

EXXON COMPANY, U.S.A.

POST OFFICE BOX 1600 • MIDLAND, TEXAS 79702-1600

PRODUCTION DEPARTMENT
SOUTHWESTERN DIVISION

RECEIVED

SEP 5 1990

OIL CONSERVATION DIVISION

September 4, 1990

Downhole Commingling
New Mexico "S" State #36
Unit B, 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.

The well is a dual producer which flows the Wantz Abo in the upper tubing string. The Wantz Granite Wash was being pumped below a packer in the long tubing string, but it was shut in during April, 1987 due to pump problems. The Wantz Granite Wash produced only 2 bopd and 8 mcfpd during the year prior to being shut in. This rate does not economically justify repairing the pump. However, there is remaining pay behind pipe in the Wantz Abo. By downhole commingling the Wantz Granite Wash with the economic Wantz Abo completion, Exxon will be able to recover an additional 4492 BO and 18,866 MCF out of the Wantz Granite Wash that otherwise would not be recovered (see Attachment 3 for the calculation).

Exxon proposes to pull the current dual production equipment, add pay in the Wantz Abo, and artificially lift the remaining reserves out of both zones simultaneously in a single completion. 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,

William T. Duncan, Jr.
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 #36
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. 36, Unit B, 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 821 psia for the Wantz Abo (measured by static downhole pressure bomb in the New Mexico "S" State #36), 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 3670 feet subsea, the Wantz Abo pressure is 827 psia and the Wantz Granite Wash pressure is 605 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 #36
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 2 bopd and 8 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 #36
ADDITIONAL RECOVERY CALCULATION

Wantz Granite Wash and Drinkard

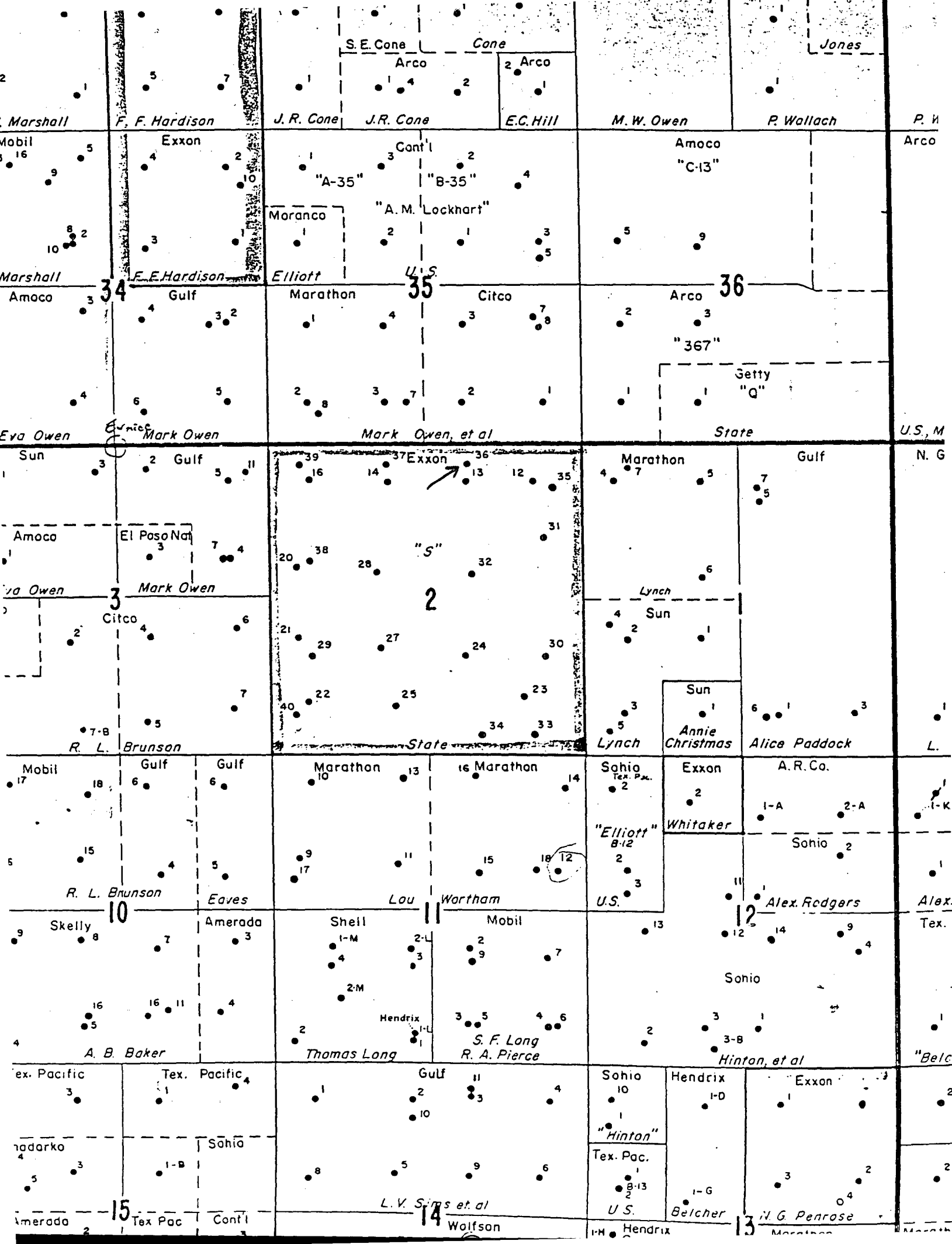
Current Rate = 2.0 BOPD, 8.4 MCFPD (GOR = 4200 SCF/bbl)

