

**Ernie Busch**

---

**From:** Ernie Busch  
**To:** Ben Stone  
**Subject:** AMOCO FIELDS A#4A(DHC)  
**Date:** Thursday, March 21, 1996 1:24PM  
**Priority:** High

O-28-32N-11W  
RECOMMEND: APPROVAL

FORM C-115- OPERATORS MONTHLY REPORT (CONTINUATION)

OPERATOR: LOUIS DREYFUS NATURAL GAS CORP		OGRID: 025773		MONTH/YEAR 08/95		PAGE 25 OF 26										
7		INJECTION		PRODUCTION		DISPOSITION OF OIL, GAS, AND WATER										
POOL NO. AND NAME PROPERTY NO. AND NAME WELL NO. AND U-L-S-T-R API NUMBER	8 C D E 1	9 VOLUME PRESSURE	10 PRESSURE	11 C D E 2	12 BBLs OF OIL/COND- ENSATE PRODUCED	13 BBLs OF WATER PRODUCED	14 GAS PRODUCED (MCF)	15 DAYS PRODUCED	16 C D E 3	17 POINT OF DISPOS- ITION	18 GAS BTU OR OIL API GRAV	19 OIL ON HAND AT BEGINNING OF MONTH	20 VOLUME (BBLs/MCF)	21 TRANS- PORTER OGRID	22 C D E 4	23 OIL ON HAND AT END OF MONTH
05120 SHEEP DRAU ATOKA (GAS) 076385 SQUAW FEDERAL																
003 K-01-23S-25E 30-015-25379	F				0	0	784	31	G	0764230	1047		759	025773	U	
05160 SHEEP DRAU MORROW (GAS) 076385 SQUAW FEDERAL									G				25			
003 K-01-23S-25E 30-015-25379	F				0	0	320	31	G	0764130	1048		310	025773	U	
05200 SHEEP DRAU STRAIN (GAS) 076385 SQUAW FEDERAL									G				10			
001 F-12-23S-25E 30-015-20999	F				0	265	171	28	G	0762230	1088		171	025773		
016392 NEW MEXICO 'EV' STATE 001 K-32-22S-26E 30-015-25352	F				0	0	1152	31	G	0762110		45	1115	025773	U	45
									G	0762130	1047		37			



**Southern**

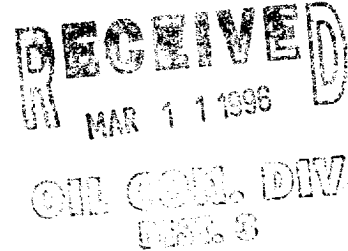
**Rockies**

**Business**

**Unit**

March 7, 1996

Mr. William J. LeMay, Director  
New Mexico Oil Conservation Division  
2040 S. Pacheco Street  
P. O. Box 6429  
Santa Fe, NM 87505



**Application for Exception to Rule 303-C**

**Downhole Commingling**

**Fields A #4A Well**

**840' FSL & 1580' FEL, Unit O Section 28-T32N-R11W**

**Undesignated Fruitland Sand and Blanco Mesaverde (Pool IDN 72319) Pools**

**San Juan County, New Mexico**

Amoco Production Company hereby requests administrative approval to downhole commingle production from the Undesignated Fruitland Sand and Blanco Mesaverde Pools in the Fields A #4A well referenced above. The Fields A #4A is currently a dual completion in the Fruitland Sand and Mesaverde formations. We plan to complete the well with both the Fruitland Sand and Mesaverde formations being downhole commingled in the wellbore. This well will benefit from downhole commingling because of the reduced costs of operation offered by commingling. The two zones are expected to produce at a total commingled rate of about 446 MCFD with less than 1.15 BCPD. The ownership (WI, RI, ORI) of these pools is common in this wellbore. Downhole commingling will offer an economical method of production while protecting against reservoir damage, waste of reserves and violation of correlative rights. Offset operators to this well will receive a copy of this application by certified mail.

The allocation method that we plan to use for this commingled well is as follows. Both formations have been producing at stabilized rates for some time. We recommend that the Mesaverde and Fruitland Sand formations gas and condensate be allocated based on current rates. The Mesaverde is currently producing at 433 MCFD with 1.15 BCPD while the Fruitland Sand is currently producing 13 MCFD with no condensate. The recommended allocation percentages after downhole commingling would be set as a percentage of the total rate with the Mesaverde attributing 97% of gas production and 100% of condensate production. The Fruitland Sand would be allocated at 3% of gas production and no condensate production. The actual commercial value of the commingled production will not be less than the sum of the values of the production from each of the common sources of supply.

Attached to aid in your review are plats showing the location of the well and offset wells in the same formation, a historical and recent production plot and a C-102 for each formation. This spacing unit

is located on a federal lease (NM-010989) and we will send a copy of the application to the BLM as their notice. Should you have questions concerning this matter, please contact me at (303) 830-5344.

Sincerely,

A handwritten signature in black ink, appearing to read 'Pamela W. Staley', written over the printed name.

Pamela W. Staley

Enclosures

cc: Khanh Vu  
Gail Jefferson

Frank Chavez, Supervisor  
NMOCD District III  
1000 Rio Brazos Road  
Aztec, NM 87410

Duane Spencer  
Bureau of Land Management  
1235 La Plata Hwy.  
Farmington, NM 87401

Application for Exception to Rule 303: SEGREGATION OF PRODUCTION FROM POOLS

Requirements

- (1) Name and address of the operator:

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

- (2) Lease name, well number, well location, name of the pools to be commingled:

Lease Name: Fields A

Well Number: #4A

Well Location: 840' FSL & 1580' FEL  
Unit O Section 28-T32N-R11W  
San Juan County, New Mexico

Pools Commingled: Blanco Mesaverde Pool  
Undesignated Fruitland Sand Pool

- (3) A plat of the area showing the acreage dedicated to the well and the ownership of all offsetting leases.

Attached

- (4) A current (within 30 days) 24-hour productivity test on Division Form C-116 showing the amount of oil, gas and water produced from each zone.

