

DISTRICT I

P.O. Box 1980, Hobbs, NM 88241-1980

DISTRICT II

811 South First St., Artesia, NM 88210-2835

DISTRICT III

1000 Rio Brazos Rd, Aztec, NM 87410-1693

State of New Mexico
Energy, Minerals and Natural Resources Department

OIL CONSERVATION DIVISION

2040 S. Pacheco
Santa Fe, New Mexico 87505-6429Form C-107-A
New 3-12-96

APPROVAL PROCESS:

☒ Administrative ☐ Hearing

EXISTING WELLBORE

☒ YES ☐ NO

APPLICATION FOR DOWNHOLE COMMINGLING

Operator Phillips Petroleum Company Address 5525 Hwy. 64, Farmington, NM 87401
San Juan 30-5 Unit # 90 H, Section 22, T30N, R5W, Rio Arriba
Lease Well No. Unit Ltr. - Sec - Twp - Rge County
GRID NO. 017654 Property Code 009258 API NO. 30-039-23173 Spacing Unit Lease Types: (check 1 or more)
Federal ☒ State ☐ (and/or) Fee ☐

The following facts are submitted in support of downhole commingling:	Upper Zone	Intermediate Zone	Lower Zone
1. Pool Name and Pool Code	72319 Blanco Mesaverde		71599 Basin Dakota
2. Top and Bottom of Pay Section (Perforations)	4220' & 5998'		8002' & 8050'
3. Type of production (Oil or Gas)	Gas		Gas
4. Method of Production (Flowing or Artificial Lift)	Flowing		Flowing
5. Bottomhole Pressure Oil Zones - Artificial Lift: Gas & Oil - Flowing: All Gas Zones: Estimated Current Measured Current Estimated Or Measured Original	a. (Current) 1030 psi (est.) b. (Original) 1294 psi (est.)		a. 824 psig (24 hr SI) b. 3412 psi (est.)
6. Oil Gravity ($^{\circ}$ API) or Gas BTU Content	1030 BTU/cu.ft.		1000 BTU/cu.ft.
7. Producing or Shut-In?			Producing
Production Marginal? (yes or no)	Yes		Yes
* If Shut-In, give date and oil/gas/water rates of last production Note: For new zones with no production history, applicant shall be required to attach production estimates and supporting data	Date: Rates:	Date: Rates:	Date: Rates:
* If Producing, give date and oil/gas/water rates of recent test (within 60 days)	Date: Estimate Rates: 420 mcf/d	Date: Rates:	Date: Jan. 1997 Rates: 37 mcf/d 0 bwpd
8. Fixed Percentage Allocation Formula - % for each zone	Oil: % Gas: %	Oil: % Gas: %	Oil: % Gas: %

9. If allocation formula is based upon something other than current or past production, or is based upon some other method, submit attachments with supporting data and/or explaining method and providing rate projections or other required data.
10. Are all working, overriding, and royalty interests identical in all commingled zones? ☐ Yes ☒ No
If not, have all working, overriding, and royalty interests been notified by certified mail? ☒ Yes ☐ No
Have all offset operators been given written notice of the proposed downhole commingling? ☒ Yes ☐ No
11. Will cross-flow occur? ☒ Yes ☐ No If yes, are fluids compatible, will the formations not be damaged, will any cross-flowed production be recovered, and will the allocation formula be reliable. ☒ Yes ☐ No (If No, attach explanation)
12. Are all produced fluids from all commingled zones compatible with each other? ☒ Yes ☐ No (see attached)
13. Will the value of production be decreased by commingling? ☐ Yes ☒ No (If Yes, attach explanation)
14. If this well is on, or communitized with, state or federal lands, either the Commissioner of Public Lands or the United States Bureau of Land Management has been notified in writing of this application. ☒ Yes ☐ No
15. NMOC Reference Cases for Rule 303(D) Exceptions: ORDER NO(S). R-10771
16. 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 all offset operators.
* Notification list of working, overriding, and royalty interests for uncommon interest cases.
* Any additional statements, data, or documents required to support commingling.

