

**MERIDIAN**  **OIL**

CASE # 10699

APRIL 8, 1993

KELLAHIN AND KELLAHIN

ATTORNEYS AT LAW

EL PATIO BUILDING

117 NORTH GUADALUPE

POST OFFICE BOX 2265

SANTA FE, NEW MEXICO 87504-2265

W. THOMAS KELLAHIN\*

\*NEW MEXICO BOARD OF LEGAL SPECIALIZATION  
RECOGNIZED SPECIALIST IN THE AREA OF  
NATURAL RESOURCES-OIL AND GAS LAW

TELEPHONE (505) 982-4285

TELEFAX (505) 982-2047

JASON KELLAHIN (RETIRED 1991)

March 15, 1993

Mr. William J. LeMay  
Oil Conservation Division  
State Land Office Building  
310 Old Santa Fe Trail, Room 219  
Santa Fe, New Mexico 87501

HAND DELIVERED

RE: Application of Meridian Oil, Inc.  
for a Non-Standard Spacing Unit  
and Downhole Commingling,  
San Juan County, New Mexico  
San Juan 29-7 Unit #583 Well

Dear Mr. LeMay:

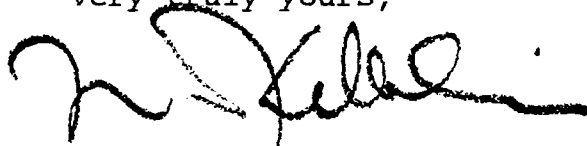
On behalf of Meridian Oil, Inc. please find enclosed our Application for a non-standard spacing unit and downhole commingling as referenced above, which we request be set for hearing on the next available Examiner's docket now scheduled for April 8, 1993.

By copy of this letter and application, sent certified mail-return receipt requested, we are notifying all interested parties offsetting the subject well and its proposed spacing and proration unit of their right to appear at the hearing and participate in this case, including the right to present evidence either in support of or in opposition to the application and that failure to appear at the hearing may preclude them from any involvement in this case at a later date. Also, all parties entitled to notice are hereby informed that pursuant to Division requirements all parties appearing in this case are required to file a Pre-Hearing Statement with the Division no later than 4:00 p.m. on Friday, April 2, 1993.

Mr. William J. LeMay  
March 15, 1993  
Page Two

Also enclosed is our suggested advertisement for  
this case.

Very truly yours,



W. Thomas Kellahin

WTK/jcl  
Enclosures

cc: with Enclosures  
Alan Alexander - Meridian Oil Inc.

By Certified Mail - Return Receipt  
All Parties Listed on Exhibits B & C of Application

ltr315.330

**PROPOSED ADVERTISEMENT FOR THE OCD DOCKET**

**Case\_\_\_\_\_:** Application of Meridian Oil Inc. for downhole commingling and a non-standard spacing unit, San Juan County, New Mexico.

Applicant seeks approval to downhole commingle Blanco Pictured Cliffs Gas Pool and the Basin-Fruitland Coal Gas Pool production within the wellbore of its proposed San Juan 29-7 Unit #583 Well to be drilled at a standard gas well location 790 feet FWL and 1850 feet FSL of Section 6, T29N, R7W, NMPM, San Juan County, New Mexico. Said well is to be dedicated a previously approved non-standard 215.22-acre gas spacing unit for the Basin-Fruitland Coal Gas Pool being the W/2 equivalent of Section 6 and to a non-standard 110.66-acre gas spacing unit for the Blanco Pictured Cliffs Gas Pool being the SW/4 equivalent of Section 6. The well is located approximately 1 mile west from Navajo City, New Mexico.

STATE OF NEW MEXICO  
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT  
OIL CONSERVATION DIVISION

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

APPLICATION OF MERIDIAN OIL INC.  
FOR A NON-STANDARD SPACING UNIT  
AND DOWNHOLE COMMINGLING  
SAN JUAN COUNTY, NEW MEXICO.

CASE:

A P P L I C A T I O N

Comes now MERIDIAN OIL INC., ("Meridian") by and through its attorneys, Kellahin and Kellahin, and applies to the New Mexico Oil Conservation Division for approval to downhole commingle Blanco Pictured Cliffs Gas Pool and the Basin-Fruitland Coal Gas Pool production within the wellbore of its proposed San Juan 29-7 Unit #583 Well to be drilled at a standard gas well location 790 feet FWL and 1850 feet FSL of Section 6, Township 29 North, Range 7 West, NMPM, San Juan County, New Mexico. Said well is to be dedicated a previously approved non-standard 215.22-acre gas spacing unit for the Basin-Fruitland Coal Gas Pool being the W/2 equivalent of Section 6 and to a non-standard 110.66-acre gas spacing unit for the Blanco Pictured Cliffs Gas Pool being the SW/4 equivalent of said Section 6.

In support of its application, Meridian states:

(1) Meridian is the operator for the proposed San Juan 29-7 Unit #583 Well to be drilled at a standard gas well location 790 feet FWL and 1850 feet FSL of Section 6, Township 29 North, Range 7 West, NMPM, San Juan County, New Mexico as shown on Exhibit "A" attached.

(2) The Well is to be drilled so that production from the Basin-Fruitland Coal Gas Pool and the Blanco Pictured Cliffs Gas Pool can be downhole commingled in the wellbore.

(3) The W/2 equivalent of Section 6 is to be dedicated to the any production from the Basin Fruitland Coal Gas Pool. It consists of Lots 10 through 14, SE/4NW/4 and E/2SW/4 of Section 6 and contains 215.22 acres, more or less. See Exhibit "B" attached. On September 27, 1990, Division Order R-9303 approved this acreage as a non-standard unit in this pool.

(4) The SW/4 equivalent of Section 6 is to be dedicated to any production from the Blanco Pictured Cliffs Gas Pool. It consists of Lots 13 and 14 and the E/2SW/4 of Section 6 and contains 110.66 acres, more or less. See Exhibit "B" attached.

(5) The ownership is common between these two spacing units.

(6) In accordance with Division Rule 303-C-1.(b), the Applicant states and will demonstrate at hearing:

a. That drilling the San Juan 29-7 Unit #583 Well initially for downhole commingling in the wellbore is necessary because it is not otherwise economic to attempt to drill and complete a separate well for either Fruitland coal gas or Pictured Cliffs gas production nor is it economic to attempt to dually complete those formations in the proposed well.

b. That there will be no crossflow between the two zones commingled.

c. That the ownership is each of the two spacing units is common between the two pools and no impairment of correlative rights will occur.

d. It is expected that the bottom hole pressure of the lower pressure zone is not less than 50 percent of the bottom hole pressure of the higher pressure zone adjusted to a common datum.

e. That the value of the commingled production will not be less than the sum of the values of the individual production.

