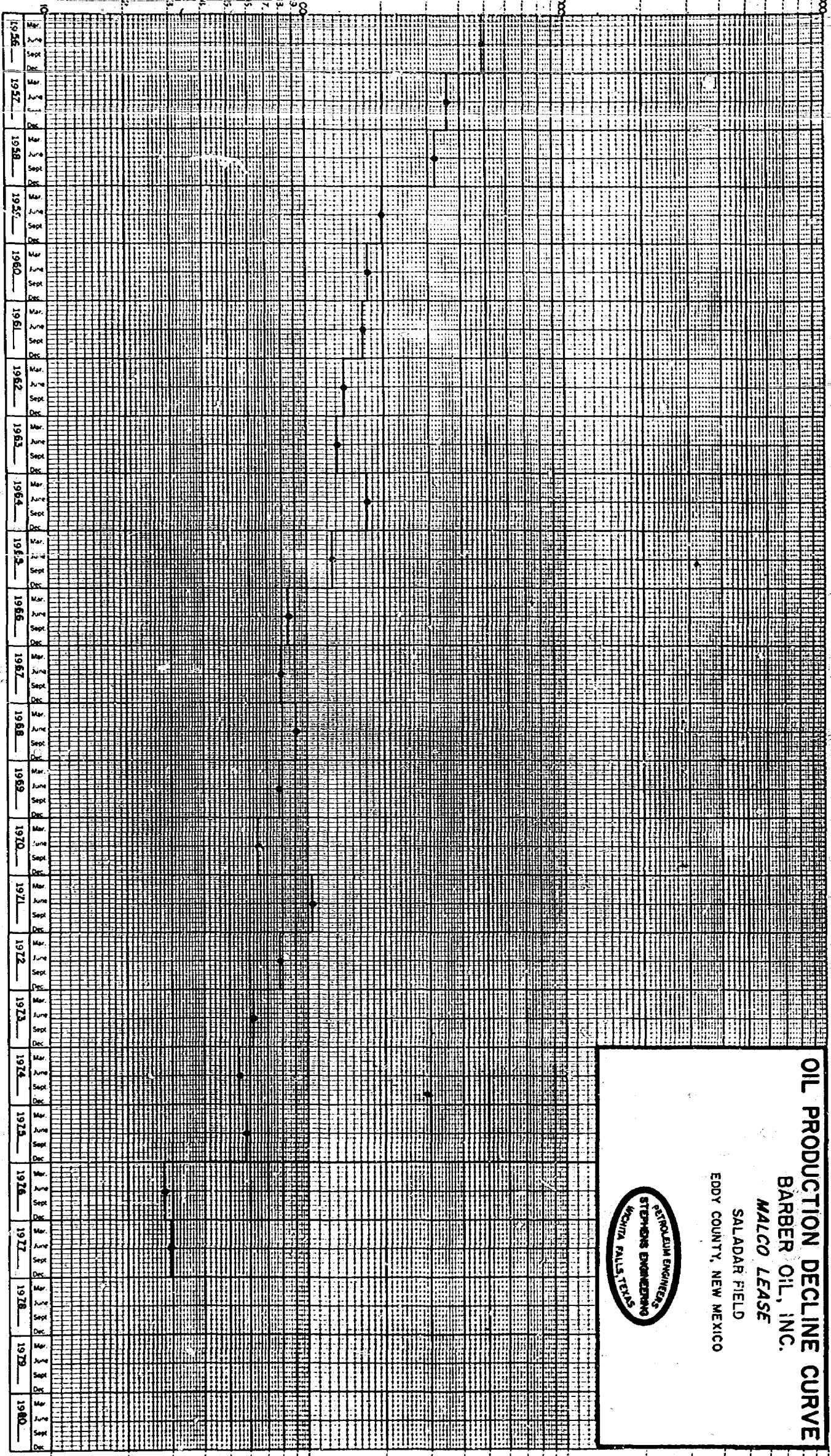


OIL PRODUCTION DECLINE CURVE

BARBER OIL, INC.
MAYFIELD LEASE
SALADAR FIELD
EDDY COUNTY, NEW MEXICO



Line
62,26



OIL PRODUCTION DECLINE CURVE
BARBER OIL, INC.
MALCO LEASE
 SALADAR FIELD
 EDDY COUNTY, NEW MEXICO

PETROLEUM ENGINEERS
STEPHENS ENGINEERING
 MICHIGAN FALLS, TEXAS

STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT
OIL CONSERVATION DIVISION
State Land Office Building
Santa Fe, New Mexico
2 August 1978

EXAMINER HEARING

IN THE MATTER OF:

Application of Barber Oil, Inc.,
for a waterflood project, Eddy
County, New Mexico.

CASE 6226

6238

BEFORE: Daniel S. Nutter

TRANSCRIPT OF HEARING

A P P E A R A N C E S

For the Oil Conservation
Division:

Lynn Teschendorf, Esq.
Legal Counsel for the Division
State Land Office Building
Santa Fe, New Mexico 87501

For the Applicant:

George H. Hunker, Jr., Esq.
HUNKER, FEDRIC, P.A.
P. O. Box 1837
Roswell, New Mexico 88201

SALLY WALTON BOYD
CERTIFIED SHORTHAND REPORTER
730 Bishop's Lodge Road • Phone (505) 988-3404
Santa Fe, New Mexico 87501

I N D E X

ROBERT LIGHT

Direct Examination by Mr. Hunker	4
Cross Examination by Mr. Nutter	11
Cross Examination by Ms. Teschendorf	16
Cross Examination by Mr. Nutter	17

E X H I B I T S

Applicant Exhibit One, Plat	20
Applicant Exhibit Two, Plat	20
Applicant Exhibit Three, Schematics	20
Applicant Exhibit Four, Pipeline summary	20
Applicant Exhibit Five, Decline curves	20
Applicant Exhibit Six, Letter	20

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1 MR. NUTTER: The hearing will come to order.

2 Call first Case Number 6238.

3 MS. TESCHENDORF: Case 6238. Application of
4 Barber Oil, Inc., for a unit agreement, Eddy County, New
5 Mexico.

6 MR. HUNKER: If the Examiner please, we would
7 like to have Case 6238 consolidated with Case 6226 and
8 have a joint hearing with regard to the matter. It's the
9 same property that's involved and it's the same project.

10 MR. NUTTER: We will at this time call Case
11 Number 6226.

12 MS. TESCHENDORF: Case 6226. Application of
13 Barber Oil, Inc., for a waterflood project, Eddy County,
14 New Mexico.

15 MR. NUTTER: Cases 6238 and 6226 will be con-
16 solidated for the purpose of hearing.

17 Will you proceed, Mr. Hunker?

18 MR. HUNKER: My name is George H. Hunker, Junior.
19 I'm an attorney, Roswell, New Mexico, and I represent
20 Barber Oil Company, Incorporated, Barber Oil, Inc., of
21 Carlsbad, New Mexico. We have one witness and six exhibits.

22 I'd like to call at this time my witness, Mr.
23 Robert S. Light.

24 (Witness sworn.)
25

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1 ROBERT S. LIGHT

2 being called as a witness and having been duly sworn upon
3 his oath, testified as follows, to-wit:

4
5 DIRECT EXAMINATION

6 BY MR. HUNKER:

7 Q. Will you identify yourself for the record,
8 please?

9 A. My name is Robert S. Light. I'm president of
10 Barber Oil, Inc., a Carlsbad corporation -- New Mexico
11 corporation operating in Carlsbad, New Mexico.

12 Q. What's your educational background, Mr. Light?

13 A. Well, I'm a graduate electrical engineer from
14 the University of Kansas and for three years after gradu-
15 ation I worked for Continental Oil Company in the Geo-
16 physical Department. After that I went to work for Barber
17 Oil in Carlsbad, New Mexico, and have been with them for
18 twenty-one years in Carlsbad.

19 Q. Have you testified before the Commission pre-
20 viously?

21 A. I have.

22 Q. And have your qualifications as a practical
23 oil man been accepted by the Commission?

24 A. They were accepted on a prior hearing con-
25 cerning the Russell waterflood project which is similar

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1 to the one presented here today.

2 Q. Barber Oil has filed an application with the
3 Commission for the approval of a waterflood project. Have
4 you prepared or caused to be prepared several exhibits in
5 connection with this matter?

6 A. We have.

7 Q. Referring to the exhibit marked Number One,
8 will you identify and explain what it shows, please/

9 A. Exhibit Number One is nothing more than an
10 oil and gas map of Township 20 South, Range 28 East, Eddy
11 County, showing in yellow the 240 acres comprising the
12 waterflood proposed project.

13 Q. Referring to Exhibit Number Two, what does
14 that exhibit show?

15 A. Exhibit Number Two is an enlargement of that
16 area in Section 33, 20 South, 28 East, showing the property
17 outlined with a hatched section here which Barber Oil now
18 operates, stripper production.

19 Q. And what do you propose to do, Mr. Light, in
20 this particular area?

21 A. Well, we want to put this project together
22 under a unit plan and inject water into five of the present
23 wells, one into the Malco lease, three into the Hughes
24 lease, and one into the Mayfield lease. There are three
25 separate leases involved in the project.

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753 Bishop's Lodge Road • Phone (505) 988-3404
Santa Fe, New Mexico 87501

1 Q And are those leases marked with the -- are
2 those wells marked with the diamond on this Exhibit Number
3 Two?

4 A. Right. If you'll refer to the legend, the
5 water injection wells are a black dot which have been pro-
6 ducing wells with a triangle around them, and there's at
7 least one injection well on each tract, Tracts One, Two,
8 and Three, so marked.

9 Q. Referring to Exhibit Number Three, tell the
10 Examiner, if you will, what the typical proposed water
11 injection well schematic plan is.

12 A. Well, just taking the first one, there are
13 five in the exhibit. All five injection wells are shown
14 here. They're all cased. All the casing is cemented, not
15 necessarily to the surface. The plan is to go into the
16 casing that's in the well, set a packer on 2-inch tubing
17 approximately 50 feet in each case above the bottom of
18 the casing, and inject water down the tubing into the
19 producing zone. Some of these wells have been fraced,
20 some have been shot.

21 Q. Do you anticipate any difficulty in accom-
22 plishing this?

23 A. We anticipate no difficulty at all. We --
24 it looks like a fairly simple operation and similar to what
25 we've been doing for twenty-five years in the Russell area.

1 Q. Referring to Exhibit Number Four, the pipeline
2 summary, what does this exhibit show, Mr. Light?

3 A. All right. This shows the summary of sales on
4 the three various leases, the three leases involved, from
5 inception, from the time they first started producing in
6 1956, and the Mayfield in 1958. It shows each separate
7 lease and then the field total for the Saladar Field.

8 If you'll look closely at the production decline
9 you'll see that it's in an advanced state of decline and
10 all wells involved are stripper and at the present, in
11 1977, it produced a field total of about ¹⁴⁰⁰~~1700~~ barrels of
12 oil, which is an advanced state of decline.

13 All wells are stripper or less.

14 Q. Have you prepared another exhibit with regard
15 to this matter of depletion, referring to Exhibit Number
16 Five?

17 A. All right. We do have as Exhibit Number Five
18 four decline curves, one for the field total, and it gives
19 from 1956 through 1977, the decline of the Saladar Field,
20 and thereafter breaks this down into each separate lease,
21 the Hughes lease, the Malco lease, and the Mayfield lease.

22 MR. NUTTER: This is graphic depiction of the
23 information --

24 A. Right.

25 MR. NUTTER: -- that was shown on the previous

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1 exhibit?

2 A. Right. This is nothing more than the sales,
3 the pipeline summary of sales, put on a graph, and it's
4 averaged for the monthly average rather than each month
5 plotted. It's a monthly average plot.

6 MR. NUTTER: For that year.

7 A. For the year, right. They took the entire
8 year production and then divide it by twelve and plot it.
9 That's what it is.

10 Q. Is Barber, Inc., an interest owner in the
11 project area leases?

12 A. Barber Oil, Inc., is a one-fourth interested
13 party in all three leases.

14 Q. Has it been agreed that Barber would operate
15 the project?

16 A. Barber would become the project operator and
17 all parties have signed the unit plan as well as the unit
18 plan of operation.

19 Q. In other words, this is a voluntary unitiza-
20 tion?

21 A. That is correct. All parties of interest are
22 involved except the royalty owners.

23 Q. Do you anticipate that the overriding royalty
24 owners will join or ratify the unit agreement?

25 A. Well, the largest one of all is George D.

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1 Riggs, who's already indicated he will and has not yet
2 signed it, but all of them we expect to sign with no pro-
3 blem.

4 Q. Have you submitted to the United States Geolo-
5 gical Survey a form of unit agreement under which these
6 project operations will be conducted?

7 A. That is true. We have submitted to the USGS
8 a form unit plan and unit operations and we have -- do
9 you want me to go further -- a letter from them.

10 Q. I'll ask you the question.

11 A. Okay.

12 Q. Has the United States Geological Survey approved
13 the area as being a logical unit area?

14 A. I have in front of me their letter dated July
15 7, whereby they approve the unit area and the allocation
16 of production as set forth in the unit plan.

17 Q. Is this Exhibit Number Six?

18 A. This would be Exhibit Number Six.

19 Q. In connection with the lands in the unit area
20 tell me what type lands are involved.

21 A. By type, there are various leases involved,
22 two Federal leases, Tract One is a 160-acre Federal lease
23 called our Hughes Federal. Tract Number Two is a 40-acre
24 Federal lease called the Mayfield Federal, and Tract Three
25 is a fee lease called the Malco fee.

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Sanita Fe, New Mexico 87501

1 Q. So you have 200 acres of Federal land and 40
2 acres of fee land, is that correct?

3 A. That's correct.

4 Q. Do you believe that this proposed area contains
5 all or substantially all of the geological features that's
6 involved?

7 A. The oil is trapped stratigraphically in this
8 area, and we feel that the entire -- the project as shown
9 would cover the entire geological structure under this
10 particular zone of production, which is about 660 feet
11 deep; fairly shallow.

12 Q. In your opinion, Mr. Light, will the alloca-
13 tion of production as provided for in the unit be reason-
14 able and afford the owner or owners of each tract the
15 opportunity to recover and receive without unnecessary
16 expense his just and fair share of the oil and gas pro-
17 duced under unitization?

18 A. We believe this to be true. The -- all the
19 leases are in an advanced state of decline and in order
20 to allocate production we took the total throughout their
21 lifetime to date and divided each lease total into that
22 total for their percentage of the unit participation.

23 We feel that's the fairest way to evaluate
24 the future use of -- to pay the royalties in the future.

25 Q. And the USGS has approved this type of allo-

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Sarasota, Florida 34236

1 cation, is that correct?

2 A. They have.

3 Q. Is it your wish that the Oil Conservation Divi-
4 sion designate Barber Oil, Inc., as the operator of this
5 unit?

6 A. That's our intent.

7 Q. Is it your opinion that the approval of the
8 unit agreement will be in the public interest, protect
9 correlative rights, prevent waste, and result in the con-
10 servation of oil and gas?

11 A. I certainly do.

12 MR. HUNKER: I have no other questions, Mr.
13 Examiner. I'm sure you will probably have one or two.

14 MR. NUTTER: Yes, sir.

15

16

CROSS EXAMINATION

17

BY MR. NUTTER:

18

19 Q. Mr. Light, it's been some time since you ap-
20 peared here in connection with the Russell Pool waterflood
21 project.

22

23 The Commission, or the Division, in the past
24 year or two has adopted some new regulations and some new
25 requirements with respect to waterflood projects. This
is all in accordance with the anticipated underground in-
jection control program that the Federal government is

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1 authoring and will impose upon the states, and for one
2 thing, we have sent out memorandum numbered 3-77, dated
3 August 24th, 1977, which requires certain things to be
4 submitted with an application or at the hearing for approval
5 of injection wells in waterflood projects.

6 Included here as item number three is a schematic
7 of all plugged and abandoned wells within the one-half mile
8 radius of any injection well in a project.

9 Now I note under Exhibit Number Two that there
10 are a number of abandoned wells, so it will be necessary
11 for you to submit some schematic diagrams of these plugged
12 wells and show the manner in which those wells were plugged.
13 Now this could be done after you get home. We'll just
14 have to withhold approval of the project until the require-
15 ments of Memo Number 3-77 have been met with.

16 Now, what is your anticipated volume of in-
17 jection in this project, Mr. Light?

18 A. We anticipate about 75 barrels of water per
19 day to be injected with a pump, with a triplex pump at
20 about approximately 500 pounds pressure.

21 Q. Is that per well?

22 A. No, that would be total.

23 Q. That would be total?

24 A. Yes, sir.

25 Q. In other words, it would average about 15

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CERTIFIED SHORTHAND REPORTER
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1 barrels per day per well.

2 A Right, it's a small project. It could be in-
3 creased at a later time. We may want to do some additional
4 drilling at a later time.

5 Q Well, do you have any idea as to what kind of
6 injection pressures will be required?

7 A 500 pounds pressures is what's anticipated.
8 The Russell Pool is being flooded at 700 pounds surface
9 pressure.

10 Q Now, that's another thing. Memo Number 3-77
11 reads as follows in Item Number One: "No surface injection
12 pressure greater than .2 psi per foot of depth to the top
13 of the injection zone will be permitted unless there's
14 strong evidence that the strata confining the injection
15 fluid has a fracture gradient that would support a higher
16 pressure."

17 Now, your average -- your typical --

18 A 660 feet deep.

19 Q Right, .2 of that will give you 120 --

20 A 120 pounds.

21 Q 120, 125 pounds pressure, so we would have to
22 have some evidence that the strata here would support a
23 higher pressure than 120 or 125 pounds prior to authorizing
24 any 500 pound injection pressure.

25 A In what manner would you like to have that

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1 presented? I'm not just sure how to present that to you.

2 Q Well, instantaneous shut-ins on frac jobs,
3 step rate injection tests; there's a number of different
4 ways in which operators have demonstrated formation can
5 sustain a higher pressure than the .2.

6 A Well, would the fact that our past performance
7 in Russell with no problems at all at 700 pounds, and it's
8 only 800 feet deep, substantiate that?

9 Q Well, I think that would help.

10 A I mean that would be a field that's three
11 miles distant.

12 Q Yeah. If you -- if you can show that there
13 hasn't been any fracturing in that.

14 A Well, we've been doing it for twenty-five
15 years and never been --

16 Q Twenty-five years?

17 A Twenty-five years. And it's the same -- almost
18 exactly the same zone with the dip taken out.

19 Q Now, I'm having a little bit of difficulty on
20 these schematic diagrams of the injection wells.

21 A All right.

22 Q Is there any surface pipe in these wells?

23 A Well, the surface pipe is shown there, which
24 is -- like on Exhibit Three, Well No. 1-3, that's Tract
25 One and that's the Hughes Well No. 3 and there's 5-1/2

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1 inch casing at 642. That's it.

2 Q There's one string of casing. There's no
3 surface casing per se; this is the production casing.

4 A Well, the surface casing was probably pulled
5 at the time they ran the casing, production string.

6 Q Are there fresh waters in this area?

7 I would say nothing but brackish water in the
8 area. There's no fresh drinking water, no; never has been
9 and I would say in this entire township.

10 I know there's none around Russell. We do
11 have a 50-foot water well which we plan to supply the water
12 for this project with, and it's brackish, and I do have
13 a water analysis, if you'd like to see it.