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

SIGNATURE Sean C. Helton TITLE Staff Reservoir Engineer DATE 3-25-97TYPE OR PRINT NAME Sean C. Helton TELEPHONE NO. (505) 599-3455

District I
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District IV

2040 South Pacheco, Santa Fe, NM 87505

State of New Mexico
Energy, Minerals & Natural Resources Department

OIL CONSERVATION DIVISION
2040 South Pacheco
Santa Fe, NM 87505

Form C-102

Revised October 18, 1994

Instructions on back

Submit to Appropriate District Office

State Lease - 4 Copies

Fee Lease - 3 Copies

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

¹ API Number 30-039-23173	² Pool Code 72319	³ Pool Name Blanco Mesaverde
⁴ Property Code 009258	⁵ Property Name San Juan 30-5 Unit	⁶ Well Number #90
⁷ OGRID No. 017654	⁸ Operator Name Phillips Petroleum Company	⁹ Elevation 6670

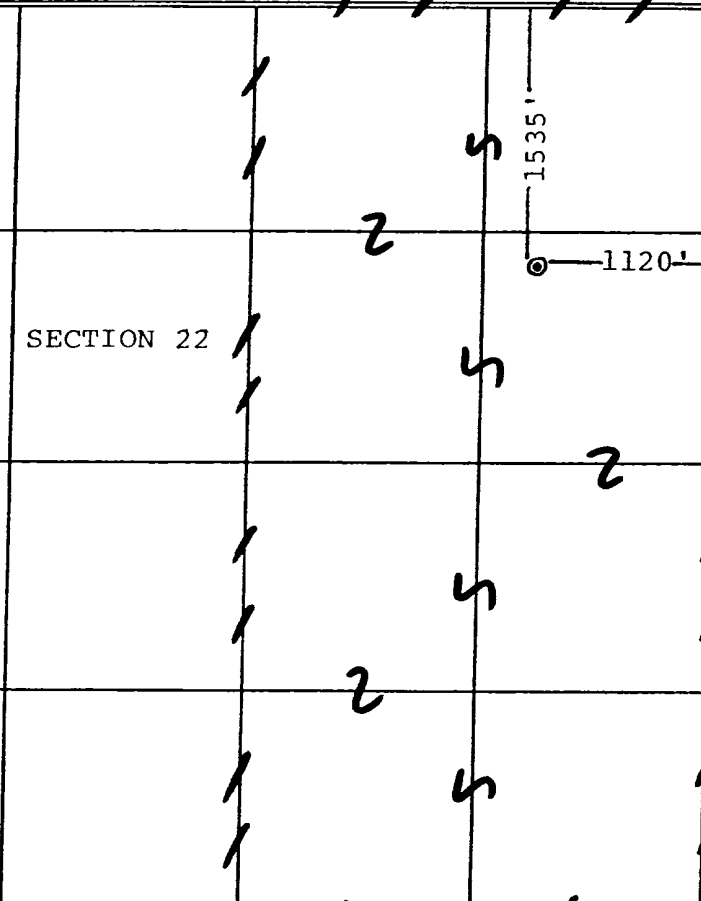

¹⁰ Surface Location

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
H	22	30N	5W		1535	North	1120	East	Rio Arriba

¹¹ 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
H									
¹² Dedicated Acres 320	¹³ Joint or Infill Y	¹⁴ Consolidation Code U	¹⁵ 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

16					17 OPERATOR CERTIFICATION I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief.  Signature Sean C. Helton Printed Name Staff Reservoir Engineer Title March 25, 1997 Date
					18 SURVEYOR CERTIFICATION 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. Date of Survey Signature and Seal of Professional Surveyer: See Dakota C-102 dated 11-8-82 Certificate Number

