

**MERIDIAN OIL**

OIL CONSERVATION DIVISION  
RECEIVED

104 JAN 5 AM 9 07

December 29, 1993

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

RE: Zachry #13  
Unit N, Section 33, T29N, 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 operators to this well are S G Interests, Horace F. McKay, Jr., Texaco Exploration and Production, Inc. and Amoco Production Company. The Bureau of Land Management and the above mentioned operators have 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 separate wells and dual completions to produce the Fruitland Coal and Pictured Cliffs are not economically justified. The only economical way to recover the Fruitland Coal and Pictured Cliffs reserves in this drill block is to downhole commingle production from both zones in this well.

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 shut-in pressures for the Pictured Cliffs and Fruitland Coal are 282 and 337 psi, respectively.

The allocation of the commingled production will be calculated using the attached allocation formula. This formula is based on offset Pictured Cliffs production performance (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. Bill LeMay  
Zachry #13  
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 operators, and an allocation formula.

Sincerely,

A handwritten signature in cursive script, appearing to read "A.L. Walker, Jr.", followed by the word "for" in a smaller, less stylized font.

Arden L. Walker, Jr.  
Regional Production Engineer

SBD:tdg  
Attachments

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

# MERIDIAN OIL

December 29, 1993

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

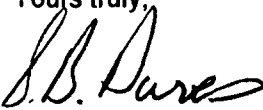
RE: Zachry #13  
Unit N, Section 33, T29N, R10W  
San Juan County, New Mexico  
Downhole Commingling Request

Gentlemen:

Meridian Oil, Inc. is in the process of applying for a downhole commingling order for the Zachry #13 well located in Unit N, Section 33, T29N, R10W, N.M.P.M., San Juan County, New Mexico, in the Pictured Cliffs and the Basin Fruitland Coal fields.

The purpose of this letter is to notify you of such action. If you have no objections to the proposed commingling order, we would appreciate your signing this letter and returning it to this office.

Your prompt attention to this matter would be appreciated.

Yours truly,  
  
Scott B. Daves  
Production Engineer

SBD/tdg

The above downhole commingling request is hereby approved:

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

# MERIDIAN OIL

December 29, 1993

Texaco Exploration & Production, Inc.  
PO Box 2100  
Denver, Colorado 80202

RE: Zachry #13  
Unit N, Section 33, T29N, R10W  
San Juan County, New Mexico  
Downhole Commingling Request

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Scott B. Daves  
Production Engineer

SBD/tdg

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

# MERIDIAN OIL

December 29, 1993

Amoco Production Company  
PO Box 800  
Denver, Colorado 80201

RE: Zachry #13  
Unit N, Section 33, T29N, R10W  
San Juan County, New Mexico  
Downhole Commingling Request

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Scott B. Daves  
Production Engineer

SBD/tdg

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

# MERIDIAN OIL

December 29, 1993

S G Interests  
811 Dallas  
Suite 1505  
Houston, Texas 77002

RE: Zachry #13  
Unit N, Section 33, T29N, R10W  
San Juan County, New Mexico  
Downhole Commingling Request

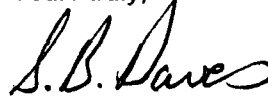
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Yours truly,



Scott B. Daves  
Production Engineer

SBD/tdg

The above downhole commingling request is hereby approved:

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

# MERIDIAN OIL

December 29, 1993

Horace F. McKay, Jr.  
PO Box 14738  
Albuquerque, New Mexico 87191

RE: Zachry #13  
Unit N, Section 33, T29N, R10W  
San Juan County, New Mexico  
Downhole Commingling Request

Gentlemen:

Meridian Oil, Inc. is in the process of applying for a downhole commingling order for the Zachry #13 well located in Unit N, Section 33, T29N, R10W, N.M.P.M., San Juan County, New Mexico, in the Pictured Cliffs and the Basin Fruitland Coal fields.