14 Q I think that would be pertinent if we could
15 have the information on that -- on that water analysis.

16 A Would you like to have -- I just have one copy.
17 I would need to copy it for you.

18 Q Well, you can send that in with the other
19 material, if you'd like to send a copy of that.

20 A But I can give you a water analysis of the
21 surface water there, which is brackish and has some salt
22 in it, that's satisfactory for flooding. We can use it.

23 Q Yeah. And in each of these wells you would
24 run a string of tubing, or you'd have a packer in them?

25 A The packer would be set -- according to our

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1 diagram the packer would be set inside the casing in each
2 case.

3 Q Are all of these wells open hole?

4 A Uh-huh, they all produce open hole.

5 Four of the injection wells have been fraced and
6 one has been shot with nitro.

7 Q And the packer in each instance would be set
8 from 30 to 50 feet --

9 A Above the bottom of the casing.

10 Q -- above the casing.

11 Now, the annulus presumably would be loaded
12 with an inert fluid.

13 A Well, that's the general practice.

14 Q Yes, sir. And the annulus either left open or
15 equipped with a pressure gauge so that if there's any
16 leakage through the packer or through the tubing it can be
17 detected at the surface.

18 A Right. I understand that portion of it, even
19 though that doesn't state that in the diagram, why, that's
20 the way it would be done, in order to detect leaks.

21 Q Yes, sir.

22 MR. NUTTER: Ms. Teschendorf?

23
24 CROSS EXAMINATION

25 BY MS. TESCHENDORF:

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1 Q My question refers back to the unit agreement,
2 which I guess you sent in with the application.

3 Articles Eight and Nine refer to removal of
4 and appointment of a successor unit operator. The Division
5 does not necessarily want to have to approve either one of
6 those things, but we certainly would like to be notified
7 of them and just from skimming this, I didn't see any re-
8 ference to the Division in those sections, and I don't
9 think it would necessarily need amendment of the agreement,
10 but our order will probably --

11 A Require notification of any change of unit
12 operator?

13 Q Right. Could that be done?

14 A Oh, yes.

15 MR. NUTTER: Is there anything else regarding
16 the unit?

17 MS. TESCHENDORF: No, I think I've covered
18 everything there. Uh-huh.

19

20 RECROSS EXAMINATION

21 BY MR. NUTTER:

22 Q Now, Mr. Light, one more question. You said
23 that the biggest royalty owner had indicated that he would
24 sign, Mr. Riggs. Is he a royalty owner on the fee lease
25 or is he an overriding royalty owner on some of the other

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1 lease?

2 A. He's the overriding royalty owner on the Hughes
3 Federal lease only, which when spread out throughout the --
4 he has 6-1/4 percent in the Hughes Federal lease as an
5 overriding royalty owner.

6 Q Uh-huh, how about the royalty owner on the fee
7 lease? Has he agreed to come in?

8 A. There are a number of them and, of course, the
9 fee lease is a 40-acre lease and becomes a rather small
10 part of the thing, but we have not -- we have not gotten
11 their signatures, but we anticipate no problem.

12 George Riggs is the only person that is in the
13 area. The rest of them are dispersed long distances.

14 Q Now that fee lease won't have a producing well
15 on it after you've converted the No. 1 to an injection
16 well.

17 A. That's true.

18 Q But they will be -- that lease and the owners
19 of that lease, will be participating in the production.

20 A. They will be participating according to their
21 portion of the present depleted property over the total
22 of all property.

23 Q And this allocation formula is covered in the
24 unit operating agreement.

25 A. That is true. And it's set forth in the -- in

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1 the exhibit -- I'm not sure it's Exhibit A -- that's ex-
2 hibited at the end of the unit plan.

3 Q Okay.

4 A Their interests are all protected, and the al-
5 location has been based on prior production.

6 It would be Exhibit C to the unit agreement.
7 The participation percentage there is based on strictly --
8 on the past production of the three depleted properties.

9 Q I see, based on primary production.

10 A Right, on primary production. That's the only
11 fair basis of doing it. We have no -- nothing but driller's
12 logs on the wells when they were drilled. We have no
13 idea of depth of formation or anything in the producing zone.

14 It's the only really fair, just way of allo-
15 cating production.

16 MR. HUNKER: Mr. Nutter, I'd like to announce
17 to the Commission that when the USGS approved the form of
18 unit agreement, they transposed the words "supervisor"
19 and "Commission" so that the word "supervisor" appears
20 first and the "Commission" appears second, in that order,
21 and they have asked us to add at the end of Article Eight
22 on page eight, a sentence which reads, "Nothing herein
23 contained shall be construed to relieve or discharge any
24 unit operator or unit manager who resigns or is removed
25 hereunder from any liability or duties accruing or per-

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1 formable by it prior to the effective date of such resig-
2 nation or removal."

3 This is probably responsive to your question,
4 Ms. Teschendorf?

5 MR. NUTTER: You mean all that took the place
6 of this one little, short sentence that was the last sen-
7 tence there?

8 MR. HUNKER: Well, they add that additional
9 sentence there.

10 A In addition.

11 MR. HUNKER: To that paragraph.

12 MR. NUTTER: Oh, I see. Are there any further
13 questions of Mr. Light? He may be excused.

14 MR. HUNKER: I'd like to offer at this time
15 Exhibits One through Six.

16 MR. NUTTER: Applicant's Exhibits One through
17 Six will be admitted in evidence.

18 Does anyone have anything they wish to offer
19 in Case Number 6238 or 6226?

20 If not, we'll take the cases under advisement.

21 (Hearing concluded.)
22
23
24
25

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REPORTER'S CERTIFICATE

I, SALLY WALTON BOYD, a Court Reporter, DO HEREBY CERTIFY that the foregoing and attached Transcript of Hearing before the Oil Conservation Division was reported by me; that said transcript is a full, true, and correct record of the hearing, prepared by me to the best of my ability, knowledge, and skill from my notes taken at the time of the hearing.

Sally Walton Boyd C.S.R.
Sally Walton Boyd, C.S.R.

I do hereby certify that the foregoing is a complete record of the proceedings in the Examiner hearing of Case No. *6226-6238* heard by me on *Aug 2*, 1978.

W. H. H., Examiner
New Mexico Oil Conservation Commission

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MEMO

From
D. S. NUTTER
CHIEF ENGINEER

To Bill Nutter

Here are the schematics of the 12 1/2 inch wells within 1/2 mile of the injection wells in Red Right proposed Salalai Creek well flood. The handwritten comments are mine, taken from the well files. Please look these over and let me know if you think any of these wells should be re-entered before drilling operations begin. Many of the wells in this area have been plugged, cemented, and plugged here having, cemented and plugged programs that have led to the desired action you want.

talking about flooding the area. I'm not too sure it's very important, however, if there's no good water in the area to worry about.

Anyway, Mr. Let me know what you think of these plugged wells. Henry. Mr.

2-8-79 Don

I agree that the casing, cementing and plugging programs on these wells have a lot to be desired. However, especially there is no good water in the area and he will be the only operator, therefore any problem that might arise as a result of the injection would be his alone. Perhaps the order could be conditional to require the immediate re-entry + re-plugging of any well that a leak shows up on, or the project be shut down immediately.

Bill

UNIT AGREEMENT
FOR THE DEVELOPMENT AND OPERATION OF THE
SALADAR UNIT
EDDY COUNTY, NEW MEXICO

UNIT AGREEMENT
SALADAR UNIT
EDDY COUNTY, NEW MEXICO

<u>Article</u>	<u>Index</u>	<u>Page</u>
	Preliminary Recitals	1
1	Enabling Act and Regulations	2
2	Definitions	2
3	Unit Area	4
4	Exhibits	4
5	Expansion	5
6	Unitized Land and Unitized Substances	6
7	Unit Operator	6
8	Resignation or Removal of Unit Operator	7
9	Successor Unit Operator	8
10	Accounting Provisions and Unit Operating Agreement	9
11	Rights and Obligations of Unit Operator	9
12	Plan of Operations	10
13	Tract Participations	11
14	Tracts Qualified for Unit Participation	11
15	Allocation of Unitized Substances	13
16	Royalty Settlement	16
17	Rental Settlement	17
18	Conservation	18
19	Drainage	18
20	Leases and Contracts Conformed and Extended	18
21	Correction of Errors	20
22	Covenants Run With Land	20
23	Effective Date and Term	20
24	Rate of Prospecting, Development and Production	22
25	Nondiscrimination	23
26	Appearances	23
27	Notices	23
28	No Waiver of Certain Rights	24
29	Equipment and Facilities Not Fixtures Attached to Realty	24
30	Unavoidable Delay	24
31	Loss of Title	25
32	Border Agreements	25
33	Nonjoinder and Subsequent Joinder	26
34	No Partnership	26
35	Oil in Lease Tankage on Effective Date	27
36	Personal Property Excepted	27
37	Taxes	28
38	Joinder in Dual Capacity	28
39	Counterparts	28

Exhibit "A" (Map of Unit Area)
Exhibit "B" (Schedule of Ownership)
Exhibit "C" (Schedule of Tract Participation)
Exhibit "D" (Section 202 of Executive Order 11246)

UNIT AGREEMENT
FOR THE DEVELOPMENT AND OPERATION OF THE
SALADAR UNIT
EDDY COUNTY, NEW MEXICO

THIS AGREEMENT, entered into as of the 1st day of May, 1978, by and between the parties subscribing, ratifying or consenting hereto, and herein referred to as "parties hereto".

W I T N E S S E T H:

WHEREAS, The parties hereto are the owners of Working, Royalty, or other Oil and Gas Interests in the Unit Area subject to this Agreement; and

WHEREAS, The Mineral Leasing Act of February 25, 1920, (41 Stat. 437, as amended 30 U.S.C. Sections 181 et seq.) authorizes Federal lessees and their representatives to unite with each other, or jointly or separately with others in collectively adopting and operating a unit plan of development or operation of any oil or gas pool, field, or like area, or any part thereof for the purpose of more properly conserving the natural resources thereof whenever determined and certified by the Secretary of the Interior to be necessary or advisable in the public interest; and

WHEREAS, The Oil Conservation Commission of the State of New Mexico is authorized by law (Chap. 72, Laws of 1935, as amended by Chap. 193, Laws of 1937, Chap. 166, Laws of 1941, and Chap. 168, Laws of 1949) to approve this Agreement, and the conservation provisions hereof; and

WHEREAS, The parties hereto hold sufficient interests in the Saladar Unit Area covering the land hereinafter described to give reasonably effective control of operations therein; and

WHEREAS, It is the purpose of the parties hereto to conserve natural resources, prevent waste, and secure other benefits obtainable through development and operation of the area subject to this Agreement under the terms, conditions and limitations herein set forth;

NOW THEREFORE, In consideration of the premises and the promises herein contained, the parties hereto commit to this Agreement their respective interests in the below-defined Unit Area, and agree severally among themselves as follows:

ARTICLE 1

ENABLING ACT AND REGULATIONS

The Mineral Leasing Act of February 25, 1920, as amended, supra, and all valid pertinent regulations, including operating and unit plan regulations, heretofore issued thereunder or valid, pertinent, and reasonable regulations hereafter issued thereunder are accepted and made a part of this Agreement as to Federal Lands, provided such regulations are not inconsistent with the terms of this Agreement; and as to privately owned lands, the oil and gas operating regulations in effect as of the effective date hereof governing drilling and producing operations, not inconsistent with the terms hereof or the laws of the State of New Mexico are hereby accepted and made a part of this Agreement.

ARTICLE 2

DEFINITIONS

For the purpose of this Agreement, the following terms and expressions as used herein shall mean:

2.1 Commission is defined as the Oil Conservation Commission of the State of New Mexico.

2.2 Director is defined as the Director of the United States Geological Survey.

2.3 Secretary is defined as the Secretary of the Interior of the United States of America, or his duly authorized delegate.

2.4 Department is defined as the Department of the Interior of the United States of America.

2.5 Supervisor is defined as the Oil and Gas Supervisor of the United States Geological Survey, for the Area in which the Unit Area is situated.

2.6 Unit Area is defined as the land depicted on Exhibit "A" and described by Tracts in Exhibit "B" attached hereto, and said land is hereby designated and recognized as constituting the Unit Area.

2.7 Unitized Formation is defined as that portion of the Yates Formation commonly known as the Yates Sand. This unitized interval is found between 641 feet and 665 feet on the drillers log dated June 20, 1956 of the George Riggs et al, Hughes Federal No. 1 well which is located 1650 feet from the south line and 1650 feet from the west line of Section 33, Township 20 South, Range 28 East, Eddy County, New Mexico.

2.8 Unitized Substances is defined as all oil, gas, gaseous substances, sulphur contained in gas, condensate, distillate and all associated and constituent liquid or liquefiable hydrocarbons within and produced from the Unitized Formation of the Unitized Land.

2.9 Working Interest is defined as an interest in Unitized Substances by virtue of a lease, operating agreement or otherwise, including a carried interest, which interest is chargeable with and obligated to pay or bear, either in cash or out of production or otherwise, all or a portion of the cost of drilling, developing, producing and operating the Unitized Formation. Any interest in Unitized Substances which is a Working Interest as of the date the owner thereof executes, ratifies or consents to this agreement shall thereafter be treated as a Working Interest for all purposes of this Agreement.

2.10 Royalty Interest is defined as a right to or interest in any portion of the Unitized Substances or proceeds thereof other than a Working Interest and other than an Overriding Royalty Interest.

2.11 Working Interest Owner is defined as a party hereof who owns a Working Interest.

2.12 Royalty Owner is defined as a party hereto who owns a Royalty Interest.

2.13 Tract is defined as each parcel of land described as such and given a Tract number in Exhibit "B".

2.14 Tract Participation is defined as the percentage of participation shown on Exhibit "C" for allocating Unitized Substances to a Tract under this Agreement.

2.15 Unit Participation is defined as the sum of the percentages obtained by multiplying the Working Interest of a Working Interest Owner in each Tract having Tract participation by the Tract Participation of such Tract.

2.16 Oil and Gas Rights is defined as the right to explore, develop, and operate land within the Unit Area for the production of Unitized Substances, or to share in the production so obtained or the proceeds thereof.

2.17 Unit Operator is defined as the party designated by Working Interest Owners under the Unit Operating Agreement to develop and operate the Unitized Formation.

2.18 Record Owner is defined as the holder of the record title to a lease covering Federal lands according to the applicable records of the Department of the Interior of the United States of America.

2.19 Tract Cumulative Oil Recovery is defined as the total number of barrels of oil produced from the Unitized Formation under such Tract prior to January 1, 1978, as officially reported to the Commission.

2.20 Unit Area Cumulative Oil Recovery is defined as the total Tract Cumulative Oil Recovery of all Tracts within the Unit Area that are committed to this agreement in accordance with the provisions hereof.

2.21 Unit Operating Agreement is defined as any agreement or agreements (whether one or more) entered into (separately or collectively) by and between the Unit Operator and the Working Interest Owners as provided in Article 10, infra, and shall be styled "Unit Operating Agreement Saladar Unit, Eddy County, New Mexico".

2.22 Unit Operations is defined as any operation conducted pursuant to this Agreement and the Unit Operating Agreement.

2.23 Unit Equipment is defined as all personal property, lease and well equipment, plants, and other facilities and equipment taken over or otherwise acquired for the joint account for use in Unit Operations.

2.24 Unit Expense is defined as all cost, expense, or indebtedness incurred pursuant to this Agreement and the Unit Operating Agreement for or on account of Unit Operations.

2.25 Overriding Royalty Interest is defined as an interest in or right to receive a portion of the Unitized Substances or the proceeds therefrom as an overriding royalty interest, oil payment interest, net profits contracts, or any other payment or burden, exclusive of a Royalty Interest, which does not carry with it the right to search for or produce Unitized Substances.

2.26 Unit Manager is defined as any person or corporation appointed by Working Interest Owners to perform the duties of Unit Operator until the selection and qualification of a successor Unit Operator as provided for in Section 5 hereof.

2.27 Outside Substances is defined as any substance obtained from any source other than the Unitized Formation and injected into the Unitized Formation.

ARTICLE 3

UNIT AREA

The following described land is hereby designated and recognized as constituting the Unit Area:

Township 20 South, Range 28 East, New Mexico Principal Meridian

SECTION 33: NW 1/4 SW 1/4, NE 1/4 SW 1/4, SE 1/4 NW 1/4, S 1/2 SW 1/4 and SW 1/4 SE 1/4.

Containing 240 acres, more or less, in Eddy County, New Mexico.

ARTICLE 4

EXHIBITS

4.1 Exhibits. Attached hereto are the following exhibits which are incorporated herein by reference:

4.1.1 Exhibit "A", is a map showing, to the extent known to the Unit Operator, the Unit Area and the boundaries and identity of Tracts and leases in said Unit Area.

4.1.2 Exhibit "B", is a schedule showing, to the extent known to the Unit Operator, the acreage comprising each Tract and the percentage of ownership of each Working Interest Owner and each Royalty Owner in each Tract.

4.1.3 Exhibit "C", is a schedule showing the percentage of participation each Tract has in the Unit Area.

4.1.4 Exhibit "D", is the provisions of paragraphs 1 through 7 of Section 202 of Executive Order 11246 as amended.

4.2 Reference to Exhibits. When reference herein is made to an exhibit, the reference is to the exhibit as originally attached, or, if revised, to the latest revision.

4.3 Exhibits Considered Correct. An exhibit shall be considered to be correct until revised as herein provided.

4.4 Filing Revised Exhibits. Exhibits "A", "B" and "C" shall be revised by the Unit Operator whenever changes render such revision necessary, and not less than four copies thereof shall be filed with the Supervisor.

ARTICLE 5

EXPANSION

The above described Unit Area may when practicable be expanded to include therein any additional Tract or Tracts regarded as reasonably necessary or advisable to conform with the purposes of this Agreement. Such expansion shall be effected in the following manner:

(a) The Working Interest Owner or Owners of a Tract or Tracts desiring to bring such Tract or Tracts into this Unit, shall file an application therefor with Unit Operator requesting such admission.

(b) After preliminary concurrence by the Director and the Commission, Unit Operator shall circulate a notice to each Working Interest Owner of the proposed expansion, setting out the basis for admission, the Unit Participation to be assigned to such Tract or Tracts, and other pertinent data. After negotiation (at Working Interest Owners' meeting or otherwise) if ninety per cent (90%) of the Working Interest Owners (on the basis of Unit Participation) have agreed to such Tract or Tracts being brought into the Unit, then Unit Operator shall:

(1) Prepare a notice of proposed expansion describing the contemplated changes in the boundaries of the Unit, the reason therefor, the basis for admission of the additional Tract or Tracts, the Unit Participation to be assigned thereto and the proposed effective date thereof preferably the first day of a month subsequent to the date of notice; and

(2) Deliver copies of said notice to the Director, the Commission and each Working Interest Owner (mailing copy of such notice to the last known address of each such Working Interest Owner) and to the lessee and

lessor whose interests are proposed to be committed, advising such parties that thirty (30) days will be allowed for submission to the Unit Operator of any objection to such proposed expansion; and

(3) File, upon expiration of said thirty (30) day period as set out in (2) immediately above and provided that objections of not more than ten per cent (10%) of the Working Interest Owners have been filed thereto, with the Supervisor and the Commission the following: (a) Comprehensive statement as to mailing such notice of expansion; (b) An Application for such expansion; (c) An instrument containing the appropriate joinders in compliance with the participation requirements of Article 14, infra, and (d) a copy of all objections received along with the Operator's response thereto.

