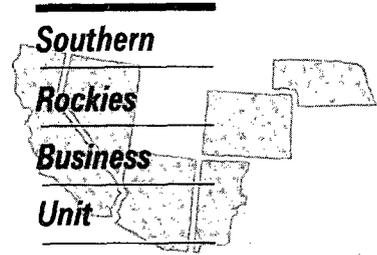


DHC 10-2-95



September 1, 1995

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  
Jicarilla Apache 102 Well #4  
1450' FSL & 1450' FWL, Unit K Section 4-T26N-R5W  
Blanco Mesaverde and Tapacito Pictured Cliffs Pools  
Rio Arriba County, New Mexico**

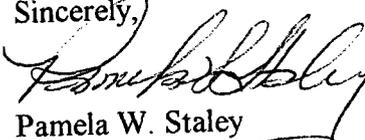
Amoco Production Company hereby requests administrative approval to downhole commingle production from the Blanco Mesaverde and Tapacito Pictured Cliffs Pools in the Jicarilla Apache 102 Well #4 referenced above. The Jicarilla Apache 102 Well #4 was originally a dual completion in the Mesaverde and Pictured Cliffs formations. This well has a marginal Pictured Cliffs formation which is being produced dually with a marginal Mesaverde formation which if left as a dual completion, the zones would likely be shut-in in the near future. We plan to complete the well with both the Mesaverde and Pictured Cliffs formations being downhole commingled in the wellbore. The two zones are expected to produce at a total commingled rate of about 154 MCFD with 4 BCPD. The ownership (WI, RI, ORI) of these pools is identical 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. Since these formations have been producing for some time, we have a good historical representation of the production by formation. Based on historical production we recommend that the allocation for gas production be 74% from the Mesaverde formation and 26% from the Pictured Cliffs formation. The Pictured Cliffs has not historically produced liquids in this well. Based on that fact, we propose to allocate 100% of the liquid production to the Mesaverde formation. 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 formations, a historical production plot and a C-102 for each formation. This spacing unit is on a federal lease and a copy of the application will be sent to the BLM as required.

Should you have questions concerning this matter, please contact me at (303) 830-5344.

Sincerely,



Pamela W. Staley

Enclosures

cc: Steve Smethie  
Patty Haefele

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

Robert Kent  
Bureau of Land Management  
435 Montano NE  
Albuquerque, NM 87107

**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: Jicarilla Apache 102  
  
Well Number: 4  
Well Location: 1450' FSL & 1450' FWL  
Unit K Section 4-T26N-R5W  
Rio Arriba County, New Mexico  
  
Pools Commingled: Tapacito Pictured Cliffs  
Blanco Mesaverde

- (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 Mesaverde produced an average stabilized rate of 55 MCFD and 0 BCPD. The Pictured Cliffs zone produced at an average rate of about 19 MCFD and 0 BCPD.

- (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.

Tapacito Pictured Cliffs Completion: Historical production curve attached.  
Blanco Mesaverde 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 OCD Packer Leakage Tests. Shut-in bottomhole pressure in the Pictured Cliffs formation is calculated to be 675 PSIG while estimated bottomhole pressure in the Mesaverde formation is 1017 PSIG. Therefore these pressures meet the pressure differential rule under article 303-C (b)(vi). See attached calculation and packer leakage test results.

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

The fluids in the Mesaverde have no abnormal components that would prohibit commingling, or promote the creation of emulsions or scale when commingled with the Pictured Cliffs formation.

- (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:

The BTU content of the produced streams are very similar and as such, we would expect the commingled production to have the same 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:

Based on historical production we recommend that the allocation for gas production be 74% from the Mesaverde formation and 26% from the Pictured Cliffs formation. The Pictured Cliffs has not historically produced liquids in this well. Based on that fact, we propose to allocate 100% of the liquid production to the Mesaverde formation. 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.

NEW MEXICO OIL CONSERVATION COMMISSION  
Well Location and Acreage Dedication Plat

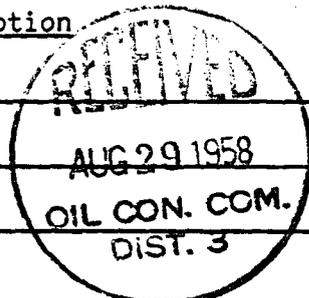
Section A.

Date August 26, 1958

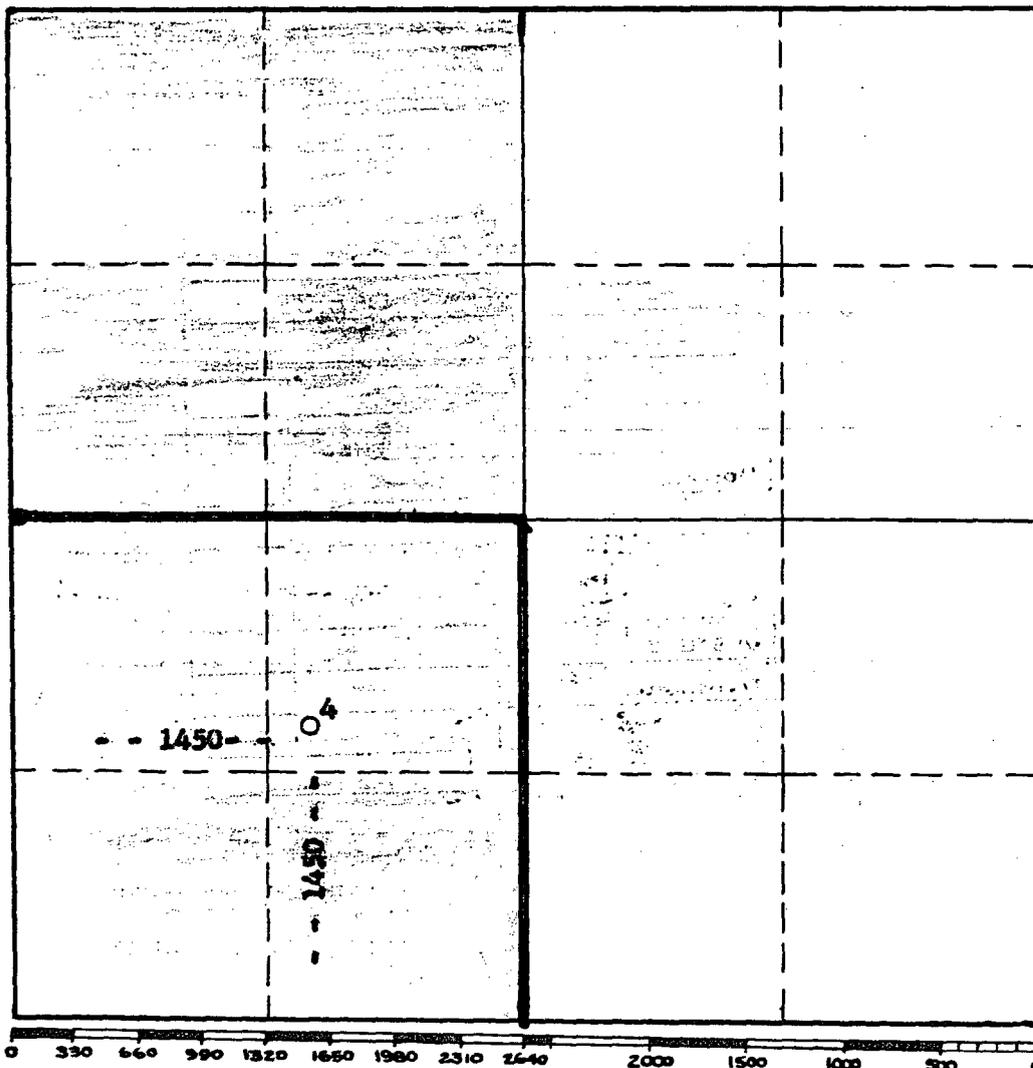
Operator HONOLULU OIL CORPORATION Lease JICARILLA APACHE  
Well No. 4 Unit Letter K Section 4 Township 26N Range 4W NMPM  
Located 1450 Feet From South Line, 1450 Feet From West Line  
County Rio Arriba G. L. Elevation 7171 Dedicated Acreage 320 1/2 288 Acres  
Name of Producing Formation Mesa Verde Pool Blanco

