



CDX Gas, LLC  
4801 N. Butler Avenue, Suite 2000  
Farmington, NM 87401  
Main: 505-326-3003  
Fax: 505-325-4007

2005 APR 15 AM 11 36

April 4, 2005

Mr. William Jones  
New Mexico Oil Conservation Division  
Engineering Bureau  
1220 S. St. Francis Dr.  
Santa Fe, New Mexico 87505

Re: Application for Exception to Rule 303-A  
Downhole Commingling  
Jicarilla B #4  
API No.: 30-0397-82260  
Basin Dakota/ Tapicito Gallup/ Blanco Mesa Verde  
1640' FNL, 990 FEL, Unit H, Sec. 21, T26N-R5W  
Rio Arriba County, New Mexico

DHC-1137-A  
(adding MVAD)

Dear Mr. Jones:

The Jicarilla B #4 well was completed on May 24, 1966 in the Basin Dakota and Tapicito Gallup formations and presently produces approximately 130 MCFD. CDX RIO, LLC is making plans to recomplete the captioned well in the Mesaverde formation and hereby requests administrative approval to downhole commingle production from the Basin Dakota, Tapicito Gallup, and Blanco Mesa Verde pools.

To avoid waste CDX is proposing to use the existing well bore and thereby capture the additional reserves. Adding the Mesaverde production will have no detrimental effects and the fluids have no abnormal components that would prohibit commingling or promote the creation of emulsions or scale.

As an analogy CDX Gas, LLC operates the Jicarilla B #5E (API No.: 30-039-22899) located 1,850' FNL and 870' FWL of Section 21, T26N-R5W, being less than one mile from our proposed location. This well was originally completed as a Mesaverde/Dakota producer in May of 1982, with the Gallup being added in August 1992. This well has been producing as a Gallup/Dakota downhole commingled producer since December of 1993 with no apparent production problems or loss of value. The Mesaverde has not produced since June of 1993.

CDX RIO, LLC is the operator and owns 100% working interest in all zones of interest in the subject well and spacing units, with identical ownership in all formations to be commingled. When the Dakota, Gallup, and Mesa Verde formations are completed they will be isolated and separately tested thru tubing. The subtraction method will be used to determine the new allocation for the commingled production.

After the recompletion we are estimating production from the Dakota to be 150 mcf/d and .8 bopd, from the Gallup 25 mcf/d and .2 bopd and from the Mesa Verde 100 mcf/d and .5 bopd. Allocations after the recompletion are estimated at:

|            |     |     |     |     |
|------------|-----|-----|-----|-----|
| Dakota     | Oil | 54% | Gas | 54% |
| Gallup     | Oil | 14% | Gas | 10% |
| Mesa Verde | Oil | 33% | Gas | 36% |

Actual allocation amounts will be provided after testing the respective zones.

Attached to aid in your review are plats showing the location of the captioned well and offset analogy well in the same formations, a recent production plot for the commingled zones in both the analogy well (Jicarilla B #5E) and the captioned well, historical plots for the Gallup, Mesaverde, and Dakota production, and C-102 forms showing the location and spacing units.

Since the spacing unit for our proposed well consist of the E/2 of Section 21, T26N-R5W, and is located on Jicarilla lease #109, a copy of this application package will be sent to both the Bureau of Land Management and the Jicarilla Tribe.

Thank you and should you have any questions concerning this application please call me at (505) 326-3003 ext. 2817 or e-mail me at rich.corcoran@cdxgas.com.

Sincerely,



Richard Corcoran  
Land Manager

cc: Steve Wells, Bureau of Land Management  
Fred Vigil, Jicarilla Oil and Gas Administration

District I  
 625 N. French Drive, Hobbs, NM 88240

District II  
 1301 W. Grand Avenue, Artesia, NM 88210

District III  
 1000 Rio Brazos Road, Aztec, NM 87410

District IV  
 1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico  
 Energy, Minerals and Natural Resources Department

Form C-107A  
 Revised June 10, 2003

**Oil Conservation Division**  
 1220 South St. Francis Dr.  
 Santa Fe, New Mexico 87505

APPLICATION TYPE  
 Single Well  
 Establish Pre-Approved Pools  
 EXISTING WELLBORE  
 Yes  No

**APPLICATION FOR DOWNHOLE COMMINGLING**

CDX RIO, LLC 4801 North Butler Ave., Suite 2000, Farmington, NM 87401  
 Operator Address

DAC-1137-A

JICARILLA CONTRACT B #4 H-21-T26N-R5W RIO ARRIBA  
 Lease Well No. Unit Letter-Section-Township-Range County

OGRID No. 222374 Property Code \_\_\_\_\_ API No. 30-039-82260 Lease Type:  Federal  State  Fee

| DATA ELEMENT   | UPPER ZONE ✓   | INTERMEDIATE ZONE ✓                                    | LOWER ZONE ✓  |
|--|--|--|---|
| Pool Name  | BLANCO MESAVERDE   | TAPACITO GALLUP ASSOC.                                 | BASIN DAKOTA  |
| Pool Code  | 72319 ✓  | 58090 ✓  | 71599 ✓   |
| Top and Bottom of Pay Section<br>(Perforated or Open-Hole Interval)  | 4,675 - 5,340<br>(To be confirmed after logs)                        | 6,702 - 6,724  | 7,204 - 7,446   |
| Method of Production<br>(Flowing or Artificial Lift)   | Plunger Lift   | Plunger Lift   | Plunger Lift  |
| Bottomhole Pressure<br>(Note: Pressure data will not be required if the bottom perforation in the lower zone is within 150% of the depth of the top perforation in the upper zone)       | 545 psi (estimated)  | 440 psi  | 440 psi   |
| Oil Gravity or Gas BTU<br>(Degree API or Gas BTU)  | 1200 BTU   | 1270 BTU   | 1210 BTU  |
| Producing, Shut-In or<br>New Zone  | NEW ZONE   | PRODUCING  | PRODUCING   |
| Date and Oil/Gas/Water Rates of<br>Last Production.<br>(Note: For new zones with no production history, applicant shall be required to attach production estimates and supporting data.) | Date: 100 mcf/d (estimated)<br>Rates: 0.5 bopd (est)<br>3 bwpd (est) | Date: 3/25/05<br>25 mcf/d<br>Rates: 0.2 bopd<br>0 bwpd | Date: 3/25/05<br>150 mcf/d<br>Rates: 0.8 bopd<br>1 bwpd |
| Fixed Allocation Percentage<br>(Note: If allocation is based upon something other than current or past production, supporting data or explanation will be required.)                     | Oil 33% Gas 36%  | Oil 14% Gas 10%  | Oil 54% Gas 54%   |

**ADDITIONAL DATA**

Are all working, royalty and overriding royalty interests identical in all commingled zones? Yes  No \_\_\_\_\_  
 If not, have all working, royalty and overriding royalty interest owners been notified by certified mail? Yes \_\_\_\_\_ No \_\_\_\_\_

Are all produced fluids from all commingled zones compatible with each other? Yes  No \_\_\_\_\_

Will commingling decrease the value of production? Yes \_\_\_\_\_ No

If this well is on, or communitized with, state or federal lands, has either the Commissioner of Public Lands or the United States Bureau of Land Management been notified in writing of this application? Yes  No \_\_\_\_\_

NMOCD Reference Case No. applicable to this well: \_\_\_\_\_

**Attachments:**

- C-102 for each zone to be commingled showing its spacing unit and acreage dedication.
- Production curve for each zone for at least one year. (If not available, attach explanation.)
- For zones with no production history, estimated production rates and supporting data.
- Data to support allocation method or formula.
- Notification list of working, royalty and overriding royalty interests for uncommon interest cases.
- Any additional statements, data or documents required to support commingling.

**PRE-APPROVED POOLS**

If application is to establish Pre-Approved Pools, the following additional information will be required:

- List of other orders approving downhole commingling within the proposed Pre-Approved Pools
- List of all operators within the proposed Pre-Approved Pools
- Proof that all operators within the proposed Pre-Approved Pools were provided notice of this application.
- Bottomhole pressure data.

