# NEW MEXICO ENERGY, MINERALS & NATURAL RESOURCES DEPARTMENT

AZTEC DISTRICT OFFICE
1000 RIO BRAZOS ROAD
AZTEC, NEW MEXICO 87410
(505) 334-6178 Fax (505)334-6170

GARY E. JOHNSON
GOVERNOR

JENNIFER A. SALISBURY
CABINET SECRETARY


## ADMINISTRATIVE ORDER RECOMMENDATION

Date: 2/20/96

New Mexico Oil Conservation Division
PO Box 2088
Santa Fe NM 87504-2088

RE:

| | |
|---|---|
| Proposed MC_____ | Proposed DHC X |
| Proposed NSL_____ | Proposed SWD_____ |
| Proposed WFX_____ | Proposed PMX_____ |
| Proposed NSP_____ | Proposed DD_____ |

Gentlemen:

I have examined the application received on 2/16/96
for the Amoco Jicarilla 155 #20E
OPERATOR LEASE & WELL NUMBER
C-29-26N-5W and my recommendations are as follows:
UL-S-T-R

Approve

Yours truly,

Southern
Rockies
Business
Unit

February 13, 1996

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

RECEIVED
FEB 1 [illegible]
OIL CON. DIV.
DIST. 3

**Application for Exception to Rule 303-C**
**Downhole Commingling**
**Jicarilla 155 #20 E Well**
**810' FNL & 1700' FWL, Unit C Section 29-T26N-R5W**
**Basin Dakota and Otero Chacra Pools**
**Rio Arriba County, New Mexico**

Amoco Production Company hereby requests administrative approval to downhole commingle production from the Basin Dakota and Otero Chacra Pools in the Jicarilla 155 #20 E Well referenced above. The Jicarilla 155 #20 E well is currently a dual completion in the Dakota and Chacra formations. We plan to complete the well with both the Dakota and Chacra formations being downhole commingled in the wellbore. Downhole commingling is expected to extend the life of the well if permitted.

The two zones are currently producing at a total rate of about 94 MCFD with 0.78 BCPD. After commingling, the two zones are expected to produce 244 MCFD and 1.28 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. Amoco is the operator of all of the existing offsetting spacing units in both the Chacra and Dakota.

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 85% from the Dakota formation and 15% from the Chacra formation. The condensate production is recommended to be allocated 99% to the Dakota and 1% to the Chacra also based on historic rates. 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, historical production plots and a C-102 for each formation. This spacing unit is on Indian lease Jicarilla Contract #155 and a copy of the application will be sent to the BLM as their notice.

