

EXXON COMPANY, U.S.A.

POST OFFICE BOX 1600 • MIDLAND, TEXAS 79702-1600

PRODUCTION DEPARTMENT
SOUTHWESTERN DIVISION

RECEIVED

September 4, 1990

SEP 5 1990

OIL CONSERVATION DIVISION

Downhole Commingling
New Mexico "S" State #37
Unit C, Section 2, T22S, R37E
Lea County, New Mexico

New Mexico Oil Conservation Division
P. O. Box 2088
Santa Fe, NM 87504

Attention: Mr. David R. Catanach

Exxon Corporation requests an exception to New Mexico Oil Conservation Division Rule 303-A to permit downhole commingling of production from the Wantz Abo and Wantz Granite Wash Pools in the captioned wellbore.

This well has been shut in since it failed a packer leakage test in May, 1988. Prior to being shut in, the well was a dual producer which flowed the Wantz Abo in the upper tubing string and pumped the Wantz Granite Wash in the lower tubing string (see attached wellbore schematic). The Wantz Abo has potential reserves behind pipe. The Wantz Granite Wash produced an average of 4 bopd and 12 mcfpd during the year prior to being shut in and is approaching its economic limit of 2 bopd. By downhole commingling the Wantz Granite Wash with the economic Wantz Abo completion, Exxon will be able to recover an additional 4492 BO and 11,980 MCF from the Granite Wash that would not otherwise be recovered (see Attachment 3 for the calculation).

Exxon proposes to pull the current dual production equipment and artificially lift the remaining reserves out of both zones simultaneously. The seat nipple will be set across the Wantz Granite Wash pay to prevent crossflow.

All offset operators have been notified by copy of this letter and its attachments.

Sincerely,


for Michael W. Andrews

MWA:dbm
Attachments

c: Offset Operators
Mr. Jerry Sexton, NMOCD, Hobbs, NM
2 copies to addressee

Attachment 1
Offset Operators
Exxon's New Mexico "S" State Lease

Arco Oil and Gas Company
P. O. Box 1610
Midland, Texas 79702

Chevron U.S.A., Inc.
P. O. Box 670
Hobbs, New Mexico 88240

Marathon Oil Company
P. O. Box 552
Midland, Texas 79702

ORYX Energy Company
P. O. Box 1861
Midland, Texas 79702

Attachment 2
New Mexico "S" State #37
Downhole Commingling - Data Required

To obtain approval for downhole commingling, we have enclosed the following data pursuant to Rule 303 (C) (2) (a through j):

1. Exxon's name and address:

Exxon Corporation
P. O. Box 1600
Midland, TX 79702

2. Lease name, well number, well location, and name of pools to be commingled:

New Mexico "S" State No. 37, Unit C, Section 2, T-22-S, R-37-E, Lea County, New Mexico. Pools to be commingled: Wantz Abo and Wantz Granite Wash.

3. A plat of the area showing the acreage dedicated to the well and ownership of all offsetting leases:

Attached.

4. A 24-hour productivity test on Division Form C-116 showing the amount of oil, gas, and water produced from each zone:

Tests for the Wantz Abo and Wantz Granite Wash are attached.

5. A production decline curve for zones showing that for a period of at least one year a steady rate of decline has been established for each zone which will permit a reasonable allocation of the commingled production to each zone for statistical purposes:

Decline curves for the Wantz Abo and Wantz Granite Wash are attached.

6. A current bottomhole pressure for each zone capable of flowing:

Measured shut-in bottomhole pressure is 542 psia for the Wantz Abo (measured by static downhole pressure bomb in the New Mexico "S" State #37), and 610 psia for the Wantz Granite Wash (measured by static downhole pressure bomb in the New Mexico "S" State #33). When adjusted to a common average datum of 3665 feet subsea, the Wantz Abo pressure is 549 psia and the Wantz Granite Wash pressure is 590 psia.

7. A description of the fluid characteristics of each zone showing that the fluids will not be incompatible in the wellbore:

Produced fluids are already surface commingled with no compatibility problems.

NEW MEXICO "S" STATE #37
DOWNHOLE COMMINGLING APPLICATION

8. A computation showing that the value of the commingled production will not be less than the sum of the values of the individual streams:

All of the crude and condensate currently produced from the Wantz Abo and Wantz Granite Wash is already being surface commingled into one common stock tank, and sold as a mixture.

