Marathon Oil Company

August 18, 1992

OIL CONSERVATION DIVISION

P.O. Box 552

Midland, TX 79702-0552 Telephone 915/682-1624 9 9 9 24

ELEASE 11:30.92

Mr. Michael E. Stogner Energy, Minerals and Natural Resources Department Oil Conservation Division P. O. Box 2088 87501 Santa Fe, New Mexico

RE: Request for Permit to Downhole Commingle Warn State A/C 2 No. 9 Section 6, T-18-S, R-35-E Abo Reef/Drinkard Lea County, New Mexico

Dear Mr. Stogner,

Marathon Oil Company respectfully requests Administration Approval for Downhole Commingling of Production from the Abo Reef and the Drinkard Pools in the subject The above referenced well is currently producing from the Abo Reef formation and it is estimated to have a BHP of 300 psi using fluid level measurements. The well has a cumulative production of 389 MBO.

A drill stem test conducted in 1962 recorded a final shut-in pressure of 710 psi for the Drinkard zone in the Texaco State of New Mexico "R" (NCT-4) No.2 well. This corresponding zone in the Warn State A/C 2 No. 9 is below 450 psi due to depletion of the Drinkard reservoir by offset operators. This is evident by the Texaco State of New Mexico "R" (NCT-4) Well Nos. 1 and 2 which produced from January, 1962 to 1965. Based on the historic performance in the are as demonstrated by these wells, we believe crossflow between the two zones will not occur. These wells are currently uneconomic in the Drinkard due to depletion indicating a significant reduction in BHP.

All ownership (WI, Royalty, and ORRI) in the wellbore is the same. As required, additional information is attached and all offset operators are being notified by copy of this application. In summary, Marathon feels that as a prudent operator, we can effectively downhole commingle the Abo Reef and Drinkard; and maximize production by doing so. We look forward to your approval of this application.

Steven P. Guidry

Production Superintendent

ATTACHMENT NO. 1

REQUEST FOR COMMINGLE PERMIT

WARN STATE A/C 2 NO. 9
ABO REEF, DRINKARD FORMATIONS
LEA COUNTY, NEW MEXICO

Reference: Section C-2 Rule 303

- A. Marathon Oil Company
 P. O. Box 552
 Midland, Texas 797902
- B. Warn State A/C 2 No. 9 Unit M, 913' FWL and 330' FSL Section 6, T-18-S, R-35-E Lea County, New Mexico (See Attachment No. 2 Form C-103)
- C. Plat of area can be seen on Attachments 3A and 3B.
- D. Form C-116 for Abo Reef Completion (Attachment 5).
- E. Well was spudded 4/22/62. Perforated from 8,541'-8,606' and treated w/1,500 gals acid; well flowed 337 BOPD. 6/71 perforated 8,636'-8,702' and treated w/2,000 gal acid. Perforated 8,423'-8,524' and treated with 5,000 gal acid. (8/85) Treated perforations with 4,000 gals 15% NEFE acid. (11/90) Acidized 8,636'-8,683', 8,541'-8,608', and 8,423'-8,524' w/15% HCL (Attachments 6). Attachment 7 identifies offset decline in the Drinkard Pool.
- F. Bottomhole pressure for the Abo Reef was estimated from recent pressure tests. Bottomhole pressure for the Drinkard estimated from 1962 offset DST and taking into account depletion due to offset production.

Abo Reef - 300 psi Drinkard - 350-500 psi

- G. Fluid data from referenced well as well as offset has been analyzed and no incompatibilities exist.
- H. Analysis of the produced fluid indicates no reduction in value from commingling.
- I. Estimated production assuming 57% contribution for the Drinkard based on offset initial production history.

| ZONE | OIL (BOPD) | (%) (%) | GAS (MCFGPD) | GAS (%) | WATER (BWPD) |
|----------------------|---------------|------------|-----------------|------------|-----------------|
| Drinkard (Estimated) | 17 | 57 | 5 | 13 | 0 |
| ABO Reef | 13 | 43 | 35 | 87 | 9 |

J. By copy of this letter via certified mail, we are notifying all offset operators of the proposed commingling.

Energy, Minerals and Natural Resources Department

Form C-103

DISTRICT I P.O. Box 1980, Hobbs, NM 88240

Submit 3 Copies

to Appropriate District Office

P.O. Box 2088

Revised 1-1-89

DISTRICT II P.O. Drawer DD, Artesia, NM 88210

DISTRICTII

OIL CONSERVATION DIVISION

WELL API NO. Santa Fe, New Mexico 87504-2088

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: 5. indicate Type of I STATE FEE L