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

SIGNATURE David C. Smith TITLE Production Engineer DATE 8/19/04

TYPE OR PRINT NAME David C. Smith TELEPHONE NO. (505) 326-3003

E-MAIL ADDRESS dave.smith@cdxgas.com

District I  
 1625 N. French Dr., Hobbs, NM 88240  
 District II  
 1301 W. Grand Avenue, Artesia, NM 88210  
 District III  
 1000 Rio Brazos Rd., Aztec, NM 87410  
 District IV  
 1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico  
 Energy, Minerals & Natural Resources Department  
**OIL CONSERVATION DIVISION**  
 1220 South St. Francis Dr.  
 Santa Fe, NM 87505

Form C-102  
 Revised June 10, 2003  
 Submit to Appropriate District Office  
 State Lease - 4 Copies  
 Fee Lease - 3 Copies

AMENDED REPORT

**WELL LOCATION AND ACREAGE DEDICATION PLAT**

|   |  |  |
|---|--|--|
| <sup>1</sup> API Number<br>30-039-08098 | <sup>2</sup> Pool Code<br>72319            | <sup>3</sup> Pool Name<br>BLANCO MESAVERDE |
| <sup>4</sup> Property Code              | <sup>5</sup> Property Name<br>JICARILLA B  | <sup>6</sup> Well Number<br>4              |
| <sup>7</sup> OGRID No.<br>222374        | <sup>8</sup> Operator Name<br>CDX RIO, LLC | <sup>9</sup> Elevation<br>6555' GR         |

<sup>10</sup> Surface Location

| UL or lot no. | Section | Township | Range | Lot Idn | Feet from the | North/South line | Feet from the | East/West line | County     |
|---------------|---------|----------|-------|---------|---------------|------------------|---------------|----------------|------------|
| H             | 21      | 26N      | R5W   |         | 1650          | NORTH            | 990           | EAST           | RIO ARRIBA |

<sup>11</sup> Bottom Hole Location If Different From Surface

| UL or lot no. | Section | Township | Range | Lot Idn | Feet from the | North/South line | Feet from the | East/West line | County |
|---------------|---------|----------|-------|---------|---------------|------------------|---------------|----------------|--------|
|               |         |          |       |         |               |                  |               |                |        |

|                               |                               |                                  |                         |
|-------------------------------|-------------------------------|----------------------------------|-------------------------|
| <sup>12</sup> Dedicated Acres | <sup>13</sup> Joint or Infill | <sup>14</sup> Consolidation Code | <sup>15</sup> Order No. |
|                               |                               |                                  |                         |

NO ALLOWABLE WILL BE ASSIGNED TO THIS COMPLETION UNTIL ALL INTERESTS HAVE BEEN CONSOLIDATED OR A NON-STANDARD UNIT HAS BEEN APPROVED BY THE DIVISION

|  |  |
|--|--|
|  | <p><sup>17</sup> <b>OPERATOR CERTIFICATION</b><br/> <i>I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief.</i></p> <p>Signature _____<br/>         Printed Name<br/>         David C. Smith<br/>         Title and E-mail Address<br/>         Production Engineer, dave.smith@cdxgas.com<br/>         Date<br/>         3/31/05</p> |
|  | <p><sup>18</sup> <b>SURVEYOR CERTIFICATION</b><br/> <i>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 belief.</i></p> <p>4/4/66<br/>         Date of Survey<br/>         Signature and Seal of Professional Surveyor: _____</p>               |
|  | <p>ON FILE</p>   |
|  | <p>2463<br/>         Certificate Number</p>  |

**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.

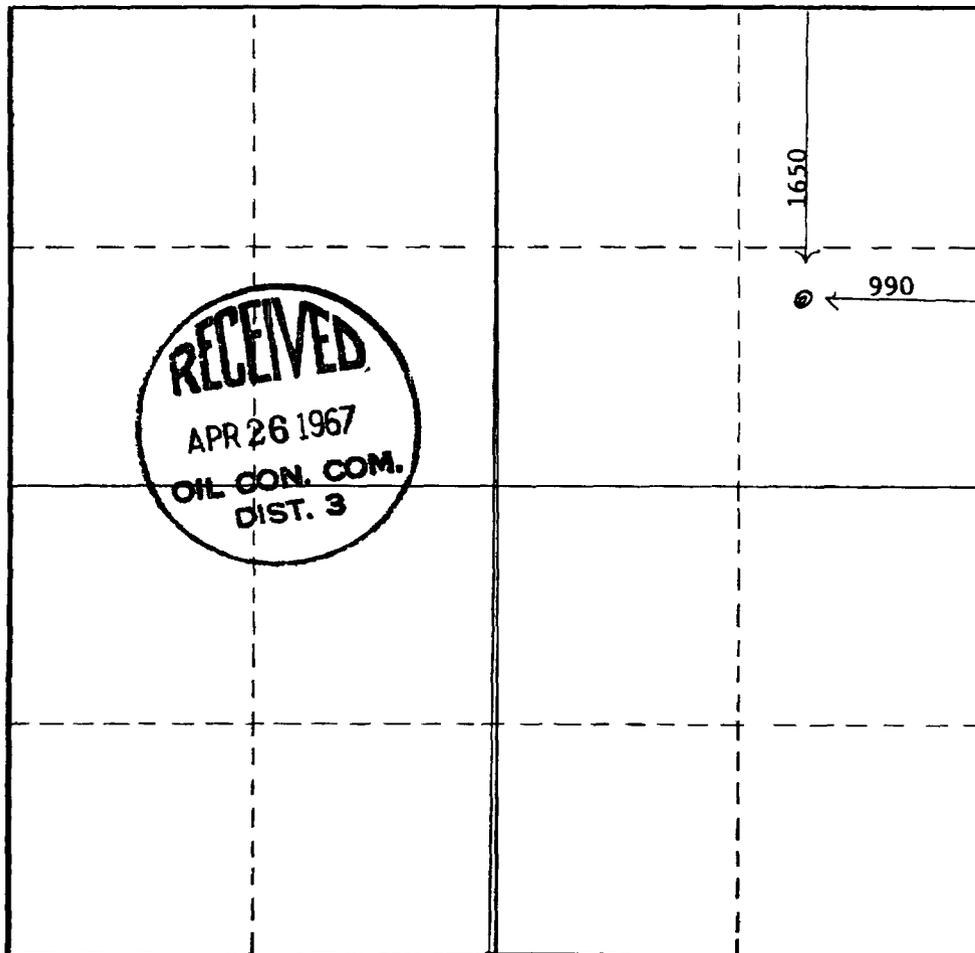
|   |   |                        |                               |   |                      |
|---|---|------------------------|-------------------------------|---|----------------------|
| Operator<br><b>Tenneco Oil Company</b>  |   |                        | Lease<br><b>Jicarilla "B"</b> |   | Well No.<br><b>4</b> |
| Unit Letter<br><b>H</b>   | Section<br><b>21</b>                          | Township<br><b>26N</b> | Range<br><b>5W</b>            | County<br><b>Rio Arriba</b>                       |                      |
| Actual Footage Location of Well:<br><b>1650</b> feet from the <b>North</b> line and <b>990</b> feet from the <b>East</b> line |   |                        |                               |   |                      |
| Ground Level Elev:<br><b>6555 UnGr.</b>   | Producing Formation<br><b>Tapacito Gallup</b> |                        | Pool<br><b>Gallup</b>         | Dedicated Acreage: <b>E/2</b><br><b>320</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.

Name **G. A. Ford**  
Senior Production Clerk

Position  
**Tenneco Oil Company**

Company  
**April 25, 1967**

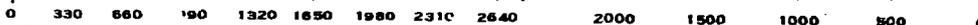
Date

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

Registered Professional Engineer and/or Land Surveyor

Certificate No.



NEW MEXICO OIL CONSERVATION COMMISSION  
WELL LOCATION AND ACERAGE DEDICATION PLAT

*See well 13-4  
10807/1011790/6  
Sec. 21, 26*

All distances must be from the outer boundaries of the Section

|   |  |                             |   |                                 |                      |
|---|--|-----------------------------|---|---------------------------------|----------------------|
| Operator<br><b>TENNECO OIL COMPANY</b>  |  |                             | Lease<br><b>JICARITIA "B"</b>                       |                                 | Well No.<br><b>4</b> |
| Unit Letter<br><b>H</b>   | Section<br><b>21</b>   | Township<br><b>26 North</b> | Range<br><b>5 West</b>                              | County<br><b>Rio Arriba</b>     |                      |
| Actual Footage Location of Well:<br><b>1650</b> feet from the <b>North</b> line and <b>990</b> feet from the <b>East</b> line |  |                             |   |                                 |                      |
| Ground Level Elev.<br><b>6555 Ungraded</b>  | Producing Formation<br><b>Undesignated Gallup and Basin Dakota</b> |                             | Pool<br><b>Undesignated Gallup and Basin Dakota</b> | Dedicated Acreage<br><b>320</b> | <b>E/2</b> Acres     |

- Outline the acreage dedicated to the subject well by colored pencil or hachure marks on the plat below.
- If more than one lease is dedicated to the well, outline each and identify the ownership thereof (both as to working interest and royalty).
- 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 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.