The expansion shall, after due consideration of all pertinent information and upon approval by the Supervisor and the Commission, become effective as of the date prescribed in the notice thereof or on such other date as set by the Supervisor and the Commission in the order or instrument approving such expansion.

ARTICLE 6

UNITIZED LAND AND UNITIZED SUBSTANCES

All land committed to this Agreement as to the Yates Sand as defined under Unitized Formation, shall constitute land referred to herein as "Unitized Land" or "Land subject to this Agreement". All oil and gas in or produced from said Unitized Formation of the "Unitized Land" are unitized under the terms of this Agreement and herein are called "Unitized Substances". Surface rights of ingress and egress shall be maintained for the benefit of the Unit.

Nothing herein shall be construed to unitize, pool, or in any way affect the oil, gas and other minerals contained in or that may be produced from any formation other than the Unitized Formation as defined in Article 2.8 of this Agreement.

ARTICLE 7

UNIT OPERATOR

Barber Oil, Inc. is hereby designated as Unit Operator, and by signing this instrument as Unit Operator he agrees and consents to accept the duties and obligations of Unit Operator for the operation,

development and production of Unitized Substances as herein provided. Whenever reference is made herein to the Unit Operator, such reference means the Unit Operator acting in that capacity and not as an owner of interests in Unitized Substances, and when such interests are owned by it the term "Working Interest Owner" when used herein shall include or refer to Unit Operator as the owner of a Working Interest when such an interest is owned by it.

ARTICLE 8

RESIGNATION OR REMOVAL OF UNIT OPERATOR

Unit Operator shall have the right to resign at any time, but such resignation shall not become effective so as to release Unit Operator from the duties and obligations of Unit Operator and terminate Unit Operator's rights as such for a period of six (6) months after written notice of intention to resign has been given by Unit Operator to all Working Interest Owners, the Supervisor and the Commission, and until all wells are placed in a satisfactory condition for suspension or abandonment whichever is required by the Supervisor, unless a new Unit Operator shall have been selected and accepted and shall have taken over and assumed the duties and obligations of Unit Operator prior to the expiration of said period.

The resignation or removal of Unit Operator shall not release Unit Operator from any liability for any default by it hereunder occurring prior to the effective date of its resignation or removal.

The Unit Operator may, upon default or failure in the performance of its duties or obligations hereunder, be subject to removal by the owner of seventy-five per cent (75%) of the committed Working Interests (on the basis of Unit Participation) exclusive of the Working Interest Owner who is the Unit Operator. Such removal shall be effective upon notice thereof to the Director, and the Commission.

In all instances of resignation or removal, until a successor Unit Operator is selected and accepted as hereinafter provided, the Working Interest Owners shall be jointly responsible for performance of the duties of Unit Operator, and shall not later than thirty (30) days before such resignation or removal becomes effective, appoint a Unit Manager to represent them in any action to be taken hereunder.

The resignation or removal of Unit Operator under this Agreement shall not terminate its right, title or interest as the owner of a Working Interest or other interest in Unitized Substances, but upon the resignation or removal of Unit Operator becoming effective, such Unit Operator shall deliver possession of all wells, equipment, books, records, materials, appurtenances and any other assets, used in conducting the Unit Operations and owned by the Working Interest Owners (including any and all data and information which it might have gained or assembled by reason of its operation of the Unit Area) to the new duly qualified successor Unit Operator or Unit Manager or to the owners thereof if no such new Unit Operator is elected, to be used for the purpose of conducting Unit Operations hereunder. Nothing herein shall be construed as authorizing removal of any material, equipment and appurtenances needed for the preservation of any wells. Nothing herein contained shall be construed to relieve or discharge any Unit Operator or Unit Manager who resigns or is removed hereunder from any liability or duties accruing or performable by it prior to the effective date of such resignation or removal.

ARTICLE 9

SUCCESSOR UNIT OPERATOR

Whenever the Unit Operator shall tender its resignation as Unit Operator or shall be removed as hereinabove provided, or a change of Unit Operator is negotiated by Working Interest Owners, the Working Interest Owners shall by affirmative vote of at least seventy-five per cent (75%) of their voting interest, based upon the percentages of participation as shown on Exhibit "C", select a successor Unit Operator, provided, however, that should any Working Interest Owner own a voting interest of more than twenty-five per cent (25%), the vote of said party shall not serve to disapprove the selection of a new Unit Operator approved by eighty per cent (80%) or more of the voting interests of the remaining Working Interest Owners, and provided further that the Unit Operator shall not vote to succeed itself. Such selection shall not become effective until (a) a Unit Operator so selected shall accept in writing the duties and responsibilities of Unit Operator, and (b) written notice of such selection shall have been filed with and approved by the

Supervisor, and the Commission. If no successor Unit Operator is selected and qualified as herein provided, the Director and the Commission at their election may declare this Agreement terminated.

ARTICLE 10

ACCOUNTING PROVISIONS AND UNIT OPERATING AGREEMENT

Costs and expenses incurred by Unit Operator in conducting Unit Operations hereunder shall be paid, apportioned among and borne by the Working Interest Owners in accordance with the Unit Operating Agreement. Such Unit Operating Agreement shall also provide the manner in which the Working Interest Owners shall be entitled to receive their respective proportionate and allocated share of the benefits accruing hereto in conformity with their underlying operating agreements, leases or other independent contracts and such other rights and obligations as between Unit Operator and the Working Interest Owners as may be agreed upon by the Unit Operator and the Working Interest Owners; however, no such Unit Operating Agreement shall be deemed either to modify any of the terms and conditions of this Unit Agreement or to relieve the Unit Operator of any right or obligation established under this Unit Agreement, and in case of any inconsistency or conflict between the Unit Agreement and the Unit Operating Agreement, this Unit Agreement shall prevail. Two true copies of any Unit Operating Agreement executed pursuant to this Article shall be filed with the Supervisor and two true copies thereof shall be filed with the Commission, prior to approval of this Agreement, and thereafter promptly after any revision or amendment.

ARTICLE 11

RIGHTS AND OBLIGATIONS OF UNIT OPERATOR

Except as otherwise specifically provided herein, the exclusive right, privilege and duty of exercising any and all rights of the parties hereto which are necessary or convenient for prospecting for, producing, storing, allocating and distributing the Unitized Substances are hereby delegated to and shall be exercised by the Unit Operator as herein provided. Upon request by Unit Operator, acceptable evidence of title to said rights shall be deposited with said Unit Operator, and together with this Agreement, shall constitute and define the rights, privileges and obligations of Unit Operator. Nothing herein, however, shall be

construed to transfer title to any land or to any lease or operating agreement, it being understood that under this Agreement the Unit Operator, in its capacity as Unit Operator, shall exercise the rights and possession and use vested in the parties hereto only for the purposes herein specified.

ARTICLE 12

PLAN OF OPERATIONS

It is recognized and agreed by the parties hereto that all of the land subject to this Agreement is reasonably proved to be productive of Unitized Substances and that the object and purpose of this Agreement is to formulate and to put into effect a secondary recovery project in order to effect additional recovery of Unitized Substances, prevent waste and conserve natural resources. The parties hereto agree that the Unit Operator may, subject to the consent and approval of a plan of operation by the Working Interest Owners, the Supervisor, and the Commission, inject into the Unitized Formation, through any well or wells completed therein, brine, water, air, gas, oil, liquefied petroleum gas, and any other substance or a combination of any of said substances, whether produced from the Unit Area or not, and that the location of input wells and the rates of injection therein and the rate of production shall be governed by standards of good geologic and petroleum engineering practices and conservation methods. After commencement of secondary operations, Unit Operator shall furnish the Supervisor and the Commission monthly, injection and production reports for each well in the Unit. The Working Interest Owners, the Supervisor, and the Commission, shall be furnished periodical reports on the progress of the plan of operation and any revisions or changes thereto; provided however, that any major revisions of the plan of operation involving a basic deviation from the initial plan of operation shall be subject to the consent and approval of the Working Interest Owners, the Supervisor, and the Commission.

The initial plan of operation shall be filed with the Supervisor and the Commission concurrently with the filing of this Unit Agreement for final approval. Said initial plan of operation and all revisions thereof shall be as complete and adequate as the Supervisor and the

Commission may determine to be necessary for timely operation consistent herewith. Reasonable diligence shall be exercised in complying with the obligations of the approved plan of operation.

ARTICLE 13

TRACT PARTICIPATION

Exhibit "C" attached hereto shows the participation allocated to each Tract in the Unit Area based on a presumed 100% commitment. The formula used for the calculations of such percentages is as follows:

$$100 \times (\text{times}) \frac{\text{Tract Cumulative Oil Recovery}}{\text{Unit Area Cumulative Oil Recovery}}$$

If this Unit Agreement is approved with less than 100% Tract Commitment, the percentages of participation shall be revised in accordance with the provisions of Article 14 of this Agreement.

ARTICLE 14

TRACTS QUALIFIED FOR UNIT PARTICIPATION

As the objective of this Agreement is to have lands in the unit area operated and entitled to participation under the terms hereof, it is agreed that, notwithstanding anything else herein, no joinder shall be considered a commitment to this Unit Agreement unless the tract involved is qualified under this section.

On and after the effective date hereof the Tracts within the Unit Area which shall be entitled to participation (as provided in Article 13 hereof) in the production of Unitized Substances therefrom shall be those Tracts within the Unit Area that are qualified as follows:

(a) Each and all of those Tracts as to which Working Interest Owners owning one hundred per cent (100%) of the Working Interest in said Tract execute this agreement and the Unit Operating Agreement and Royalty Owners owning one hundred per cent (100%) of the Royalty Interest in said Tract have subscribed, ratified or consented to this Agreement; and

(b) Each and all of those Tracts in which the owners of not less than ninety-five per cent (95%) of the Working Interest therein execute this Agreement and the Unit Operating Agreement and the owners of not less than seventy-five per cent (75%) of the Royalty Interest therein

have executed this Agreement, and in which the Working Interest Owners in said Tract who have executed this Agreement and the Unit Operating Agreement have agreed to indemnify and hold harmless all other parties hereto, in a manner satisfactory to the owners of eighty-five per cent (85%) of the Working Interests qualified under Subarticle 14(a), against any and all claims and demands that may be made by the nonjoining Working Interest Owners or Royalty Owners, or both, on account of the commitment and joinder of such Tract to the Unit Agreement, and operation thereof under such conditions on the basis herein provided, and as to which the owners of eighty-five per cent (85%) of the Working Interests qualified under Subarticle 14(a), exclusive of the Working Interest Owner submitting such Tract, have approved the commitment of such Tract to this Unit Agreement.

(c) Each Tract as to which Working Interest Owners owning less than 100% of the Working Interest therein have executed this Agreement and the Unit Operating Agreement, regardless of the percentage of Royalty Interest therein which is committed hereto, and, further, as to which:

(i) The Working Interest Owner operating any such Tract and all of the other Working Interest Owners in such Tract who have executed this Agreement and the Unit Operating Agreement have joined in a request for qualification of such Tract for Unit Participation and have executed and delivered an indemnity agreement indemnifying and agreeing to hold harmless the other Working Interest Owners in the Unit Area, their successors and assigns, against all claims and demands which may be made by the owners of Working Interests in such Tract who are not parties hereto and which arise out of the qualification of such Tract for Unit Participation, and

(ii) The owners of eighty per cent (80%) of the committed Working Interest in all Tracts meeting the requirements of Subarticles 14(a) and 14(b) have voted in favor of the qualification of such Tract and acceptance of the indemnity agreement.

Upon the qualification of such a Tract for Unit Participation, the Unit Participation that would have been attributed to the nonsubscribing owners of the Working Interest in such Tract, had they become parties to this Agreement and the Unit Operating Agreement, shall be attributed to the Working Interest Owners in such Tract who have become parties to such agreements, in proportion to their respective Working Interests in the Tract.

If, on the effective date of this Agreement, there is any Tract or Tracts which have not been effectively committed to and made subject to this Agreement by qualifying as above provided, then such Tract or Tracts shall not be entitled to participate hereunder. Unit Operator shall, when submitting this Agreement for final approval by the Supervisor, or as promptly thereafter as practicable, file therewith a schedule of those Tracts which have been committed and made subject to this Agreement and are entitled to participate in the production from the Unitized Land hereunder. Said schedule shall set forth opposite each such committed Tract the lease number and assignment number, the owner of record of the lease, and the percentages of participation of such Tract which shall be computed using the formula set out in Article 13 (Tract Participation) above. This schedule of participation shall be revised Exhibit "C" and upon approval thereof by the Supervisor and the Commission shall become a part of this Agreement and shall govern the allocation of production of Unitized Substances until a new schedule is approved by the Supervisor and the Commission.

ARTICLE 15

ALLOCATION OF UNITIZED SUBSTANCES

All Unitized Substances produced and saved (less, save and except any part of such Unitized Substances used in conformity with good operating practices on Unitized Land for drilling, operating, camp, and other production or development purposes and for pressure maintenance or unavoidable loss) shall be apportioned among and allocated to the committed Tracts within the Unit Area in accordance with the respective Tract Participation then effective hereunder during the

respective periods such Unitized Substances were produced, as set forth in the schedule of participation in Exhibit "C". The amount of Unitized Substances so allocated to each Tract, and only that amount, (regardless of whether it be more or less than the amount of the actual production of Unitized Substances from the well or wells, if any, on such Tract) shall, for all intents, uses and purposes, be deemed to have been produced from such Tract.

The Unitized Substances allocated to each Tract shall be distributed among, or accounted for to the parties executing, consenting to or ratifying this Agreement entitled to share in the production from such Tract in the same manner, in the same proportions, and upon the same conditions, as they would have participated and shared in the production from such Tracts, or in the proceeds thereof, had this Agreement not been entered into; and with the same legal force and effect.

No Tract committed to this Agreement and qualified for participation as above provided shall be subsequently excluded from participation hereunder on account of depletion of Unitized Substances, and nothing herein contained shall be construed as requiring any retroactive adjustment for production obtained prior to the effective date of the joinder and qualification of any Tract.

If any Working Interest or Royalty Interest in a Tract hereafter become divided and owned in severalty as to different parts of the Tract, the owners of the divided interests, in the absence of an agreement providing for a different division, shall share in the Unitized Substances allocated to the Tract, or in the proceeds thereof, in proportion to the surface acreage of their respective parts of the Tract.

The Unitized Substances allocated to each Tract shall be delivered in kind to the respective Working Interest Owners and parties entitled thereto by virtue of the ownership of Oil and Gas Rights therein or by purchase from such owners. Each Working Interest Owner and the parties entitled thereto shall have the continuing right to receive such production in kind at a common point within the Unit Area and to sell or dispose of the same as it sees fit. Each such party shall have the right

to construct, maintain and operate all necessary facilities for that purpose on Unitized Land, provided the same are so constructed, maintained and operated as not to interfere with operations carried on pursuant hereto. Subject to Article 16 (Royalty Settlement) hereof, any extra expenditure incurred by Unit Operator by reason of the delivery in kind of any portion of the Unitized Substances shall be borne by the party responsible for the payment of such expense. In the event any party hereto shall fail to take or otherwise adequately dispose of its proportionate share of the production from the Unit Area currently as and when produced, then so long as such conditions continue, Unit Operator, for the account and at the expense of such party and in order to avoid curtailing the operation of the Unit Area, may buy, sell or otherwise dispose of such production to itself or others on a day-to-day basis at not less than the prevailing market price in the area for like production, and the account of such party shall be charged therewith as having received such production. The net proceeds, if any, of the Unitized Substances so disposed of by Unit Operator shall be paid to the Working Interest Owner for payment to the parties entitled thereto under existing contracts.

Any party receiving in kind or separately disposing of all or any part of the Unitized Substances allocated to any Tract, or receiving the proceeds therefrom if the same is sold or purchased by Unit Operator, shall be responsible for the payment of all Royalty on the lease or leases and Tracts contributed by it and received into the Unit, and each such party shall hold each other party hereto harmless against all claims, demands and causes of action for such Royalty on the lease or leases and Tracts contributed by it and received into the Unitized Land.

If, after the effective date of this Agreement, there is any Tract or Tracts that are subsequently committed hereto, as provided in Article 5 (Expansion) hereof, or any Tract or Tracts within the Unit Area not committed hereto as of the effective date hereof but which are subsequently committed hereto under the provisions of Article 33 (Nonjoinder and Subsequent Joinder), and Article 14 (Tracts Qualified for Unit

Participation), or if any Tract is excluded from the Unit Area as provided for in Article 31 (Loss of Title), the schedule of participation as shown in Exhibit "C" shall be revised by the Unit Operator and distributed to the Working Interest Owners, the Supervisor and the Commission to show the new percentages of participation of all the then effectively committed Tracts, in any such revision pursuant to this paragraph the Tract Participations of the Tracts committed prior to the revision shall remain in the same ratio one to the other and the revised schedules, upon approval by the Supervisor and the Commission, shall govern all the allocation of production from and after the effective date thereof until a new schedule is so approved.

ARTICLE 16

ROYALTY SETTLEMENT

The United States of America and all Royalty Owners who, under an existing contract, are entitled to take in kind a share of the substances produced from any Tract unitized hereunder, shall continue to be entitled to such right to take in kind their share of the Unitized Substances allocated to such Tract, and Unit Operator shall make deliveries of such Royalty share taken in kind in conformity with the applicable contracts, laws and regulations. Settlement for Royalty Interest not taken in kind shall be made by Working Interest Owners responsible therefor under existing contracts, laws and regulations, on or before the last day of each month for Unitized Substances produced during the preceding calendar month; provided, however, that nothing herein contained shall operate to relieve the lessees of any land from their respective lease obligations for the payment of any Royalty due under their leases, except that such Royalty shall be computed in accordance with the terms of this Unit Agreement.

If gas obtained from lands not subject to this Agreement is introduced into the Unitized Formation, for use in repressuring, stimulation of production or increasing ultimate recovery in conformity with a plan approved pursuant to Article 12 (Plan of Operations), a like amount of gas, less appropriate deductions for loss from any cause, may be withdrawn from the Unitized Formation, Royalty free as to dry gas but

not as to the products extracted therefrom; provided such withdrawal shall be pursuant to such conditions and formulas as may be prescribed or approved by the Supervisor and the Commission; and provided further that such right of withdrawal shall terminate as of the effective date of termination of this Agreement.

All royalty due the United States of America and the other Royalty Owners hereunder and payment on account of any Overriding Royalty Interest shall be computed and paid on the basis of all Unitized Substances allocated to the respective Tract or Tracts committed hereto, in lieu of actual production from such Tract or Tracts.

Royalty due the United States shall be computed as provided in the operating regulations and paid in value or delivered in kind as to all Unitized Substances on the basis of the amounts thereof allocated to unitized Federal land as provided herein at the rates specified in the respective Federal leases, or at such lower rate or rates as may be authorized by law or regulation.

Each Royalty Owner (other than the United States of America) and each party hereto claiming an Overriding Royalty Interest that executes this Agreement represents and warrants that it is the owner of a Royalty Interest or Overriding Royalty Interest (as applicable) in a Tract or Tracts within the Unit Area as its interest appears in Exhibit "B" attached hereto. If any Royalty Interest in a Tract or Tracts should be lost by title failure or otherwise in whole or in part, during the term of this Agreement, then the Royalty Interest of the party representing himself to be the owner hereof shall be reduced proportionately and the interest of all parties shall be adjusted accordingly.

