

DHC-1166

**MERIDIAN OIL**

OIL CONSERVATION DIVISION  
RECEIVED

195 SEP 26 AM 8 52  
August 14, 1995

S G Interest  
811 Dallas  
Suite 1505  
Houston, Texas 77002

RE: Sharp #5  
Unit N, Section 18, T28N, R08W  
San Juan County, New Mexico  
Downhole Commingling Request

Gentlemen:

Meridian Oil Inc. is in the process of applying for a downhole commingling order from the New Mexico Oil Conservation Division (NMOCD) for the referenced well located in San Juan County, New Mexico. The approved application will commingle the Aztec Pictured Cliffs and the Basin Fruitland Coal fields.

The purpose of this letter is to notify you of Meridian's application. If you have no objections to the NMOCD issuing a commingling order, we would appreciate your signing this letter and returning the original to Mr. LeMay at the following address with a copy to this office:

New Mexico Oil Conservation Division  
Mr. William LeMay  
P.O. Box 2088  
Santa Fe, New Mexico 87501

Your prompt attention to this matter would be appreciated.

Sincerely,

*Sean Woolverton*  
Sean C. Woolverton  
Production Engineer

SCW/t dj

**The undersigned hereby waives objection to the referenced  
Downhole Commingling Request.**

Company/Owner: Gay S. Weber, S.G. Interests 1

Title: J.P.

Date: 8/20/95

MERIDIAN OIL

OIL CONSERVATION DIVISION  
RECEIVED'95 DEC 30 AM 8 52  
August 14, 1995Alladin Petroleum Corporation  
809 Petroleum Building  
Wichita, Kansas 67202RE: Sharp #5  
Unit N, Section 18, T28N, R08W  
San Juan County, New Mexico  
Downhole Commingling Request

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Santa Fe, New Mexico 87501

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Sincerely,



Sean C. Woolverton  
Production Engineer

SCW/tdj

**The undersigned hereby waives objection to the referenced  
Downhole Commingling Request.**

Company/Owner: Aladdin Petroleum Corp.

Title: Amy F. Gensel, President

Date: 10/12/95

DHC 10-16-95

# MERIDIAN OIL

OIL CONSERVATION DIVISION  
RECEIVED

August 14, 1995  
1995 SEP 27 AM 8 52

New Mexico Oil Conservation Division  
Attn: Mr. William LeMay  
P. O. Box 2088  
310 Old Santa Fe Trail  
Santa Fe, New Mexico 87501

RE: Sharp #5  
Unit N, Section 18, T28N, R08W  
San Juan County, New Mexico  
Downhole Commingling Request

Dear Mr. LeMay:

Meridian Oil Inc. is applying for an administrative downhole commingling order for the referenced well in the Aztec Pictured Cliffs and the Basin Fruitland Coal fields. The ownership of the zones to be commingled is common. The offset operators to this well are Alladin Petroleum Corporation, W. H. Gilmore, West Largo Corporation, Amoco Production Company, S G Interest and Conoco, Inc. The Bureau of Land Management and the above mentioned operators have received notification of this downhole commingle.

The proposed project will recomplete the Fruitland Coal formation in the existing Pictured Cliffs wellbore. Fruitland Coal production will then be commingled with established Pictured Cliffs production. The estimated reserves associated with the Fruitland Coal in this drill block do not economically justify a new drill at this location. The only way to recover Fruitland Coal reserves in this drill block is to downhole commingle Fruitland Coal production with Pictured Cliff production.

It is proposed to set a bridge plug above the Pictured Cliffs, perforate and stimulate the Fruitland Coal, and test its production. The bridge plug will then be removed, and both zones produced through a single string of tubing. The reservoir characteristics of each of the subject zones are such that underground waste will not be caused by the proposed commingling. Neither producing interval makes oil, and only minimal amounts of similar water are produced in the offset wells. The shut-in pressures for the Pictured Cliffs and Fruitland Coal are 225 and 400 psi, respectively.