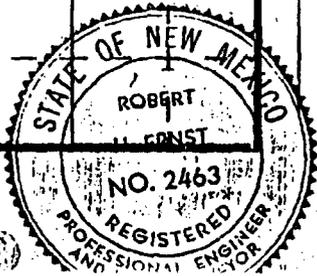
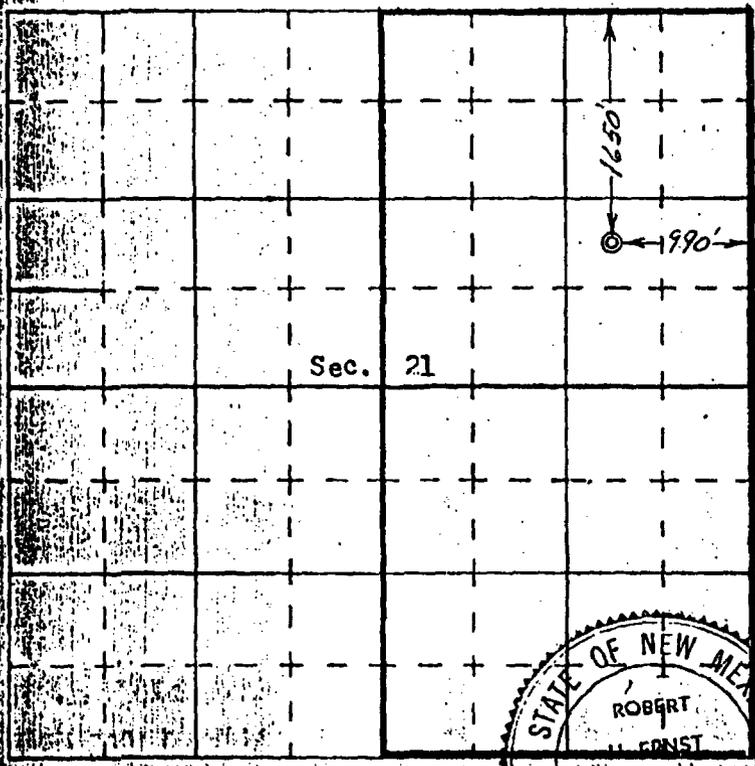
CERTIFICATION

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

*Harold C. Nichols*  
 Name Harold C. Nichols  
 Position Senior Production Clerk  
 Company Tenneco Oil Company  
 Date May 9, 1966

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.

4 April 1966  
 Date Surveyed  
*Robert H. Ernst*  
 Registered Professional Engineer  
 and/or Land Surveyor  
 Robert H. Ernst  
 N. Mex. PE & LS 2463  
 Certificate No. \_\_\_\_\_



ERNST ENGINEERING CO.  
DURANGO, COLORADO

PI/Dwights PLUS on CD Map Report

ME SA/6000

Jic B-4

|     |          |         |        |     |  |
|-----|----------|---------|--------|-----|--|
|     |          |         |        |     |  |
|     | 5        | 4       | 3      |     |  |
|     | 8        | 9       | 10     |     |  |
|     | 7E       | 7       | 8M 8   |     |  |
| CDX | 17 8E    | 16      | 15     | CDX |  |
|     | 9        | 5E      | 26N 5W |     |  |
|     | 20       | 5       | 21     | 22  |  |
|     | 33A      | 33      | 11E    | 9   |  |
| CDX | 20 29 32 | 11 289E | 8E 27  |     |  |
|     | 32       | 33      | 34     |     |  |
|     | 5        | 4       | 3      |     |  |
|     | 8        | 9       | 10     |     |  |



# PI/Dwights PLUS on CD Map Report

GALUP  
Tic B-4

|  |    |        |    |  |  |  |
|--|----|--------|----|--|--|--|
|  |    |        |    |  |  |  |
|  | 5  | 4      | 3  |  |  |  |
|  | 8  | 9      | 10 |  |  |  |
|  | 17 | 8      | 15 |  |  |  |
|  | 5  | 5E     | 21 |  |  |  |
|  | 20 | 26N 5W | 22 |  |  |  |
|  | 29 | XTD    | 27 |  |  |  |
|  | 32 | 33     | 34 |  |  |  |
|  | 5  | 4      | 3  |  |  |  |
|  | 8  | 9      | 10 |  |  |  |