1. Is the Operator the only owner\* in the dedicated acreage outlined on the plat below?  
Yes  No .
2. If the answer to question one is "no," have the interests of all the owners been consolidated by communitization agreement or otherwise? Yes  No . If answer is "yes," Type of Consolidation \_\_\_\_\_
3. If the answer to question two is "no," list all the owners and their respective interests below:

<u>Owner</u>	<u>Land Description</u>



Section B



This is to certify that the information in Section A above is true and complete to the best of my knowledge and belief.

HONOLULU OIL CORPORATION

(Operator)

Wm. R. Hoy  
(Representative)

P.O. Drawer 1391

Midland, Texas

Address

This is to certify that the well location shown on the plat in Section B 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 \_\_\_\_\_

Registered Professional Engineer and/or Land Surveyor.

Certificate No. \_\_\_\_\_  
(See instructions for completing this form on the reverse side)

NEW MEXICO  
OIL CONSERVATION COMMISSION

Form C-123

Well Location and/or Gas Proration Plat

Date June 11, 1956

Operator HONOLULU OIL COMPANY Lease Jicarilla-Apache

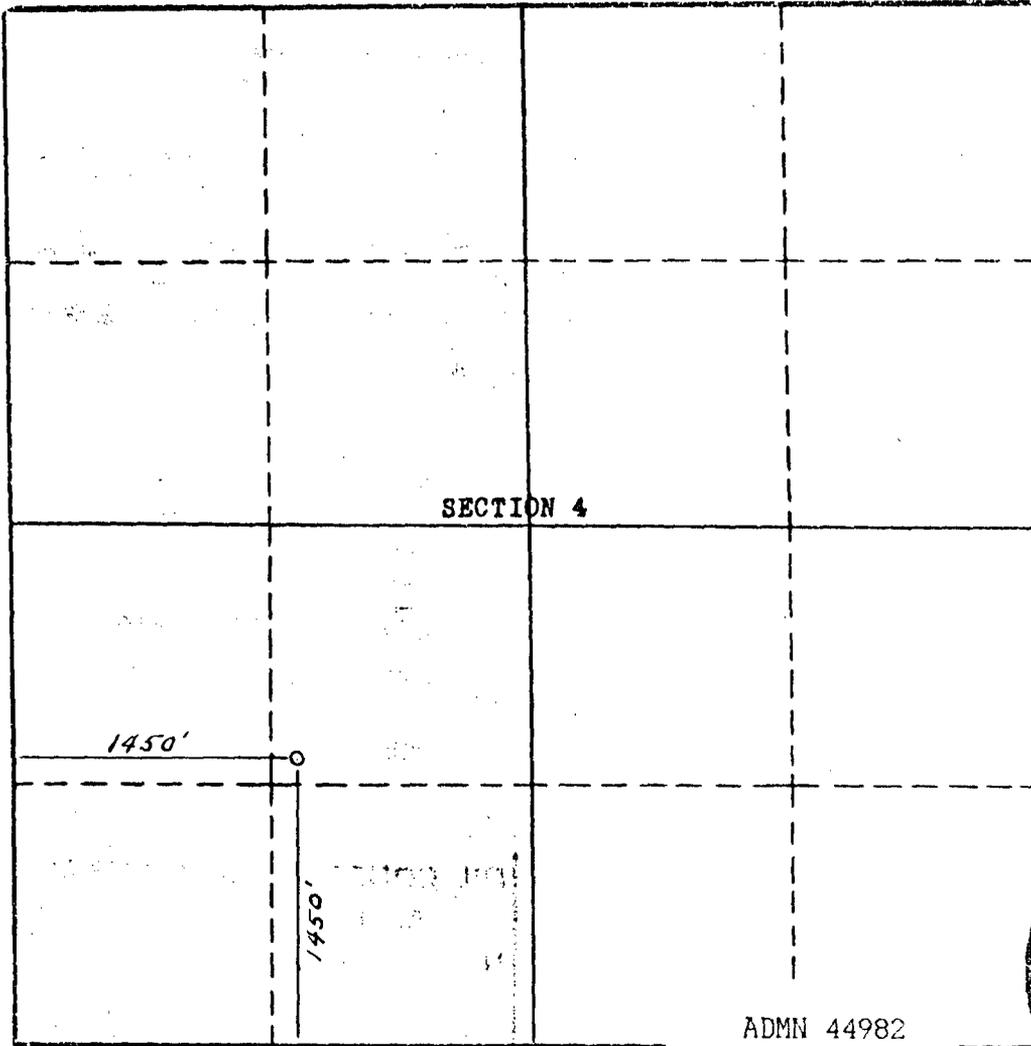
Well No. 4 Section 4 Township 26N Range 4W NMPM

Located 1450 Feet From South Line, 1450 Feet From West Line,

Rio Arriba County, New Mexico. G. L. Elevation 7171

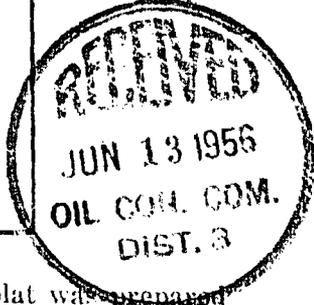
Name of Producing Formation **Pictured Cliff** Pool **Tapacito** Dedicated Acreage **320**

(Note: All distances must be from outer boundaries of Section)