The allocation of the commingled production will be calculated using the attached allocation formula. This formula is based on historical production performance of the Sharp #5, and uses accepted Reservoir Engineering methods to allocate the Pictured Cliffs reserves. This addresses the Fruitland Coal producing characteristics of early life inclining production rates.

New Mexico Oil Conservation Division  
Mr. William LeMay  
Sharp #5  
Downhole Commingling Request  
Page Two

Approval of this commingling application will allow for the prevention of wasted resources and protection of correlative rights. Precedent for commingling the referenced intervals in this area has been established in the Hardie D #3 (Unit M, Section 14, T28N, R08W) per NMOCD Administrative Order #DHC-827, dated October 28, 1991. Included with this letter are plats showing ownership of offsetting leases for both the Pictured Cliffs and Fruitland Coal, a copy of letters to the BLM and offset operators, an allocation formula, and Production History Curve for the Sharp #5 (PC).

Sincerely,

  
Sean C. Woolverton  
Production Engineer

SCW:tdj

Attachments

cc: Frank T. Chavez - NMOCD/Aztec  
Bureau of Land Management - Farmington  
MOI Regulatory Agent/P. Bradfield  
Well File  
FTC Team File

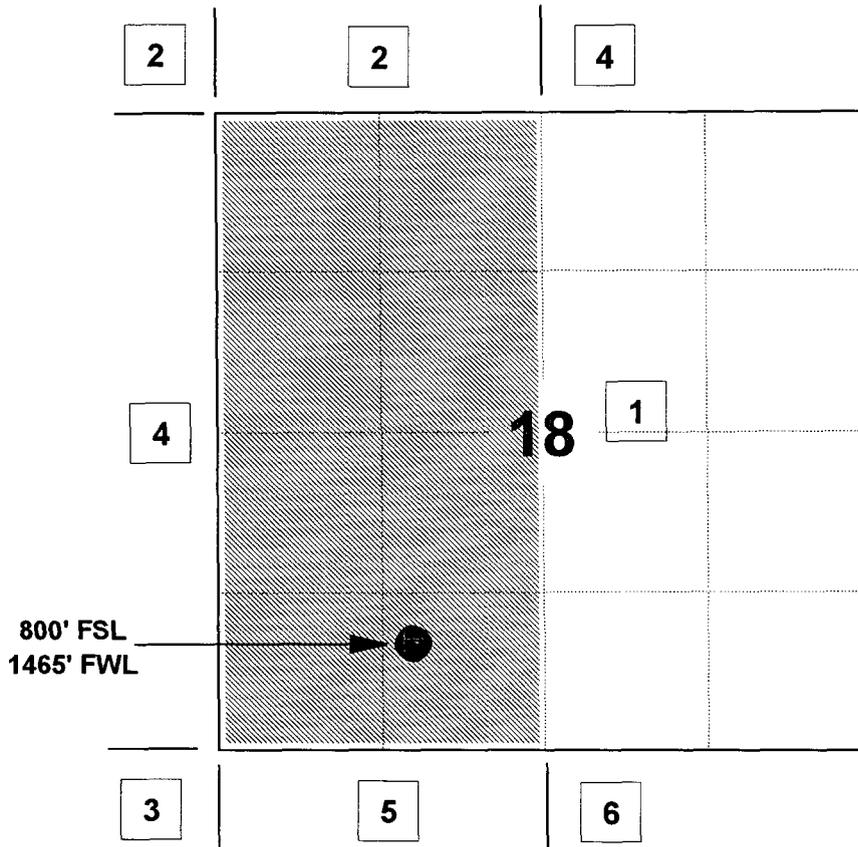
# MERIDIAN OIL INC

## SHARP #5

### OFFSET OPERATOR \ OWNER PLAT

#### Fruitland Coal / Pictured Cliffs Formations Commingle Well

Township 28 North, Range 8 West



- |   |   |
|---|---|
| 1) Meridian Oil Inc                               |   |
| 2) Meridian Oil Inc., Southland Royalty Company & |   |