The Blanco Mesaverde produced an average stabilized rate of 433 MCFD and 1.15 BCPD. The Undesignated Fruitland Sand zone produced at an average rate of about 13 MCFD and no condensate.

- (5) A production decline curve for both zones showing that for a period of at least one year a steady rate of decline has been established for each zone which will permit a reasonable allocation of the commingled production to each zone for statistical purposes.

Blanco Mesaverde Completion:

Historical production curve attached.

Undesignated Fruitland Sand Completion:

Historical production curve attached.

- (6) Estimated bottomhole pressure for each zone. A current (within 30 days) measured bottom hole pressure for each zone capable of flowing.

Bottomhole pressures were estimated from 72 hour shut-in pressures during a packer leakage test for the well. Estimated bottomhole pressure in the Fruitland Sand formation is 391 PSI while the estimated bottomhole pressure in the Mesaverde is 587 PSI. See attached calculations.

- (7) A description of the fluid characteristics of each zone showing that the fluids will not be incompatible in the wellbore.

The two formations do not produce any measurable amount of fluids and therefore are not expected to any effect that would prohibit commingling, or promote the creation of emulsions or scale .

- (8) A computation showing that the value of the commingled production will not be less than the sum of the values of the individual streams:

Since the BTU content of the produced gasses are very similar, we would expect the commingled production to have a similar value as the sum of the individual streams.

- (9) A formula for the allocation of production to each of the commingled zones and a description of the factors or data used in determining such formula:

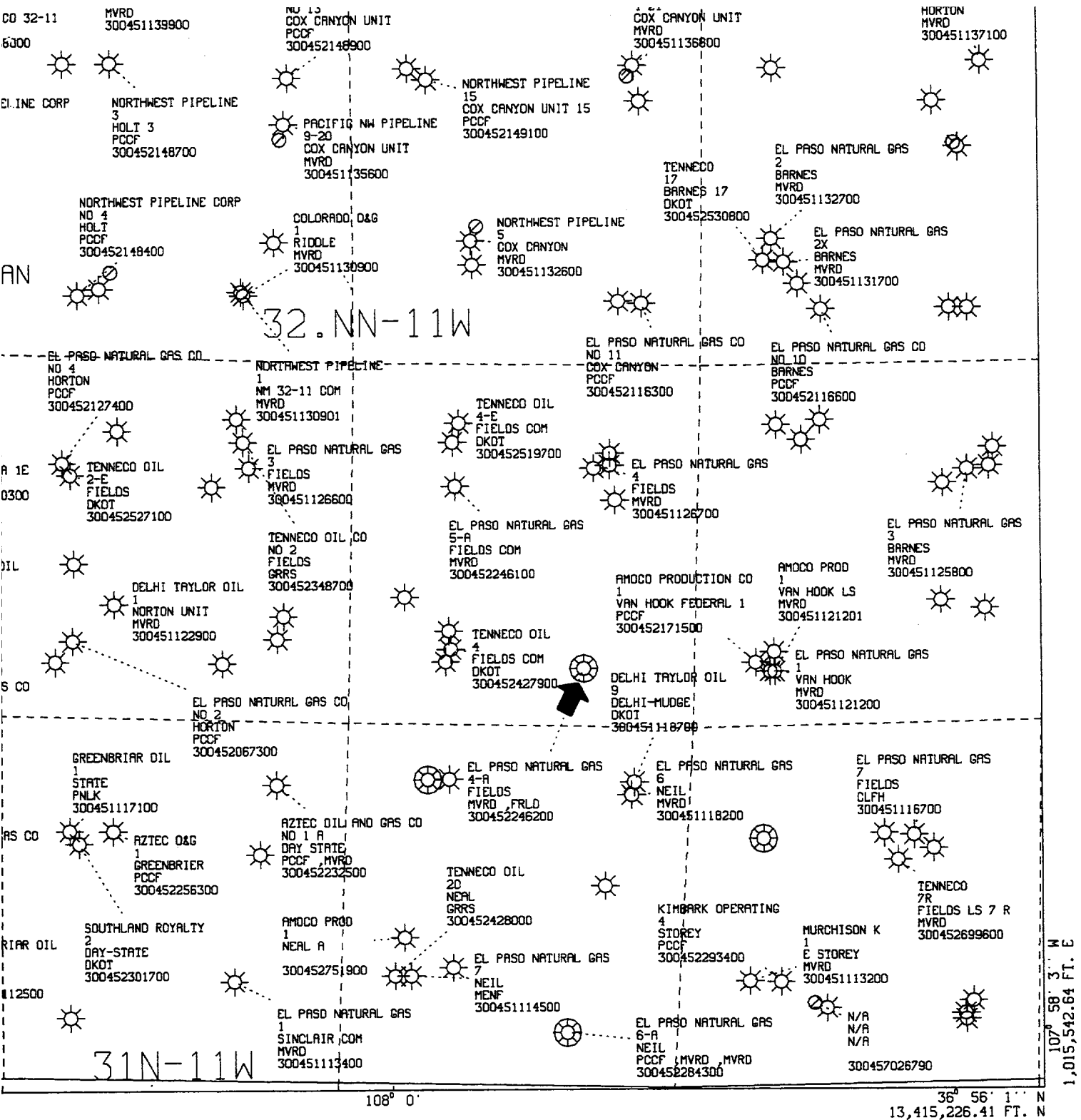
The allocation method that we plan to use for this commingled well is as follows. Both formations have been producing at stabilized rates for some time. We recommend that the Mesaverde and Fruitland Sand formations gas and condensate be allocated based on current rates. The Mesaverde is currently producing at 433 MCFD with 1.15 BCPD while the Fruitland Sand is currently producing 13 MCFD with no condensate. The recommended allocation percentages after downhole commingling would be set as a percentage of the total rate with the Mesaverde attributing 97% of gas production and 100% of condensate production. The Fruitland Sand would be allocated at 3% of gas production and no condensate production. The actual commercial value of the commingled production will not be less than the sum of the values of the production from each of the common sources of supply.