ADMN 44982

Scale—1 Inch Equals 1000 Feet



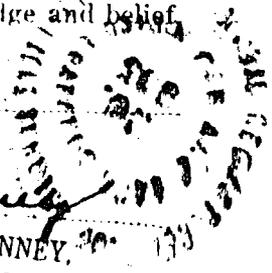
1. Is this Well a Dual Comp.? Yes No
2. If the answer to Question 1 is yes, are there any other dual completed wells within the dedicated acreage? Yes No

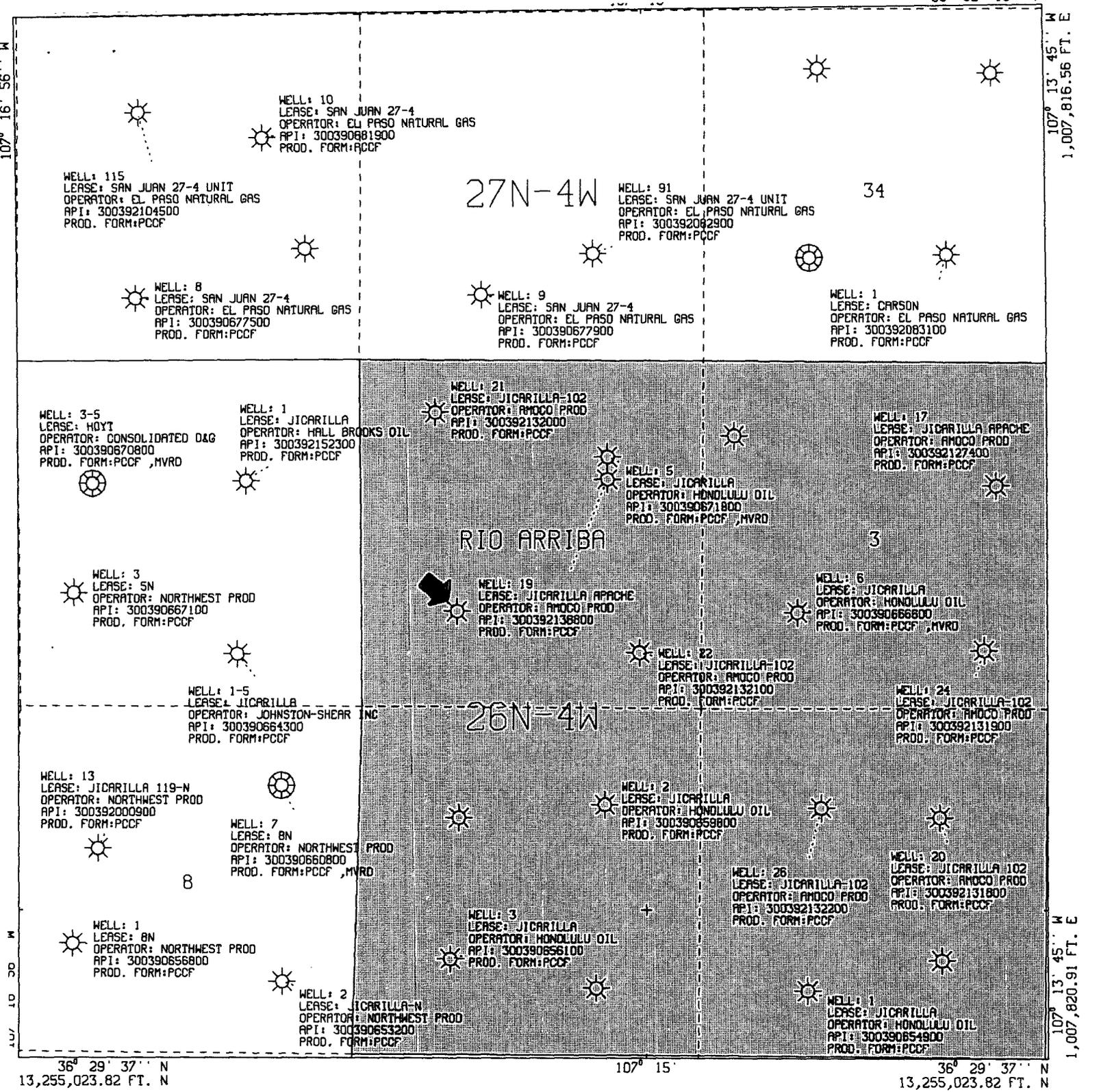
**George R. Hoy**  
 Name **HONOLULU OIL CORPORATION**  
 Position **Division Development Engineer**  
 Representing **P.O. Drawer 1391, Midland, Texas.**

This is to certify that the above plat was prepared from field notes of actual surveys made by me or under my supervision and that the same are true and correct to the best of my knowledge and belief.

Date Surveyed May 19, 1956

*Stephen H. Kinney*  
**STEPHEN H. KINNEY**  
 Registered Professional Engineer and Land Surveyor