CD

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B-26N 5W

A

5E

B

26N

5W

C

Tic

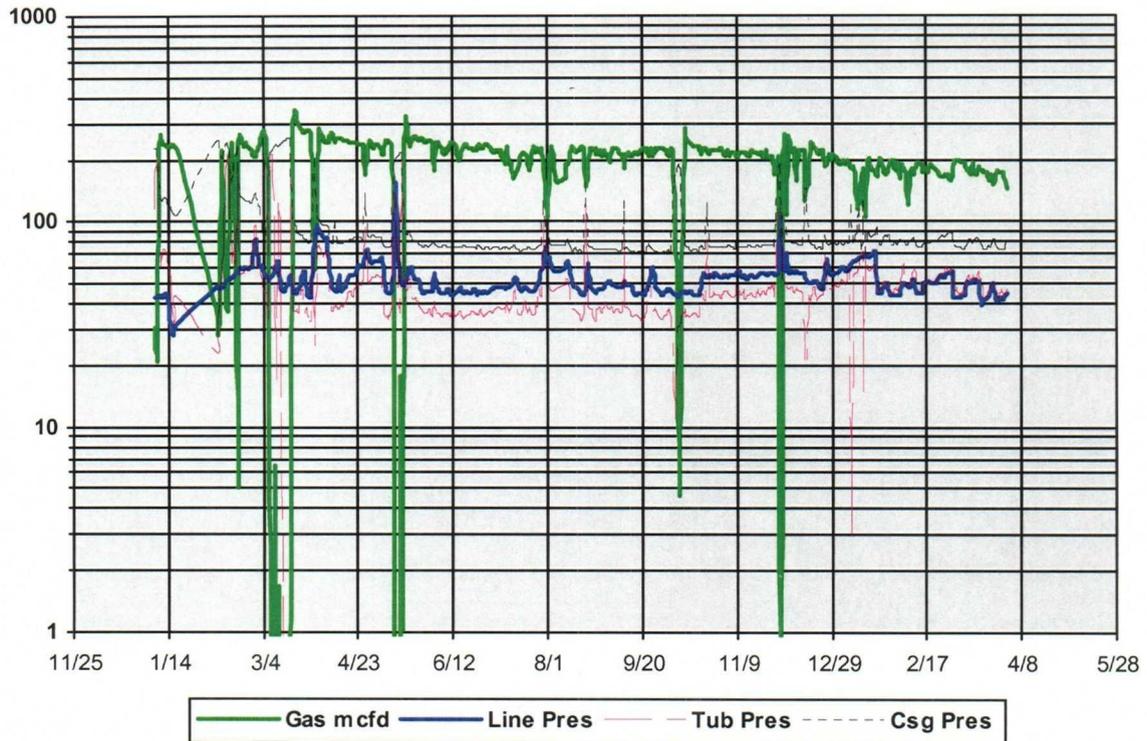
B-4

GALUP

3/30/2005

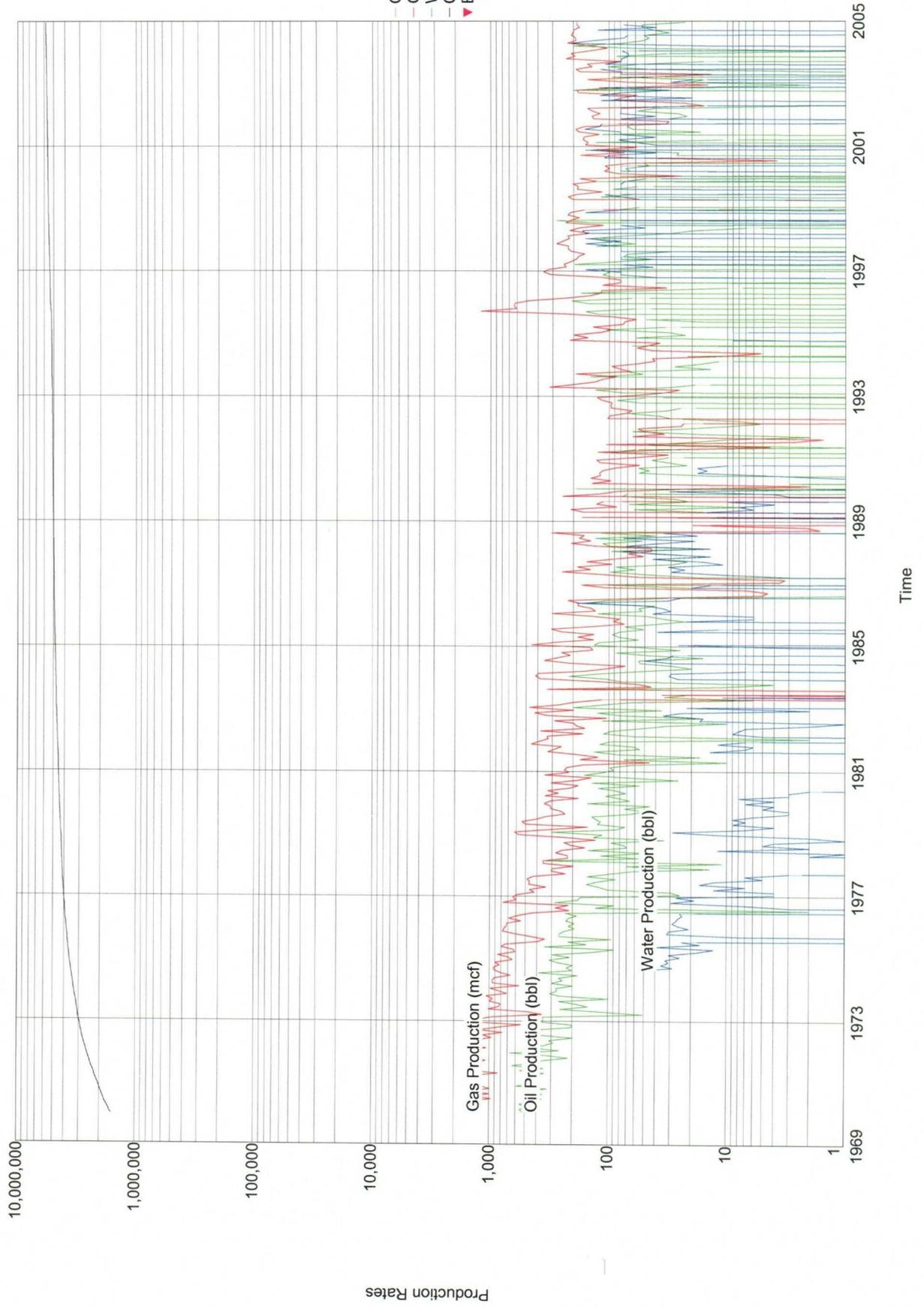
11:21 AM

'JICARILLA B 004-DK/GP API: 30-039-82260' (1/6/04 - 3/31/05)



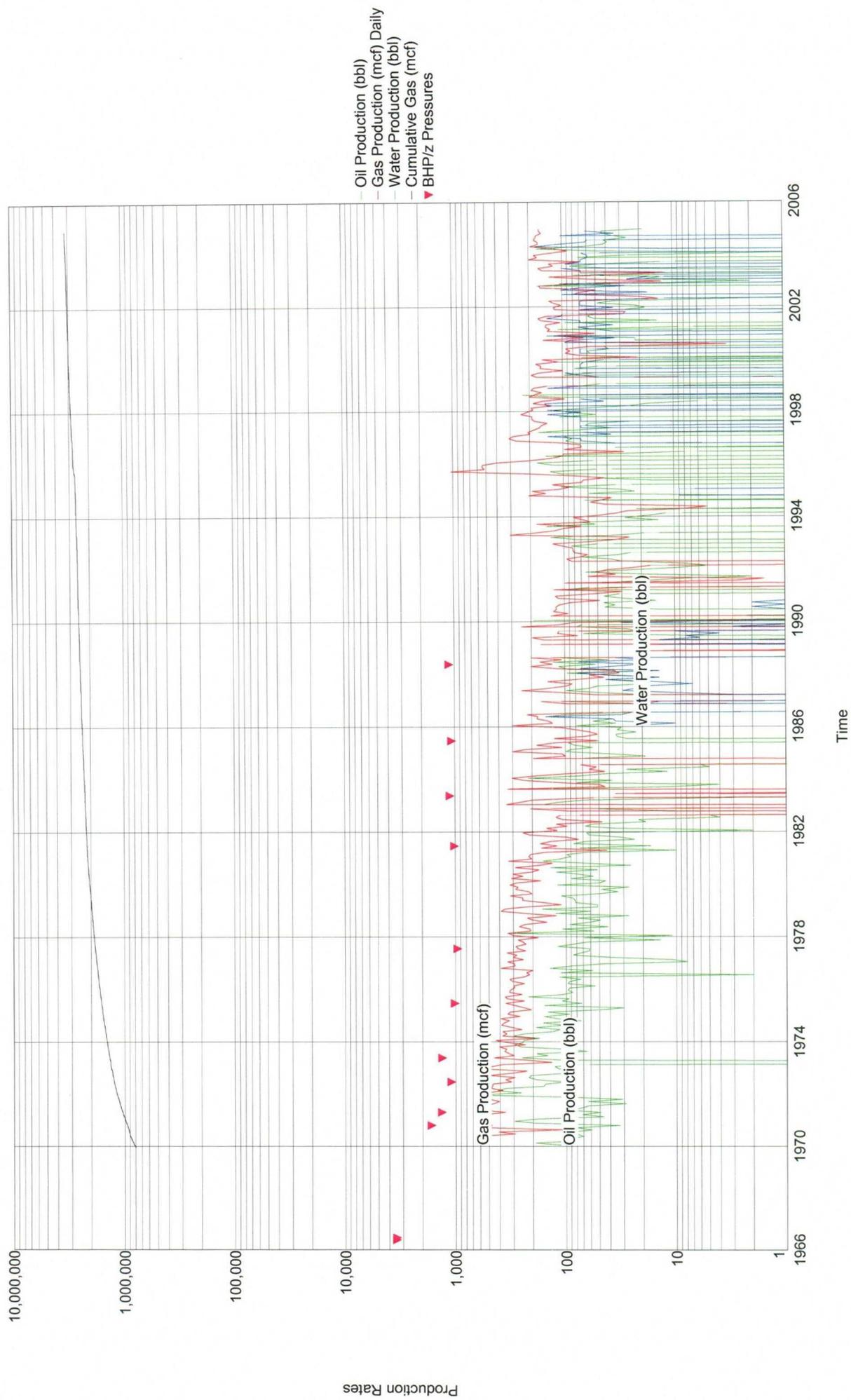
Lease Name: JICARILLA B  
 County, State: RIO ARBA, NM  
 Operator: CDX RIO LIMITED LIABILITY CORPORATIO  
 Field: MULTIPLE  
 Reservoir: MULTIPLE  
 Location:

JICARILLA B - ( MULTIPLE) B-4 (DK/GP)