- (10) A statement that all offset operators and, in the case of a well on federal land, the United States Bureau of Land Management, have been notified in writing of the proposed commingling.

BLM will receive a copy of this application by certified mail. The offsetting operators listed on the attached sheet will receive a copy of this application by certified mail.

- (11) Referencing NMOCD Order No. 10470 Rule 303 (D) (11): In a case where there is diversity of ownership between the zones to be commingled (including working royalty, or overriding royalty interest), the applicant shall submit a statement that all such interest owners have been notified in writing of the proposed commingling.

Interests are common between the formations.



AMOCO PRODUCTION COMPANY  
 PLAT MAP  
 Fields A 4A  
 Offset Wells

SCALE 1 IN. = 2,000 FT. APR 27, 1995

HORIZONTAL DATUM NAD27

DWS09023--RUN#95117002733

All distances must be from the outer boundaries of the Section.

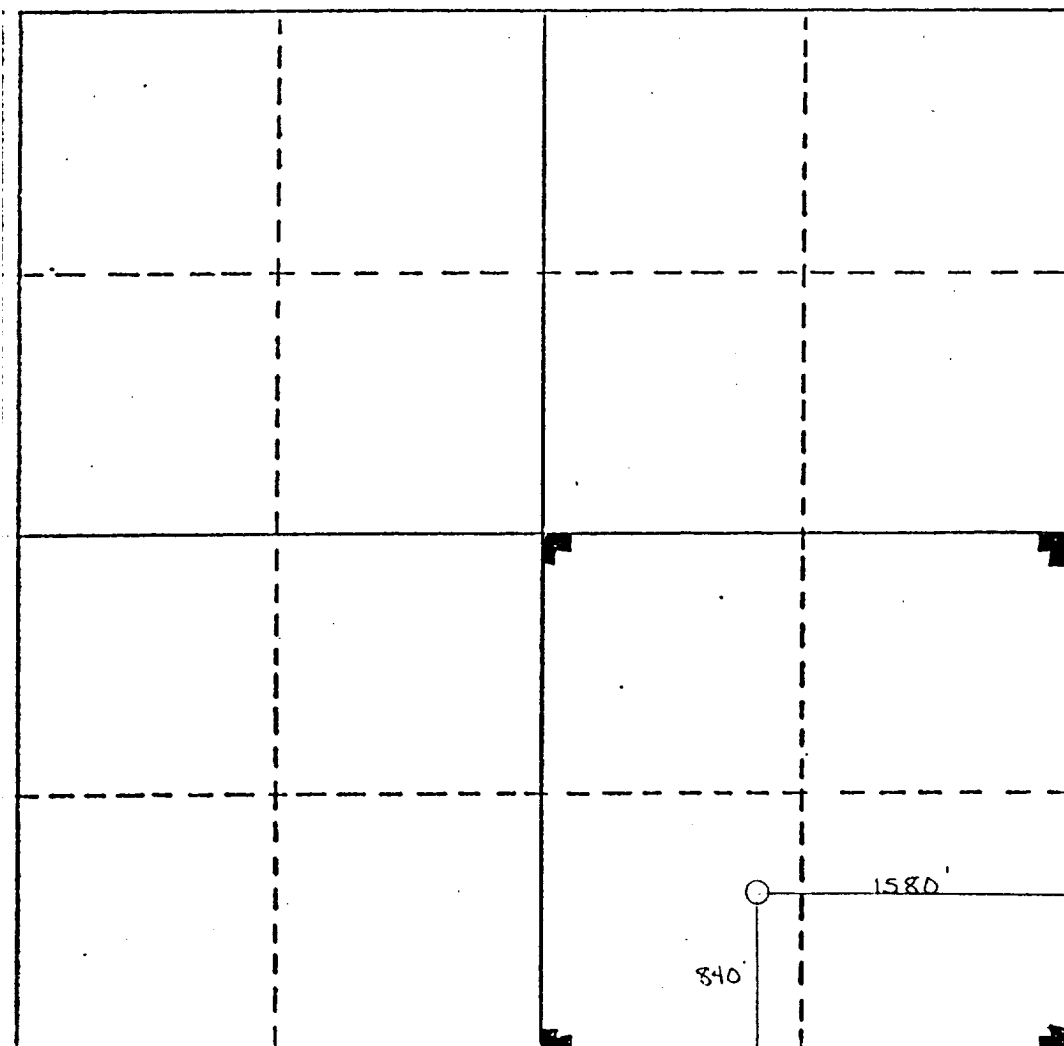
Operator <b>Amoco Production Co.</b>			Lease <b>Fields LS</b>		Well No. <b>4A</b>
Unit Letter <b>0</b>	Section <b>28</b>	Township <b>32N</b>	Range <b>11W</b>	County <b>San Juan</b>	
Actual Postage Location of Well:					
<b>840</b> feet from the <b>South</b> line and		<b>1580</b> feet from the <b>East</b> line			
Ground Level Elev. <b>6185'</b>	Producing Formation <b>Fruitland</b>	Pool <b>Undesignated Fruitland Sand</b>	Dedicated Acreage: <b>160 SE/4</b> Acres		

1. Outline the acreage dedicated to the subject well by colored pencil or hatchure marks on the plat below.
2. If more than one lease is dedicated to the well, outline each and identify the ownership thereof (both as to working interest and royalty).
3. If more than one lease of different ownership is dedicated to the well, have the interests of all owners been consolidated by communitization, unitization, force-pooling, etc?

☐ Yes ☐ No If answer is "yes," type of consolidation \_\_\_\_\_

If answer is "no," list the owners and tract descriptions which have actually been consolidated. (Use reverse side of this form if necessary.) \_\_\_\_\_

No allowable will be assigned to the well until all interests have been consolidated (by communitization, unitization, forced-pooling, or otherwise) or until a non-standard unit, eliminating such interests, has been approved by the Division.



#### CERTIFICATION

I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief.