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Yours truly,



Scott B. Daves  
Production Engineer

SBD/tdg

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

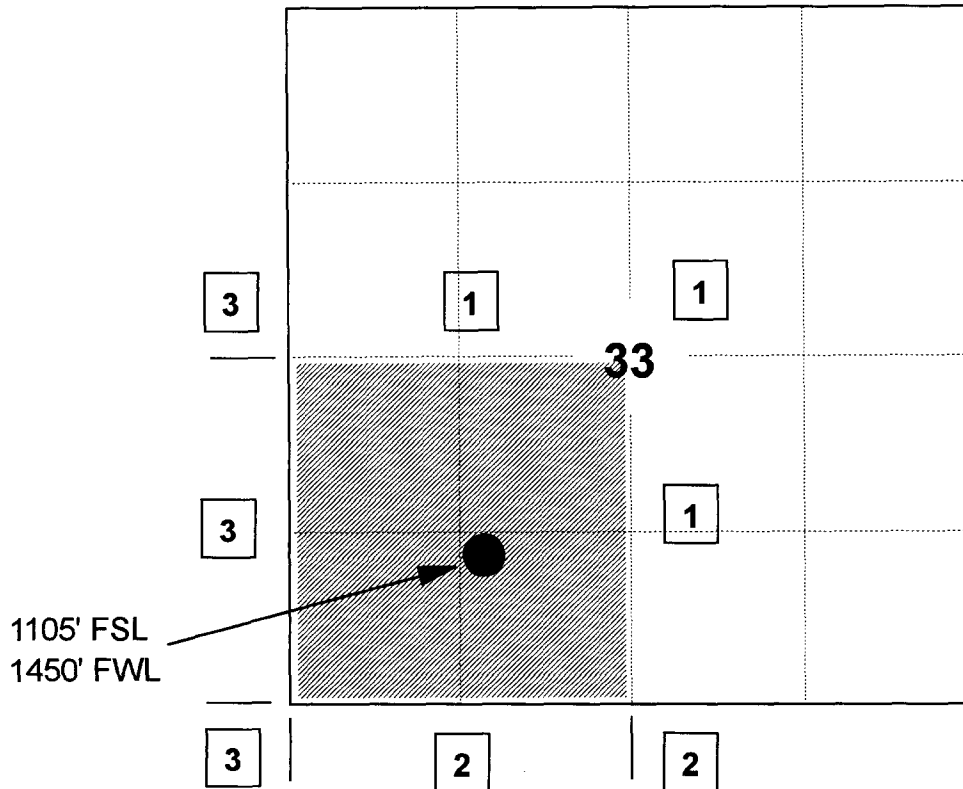
# MERIDIAN OIL INC

## ZACHERY #13

### OFFSET OPERATOR PLAT

Fruitland Coal \ Pictured Cliffs Comingle Well

Township 29 North, Range 10 West



1) Meridian Oil Inc

2) Southland Royalty Company

3) Texaco Exploration & Production, Inc. PO Box 2100, Denver, CO 80202

Pictured Cliffs Formation



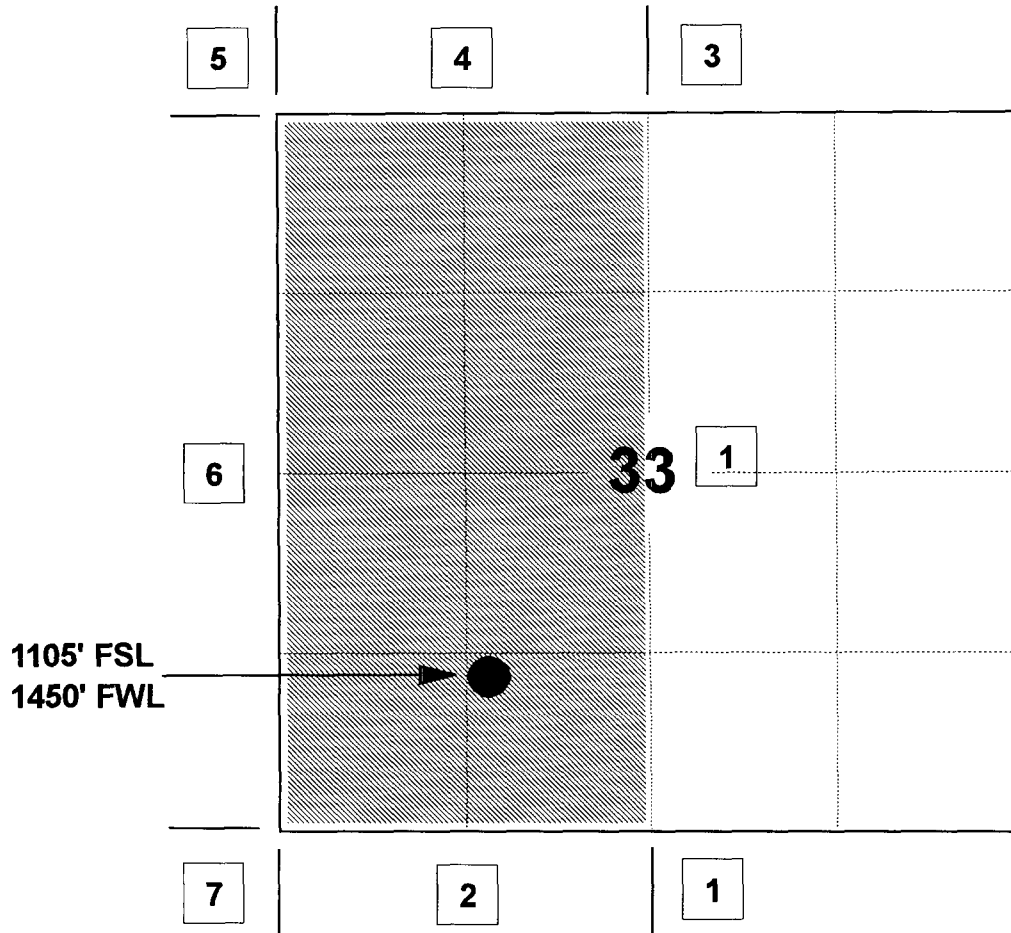
# MERIDIAN OIL INC

## ZACHERY #13

OFFSET OPERATOR \ OWNER PLAT

Fruitland Coal / Pictured Cliffs Commingle Well

Township 29 North, Range 10 West



1) Meridian Oil Inc

2) Southland Royalty Company

3) Amoco Production Company

PO Box 800, Denver, CO 80201

4) S G Interests

811 Dallas, Suite 1505, Houston, TX 77002

5) Horace F. McKay, Jr.

PO Box 14738, Albuquerque, NM 87191,

Amoco Production Company & S G Interests

6) Texaco Exploration & Production, Inc.  
S G Interests

PO Box 2100, Denver, CO 80202 &

7) Southland Royalty Company & Texaco Exploration & Production, Inc.

# **ZACHRY #13**

## **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.

ICTURED CLIFFS (PC) FORMATION PRODUCTION FORMULA IS:

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

WHERE:  $Q_{pci}$  = INITIAL PC MONTHLY FLOW RATE (DETERMINED FROM LAST MONTH OF PC ONLY PRODUCTION, PRIOR TO RECOMPLETION & COMMINGLE)