Decline Rate = 15% per year (exponential)

Additional Reserves Recovered by Downhole Commingling

Oil:
$$N = \frac{(Q-Q_i) 365}{\ln(1-d)} = \frac{(0-2)365}{\ln(1-.15)} = \underline{\underline{4492 \text{ BO}}}$$

Gas:
$$G = 4492 \text{ BO} * 4200 \text{ SCF/bbl} = \underline{\underline{18,866 \text{ MCF}}}$$



Exxon Lse. No. _____

NEW MEXICO OIL CONSERVATION COMMISSION

Form C-102
Supersedes C-128
Effective 1-1-65State Lse. No. B-934

WELL LOCATION AND ACREAGE DEDICATION PLAT

Federal Lse. No. _____

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

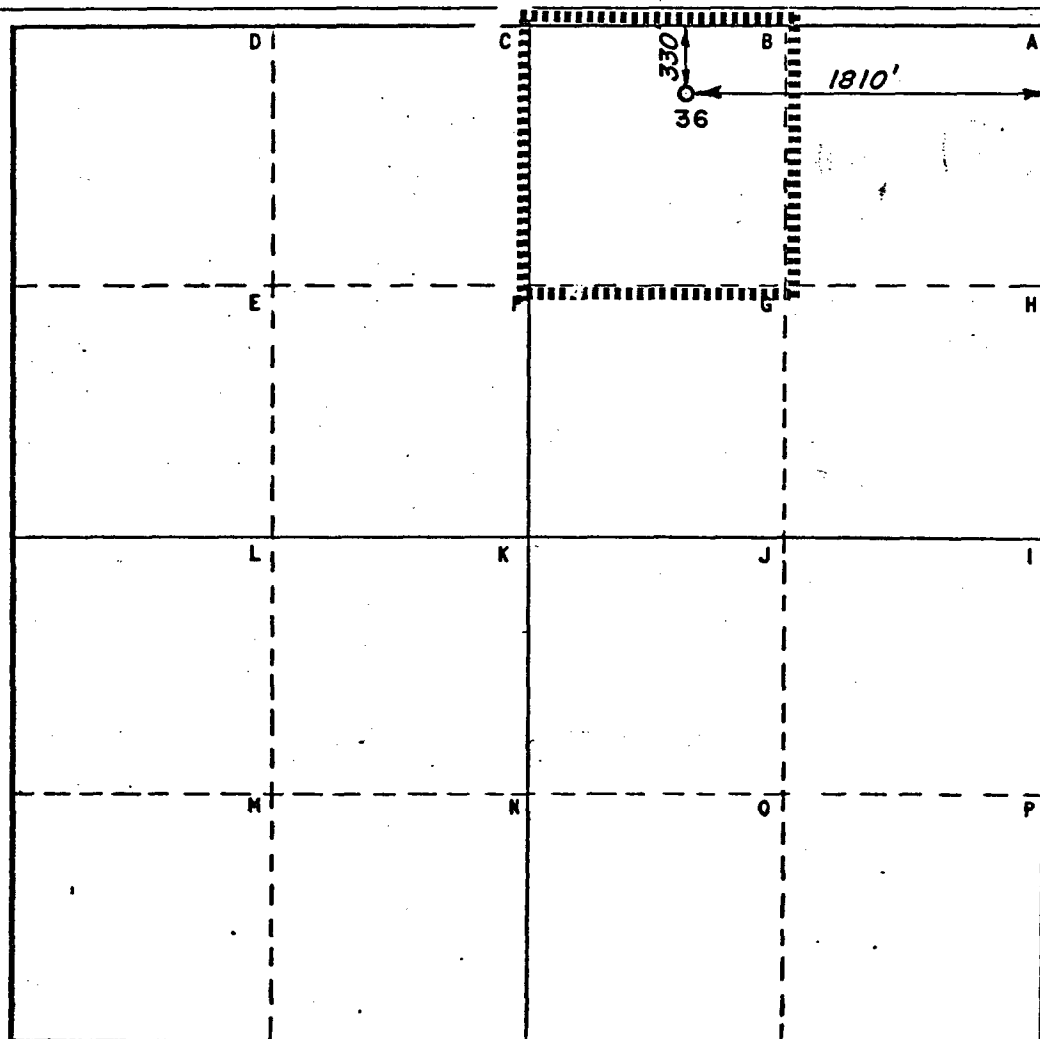
| | | | | |
|---|---|---|--------------------------------|----------------|
| Operator Exxon Corporation | | Lease New Mexico "S" State | | Well No. 36 |
| Unit Letter B | Section 2 | Township 22 South | Range 37 East | County Lea |
| Actual Footage Location of Well: 330 feet from the North line and 1810 feet from the East 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 hatchure 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 Kripling