(7) Both the Pictured Cliffs and Fruitland Coal formations in this area of the basin should be marginally productive.

(8) Meridian has selected to drill the proposed well in the SW/4 equivalent instead of the NW/4 equivalent of Section 6 because that location appears to have a greater opportunity for a successful although marginal Fruitland formation well.

(9) In addition, the SW/4 equivalent of Section 6 is a standard location for a Fruitland Coal Gas Well while the NW/4 equivalent is an unorthodox location.

(10) Due to the nature of the Basin-Fruitland Coal Gas production, straight allocation of gas volumes from both zones is not appropriate. Meridian therefore seeks the adoption of a monthly allocation formula, to be presented at the hearing in this matter.

(11) While the downhole commingling is subject to administrative approval, the non-standard spacing unit for the Blanco Pictured Cliffs Gas Pool requires a



Application of Meridian Oil Inc.  
Page 5

hearing. Therefore, Applicant requests that both matters be docketed for hearing on the Division's Examiner docket now scheduled for April 8, 1993.

(12) In accordance with Division Rule 1207.A(6) a copy of this application has been sent to all offsetting operators as set forth on Exhibit "C."

WHEREFORE Applicant requests that this matter be set for hearing on April 8, 1993 before a duly appointed Examiner of the Oil Conservation Division and that after notice and hearing as required by law, the Division enter its order granting this application.

Respectfully submitted

A handwritten signature in black ink, appearing to read 'W. Thomas Kellahin', with a stylized flourish at the end.

W. Thomas Kellahin  
KELLAHIN and KELLAHIN  
P. O. Box 2265  
Santa Fe, New Mexico 87501  
(505) 982-4285  
Attorneys for Applicant

San Juan 29-7 Unit #583, W/2 6-29N-7W  
FR/PC Commingle & Non-Standard Proration Unit

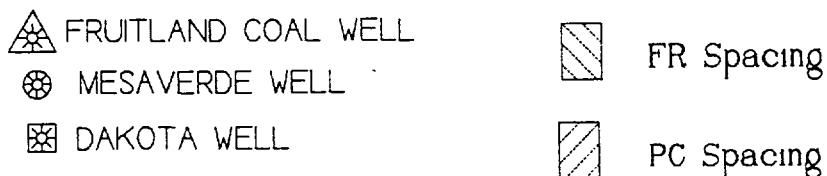
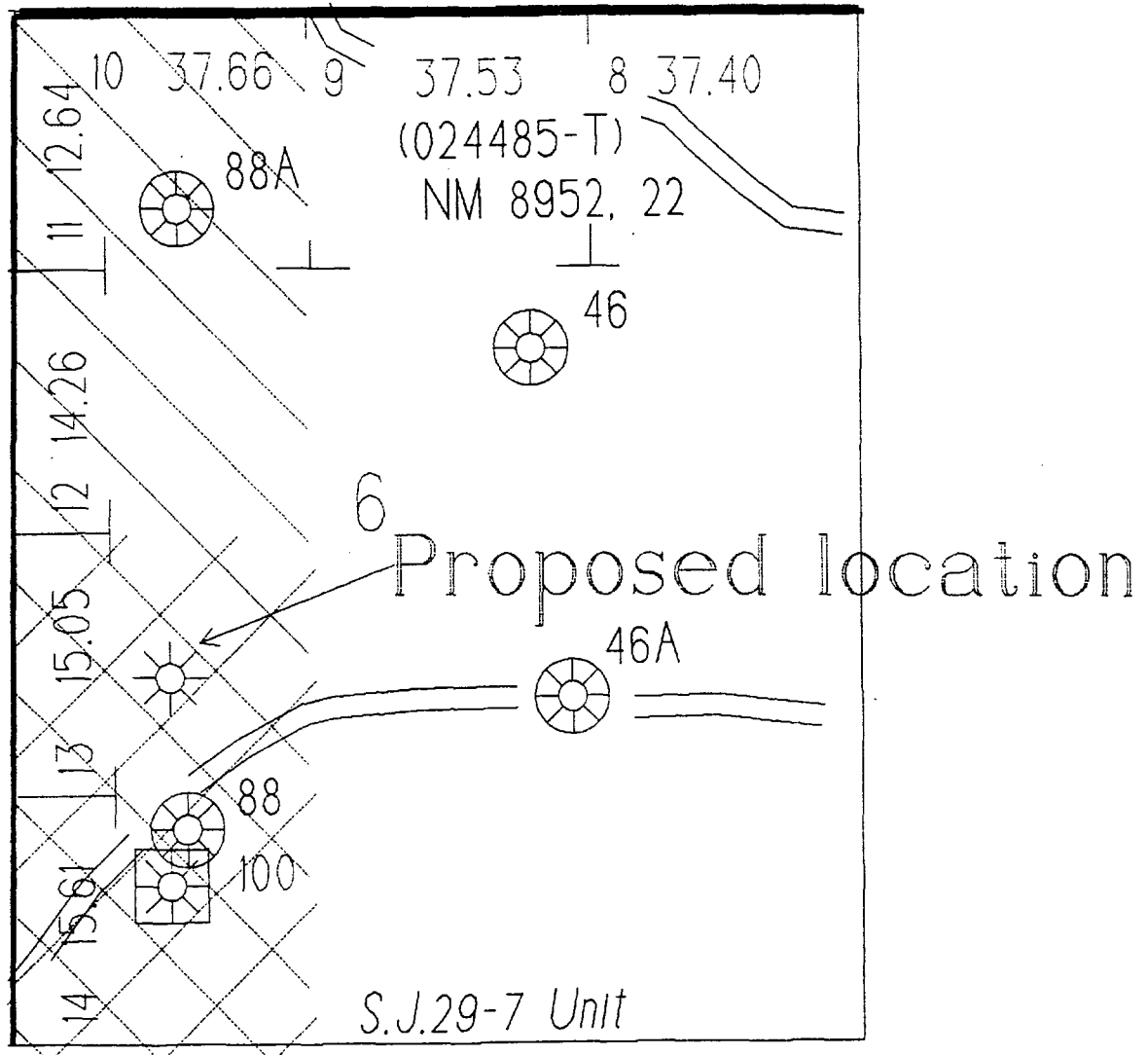


EXHIBIT "A"

EXHIBIT "B"

San Juan 29-7 Unit #583, W/2 6-29N-7W  
FR/PC Commingle & Non-Standard Proration Unit