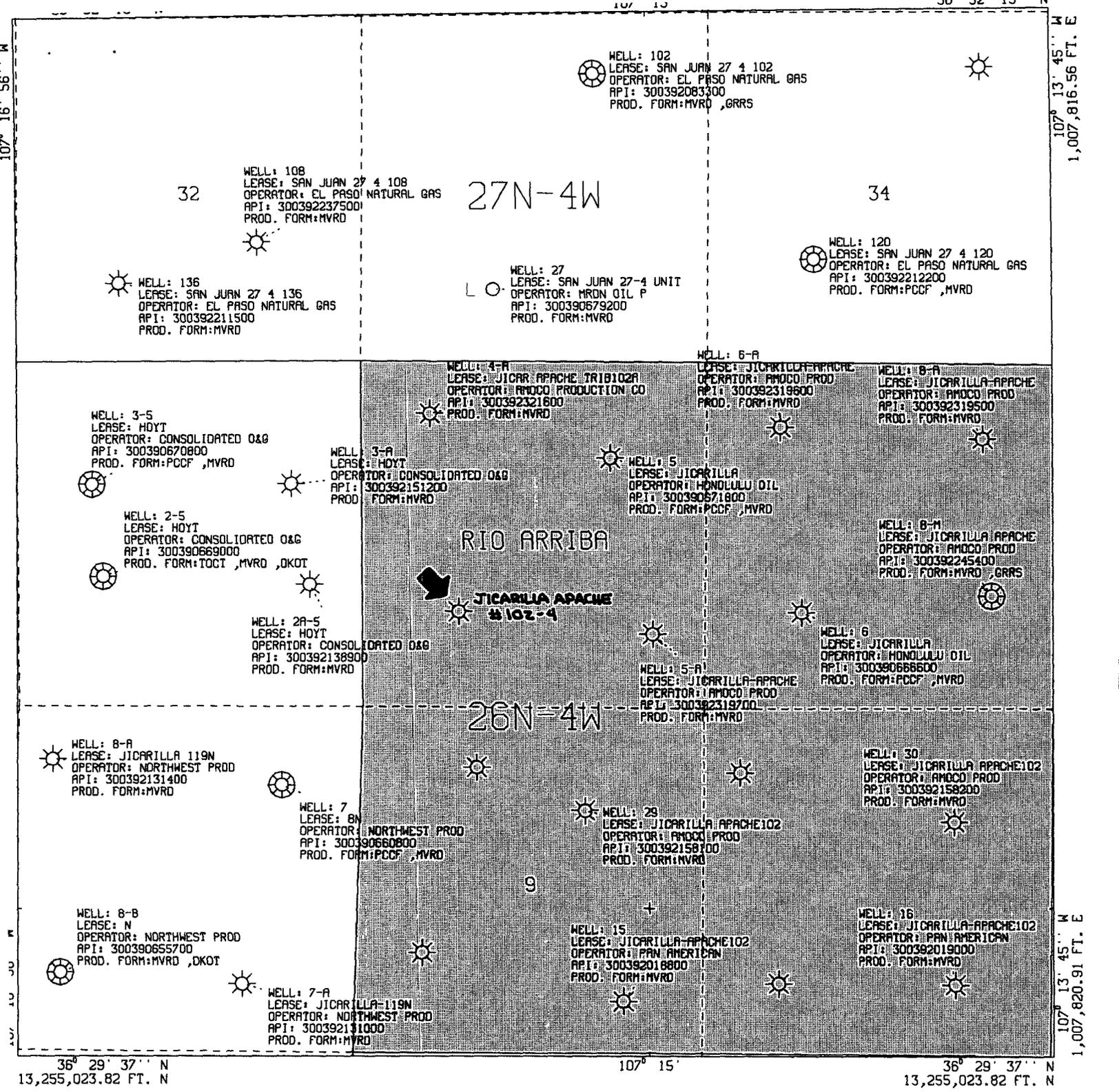




All geological and geophysical data, including the interpretation thereof, appearing on this map is the private and confidential property of Amoco Production Company. The publication or reproduction thereof without the written permission of said Company is strictly prohibited.



AMOCO PRODUCTION COMPANY  
 PLAT MAP  
 Jicarilla Apache 102-4 Sec. 4-T26N-R04W  
 Rio Arriba New Mexico  
 SCALE 1 IN. = 2,000 FT. JUL 15, 1995



All geological and geophysical data, including the interpretation thereof, appearing on this map is the private and confidential property of Amoco Production Company. The publication or reproduction thereof without the written permission of said Company is strictly prohibited.



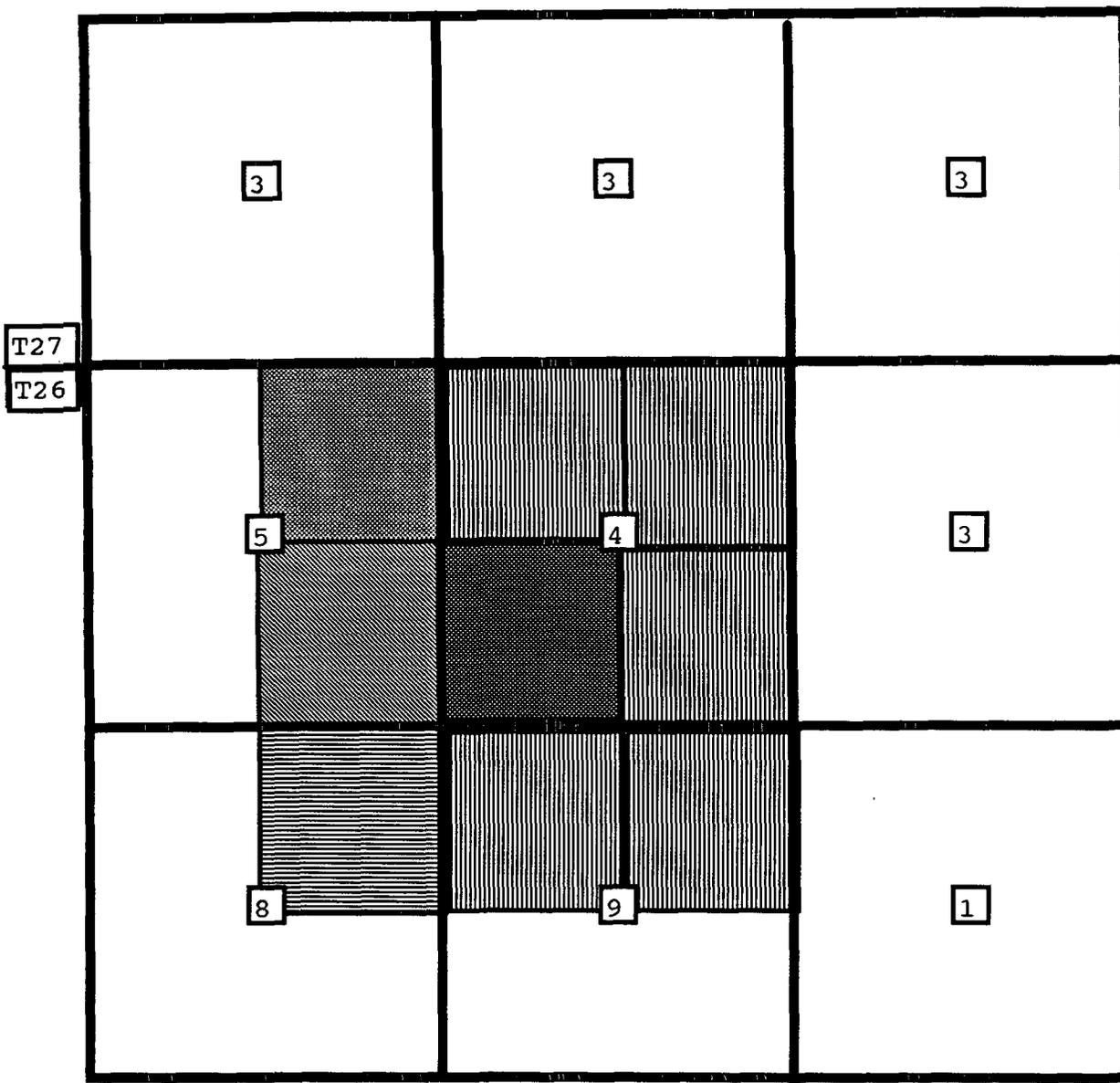
**AMOCO PRODUCTION COMPANY**  
**PLAT MAP**  
 Jicarilla Apache 102-4 Sec. 4-T26N-R04W  
 Rio Arriba New Mexico FM: MVRD  
  
 SCALE 1 IN. = 2,000 FT. JUL 15, 1995

LIST OF ADDRESSES FOR OFFSET OPERATORS  
Jicarilla Apache 102 Well #4

- 1 Meridian Oil, Inc.  
P.O. Box 4289  
Farmington, NM 87499
  
- 2 Snyder Oil Corp.  
1625 Broadway  
Denver. Co. 80202
  
- 3 Oklahoma and Northwestern Co.  
c/o Dugan Production Corporation  
P.O. Box 420  
Farmington, New Mexico 87499
  