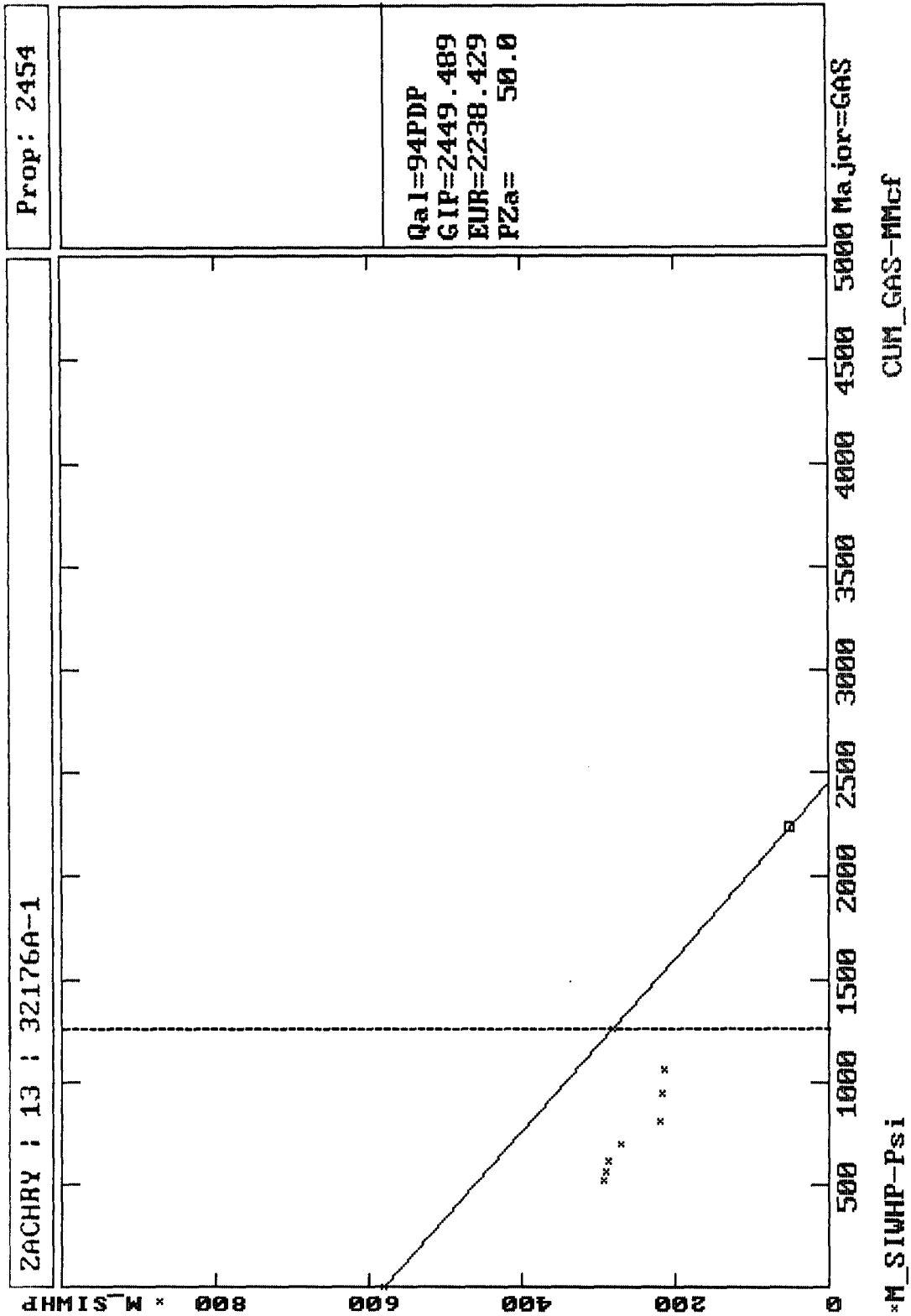
$D_{pc}$  = PICTURED CLIFFS MONTHLY DECLINE RATE CALCULATED FROM DECLINE CURVE AND MATERIAL BALANCE ANALYSIS:

$$D_{pc} = (0.00252/M)$$

THUS:  $Q_{ftc} = Q_t - Q_{pci} \times e^{\{-(0.00252) \times (t)\}}$

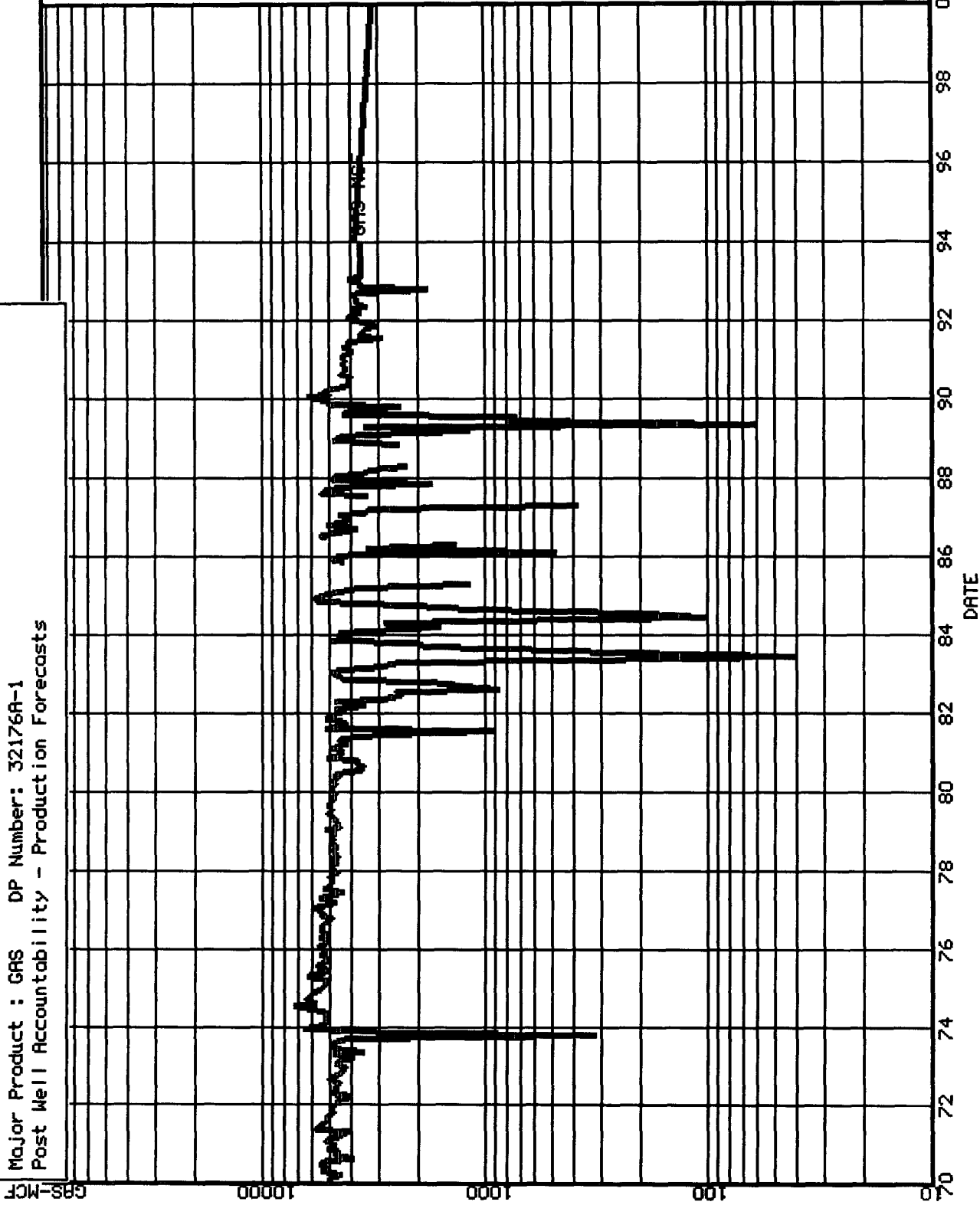
WHERE: (t) IS IN MONTHS

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



Lease : ZACHRY  
 Field : AZTEC PICTURED CLIFFS (GAS)  
 Location : 029ND10W33N  
 County, St : SAN JUAN NM  
 Major Product : GAS DP Number: 32176A-1  
 Post Well Accountability - Production Forecasts

GAS  
 Qa1=94PDP  
 Ref= 01/94  
 Cum=1668.433  
 Rem=1430.262  
 EUR=3038.695  
 Yrs= 84.083  
 Qi= 3959.9  
 De= 3.024  
 n= .000  
 Qab= 300.0



UNAN93, RT.,  
 MATCHING P/Z RESULTS IN STEEPER DECLINE (7%) THAN  
 HISTORY SUPPORTS,  
 P/Z=2238.4,,

94PDP, RT., RUDY WELL, RUDY, CENTRAL COMPRESSION CATCHER



OIL CONSERVATION DIVISION  
RECEIVED

'94 JAN 25 AM 9 35

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

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

Date: 1-21-94

*Attn: Ben Stone*

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

RE: Proposed MC \_\_\_\_\_  
Proposed NSL \_\_\_\_\_  
Proposed WFX \_\_\_\_\_  
Proposed NSP \_\_\_\_\_

Proposed DHC X \_\_\_\_\_  
Proposed SWD \_\_\_\_\_  
Proposed PMX \_\_\_\_\_  
Proposed DD \_\_\_\_\_

Gentlemen:

I have examined the application received on 1-4-94  
for the Meridian Oil Inc. ZACHRY #13  
OPERATOR LEASE & WELL NO.

N-33-29N-10W and my recommendations are as follows:  
UL-S-T-R

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

Yours truly,

*David Busch*