- △ FRUITLAND COAL WELL
- ⊗ MESAVERDE WELL
- ⊠ DAKOTA WELL

- ▨ FR Spacing
- ▨ PC Spacing

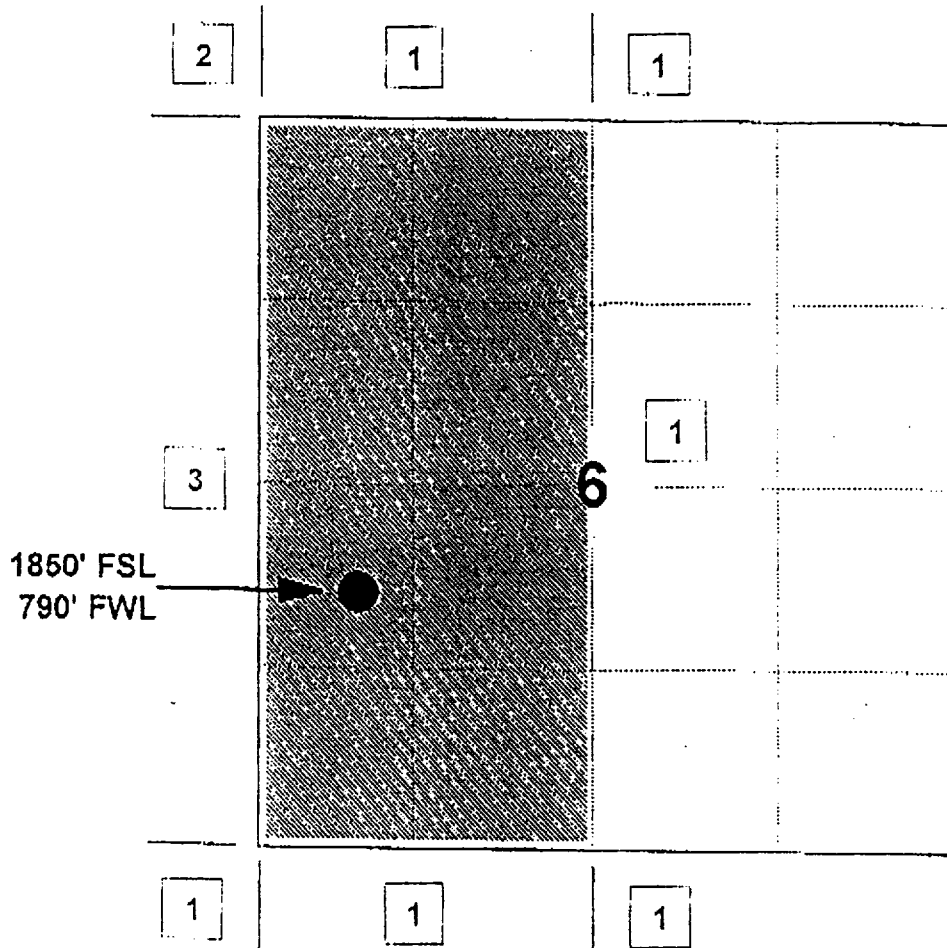
# MERIDIAN OIL INC

## SAN JUAN 29-7 UNIT #583

OFFSET OPERATOR \ OWNER PLAT

Fruitland Coal / Pictured Cliffs Formations Commingle

Township 29 North, Range 07 West



1) Meridian Oil Inc

2) Amoco Production Company

PO Box 800, Denver, CO 80202

3) Amoco Production Company

Conoco, Inc.

10 Desta Dr., Suite 100W, Midland, TX 79705-4500

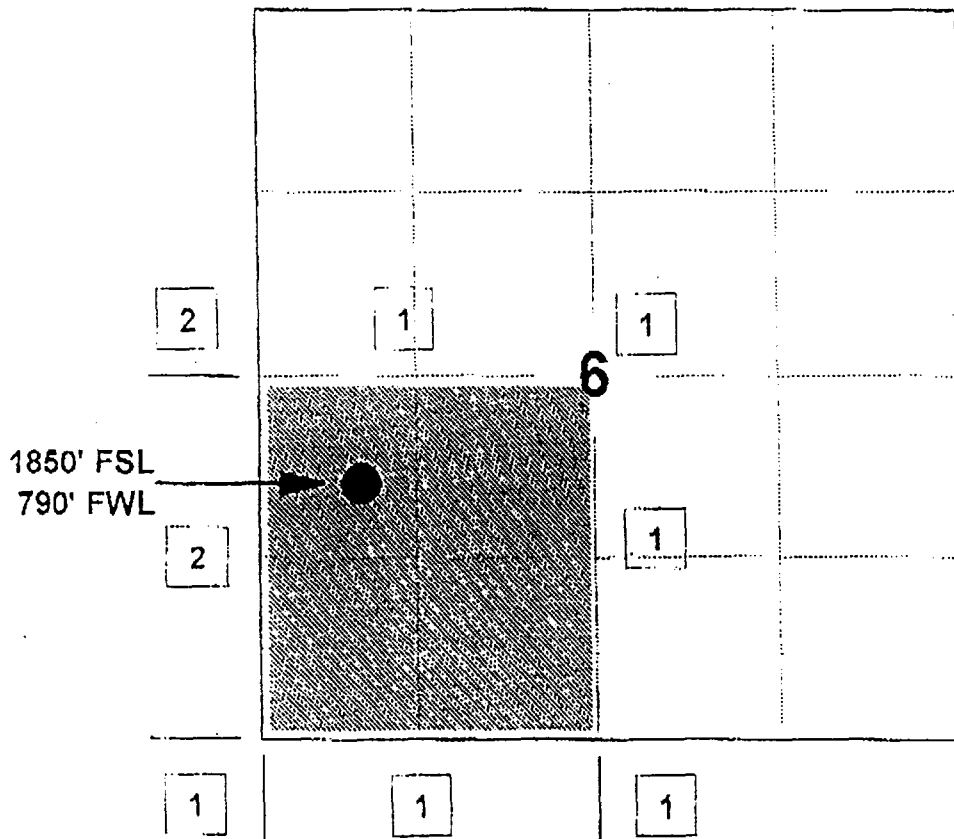
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PO Box 800, Denver, CO 80202

Conoco, Inc.