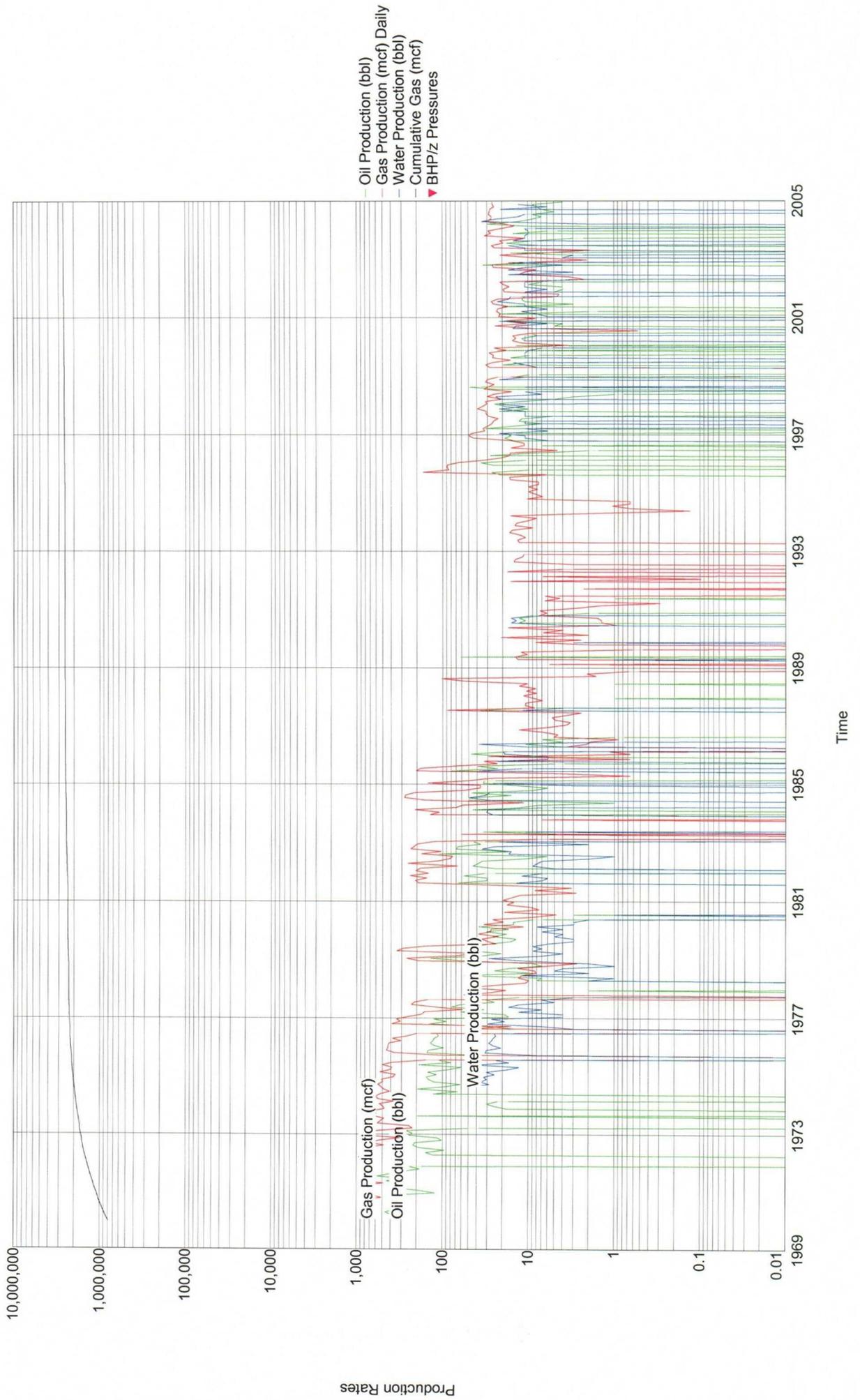
Lease Name: JICARILLA B  
County, State: RIO ARBA, NM  
Operator: CDX RIO LIMITED LIABILITY CORPORATIO  
Field: BASIN  
Reservoir: DAKOTA  
Location: 21 26N 5W SE NE

JICARILLA B - 4 ( DAKOTA)



Lease Name: JICARILLA B  
County, State: RIO ARBA, NM  
Operator: CDX RIO LIMITED LIABILITY CORPORATIO  
Field: TAPACITO  
Reservoir: GALLUP  
Location: 21 26N 5W SE NE

JICARILLA B - 4 ( GALLUP)



STATE OF NEW MEXICO  
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT  
OIL CONSERVATION DIVISION



BRUCE KING  
GOVERNOR

ANITA LOCKWOOD  
CABINET SECRETARY

POST OFFICE BOX 2088  
STATE LAND OFFICE BUILDING  
SANTA FE, NEW MEXICO 87504  
(505) 827-5800

RECEIVED  
OCT 25 1993  
OIL CON. DIV.  
DIST. 3

COMMINGLING ORDER PC-871

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

Attention: J.W. Hawkins

**LEASE NAME:** *Jicarilla "B" Well No. 4*  
**DESCRIPTION:** *Tapacito Gallup Pool: E/2 and, Basin Dakota Pool: E/2 of Section 21, Township 26 North, Range 5 West, Rio Arriba County, New Mexico.*

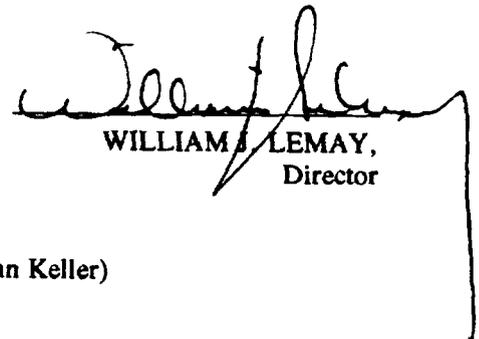
The above-named company is hereby authorized to commingle Tapacito Gallup Pool and Basin Dakota Pool production in a common separator and meter run, and to determine the production from each pool by well tests to be conducted on a bi-annual basis. (All commingled production must be of marginal nature; further, the operator shall notify the Santa Fe office of the Division in the event any well in the commingled battery becomes capable of top allowable production, at which time the Division will amend this order or take such other action as may be appropriate.

**FURTHER:** The operator shall notify the Aztec District Office of the Division upon implementation of the commingling process.

**NOTE:** This installation shall be installed and operated in accordance with the applicable provisions of Rule 303 of the Division Rules and Regulations and the Division "Manual for the Installation and Operation of Commingling Facilities." It is the responsibility of the producer to notify the transporter of this commingling authority.

**REMARKS:** Production may be allocated based on historical percentages for individual pools until no later than June 1994 at which time the bi-annual well tests will commence.

DONE at Santa Fe, New Mexico, on this 20th day of October, 1993.

  
WILLIAM J. LEMAY,  
Director

cc: Oil Conservation Division- Aztec  
US Bureau of Land Management - Farmington (Attention: John Keller)

AD: [Handwritten initials]



STATE OF NEW MEXICO  
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION  
2040 S. PACHECO  
SANTA FE, NEW MEXICO 87505  
(505) 827-7131

**ADMINISTRATIVE ORDER DHC-1137**

Amoco Production Company  
P.O. Box 800  
Denver, Colorado 80201-0800

Attention: Ms. Pamela W. Staley

RECEIVED  
JUN 21 1985

OIL CON. DIV.  
DIST. 3

*Jicarilla Contract "B" Well No.4  
Unit H, Section 21, Township 26 North, Range 5 West,  
NMPM, Rio Arriba County, New Mexico.  
Basin Dakota (Prorated Gas) Pools and Tapacito Gallup (Associated) Pools*

Dear Ms. Staley:

Reference is made to your recent application for an exception to Rule 303-A of the Division Rules and Regulations to permit the subject well to commingle production from both pools in the wellbore.

It appearing that the subject well qualifies for approval for such exception pursuant to the provisions of Rule 303-C, and that reservoir damage or waste will not result from such downhole commingling, and correlative rights will not be violated thereby, you are hereby authorized to commingle the production as described above and any Division Order which authorized the dual completion and required separation of the two zones is hereby placed in abeyance.

In accordance with the provisions of Rule 303-C-4., total commingled oil production from the subject well shall not exceed 40 barrels per day, and total water production shall not exceed 80 barrels per day. The maximum amount of gas which may be produced daily from the well shall be determined by Division Rules and Regulations or by the gas allowable for each respective prorated pool as printed in the Division's San Juan Basin Gas Proration Schedule.

Assignment of allowable to the well and allocation of production from the well shall be on the following basis:

|                              |         |         |
|------------------------------|---------|---------|
| Basin Dakota (Prorated Gas)  | Oil 83% | Gas 86% |
| Tapacito Gallup (Associated) | Oil 17% | Gas 14% |

FURTHER: The operator shall notify the Aztec District Office of the Division upon implementation of the commingling process.