ARTICLE 17

RENTAL SETTLEMENT

Rentals or minimum royalties due on leases committed hereto shall be paid by Working Interest Owners responsible therefor under existing contracts, laws and regulations, provided that nothing herein contained shall operate to relieve the lessees of any land from their respective lease obligations for the payment of any rental or minimum royalty in lieu thereof due under their leases. Rental or minimum royalty for

lands of the United States of America subject to this Agreement shall be paid at the rate specified in the respective leases from the United States of America, unless rental or minimum royalty is waived, suspended, or reduced by law or by approval of the Secretary of his duly authorized representative.

ARTICLE 18

CONSERVATION

Operations hereunder and production of Unitized Substances shall be conducted to provide for the most economical and efficient recovery of said substances without waste, as defined by or pursuant to Federal and State laws and regulations.

ARTICLE 19

DRAINAGE

The Unit Operator shall take appropriate and adequate measures to prevent drainage of Unitized Substances from Unitized Land by wells on land not subject to this Agreement.

ARTICLE 20

LEASES AND CONTRACTS CONFORMED AND EXTENDED

The terms, conditions and provisions of all leases, subleases and other contracts relating to exploration, drilling, development or operation for oil or gas on lands committed to this Agreement are hereby expressly modified and amended to the extent necessary to make the same conform to the provisions hereof, but otherwise to remain in full force and effect, and the parties hereto hereby consent that the Secretary shall and by his approval hereof, or by the approval hereof by his duly authorized representative, do hereby establish, alter, change or revoke the drilling, producing, rental, minimum royalty and royalty requirements of Federal leases committed hereto and the regulations in respect thereto to conform said requirements to the provisions of this Agreement.

Without limiting the generality of the foregoing, all leases, subleases and contracts are particularly modified in accordance with the following:

(a) The development and operation of lands subject to this Agreement under the terms hereof shall be deemed full performance of all obligations for development and operation with respect to each and every part of separately owned Tract committed to this Agreement, regardless of whether there is any development of any particular part or Tract of the Unitized Land, notwithstanding anything to the contrary in any lease, operating agreement or other contract by and between the parties hereto, or their respective predecessors in interest, or any of them.

(b) Drilling, producing or secondary recovery operations performed hereunder upon any Tract of Unitized Lands shall be accepted and deemed to be performed upon and for the benefit of each and every Tract of Unitized Land, and no lease shall be deemed to expire by reason of failure to drill or produce wells situated on land therein embraced.

(c) Suspension of drilling or producing operations on all Unitized Lands pursuant to direction or consent of the Secretary and the Commission or their duly authorized representative, shall be deemed to constitute such suspension pursuant to such direction or consent as to each and every Tract of Unitized Lands.

(d) Each lease, sublease, or contract relating to the exploration, drilling, development or operation for oil and gas which by its terms might expire prior to the termination of this Agreement, is hereby extended beyond any such term so provided therein, so that it shall be continued in full force and effect for so long as such land remains committed hereto.

(e) The segregation of any Federal lease committed to this Agreement is governed by the following provisions in the fourth paragraph of Sec. 17(j) of said Act of February 25, 1920, as amended by the Act of September 2, 1960 (74 Stat. 781-784): "Any (Federal) lease hereafter committed to any such (unit) plan embracing lands that are in part within and in part outside of the area covered by any such plan shall be segregated into separate leases as to the lands committed and the lands not committed as of the effective date of unitization; Provided, however, that any such lease as to the nonunitized portion shall continue in

force and effect for the term thereof but for not less than two (2) years from the date of such segregation and so long thereafter as oil or gas is produced in paying quantities."

ARTICLE 21

CORRECTION OF ERRORS

It is hereby agreed by all parties to this Agreement that Unit Operator is empowered to correct any mathematical or clerical errors which might exist in the pertinent exhibits to this Agreement; provided however, that correction of any error other than mathematical or clerical shall be made by Unit Operator only after first having obtained approval of the Supervisor, the Commission, and the Working Interest Owners.

ARTICLE 22

COVENANTS RUN WITH LAND

The covenants herein shall be construed to be covenants running with the land with respect to the interest of the parties hereto and their successors in interest until this Agreement terminates, and any grant, transfer or conveyance of interest in land or leases subject hereto shall be and hereby is conditioned upon the assumption of all privileges and obligations hereunder by the grantee, transferee or other successor in interest. No assignment or transfer of any Working Interest subject hereto shall be binding upon Unit Operator until the first day of the calendar month after Unit Operator is furnished with the original, or acceptable photostatic or certified copy, of the recorded instrument of transfer; and no assignment or transfer of any Royalty Interest subject hereto shall be binding upon the Working Interest Owner responsible therefor until the first day of the calendar month after said Working Interest Owner is furnished with the original, or acceptable photostatic or certified copy, of the recorded instrument of transfer.

ARTICLE 23

EFFECTIVE DATE AND TERM

This Agreement shall become binding upon each party as of the date such party signs the instrument by which it becomes a party hereto; and, unless sooner terminated as hereinafter provided, shall become

effective as to qualified Tracts after approval by the Secretary of the Interior or his duly authorized delegate and the Commission, at the time and date as determined by the Working Interest Owners in all the qualified Tracts, and set forth in a certificate filed for record by Unit Operator in Eddy County, New Mexico. The certificate shall also recite the percentage of the Unit Area represented by the Tracts qualified under Article 14, the book and page in which a counterpart of this Agreement has been recorded, and the case number and order number of the order of approval by Governmental authority, if obtained. The certificate shall not be filed until after the following requirements have been met:

(a) The execution or ratification of this Agreement and the Unit Operating Agreement by Working Interest Owners owning a combined Unit Participation of at least ninety-three per cent (93%), and the execution or ratification of this Agreement by Royalty Owners owning a combined interest of at least seventy-five per cent (75%) of the Royalty Interest, in said Unit Area; and

(b) The approval of this Agreement by the Secretary or his duly authorized representative and the Commission.

If this Agreement is not filed for final approval by the Secretary or his duly authorized representative and the Commission on or before January 31, 1979, this Agreement shall ipso facto expire on said date (hereinafter called "expiration date") and thereafter be of no further force or effect, unless prior thereto this Agreement has been executed or ratified by Working Interest Owners owning a combined Unit Participation of at least ninety per cent (90%) and the owners of at least sixty-five per cent (65%) of the Working Interests committed to this Agreement have voted to extend said expiration date for a period not to exceed six (6) months (hereinafter called "extended expiration date"). If said expiration date is so extended and this Agreement is not filed for final approval by the Secretary or his duly authorized representative and the Commission on or before said extended expiration date, this Agreement shall ipso facto expire on said extended expiration date and thereafter be of no further force or effect. For the purpose of this Article,

ownership shall be computed on the basis of Unit Participation as determined from Exhibit "C" attached to the Unit Operating Agreement.

Unit Operator shall, within thirty (30) days after the effective date of this Agreement, file for record a certificate to the effect that this Agreement has become effective according to its terms and stating further the effective date and the location of the governmental agency offices where copies of this Agreement are filed.

The term of this Agreement shall be for and during the time that Unitized Substances are produced in quantities sufficient to pay the cost of producing same from the Unit Area and as long thereafter as drilling, reworking or other operations (including secondary recovery operations) are prosecuted thereon without cessation of more than ninety (90) consecutive days, unless sooner terminated by Working Interest Owners in the manner hereinafter provided.

This Agreement may be terminated for any reason with the approval of the Director and the Commission by Working Interest Owners owning seventy-five per cent (75%) Unit Participation. Notice of any such termination shall be given by Unit Operator to all parties thereto.

Upon termination of this Agreement, the parties hereto shall be governed by the terms and provisions of the leases and contracts affecting the separate Tracts.

If not otherwise covered by the leases unitized under this Agreement, Royalty Owners hereby grant Working Interest Owners a period of six (6) months after termination of this Agreement in which to salvage, sell, distribute or otherwise dispose of the personal property and facilities used in connection with Unit Operations.

ARTICLE 24

RATE OF PROSPECTING, DEVELOPMENT AND PRODUCTION

All production and the disposal thereof shall be in conformity with allocations and quotas made or fixed by any duly authorized person or regulatory body under any Federal or State statute. The Director is hereby vested with authority to alter or modify from time to time, at his discretion, the rate of prospecting and development and within the limits made or fixed by the Commission to alter or modify the quantity

and rate of production under this Agreement, such authority being hereby limited to alteration or modification in the public interest, the purpose thereof and the public interest to be served thereby to be stated in the order of alteration or modification; provided further that no such alteration or modification shall be effective as to any privately owned lands subject to this agreement as to the quantity and rate of production in the absence of specific written approval thereof by the Commission.

Powers in this Article vested in the Director shall only be exercised after notice to Unit Operator and opportunity for hearing to be held not less than fifteen (15) days from notice.

ARTICLE 25

NONDISCRIMINATION

In connection with the performance of work under this agreement, Unit Operator agrees to comply with all of the provisions of Section 202(1) to (7), inclusive, of Executive Order 11246 (30 F.R. 12319), as amended by Executive Order 11375, dated October 13, 1967.

ARTICLE 26

APPEARANCES

Unit Operator shall have the right to appear for or on behalf of any and all interests affected hereby before the Department and the Commission, and to appeal from any order issued under the rules and regulations of the Department or the Commission, or to apply for relief from any of said rules and regulations or in any proceedings relative to operations before the Department or the Commission, or any other legally constituted authority; provided, however, that any other interested party shall also have the right at his or its own expense to be heard in any such proceeding.

ARTICLE 27

NOTICES

All notices, demands, objections or statements required hereunder to be given or rendered to the parties hereto shall be deemed fully given if made in writing and personally delivered to the party or parties or sent by postpaid registered or certified mail, addressed

to such party or parties at their respective addresses set forth in connection with the signatures hereto or to the ratification or consent hereof or to such other address as any such party or parties may have furnished in writing to the party sending the notice, demand or statement.

ARTICLE 28

NO WAIVER OF CERTAIN RIGHTS

Nothing in this Agreement contained shall be construed as a waiver by any party hereto of the right to assert any legal or constitutional right or defense as to the validity or invalidity of any law of the United States or of the State wherein said Unitized Lands are located, or rules or regulations issued thereunder in any way affecting such party, or as a waiver by any such party of any right beyond his or its authority to waive.

ARTICLE 29

EQUIPMENT AND FACILITIES NOT FIXTURES ATTACHED TO REALTY

Each Working Interest Owner has heretofore placed and used on its Tract or Tracts committed to this Agreement various well and lease equipment and other property, equipment and facilities. It is also recognized that additional equipment and facilities may hereafter be placed and used upon the Unitized Land as now or hereafter constituted. Therefore, for all purposes of this Agreement any such equipment shall be considered to be personal property and not fixtures attached to realty. Accordingly, said well and lease equipment and personal property is hereby severed from the mineral estates affected by this Agreement, and it is agreed that any such equipment and personal property shall be and remain personal property of the Working Interest Owners for all purposes.

ARTICLE 30

UNAVOIDABLE DELAY

All obligations under this Agreement requiring the Unit Operator to commence or continue secondary recovery operations or to operate on or produce Unitized Substances from any of the lands covered by this Agreement shall be suspended while, but only so long as the Unit Operator

despite the exercise of due care and diligence, is prevented from complying with such obligations, in whole or in part, by strikes, acts of God, Federal, State or municipal law or agency, unavoidable accident, uncontrolled delays in transportation, inability to obtain necessary materials in open market, or other matters beyond the reasonable control of the Unit Operator whether similar to matters herein enumerated or not.

ARTICLE 31

LOSS OF TITLE

In the event title to any Tract of Unitized Land shall fail so as to render the Tract inoperable under this Agreement and the true owner cannot be induced to joint this Agreement, such Tract shall be automatically regarded as not committed hereto and there shall be such readjustment of future costs and benefits as may be required on account of the loss of such title. In the event of a dispute as to title as to any Royalty, Working Interest or other interest subject thereto, payment or delivery on account thereof may be withheld without liability or interest until the dispute is finally settled; provided, that as to State or Federal land or leases, no payments of funds due the United States of America shall be withheld, but such funds shall be deposited as directed by the Supervisor, to be held as unearned money pending final settlement of the title dispute, and then applied as earned or returned in accordance with such final settlement.

Unit Operator as such is relieved from any responsibility for any defect or failure of any title hereunder.

ARTICLE 32

BORDER AGREEMENTS

Subject to the approval of the Supervisor and the Commission, the Unit Operator, with concurrence of sixty-five per cent (65%) of the Working Interest Owners, based upon the percentages of participation may enter into border protection agreement or agreements with the Working Interest Owners of adjacent lands along the boundaries of the Unit Area with respect to the operations in the border area for the maximum ultimate recovery, conservation purposes and proper protection of the parties and interests.

ARTICLE 33

NONJOINDER AND SUBSEQUENT JOINDER

Any Oil or Gas Interest in the lands in the Unit Area not committed hereto prior to submission of this Agreement to the Director and the Commission for final approval may thereafter be committed hereto upon compliance with the applicable provisions of this Article and of Article 14 (Tracts Qualified for Unit Participation) hereof, at any time up to the effective date hereof.

It is understood and agreed, however, that from and after the effective date hereof, the right of subsequent joinder as provided in this Article, shall be subject to such requirements or approvals and on such basis as may be agreed upon by ninety per cent (90%) of the Working Interest Owners (based upon the percentages of participation) and the Supervisor. Such joinder by a proposed Working Interest Owner must be evidenced by his execution or ratification of this Agreement and the Unit Operating Agreement. Such joinder by a proposed Royalty Owner must be evidenced by his execution, ratification or consent of this Agreement and must be consented to in writing by the Working Interest Owner responsible for the payment of any benefits that may accrue hereunder in behalf of such proposed Royalty Owner. Except as may be otherwise herein provided, subsequent joinder to this Agreement shall be effective as of the first day of the month following the filing with the Supervisor and the Commission of duly executed counterparts of any and all documents necessary to establish effective commitment of any Tract or interest to this Agreement, unless objection to such joinder by the Director or the Commission is duly made within sixty (60) days after such filing.

ARTICLE 34

NO PARTNERSHIP

It is expressly agreed that the relation of the parties hereto is that of independent contractors and nothing in this Agreement contained, expressed or implied, or any operations conducted hereunder, shall create or be deemed to create a partnership or association between the parties hereto or any of them.

ARTICLE 35

OIL IN LEASE TANKAGE ON EFFECTIVE DATE

Unit Operator shall make a proper and timely gauge of all lease and other tanks within the Unitized Area in order to ascertain the amount of merchantable oil in such tanks, above the pipe line connections, as of 7:00 a.m. on the effective date hereof. All such oil as is a part of the prior allowable of the well or wells from which the same was produced shall be and remain the property of the Interest Owners entitled thereto the same as if the Unit had not been formed, and the responsible Working Interest Owners shall promptly remove said oil from the Unitized Area. Any such oil not so removed may be sold by the Unit Operator for the account of such Working Interest Owners, subject to the payment of all Royalty to Royalty Owners under the terms and provisions of the applicable lease or leases and other contracts. All such oil and gas in excess of the prior allowable of the well or wells from which the same was produced shall be regarded and treated the same as Unitized Substances produced after the effective date hereof. If, as of the effective date hereof, any Tract is overproduced with respect to the allowable of the well or wells on that Tract and the amount of such overproduction has been sold or otherwise disposed of, such overproduction shall be regarded and included as a part of the Unitized Substances produced after the effective date hereof and the amount thereof charged to such Tract as having been delivered to the persons entitled to Unitized Substances allocated to such Tract.

ARTICLE 36

PERSONAL PROPERTY EXCEPTED

All lease and well equipment, materials, and other facilities heretofore or hereafter placed by any of the Working Interest Owners on the land subject to this Agreement shall be deemed to be and shall remain personal property belonging to and may be removed by the Working Interest Owners. The rights and interests therein as among Working Interest Owners are covered by the Unit Operating Agreement.

ARTICLE 37

TAXES

Each party hereto shall, for its own account, render and pay its share of any taxes levied against or measured by the amount or value of the Unitized Substances produced from the Unitized Land; provided, however, that if it is required or if it be determined that the Unit Operator or the several Working Interest Owners must pay or advance said taxes for the account of the parties hereto, it is hereby expressly agreed that the parties so paying or advancing said taxes shall be reimbursed therefor by the parties hereto, including Royalty Owners, who may be responsible for the taxes on their respective allocated share of said Unitized Substances. No such taxes shall be charged to the United States nor to any lessor who has a contract with a lessee which requires his lessee to pay such taxes.

ARTICLE 38

JOINDER IN DUAL CAPACITY

Execution as herein provided by any party as either a Working Interest Owner or a Royalty Owner shall commit all interests owned or controlled by such party; provided, however, that if the party is the owner of a Working Interest, he must also execute the Unit Operating Agreement.

ARTICLE 39

COUNTERPARTS

This Agreement may be executed in any number of counterparts, no one of which needs to be executed by all parties and may be ratified or consented to by separate instrument in writing specifically referring hereto, and shall be binding upon all those parties who have executed such a counterpart, ratification or consent hereto with the same force and effect as if all parties had signed the same document, and regardless of whether or not it is executed by all other parties owning or claiming an interest in the lands within the above described Unit Area.

IN WITNESS WHEREOF, the parties hereto have caused this Agreement to be executed and have set opposite their respective names the date of execution.

ATTEST:

BARBER OIL, INC.
Unit Operator

By Anna W. Light
Anna W. Light, Secretary
Date 7-18-78

By Robert S. Light
Robert S. Light, President

Date 5/12/78

Thomas F. Stephens
Thomas F. Stephens

Date 5/12/78

Jane Stephens
Jane Stephens

Date 5-11-78

Joe L. Johnson, Jr.
Joe L. Johnson, Jr.

Date 5/11/78

Nan H. Johnson
Nan H. Johnson

Date 6/23/78

E. P. Russell
E. P. Russell

Date 6/23/78

Josephine N. Russell
Josephine N. Russell

Date 6-19-78

Myra S. Morgan
Myra S. Morgan

Date 6-20-78

Myra S. Morgan
Myra S. Morgan

Date 6-19-78

Dudley J. Hughes
Dudley J. Hughes

Date 6-20-78

Robbie W. Hughes
Robbie W. Hughes

Date 6-19-78

Dan A. Hughes
Dan A. Hughes

Date 6-19-78

Juanita W. Hughes
Juanita W. Hughes

STATE OF NEW MEXICO

COUNTY OF EDDY

The foregoing instrument was acknowledged before me this 28th day of July, 1978, by Robert S. Light, President of Barber Oil, Inc., a New Mexico corporation, on behalf of said corporation.

My Commission Expires:

April 8, 1981

Juan S. Montgomery
Notary Public

STATE OF TEXAS

COUNTY OF WICHITA

The foregoing instrument was acknowledged before me this 12th day of May, 1978, by Thomas F. Stephens and Jane Stephens, his wife.

My Commission Expires:

May 31, 1979

Barbara Walker
Notary Public BARBARA WALKER

STATE OF TEXAS

COUNTY OF WICHITA

The foregoing instrument was acknowledged before me this 11th day of May, 1978, by Joe L. Johnson, Jr. and Nan H. Johnson, his wife.

My Commission Expires:

May 31, 1979

Barbara Walker
Notary Public BARBARA WALKER

STATE OF MISSISSIPPI

COUNTY OF JONES

The foregoing instrument was acknowledged before me this 23 day of June, 1978, by E. P. Russell and Josephine N. Russell, his wife.

My Commission Expires:

January 30, 1979

Joyce G. Torris
Notary Public
JOYCE G. TORRIS

STATE OF MISSISSIPPI

COUNTY OF JONES

The foregoing instrument was acknowledged before me this
20 day of June, 1978, by J. A. Morgan and Myra S. Morgan,
his wife.