| Alladin Petroleum Corp.                           | 809 Petroleum Building, Wichita, KS 67202         |
| W H Gilmore                                       | 403 North Marienfield St, Midland, TX 79701       |
| West Largo Corp                                   | 6638 W Ottawa Ave, Suite 100, Littleton, CO 80123 |
| 3) Amoco Production Company                       | PO Box 800, Denver, CO 80201                      |
| 4) West Largo Corp                                |   |
| 5) S G Interest                                   | 811 Dallas, Suite 1505, Houston, TX 77002         |
| 6) Amoco Production Company &                     |   |
| Conoco, Inc.                                      | 10 Desta Drive, Suite 100W, Midland, TX 79705     |

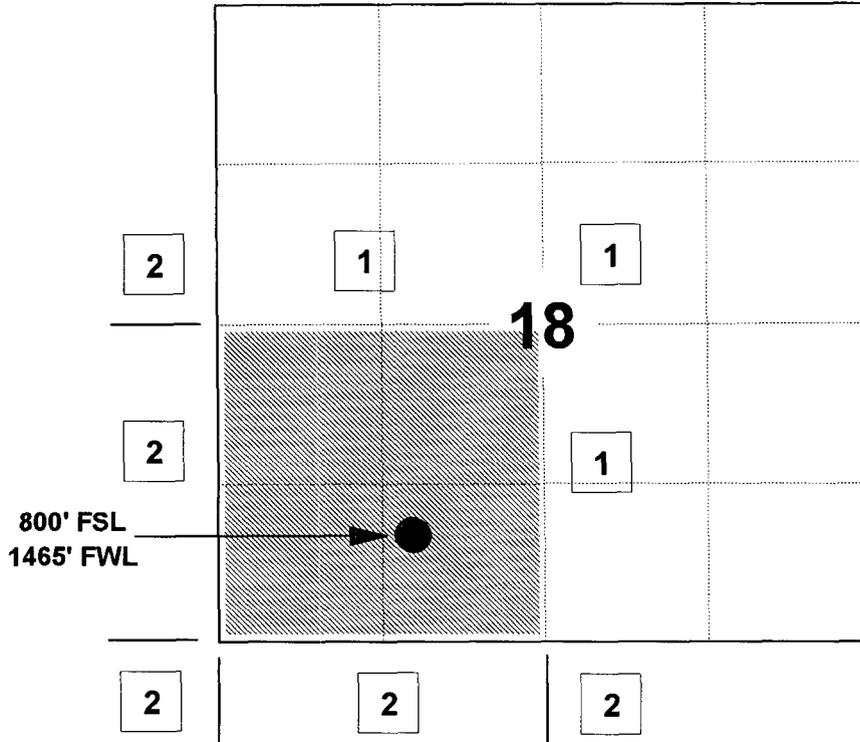
# MERIDIAN OIL INC

## SHARP #5

OFFSET OPERATOR \ OWNER PLAT

Fruitland Coal / Pictured Cliffs Formations Commingle Well

Township 28 North, Range 8 West



1) Meridian Oil Inc

2) Amoco Production Company

PO Box 800, Denver, CO 80201

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## EXHIBIT "A"

### SHARP #5 MONTHLY GAS PRODUCTION ALLOCATION FORMULA

#### GENERAL EQUATION

$$Q_t = Q_{ftc} + Q_{pc}$$

WHERE:  $Q_t$  = TOTAL MONTHLY PRODUCTION (MCF/MONTH)  
 $Q_{ftc}$  = FRUITLAND COAL (ftc) MONTHLY PRODUCTION  
 $Q_{pc}$  = PICTURED CLIFFS (pc) MONTHLY PRODUCTION (MCF/MONTH)

REARRANGING THE EQUATION TO SOLVE FOR  $Q_{ftc}$ :

$$Q_{ftc} = Q_t - Q_{pc}$$

ANY PRODUCTION RATE OVER WHAT IS CALCULATED FOR THE PICTURED CLIFFS (PC) USING THE APPLIED FORMULA IS FRUITLAND COAL (FTC) PRODUCTION.