*B. D. Shaw*

Name  
**B. D. Shaw**  
Position  
**Admin. Supv**  
Company  
**Amoco**  
Date  
**3-3-89**

I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my knowledge and belief.

*On file*

Date Surveyed

Registered Professional Engineer and/or Land Surveyor

Certificate No.



All distances must be from the outer boundaries of the Section.

Operator <b>EL PASO NATURAL GAS COMPANY</b>		Lease <b>FIELDS (NM-010989)</b>		Well No. <b>4A</b>
Unit Letter <b>0</b>	Section <b>28</b>	Township <b>32-N</b>	Range <b>11-W</b>	County <b>SAN JUAN</b>
Actual Footage Location of Well: <b>840</b> feet from the <b>SOUTH</b> line and <b>1580</b> feet from the <b>EAST</b> line				
Ground Level Elev. <b>6185</b>	Producing Formation <b>FRUITLAND &amp; MESA VERDE</b>	Pool <b>UNDESIGNATED FRUITLAND BLANCO MESA VERDE</b>	Dedicated Acreage: <b>160.00 &amp; 320.00</b> Acres	

1. Outline the acreage dedicated to the subject well by colored pencil or hatchure marks on the plat below.
2. If more than one lease is dedicated to the well, outline each and identify the ownership thereof (both as to working interest and royalty).
3. If more than one lease of different ownership is dedicated to the well, have the interests of all owners been consolidated by communitization, unitization, force-pooling, etc?

☐ Yes ☐ No If answer is "yes," type of consolidation \_\_\_\_\_

If answer is "no," list the owners and tract descriptions which have actually been consolidated. (Use reverse side of this form if necessary.) \_\_\_\_\_

No allowable will be assigned to the well until all interests have been consolidated (by communitization, unitization, forced-pooling, or otherwise) or until a non-standard unit, eliminating such interests, has been approved by the Commission.  
NOTE: THIS PLAT IS REISSUED TO SHOW DUAL COMPLETION. 4-6-77

NOTE: THIS PLAT IS REISSUED  
TO SHOW CHANGE IN FORMATION.  
9-6-77

SECTION 28

NM-010989

## CERTIFICATION

I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief.

Original Signed by  
**D. G. Brisco**

Name  
**Drilling Clerk**

Position  
**El Paso Natural GasCo**

Company  
**September 8, 1977**

Date

I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my knowledge and belief.

Date Surveyed  
**MARCH 22, 1977**

Registered Professional Engineer  
and/or Land Surveyor

*[Signature]*

Certificate No.  
**1760**

0 500 1000 1500 2000 2500 2640 2310 1980 1650 1320 990 660 330 0

NEW MEXICO OIL CONSERVATION COMMISSION  
 WELL LOCATION AND ACREAGE DEDICATION PLAT

Form C-102  
 Supersedes C-128  
 Effective 1-1-65

All distances must be from the outer boundaries of the Section.

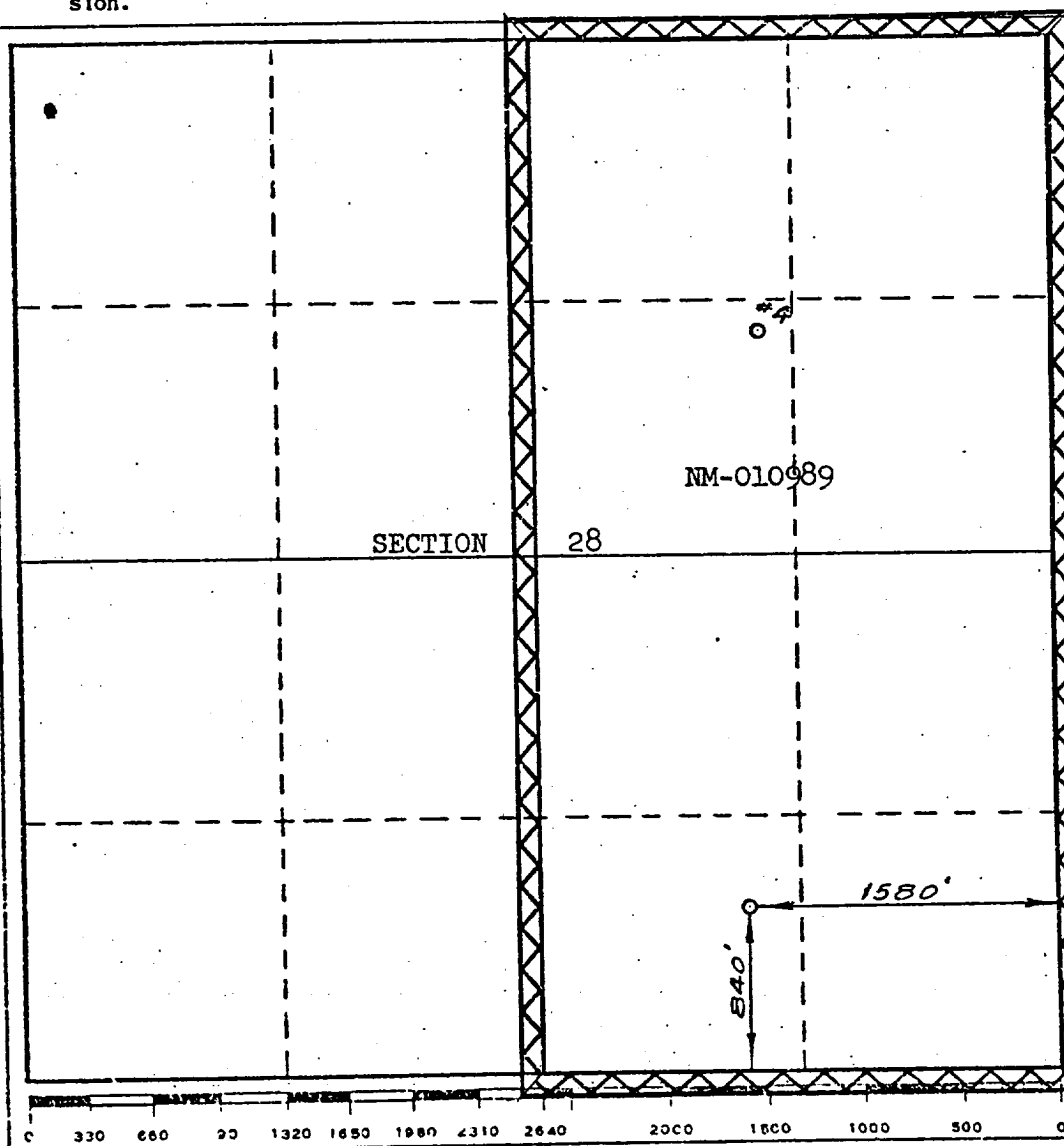
Operator <b>EL PASO NATURAL GAS COMPANY</b>			Lease <b>FIELDS (NM-010989)</b>		Well No. <b>4A</b>
Unit Letter <b>0</b>	Section <b>28</b>	Township <b>32-N</b>	Range <b>11-W</b>	County <b>SAN JUAN</b>	
Actual Footage Location of Well: <b>840</b> feet from the <b>SOUTH</b> line and <b>1580</b> feet from the <b>EAST</b> line					
Ground Level Elev. <b>6185</b>	Producing Formation <b>MESA VERDE</b>		Pool <b>BLANCO MESA VERDE</b>		Dedicated Acreage: <b>320.0</b> Acres