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. Westerfeld*

Certificate No.

1382

2 Miles SE of Eunice

New Mexico

C.E. Sec. File No. A-6877 G

OIL CONSERVATION DIVISION

P.O. Box 2088

Santa Fe, New Mexico 87504-2088

GAS - OIL RATIO TEST

Test Period - February

| Operator Exxon Co. U.S.A. | | Pool Wantz Abo | | County Lea | | | | | | | | | | | |
|------------------------------|----------|-------------------|---|---------------|--------------|-------------|---------------|-------------------|----------------------|-------------------|--------------|-----------|---------------------------|------------|------------|
| Address P. O. Box 1600 | | Midland, TX 79702 | | | | | | | | | | | | | |
| LEASE NAME | WELL NO. | LOCATION | | | DATE OF TEST | CHOKES SIZE | T.B.G. 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 | | OIL BBL.S. | GAS M.C.F. |
| New Mexico 'S' State | 24 | J | 2 | 22 | 37 | 2-10-90 | F 32 | | | 24 | 2 | | 8 | 65 | 8126 |
| | 25 | N | | | | 2-2-90 | F 32 | | | 24 | 2 | | 5 | 206 | 41228 |
| | 27 | K | | | | 2-22-90 | F 32 | | | 24 | 0 | | 0 | 2 | |
| | 28 | F | | | | SHUT-IN | | | | | | | | | |
| | 29 | L | | | | 2-14-90 | F 32 | | | 24 | 0 | | 0 | 8 | |
| | 31 | H | | | | 2-11-90 | F 32 | | | 24 | 0 | | 1 | 26 | 26000 |
| | 34 | O | | | | 2-8-90 | F 32 | | | 24 | 0 | | 0 | 9 | |
| 35 | A | | | | 2-17-90 | F 32 | | | 24 | 0 | | 0 | 6 | | |
| | 36 | B | | | | 2-28-90 | F | | | 24 | 0 | | 1 | 22 | 22080 |

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.)

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

Anita R. Douglass
Signature

Printed name and title

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

Date

3-2-90

915/688-7627

Telephone No.