9. A formula for the allocation of production to each of the commingled zones and a description of the factors or data used in determining such a formula:

The Wantz Granite Wash produced an average of 4 bopd and 12 mcfpd during the year prior to being shut in. Pay will be added in the Wantz Abo. The contribution from the Wantz Abo will be determined by subtracting the prior rate of the Wantz Granite Wash from the total commingled rate. A test period of 2 to 3 weeks will be used to obtain a stabilized rate prior to submitting the allocation formula.

10. A statement that all offset operators and, in case of a well on Federal land, the United States Geological Survey, has been notified in writing of the proposed commingling.

By copy of this letter, we are notifying the offset operators of this proposed commingling.

11. In addition, working interest and royalty interest ownership in all zones are the same.

ATTACHMENT 3
NEW MEXICO "S" STATE #37
ADDITIONAL RECOVERY CALCULATION

Wantz Granite Wash

Current Rate: 4.5 BOPD, 12.0 MCFPD (GOR = 2667 SCF/bbl)

Decline Rate: 15% per year

Economic Limit: 2 BOPD

Remaining Wantz Granite Wash Reserves

Produce to economic limit
without commingling: $N = \frac{(Q-Q_i)365}{\ln(1-d)} = \frac{(2-4.5)365}{\ln(1-.15)} = 5,615 \text{ BO}$

Produce to commingling
with Wantz Abo: $N = \frac{(Q-Q_i)365}{\ln(1-d)} = \frac{(0-4.5)365}{\ln(1-.15)} = 10,107 \text{ BO}$

Additional Oil Reserves Captured by Commingling = 10,107-5615 = 4492 BO

Additional Gas Reserves Captured by Commingling = 4492 BO X 2667 SCF/bbl = 11,980 MCF

Exxon Lse. No. _____

NEW MEXICO OIL CONSERVATION COMMISS

Form C-102
Supersedes C-128
Effective 1-1-65

State Lse. No. B-934

WELL LOCATION AND ACREAGE DEDICATION PLAT

Federal Lse. No. _____

All distances must be from the outer boundaries of the Section.

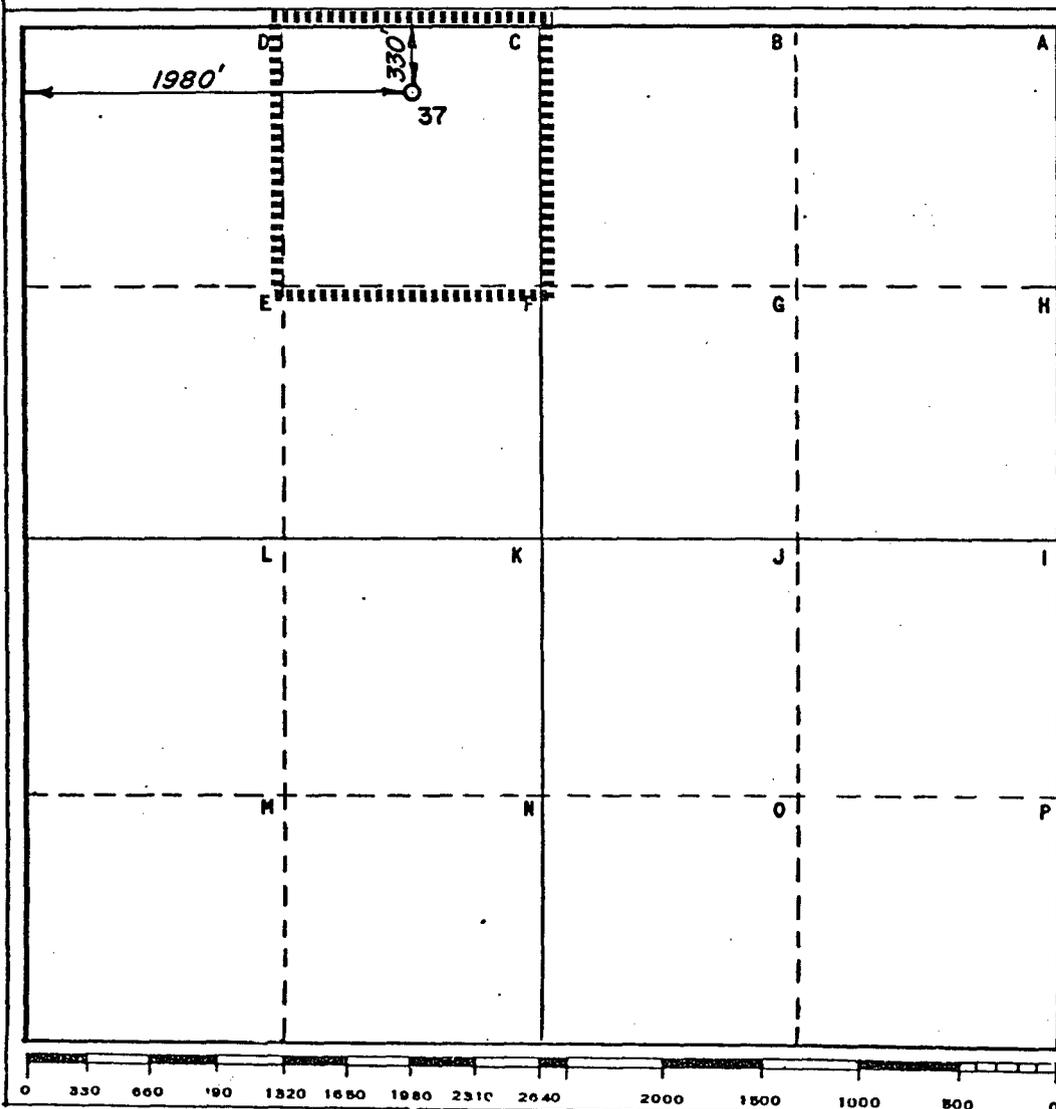
Operator Exxon Corporation		Lease New Mexico "S" State			Well No. 37
Unit Letter C	Section 2	Township 22 South	Range 37 East	County Lea	
Actual Footage Location of Well: 330 feet from the North line and 1980 feet from the West line					
Ground Level Elev.	Producing Formation Granite Wash & Abo	Pool Wantz-Granite Wash & Wantz Abo		Dedicated Acreage: 40 Acres	