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

Sincerely,

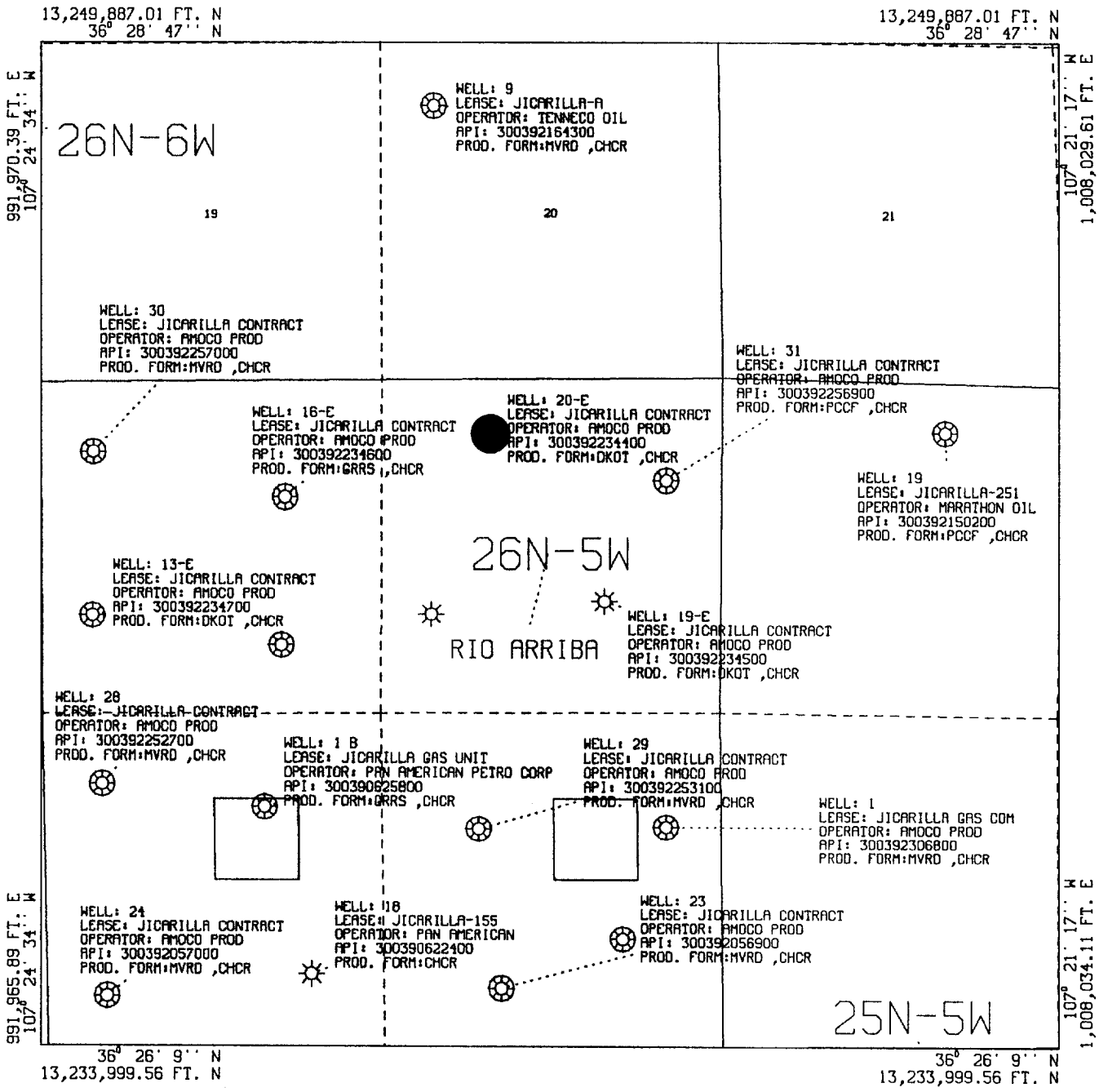
Pamela W. Staley

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





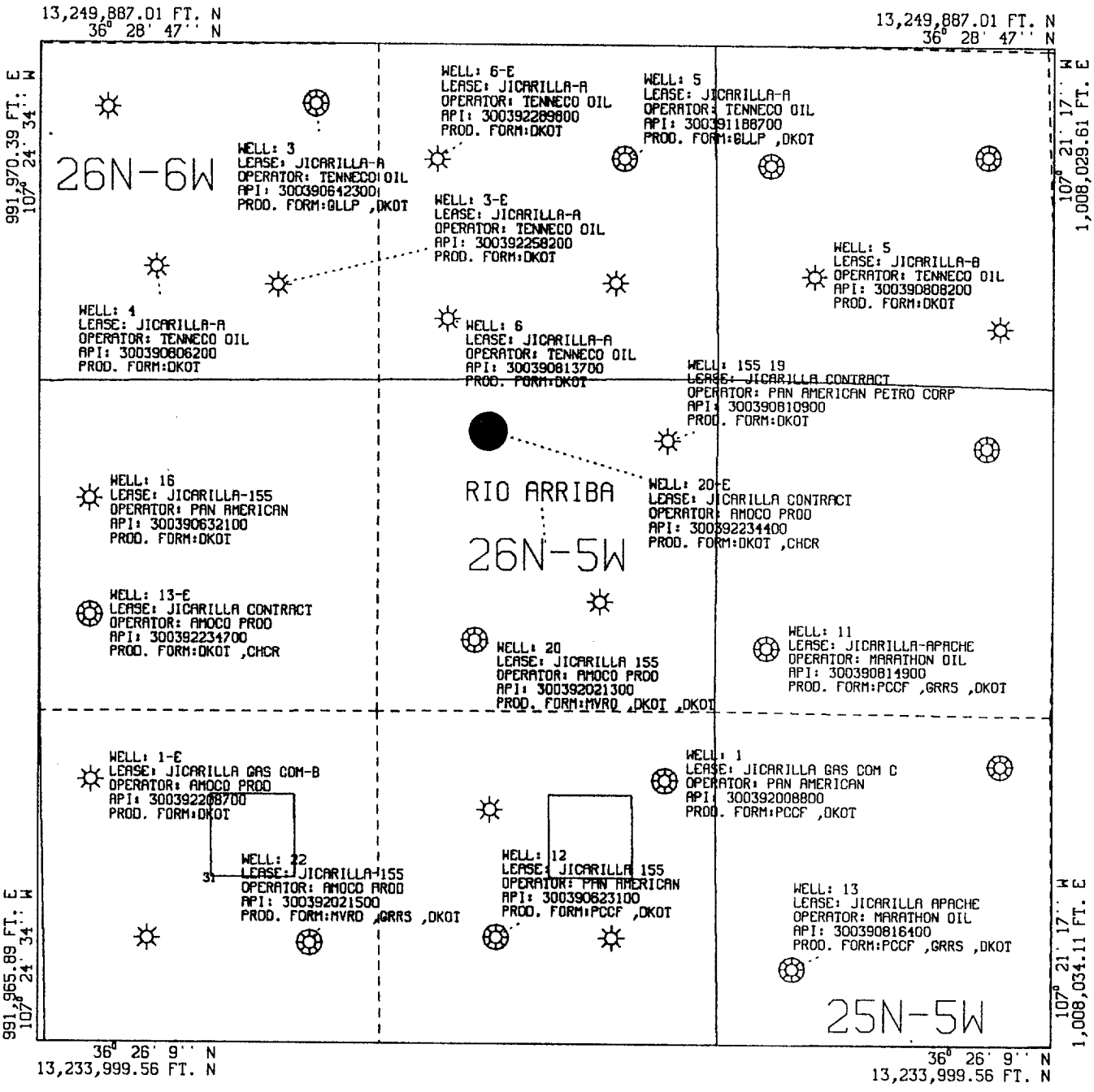

# AMOCO PRODUCTION COMPANY
## PLAT MAP
## Jicarilla Contract 155-20E Sec 29-T26N-R05W CK
## Rio Arriba New Mexico

SCALE 1 IN. = 2,500 FT. NOV 3, 1995

HORIZONTAL DATUM NAD27

PLOT 1 06.52.01 FRI 3 NOV, 1995 JOB-P1344502, ISSCO DISSPLA 10.0

HAB13445--RUN#9530706422O






# AMOCO PRODUCTION COMPANY
## PLAT MAP
## Jicarilla Contract 155-20E Sec 29-T26N-R05W DK
## Rio Arriba New Mexico

SCALE 1 IN. = 2,500 FT. NOV 3, 1995

HORIZONTAL DATUM NAD27

PLOT 1 08.02.35 FRI 3 NOV, 1995 JOB-P1345402, ISSCO DISSPLA 10.0
HAB13454--RUN*9530707210S

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 155 |
| Well Number: | 20E |
| Well Location: | 810' FNL & 1700' FWL<br>Unit C Section 29-T26N-R5W<br>Rio Arriba County, New Mexico |
| Pools Commingled: | Otero Chacra<br>Basin Dakota |

(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 Dakota produced an average stabilized rate of 80 MCFD and 0.77 BCPD. The Chacra zone produced at an average rate of about 14 MCFD and 0.01 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.

| | |
|---|---|
| Otero Chacra Completion: | Historical production curve attached. |
| Basin Dakota 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 Chacra formation is calculated to be 780 PSIG while estimated bottomhole pressure in the Dakota formation is 1090 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 Dakota have no abnormal components that would prohibit commingling, or promote the creation of emulsions or scale when commingled with the Chacra 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:

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 85% from the Dakota formation and 15% from the Chacra formation. The condensate production is recommended to be allocated 99% to the Dakota and 1% to the Chacra also based on historic rates. 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. Amoco is the operator of all offsetting spacing units in both formations

STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT

P. O. BOX 2088
SANTA FE, NEW MEXICO 8750

Form C-102
Revised 10-1-78

All distances must be from the outer boundaries of the Section

| Operator | Lease | Well No. |
|---|---|---|
| AMOCO PRODUCTION COMPANY | JICARILLA CONTRACT 155 | 20-E |

| Unit Letter | Section | Township | Range | County |
|---|---|---|---|---|
| C | 29 | 26N | 5W | Rio Arriba |

Actual Footage Location of Well:
810 feet from the North line and 1700 feet from the West line

| Ground Level Elev. | Producing Formation | Pool | Dedicated Acreage: |
|---|---|---|---|
| 6687 | Dakota | Basin Dakota | 320 Acres |

