STATE OF NEW MEXICO

ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION

≡ DRUG FREE ≡

BRUCE KING
GOVERNOR

ANITA LOCKWOOD
CABINET SECRETARY

POST OFFICE BOX 2088
STATE LAND OFFICE BUILDING
SANTA FE, NEW MEXICO 87504
(505) 827-5800

ADMINISTRATIVE ORDER DHC-1028

Meridian Oil Company
P.O. Box 4289
Farmington, NM 87499-4289

RECEIVED
SEP - 2 1994
OIL CON. DIV.
DIST. 3

Attention: Arden L. Walker, Jr.

Lucerne "A" Well No. 4A
Unit C, Section 10, Township 31 North, Range 10 West, NMPM,
San Juan County, New Mexico.
Basin-Fruitland Coal and Blanco-Pictured Cliffs Pools

Dear Mr. Stice:

Reference is made to your recent application for an exception to Rule 303-A of the Division Rules and Regulations to permit the subject well to commingle production from both pools in the wellbore.

It appearing that the subject well qualifies for approval for such exception pursuant to the provisions of Rule 303-C, and that reservoir damage or waste will not result from such downhole commingling, and correlative rights will not be violated thereby, you are hereby authorized to commingle the production as described above and any Division Order which authorized the dual completion and required separation of the two zones is hereby placed in abeyance.

In accordance with the provisions of Rule 303-C-4., total commingled oil production from the subject well shall not exceed 20 barrels per day, and total water production shall not exceed 40 barrels per day. The maximum amount of gas which may be produced daily from the well shall be determined by Division Rules and Regulations or by the gas allowable for each respective prorated pool as printed in the Division's San Juan Basin Gas Proration Schedule.

Assignment of allowable to the well and allocation of production from the well shall be in accordance with the allocation formula shown on Exhibit "A", attached hereto and made a part hereof. Any condensate production will be allocated entirely to the Blanco-Pictured Cliffs interval.
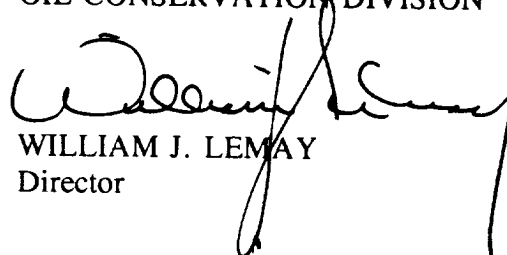
The operator is responsible for reporting the monthly gas production from the subject well to the Division utilizing the allocation formula adopted herein. An annual report shall be submitted by the operator to both the Aztec and Santa Fe offices of the Division showing the complete computations for the previous twelve-month period.

FURTHER: The operator shall notify the Aztec District Office of the Division upon implementation of the commingling process.

Pursuant to Rule 303-C-5, the commingling authority granted by the order may be rescinded by the Division Director if, in his opinion, conservation is not being best served by such commingling.

Approved at Santa Fe, New Mexico on this 30th day of August, 1994.

STATE OF NEW MEXICO
OIL CONSERVATION DIVISION

WILLIAM J. LEMAY
Director

S E A L

WJL/DRC/amg

cc:　Oil Conservation Division - Aztec
　　　U.S. Bureau of Land Management - Farmington

Lucerne A #4A
MONTHLY GAS PRODUCTION ALLOCATION FORMULA

GENERAL EQUATION

$$Qt = Qftc + Qpc$$

WHERE: Qt = TOTAL MONTHLY PRODUCTION (MCF/MONTH)

$Qftc$ = FRUITLAND COAL (ftc) MONTHLY PRODUCTION
Qpc = PICTURED CLIFFS (pc) MONTHLY PRODUCTION (MCF/MONTH)

REARRANGING THE EQUATION TO SOLVE FOR $Qftc$:

$$Qftc = Qt - Qpc$$

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:

$$Qpc = Qpci \times e^{\{-(Dpc) \times (t)\}}$$

WHERE: $Qpci$ = INITIAL PC MONTHLY FLOW RATE = 1053 MCF/M

Dpc = PICTURED CLIFFS MONTHLY NOMINAL DECLINE RATE CALCULATED FROM DECLINE CURVE AND MATERIAL BALANCE ANALYSIS:

Dpc = 0.0240/yr = 0.00201/M

THUS: $Qftc$ = $Qt - Qpci \times e^{\{-(0.00201) \times (t)\}}$

WHERE: (t) IS IN MONTHS

Reference: Thompson, R.S., and Wright, J.D., "Oil Property Evaluation", pages 5-2, 5-3, 5-4, 5-46

MERIDIAN OIL

July 18, 1994

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

RE: Lucerne A #4A
        Unit C, Section 10, T31N, R10W
        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 Pictured Cliffs and the Basin Fruitland Coal fields. The ownership of the zones to be commingled is common. The offset operator to this well is Koch Explocration. The Bureau of Land Management and the above mentioned operator has received notification of this downhole commingle.