1. Outline the acreage dedicated to the subject well by colored pencil or hachure marks on the plat below.
2. If more than one lease is dedicated to the well, outline each and identify the ownership thereof (both as to working interest and royalty).
3. If more than one lease of different ownership is dedicated to the well, have the interests of all owners been consolidated by communitization, unitization, force-pooling, etc?

Yes No If answer is "yes," type of consolidation _____

If answer is "no," list the owners and tract descriptions which have actually been consolidated. (Use reverse side of this form if necessary.) _____

No allowable will be assigned to the well until all interests have been consolidated (by communitization, unitization, forced-pooling, or otherwise) or until a non-standard unit, eliminating such interests, has been approved by the Commission.



CERTIFICATION

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

Name
Melba Knippling

Position
Proration Specialist

Company **Exxon Corporation**
Box 1600 Midland, Texas

Date
2-2-77

I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my knowledge and belief.

Date Surveyed
2-1-77

Registered Professional Engineer and/or Land Surveyor
H. S. Hesterfield

Certificate No.
1382

2 Miles **SE** of Eunice, New Mexico

C.E. Sec. File No. **A-6877 H**

Submit 2 copies to Appropriate District Office.
 DISTRICT I
 P.O. Box 1980, Hobbs, NM 88240
 DISTRICT II
 P.O. Drawer DD, Artesia, NM 88210
 DISTRICT III
 1000 Rto Brazos Rd., Aztec, NM 87410

State of New Mexico
 Energy, Minerals and Natural Resources Department
OIL CONSERVATION DIVISION
 P.O. Box 2088
 Santa Fe, New Mexico 87504-2088

GAS - OIL RATIO TEST

Test Period - February

Operator	Pool		WANTZ ABO	TYPE OF TEST - (X)	SCHEDULED	COMPLETION			GAS - OIL RATIO CU.FT/BBL.					
	EXXON CO. U.S.A.	MIDLAND, TX 79702				WATER BBL.	PROD. DURING TEST GRAV. OIL	OIL BBL.		GAS M.C.F.	SPECIAL			
Address	LEASE NAME			WELL NO.	LOCATION	DATE OF TEST	CHOKE SIZE	TBG. PRESS.	DAILY ALLOWABLE	LENGTH OF TEST HOURS	COUNT			
	U	S	T	R										
	J	2	22	37		2-10-90	F 32			24	2	8	65	8126
	N					2-2-90	F 32			24	2	5	206	41228
	K					2-22-90	F 32			24	0	0	2	
	F					SHUT-IN				24	0	0	8	
	L					2-14-90	F 32			24	0	1	26	26000
	H					2-11-90	F 32			24	0	0	9	
	O					2-8-90	F 32			24	0	0	6	
	A					2-17-90	F 32			24	0	1	22	22080
	B					2-28-90	F			24	0	0		