PICTURED CLIFFS (PC) FORMATION PRODUCTION FORMULA IS:

$$Q_{pc} = Q_{pci} \times e^{-\{D_{pc} \times (t)\}}$$

WHERE:  $Q_{pci}$  = INITIAL PC MONTHLY FLOW RATE (OBTAINED FROM SHARP #5 PRODUCTION HISTORY)  
 $D_{pc}$  = PICTURED CLIFFS MONTHLY DECLINE RATE CALCULATED FROM:  
 $D_{pc} = (Q_{pci} - Q_{pcabd}) / N_{p(pc)}$   
See Determination of  $Q_{pci}$  and PC Estimated Ultimate Recovery ( $N_{p(pc)}$ )  
 $Q_{pci} = 4075$  MCF/M;  $Q_{pcabd} = 300$  MCF/M;  $N_{p(pc)} = 1336$  MMCF

WHERE:  $N_{p(pc)}$  = PICTURED CLIFFS ESTIMATED REMAINING RESERVES (EUR)  
 $N_{p(pc)}$  = DETERMINED FROM PRODUCTION PERFORMANCE (DECLINE CURVE ANALYSIS) (REMAINING RESERVES = 1336 MMCF).

FRUITLAND COAL (FTC) FORMATION PRODUCTION FORMULA IS:

$$Q_{ftc} = Q_t - Q_{pci} \times e^{-\{D_{pc} \times (t)\}}$$

WHERE: (t) IS IN MONTHS

REFERENCE: Thompson, R. S., and Wright, J. D., "Oil Property Evaluation", pages 5-2, 5-3, 5-4.

# SHARP #5

DETERMINATION OF:

(a)  $Q_{pci}$   
(b)  $D_{pc}$

INITIAL PC MONTHLY FLOW RATE  
PC MONTHLY DECLINE RATE

## (a) DETERMINATION OF $Q_{pci}$

ATTACHED IS A COPY OF THE PICTURED CLIFFS PRODUCTION HISTORY FOR THE SHARP #5. THE EXPECTED INITIAL PRODUCTION FOR THE PICTURED CLIFFS ESTIMATED FROM THIS PLOT IS 3650 MCF/M.

$$\underline{Q_{pci} = 4,075 \text{ MCF/M}}$$

## (b) DETERMINATION OF $D_{pc}$

$$D_{pc} = (Q_{pci} - Q_{pcabd})/N_p(pc)$$

$$Q_{pcabd} = 300 \text{ MCF/M}$$
$$N_p(pc) = 1335.9 \text{ MMCF}$$

$$D_{pc} = (4,075 \text{ MCF/M} - 300 \text{ MCF/M}) / (1,335,900 \text{ MCF})$$

$$\underline{D_{pc} = 0.0028/M}$$

$$\underline{\text{THUS: } Q_{ftc} = Q_t(\text{MCF/M}) - 4,075(\text{MCF/M}) \times e^{\{-0.0028(1/M)\}} \times t(M)}$$