10 Desta Dr., Suite 100W, Midland, TX 79705-4500

EXHIBIT 1

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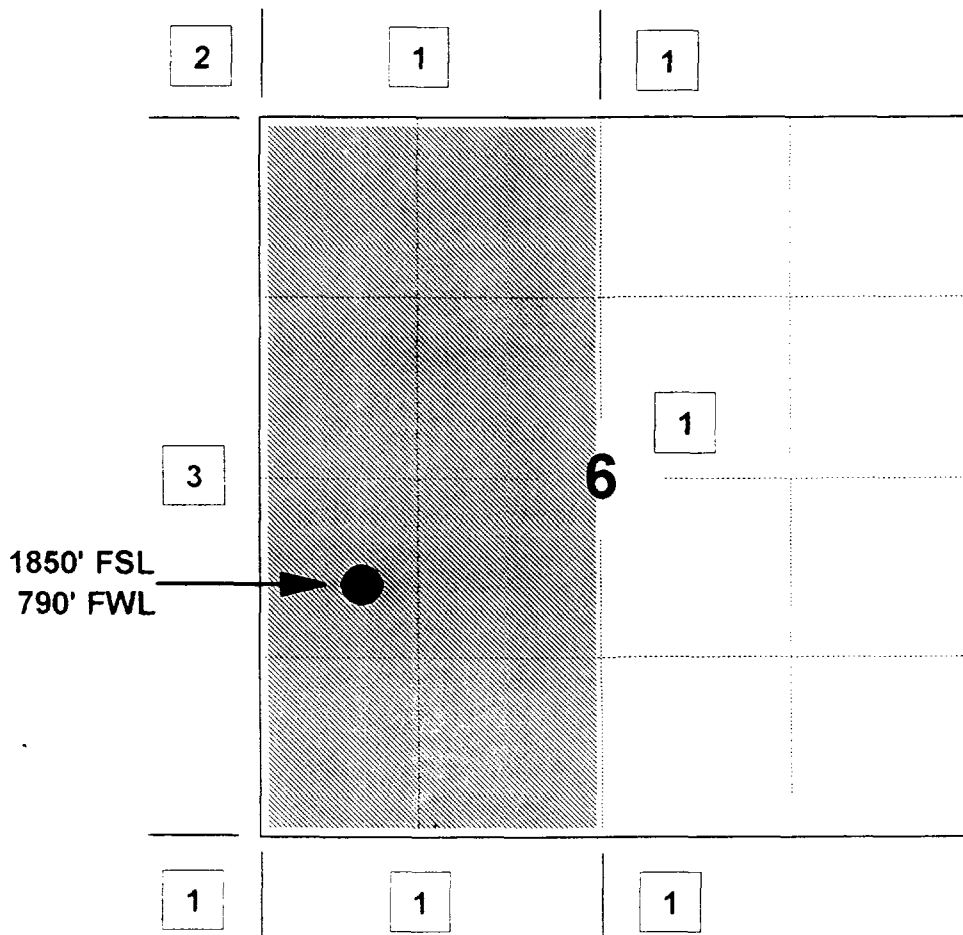
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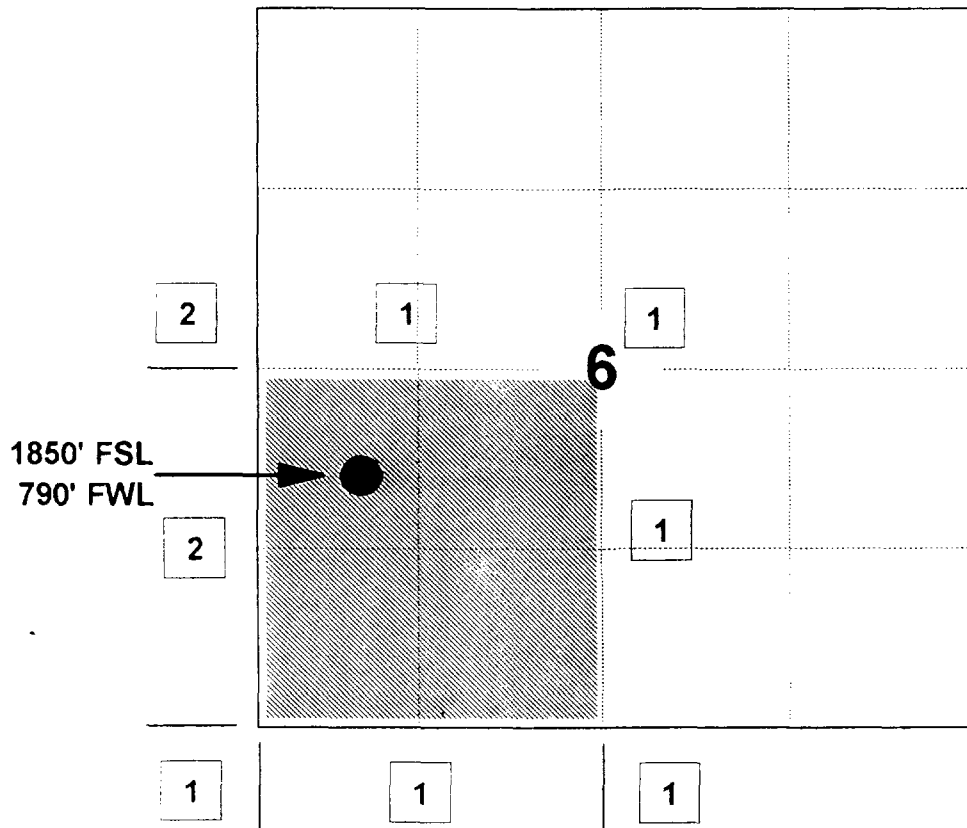
# MERIDIAN OIL INC