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

Anita R. Douglass
 Signature
 Anita R. Douglass, Sr., Staff Ofc. Asst.
 Printed name and title
 3-2-90
 Date
 915/688-7627
 Telephone No.

Instructions:
 During gas-oil ratio test, each well shall be produced at a rate not exceeding the top unit allowable for the pool in which well is located by more than 25 percent. Operator is encouraged to take advantage of this 25 percent tolerance in order that well can be assigned increased allowables when authorized by the Division.
 Gas volumes must be reported in MCF measured at a pressure base of 15.025 psia and a temperature of 60° F. Specific gravity base will be 0.60.
 Report casing pressure in lieu of tubing pressure for any well producing through casing.
 (See Rule 301, Rule 1116 & appropriate pool rules.)

Submit 2 copies to Appropriate District Office.
 DISIRICLIJ
 P.O. Box 1980, Hobbs, NM 88240
 DISIRICLIJ
 P.O. Drawer DD, Artesia, NM 88210
 DISIRICLIJ
 1000 Rio Brazos Rd., Aztec, NM 87410

State of New Mexico
 Energy, Minerals and Natural Resources Department
OIL CONSERVATION DIVISION
 P.O. Box 2088
 Santa Fe, New Mexico 87504-2088

GAS - OIL RATIO TEST Test Period - February

Operator		Pool		Wantz Abo		County		Lea				
EXXON CO. U.S.A.		Midland, TX 79702		Wantz Abo		Lea		Lea				
Address		P. O. Box 1600		TYPE OF TEST - (X)		Completion		Special				
				<input checked="" type="checkbox"/> Scheduled		<input type="checkbox"/>		<input type="checkbox"/>				
LEASE NAME	WELL NO.	LOCATION			DATE OF TEST	CHOKE SIZE	TBG. PRESS.	DAILY ALLOW-ABLE	LENGTH OF TEST HOURS	PROD. DURING TEST		GAS - OIL RATIO CU.FT/BBL.
		U	S	T						R	WATER BBL.	
New Mexico 'S' State	37	C	2	22	37	SHUT-IN			24	0	0	3
	38	E				SHUT-IN			24	0	2	51
	39	D				2-9-90	32		24	0	2	2566
	40	M				2-11-90			24	2	11	1865
Wantz Federal	1	R	1	21	37	2-16-90	P		24	0	20	58
	2	O				2-19-90	P		24	2	19	24
	4	Q				2-22-90	P		24	7	24	1256
	5	P				2-25-90	P		24	7	24	1814

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

Anita R. Douglass
 Signature
 Anita R. Douglass, Sr. Staff Ofc. Asst.
 Printed name and title
 3-2-90
 Date
 915/688-7627
 Telephone No.

Instructions:
 During gas-oil ratio test, each well shall be produced at a rate not exceeding the top unit allowable for the pool in which well is located by more than 25 percent. Operator is encouraged to take advantage of this 25 percent tolerance in order that well can be assigned increased allowables when authorized by the Division.
 Gas volumes must be reported in MCF measured at a pressure base of 15.025 psia and a temperature of 60° F. Specific gravity base will be 0.60.
 Report casing pressure in lieu of tubing pressure for any well producing through casing.
 (See Rule 301, Rule 1116 & appropriate pool rules.)

Submit 2 copies to Appropriate District Office.