- 4 Rife Oil Properties, Inc.  
c/o Dugan Production Corporation  
P.O. Box 420  
Farmington, New Mexico 87499

AMOCO PRODUCTION COMPANY OFFSET OPERATOR PLAT

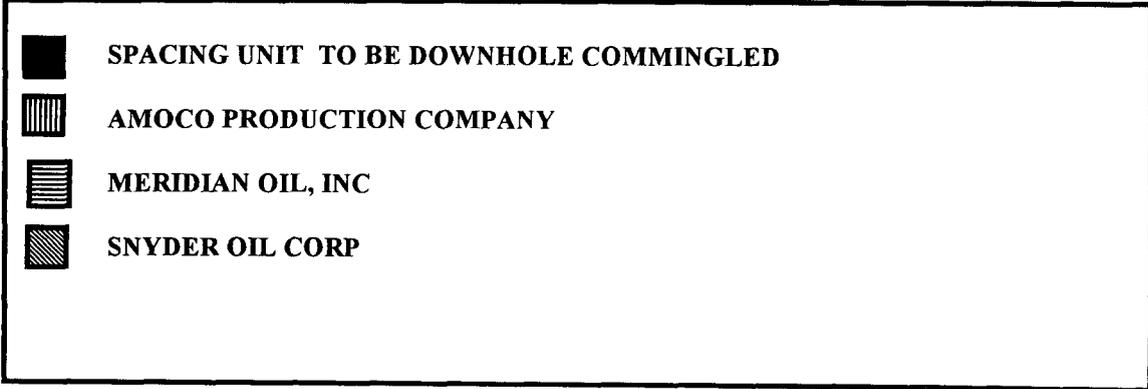
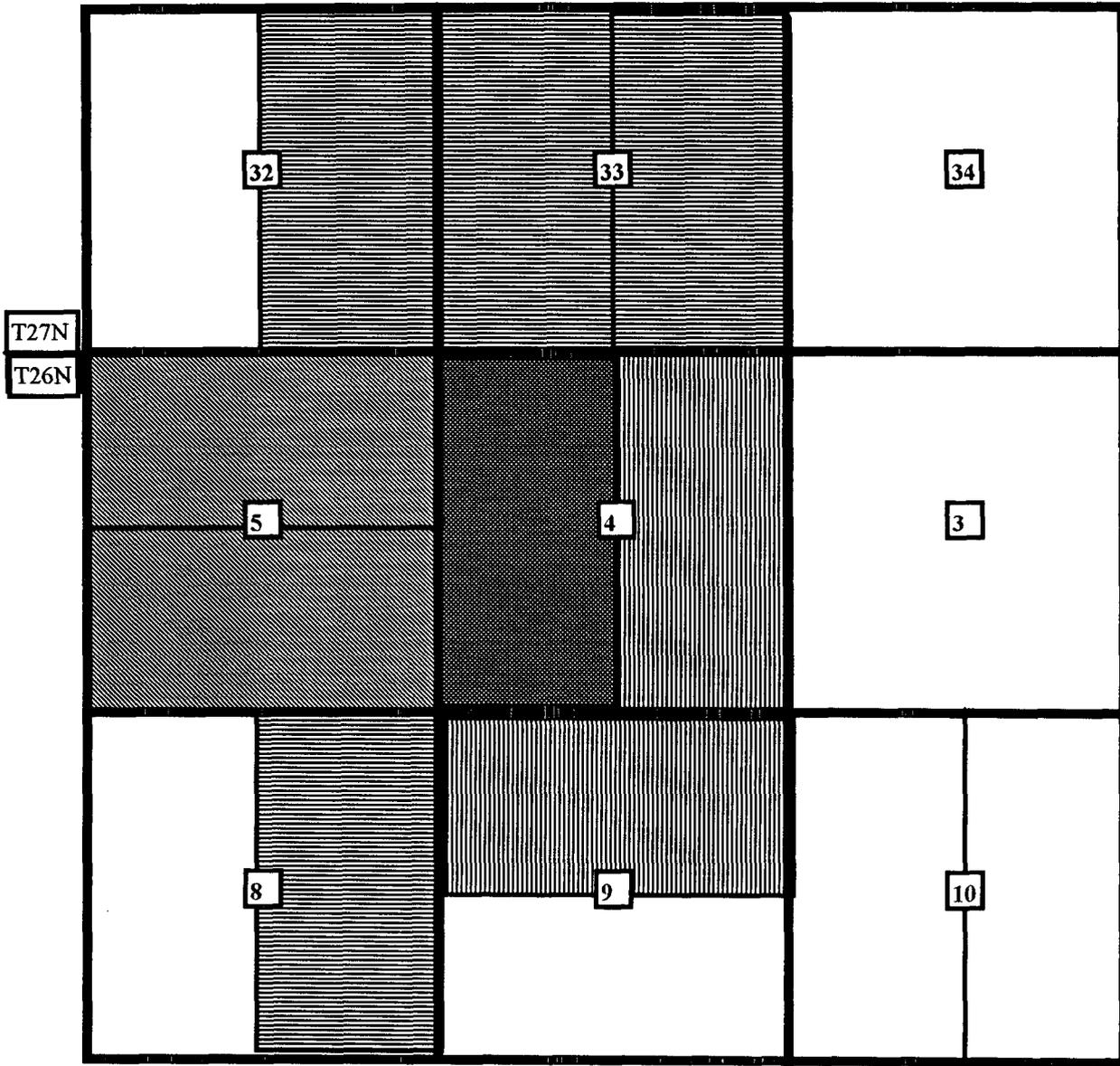
Jicarilla Apache 102 Well #4  
1450' FSL & 1450' FWL  
Unit K Section 4-T26N-R5W  
Tapacito Pictured Cliffs



-  SPACING UNIT TO BE DOWNHOLE COMMINGLED
-  AMOCO PRODUCTION COMPANY
-  MERIDIAN OIL, INC.
-  RIFE OIL PROPERTIES
-  OKLAHOMA AND NORTHWESTERN CO.