The Fruitland Coal and Pictured Cliffs wells producing in this area operated by Meridian and others are marginally productive. Based on offset production in this area, drilling of a separate well to produce the Fruitland Coal is not economically justified. The only economical way to recover the Fruitland Coal reserves in this drill block is to downhole commingle production from both zones in this well. A dual completion is not feasible on the drill block as the Lucerne A #4A is already a dual completion.
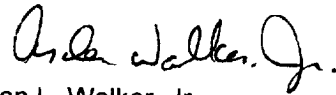
The Pictured Cliffs formation is currently completed and marginally productive. It is proposed to set a bridge plug above the Pictured Cliffs, perforate and stimulate the Fruitland Coal, and test its production. The bridge plug will then be removed, and both zones produced through a single string of 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 bottom hole shut-in pressures for the Pictured Cliffs and Fruitland Coal are **350** and **694** psi, respectively.

The allocation of the commingled production will be calculated using the attached allocation formula. This formula is based on Pictured Cliffs production (material balance), 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.

Meridian Oil Inc., 3535 East 30th St., P.O. Box 4289, Farmington, New Mexico 87499-4289, Telephone 505-326-9700

New Mexico Oil Conservation Division
Mr. William LeMay
Lucerne A #4A
Downhole Commingling Request
Page Two

Approval of this commingling application will allow for the prevention of wasted resources and protection of correlative rights. 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 the offset operator, and an allocation formula.

Sincerely,

Arden L. Walker, Jr.
Regional Production Engineer

JBK:tdg

Attachments

cc: Frank T. Chavez - NMOCD/Aztec
        Peggy A. Bradfield
        Well File

MERIDIAN OIL

July 18, 1994

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

RE: Lucerne A #4A
Unit C, Section 10, T31N, R10W
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 Pictured Cliffs and the Fruitland Coal formations.

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,

Jay B. Knaebel
Reservoir Engineer

JBK/tdg

The undersigned hereby waives objection to the referenced Downhole Commingle Request.

Company/Owner:_____

Title:_____

Date:_____

MERIDIAN OIL

July 18, 1994

Koch Exploration
P.O. Box 2256
Wichita, Kansas 67201

RE: Lucerne A #4A
         Unit C, Section 10, T31N, R10W
         San Juan County, New Mexico
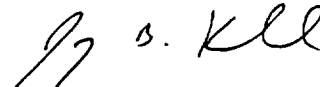   Downhole Commingling Request

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MERIDIAN OIL INC
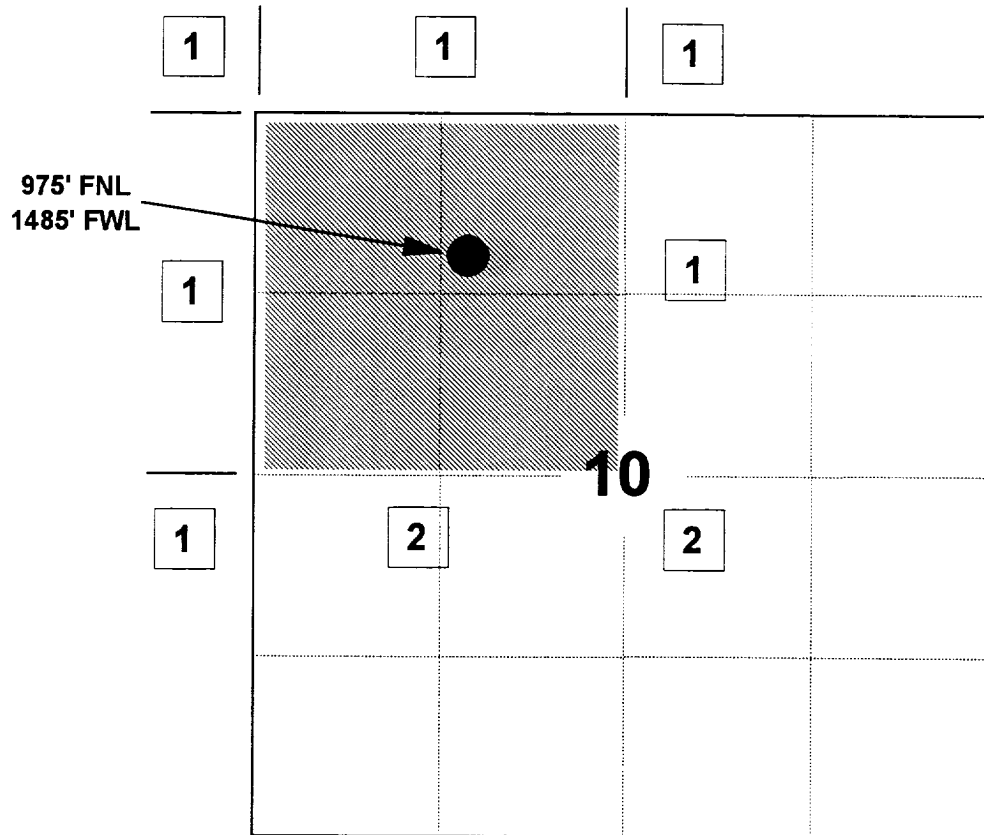
LUCERNE A #4A