SHARP : 5 : 44714A-1

\* GAS : 10000  
 \* OIL : 1000  
 \* OIL/GAS : 1000  
 \* WATER : 10000

10000  
 1000  
 1000  
 10000

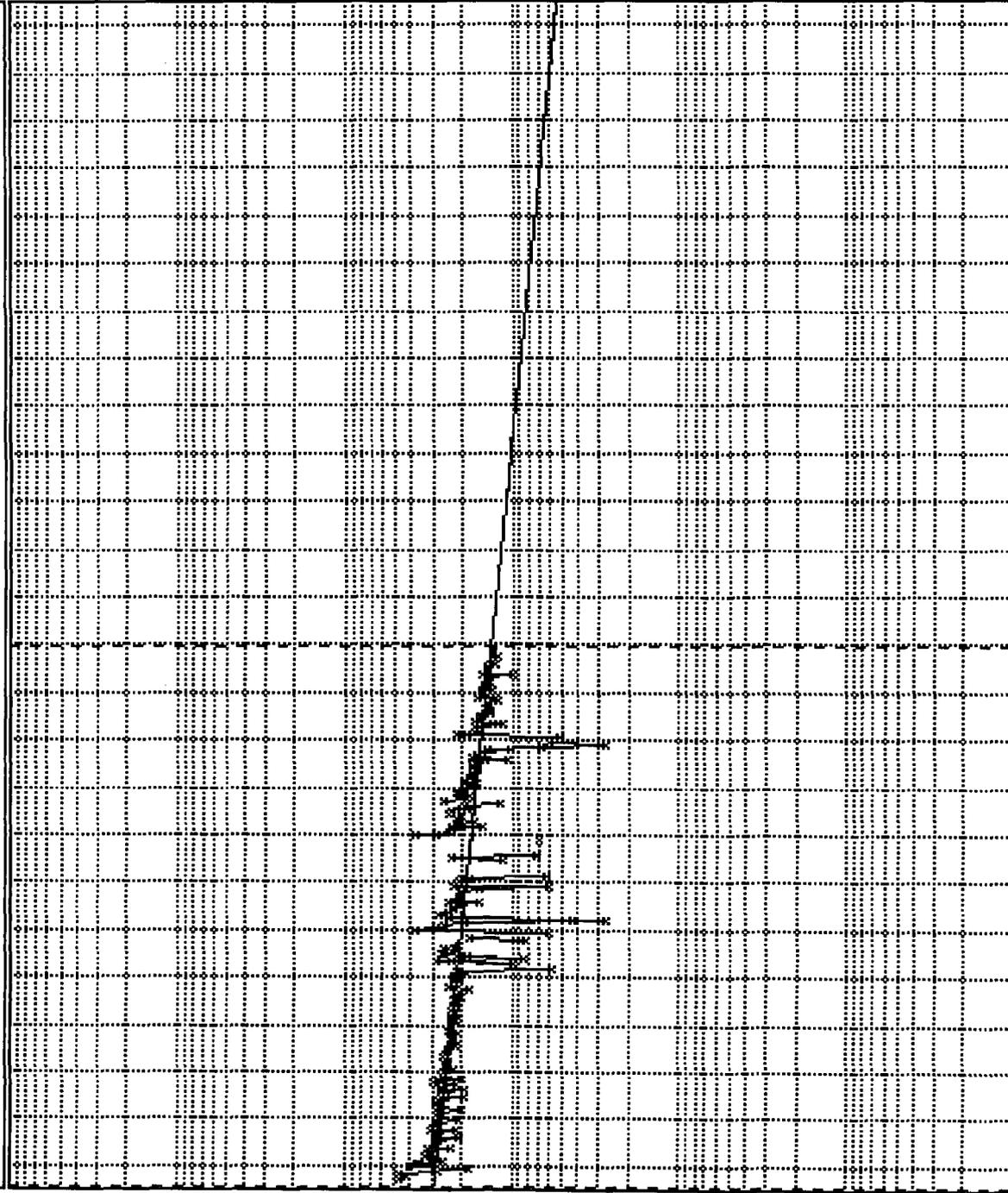
1000  
 100  
 100  
 1000

100  
 10  
 10  
 100

10  
 1  
 1  
 10

1  
 1.0  
 1.0  
 1

1.0  
 10.0  
 10.0  
 0.0



RateTime  
 Semi Log

EUR 2,865,860

Cum 1,529,885

Rem 1,335,975

Rem% 46.6%

Yrs 77

Date 1/1/1996

Act 0

Qmo 4,128

Q 133.7

n 0

De 3.327

Qab 10

GetQual 96PDP

74 76 78 80 82 84 86 88 90 92 94 96 98 00 02 04 06 08 10 12 14 16 18 20 22

Major = GAS

Prop 7052 \*

- \* GAS Mcf/d
- \* OIL Bbl/d
- \* OIL/GAS
- \* WATER Bbls/d

# MERIDIAN OIL

August 14, 1995

Bureau of Land Management  
1235 La Plata Highway  
Farmington, New Mexico 87401

RE: Sharp #5  
Unit N, Section 18, T28N, R08W  
San Juan County, New Mexico  
Downhole Commingling Request

Gentlemen:

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The purpose of this letter is to notify you of Meridian's application. If you have no objections to the NMOCD issuing a commingling order, we would appreciate your signing this letter and returning the original to Mr. LeMay at the following address with a copy to this office:

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Mr. William LeMay  
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Santa Fe, New Mexico 87501

Your prompt attention to this matter would be appreciated.

Sincerely,



Sean C. Woolverton  
Production Engineer

SCW/tdj

**The undersigned hereby waives objection to the referenced  
Downhole Commingling Request.**

**Company/Owner:** \_\_\_\_\_

**Title:** \_\_\_\_\_

**Date:** \_\_\_\_\_

# MERIDIAN OIL

August 14, 1995

Alladin Petroleum Corporation  
809 Petroleum Building  
Wichita, Kansas 67202

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San Juan County, New Mexico  
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**Title:** \_\_\_\_\_

**Date:** \_\_\_\_\_

# MERIDIAN OIL

August 14, 1995

W. H. Gilmore  
403 North Marienfield Street  