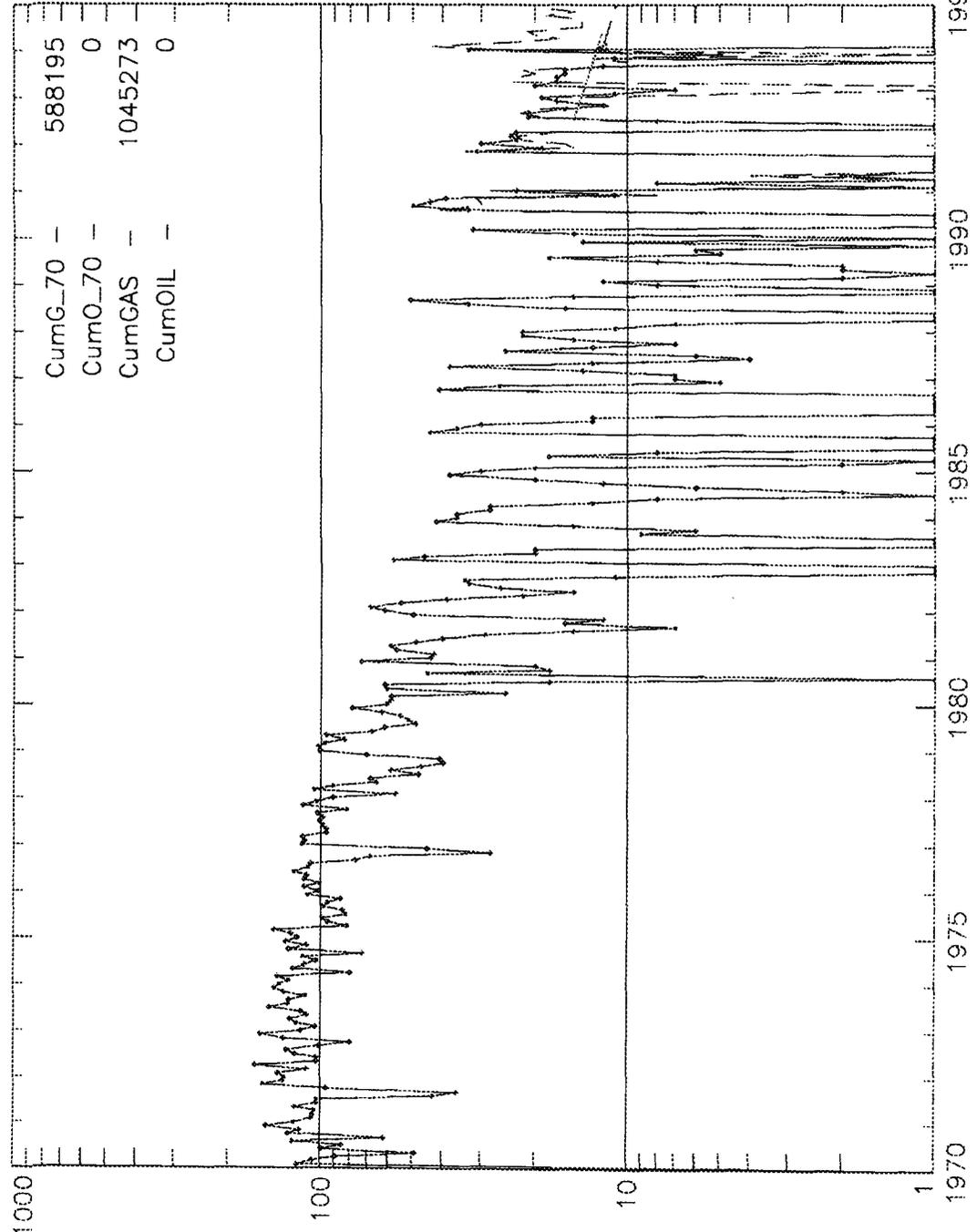
**AMOCO PRODUCTION COMPANY OFFSET OPERATOR PLAT**

**Jicarilla Apache 102 Well #4  
1450' FSL & 1450' FWL  
Unit K Section 4-T26N-R5W  
Blanco Mesaverde**



Engr: zhab0b

JICARILLA APACHE 102 4  
300390666400PC K042604-004 PC  
Operator- AMOCO PRODUCTION CO  
APC\_WI - 1.0000000



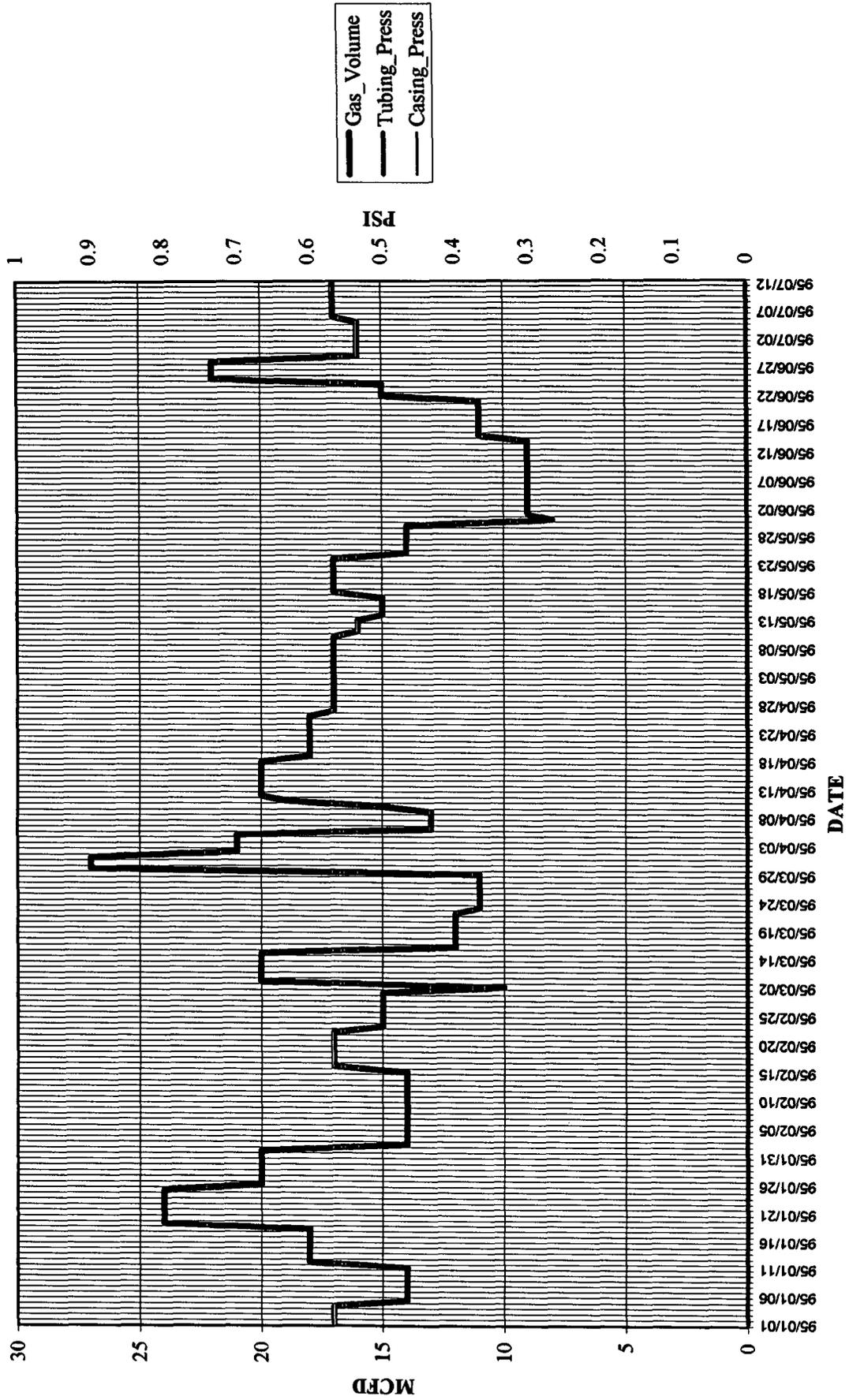
CumG\_70 - 588195  
CumO\_70 - 0  
CumGAS - 1045273  
CumOIL - 0