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

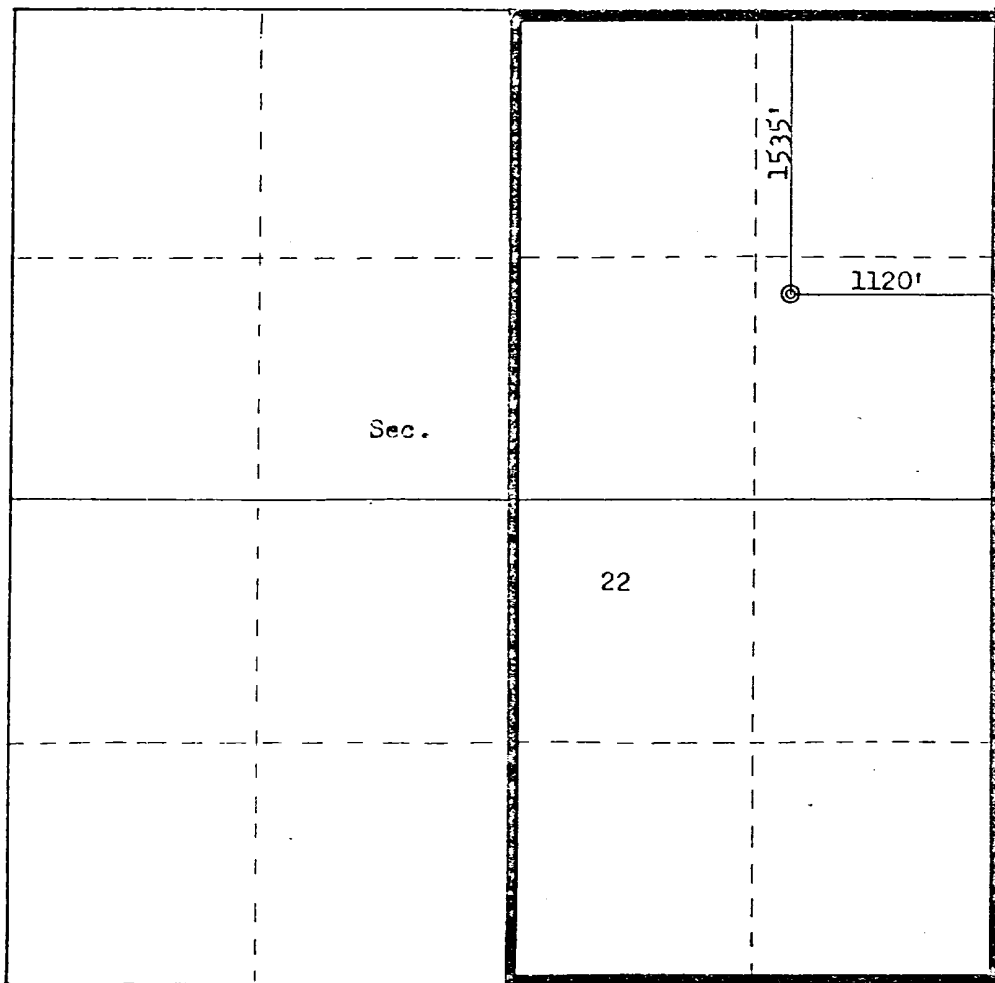
Operator NORTHWEST PIPELINE CORPORATION			Lease SAN JUAN 30-5 UNIT		Well No. 90
Unit Letter H	Section 22	Township 30N	Range 5W	County Rio Arriba	
Actual Footage Location of Well: 1535 feet from the North line and 1120 feet from the East line					
Ground Level Elev: 6670	Producing Formation Dakota		Pool Basin Dakota		Dedicated Acreage: 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 Unitization

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.



Scale: 1"=1000'

CERTIFICATION

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

Paul C. Thompson

Name
Paul C. Thompson

Position
Drilling Engineer

Company
Northwest Pipeline Corp

Date
November 12, 1982

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
November 8, 1982

Registered Professional Engineer
and Land Surveyor

Fred B. Kerr Jr.
Fred B. Kerr Jr.