State of New Mexico
Energy, Minerals and Natural Resources Department

Form C-116
Revised 1/1/89

DISTRICT I
P.O. Box 1980, Hobbs, NM 88240
DISTRICT II
P.O. Drawer DD, Artesia, NM 88210
DISTRICT III
1000 Rio Brazos Rd., Aztec, NM 87410

OIL CONSERVATION DIVISION

P.O. Box 2088
Santa Fe, New Mexico 87504-2088

GAS - OIL RATIO TEST

Test Period - April

Operator		Pool		County									
Exxon Co., U.S.A. Operations Acctg. P.C. #3		Wantz Granite Wash		Lea									
Address		TYPE OF TEST - (X)		Completion		Special							
P. O. Box 1600 Midland, TX 79702		<input checked="" type="checkbox"/> Scheduled		<input type="checkbox"/>		<input type="checkbox"/>							
LEASE NAME	WELL NO.	LOCATION			DATE OF TEST	CHOKE SIZE	TBG. PRESS.	DAILY ALLOW-ABLE	LENGTH OF TEST HOURS	PROD. DURING TEST			GAS - OIL RATIO CU.FT/BBL.
		U	S	T						R	WATER BBL.S.	GRAV. OIL	
New Mexico "S" State	30 L	I	2	22	37	4-26-90 P			24	0	1	3	3000
	32	G				S.I.			24	0	4	132	33000
	33 L	P				4-27-90 P			24	0	1	6	6000
	35 L	A				4-25-90 P							
	36 L	B				S.I.							
	37 L	C				S.I.							
	38 L	E				S.I.							
	24 J	J				4-22-90 P			24	0	0	13	

INSTRUCTIONS:

During gas-oil ratio test, each well shall be produced at a rate not exceeding the top unit allowable for the pool in which well is located by more than 25 percent. Operator is encouraged to take advantage of this 25 percent tolerance in order that well can be assigned increased allowables when authorized by the Division.
Gas volumes must be reported in MCF measured at a pressure base of 15.025 psia and a temperature of 60° F. Specific gravity base will be 0.60.
Report casing pressure in lieu of tubing pressure for any well producing through casing.

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

Anita R. Douglass
Signature

Anita R. Douglass, Sr. Staff Offc. Asst.