1. Outline the acreage dedicated to the subject well by colored pencil or hachure marks on the plat below.

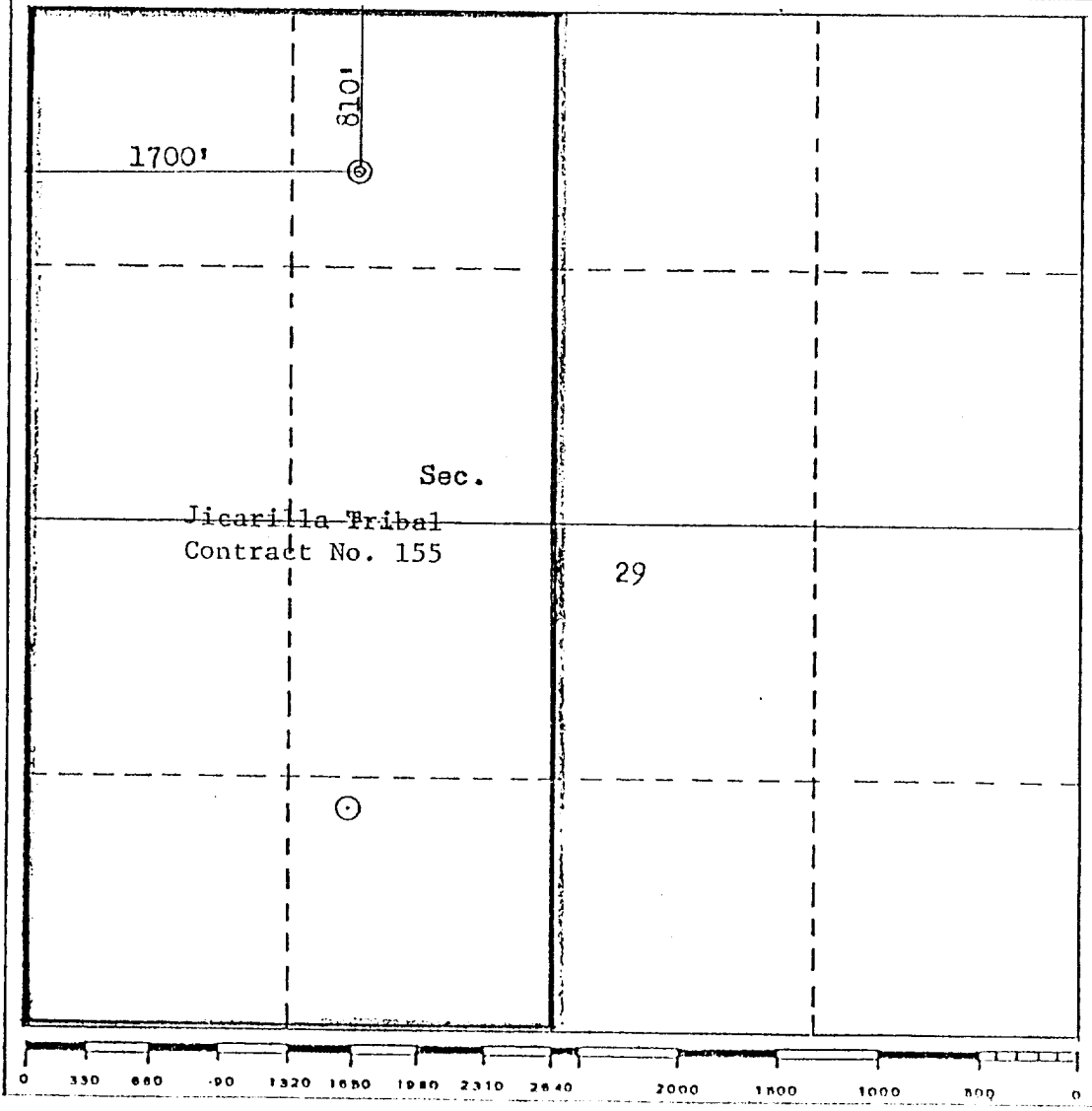
2. If more than one lease is dedicated to the well, outline each and identify the ownership thereof (both as to working interest and royalty).

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.*

B. E. Fackrell

Name
B. E. FACKRELL

Position
DISTRICT ENGINEER

Company
AMOCO PRODUCTION COMPANY

Date
FEBRUARY 1, 1980

*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
January 23, 1980

Registered Professional Engineer and/or Land Surveyor

Fred B. Kerr Jr.