| 1000 Rio Brazos Rd., Aziec, NM 87410 | | | | | | 6. State Oil & Gas Lease No. | | | |
|---|--|------------------------------------|-----------|---------------------------------------|------------|----------------------------------|-----------|--|--|
| SUNDRY NOTICES AND REPORTS ON WELLS | | | | | | | | | |
| | (DO NOT USE THIS FORM FOR PROPOSALS TO DRILL OR TO DEEPEN OR PLUG BACK TO A DIFFERENT RESERVOIR. USE "APPLICATION FOR PERMIT" (FORM C-101) FOR SUCH PROPOSALS.) | | | | | | 8 | | |
| 1. Type of Well: OIL WELL X | GAS | OTHER. | | | N | Jarn State A/C 2 | | | |
| 2. Name of Operator | | | | | 8. Well | • | | | |
| Marathon Oil Address of Operator | Company | | | | 9 Provi | 9 same or Wildow | | | |
| P. O. Box 552 | Midland | Texas 79702 | | | ; | Reef/Drinkard | | | |
| 4. Well Location | , muana, | Texas ///02 | | · · · · · · · · · · · · · · · · · · · | 1100 | Recifbilinala | | | |
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| Section | 6 | Township 18-S | | | NMPM | Lea | County | | |
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| | | | | | | | | | |
| 11. | | appropriate Box to Inc | licate l | Nature of Notice, R | leport, o | r Other Data | | | |
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| PERFORM REMEDIAL | WORK 🗌 | PLUG AND ABANDON | | REMEDIAL WORK | | ALTERING CASIN | G | | |
| TEMPORARILY ABAND | XON | CHANGE PLANS | | COMMENCE DRILLING | G OPNS. | PLUG AND ABANE | COMMENT [| | |
| PULL OR ALTER CASI | NG 🗌 | | | CASING TEST AND C | EMENT JO | | | | |
| OTHER: Down | hole Commin | gle | X | OTHER: | | | | | |
| | | | | | | | | | |
| 12. Describe Proposed on work) SEE RULE 11 | | ons (Clearly state all pertinent i | م ,دانمهه | nd give partinent dates, incli | ding exima | ned date of starting any propose | d | | |
| HOTH GEE ROLLS I | 100 | | | | | | | | |

Request authorization to downhole commingle the Abo Reef and the Drinkard Zones.

| APPROVED BY | TITLE DATE | |
|--|---------------------------------|----|
| (This space for State Use) | | |
| TYPEOR FUETTHAME Steven P. Guidry | TELEPHONE NO. | |
| I hereby certify that the sefections allows in true and complete to the best of my | Production Superintendent 8/2// | 19 |
| | | |

Submit to Appropriate District Office State Lease - 4 copies Fee Lease - 3 copies

ATTACHMENT NO. 3A State of New Mexico Energy, Minerals and Natural Resources Department

Form C-102 Revised 1-1-89

DISTRICT I P.O. BOX 1980, Hobbs, NM 88240

OIL CONSERVATION DIVISION

P.O. Box 2088

Santa Fe, New Mexico 87504-2088

DISTRICT II P.O. Drawer DD, Arlesia, NM 88210

DISTRICT III
1000 Rio Brazos Rd., Azzec, NM 87410

WELL LOCATION AND ACREAGE DEDICATION PLAT

| Mart State A/C 2 9 Later Sensor Township M 6 18-S 35-E NMPM Lea 18-S 35-E NMPM Lea 18-S 18-S NMPM Lea 19-S | AU KIO BREZOS KE., | rezec, run ora | All Distar | nces must be in | om the outer | Doundanes | of the section | | | |
|--|--|---|--|--------------------|----------------|------------------|---|--|--|--|
| Section Township Range Soliday Lea | perator | | | | est. | | | | Well No. | |
| M 6 18-S 35-E NMPM Lea all Postage Location of Well: 330 | Marathon | Oil Compa | any | | Warn | State A, | /C 2 | | 9 | |
| all Focusps Leading of West Inne and 914.3 (eat from the West Inne and 914.3 Adv Reef Adv Acre Adv Adv Acre Adv Adv Acre Adv Adv Acre Adv Adv | it Letter | Section | | 1 | Lange | | | Count | у | |
| all records because of Wells feet from the South ine and 914.3' feet from the West into Dedicated Actings: 3,979' Abo Reef Abo Reef Abo Reef Ado Act 1. Outline the acresses dedicated to the subject well by concern pencil or hadrour marks on the plan below. 2. If more than one leads of different connections is dedicated to the well, outline each and identify the ownership thereof footh as to working interest and royalty). 3. If more than one leads of different connections is dedicated to the well, have the interest of all owners been consolidated by communications, unrelations from the increases. 1. If more than one leads of different connections is dedicated to the well, have the interest of all owners been consolidated by communications, unrelations from the increases. 2. If more than one leads of different connections of the well will be accounted by the connection of the connection of the interest of all owners been consolidated by communications. 3. If more than one leads of the well until all interests have been consolidated (the reverse acts of interest, has been approved by the Division. OPERATOR CERTIFICATE Accordance Supervised Name Production Superinter Prostod Name Production Superinter Prostod Name Production Superinter To correct to the best of my innerest in record of professional Surveyor. Supervised Seal of Professional Surveyor. | M | 6 | 18 - S | : | 35 | -E | NM | PM | Lea | |
| Abo Reef Abo Reef Abo Reef Ado Reef Ado Reef Acres | | on of Well: | | | | | | | | |
| 3,979 | 330 ' | feet from the | South | line and | 914 | .3' | _feet fr | om the | West li ne | |
| 1. Outline the screege dedicated to the subject well by colored pencil or hardson marks on the pint 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 interest of all owners been consolidated by communication, immunication, from-pointing, force—pointing, force—pointing which have actually been consolidated. (Use reverse and or of the form of necessary.) No altered by will be sampled to the well used all interests have been consolidated thy communication, untilitation, forced-pooling, or otherwise) or until a non-danderd unit, eliminating such interest, has been approved by the Division. OPERATIOR CERTIFICATION OPERATION CERTIFICATION Superinter Sec. 6 Surveyor distiply that the well location of the plan was plotted from field at actual plan was plotted from field from fi | aund level Elev. | | icing Formation | 1.1 | Pool | | | | Dedicated Acres | te: |
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ATTACHMENT NO. 3B State of New Mexico