OIL CONSERVATION DIVISION

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

GAS - OIL RATIO TEST

Test Period - February

| | | | | | | | | | | | | | |
|------------------------------|---------------------------|--------------------|--|----|--------------|------------|-------------|------------------|----------------------|-------------------|--------------|-----------|---------------------------|
| Operator Exxon Co. U.S.A. | Pool Midland, TX 79702 | Wantz Abo | County Lea | | | | | | | | | | |
| Address P. O. Box 1600 | | TYPE OF TEST - (X) | Completion <input type="checkbox"/> Special <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/88L |
| | | U | S | T | | | | | | R | WATER BBL.S. | GRAV. OIL | |
| New Mexico 'S' State | 37 | C | 2 | 22 | 37 | SHUT-IN | | | | 24 | 0 | 0 | 3 |
| | 38 | E | | | | SHUT-IN | | | | 24 | 0 | 0 | 51 |
| | 39 | D | | | | 2-9-90 | 32 | | | 24 | 2 | 2 | 25660 |
| | 40 | M | | | | 2-11-90 | P | | | 24 | 2 | 11 | 1865 |
| | 1 | R | 1 | 21 | 37 | 2-16-90 | P | | | 24 | 0 | 20 | 2979 |
| Wantz Federal | 2 | O | | | | 2-19-90 | P | | | 24 | 2 | 19 | 1256 |
| | 4 | Q | | | | 2-22-90 | P | | | 24 | 7 | 24 | 1814 |
| | 5 | P | | | | 2-25-90 | P | | | 24 | | | |

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.

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

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

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

Telephone No.

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 Rio Brazos Rd., Aztec, NM 87410

State of New Mexico

Energy, Minerals and Natural Resources Department

Form C-116
Revised 1/1/89

OIL CONSERVATION DIVISION

P.O. Box 2088

Santa Fe, New Mexico 87504-2088

GAS - OIL RATIO TEST

Test Period - April

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

Instructions:

