

MERIDIAN OIL

OIL CONSERVATION DIVISION
RECEIVED

'94 JUL 25 AM 8 50

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 Explocloration. 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.

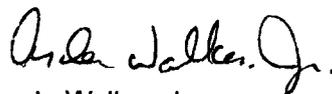
The Pictured Cliffs formation is currently completed and marginally productive. It is proposed to set a bridge plug above the Pictured Cliffs, perforate and stimulate the Fruitland Coal, and test its production. The bridge plug will then be removed, and both zones produced through a single string of 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.

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

Gentlemen:

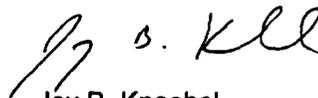
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Jay B. Knaebel
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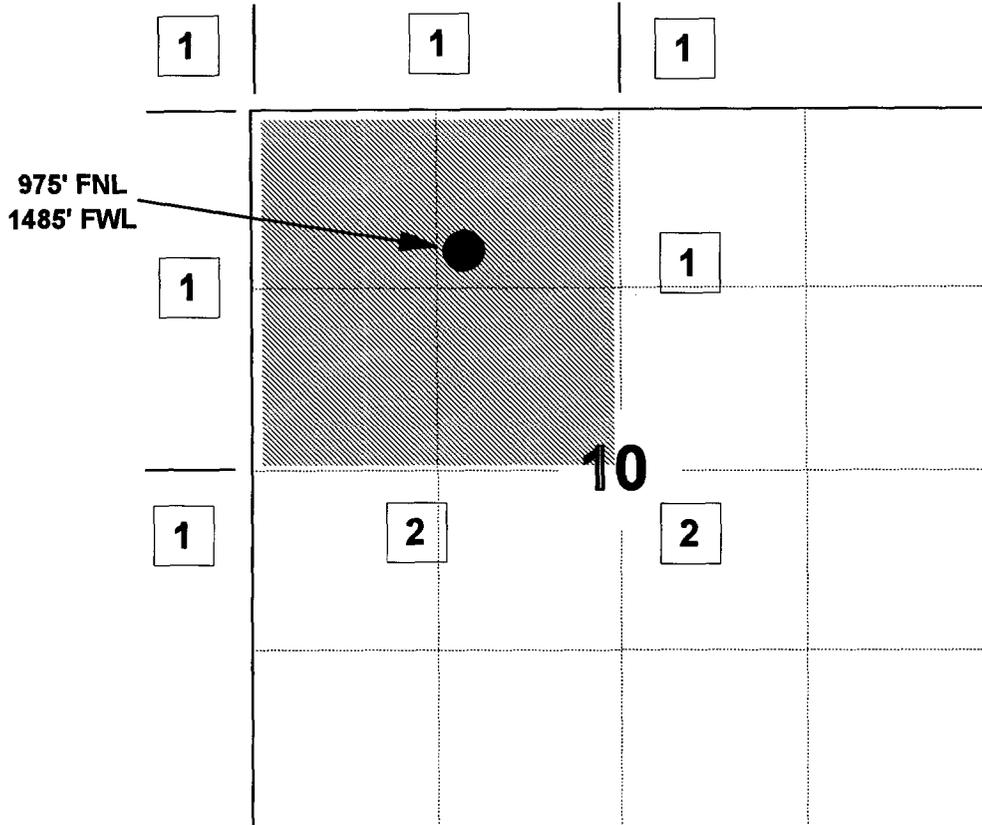
MERIDIAN OIL INC