## SAN JUAN 29-7 UNIT #583

### OFFSET OPERATOR \ OWNER PLAT

#### Fruitland Coal / Pictured Cliffs Formations Commingle

Township 29 North, Range 07 West



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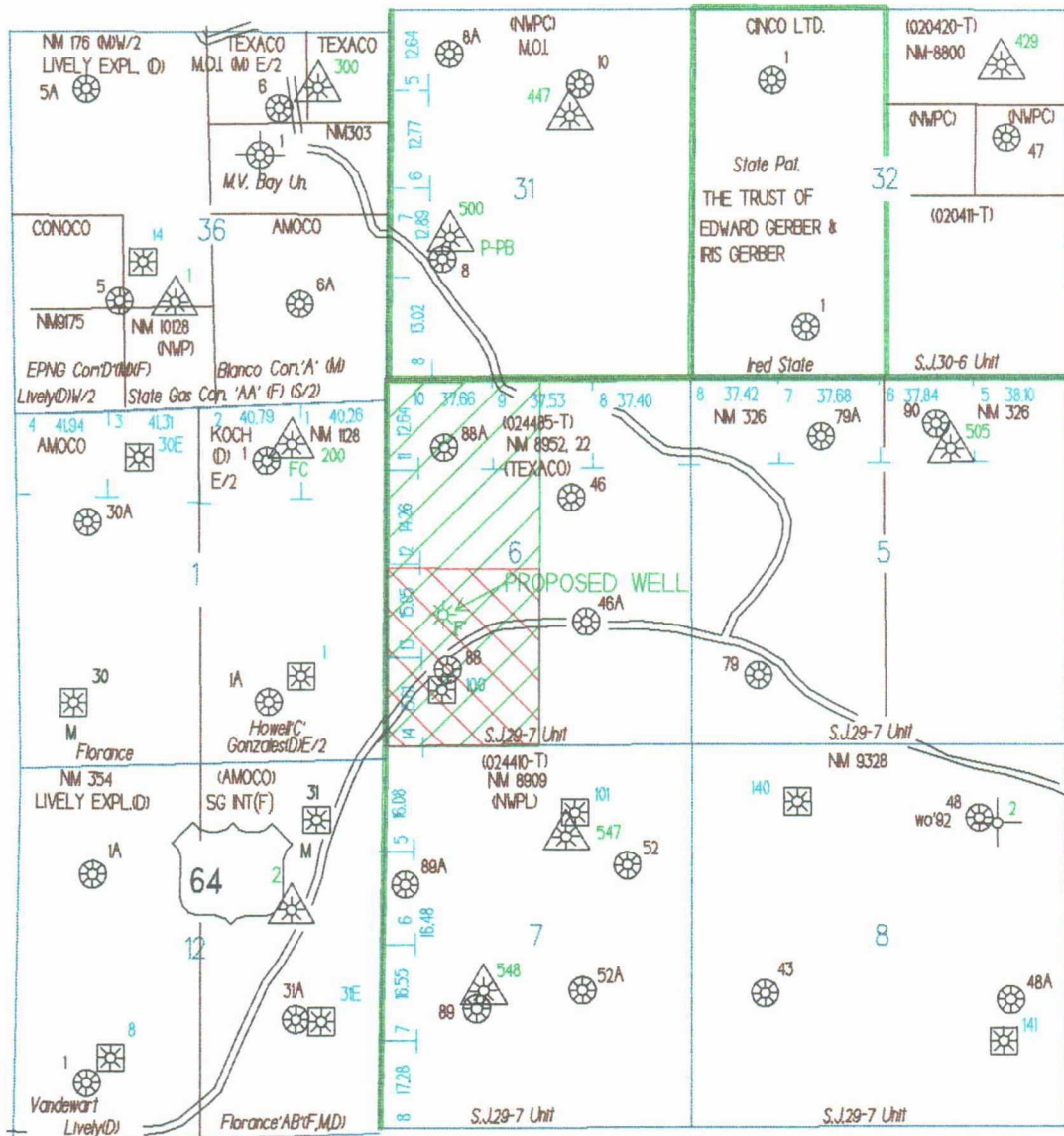
EXHIBIT 2

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# SAN JUAN 29-7 UNIT # 583 WELL

## 790'FWL, 1850'FSL

### SECTION 6-29N-7W



- ★ PICTURED CLIFFS WELL
- ▲ FRUITLAND COAL WELL
- MESAVERDE WELL

■ DAKOTA WELL



SPACING UNIT FRUITLAND COAL



SPACING UNIT PICTURED CLIFFS

EXHIBIT 3

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STATE OF NEW MEXICO  
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT  
OIL CONSERVATION DIVISION

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

CASE NO. 10042  
ORDER NO. R-9303

*APPLICATION OF MERIDIAN OIL, INC. FOR  
SIX NON-STANDARD GAS PRORATION UNITS,  
RIO ARriba COUNTY, NEW MEXICO*

ORDER OF THE DIVISION

BY THE DIVISION:

This cause came on for hearing at 8:15 a.m. on August 8 and September 5, 1990, at Santa Fe, New Mexico, before Examiner Michael E. Stogner.

NOW, on this 27th day of September, 1990, the Division Director, having considered the testimony, the record and the recommendations of the Examiner, and being fully advised in the premises,

FINDS THAT:

- (1) Due public notice having been given as required by law, the Division has jurisdiction of this cause and the subject matter thereof.
- (2) At the time of the August 8, 1990 hearing this case was consolidated with Case No. 10041 for the purpose of testimony.
- (3) The applicant, Meridian Oil, Inc., seeks an exception to Rule 6 of Division Order No. R-8768 to establish six non-standard gas proration units for Basin-Fruitland Coal Gas Pool production in Townships 29 and 30 North, Range 7 West, NMPM, Rio Arriba County, New Mexico, as further described in Exhibit "A" attached hereto and made a part hereof.
- (4) Said non-standard proration units are necessitated by irregular sections resulting from survey corrections in the United States Public Lands Survey.
- (5) The acreage contained in each individual proration unit should be based

Case No. 10042  
Order No. R-9303  
Page 2

on the latest official surveys and resurveys accepted by the United States Government.

(6) The non-standard proration units may reasonably be presumed productive of gas from the Basin-Fruitland Coal Gas Pool and the non-standard gas proration units can be efficiently and economically drained and developed by one well on each unit.

(7) No offset operator objected to the proposed non-standard gas proration units.

(8) Approval of the subject application will afford the applicant the opportunity to produce his just and equitable share of the gas in the Basin-Fruitland Coal Gas Pool, will prevent the economic loss caused by the drilling of unnecessary wells, avoid the augmentation of risk arising from the drilling of an excessive number of wells, and will otherwise prevent waste and protect correlative rights.

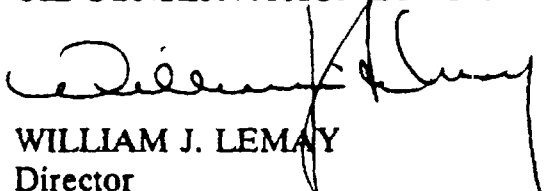
**IT IS THEREFORE ORDERED THAT:**

(1) The application of Meridian Oil, Inc. for six non-standard gas proration units in the Basin-Fruitland Coal Gas Pool in Townships 29 and 30 North, Range 7 West, NMPM, Rio Arriba County, New Mexico, as further described in Exhibit "A" attached hereto and made a part hereof, is hereby approved.

(2) 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.