DCLN 0.108  
CurrQ 12  
RemRes 16898  
EUR 1062171  
Fit\_date 1994 7

New\_fit  
DCLN  
CurrQ  
RemRes  
EUR  
Fit\_date

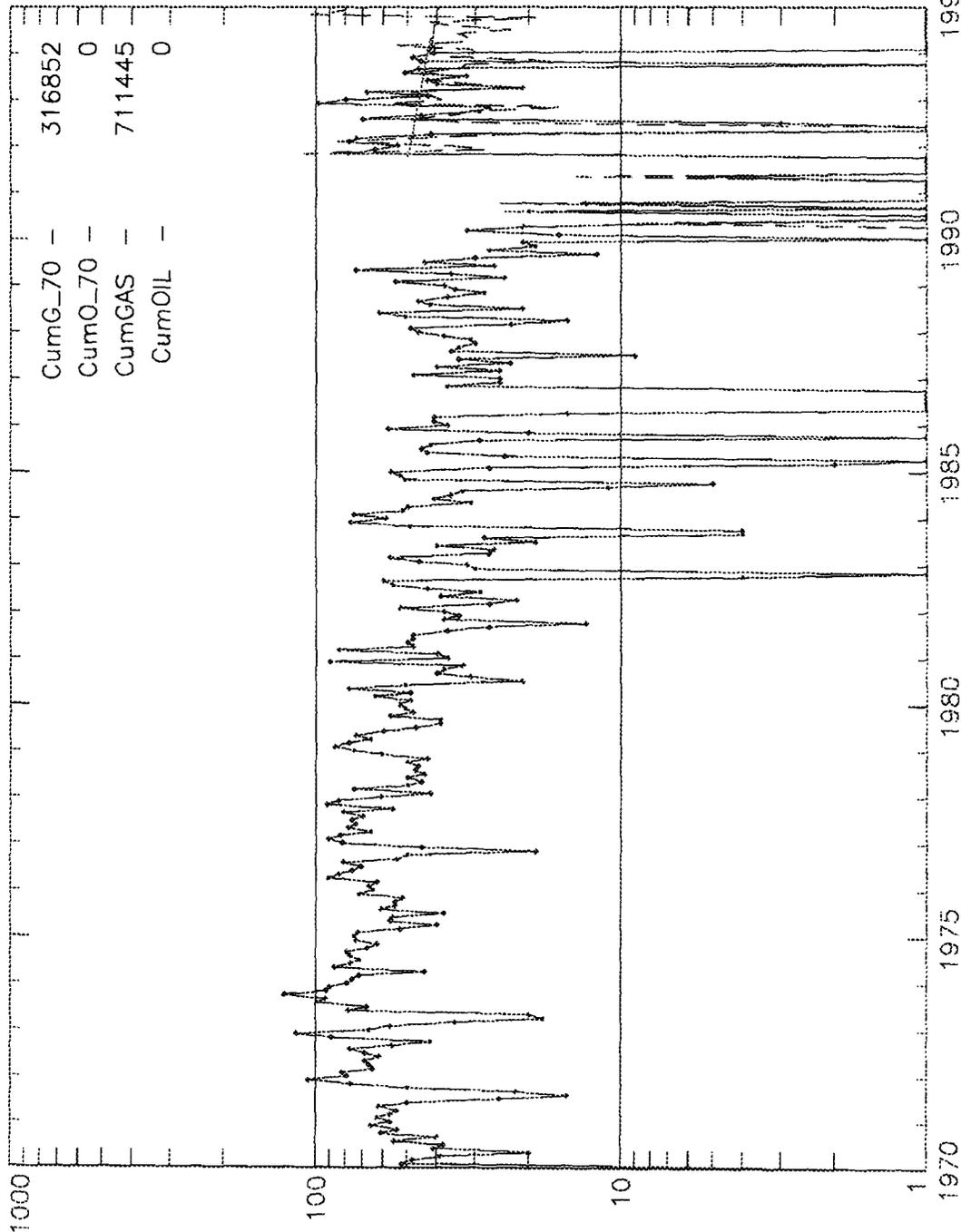
Chart1

Well: JIC APACHE 102 004-PC (92417302)