LUCERNE A #4A

OFFSET OPERATOR \ OWNER PLAT

Fruitland Coal / Pictured Cliffs Commingle Well

Township 31 North, Range 10 West



1) Meridian Oil Inc

2) Koch Exploration

PO Box 2256, Wichita, KS 67201

Pictured Cliffs Formation

MERIDIAN OIL INC

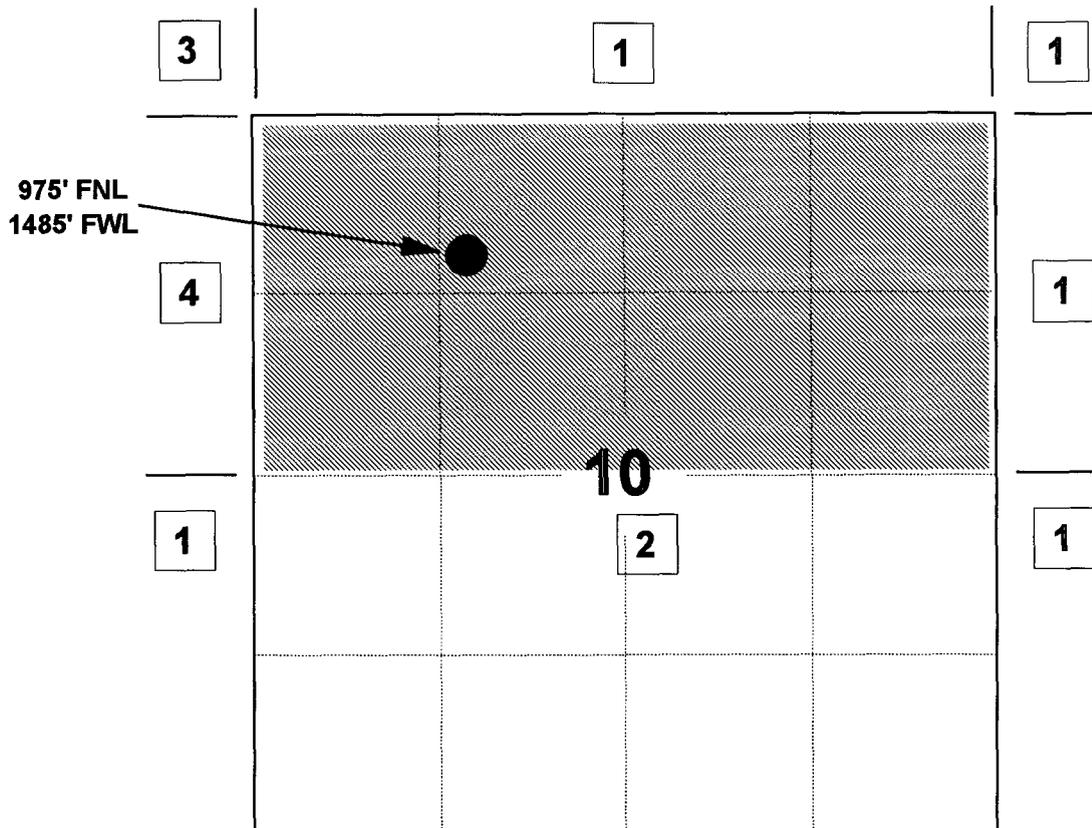
LUCERNE A #4A

OFFSET OPERATOR \ OWNER PLAT

Fruitland Coal / Pictured Cliffs Commingle Well

Unorhtodox Fruitland Coal Well Location

Township 31 North, Range 10 West



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

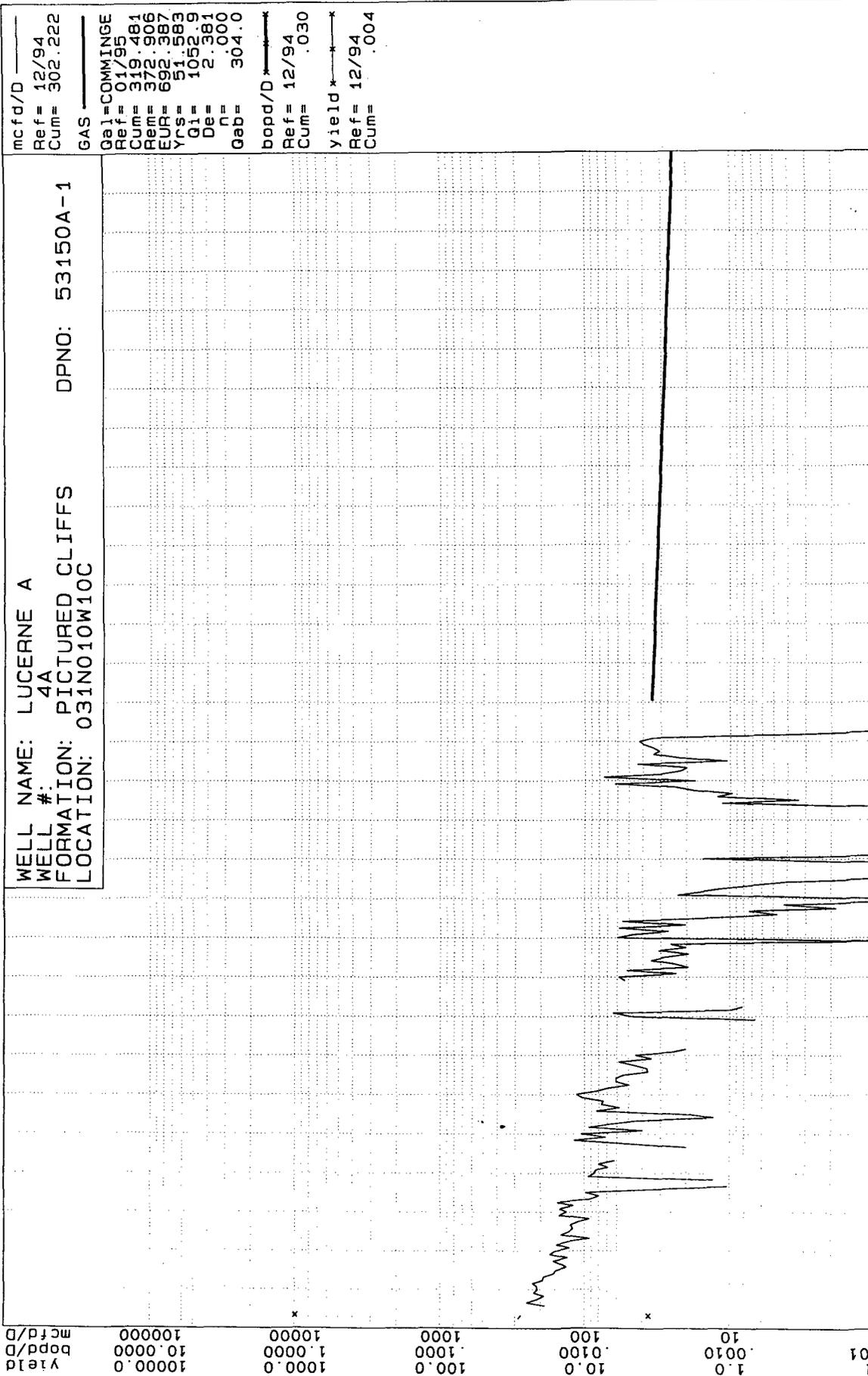
Total Minatome Corp

PO Box 4326, Houston, TX 77210-4326

Amoco Production Company

PO Box 800, Denver, CO 80201

Fruitland Coal Formation



WELL NAME: LUCERNE A
 WELL #: 4A
 FORMATION: PICTURED CLIFFS
 LOCATION: 031N010W10C

DPNO: 53150A-1

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
 G1= 1052.9
 De= 2.381
 n= .000
 Gab= 304.0

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

yield
 Ref= 12/94
 Cum= .004

1000.0
 100.0
 10.0
 1.0
 .100
 .010
 .001

79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 00 01 02 03 04 05 06 07 08