My Commission Expires:

My Commission Expires November 26, 1979

Essie M. Reid
Notary Public
Essie M. Reid

STATE OF MISSISSIPPI

COUNTY OF Rankin
~~RANKIN~~

The foregoing instrument was acknowledged before me this
20th day of June, 1978, by Dudley J. Hughes and Robbie W.
Hughes, his wife.

My Commission Expires:

July 29, 1981

Ruth Wallace
Notary Public
Ruth Wallace

STATE OF TEXAS

COUNTY OF BEE

The foregoing instrument was acknowledged before me this
19th day of June, 1978, by Dan A. Hughes and Juanita W. Hughes,
his wife.

My Commission Expires:

9-20-78

Ronald P. Stasny
Notary Public
RONALD P. STASNY

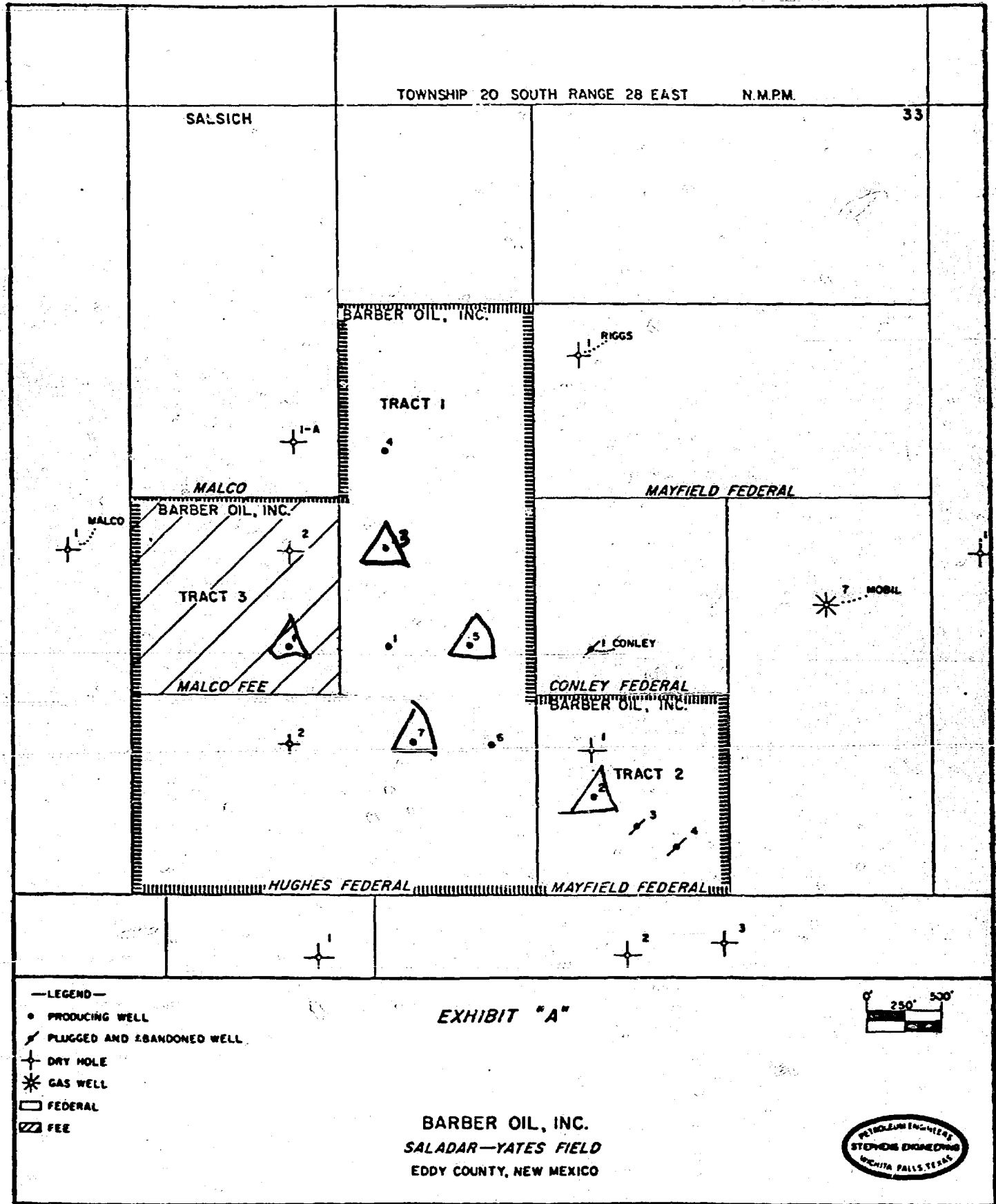


EXHIBIT "B"
TO
UNIT AGREEMENT

SALADAR UNIT
EDDY COUNTY, NEW MEXICO

Schedule of Acreage by Tracts
and
Percentage of Ownership

EXHIBIT "B"
TO UNIT AGREEMENT
SALADAR UNIT
EDDY COUNTY, NEW MEXICO

Tract No.	Description of Land Acres	Serial No. & Date of Lease	Lessee of Record	Basic Royalty Ownership and Percentage	Overriding Royalty Owner and Percentage	Working Interest Ownership and Percentage	Unit Participation
1	Federal Land T-20-S, R-28-E, Sec. 33; NE 1/4 SW 1/4, SE 1/4 NW 1/4, and S 1/2 SW 1/4 (Hughes Federal) 160 acres	MM-08277 12-1-52	Dan A. Hughes	U.S.G.S. 12.5%	George D. Riees 6.25%*	Dan A. Hughes Dudley J. Hughes J. A. Morgan E. P. Russell Joe L. Johnson, Jr. Thomas F. Stephens Barber Oil, Inc. 19.445% 8.333% 13.889% 8.333% 12.500% 12.500% 25.000%	71.473862%
2	T-20-S, R-28-E, Sec. 33; SW 1/4 SE 1/4 (Mayfield Federal) 40 acres	LC-062254-A 5-1-52	W. A. Sudderth assigned to T. M. Mayfield	U.S.G.S. El Paso Natl. Br. 1.0625% P. T. Mayfield 1.0625%	J. L. Dunigan 1%	Dan A. Hughes Dudley J. Hughes J. A. Morgan E. P. Russell Joe L. Johnson, Jr. Thomas F. Stephens Barber Oil, Inc. 20.834% 12.500% 8.333% 8.333% 12.500% 12.500% 25.000%	6.802539%

*Percentage increases from 5% when Unit production exceeds 15 BOPD.

Total: 2 Federal Tracts - 200 Acres - 78.276401% of Unit Area

EXHIBIT "B"
TO UNIT AGREEMENT
SALADAR UNIT
EDDY COUNTY, NEW MEXICO

Tract No.	Description of Land Acres	Serial No. & Date of Lease	Lessee of Record	Basic Royalty Ownership and Percentage	Overriding Royalty Owner and Percentage	Working Interest Ownership and Percentage	Unit Participation
3	Free Land T-20-S, R-28-E, Sec. 33; NW/4 SW/4 (Malco) 40 acres	7-15-54	Malco Refg. Inc.	L. Davis Sabine Prod. Singer Bros. E. Davis 3.125% 3.125% 3.125% 3.125%	Hondo Oil 6.25%	Dan A. Hughes Dudley J. Hughes J. A. Morgan E. P. Russell Joe L. Johnson, Jr. Thomas F. Stephens Barber Oil, Inc. 20.834% 12.500% 8.333% 8.333% 12.500% 12.500% 25.000%	21.723599%

Total: 1 Fee Tract - 40 Acres - 21.723599% of Unit Area

EXHIBIT "C"
TO
UNIT AGREEMENT
SALADAR UNIT
EDDY COUNTY, NEW MEXICO

Schedule of Tract Participation

<u>Tract No.</u>	<u>Participation Percentage</u>
1	71.473862
2	6.802539
3	21.723599
	<hr/>
Total	100.000000

EXHIBIT "D"
TO UNIT AGREEMENT
SALADAR UNIT
EDDY COUNTY, NEW MEXICO

PROVISIONS OF SECTION 202 OF
EXECUTIVE ORDER 11246

(1) The contractor will not discriminate against any employee or applicant for employment because of race, color, religion, sex or national origin. The contractor will take affirmative action to ensure that applicants are employed, and that employees are treated during employment, without regard to their race, color, religion, sex or national origin. Such action shall include but not be limited to the following: employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. The contractor agrees to post in conspicuous places available to employees and applicants for employment, notices to be provided by the contracting officer setting forth the provisions of this nondiscrimination clause.

(2) The contractor will, in all solicitations or advertisements for employees placed by or on behalf of the contractor, state that all qualified applicants will receive consideration for employment without regard to race, color, religion, sex or national origin.

(3) The contractor will send to each labor union or representative of workers with which he has a collective bargaining agreement or other contract or understanding, a notice, to be provided by the agency contracting officer, advising the labor union or workers' representative of the contractor's commitments under Section 202 of Executive Order No. 11246 of September 24, 1965, and shall post copies of the notice in conspicuous places available to employees and applicants for employment.

(4) The contractor will comply with all provisions of Executive Order No. 11246 of Sept. 24, 1965, and of the rules, regulations, and relevant orders of the Secretary of Labor.

(5) The contractor will furnish all information and reports required by Executive Order No. 11246 of September 24, 1965, and by the rules, regulations, and orders of the Secretary of Labor, or pursuant thereto, and will permit access to his books, records, and accounts by the contracting agency and the Secretary of Labor for purposes of investigation to ascertain compliance with such rules, regulations, and orders.

(6) In the event of the contractor's noncompliance with the nondiscrimination clauses of this contract or with any of such rules, regulations, or orders, this contract may be cancelled, terminated or suspended in whole or in part and the contractor may be declared ineligible for further Government contracts in accordance with procedures authorized in Executive Order No. 11246 of Sept. 24, 1965, and such other sanctions may be imposed and remedies invoked as provided in Executive Order No. 11246 of September 24, 1965, or by rule, regulation, or order of the Secretary of Labor, or as otherwise provided by Law.

(7) The contractor will include the provisions of Paragraphs (1) through (7) in every subcontract or purchase orders unless exempted by rules, regulations, or orders of the Secretary of Labor issued pursuant to Section 204 of Executive Order No. 11246 of Sept. 24, 1965, so that such provisions will be binding upon each subcontractor or vendor. The contractor will take such action with respect to any subcontract or purchase order as the contracting agency may direct as a means of enforcing such provisions including sanctions for noncompliance: Provided, however, that in the event the contractor becomes involved in, or is threatened with, litigation with a subcontractor or vendor as a result of such direction by the contracting agency, the contractor may request the United States to enter into such litigation to protect the interests of the United States.

Contractor shall also abide by the regulations of Executive Order 11598, Occupational Safety and Health Act and by Executive Order 11640, Veterans Hire Regulation, which orders are inserted herein by reference.

RECEIVED

UNITED STATES

SUBMIT IN DUPLICATE

Form approved.
Budget Bureau No. 42-4355.6.APR 5 1965 DEPARTMENT OF THE INTERIOR
U. S. GEOLOGICAL SURVEY GEOLOGICAL SURVEY(See other in-
structions on
reverse side)6. LEASE DESIGNATION AND SERIAL NO.
Federal N. 08277

8. IF INDIAN, ALLOTTEE OR TRIBE NAME

7. UNIT AGREEMENT NAME

8. FARM OR LEASE NAME
Hughes-Federal9. WELL NO.
710. FIELD AND POOL, OR WILDCAT
Salader-Yates11. SEC., T., R., M., OR BLOCK AND SURVEY
OR AREA
Sec. 33 20S-28E
N.M.P.M.12. COUNTY OR
Cady13. STATE
New Mexico

ARTESIAN WELL COMPLETION OR RECOMPLETION REPORT AND LOG

1a. TYPE OF WELL: OIL WELL ☒ GAS WELL ☐ DAY ☐ OTHER ☐b. TYPE OF COMPLETION:
NEW WELL ☒ WORK OVER ☐ DEEP-EN ☐ PLUG BACK ☐ DIFF. RESVR. ☐ APR 4 19652. NAME OF OPERATOR
Geo. D. Riggs ✓3. ADDRESS OF OPERATOR
Box 116 Carlsbad, New Mexico 88220

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements):

At surface 990 feet from south line, 1308 feet from west line

At top prod. interval reported below 85MG

At total depth 85MG

14. PERMIT NO.

DATE ISSUED

15. DATE STUDDERED 10-21-64

16. DATE T.D. REACHED 11-26-64

17. DATE COMPL. (Ready to prod.) 3-29-65

18. ELEVATIONS (OF, AKB, BY, GZ, ETC.) 3197.1 (still, gnd + 8")

19. ELEV. CASINGHEAD 3199.3

20. TOTAL DEPTH, MD & TVD 633 MD & TVD

21. PLUG, BACK T.D., MD & TVD

22. IF MULTIPLE COMPL. HOW MANY?

23. INTERVALS DRILLED BY

ROTARY TOOLS 0 to 633

CABLE TOOLS

24. PRODUCING INTERVAL(S), OF THIS COMPLETION—TOP, BOTTOM, NAME (MD AND TVD):

Yates Sand 610 to 612 and 620 to 625 TVD

25. WAS DIRECTIONAL SURVEY MADE
No26. TYPE ELECTRIC AND OTHER LOGS RUN
Sample27. WAS WELL CORED
No

28. CASING RECORD (Report all strings set in well)

CASING SIZE	WEIGHT, LB./FT.	DEPTH SET (MD)	HOLE SIZE	CEMENTING RECORD	AMOUNT FULLED
7 1/2	17	424	8 1/2	Mudded	424
5 1/2	14	612		100 sacks	none

29. LINER RECORD

SIZE	TOP (MD)	BOTTOM (MD)	BACKS CEMENT*	SCREEN (MD)	SIZE	DEPTH SET (MD)	PACKER SET (MD)
					2"	630	

30. TUBING RECORD

31. PERFORATION RECORD (Interval, size and number):

none

32. ACID, SHOT, FRACTURE, CEMENT SQUEEZE, ETC.

DEPTH INTERVAL (MD)	AMOUNT AND KIND OF MATERIAL USED
633 - 633	Fracture with 275 bbl of lease oil and 11000 lbs of 20-40 sand by DOWELL

33. PRODUCTION

DATE FIRST PRODUCTION 3-29-65

PRODUCTION METHOD (Flowing, gas lift, pumping—size and type of pump)
pumping, common working bbl. 2"WELL STATUS (Producing or shut-in)
producing

DATE OF TEST 3-31-65

HOURS TESTED 24

CHOKER SIZE

PROD'N. FOR TEST PERIOD

OIL—BBL. 5

GAS—MCF. 500

WATER—BBL. none

GAS-OIL RATIO

FLOW, TUBING PRESS. CASING PRESSURE CALCULATED 24-HOUR RATE

OIL—BBL. 5

GAS—MCF.

WATER—BBL. none

OIL GRAVITY-API (CORR.) 36

34. DISPOSITION OF GAS (Sold, used for fuel, vented, etc.)
used to run pumping engine

TEST WITNESSED BY

35. LIST OF ATTACHMENTS

36. I hereby certify that the foregoing and attached information is complete and correct as determined from all available records

SIGNED

Geo. D. Riggs

TITLE

operator

DATE

4-3-65

*(See Instructions and Spaces for Additional Data on Reverse Side)

INSTRUCTIONS

General: This form is designed for submitting a complete and correct well completion report and log on all types of lands and leases to either a Federal agency or a State agency, or both, pursuant to applicable Federal and/or State laws and regulations. Any necessary special instructions concerning the use of this form and the number of copies to be submitted, particularly with regard to local, area, or regional procedures and practices, either are shown below or will be issued by, or may be obtained from, the local Federal and/or State office. See instructions on Items 22 and 24, and 33, below regarding separate reports for separate completions.

If not filed prior to the time this summary record is submitted, copies of all currently available logs (drillers, geologists, sample and core analysis, all types electric, etc.), formation and pressure tests, and directional surveys, should be attached hereto, to the extent required by applicable Federal and/or State laws and regulations. All attachments should be listed on this form. See Item 35.

Item 4: If there are no applicable State requirements, locations on Federal or Indian land should be described in accordance with Federal requirements. Consult local State or Federal office for specific instructions.

Item 18: Indicate which elevation is used as reference (where not otherwise shown) for depth measurements given in other spaces on this form and in any attachments.

Items 22 and 24: If this well is completed for separate production from more than one interval zone (multiple completion), so state in item 22, and in item 24 show the producing interval, or intervals, top(s), bottom(s) and name(s) (if any) for only the interval reported in item 33. Submit a separate report (page) on this form, adequately identified, for each additional interval to be separately produced, showing the additional data pertinent to such interval.

Item 29: "Sacks Cement": Attached supplemental records for this well should show the details of any multiple stage cementing and the location of the cementing tool.

Item 33: Submit a separate completion report on this form for each interval to be separately produced. (See instruction for items 22 and 24 above.)

27. SUMMARY OF POROUS ZONES:

SHOW ALL IMPORTANT ZONES OF POROSITY AND CONTENTS THEREOF; CORED INTERVALS; AND ALL DRILL-STEM TESTS, INCLUDING DEPTH INTERVAL TESTED, CUSHION USED, TIME TOOL OPEN, FLOWING AND SHUT-IN PRESSURES, AND RECOVERIES

FORMATION	TOP	BOTTOM	DESCRIPTION, CONTENTS, ETC.
	0	55	surface sand, clay etc
	65	200	red beds and sand
	200	424	Exp, red beds salty at 391 to 420
	424	436	hard anhydrite
	436	424	lime and anhydrite
	484	494	lime and shale breaks
	494	552	lime and anhydrite, few shale breaks
	552	583	brown lime, some anhydrite
	583	603	sand and anhydrite
	603	633	sand, fine, gray T.D.
			Oil shows 610 to 612 620 to 625

38. GEOLOGIC MARKERS

NAME	TOP	
	MEAS. DEPTH	TRUE VERT. DEPTH
Fletcher	424	same
Tensill	436	
Ocotillo	484	
Yates	583	

Case 6226

Case
6226

Carlsbad, New Mexico
29 Sept. 1975

New Mexico Oil Conservation Commission
P.O. Box 2088
Santa Fe, New Mexico 87501

Application is hereby made for the original authority to inject water into the Yates sand formation of the Saladar-Yates field for the purpose of secondary recovery of oil.

Enclosed are:

- 1 A plat showing the location of the proposed injection wells and other wells in the field. There^{are} no other wells in the 2 mile radius area which produce from the Yates sand.
- 2 Sample logs of two of the proposed injection wells.
- 3 A diagram to show the relation of casing, tubing, packer and the injection zone.
- 4 The injection zone is a sand in the Yates formation at a depth of about 650 feet. The fluid to be injected will be water from a lease water well which is 55 feet deep.