OFFSET OPERATOR \ OWNER PLAT

Fruitland Coal / Pictured Cliffs Commingle Well

Township 31 North, Range 10 West

975' FNL
1485' FWL

1) Meridian Oil Inc

2) Koch Exploration   PO Box 2256, Wichita, KS 67201

Pictured Cliffs Formation
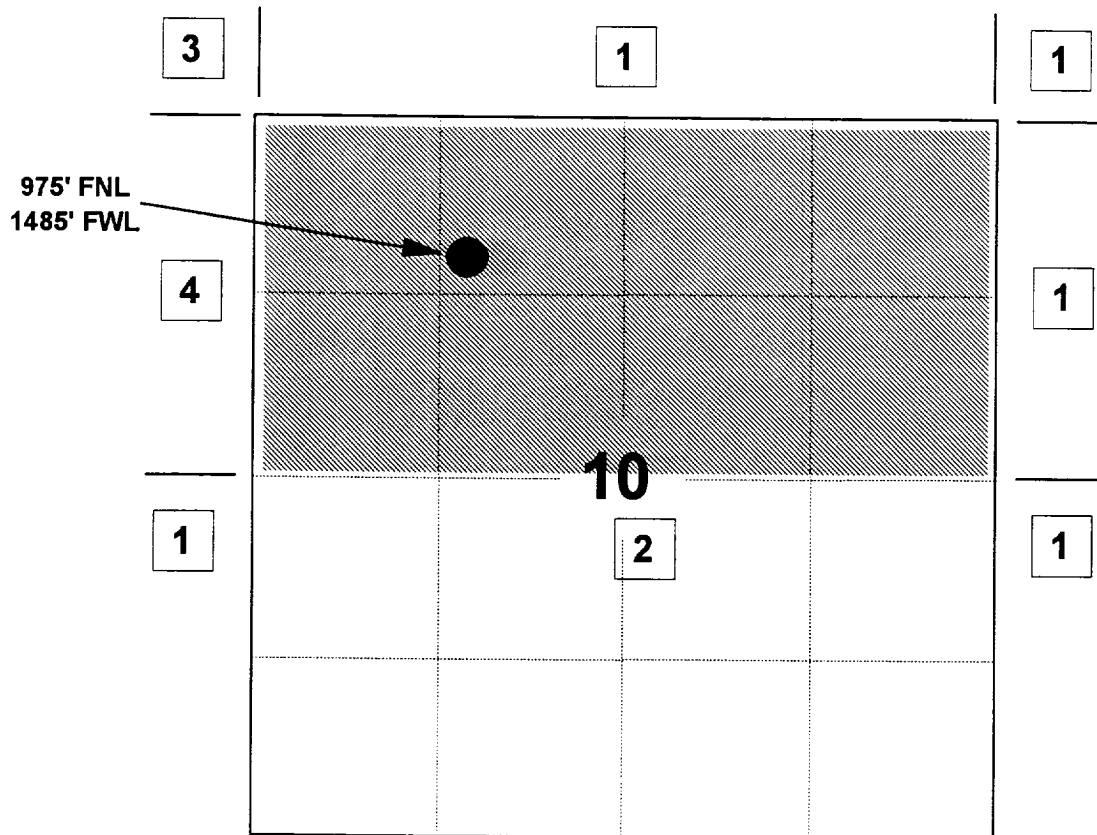
MERIDIAN OIL INC