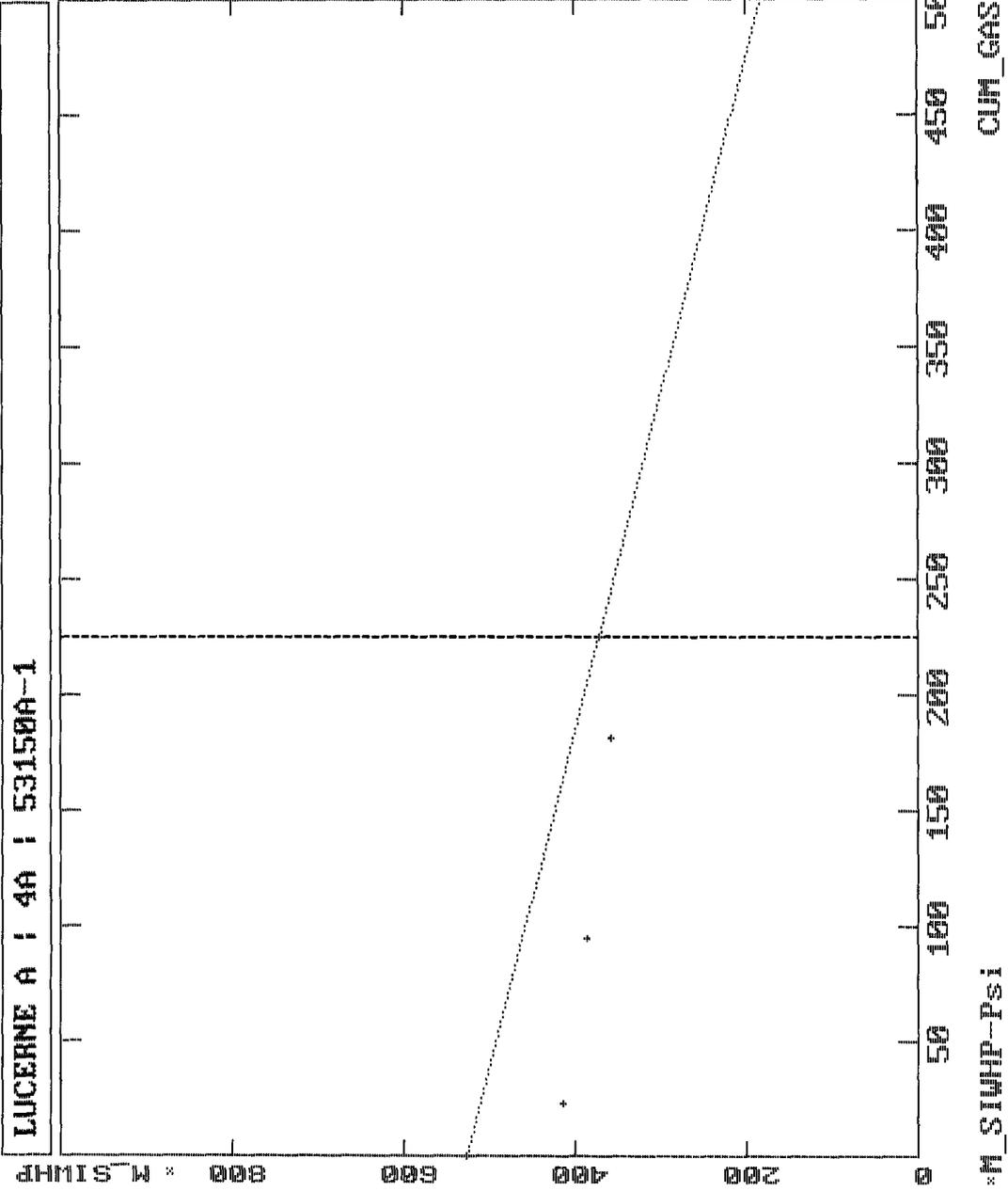
DATE

Nominal Decline (D) = $-\ln(1 - D_e)$
 $D = -\ln(1 - 0.02381)$
 $D = 0.02410/yr$

Prop: 581

Ref=07/14/94
GIP= 765.000
EUR= 692.387
PZa= 50.0

Cum= 310.417
Rem= 381.970
P/Z= 313.0



LUCERNE A I 4A I 53150A-1

CUM_GAS-MMcf

M SIMP-Psi

Major=GAS

Lucerne A #4A

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 = 1053 MCF/M
 D_{pc} = PICTURED CLIFFS MONTHLY NOMINAL DECLINE RATE CALCULATED FROM DECLINE CURVE AND MATERIAL BALANCE ANALYSIS:
 $D_{pc} = 0.0240/\text{yr} = 0.00201/\text{M}$

THUS: $Q_{ftc} = Q_t - Q_{pci} \times e^{-\{0.00201\} \times (t)}$

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

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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
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DHC-1028

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Sincerely,

J. B. Knaebel
Jay B. Knaebel
Reservoir Engineer

JBK/tdg

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

Company/Owner: Koch Exploration Company

Title: LAND MANAGER

Date: 8/1/94