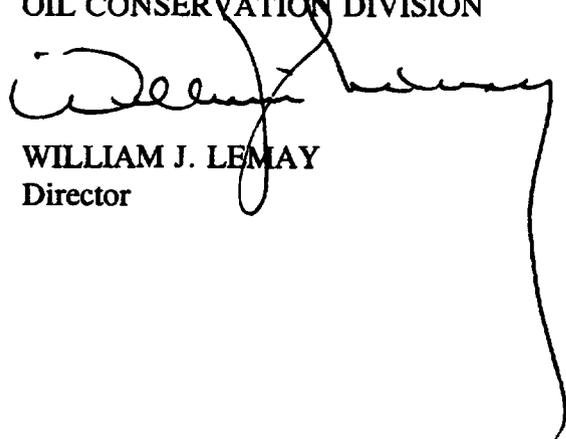
*Administrative Order DHC-1137*  
*Amoco Production Company*  
*June 20, 1995*  
*Page 2*

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Pursuant to Rule 303-C-5, the commingling authority granted by the order may be rescinded by the Division Director if, in his opinion, conservation is not being best served by such commingling.

Approved at Santa Fe, New Mexico on this 20th day of June, 1995.

STATE OF NEW MEXICO  
OIL CONSERVATION DIVISION



WILLIAM J. LEMAY  
Director

S E A L

WJL/BES

cc: Oil Conservation Division - Aztec ✓  
Bureau of Land Management - Farmington



1115 FARMINGTON AVE. - FARMINGTON, NM 87401

(505) 325-6622

ANALYSIS NO. AMO30289

WELL/LEASE INFORMATION

COMPANY: AMOCO PRODUCTION COMPANY PRESSURE: 245 PSIG  
 WELL NAME: JICARILLA B #5E SAMPLE TEMP.: DEG. F  
 LOCATION: DATE SAMPLED: 8/2/93  
 FORMATION: GALLUP SAMPLE SRC:  
 COUNTY: RIO ARRIBA, NM SAMPLED BY: CLEVE J NOBLE JR  
 STATION NO.: TEST E-153 PROD FOREMAN: JAKE NUNEZ  
 REMARKS:

ANALYSIS

| COMPONENT | MOLE %  | GPM**  | B.T.U.* | SP. GR.* |
|-----------|---------|--------|---------|----------|
| NITROGEN  | 3.234   | 0.0000 | 0.00    | 0.0313   |
| CO2       | 0.737   | 0.0000 | 0.00    | 0.0112   |
| METHANE   | 72.253  | 0.0000 | 731.41  | 0.4002   |
| ETHANE    | 13.929  | 3.7175 | 247.07  | 0.1446   |
| PROPANE   | 6.230   | 1.7130 | 157.11  | 0.0949   |
| I-BUTANE  | 0.858   | 0.2799 | 27.96   | 0.0172   |
| N-BUTANE  | 1.637   | 0.5150 | 53.53   | 0.0329   |
| I-PENTANE | 0.465   | 0.1698 | 18.65   | 0.0116   |
| N-PENTANE | 0.349   | 0.1263 | 14.04   | 0.0087   |
| HEXANE    | 0.308   | 0.1341 | 15.84   | 0.0099   |
| TOTAL     | 100.000 | 6.6556 | 1265.61 | 0.7625   |

\* @ 14.730 PSIA DRY & UNCORRECTED FOR COMPRESSIBILITY

\*\* @ 14.696 & 60 DEG. F

COMPRESSIBILITY FACTOR (1/2) 1.0038  
 BTU/CU.FT. (DRY) CORRECTED FOR (1/2) 1267.5  
 BTU/CU.FT. (WET) CORRECTED FOR (1/2) 1245.4  
 REAL SPECIFIC GRAVITY 0.7649

ANALYSIS RUN AT 14.696 PSIA & 60 DEGREES F

CYLINDER PRESSURE: 236 PSIG  
 CYLINDER NO.: GAS-AZT040  
 DATE RUN: 8/4/93

SENT BY: NWP-SLL/FAX 8010040488 8-9-83 110:08AM NWP-SALT LAKE-508  
T50M630

P.2/2  
F.1:# 1/  
SCREEN NBR: \_

QUALITY DATA SCREEN  
14.73 0 60 F

TRAN CODE: I  
METER NBR: 85786 - 01 P  
METER NAME: JICARILLA B #5E COMG  
SEG CREATE DATE: 070293  
SEG EFFECT DATE: 063093  
DATE PULLED: 062393  
SEG EFFECT TIME: 1800

CHECK DIGIT: \_

|                | MOL %    | GPM        |                | MOL %    | GPM   |
|----------------|----------|------------|----------------|----------|-------|
| CH4 METHANE:   | 82 . 824 | 11.783     | C2 ETHANE :    | 10 . 792 | 2.885 |
| C3 PROPANE:    | 03 . 503 | .964       | IC4 ISO BUT :  | 00 . 429 | .140  |
| NC4 BUTANE :   | 00 . 681 | .215       | IOS ISO PEN :  | 00 . 158 | .061  |
| NCS PENTANE:   | 00 . 133 | .048       | C6 HEXANE :    | 00 . 177 | .077  |
| C7 HEPTANE:    | 00 . 000 | .000       | C8 OCTANE :    | 00 . 000 | .000  |
| C9 NONANE :    | 00 . 000 | .000       | C10 DECANE :   | 00 . 000 | .000  |
| N2 NITROGEN:   | 00 . 451 | .000       | CO2 CARBON :   | 00 . 841 | .142  |
| SPECIFIC GRAV: | 0 . 578  |            | DRY BTU ( 1178 |          |       |
|                | MOL %    | GRAINS/CCF |                | MOL %    | #/MCF |
| H2S SULFUR :   | 00 . 000 | .00        | H2O WATER :    | 000 :    | 00    |

0170I - INQUIRY SUCCESSFULLY COMPLETED

Post-It™ brand fax transmittal memo 7671 # of pages 2

|                         |                        |
|-------------------------|------------------------|
| To <u>Laura Kwartin</u> | From <u>John Boker</u> |
| Co. <u>Amoco</u>        | Co. <u>Halliburton</u> |
| Dept.                   | Phone #                |
| Fax #                   | Fax #                  |

**SERVICES**  
**LATORY**  
**REA**  
**ANALYSIS**

To: Mr. Jake Nunez

Date: August 4, 1993

AMOCO PRODUCTION

Submitted by: \_\_\_\_\_

Date Rec. 8-3-1993

Well No. Jicarilla B #5F

Location: \_\_\_\_\_

Sample Markings Gallup Formation

API Oil Gravity 58 at 60°F

Specific Gravity 1.006

pH 6.25

Resistivity 0.684 at 80.7°F

Iron (Fe) 16

Milligrams per Liter

Potassium (K) \_\_\_\_\_

" "

Sodium (Na) 3,006

" "

Calcium (Ca) 350

" "

Magnesium (Mg) 71

" "

Chlorides (Cl) 3,850

" "

Sulfates (SO<sub>4</sub>) 3,000

" "

Carbonates (CO<sub>3</sub>) \_\_\_\_\_

" "

Bicarbonates (HCO<sub>3</sub>) 468

" "

Total Dissolved Solids 10,761

" "

By Mike Ulrich

Title Lab Tech

Location Farmington, NM

**NOTICE:**

This report is limited to the described sample tested. Any person using or relying on this report agrees that Halliburton shall not be liable for any loss or damage whether due to act or omission resulting from such report or its use.

M.U.

**HALLIBURTON DISTRICT LABORATORY**  
**WATER ANALYSIS DATA SHEET**

Analysis Date: 8-6-93

Report No. \_\_\_\_\_

AMOCO  
 \_\_\_\_\_  
 \_\_\_\_\_

Requested By \_\_\_\_\_ Date Received \_\_\_\_\_

Well Number NICARILLA B #5E

Location \_\_\_\_\_ Formation DAKOTA

DATA FOR REPORT

Specific Gravity 1.005

pH 7.72

| Ion or Anion | Ion     | Calculation | ppm           |
|--------------|---------|-------------|---------------|
|              | Fe Log  |             | <u>6</u>      |
|              | K & T   |             | <u>&lt;10</u> |
|              | Na & T  |             | <u>3042</u>   |
|              | Ca      |             | <u>117</u>    |
|              | Mg      |             | <u>7</u>      |
|              | Cl      |             | <u>1656</u>   |
|              | SO4 Log |             | <u>3400</u>   |
|              | CO3     |             |               |
|              | MCO3    |             | <u>1317</u>   |
|              | TDS     |             | <u>9545</u>   |