Engr: zhab0b

JICARILLA APACHE 102 4 Operator- AMOCO PRODUCTION CO  
300390666400MV K042604-004 MV APC\_WI - 1.00000000

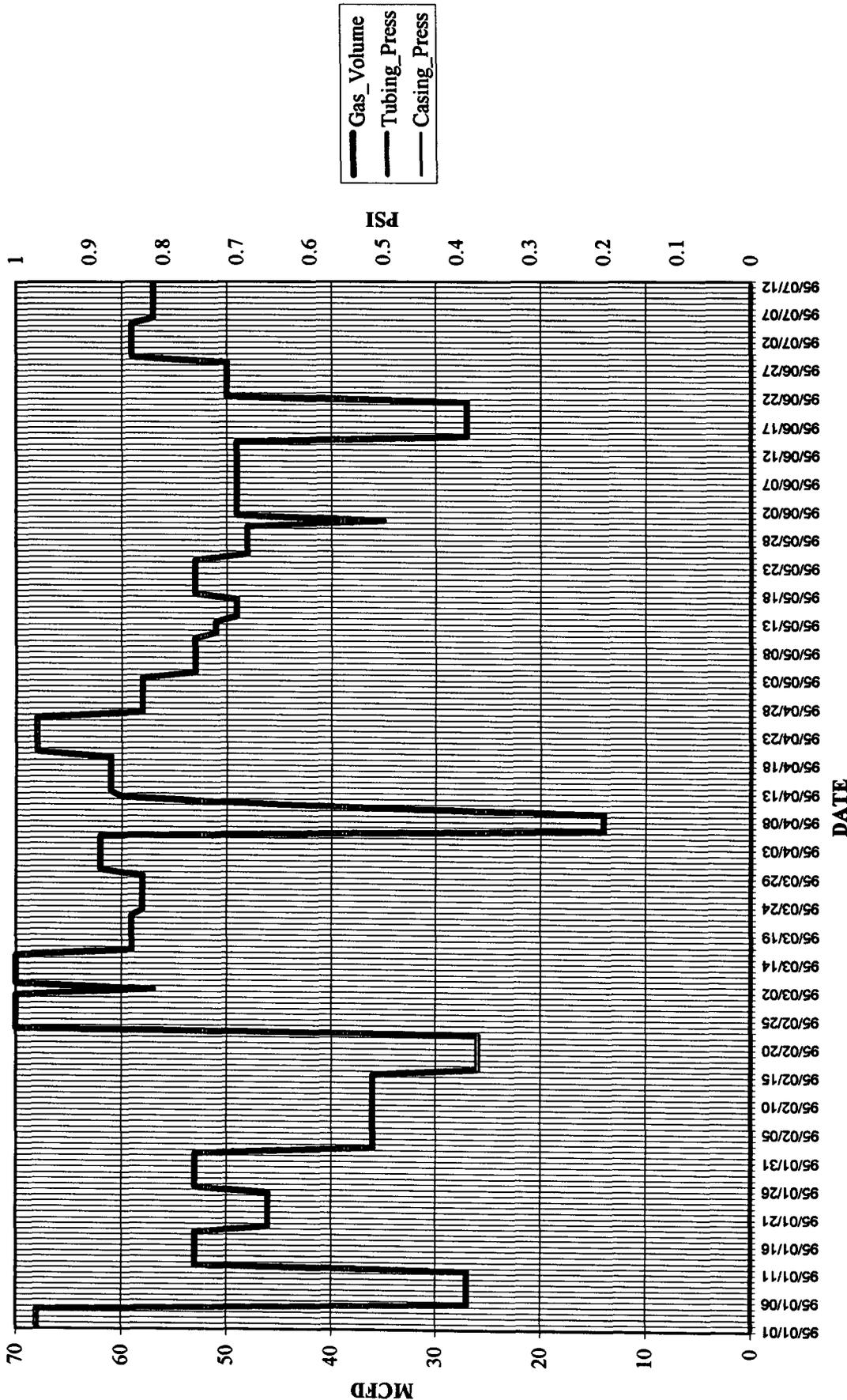


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CurrQ 42  
RemRes 202777  
EUR 914222  
Fit\_date 1994 7

New\_fit  
DCLN  
CurrQ  
RemRes  
EUR  
Fit\_date

Chart1

Well: JIC APACHE 102 004-MV (92417301)



**ESTIMATED BOTTOMHOLE PRESSURES BY FORMATION  
JICARILLA APACHE #102-4**

PC Perforations at 3919-3974' midperf at 3946'  
MV Perforations at 6074-6170' midperf at 6122'

11/80 shut in pressures --- PC = 359 PSIG  
MV = 527 PSIG

GRADIENT = 0.08 PSI/FT

PC BHP = 359 PSIG + 3946' X 0.08 PSIG  
= 675 PSIG

MV BHP = 527 PSIG + 6122' X 0.08 PSIG  
= 1017 PSIG

675 PSIG / 1017 PSIG = 66% WHICH MEETS THE >50% RULE

STATE OF NEW MEXICO  
OIL and MINERALS DEPARTMENT

OIL CONSERVATION DIVISION

NORTHWEST NEW MEXICO PACKER-LEAKAGE TEST

**RECEIVED**

OCT 16 1990

OIL CON. DIV.,  
DIST. 3

Operator: AMOCO PRODUCTION COMPANY Lease/Well #: JIC AP 102 4

Location of Well: K042604 Meter #: 228321 RTU: 1-024-02 County: RIO ARRIB

NAME RESERVOIR OR POOL	TYPE PROD	METHOD PROD	MEDIUM PROD
TAPACITO PICTURED CLIFF 233604	GAS	FLOW	CSG
BLANCO MESAVERDE 228321	GAS	FLOW	TBG

PRE-FLOW SHUT-IN PRESSURE DATA

Hour/Date Shut-In	Length of Time Shut-In	SI Press. PSIG	Stabilized
09/17/90	72 Hours	359	yes
09/17/90	72 Hours	527	yes

FLOW TEST DATE NO. 1

Tested at (hour, date)*				Zone Producing (Upr/Lwr)	
TIME (hour, date)	LAPSED TIME SINCE*	PRESSURE		Prod Temp.	REMARKS
		Upper	Lower		
09/17/90	Day 1	342	523		Both Zones SI
09/18/90	Day 2	348	524		Both Zones SI
09/19/90	Day 3	355	526		Both Zones SI
09/20/90	Day 4	359	527		Lower Zone on
09/21/90	Day 5	356	381		"
09/22/90	Day 6	357	270		"

Production rate during test

BOPD based on \_\_\_\_\_ BBLs in \_\_\_\_\_ Hrs \_\_\_\_\_ Grav \_\_\_\_\_ GOR

MFCPD: Tested thru (Orifice or Meter): METER

MID-TEST SHUT-IN PRESSURE DATA

Hour, Date SI	Length of Time SI	SI Press. PSIG	Stabilized (yes/no)

DHC-1159



Snyder Oil Corporation

OIL CONSERVATION DIVISION  
RECEIVED

1625 Broadway  
Suite 2200  
Denver, CO 80202  
303/592-8500  
Fax 303/592-8600

September 15, 1995

'95 SEP 21 AM 8 52

State of New Mexico  
Energy and Minerals Department  
Oil Conservation Division  
P. O. Box 6424  
Santa Fe, New Mexico 87505

RE: .Application for Exception to Rule 303-C, Downhole Commingling  
Jicarilla Apache 102 Well #4  
1450' FSL & 1450' FWL, Unit K, Section 4 - T 26N - R 5W  
Blanco Mesaverde and Tapecito Picture Cliff Pools  
Rio Arriba County, New Mexico

Gentlemen:

This letter is to notify you that Snyder Oil Corporation (SOCO) is in support of the application from Amoco concerning the captioned subject.

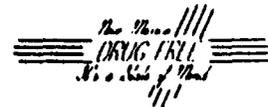
If you require further specifics concerning the above referenced application, please contact me in our Denver office at (303) 592-8500.

Very truly yours,

H. Richard Pate  
Director of Operations

cc: Amoco  
Pamela W. Staley  
1670 Broadway  
P. O. Box 800  
Denver, CO 80201

DHC - 1159



STATE OF NEW MEXICO

ENERGY, MINERALS and NATURAL RESOURCES DIVISION

OIL CONSERVATION DIVISION

AZTEC DISTRICT OFFICE

BRUCE KING GOVERNOR

ANITA LOCKWOOD CABINET SECRETARY

35 SEP 27 AM 8 52

1000 RIO BRAZOS ROAD AZTEC, NEW MEXICO 87410 (505) 334-6170

Date: 9/21/95

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

RE: Proposed MC Proposed NSL Proposed WFX Proposed NSP

Proposed DHC Proposed SWD Proposed PMX Proposed DD

Gentlemen:

I have examined the application received on Sept 8, 1995

for the Amoco Jicarilla Apache #4 OPERATOR LEASE & WELL NO.

K-4-26N-SW and my recommendations are as follows: UL-S-T-R

Approve.

Pressures are calculated in error.

Yours truly, [Signature]