Certificate No. *2050*

SAN JUAN 30-5 UNIT #90 DAKOTA

	MONTH	MONTHLY FORECAST (MCF)
	Mar-97	1751
1	Apr-97	1745
2	May-97	1738
3	Jun-97	1731
4	Jul-97	1725
5	Aug-97	1718
6	Sep-97	1711
7	Oct-97	1705
8	Nov-97	1698
9	Dec-97	1692
10	Jan-98	1685
11	Feb-98	1679
12	Mar-98	1673
13	Apr-98	1666
14	May-98	1660
15	Jun-98	1654
16	Jul-98	1648
17	Aug-98	1642
18	Sep-98	1635

AMERICAN OILFIELD SERVICE COMPANY
SUITE PMB 64 NEU 3004
FARMINGTON, NEW MEXICO 87401

DATE: MARCH 05, 1997

WELL NAME: SAN JUAN 30-5 # 90
FORMATION: DAKOTA

TYPE TEST: STATIC GRADIENT

COUNTY: RIO ARriba
STATE: NEW MEXICO

ELEVATION: GL
TOTAL DEPTH: 8100' PBTD
PERFORATIONS: 8002' TO 8050'
TUBING SIZE: 2-3/8" TO 7978'
CASING SIZE: TD
PACKER:
OTHER:

CASING PRESSURE: 700
TUBING PRESSURE: 690
OIL LEVEL:
WATER LEVEL:
TEMPERATURE:
AMERADA ELEMENT NUMBER: 86184
RANGE: 0-3500
WELL STATUS: SHUT IN
24 HOURS

INDIVIDUAL WELL DATA SHEET

===== STATIC GRADIENT TRAVERSE

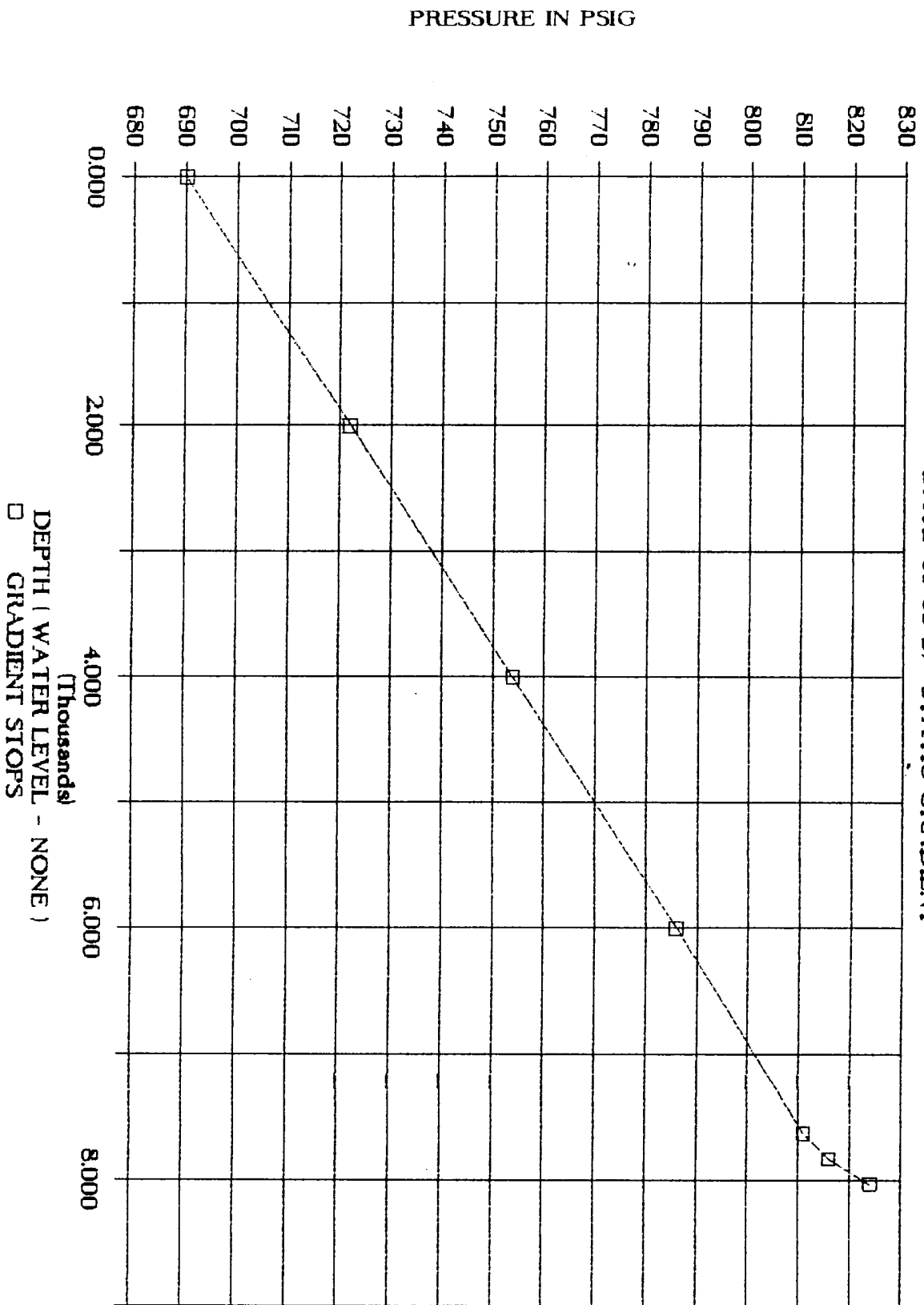
DEPTH IN FEET	PRESSURE PSIG	GRADIENT PSI/FOOT
0	690	
2000	722	0.016
4000	754	0.016
6000	786	0.016
7626	811	0.015
7826	816	0.025
8026	824	0.040