Midland, Texas 79701

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**Title:** \_\_\_\_\_

**Date:** \_\_\_\_\_

# MERIDIAN OIL

August 14, 1995

West Largo Corporation  
6638 W Ottawa Avenue  
Suite 100  
Littleton, Colorado 80123

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**Title:** \_\_\_\_\_

**Date:** \_\_\_\_\_

# MERIDIAN OIL

August 14, 1995

Amoco Production Company  
P.O. Box 800  
Denver, Colorado 80201

RE: Sharp #5  
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San Juan County, New Mexico  
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811 Dallas  
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**Company/Owner:** \_\_\_\_\_

**Title:** \_\_\_\_\_

**Date:** \_\_\_\_\_

# MERIDIAN OIL

August 14, 1995

Conoco, Inc.  
10 Desta Drive  
Suite 100W  
Midland, Texas 79705

RE: Sharp #5  
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San Juan County, New Mexico  
Downhole Commingling Request

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Production Engineer

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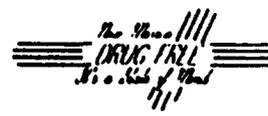
**Company/Owner:** \_\_\_\_\_

**Title:** \_\_\_\_\_

**Date:** \_\_\_\_\_



DHC-1166



STATE OF NEW MEXICO  
ENERGY, MINERALS and NATURAL RESOURCES DIVISION  
OIL CONSERVATION DIVISION  
OIL CONSERVATION DIVISION RECEIVED  
AZTEC DISTRICT OFFICE

BRUCE KING  
GOVERNOR

ANITA LOCKWOOD  
CABINET SECRETARY

195 SEP 22 AM 8 52

1000 RIO BRAZOS ROAD  
AZTEC, NEW MEXICO 87410  
(505) 334-6178

Date: 9/21/95

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

RE: Proposed MC _____	Proposed DHC <u>  X  </u> _____
Proposed NSL _____	Proposed SWD _____
Proposed WFX _____	Proposed PMX _____
Proposed NSP _____	Proposed DD _____

Gentlemen:

I have examined the application received on 9/15/95  
for the Meridian Lease #5  
OPERATOR LEASE & WELL NO.

N-18-28N-8W and my recommendations are as follows:  
UL-S-T-R

Approve  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Yours truly,  
[Signature]