STATE OF NEW MEXICO  
OIL CONSERVATION DIVISION

  
WILLIAM J. LEMAY  
Director

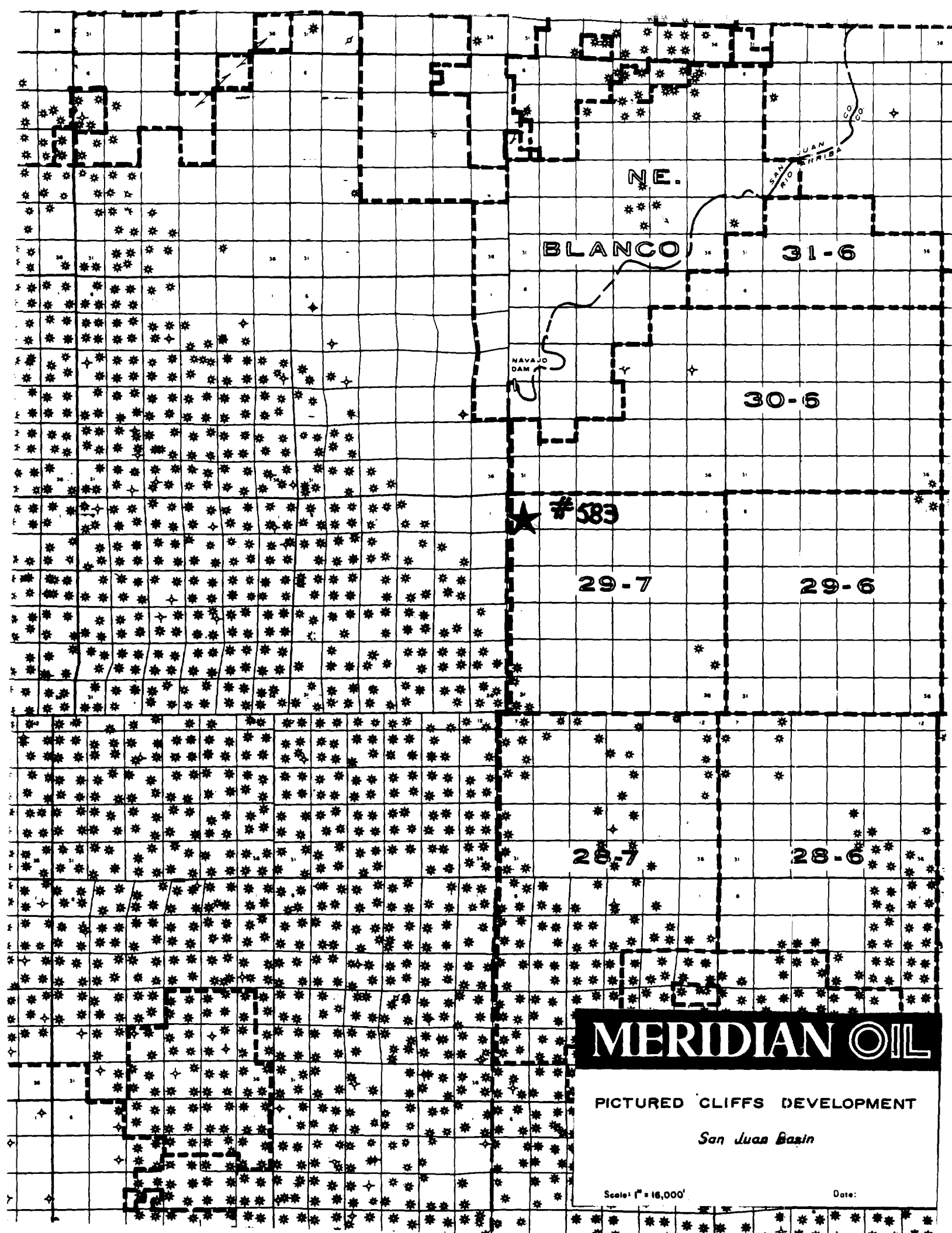
SEAL

*EXHIBIT "A"*  
*CASE NO. 10042*  
*ORDER NO. R-9303*

<i>Tract</i>	<i>Acreage (more or less)</i>	<i>Section</i>	<i>Description</i>
TOWNSHIP 29 NORTH, RANGE 7 WEST, NMPM			
1	215.22	6	Lots 10 through 14, SE/4 NW/4, and E/2 SW/4 (W/2 equivalent)
2	226.72	7	Lots 5 through 8 and E/2 W/2 (W/2 equivalent)
3	231.03	18	Lots 5 through 8 and E/2 W/2 (W/2 equivalent)
4	238.88	19	Lots 5 through 8 and E/2 W/2 (W/2 equivalent)
TOWNSHIP 30 NORTH, RANGE 7 WEST, NMPM			
5	209.36	30	Lots 5 through 8 and E/2 W/2 (W/2 equivalent)
6	211.32	31	Lots 5 through 8 and E/2 W/2 (W/2 equivalent)

EXHIBIT 4

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BLANCO

NE.

31-6

30-6

NAVAJO  
DAM

★ #583

29-7

29-6

28-7

28-6

**MERIDIAN OIL**

PICTURED CLIFFS DEVELOPMENT

*San Juan Basin*

Scale: 1" = 16,000'

Date:



EXHIBIT 5

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#88 (SW 6-T29N-R7W)

SAN JUAN 29-7 UNIT #583

TYPE LOG

TOP FRUITLAND FM.

COAL



2900

3100

TOP PICTURED CLIFFS SS.