LUCERNE A #4A

OFFSET OPERATOR \ OWNER PLAT

Fruitland Coal / Pictured Cliffs Commingle Well

Unorhtodox Fruitland Coal Well Location

Township 31 North, Range 10 West

975' FNL
1485' FWL

3

1

1

4

1

10

1

2

1

1) Meridian Oil Inc

2) Koch Exploration   PO Box 2256, Wichita, KS 67201

3) Meridian Oil Inc

     Total Minatome Corp   PO Box 4326, Houston, TX 77210-4326

     Amoco Production Company   PO Box 800, Denver, CO 80201

     Moore Loyal Trust   403 N. Marienfeld, Midland, TX 79701-4397

4) Meridian Oil Inc

     Total Minatome Corp   PO Box 4326, Houston, TX 77210-4326

     Amoco Production Company   PO Box 800, Denver, CO 80201

Fruitland Coal Formation

Lucerne A #4A
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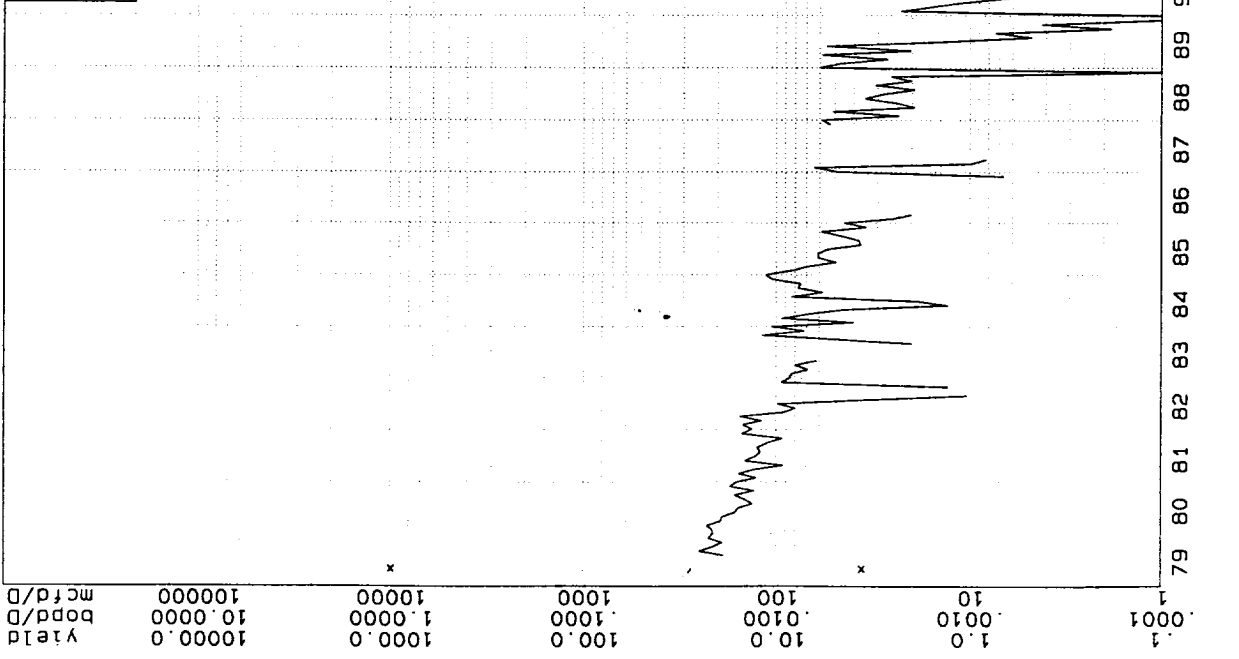
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Reference: Thompson, R.S., and Wright, J.D., "Oil Property Evaluation", pages 5-2, 5-3, 5-4, 5-46

WELL NAME: LUCERNE A
WELL #: 4A
FORMATION: PICTURED CLIFFS   DPNO: 53150A-1
LOCATION: 031N010W10C

mcfd/D	
Ref=	12/94
Cum=	302.222

GAS
Gal=	COMMINGE
Ref=	01/95
Cum=	319.481
Rem=	372.906
EUR=	692.387
Yrs=	51.583
Qi=	1052.9
De=	2.381
n=	3.000
Qab=	304.0

bopd/D	
Ref=	12/94
Cum=	.030

yield	
Ref=	12/94
Cum=	.004

$Nominal\ Decline\ (D) = -ln(1 - D_e)$

$D = -ln(1 - 0.0238i)$

LUCERNE A : 4A : 53150A-1

Prop: 501

Ref = 07/14/94
GIP = 765.000
EUR = 692.307
PZa = 50.0

Cum = 310.417
Rem = 381.970
P/Z = 313.0

Major = GAS

CUM_GAS-MMcf

M_SIWHP

800

600

400

200

0

50 100 150 200 250 300 350 400 450 500

"M_SIWHP-Psi"