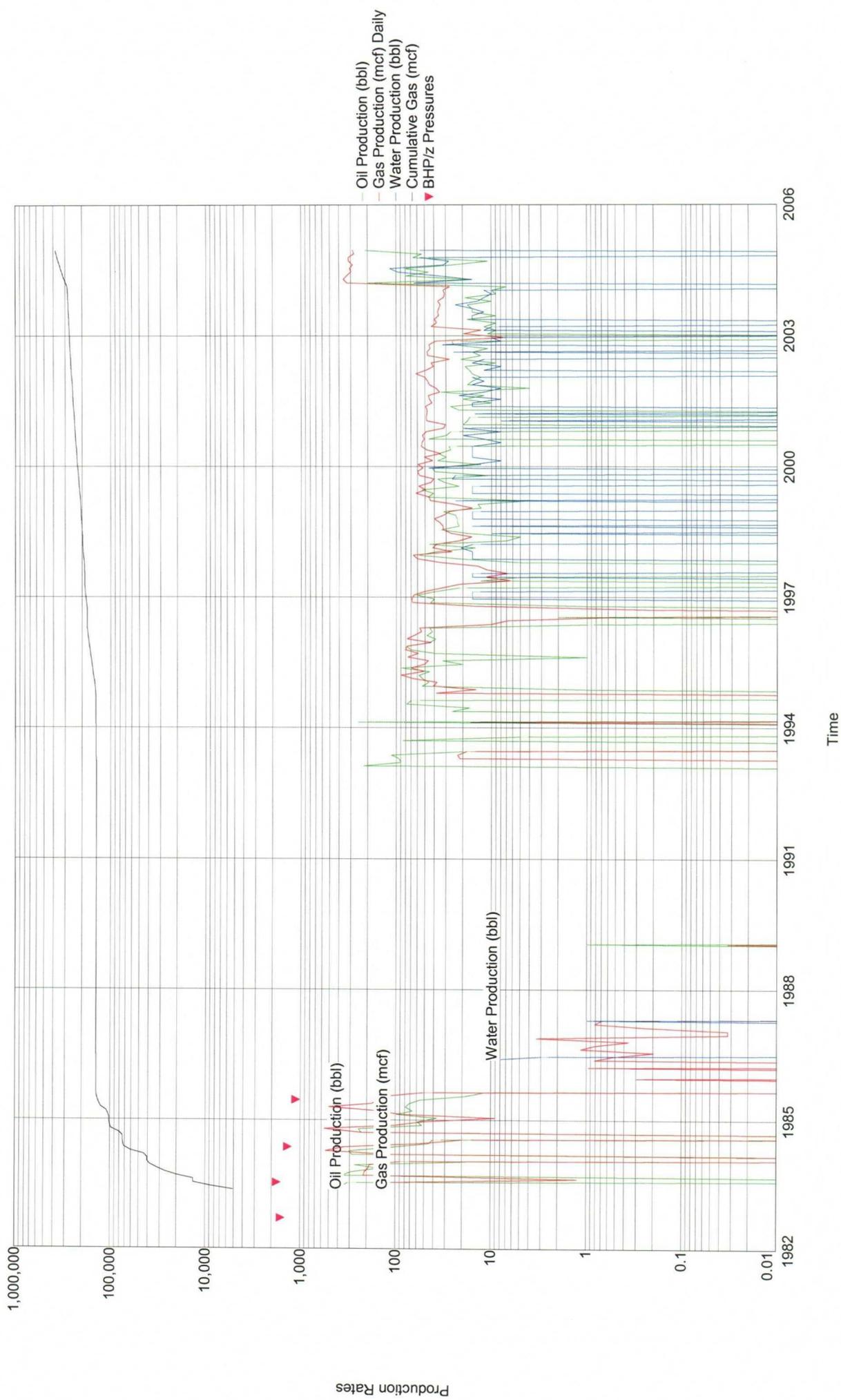
Rw .95 @ 80.5°F

**Notes**

Report is based on sound engineering practices, but because of variable well conditions and other information which must be relied upon, Halliburton makes no warranty, express or implied, as to the accuracy of the data or of any calculations or opinions expressed herein. You agree that Halliburton is liable for any loss or damage whether due to negligence or otherwise arising out of or in connection with such data, calculations or opinions.

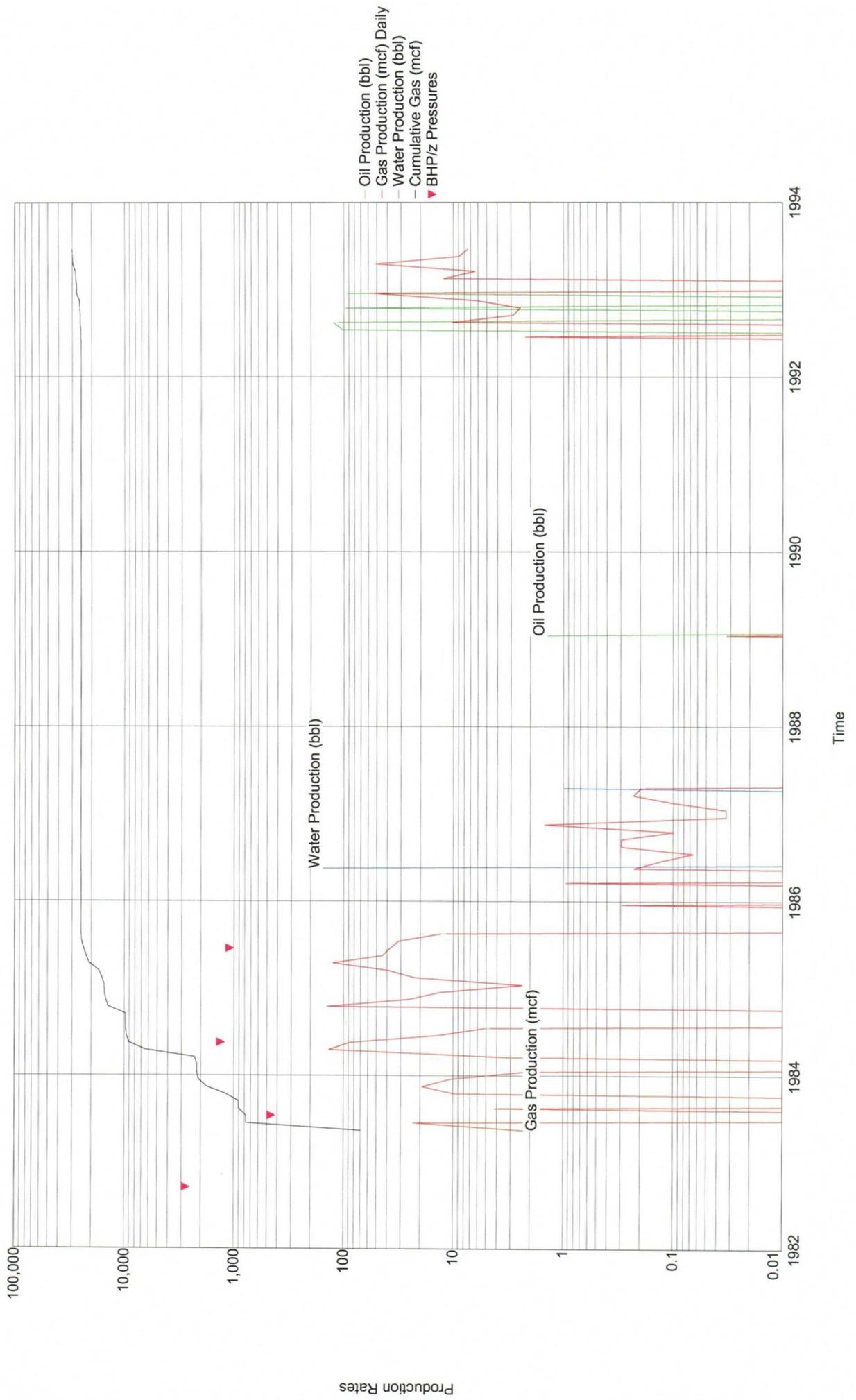
Lease Name: JICARILLA B  
 County, State: RIO ARBA, NM  
 Operator: CDX RIO LIMITED LIABILITY CORPORATIO  
 Field: BASIN  
 Reservoir: DAKOTA  
 Location: 21 26N 5W NE SW NW

JICARILLA B - 5E ( DAKOTA)