1. Outline the acreage dedicated to the subject well by colored pencil or hachure marks on the plat below.
2. If more than one lease is dedicated to the well, outline each and identify the ownership thereof (both as to working interest and royalty).
3. If more than one lease of different ownership is dedicated to the well, have the interests of all owners been consolidated by communitization, unitization, force-pooling, etc?

☐ Yes ☐ No If answer is "yes," type of consolidation \_\_\_\_\_

If answer is "no," list the owners and tract descriptions which have actually been consolidated. (Use reverse side of this form if necessary.) \_\_\_\_\_

No allowable will be assigned to the well until all interests have been consolidated (by communitization, unitization, forced-pooling, or otherwise) or until a non-standard unit, eliminating such interests, has been approved by the Commission.



CERTIFICATION

I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief.

Original Signed by  
**D. G. Baker**

Name

**Drilling Clerk**  
 Position

**El Paso Natural Gas**  
 Company

**April 1, 1977**  
 Date

I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my knowledge and belief.

Date Surveyed

**MARCH 22, 1977**

Registered Professional Engineer and/or Land Surveyor

Certificate No:

**1760**

Engr: zdws22

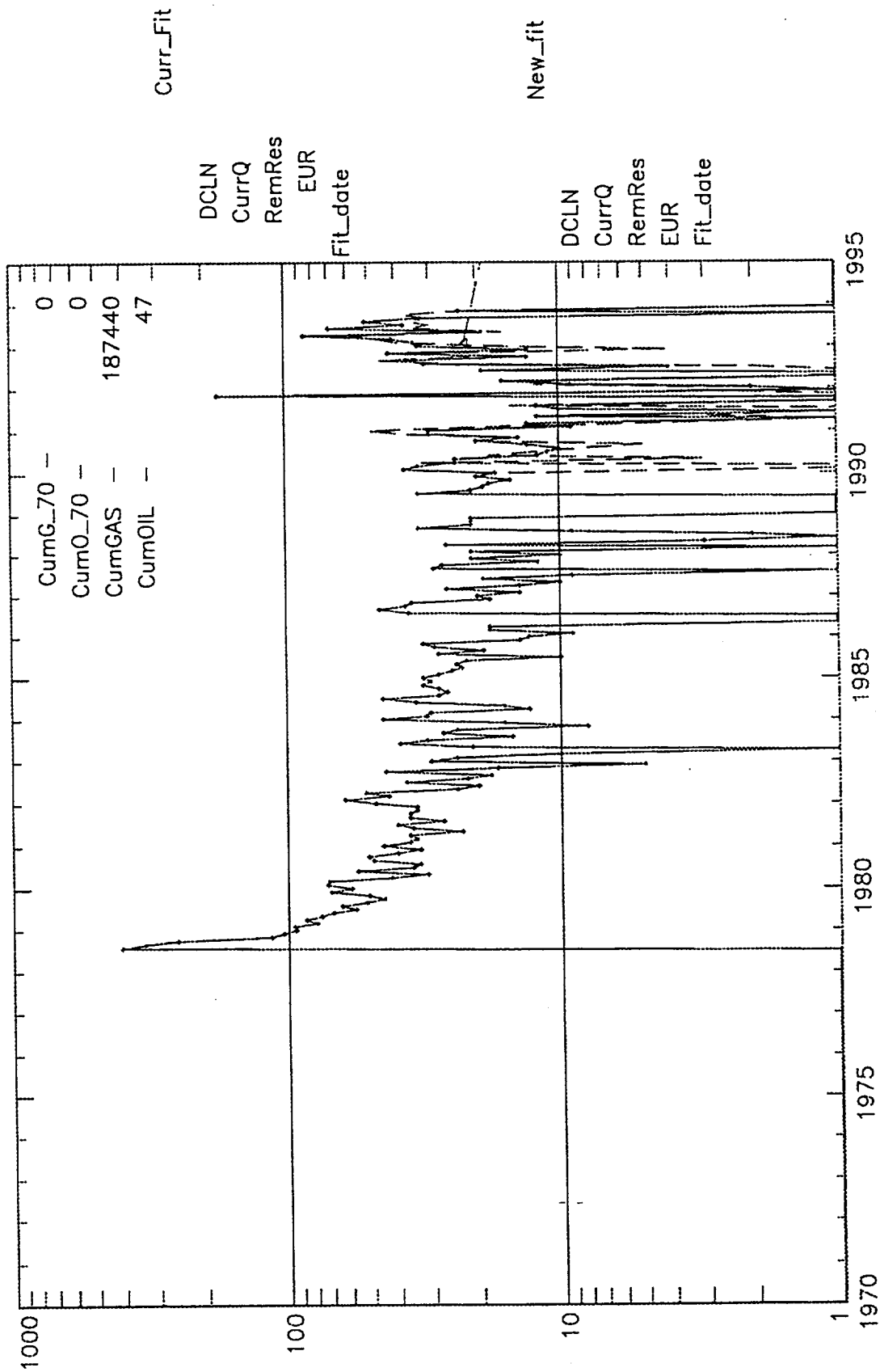
FIELDS A 4A

Operator-- AMOCO PRODUCTION CO

300452246200FT

0283211-004AFT

APC\_WI - 0.50000000



Engr: zdws22

FIELDS A 4A

Operator-- AMOCO PRODUCTION CO

300452246200MV 0283211-004AMV

APC\_WI - 0.50000000

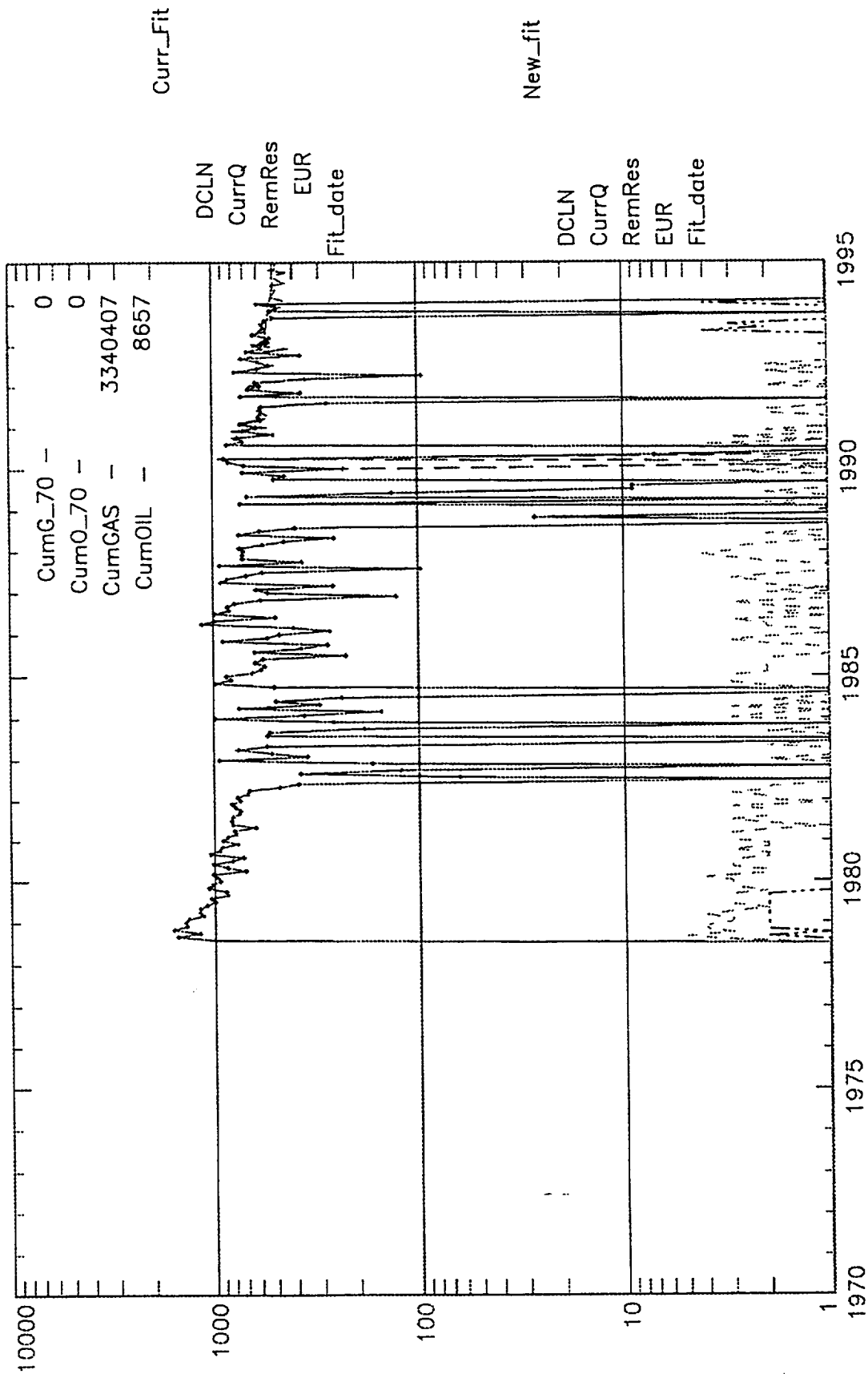
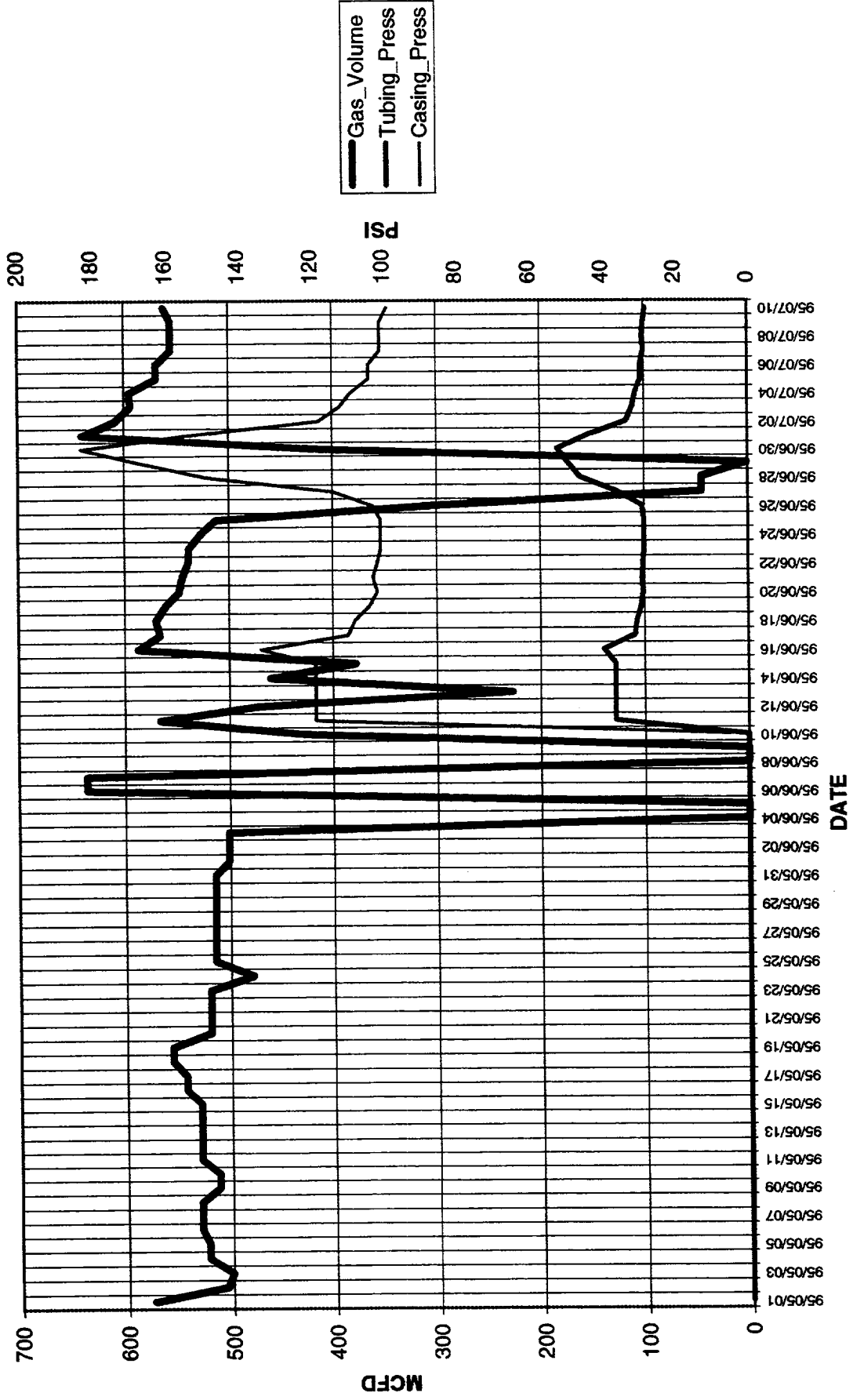