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Anita R. Douglass
Signature

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

Printed name and title

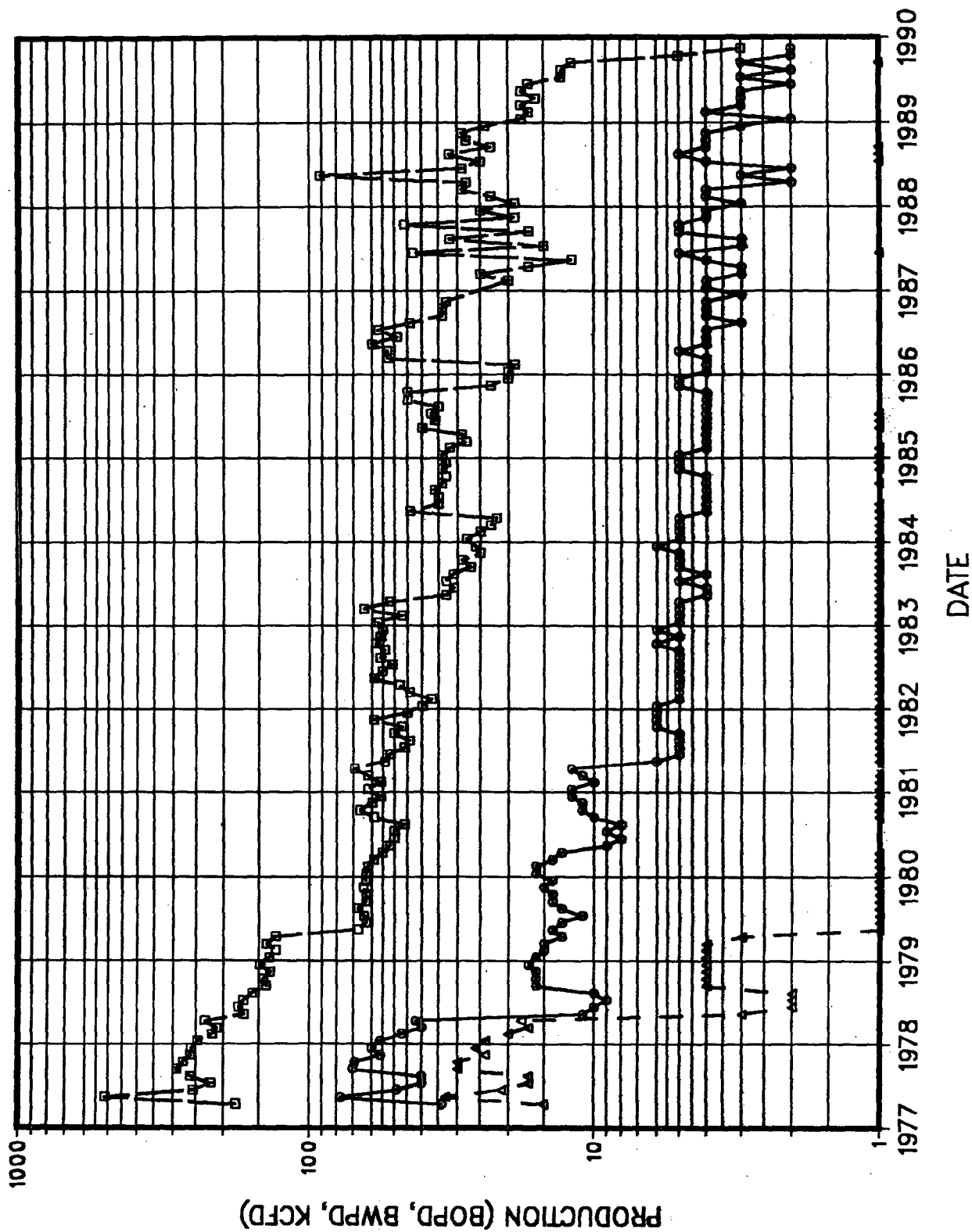
5-11-90

Date

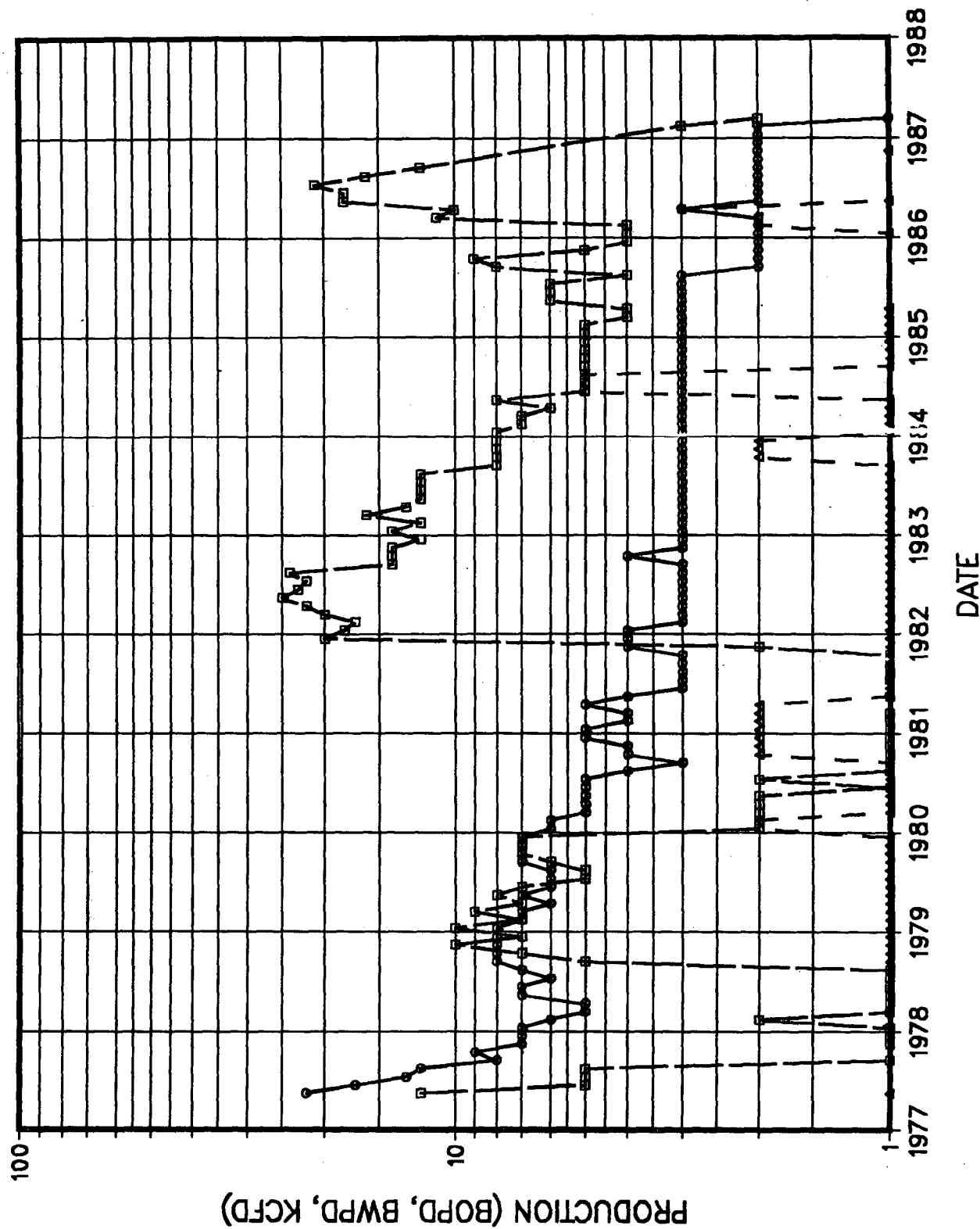
915/688-7627

Telephone No.

NEW MEXICO S STATE -- WELL 36
 FIELD 3306 LEASE 61960
 RESERVOIR 575 -- WANTZ ABO



NEW MEXICO S STATE - WELL 36
 FIELD 3306 LEASE 61960
 RESERVOIR 950 - WANTZ GRANITE WASH



Wellbore Sketch

Date: 4/10/90

Lease, Well: New Mexico "S" State #36

Elev. 3369', _____

above _____

H2S 0 PPM

Field: BDT

Field Supt: Glyn Pace

Tubing Size 2 3/8 Grade _____

Bottom Hole Arrangement

CURRENT
WELLBORE
CONFIGURATION

1176' - 10 3/4" csg Well history:

6579' - Baker model "K" dual per

6656' - 58', 6682 - 85
6698' - 670', 6735 - 41' Abo
6746' - 63', 6772' - 91' (flow)

6830' - 42', 6854 - 66'
6875' - 90', 6901 - 18'

7141' - Baker per of on-off tool

7200' - 14', 7225 - 27' (Granite
7233' - 34', 7251' - 54' Wash
7270' - 76', 7320' - 40' (pump)
7345' - 61'

7545' - 7" csg

TOC

PBO - 7530'

T.D. 7600

5/77 - OAC dual comp. in Abo & Granite Wash
Perf. Abo.
Frac'd Wantz ABO w/ 24,000 gal
polymer solution, 24,000 gal gelled
20% HCl acid.

IP'd - 114 BOPD, 475 KCFD, 44 BOPD