3200

3300

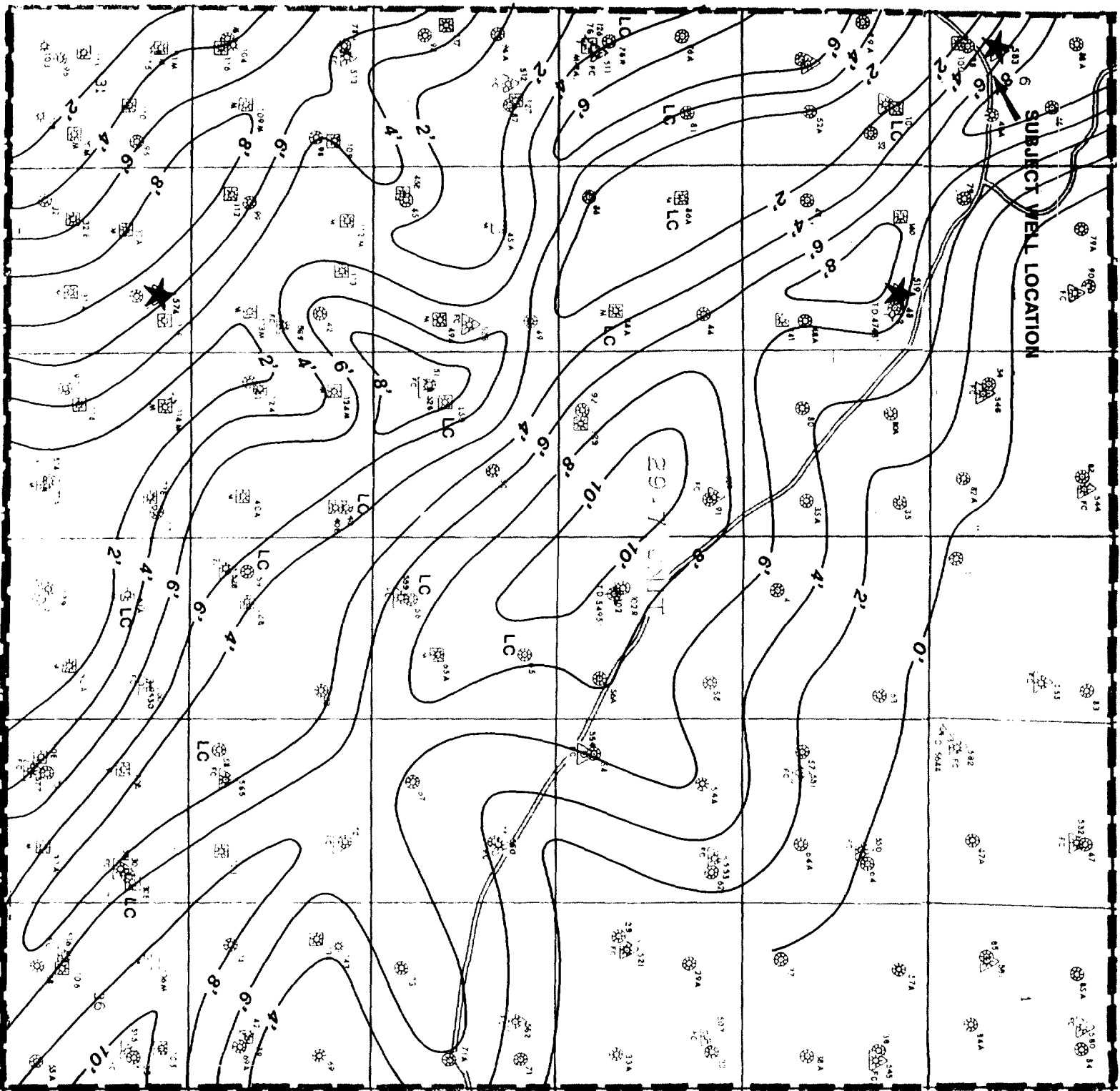
T.D.

EQUIVALENT

3400

EXHIBIT 6

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**MERIDIAN OIL**

**PICTURED CLIFFS-  
Net Sandstone Isopach**

Rt > 18  $\Omega$ -M  
SP > 6 MV  
Contour Interval = 2 Feet  
Ød > 10%  
Vsh < 40%  
RIO ARRIBA, NEW MEXICO

M. Dawson

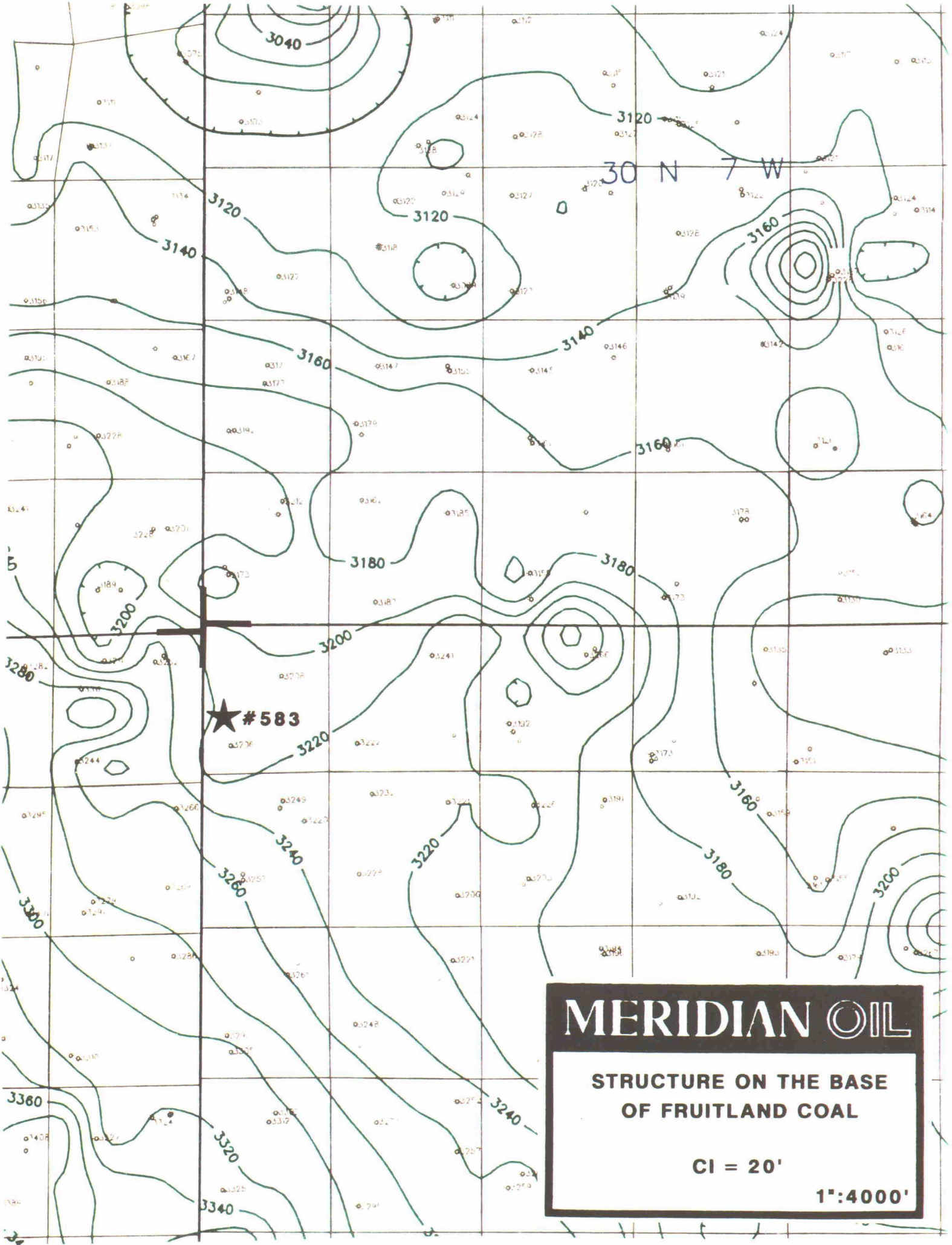
11-10-'92

EXHIBIT 7

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**MERIDIAN OIL**

**STRUCTURE ON THE BASE  
OF FRUITLAND COAL**

**CI = 20'**

**1":4000'**

EXHIBIT 8

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**San Juan 29-7 Unit #583**  
**SW/4 of Section 6, T29N, R07W**  
**Rio Arriba County, NM**  
**Fruitland Coal/Pictured Cliffs Commingle Application**

**Expected Reservoir Pressures**

Pictured Cliffs - Average of the 11 closest PC completions is 819 psi SICP ( range from 631 to 1100 psi). All of the completions are 2-3 miles southwest of the subject location. The pressure at the subject location is expected to be the offset PC average of 819 psi.