Chart1

Well: FIELDS A 004A-MV (97936202)



***ESTIMATED BOTTOMHOLE PRESSURES BY FORMATION***  
Fields A #4A

FT Perforations at 2448-2663' midperf at 2556'  
MV Perforations at 4431-5570' midperf at 5001'

6/94 shut in pressures --- MV =187 PSIG  
FT =315 PSIG

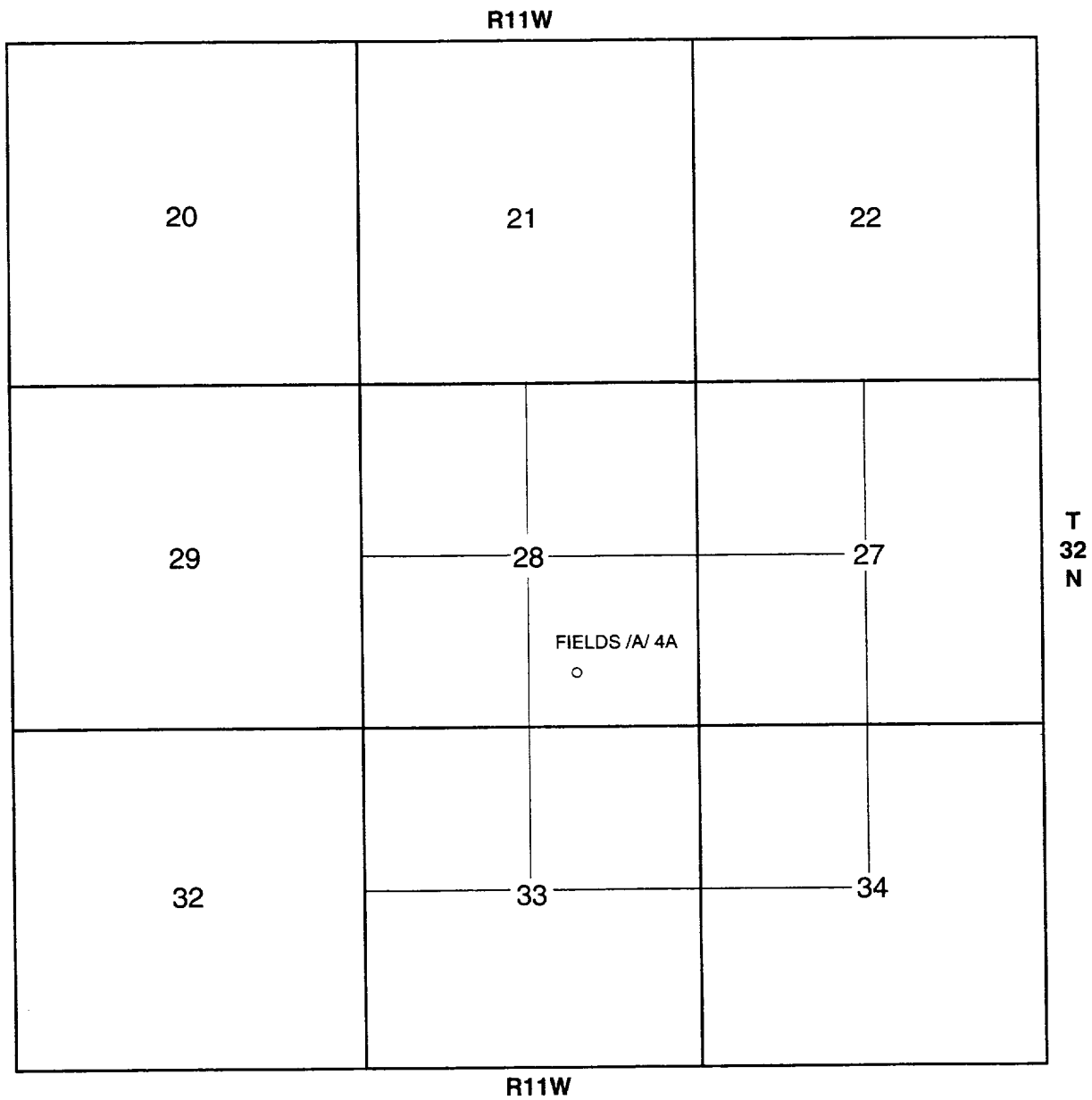
GRADIENT = 0.08 PSI/FT MV  
0.03 PSI/FT FT