Geo. D. Riggs Operator

P.O. Box 116

Carlsbad, NM 88220

Geo. D. Riggs

Case
6626

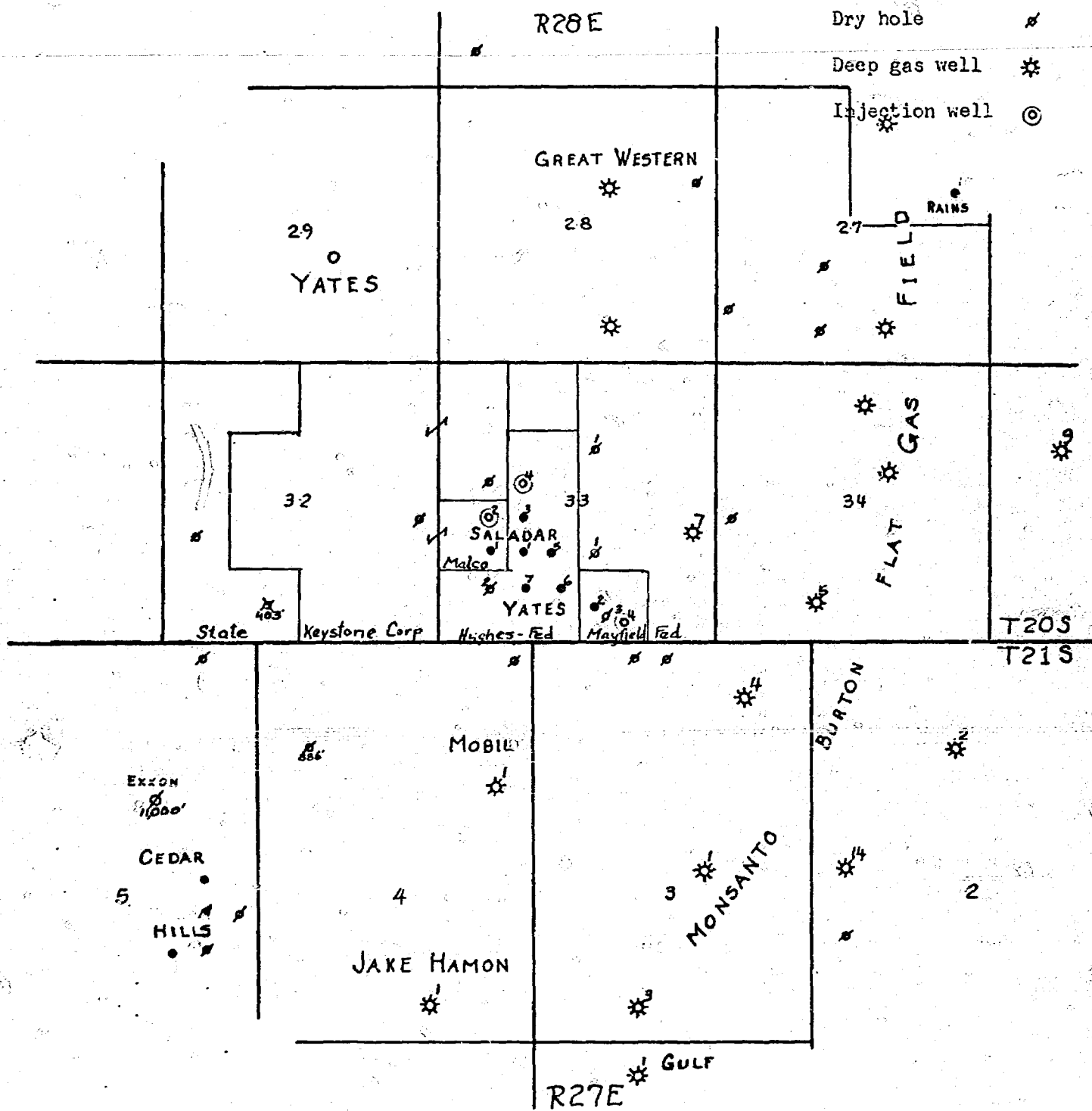
SALADAR - YATES FIELD

Sec 33 T 20 S R 28 E

Eddy County NM

Scale 2" = 1 mile

- Oil well •
- Dry hole ✕
- Deep gas well *
- Injection well ⊙



Dockets Nos. 29-75 and 30-75 are tentatively set for hearing on November 19 and December 3, 1975. Applications for hearing must be filed at least 22 days in advance of hearing date.

DOCKET: EXAMINER HEARING - WEDNESDAY - NOVEMBER 5, 1975

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

The following cases will be heard before Richard L. Stomers, Examiner, or Daniel S. Nutter, Alternate Examiner:

CASE 5533: (Continued from September 24, 1975 Examiner Hearing)

Application of Southern Union Production Company for compulsory pooling, Chaves County, New Mexico. Applicant, in the above-styled cause, seeks an order pooling all mineral interests in the Ellensburg formation underlying the N/2 of Section 21, Township 12 South, Range 26 East, Chaves County, New Mexico, to be dedicated to a well to be drilled at an orthodox location in Unit 7 of said Section 21. Also to be considered will be the cost of drilling and completing said well and the allocation of the cost thereof, as well as actual operating costs and charges for supervision. Also to be considered will be the designation of the applicant as the operator of the well and a charge for the risk involved in drilling said well.

CASE 5565: (Continued from October 8, 1975 Examiner Hearing)

Application of Atlantic Richfield Company for a waterflood project, Lea County, New Mexico. Applicant, in the above-styled cause, seeks authority to institute a waterflood project in the Vacuum Grayburg-San Andres Pool by injection of water through seven wells on its State "B" and State "C" Leases, six of said wells being converted producers located in Units C, E, I, K, M, and O of Section 32, Township 17 South, Range 34 East, Lea County, New Mexico, and the seventh being a new well drilled at an unorthodox location 250 feet from the South line and 2250 feet from the West line of said Section 32. Applicant further seeks an administrative procedure whereby the project area could be expanded and additional wells at standard and non-standard locations put on injection and production.

✓ CASE 5576: (Continued from October 22, 1975 Examiner Hearing)

Application of George D. Riggs for a waterflood project, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks authority to institute a waterflood project in the Saladar-Yates Pool by the injection of water through his Hughes-Federal No. 4, Malco Well No. 2, and Mayfield Federal No. 4 Wells located, respectively, in Units F, L, and O of Section 33, Township 29 South, Range 28 East, Eddy County, New Mexico.

CASE 5578: Application of Mobil Oil Corporation for a non-standard gas proration unit, two unorthodox gas well locations, and simultaneous dedication, Lea County, New Mexico. Applicant, in the above-styled cause, seeks approval for the simultaneous dedication of a 320-acre non-standard gas proration unit comprising the W/2 SW/4 and the SE/4 SW/4 of Section 28, and the NW/4 and SW/4 NE/4 of Section 33, Township 21 South, Range 37 East, Eumont Gas Pool, Lea County, New Mexico, to its E. O. Carson Wells Nos. 4 and 22 located in Units N and L, respectively, of said Section 28.

CASE 5579: Application of Exxon Corporation for a unit agreement, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks approval for the Laguna Grande Unit Area comprising 7640 acres, more or less, of Federal, State, and fee lands in Township 23 South, Range 29 East, Eddy County, New Mexico.

CASE 5580: Application of Cities Service Oil Company for compulsory pooling and an unorthodox gas well location, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks an order pooling all mineral interests in the Pennsylvanian formation underlying the W/2 of Section 18, Township 22 South, Range 27 East, South Carlsbad Gas Field, Eddy County, New Mexico, to be dedicated to a well to be drilled at an unorthodox location 1650 feet from the South line and 1980 feet from the West line of said Section 18. Also to be considered will be the cost of drilling and completing said well and the allocation of the cost thereof, as well as actual operating costs and charges for supervision. Also to be considered will be the designation of applicant as operator of the well and a charge for risk involved in drilling said well.

CASE 5581: In the matter of the hearing called by the Oil Conservation Commission on its own motion to permit Astro-Tex Oil Corporation of New Mexico, American Employers' Insurance Company and all other interested parties to appear and show cause why the Cain Well No. 2 located in Unit J of Section 22, Township 15 North, Range 33 East, NMPM, Harding County, New Mexico, should not be plugged and abandoned in accordance with a Commission-approved plugging program.

CASE 5582: Southeastern New Mexico nomenclature case calling for an order for the creation and extension of certain pools in Eddy, Lea, and Chaves Counties, New Mexico.

(a) CREATE a new pool in Eddy County, New Mexico, classified as a gas pool for Morrow production and designated as the Bass-Morrow Gas Pool. The discovery well is the Perry R. Bass Big Eddy Unit Well No. 39 located in Unit G of Section 29, Township 21 South, Range 28 East, NMPM. Said pool would comprise:

TOWNSHIP 21 SOUTH, RANGE 28 EAST, NMPM
Section 29: E/2

Case
6226

(b) CREATE a new pool in Eddy County, New Mexico, classified as an oil pool for Cherry Canyon production and designated as the South Carlshad-Cherry Canyon Pool. Further to assign approximately 16,275 barrels of oil discovery allowable to the discovery well, the Belco Petroleum Company Martin Com Well No. 2, located in Unit F of Section 20, Township 22 South, Range 27 East, NMPM. Said well was completed September 12, 1975. The top of the perforations is at 3255 feet. Said pool would comprise:

TOWNSHIP 22 SOUTH, RANGE 27 EAST, NMPM
Section 20: NW/4

(c) CREATE a new pool in Eddy County, New Mexico, classified as a gas pool for Wolfcamp production and designated as the Corral Draw-Wolfcamp Gas Pool. The discovery well is the Mobil Oil Corporation Corral Draw Unit Well No. 2 located in Unit K of Section 22, Township 25 South, Range 29 East, NMPM. Said pool would comprise:

TOWNSHIP 25 SOUTH, RANGE 29 EAST, NMPM
Section 22: SW/4

(d) CREATE a new pool in Eddy County, New Mexico, classified as a gas pool for Wolfcamp production and designated as the Phantom Draw-Wolfcamp Gas Pool. The discovery well is the Texas Pacific Oil Company, Inc. Phantom Draw Unit Well No. 1, located in Unit M of Section 20, Township 26 South, Range 31 East, NMPM. Said pool would comprise:

TOWNSHIP 26 SOUTH, RANGE 31 EAST, NMPM
Section 20: SW/4

(e) CREATE a new pool in Lea County, New Mexico, classified as an oil pool for Bone Springs production and designated as the Sand Dunes-Bone Springs Pool. The discovery well is the Skelly Oil Company Federal Sand 18 Well No. 1, located in Unit H of Section 18, Township 23 South, Range 32 East, NMPM. Said pool would comprise:

TOWNSHIP 23 SOUTH, RANGE 32 EAST, NMPM
Section 18: E/2

(f) EXTEND the Atoka-Pennsylvanian Gas Pool in Eddy County, New Mexico, to include therein:

TOWNSHIP 18 SOUTH, RANGE 26 EAST, NMPM
Section 1: W/2
Section 3: E/2

(g) EXTEND the South Bell Lake-Morrow Gas Pool in Lea County, New Mexico, to include therein:

TOWNSHIP 24 SOUTH, RANGE 34 EAST, NMPM
Section 6: S/2
Section 7: N/2

(h) EXTEND the Elincbry Oil and Gas Pool in Lea County, New Mexico, to include therein:

TOWNSHIP 20 SOUTH, RANGE 38 EAST, NMPM
Section 27: NW/4

(i) EXTEND the Casey-Strawn Pool in Lea County, New Mexico, to include therein:

TOWNSHIP 16 SOUTH, RANGE 37 EAST, NMPM
Section 34: NW/4

(j) EXTEND the East Carlsbad-Wolfcamp Gas Pool in Eddy County, New Mexico, to include therein:

TOWNSHIP 22 SOUTH, RANGE 27 EAST, NMPM
Section 1: NE/4

(k) EXTEND the Cemetary-Morrow Gas Pool in Eddy County, New Mexico, to include therein:

TOWNSHIP 20 SOUTH, RANGE 25 EAST, NMPM
Section 28: N/2

(l) EXTEND the Double L-Queen Associated Pool in Chaves County, New Mexico, to include therein:

TOWNSHIP 14 SOUTH, RANGE 30 EAST, NMPM
Section 32: SE/4
Section 33: SW/4

(m) EXTEND the Drinkard Pool in Lea County, New Mexico, to include therein:

TOWNSHIP 21 SOUTH, RANGE 37 EAST, NMPM
Section 18: NE/4

(n) EXTEND the Indian Draw-Delaware Pool in Eddy County, New Mexico, to include therein:

TOWNSHIP 22 SOUTH, RANGE 28 EAST, NMPM
Section 18: S/2 NE/4 & E/2 SW/4

(o) EXTEND the West Knowles-Drinkard Pool in Lea County, New Mexico, to include therein:

TOWNSHIP 16 SOUTH, RANGE 37 EAST, NMPM
Section 35: NW/4

(p) EXTEND the Langlie Mattix Pool in Lea County, New Mexico, to include therein:

TOWNSHIP 24 SOUTH, RANGE 36 EAST, NMPM
Section 3: NW/4

(q) EXTEND the Llano-Pennsylvanian Pool in Lea County, New Mexico, to include therein:

TOWNSHIP 11 SOUTH, RANGE 35 EAST, NMPM
Section 31: NE/4

(r) EXTEND the Penasco Draw San Andres-Yeso Pool in Eddy County, New Mexico, to include therein:

TOWNSHIP 19 SOUTH, RANGE 24 EAST, NMPM
Section 1: SE/4 SW/4

(s) EXTEND the Red Tank-Morrow Gas Pool in Lea County, New Mexico, to include therein:

TOWNSHIP 22 SOUTH, RANGE 32 EAST, NMPM
Section 17: All

(t) EXTEND the Sand Dunes-Morrow Gas Pool in Eddy County, New Mexico, to include therein:

TOWNSHIP 23 SOUTH, RANGE 31 EAST, NMPM
Section 25: W/2

(u) EXTEND the Shugart Pool in Eddy County, New Mexico, to include therein:

TOWNSHIP 18 SOUTH, RANGE 31 EAST, NMPM
Section 23: E/2 SW/4

(v) EXTEND the Tom Tom-San Andres Pool in Chaves County, New Mexico, to include therein:

TOWNSHIP 7 SOUTH, RANGE 31 EAST, NMPM
Section 27: SE/4

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

TOWNSHIP 14 SOUTH, RANGE 34 EAST, NMPM
Section 28: SE/4

(x) EXTEND the Tulk-Pennsylvanian Pool in Lea County, New Mexico, to include therein:

TOWNSHIP 14 SOUTH, RANGE 32 EAST, NMPM
Section 27: NW/4

(y) EXTEND the North Vacuum-Abo Pool in Lea County, New Mexico, to include therein:

TOWNSHIP 16 SOUTH, RANGE 34 EAST, NMPM
Section 35: SE/4

TOWNSHIP 17 SOUTH, RANGE 34 EAST, NMPM
Section 2: E/2

(z) EXTEND the Vada-Pennsylvanian Pool in Lea County, New Mexico,
to include therein:

TOWNSHIP 9 SOUTH, RANGE 33 EAST, NMPM
Section 3: SE/4

(aa) EXTEND the Wantz-Granite Wash Pool in Lea County, New Mexico,
to include therein:

TOWNSHIP 22 SOUTH, RANGE 37 EAST, NMPM
Section 1: NE/4

TOWNSHIP 22 SOUTH, RANGE 38 EAST, NMPM
Section 19: SE/4

(bb) EXTEND the Warren-Tubb Gas Pool in Lea County, New Mexico, to
include therein:

TOWNSHIP 20 SOUTH, RANGE 38 EAST, NMPM
Section 34: NW/4

Cure
6226

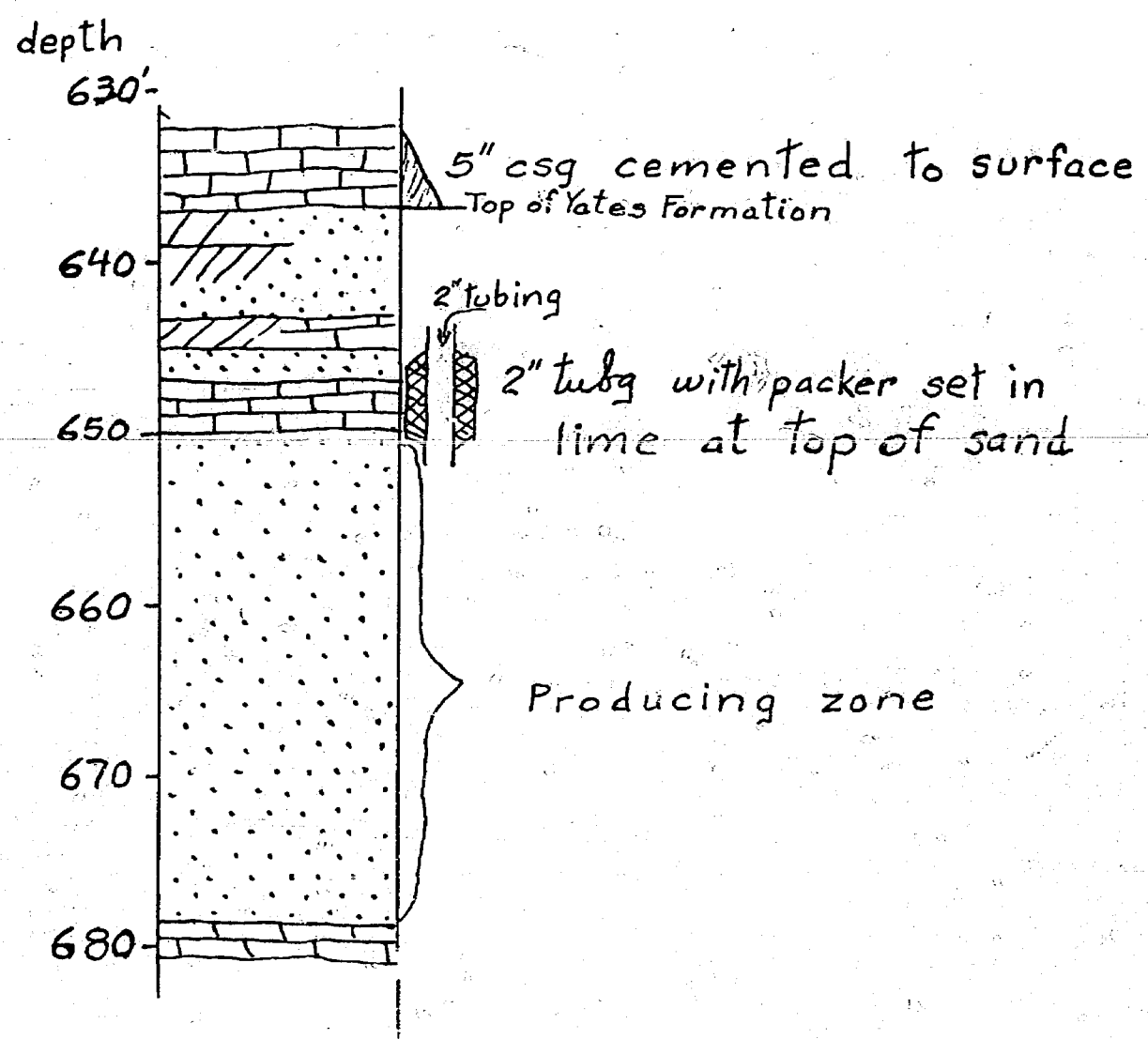
SALADAR - YATES FIELD

Sec 33 T20S R28E

Eddy County NM

Diagram of:

Casing, tubing &
producing zone





United States Department of the Interior

GEOLOGICAL SURVEY

P. O. Drawer U
Artesia, New Mexico 88210

December 5, 1975

Mr. George D. Riggs
Post Office Box 113
Carlsbad, New Mexico 88220

Dear Mr. Riggs:

Your letter of September 29, 1975 requests approval to operate a waterflood of the Yates formation in the Saladar-Yates Field on that portion of Federal oil and gas leases described as follows:

Sec. 33, T. 20 S., R. 28 E., N.M.P.M.,
Eddy County, New Mexico

NM 08277 SE $\frac{1}{4}$ NW $\frac{1}{4}$, NE $\frac{1}{4}$ SW $\frac{1}{4}$, and S $\frac{1}{4}$ SW $\frac{1}{4}$
LC 062254-A SW $\frac{1}{4}$ SE $\frac{1}{4}$


The flood pattern would be non-symmetrical and the plan proposes to convert to water injection wells No. 4 Hughes located 2310/N 1650/W and No. 4 Mayfield located 330/S 1753/E, both in sec. 33 above. This project will be operated in conjunction with the fee lease in the northwest.