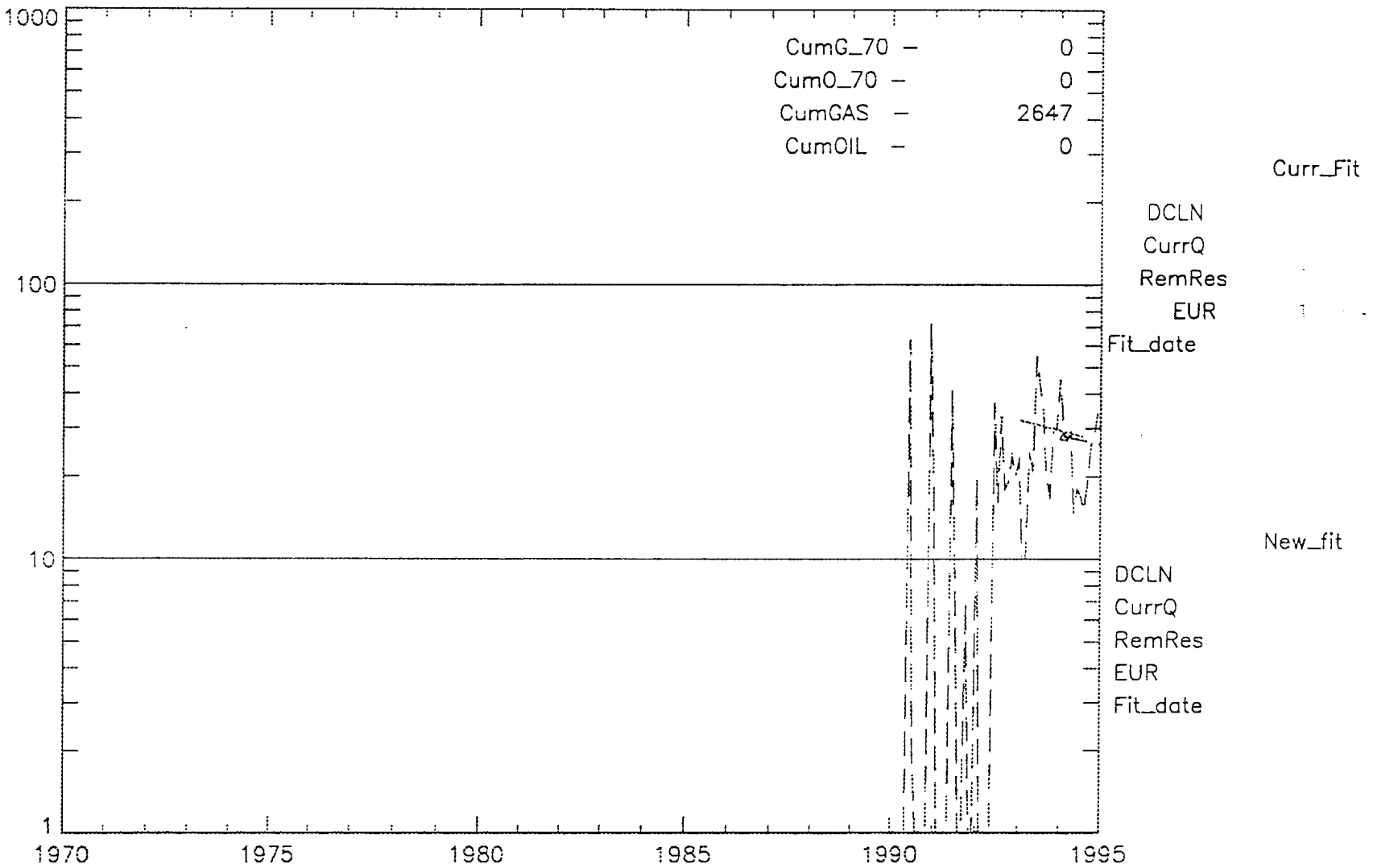
Certificate No.
3950

Engr: zhab0b

JICARILLA CONTRACT 155 20E

Operator- AMOCO PRODUCTION CO

300392234400CK C292605-020ECK APC_WI - 1.0000000



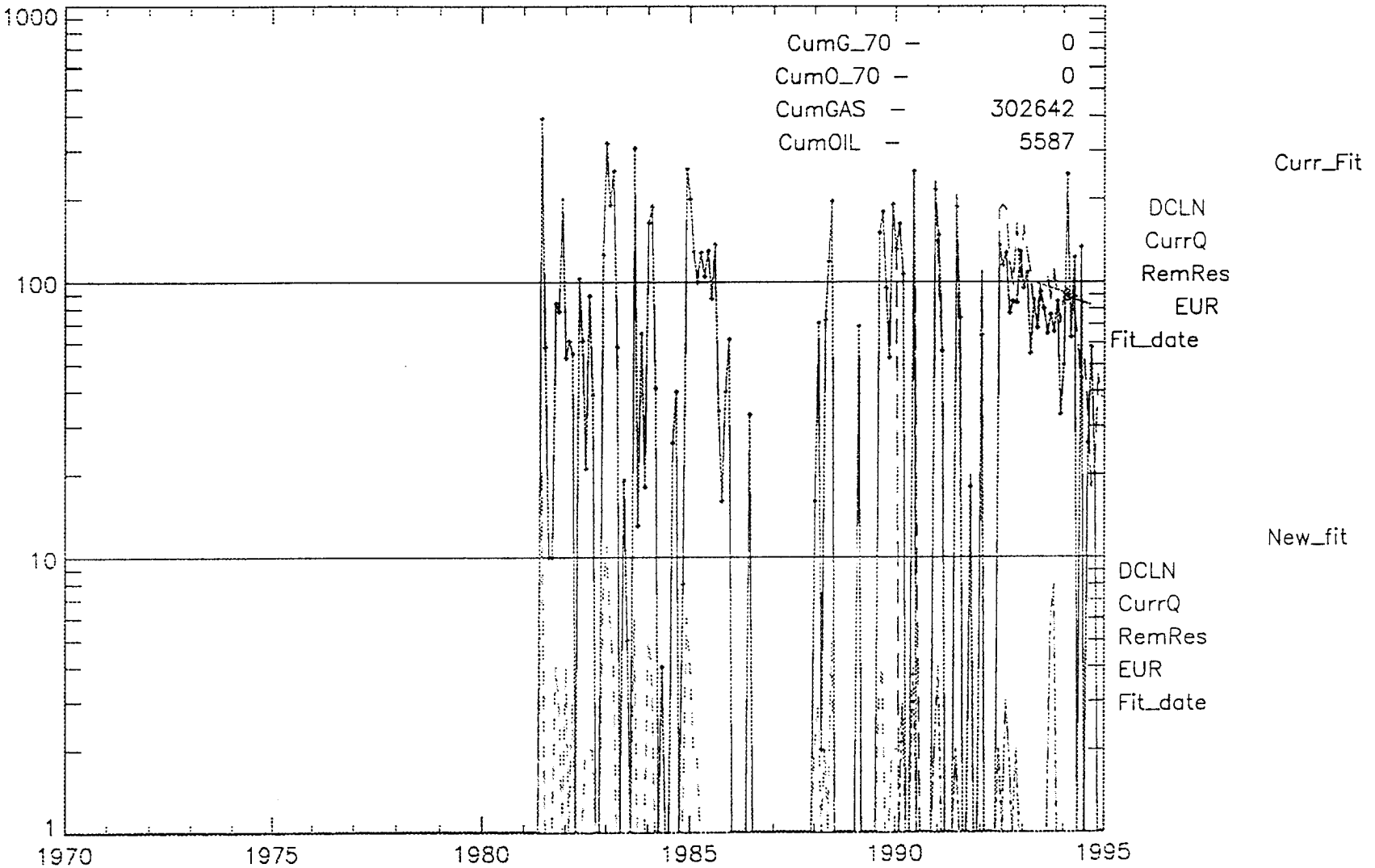
Engr: zhab0b

JICARILLA CONTRACT 155 20E

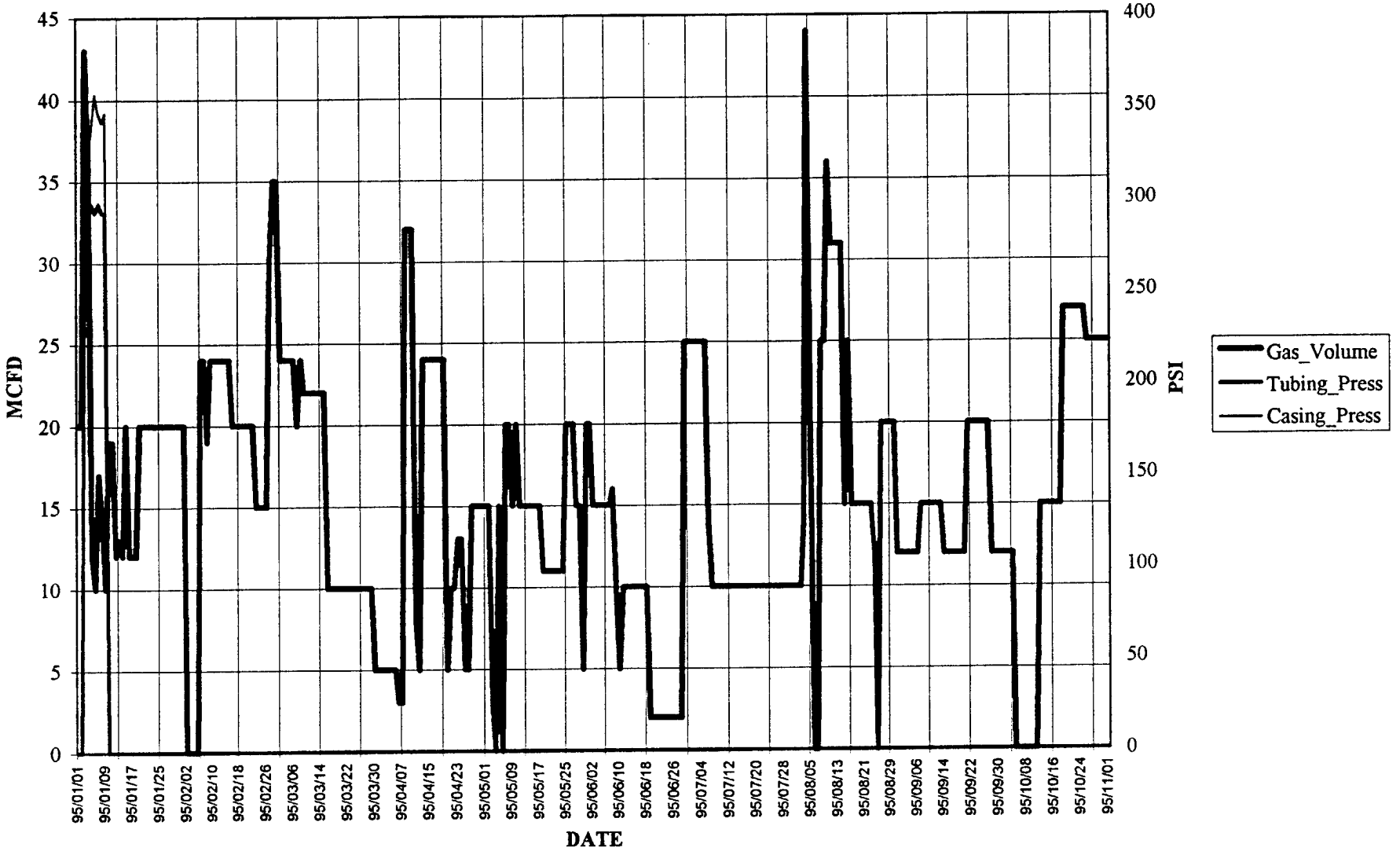