MV BHP = 187 PSIG + 5001' X 0.08 PSIG  
= 587 PSIG

FT BHP = 315 PSIG +2556' X 0.03 PSIG  
=391 PSIG

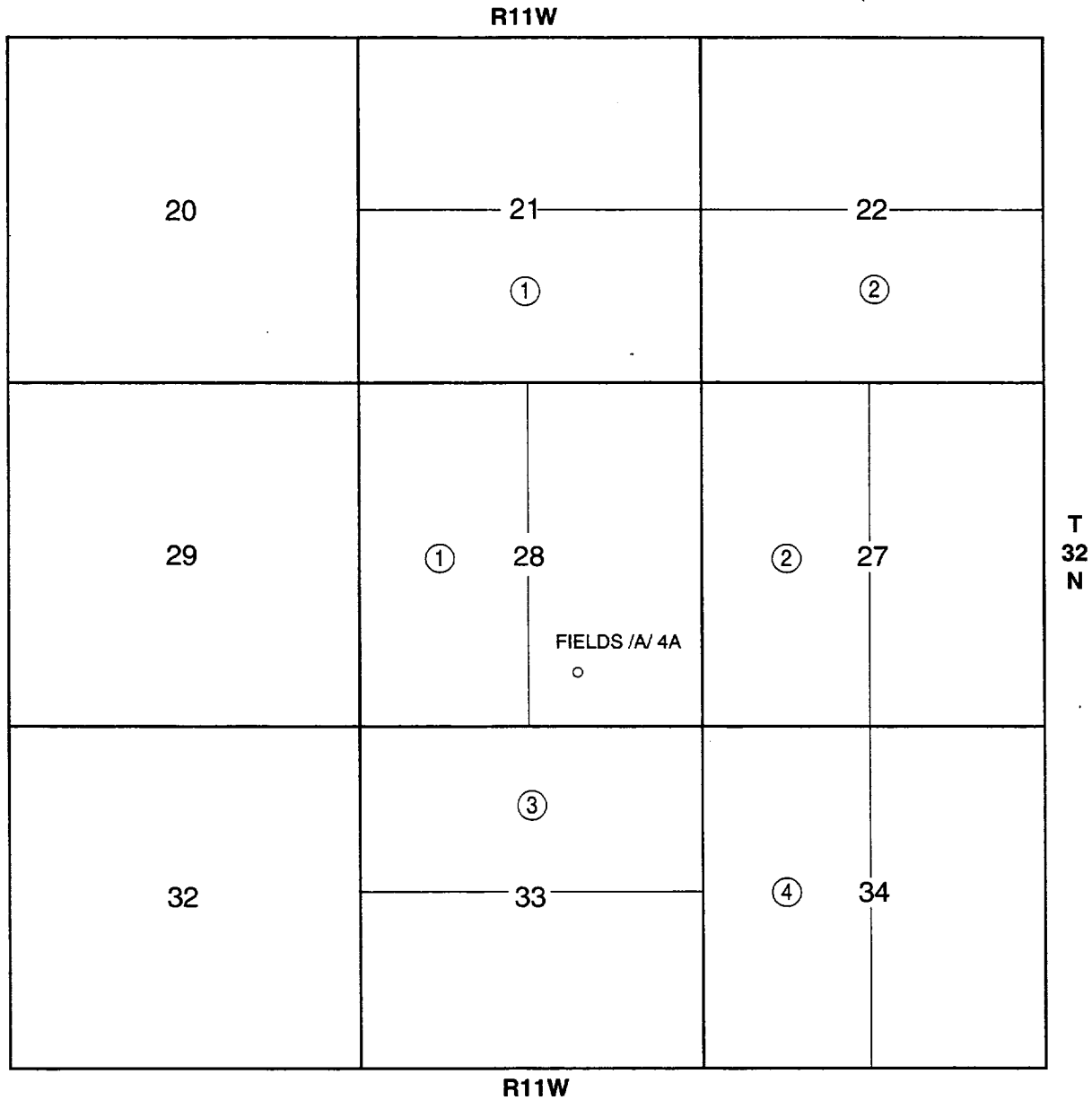


**Amoco Production Company**  
Offset Operator Plat  
Fields /A/ 4A  
T32N-R11W Sec. 28  
Undes Fruitland Sand Formation





**Amoco Production Company**  
 Offset Operator Plat  
 Fields /A/ 4A  
 T32N-R11W Sec. 28  
 Blanco Mesaverde Formation



- ① Amoco Production Company
- ② Basin Minerals Inc.
- ③ Conoco Inc.
- ④ Meridian Oil Production Inc.

**LIST OF ADDRESSES FOR OFFSET OPERATORS**

Fields A #4A

- 1 Meridian Oil, Inc.  
P.O. Box 4289  
Farmington, NM 87499
- 2 Conoco, Inc.  
10 Desta Drive West  
Midland, Texas 79705
- 3 Basin Minerals, Inc.  
C/O Walsh Eng. and Prod. Corp  
204 N. Auburn  
Farmington, NM 87401