Fruitland Coal - Geological mapping of the over-pressured envelope predicts an initial pressure of 950 psi.

**PC - 819 psi, FTC - 950 psi. Within limits of pressure requirements for commingling.**

**Fluid Compatibility**

Pictured Cliffs - The closet offset PC completions currently produce dry gas with no water production reported. Cumulative water production of 100 to 200 barrels per well is reported in the production records. Produced water analyses indicate total dissolved solids (TDS) of 4600 - 8000 parts per million (PPM) and a specific gravity of 1.01.

Fruitland Coal - The closest offset FTC completions produce less than 1 BWPD from wells in the under pressured area. The subject location is expected to be in the same under pressured trend and will also produce negligible amounts of water. Produced water analysis indicates total dissolved solids (TDS) of 8000 - 16000 parts per million (PPM) and a specific gravity of 1.01.

**PC - dry gas production , FTC - gas production with less than 1 BWPD. Where there is produced water, the TDS and specific gravity are similar and are compatible.**

**San Juan 29-7 Unit #583**  
**SW/4 of Section 6, T29N, R07W**  
**Rio Arriba County, NM**  
**Fruitland Coal/Pictured Cliffs Commingle Application**

**Well Economics**

Pictured Cliffs - The thin expected pay zone of 7 feet and the step-out from established production result in an estimated gross ultimate reserve of 183 MMCF for the PC. A gross initial production rate of 105 MCFD makes this zone uneconomic as a new drill prospect.

Fruitland Coal - The immediate offset wells that are producing rates of 20 to 35 MCFD make this a risky location and a marginal economic prospect. The expected gross ultimate reserve of 570 MMCF based on the area control makes this a marginal new drill prospect.

**Combined EUR for the two zones of 753 MMCF will make the well an economic prospect. Commingling of the two zones will prevent waste by allowing economic development of both reservoirs. The sum of the two formations production will be greater due to the commingling of the zones.**

**There will be no adverse reservoir affects from the production of both reservoirs through the same production string of tubing. The allocation of the commingled production will be calculated by using flow test information from both zones during completion operations and offset well production rates. This flow information will used with the Pictured Cliffs production formula and the Fruitland Coal will be the difference between total production rate and the Pictured Cliffs calculated production rate. Meridian will consult with the District Supervisor of the Aztec NMOCD office for approval of the allocation when the completion information is obtained.**

**San Juan 29-7 Unit #583**  
**SW/4 of Section 6, T29N, R07W**  
**Rio Arriba County, NM**  
**Fruitland Coal/Pictured Cliffs Commingle Application**

**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 (MCF/MONTH)  
 $Q_{pc}$  = 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 :

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

WHERE:  $Q_{pci}$  = Initial PC monthly flow rate (determined from completion data)  
 $D_{pc}$  = Monthly Decline Rate based on PC Offsets  
**ANNUAL DECLINE = 6.4 % Based on 18 well study in T29N, R08W**

$$D_{pc} = (0.00533)$$

THUS:  $Q_{pc} = Q_{pci} * e^{\{-(0.00533)*(t)\}}$

$$Q_{ftc} = Q_t - Q_{pci} * e^{\{-(0.00533)*(t)\}}$$

WHERE: (t) is time in months of production

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

**San Juan 29-7 Unit #583  
SW/4 of Section 6, T29N, R07W  
Rio Arriba County, NM  
Fruitland Coal/Pictured Cliffs Commingle Application**

**DETERMINATION OF  $Q_{pci}$ :  
(INITIAL PICTURED CLIFFS MONTHLY PRODUCTION)**

$$\underline{Q_{pci} = Q_{t(1)} * Q_{pc(p)} / \{Q_{pc(p)} + Q_{ftc(p)}\}}$$

**WHERE:**

**$Q_{t(1)}$  = FIRST MONTH TOTAL PRODUCTION (MCF)**

**$Q_{pc(p)}$ = FINAL PICTURED CLIFFS PITOT GAUGE (MCFPD)**

**$Q_{ftc(p)}$ = FINAL FRUITLAND COAL PITOT GAUGE (MCFPD)**

STATE OF NEW MEXICO  
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT  
OIL CONSERVATION DIVISION

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

CASE NO. 10699

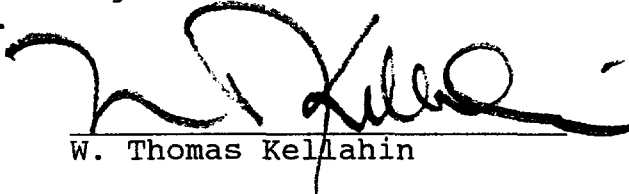
APPLICATION OF MERIDIAN OIL INC.  
FOR DOWNHOLE COMMINGLING AND A  
NON-STANDARD SPACING UNIT,  
SAN JUAN COUNTY, NEW MEXICO.

CERTIFICATE OF MAILING


AND

COMPLIANCE WITH ORDER R-8054

W. THOMAS KELLAHIN, attorney in fact and authorized representative of MERIDIAN OIL INC., states that the notice provisions of Division Rule 1207 (Order R-8054) have been complied with, that Applicant has caused to be conducted a good faith diligent effort to find the correct addresses of all interested parties entitled to receive notice, that on March 16, 1993, I caused to be mailed by certified mail return-receipt requested notice of this hearing and a copy of the application for the above referenced case along with the cover letter, at least twenty days prior to the hearing set for April 8, 1993, to the parties shown in the application as evidenced by the attached copies of return receipt cards, and that pursuant to Division Rule 1207, notice has been given at the correct addresses provided by such rule.

  
W. Thomas Kellahin

SUBSCRIBED AND SWORN to before me this 5<sup>TH</sup> day of  
April, 1993.

  
Notary Public

My Commission Expires:

10/1/95

cert402a.330

BEFORE EXAMINER CATANACH

OIL CONSERVATION DIVISION

Meridian EXHIBIT NO. 9

CASE NO. 10699