Printed name and title

5-11-90

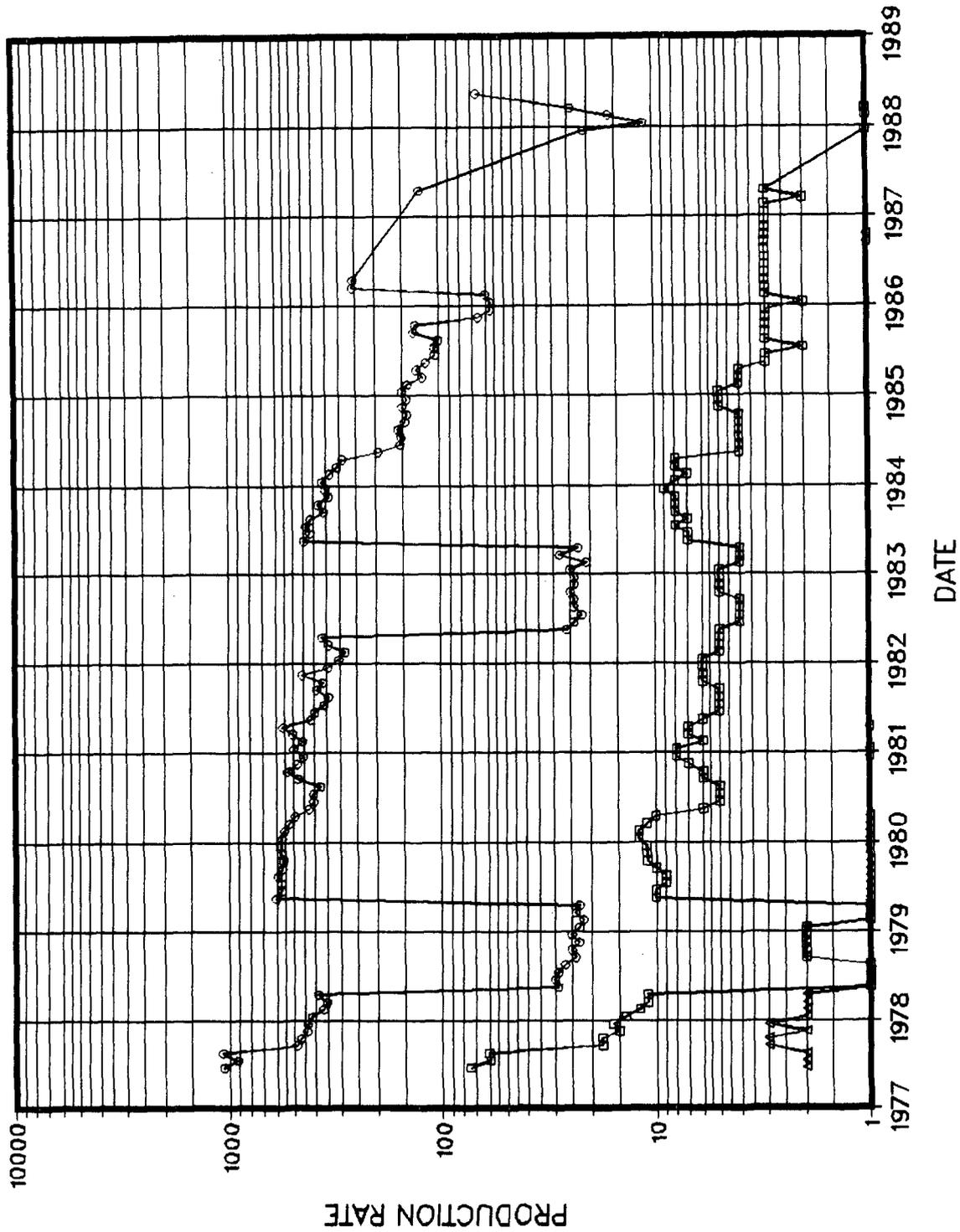
Date

915/688-7627

Telephone No.

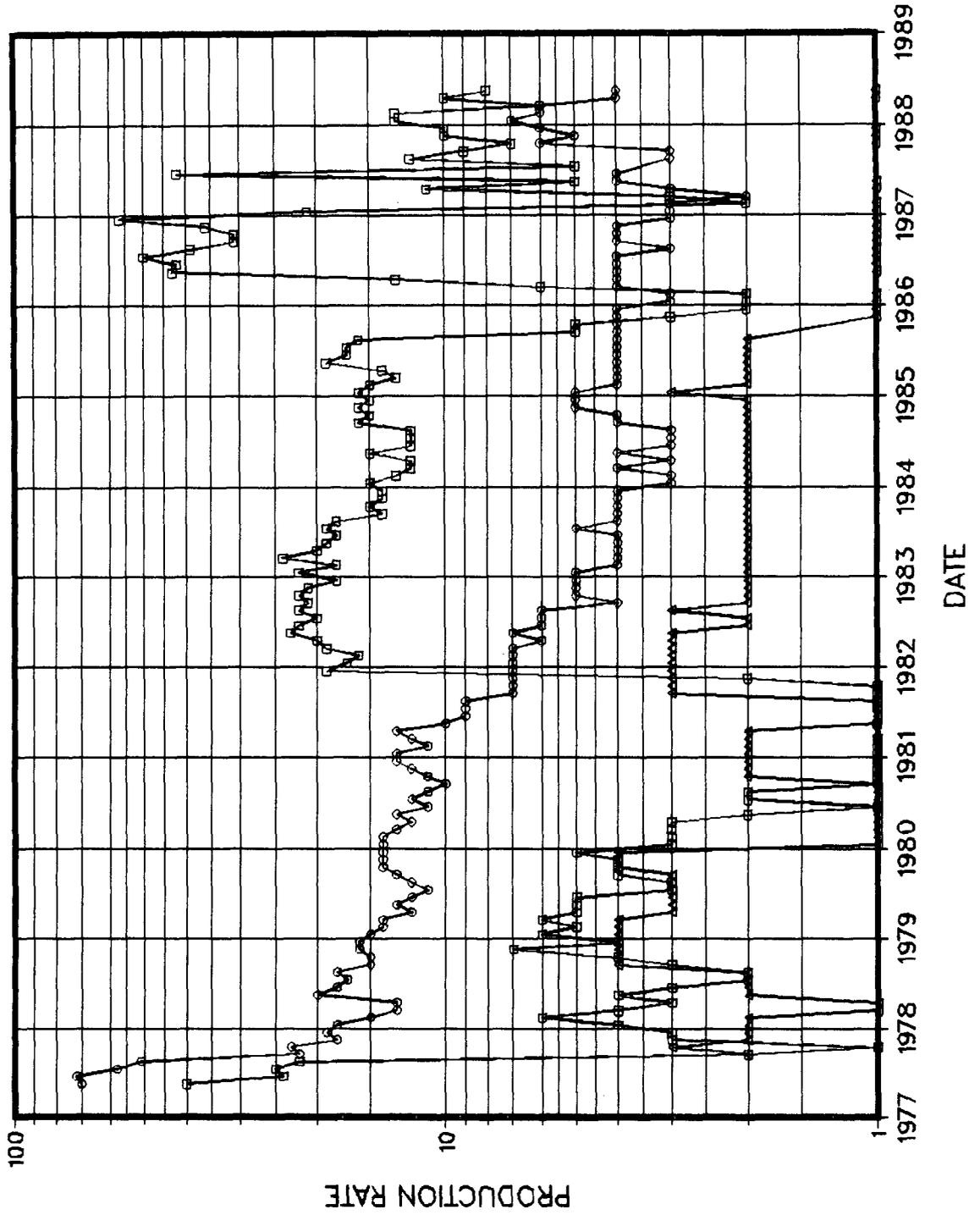
(See Rule 301, Rule 1116 & appropriate pool rules.)