Perf. Granite Wash

Acidize Granite Wash w/ 200 gal
15% HCl, Frac'd G/W w/ 20,000 gal
gel oil \$23,000 # 20/40 sand
G/W IP'd - 39 BOPD, 53 KCFD
1 BOPD

WANTZ ABO - FLOWING

GRANITEWASH - PUMPING

Wellbore Sketch

Date: 4/19/90

Lease, Well: NEW MEXICO "S" STATE #36

Elev. 3369',
above _____

Field: BDT

Field Supt: McBEE

H2S 0 PPM

Tubing Size 2 3/8" Grade _____

AFTER COMMINGLING
WELLBORE
CONFIGURATION

Bottom Hole Arrangement

10 3/4" @ 1176' Well history:

5/77 D+C DUAL COMP

PERF ABO

Frac w/ 24,000 gals. poly mulsion
+ 24,000 gals. gelled 20% HCL
IP = 114 BOPD, 475 MCFPD, 49 BWPD

6656' - 7150'

PERF GRANITE WASH

Acidize w/ 2200 gals. 15% HCL
Frac w/ 20,000 gals. gelled oil
+ 23,000 # 20/40 sand
IP = 39 BOPD, 53 MCFPD, 1 BWPD

WANTZ ABO

TOC

7200' - 7361'

GRANITE WASH

7" @ 7595'

TD @ 7600'

PBTD @ 7530'



CONSERVATION DIVISION
RECEIVED
90 SEP 13 AM 9 30

ENERGY

AND

STATE OF NEW MEXICO
MINERALS DEPARTMENT

OIL CONSERVATION DIVISION
HOBBS DISTRICT OFFICE

9-7-90

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 X _____
NSL _____
NSP _____
SWD _____
WFX _____
PMX _____

Gentlemen:

I have examined the application for the:

Exxon Corp. New Mexico State # 36-B 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