The plan for operating the above described waterflood project as proposed in the application is satisfactory to this office and hereby approved subject to approval by the New Mexico Oil Conservation Commission and the following:

1. This project will be operated in compliance with the New Mexico Oil Conservation Commission regulations governing waterflood operations.
2. Prior approval will be obtained for any change or deviation from the original plans or revision thereof.
3. The usual notice and reports of workover, conversions, injection commencement, or suspension, etc. of all wells involved will be timely submitted.

4. Duplicate copies of a monthly progress report (N.M.O.C.C. form C-120 acceptable) are to be submitted to this office showing the volume of water injected and average pressure for the injection wells and production for the producing wells in the project area.

Sincerely yours,


Robert L. Beekman
Assistant District Engineer

cc:
Roswell/Attachments

Case
6226

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. 5576
Order No. R-5122

APPLICATION OF GEORGE D. RIGGS
FOR A WATERFLOOD PROJECT, EDDY
COUNTY, NEW MEXICO.

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9 a.m. on November 5, 1975, at Santa Fe, New Mexico, before Examiner Richard L. Stamets.

NOW, on this 17th day of November, 1975, 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, George D. Riggs, seeks authority to institute a waterflood project on his Hughes Federal, Malco, and Mayfield Federal Leases in the Saladar-Yates Pool by the injection of water into the Yates formation through his Hughes-Federal No. 4, Malco No. 2 and Mayfield-Federal No. 4 wells located, respectively, in Units F, L, and O of Section 33, Township 20 South, Range 28 East, NMPM, Eddy County, New Mexico.

(3) That the applicant proposes to inject water into said wells by gravity pressure only.

(4) That the applicant should file an analysis of the supply water and a report of water treatment.

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

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

(7) That the operator should take all steps necessary to ensure that the injected water enters only the proposed injection interval and is not permitted to escape to other formations or onto the surface from injection, production, or plugged and abandoned wells.

(8) 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, George D. Riggs, is hereby authorized to institute a waterflood project on his Hughes Federal, Malco, and Mayfield Federal Leases in the Saladar-Yates Pool by the injection of water by gravity pressure only into the Yates formation through the following-described wells in Section 33, Township 20 South, Range 28 East, NMPM, Eddy County, New Mexico:

Hughes-Federal No. 4, Unit F
Malco No. 2, Unit L
Mayfield-Federal No. 4, Unit O

(2) That injection into each of said wells shall be through internally coated tubing, set in a packer which shall be located within the casing as near as practicable to the casing shoe; that the casing-tubing annulus of each injection well shall be loaded with an inert fluid and equipped with an approved pressure gauge or leak detection device. Internal coating of the tubing shall not be required if the injected fluid is treated on a continuing basis to prevent corrosion.

(3) That the operator shall immediately notify the supervisor of the Commission's Artesia district office of the failure of the tubing or packer in any of said injection wells, the leakage of water or oil from around any producing well, or the leakage of water or oil from any plugged and abandoned well within the project area and shall take such timely steps as may be necessary or required to correct such failure or leakage.

(4) That the operator shall file with the Supervisor of the Artesia District Office of the Commission within 30 days of the date of initial water injection a report showing analysis of the supply water, a report of water treatment processes or chemicals to be used, and a sketch of the treatment facilities.

(5) That the subject waterflood project is hereby designated the Riggs-Saladar Waterflood Project and shall be governed by the provisions of Rules 701, 702, and 703 of the Commission Rules and Regulations.

(6) 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.

(7) 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

Phil R. Lucero
PHIL R. LUCERO, Chairman

Emery C. Arnold
EMERY C. ARNOLD, Member

Joe D. Ramey
JOE D. RAMEY, Member & Secretary

S E A L

dr/

Dockets Nos. 25-78 and 26-78 are tentatively set for hearing on August 16 and 30, 1978. Applications for hearing must be filed at least 22 days in advance of hearing date.

DOCKET: EXAMINER HEARING - WEDNESDAY - AUGUST 2, 1978

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

The following cases will be heard before Daniel S. Nutter, Examiner, or Richard L. Stamets, Alternate Examiner:

CASE 6238: (Continued from June 21, 1978, Examiner Hearing)

Application of Barber Oil, Inc., for a unit agreement, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks approval for its Saladar Unit Area comprising 240 acres, more or less, of Federal and fee lands in Township 20 South, Range 28 East, Eddy County, New Mexico.

CASE 6226: (Continued from June 21, 1978, Examiner Hearing)

Application of Barber Oil, Inc., for a waterflood project, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks authority to institute a waterflood project on its Saladar Unit, by the injection of water into the Yates formation through five wells located in Units K, L, N and O of Section 33, Township 20 South, Range 28 East, Saladar-Yates Pool, Eddy County, New Mexico.

CASE 6283: Application of Texas Oil & Gas Corporation for a non-standard proration unit, Lea County, New Mexico. Applicant, in the above-styled cause, seeks approval for a 320-acre non-standard gas proration unit comprising the W/2 of Section 16, Township 20 South, Range 36 East, North Osudo-Morrow Gas Pool, Lea County, New Mexico, to be dedicated to a well to be drilled at a standard location thereon.

CASE 6276: (Continued from July 19, 1978, Examiner Hearing)

Application of Jerome P. McHugh for an unorthodox gas well location, Rio Arriba County, New Mexico. Applicant, in the above-styled cause, seeks approval for the unorthodox location of his Chris Well No. 4 to be drilled 1902 feet from the South line and 1650 feet from the East line of Section 9, Township 27 North, Range 3 West, Blanco Mesaverde Pool, Rio Arriba County, New Mexico, the S/2 of said Section 9 to be dedicated to the well.

Applicant further seeks authority to commingle Blanco Mesaverde and Gavilan-Pictured Cliffs production in the wellbore of said well.

CASE 6277: (Continued from July 19, 1978, Examiner Hearing)

Application of Jerome P. McHugh for downhole commingling, Rio Arriba County, New Mexico. Applicant, in the above-styled cause, seeks approval for the downhole commingling of Gavilan Pictured Cliffs and Blanco Mesaverde production in the wellbores of his Chris Wells Nos. 3 and 3A, located in Units H and I of Section 21, Township 27 North, Range 3 West, Rio Arriba County, New Mexico.

CASE 6279: (Continued from July 19, 1978, Examiner Hearing)

Application of Hanagan Petroleum Corporation for compulsory pooling, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks an order pooling all mineral interests in the Morrow formation underlying the N/2 of Section 28, Township 21 South, Range 26 East, Avalon Hills-Morrow Pool, Eddy County, New Mexico, to be dedicated to a well to be drilled at a standard location thereon. Also to be considered will be the cost of drilling and completing said well and the allocation of the cost thereof as well as actual operating costs and charges for supervision. Also to be considered will be the designation of applicant as operator of the well and a charge for risk involved in drilling said well.

CASE 6284: Application of Harvey E. Yates Company for an unorthodox gas well location, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks approval for the unorthodox location of its Welch "A" Well No. 1 located 480 feet from the North line and 500 feet from the West line of Section 9, Township 18 South, Range 29 East, Eddy County, New Mexico, the W/2 of said Section 9 to be dedicated to the well.

CASE 6285: Application of Yates Petroleum Corporation for downhole commingling, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks authority to commingle Atoka and Permo-Penn gas production in the wellbore of its Federal "HQ" Well No. 1 located in Unit O of Section 5, Township 21 South, Range 22 East, Little Box Canyon Field, Eddy County, New Mexico.

CASE 6241: (Continued from July 19, 1978, Examiner Hearing)

Application of Yates Petroleum Corporation for downhole commingling, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks authority to commingle Eagle Creek Permo-Penn and West Atoka-Morrow gas production in the wellbore of its Powell DG Well No. 1 located in Unit O of Section 35, Township 17 South, Range 25 East, Eddy County, New Mexico.

STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT
OIL CONSERVATION DIVISION
State Land Office Building
Santa Fe, New Mexico
21 June 1978

EXAMINER HEARING

IN THE MATTER OF:

Application of Barber Oil, Inc., for
a waterflood project, Eddy County,
New Mexico.

CASE
6226

BEFORE: Richard L. Stamets

TRANSCRIPT OF HEARING

A P P E A R A N C E S

For the Oil
Conservation Division:

Lynn Teschendorf, Esq.
Legal Counsel for the Division
State Land Office Building
Santa Fe, New Mexico 87501

SALLY WALTON BOYD
CERTIFIED SHORTHAND REPORTER
730 Bishop's Lodge Road • Phone (505) 988-3404
Santa Fe, New Mexico 87501

MR. STAMETS: Call next Case 6226.

MS. TESCHENDORF: Case Number 6226. Application of Barber Oil, Inc., for a waterflood project, Eddy County, New Mexico.

The applicant has requested that this case also be continued to the August 2nd Examiner Hearing.

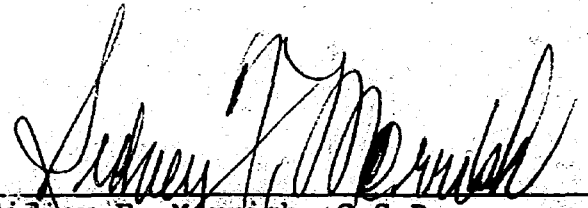
MR. STAMETS: The case will be so continued.

(Hearing concluded.)

SALLY WALTON BOYD
CERTIFIED SHORTHAND REPORTER
730 Bishop's Lodge Road • Phone (808) 988-3404
Santa Fe, New Mexico 87501

REPORTER'S CERTIFICATE

I, SIDNEY F. MORRISH, a Court Reporter, DO HEREBY
 CERTIFY that the foregoing and attached Transcript of
 Hearing before the Oil Conservation Division was reported
 by me; that said transcript is a full, true, and correct
 record of the hearing, prepared by me to the best of my
 ability, knowledge, and skill from my notes taken at the
 time of the hearing.


 Sidney F. Morrish, C.S.R.

SALLY WALTON BOYD
 CERTIFIED SHORTHAND REPORTER
 730 Bishop's Lodge Road • Phone (505) 888-3404
 Santa Fe, New Mexico 87501

I do hereby certify that the foregoing is
 a complete record of the proceedings in
 the Examiner hearing of Case No.
 heard by me on, 19....

Examiner
 New Mexico Oil Conservation Commission

WATER FLOODING

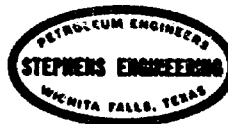
VALUATIONS

210 1975

RESERVOIR STUDIES

CONSERVATION

TELEPHONE - 817-723-2168



POST OFFICE BOX-2249

WICHITA FALLS, TEXAS
76307

April 11, 1978

United States Geological Survey
P. O. Drawer 1857
Roswell, New Mexico 88201

New Mexico Oil Conservation Commission
P. O. Box 2088
Santa Fe, New Mexico 87501

Re: Initial Plan of Operation
Barber Oil, Inc.
Saladar Unit
Eddy County, New Mexico

Gentlemen:

Barber Oil, Inc. is presently finalizing plans towards initiating a secondary recovery project in the Saladar Unit, Eddy County, New Mexico. Work is presently being accomplished towards unitizing three individual tracts all owned by Barber Oil, Inc. into the Saladar Unit, Saladar Field, Eddy County, New Mexico. Attached hereto are copies of the various information required under Statewide Rule 701-B for your inspection.

As can be seen in this presentation, Barber Oil, Inc. plans to utilize the following wells for water injection purposes: Tract 1, wells No. 3, 5 and 7. (This lease is presently identified as the Barber Oil, Inc., Hughes Federal lease.) Tract 2, well No. 2. (This lease is presently identified as the Barber Oil, Inc., Mayfield Federal lease.) Tract 3, well No. 1. (This lease is presently identified as the Barber Oil, Inc., Malco Fee lease.)

Under the initial plan of operation, it is proposed to convert each of the five wells previously mentioned to water injection service and to inject brackish water which will be obtained from a shallow water zone located on the Hughes Federal lease. This water will be injected down tubing, below a packer, into the Yates zone at a depth

of approximately 600'. Injection rates at each of the proposed wells will average 75 barrels of water per day initially at a maximum plant pressure of 500 psig.

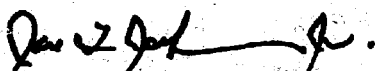
Also included herein are the following items for your inspection:

- 1) Plat of the proposed project area.
- 2) Plat of the general area around the project.
- 3) Copy of a drillers log (only type log available) on the Hughes Federal, well No. 7.
- 4) Diagramatic sketches of the proposed installation in each of the five injection wells.
- 5) A pipeline production history tabulation.
- 6) Production curves of each of the leases and the proposed project combination production curve.
- 7) Copy of presentation made by Mr. George D. Riggs to obtain approval for injection of water into these properties dated September 29, 1975. In line with this request, which has now been approved, it is now requested by Barber Oil, Inc. that this permit be resended in lieu of the present application.

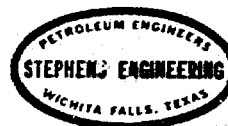
Should there be any questions concerning the data presented or your requested approval of this project, please do not hesitate to contact us.

Yours very truly,

STEPHENS ENGINEERING


Joe L. Johnson, Jr.

JLJjr/dk



STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT
OIL CONSERVATION DIVISION
State Land Office Building
Santa Fe, New Mexico
7 June, 1978

EXAMINER HEARING

IN THE MATTER OF:

(Continued from May 17, 1978
Examiner Hearing)

Application of Barber Oil, Inc., for
a waterflood project, Eddy County,
New Mexico.

CASE
6226

BEFORE: Daniel S. Nutter

TRANSCRIPT OF HEARING

A P P E A R A N C E S

For the Oil Conservation
Division:

Lynn Teschendorf, Esq.
Legal Counsel for the Division
State Land Office Building
Santa Fe, New Mexico 87501

SALLY WALTON BOYD
CERTIFIED SHORTHAND REPORTER
730 Bishop's Lodge Road • Phone (505) 888-3404
Santa Fe, New Mexico 87501

1 MR. NUTTER: Call Case 6226.

2 MS. TESCHENDORF: Case 6226. Application of
3 Barber Oil, Inc., for a waterflood project, Eddy County,
4 New Mexico.

5 The applicant has also requested that this
6 case be continued to the June 21st Examiner Hearing.

7 MR. NUTTER: Case Number 6226 will be continued
8 to the Examiner Hearing scheduled to be held at this same
9 place at 9:00 o'clock a. m., June 21, 1978.

10 (Hearing concluded.)
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SALLY WALTON BOYD

CERTIFIED SHORTHAND REPORTER

730 Bishop's Lodge Road • Phone (505) 988-3404
Santa Fe, New Mexico 87501

REPORTER'S CERTIFICATE

I, SALLY WALTON BOYD, a Court Reporter, DO HEREBY CERTIFY that the foregoing and attached Transcript of Hearing before the Oil Conservation Division was reported by me; that said transcript is a full, true, and correct record of the hearing, prepared by me to the best of my ability, knowledge, and skill from my notes taken at the time of the hearing.

Sally Walton Boyd CSR
Sally Walton Boyd, C.S.R.

SALLY WALTON BOYD
CERTIFIED SHORTHAND REPORTER
730 Bishop's Lodge Road • Phone (505) 988-3404
Santa Fe, New Mexico 87501

I do hereby certify that the foregoing is a complete record of the proceedings in the Examiner hearing of Case No. *6345* heard by me on *April 1972*.
[Signature] Examiner
New Mexico Oil Conservation Commission

HUNKER-FEDRIC, P.A.

GEORGE H. HUNKER, JR.

DON M. FEDRIC

ROBERT I. WALDMAN

215 HINKLE BUILDING

POST OFFICE BOX 1837

ROSWELL, NEW MEXICO 88201

JUL 20 1978
TELEPHONE 622-2700
AREA CODE 505

June 16, 1978

Mr. Joe D. Ramey, Division Director
Oil Conservation Division
P.O. Box 2088
Santa Fe, New Mexico 87501

Re: Barber Oil, Inc.
Cases 6226 and 6238
Saladar Unit
Eddy County, New Mexico

Dear Mr. Ramey:

Aug 7

Our client has requested us to ask the Division for a continuance of the above described cases which are scheduled for hearing at 9:00 A.M. on June 21, 1978. We have encountered some delay with respect to this matter in the United States Geological Survey, and we need a little more time. Will you please reschedule the cases for your hearing on July 6, 1978, if you can conveniently do so.

Will you please advise us if the two cases can be rescheduled.

In connection with the report which was filed in your office in connection with Case No. 6226 by Stephens Engineering, we enclose herewith a corrected Schedule showing the production from the Saladar Field. This is a Pipeline Summary and we would like for you to substitute this page for the page in the report.

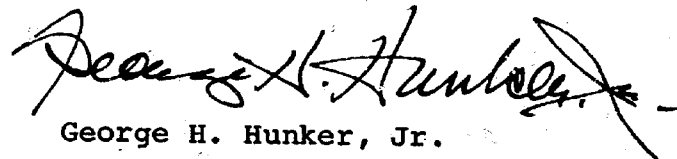
The figures for tract participation have also been changed, and we ask that you substitute a new Exhibit "C" to the Saladar Unit which was previously submitted to you.

Mr. Joe D. Ramey
Oil Conservation Division
6/16/78
Page 2

We would appreciate it if you would make these corrections
for us.

Respectfully submitted,

HUNKER - FEDRIC, P.A.



George H. Hunker, Jr.

GHH:dd
Encls.

cc: Robert S. Light, President
Barber Oil, Inc.
P.O. Box 1658
Carlsbad, New Mexico 88220

cc: Mr. Joe L. Johnson, Jr.
Stephens Engineering
P.O. Box 2249
Wichita Falls, Texas 763

BARBER OIL, INC.
SALADAR FIELD
EDDY COUNTY, NEW MEXICO

PIPELINE SUMMARY

Year	Hughes Federal	Malco	Mayfield Federal	Field Total
1956	4,715	3,549	0	8,264
1957	15,335	4,697	0	20,032
1958	8,696	3,445	827	12,968
1959	6,994	2,439	980	10,413
1960	5,632	2,135	674	8,441
1961	4,750	1,976	1,236*	7,962
1962	7,072	1,698	997	9,767
1963	11,802	1,531	1,043	14,376
1964	8,182	1,422	704	10,308
1965	6,370	1,087	821	8,278
1966	3,570	1,066	602	5,238
1967	3,880	1,017	408	5,305
1968	4,574	1,043	486	6,103
1969	2,958	920	419	4,297
1970	2,507	822	326	3,655
1971	2,515	1,213	301	4,029
1972	3,150	984	276	4,410
1973	2,565	747	212	3,524
1974	2,134	789	142	3,065
1975	1,834	767	71	2,672
1976	1,576	258	92	1,926
1977	1,235	450	47	1,732
Total	112,046	34,055	10,664	156,765
% of Total	71.473862	21.723599	6.802539	100.000000

*Does not match 1961 total for year in Annual Report.
Their accumulative total did not balance from 1961 to
1962. We have adjusted the Mayfield 1961 total to
fit the accumulative total to date 1977.