NEW MEXICO S STATE #37 WANTZ ABO PRODUCTION



Legend
○ GAS PROD. MCFPD
□ OIL PROD. BOPD
△ WATER PROD. BWPD

NEW MEXICO S STATE #37 WANTZ GRANITE WASH PRODUCTION



Legend
○ OIL PROD BOPD
□ GAS PROD MCFPD
△ WATER PROD BWPD

BEFORE WORKOVER

Date: 4/19/90

Lease, Well: N. Mex. State #37

Elev. K63371', 14'
above GHE

Field: BOT

H2S 0 PPM

Field Supt: M^cBEE

Tubing Size 2 3/8" Grade _____

Bottom Hole Arrangement

CURRENT
WELLBORE
CONFIGURATION

Well history:
1174' - 9 5/8" csg

4/77

D & C. Perf. Abo 6640' - 6870'

Acidize w/ 2325 gal 15% HCl

Frac w/ 30,000 gal K-1 \$30,000
gel 20% HCl

IP Abo: 175 bopd, 56 bopd, 170

Perf Granite Wash 7154' - 7310'

Acidize w/ 700 gal 15% HCl

Frac w/ 40,000 gal gel oil
\$46,000 # 20/40 sand

IP G/W: 170 bopd, 249 KCFD

WANTZ ABO - FLOWING

GRANITE WASH - PUMPING

6538' - Baker 'k' dual pkr

6640' - 6870' Wantz Abo
(66 shots)

7070' - Baker Lokiset pkr
w/on-off

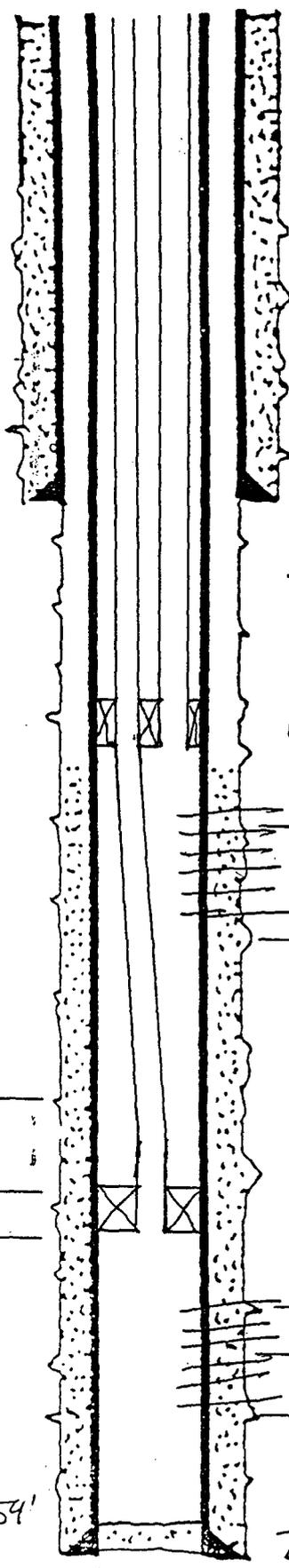
7154' - 7310' Granite
(182F) Wash

7500' - 7" csg

TOC

7354' - 7500'

TD - 7500'