Energy, Minerals and Natural Resources Department

Form C-102 Revised 1-1-89

Submit to Appropriate District Office State Lease - 4 copies Fee Lease - 3 copies

DISTRICT | P.O. Box 1980, Hobbs, NM 88240

OIL CONSERVATION DIVISION

P.O. Box 2088

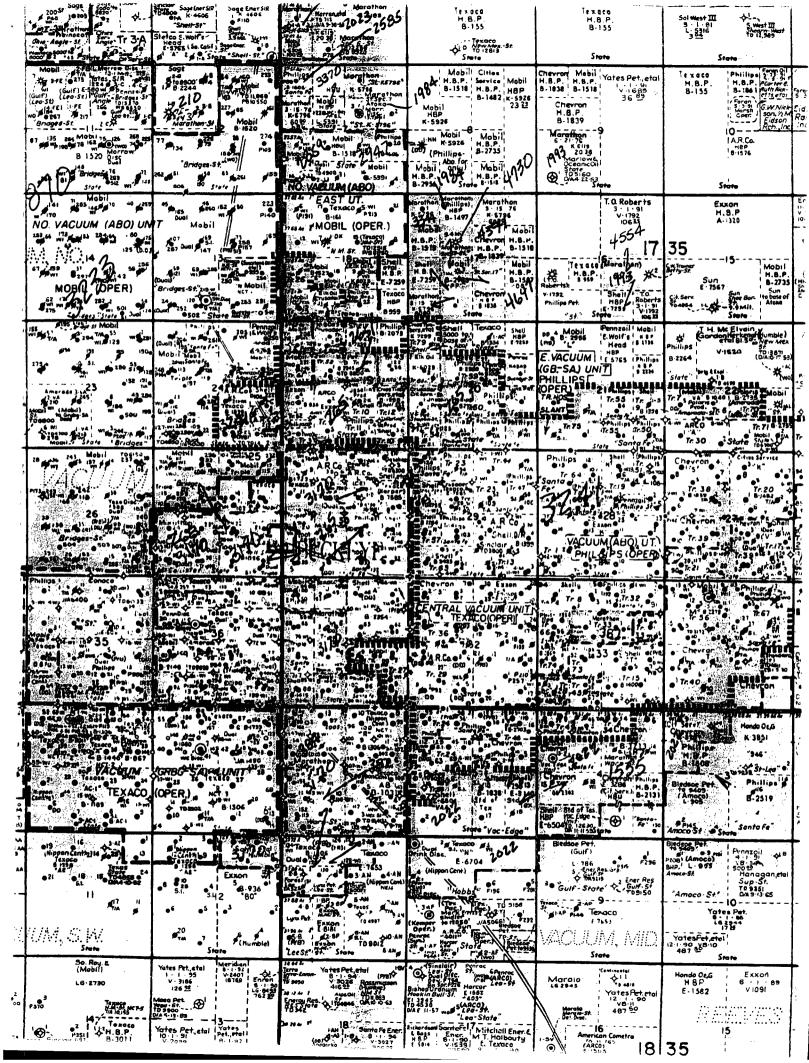
Santa Fe, New Mexico 87504-2088

DISTRICT II P.O. Drawer DD, Artesia, NM 88210

DISTRICT III
1000 Rio Brazos Rd., Aziec, NM 87410

WELL LOCATION AND ACREAGE DEDICATION PLAT

| water | | | Lease | | · | Well No. |
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| Marathon | Oil Compan | | Rang | Warn State A | A/C 2 | ; 9 |
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District Office. Submit 2 copies to Appropriate P.O. Box 1980, Hobbs, NM 88240 DISTRICT

P.O. Drawer DD, Artesia, NM 88210

DISTRICT

DISTRICT III

1000 Rio Brazos Rd., Aziec, NM 87410

ATTACHMENT NO. 5
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

| Instructions: | | Warn State A/C 2 | LEASE NAME | | nd, | Marathon Oil Company | Operator |
|--|---|------------------|----------------|-------------------|------------|----------------------|----------|
| | | 9 | <u>₹</u> | WELL | Texas | | |
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| I hereby certify that the above information i complete to the best of my knowledge and belief. | | 13 | STER OIL | NG TEST | 1 & | Lea | |
| mation nd belief | | 45 | MCF. | | Special | ! | |
| is true and f. | | 3,462 | CU FT/BBL | GAS - OIL | | | |

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

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

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

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

Telephone No.