EXHIBIT "C"
TO
UNIT AGREEMENT
SALADAR UNIT
EDDY COUNTY, NEW MEXICO

Schedule of Tract Participation

<u>Tract No.</u>	<u>Participation Percentage</u>
1	71.473862
2	6.802539
3	21.723599
Total	100.000000

Dockets Nos. 22-78 and 23-78 are tentatively set for hearing on July 6 and 19, 1978. Applications for hearing must be filed at least 22 days in advance of hearing date.

DOCKET: EXAMINER HEARING - WEDNESDAY - JUNE 21, 1978

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

The following cases will be heard before Richard L. Stamets, Examiner, or Daniel S. Nutter, Alternate Examiner:

- ALLOWABLE: (1) Consideration of the allowable production of gas for July, 1978, from fifteen prorated pools in Lea, Eddy, and Chaves Counties, New Mexico.
- (2) Consideration of the allowable production of gas for July, 1978, from four prorated pools in San Juan, Rio Arriba, and Sandoval Counties, New Mexico.

CASE 6238: (Continued from June 7, 1978, Examiner Hearing)

Application of Barber Oil, Inc., for a unit agreement, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks approval for its Saladar Unit Area comprising 240 acres, more or less, of Federal and fee lands in Township 20 South, Range 28 East, Eddy County, New Mexico.

CASE 6226: (Continued from June 7, 1978, Examiner Hearing)

Application of Barber Oil, Inc., for a waterflood project, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks authority to institute a waterflood project on its Saladar Unit, by the injection of water into the Yates formation through five wells located in Units K, L, N and O of Section 33, Township 20 South, Range 28 East, Saladar-Yates Pool, Eddy County, New Mexico.

CASE 6251: Application of Amoco Production Company for compulsory pooling, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks an order pooling all mineral interests in the Pennsylvanian formation underlying the S/2 of Section 27, Township 18 South, Range 26 East, Atoka-Pennsylvanian Gas Pool, Eddy County, New Mexico, to be dedicated to a well to be drilled at a standard location thereon. Also to be considered will be the cost of drilling and completing said well and the allocation of the cost thereof as well as actual operating costs and charges for supervision. Also to be considered will be the designation of applicant as operator of the well and a charge for risk involved in drilling said well.

CASE 6252: Application of Holly Energy, Inc., for an unorthodox gas well location, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks approval for the unorthodox location of its State 14 Well No. 1, a Morrow test to be located 990 feet from the North line and 660 feet from the East line of Section 14, Township 18 South, Range 28 East, Eddy County, New Mexico, the N/2 of said Section 14 to be dedicated to the well.

CASE 6253: Application of Merriam & Bayless for a non-standard proration unit, Rio Arriba County, New Mexico. Applicant, in the above-styled cause, seeks approval for 364.44-acre non-standard gas proration unit comprising the W/2 of Sections 30 and 31, Township 26 North, Range 2 West, Blanco Mesaverde Pool, Rio Arriba County, New Mexico, to be dedicated to a well to be drilled at a standard location thereon.

CASE 6254: Application of Read & Stevens, Inc., for compulsory pooling, Lea County, New Mexico. Applicant, in the above-styled cause, seeks an order pooling all mineral interests in the Bone Spring formation underlying the W/2 SE/4 of Section 7, Township 19 South, Range 35 East, Scharb-Bone Spring Pool, Lea County, New Mexico, to be dedicated to a well drilled at an unorthodox location thereon. Also to be considered will be the cost of drilling and completing said well and the allocation of the cost thereof as well as actual operating costs and charges for supervision. Also to be considered will be the designation of applicant as operator of the well and a charge for risk involved in drilling said well.

CASE 6255: Application of Hanagan Petroleum Corporation for compulsory pooling, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks an order pooling all mineral interests in the Wolfcamp and Pennsylvanian formations underlying the N/2 of Section 8, Township 19 South, Range 26 East, Eddy County, New Mexico, to be dedicated to a well to be drilled at a standard location thereon. Also to be considered will be the cost of drilling and completing said well and the allocation of the cost thereof as well as actual operating costs and charges for supervision. Also to be considered will be the designation of applicant as operator of the well and a charge for risk involved in drilling said well.

Dockets Nos. 21-78 and 22-78 are tentatively scheduled for hearing on June 21 and July 6, 1978. Applications for hearing must be filed at least 22 days in advance of hearing date.

DOCKET: EXAMINER HEARING - WEDNESDAY - JUNE 7, 1978

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

The following cases will be heard before Daniel S. Nutter, Examiner, or Richard L. Stamets, Alternate Examiner:

- CASE 6235:** In the matter of the hearing called by the Oil Conservation Division on its own motion to permit Black Diamond Oil Company and all other interested parties to appear and show cause why the Well No. 1 located in Unit C of Section 27, Township 29 North, Range 11 West, San Juan County, New Mexico, should not be plugged and abandoned in accordance with a Division-approved plugging program.
- CASE 6236:** In the matter of the hearing called by the Oil Conservation Division on its own motion to permit Bloomfield Oil & Gas Company and all other interested parties to appear and show cause why the C. Hare Well No. 3 located in Unit N of Section 15 and the H. D. Abrams Well No. 5 located in Unit E of Section 23, both in Township 29 North, Range 11 West, San Juan County, New Mexico, should not be plugged and abandoned in accordance with a Division-approved plugging program.
- CASE 6237:** In the matter of the hearing called by the Oil Conservation Division on its own motion to permit Finley & Johansen and all other interested parties to appear and show cause why the Hare Well No. 1 located in Unit C of Section 22, Township 29 North, Range 11 West, San Juan County, New Mexico, should not be plugged and abandoned in accordance with a Division-approved plugging program.
- CASE 6238:** Application of Barber Oil, Inc., for a unit agreement, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks approval for its Saladar Unit Area comprising 240 acres, more or less, of Federal and fee lands in Township 20 South, Range 28 East, Eddy County, New Mexico.
- CASE 6226:** (Continued from May 17, 1978 Examiner Hearing)
Application of Barber Oil, Inc. for a waterflood project, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks authority to institute a waterflood project on its Saladar Unit, by the injection of water into the Yates formation through five wells located in Units K, L, N and O of Section 33, Township 20 South, Range 28 East, Saladar-Yates Pool, Eddy County, New Mexico.
- CASE 6239:** Application of Robert N. Enfield for a unit agreement, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks approval for his North Lake McMillan Unit Area comprising 3194 acres, more or less, of Federal and fee lands in Township 19 South, Ranges 26 and 27 East, Eddy County, New Mexico.
- CASE 6240:** Application of Bass Enterprises Production Company for an unorthodox oil well location, San Juan County, New Mexico. Applicant, in the above-styled cause, seeks approval for the unorthodox location of its Navajo 20 Well No. 1; a Barker Creek oil test to be drilled 1190 feet from the South line and 2510 feet from the East line of Section 20, Township 27 North, Range 19 West, San Juan County, New Mexico, the SW/4 SE/4 of said Section 20 to be dedicated to the well.
- CASE 6241:** Application of Yates Petroleum Corporation for downhole commingling, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks authority to commingle Eagle Creek Permo-Penn and West Atoka-Morrow gas production in the wellbore of its Powell DG Well No. 1 located in Unit O of Section 35, Township 17 South, Range 25 East, Eddy County, New Mexico.
- CASE 6242:** Application of C & E Operators, Inc., for compulsory pooling, San Juan County, New Mexico. Applicant, in the above-styled cause, seeks an order pooling all mineral interests in the Pictured Cliffs formation underlying the SE/4 of Section 32, Township 32 North, Range 10 West, San Juan County, New Mexico, to be dedicated to a well to be drilled at a standard location thereon. Also to be considered will be the cost of drilling and completing said well and the allocation of the cost thereof as well as actual operating costs and charges for supervision. Also to be considered will be the designation of applicant as operator of the well and a charge for risk involved in drilling said well.
- CASE 6243:** Application of Caulkins Oil Company for four unorthodox gas well locations, Rio Arriba County, New Mexico. Applicant, in the above-styled cause, seeks approval for the unorthodox location of its Breech "E" Wells Nos. 104 and 587, located in Unit P of Section 5 and Unit J of Section 4, respectively; and its Breech "A" Wells Nos. 207 and 679, located in Unit J of Sections 10 and 9, respectively, all in Township 26 North, Range 6 West, Blanco Mesaverte Pool, Rio Arriba County, New Mexico.

HUNKER-FEDRIC, P.A.

GEORGE H. HUNKER, JR.
DON M. FEDRIC210 HINKLE BUILDING
POST OFFICE BOX 1837

ROSWELL, NEW MEXICO 88201

TELEPHONE 622-2700
AREA CODE 505

ROBERT I. WALDMAN

May 23, 1978

Mr. Joe D. Ramey
Division Director
Oil Conservation Division
P.O. Box 2088
Santa Fe, New Mexico 87501

MAY 23 1978

Santa Fe

Re: Barber Oil, Inc.
Cases 6226 and 6238
Saladar Unit

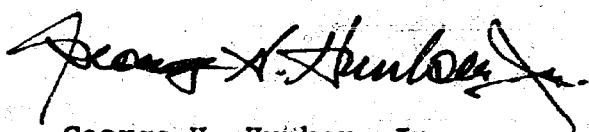
Dear Mr. Ramey:

Our client has requested us to ask the Division for a continuance of the above described cases, which we understand were originally scheduled for June 7, 1978. We would like to have these rescheduled for June 21, 1978, if this is possible. Our principal witness, Mr. Robert S. Light, is involved in the primary election in Carlsbad and finds it most inconvenient to be in Santa Fe on the morning of June 7.

Please advise us if the two cases can be rescheduled.

Sincerely yours,

HUNKER - FEDRIC, P.A.


George H. Hunker, Jr.

GHH:dd

cc: Mr. Joe L. Johnson, Jr.
Stephens Engineering
P.O. Box 2249
Wichita Falls, Texas 76307

cc: Mr. Robert S. Light
Barber Oil, Inc.
P.O. Box 1658
Carlsbad, New Mexico 88220

Dockets Nos. 19-78 and 20-78 are tentatively set for hearing on June 7 and 21, 1978. Applications for hearing must be filed at least 22 days in advance of hearing date.

DOCKET: EXAMINER HEARING - WEDNESDAY - MAY 17, 1978

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

The following cases will be heard before Richard L. Stamets, Examiner, or Daniel S. Nutter, Alternate Examiner:

- CASE 6225: Application of Petroleum Development Corporation for a dual completion, Lea County, New Mexico. Applicant, in the above-styled cause, seeks approval for the dual completion (conventional) of its Sun McKay Federal Well No. 2 located in Unit G of Section 10, Township 19 South, Range 32 East, Lea County, New Mexico, in such a manner as to produce oil from the Wolfcamp formation thru tubing and gas from the Morrow formation thru the casing tubing annulus by means of a cross-over assembly.
- CASE 6226: Application of Barber Oil, Inc. for a waterflood project, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks authority to institute a waterflood project on its Saladar Unit, by the injection of water into the Yates formation through five wells located in Units K, L, N and O of Section 33, Township 20 South, Range 28 East, Saladar-Yates Pool, Eddy County, New Mexico.
- CASE 6227: Application of Union Texas Petroleum for a non-standard proration unit, San Juan County, New Mexico. Applicant, in the above-styled cause, seeks approval of a 209.5-acre non-standard gas proration unit comprising the W/2 of Section 7, Township 31 North, Range 9 West, Blanco Pictured Cliffs Pool, San Juan County, New Mexico, to be dedicated to a well drilled at a standard location thereon.
- CASE 6228: Application of Depco, Inc., for an unorthodox location, Chaves County, New Mexico. Applicant, in the above-styled cause, seeks approval for the unorthodox location of its RLS-Federal Com Well No. 1 to be located 1980 feet from the South line and 990 feet from the West line of Section 17, Township 15 South, Range 28 East, Buffalo Valley-Pennsylvanian Gas Pool, Chaves County, New Mexico, the S/2 of said Section 17 to be dedicated to the well.
- CASE 6229: Application of Texas Oil & Gas Corporation for a unit agreement, Lea County, New Mexico. Applicant, in the above-styled cause, seeks approval for its South Wilson State Unit Area comprising 3,200 acres, more or less, of State land in Township 21 South, Range 34 East, Lea County, New Mexico.
- CASE 6230: Application of Texas Oil & Gas Corporation for an unorthodox gas well location, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks approval of an unorthodox location for its Duffield Fed. Com Well No. 1, a Wolfcamp-Pennsylvanian test to be located 1980 feet from the South line and 660 feet from the West line of Section 28, Township 16 South, Range 27 East, Eddy County, New Mexico, the S/2 of said Section 28 to be dedicated to the well.
- CASE 6215: (Continued from May 3, 1978, Examiner Hearing)
Application of Texas Oil & Gas Corporation for a non-standard unit and an unorthodox gas well location, Lea County, New Mexico. Applicant, in the above-styled cause, seeks approval for a 320-acre non-standard proration unit comprising the N/2 of Section 29, Township 20 South, Range 36 East, North Osado-Morrow Gas Pool, Lea County, New Mexico, to be dedicated to a well to be located at an unorthodox location 660 feet from the North and West lines of said Section 29.
- CASE 6231: Application of Yates Petroleum Corporation for an unorthodox gas well location, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks approval for the unorthodox location of its State "JM" Well No. 1, a Morrow test to be located 660 feet from the North and East lines of Section 25, Township 18 South, Range 24 East, Eddy County, New Mexico, the N/2 of said Section 25 to be dedicated to the well.
- CASE 6232: Application of Yates Petroleum Corporation for an unorthodox location, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks approval for the unorthodox location of its Cities "JG" Well No. 1 to be located 660 feet from the South and East lines of Section 13, Township 18 South, Range 24 East, Fordinkus Field, Eddy County, New Mexico, the E/2 of said Section 13 to be dedicated to the well.
- CASE 6233: Application of Amoco Production Company for salt water disposal, San Juan County, New Mexico. Applicant, in the above-styled cause, seeks authority to dispose of produced salt water into the Ojo Alamo formation through the perforated interval from 1175 feet to 1230 feet in its Cahn Gas Com Well No. 3 located in Unit F of Section 33, and from 1104 feet to 1122 feet in its Key Gas Com "F" Well No. 1, located in Unit K of Section 27, all in Township 32 North, Range 10 East, Mt. Nebo-Fruitland Pool, San Juan County, New Mexico.

DRAFT

dr/

STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT
OIL CONSERVATION DIVISION

IN THE MATTER OF THE HEARING
CALLED BY THE OIL CONSERVATION
DIVISION FOR THE PURPOSE OF
CONSIDERING:

CASE NO. 6226

Order No. R- 5939

APPLICATION OF BARBER OIL, INC.

FOR A WATERFLOOD PROJECT, EDDY

COUNTY, NEW MEXICO.

JAR *don*
ORDER OF THE DIVISION

BL
BY THE DIVISION:

This cause came on for hearing at 9 a.m. on August 2,
19 78, at Santa Fe, New Mexico, before Examiner Daniel S. Nutter.

NOW, on this day of August, 1978, the Division
Director, 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 Division has jurisdiction of this cause and the
subject matter thereof.

(2) That the applicant, Barber Oil, Inc.,
seeks authority to institute a waterflood project on its
Saladar Lease, Saladar-Yates
Pool, by the injection of water into the Yates
located in Units K, L, N and O of
formation through five injection wells in Section 33,
Township 20 South, Range 28 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.

(5) That the operator should take all steps necessary to ensure that the injected water enters only the proposed injection interval and is not permitted to escape to other formations or onto the surface from injection, production, or plugged and abandoned wells.

(6) That the Unit Operator should immediately notify the ~~Bottom~~ Supervisor of the Artesia District Office of the Division of the failure of the tubing, ~~packer~~ casing, or packer of any well in the Unit Area or of the leakage of water from ^{or around} any wire ^{within one-half mile of the Salada Unit Area,} including wires which have been plugged and abandoned.

(7) That upon such failure of any wire ~~in within~~ one-half mile of an injection well in the Salada Unit Area, the Division Director should be authorized to limit injection pressure ^{in the upper formation} in such injection well to no more than hydrostatic pressure, and to maintain ~~to~~ such pressure limitation until such time as ~~such~~ workover operations (including re-plugging, if necessary) have been completed correcting such failure.

(8) That the injection well or system should be equipped with a pressure control device or other acceptable substitute ~~with~~ which will limit injection to surface injection pressure to no more than 557 psi. Provision should be made for the Division Director to administratively authorize ~~on~~ a pressure limitation in excess of said 557 psi upon a showing that by the Unit Operator that such higher pressure is necessary to effectively and efficiently waterflood the Salada Unit Area and that such higher pressure limitation will not result in fracturing of the confining strata.

-3-

Case NO. _____
Order No. R _____

subject to the above conditions

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

IT IS THEREFORE ORDERED:

(1) That the applicant, Barber Oil, Inc., is hereby authorized to institute a waterflood project on its Saladar Lease, Saladar-Yates Pool, by the injection of water into the Yates formation through the following-described wells in Township 20 ^{Section 33,} South, Range 28 East, NMPM, Eddy County,

New Mexico:

Original Well Name and No	Unit Well No	Unit Letter
Riggs Hughes Fed No. 3	1-3	K
Riggs Hughes Fed No. 5	1-5	K
Riggs Hughes Fed No. 7	1-7	2
Conley Mayfield Fed No. 2	2-2	L
Riggs Malco-Keystone No 1	3-1	L

(2) That injection into each of said wells shall be through internally coated tubing, set in a packer which shall be located as near as practicable to the ^{casing shoe} ~~uppermost perforation~~; that the casing-tubing annulus of each injection well shall be loaded with an inert fluid and equipped with an approved pressure gauge or attention-attracting leak detection device.

(3) That the operator shall immediately notify the supervisor of the Division's Artesia district office of the failure of the tubing or packer in any of said injection wells, the leakage of water or oil from around any producing well, or the leakage of water or oil from any plugged and abandoned well ^{or within one-half mile of the Saladar Unit Area.} within the project area, ~~and shall take such timely steps as may be necessary or required to correct such failure or leakage.~~

(4) That upon such failure of any well ~~to~~ within one-half mile of an injection well in the Saladar Unit Area, the Division Director is hereby authorized to limit injection ^{in the open formation} pressure to such injection well to no more than hydrostatic pressure, and to maintain ~~the~~ such pressure limitation until such time as ~~such~~ workover operations (including re-slugging, if necessary) have been completed, ^{successfully} correcting such failure.

(5) That the injection well or system shall be equipped with a pressure control device or other acceptable substitute ~~with~~ which will limit ~~injection~~ the surface injection pressure to no more than 557 psi. ~~Provision should be made for the Division Director may administratively authorize~~ a pressure limitation in excess of said 557 psi upon a showing that by the Unit Operator that such higher pressure is necessary to effectively and efficiently waterflood the Saladar Unit Area and that such higher pressure limitation will not result in fracturing of the confining strata.

(6) That the subject waterflood project is hereby designated the Saladar Unit Waterflood Project and shall be governed by the provisions of Rules 701, 702, and 703 of the Division Rules and Regulations.

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

(8) That jurisdiction of this cause is retained for the entry of such further orders as the Division may deem necessary.

DONE at Santa Fe, New Mexico, on the day and year hereinabove designated.