Operator– AMOCO PRODUCTION CO

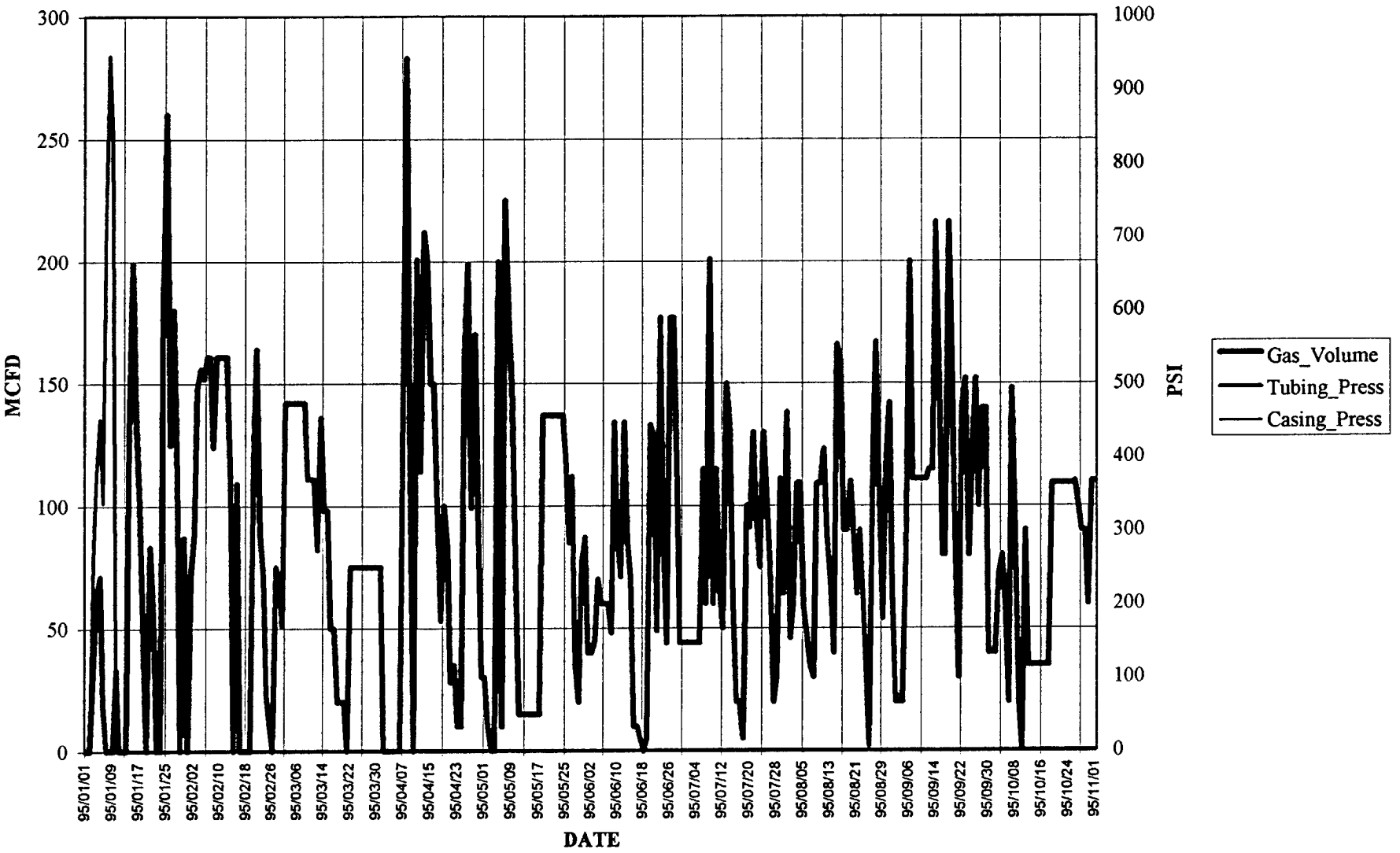
300392234400DK C292605–020EDK

APC_WI – 1.0000000



## Well: JICARILLA CONT 155 020E-CK (84215901)




Well: JICARILLA CONT 155 020E-DK (84215902)
MCFD
PSI
DATE
300
250
200
150
100
50
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1000
900
800
700
600
500
400
300
200
100
0
95/01/01
95/01/09
95/01/17
95/01/25
95/02/02
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95/08/29
95/09/06
95/09/14
95/09/22
95/09/30
95/10/08
95/10/16
95/10/24
95/11/01
Gas_Volume
Tubing_Press
Casing_Press