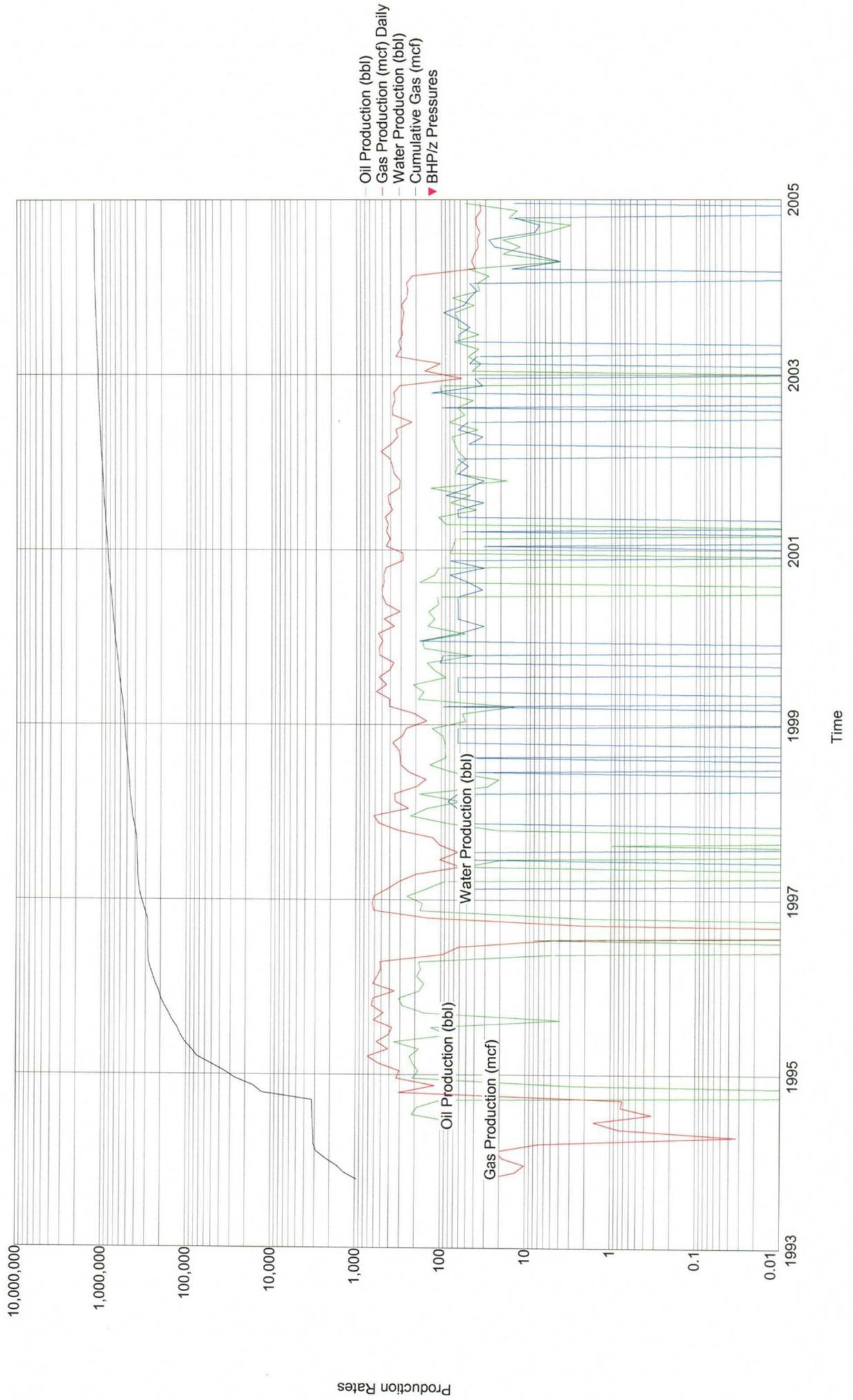
Lease Name: JICARILLA B  
 County, State: RIO ARBA, NM  
 Operator: BP AMERICA PRODUCTION COMPANY  
 Field: BLANCO  
 Reservoir: MESAVERDE  
 Location: 21 26N 5W NE SW NW

JICARILLA B - 5E ( MESAVERDE )

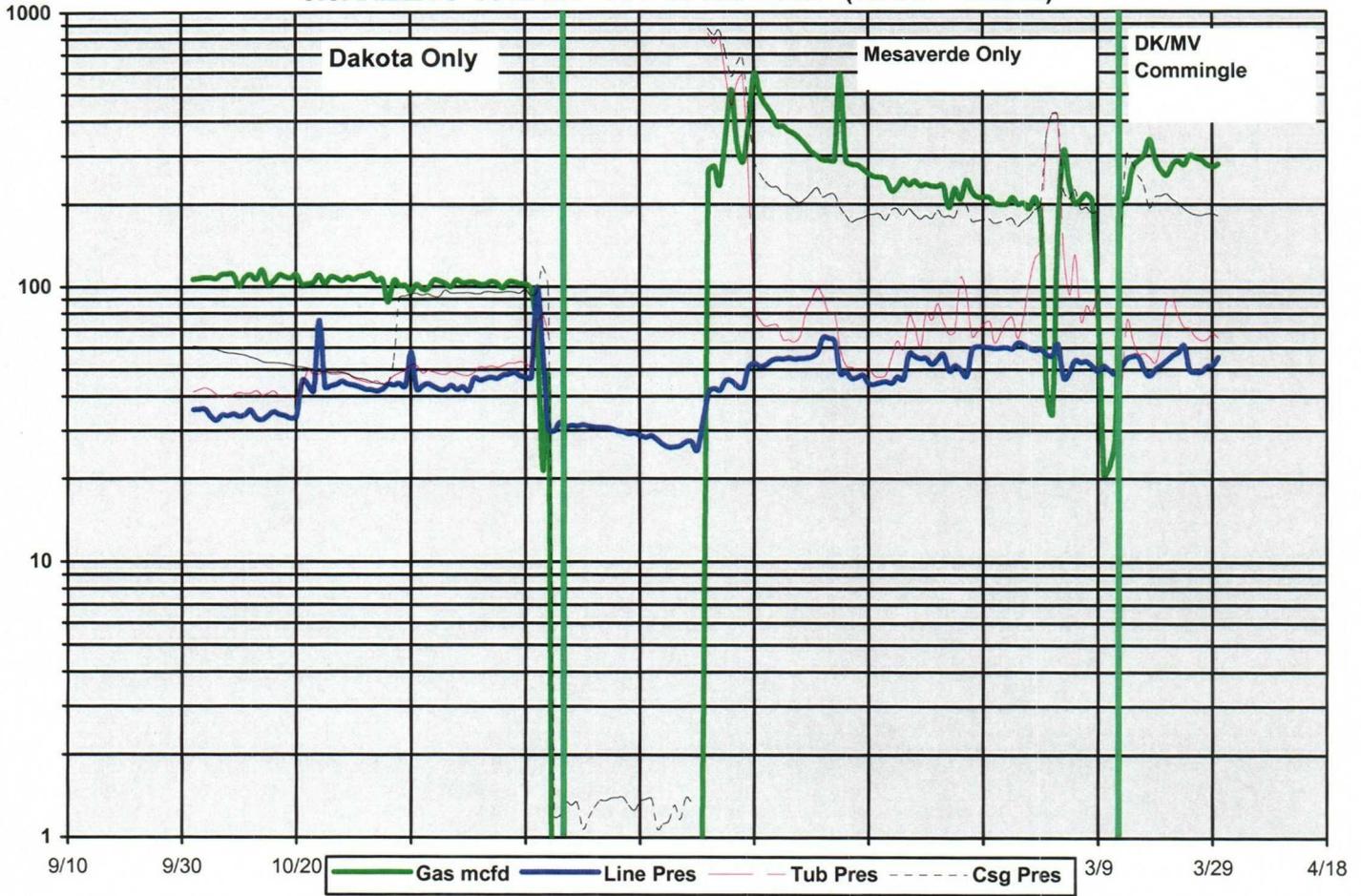


Lease Name: JICARILLA B  
 County, State: RIO ARBA, NM  
 Operator: CDX RIO LIMITED LIABILITY CORPORATIO  
 Field: TAPACITO  
 Reservoir: GALLUP  
 Location: 21 26N 5W NE SW NW

JICARILLA B - 5E ( GALLUP)



'JICARILLA C 004E-DK API: 30-039-22298' (10/1/04 - 3/30/05)



Jicarilla C-4E Section 24 T26N, R5W.  
CDX Gas, LLC. most recent Mesaverde pay-add.