AFTER COMMINGLING

Wellbore Sketch

Date: 4/19/90

Lease, Well: NEW MEXICO'S STATE #37

Elev. 3371' KB, 14'
above CHF

Field: B-D-T

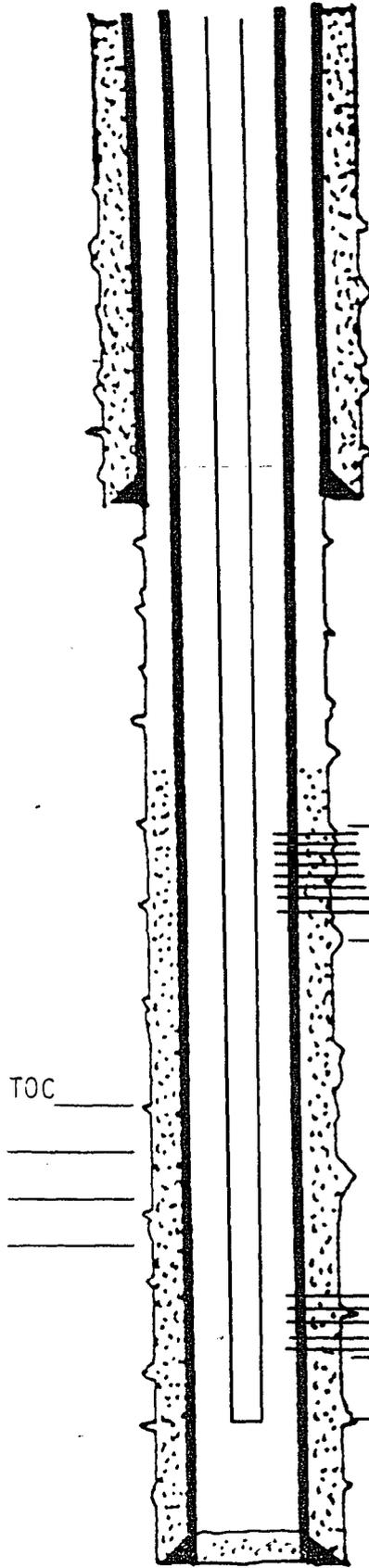
H2S 0 PPM

Field Supt: McBEE

Tubing Size 2 3/8" Grade _____

AFTER COMMINGLING
WELLBORE
CONFIGURATION

Bottom Hole Arrangement



Well history:
9 5/8" @ 1174'

4/77

D+C Perf Abo 6640' - 6870'

Acidize w/ 2325 gals 15% HCL

Free w/ 30,000 gal K-1 + 30,000 gal
of 20% HCL

ABO IP = 175 BOPD, 5 BWPD, 1710 KCFPD

Perf Granite Wash 7154' - 7310'

Acidize w/ 200 gal. 15% HCL

Free w/ 40,000 gals. gelled oil
+ 46,000 # 20/40 sand

GLW IP: 170 BOPD, 249 MCF/DAY

6606' - 7070'
WANTZ ABO

7154' - 7310'
GRANITE WASH

7" @ 7500'

TDC @ 7500'

PBD @ 7359'

TOC



OIL CONSERVATION DIVISION

RECEIVED

90 SEP 13 AM 9 30

ENERGY AND MINERALS DEPARTMENT

OIL CONSERVATION DIVISION

HOBBS DISTRICT OFFICE

STATE OF NEW MEXICO

GARREY CARRUTHERS
GOVERNOR

POST OFFICE BOX 1980
HOBBS, NEW MEXICO 88241-1980
(505) 393-6161

OIL CONSERVATION DIVISION
P. O. BOX 2088
SANTA FE, NEW MEXICO 87501

RE: Proposed:

- MC _____
- DHC _____
- NSL _____
- NSP _____
- SWD _____
- WFX _____
- PMX _____

Gentlemen:

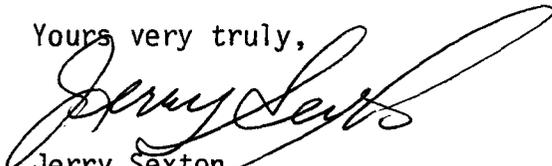
I have examined the application for the:

Exxon Corp. New Mexico State # 37-C 2-22-37
 Operator Lease & Well No. Unit S-T-R

and my recommendations are as follows:

OK

Yours very truly,


 Jerry Sexton
 Supervisor, District 1

/ed