# ESTIMATED BOTTOMHOLE PRESSURES

## Jicarilla Contract #155 20 E

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| CK | PERFORATIONS | | TOP | 3952 | BOTTOM | 4050 | MIDPERF | 4001 | | | |
| DK | PERFORATIONS | | TOP | 7270 | BOTTOM | 7454 | MIDPERF | 7362 | | | |
| | Jun-95 | SHUT-IN PRESSURES | | | | | | | | | |
| | | CK | = | 460 | PSIG | | | | | | |
| | | DK | = | 501 | PSIG | | | | | | |
| | GRADIENT | = 0.8 PSI/FT | | | | | | | | | |
| | CK | BHP = | 460 | PSIG + | 4001 | X 0.08 PSIG | | | | | |
| | | = | 780 | PSI | | | | | | | |
| | DK | BHP = | 501 | PSIG + | 7362 | X 0.08 PSIG | | | | | |
| | | = | 1090 | | | | | | | | |
| | 780 | PSI / | 1090 | = | 72% | WHICH IS > 50% DIFFERENTIAL RULE | | | | | |

STATE OF NEW MEXICO
ENERGY and MINERALS DEPARTMENT



OIL CONSERVATION DIVISION

NORTHWEST NEW MEXICO PACKER-LEAKAGE TEST

Operator: AMOCO PRODUCTION COMPANY Lease/Well #:JIC CONTRACT 155 20E

Location of Well: C 29 26 05 Meter #: 85360 RTU: 1-160-01 County: RIO ARRIB

| | NAME RESERVOIR OR POOL | | TYPE PROD | METHOD PROD | MEDIUM PROD |
|---|---|---|---|---|---|
| UPR COMP | OTERO CHACRA | 85679 161-1 | GAS | FLOW | TBG |
| LWR COMP | BASIN DAKOTA | 85360 160-1 | GAS | FLOW | TBG |

PRE-FLOW SHUT-IN PRESSURE DATA

| | Hour/Date Shut-In | Length of Time Shut-In | SI Press. PSIG | Stabilzed |
|---|---|---|---|---|
| UPR COMP | 11/19/90 | 72 Hours | 460 | yes |
| LWR COMP | 11/19/90 | 72 Hours | 501 | yes |

FLOW TEST DATE NO.1

Commenced at (hour,date)* Zone Producing (Upr/Lwr)

| TIME (hour, date) | LAPSED TIME SINCE* | PRESSURE Upper | PRESSURE Lower | Prod Temp. | REMARKS |
|---|---|---|---|---|---|
| 11/19/90 | Day 1 | [illegible] | [illegible] | | Both Zones SI |
| 11/20/90 | Day 2 | 439 | 784 | | Both Zones SI |
| 11/21/90 | Day 3 | 451 | 442 | | Both Zones SI |
| 11/22/90 | Day 4 | [illegible] | 501 | | flowed down Lwr |
| 11/23/90 | Day 5 | [illegible] | [illegible] | | " |
| 11/24/90 | Day 6 | 496 | 338 | | " |

Production rate during test

Oil: _____ BOPD based on _____ BBLs in _____ Hrs _____ Grav___ GOR ___

Gas: _____ MFCPD:Tested theu (Orifice or Meter):

MID-TEST SHUT-IN PRESSURE DATA

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

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OIL CON. DIV.
DIST. 3

*ESTIMATED BOTTOMHOLE PRESSURES BY FORMATION*

JICARILLA 155 # 20E

| ALLOCATION RECOMMENDATION | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | Recommended | | | | |
| | | | Current | | | Expected Rate | | | | Production Allocation Factors | | | | |
| | | MCFD | BOPD | BWPD | | MCFD | BOPD | BWPD | | MCFD | BOPD | BWPD | | |
| CHACRA | | 14 | 0.01 | 0.01 | | 36.85 | 0.02 | 0.02 | | 0.15 | 0.01 | 0.01 | | |
| DAKOTA | | 80 | 0.77 | 0.97 | | 207.15 | 1.26 | 1.96 | | 0.85 | 0.99 | 0.99 | | |
| | Wellbore Tota | 94 | 0.78 | 0.98 | | 244.00 | 1.28 | 1.98 | | 1.00 | 1.00 | 1.00 | | |