NO CHANGE IN PRESSURE.

H & H WIRELINE SERVICE INC.
P. O. BOX 899
FLORA VISTA, N. MEX. 87415
OPERATOR: CHARLES HUGHES
UNIT NO. T-10

PHILLIPS PETROLEUM SAN JUAN 30-5 #90

DATE: 03-05-97 STATIC GRADIENT



MEP81-01

PARPI - WELLZONE PRODUCTION BROWSE

Date: 3/06/97

DAILY AVERAGE BY MONTH

User: #60X

Wellzone L9901 01 Yr: 1996 Mth: 02 Property: 650262 SAN JUAN 30-5 DAKOTA UNIT
 Screen: 1 (1-Prod, 2-Inj, 3-Both) Well No: 000090
 Type: D (T-Total, D-Daily Avg) Field: 042233 BASIN
 Period: M (M-Mnthly, Y-Yrly, C-Cum) Resvr: 20076 DAKOTA

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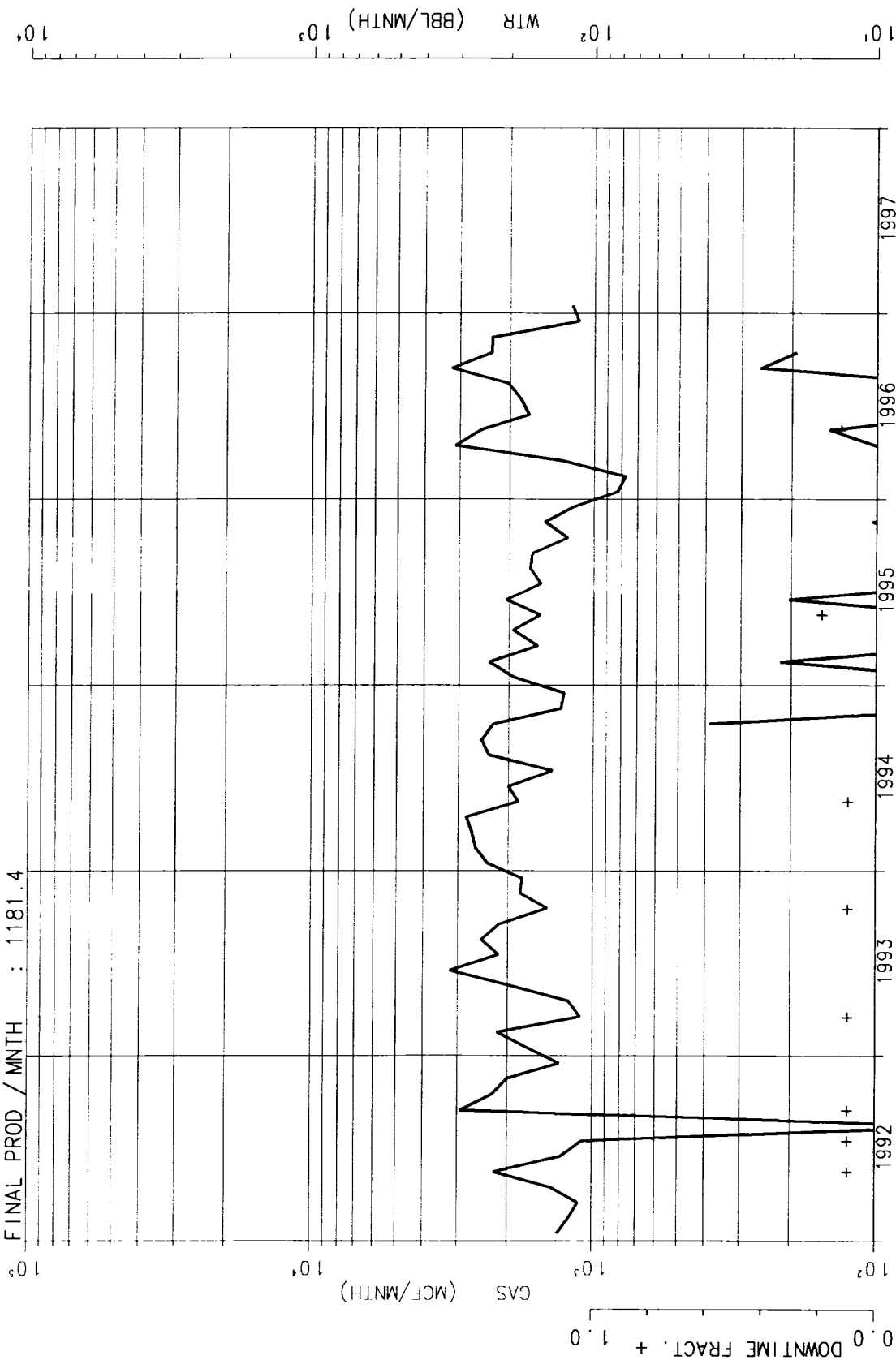
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ADJ          ----- PRODUCED ----- DAYS ----- - WELL -
FLG DATE      OIL (BBL)      GAS (MCF)      WATER (BBL)      PROD      OP ST CL TY
1996-02          0.00          23              0      29.00      29 11 03 2
1996-03          0.00          41              0      31.00      31 11 03 2
1996-04          0.00         100              0      30.00      30 11 03 2
1996-05          0.00          93              0      27.00      27 11 03 2
1996-06          0.00          54              0      30.00      30 11 03 2
1996-07          0.00          59              0      31.00      31 11 03 2
1996-08          0.00          63              0      31.00      31 11 03 2
1996-09          0.00         101              0      30.00      30 11 03 2
1996-10          0.00          75              0      31.00      31 11 03 2
1996-11          0.00          72              0      30.00      30 11 03 2
1996-12          0.00          37              0      31.00      31 11 03 2
1997-01          0.00          37              0      31.00      31 11 03 2
PA1=ICE  PA2=Exit  PF1=Help      PF3=End      PF5=INITIAL CUM  PF11=GRAPH
Transfer->  PF7=Backward  PF8=Forward  PF10=GRAND MENU  PF12=LOG GRAPH
  
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1/92-1/97

INITIAL PROD / MNTH : 1302.1
REMAINING LIFE : 5.08

CUM PRODUCTION : 110687.
FINAL PROD / MNTH : 1181.4

Current Cums
110687. MCF GAS
160. BBL WTR

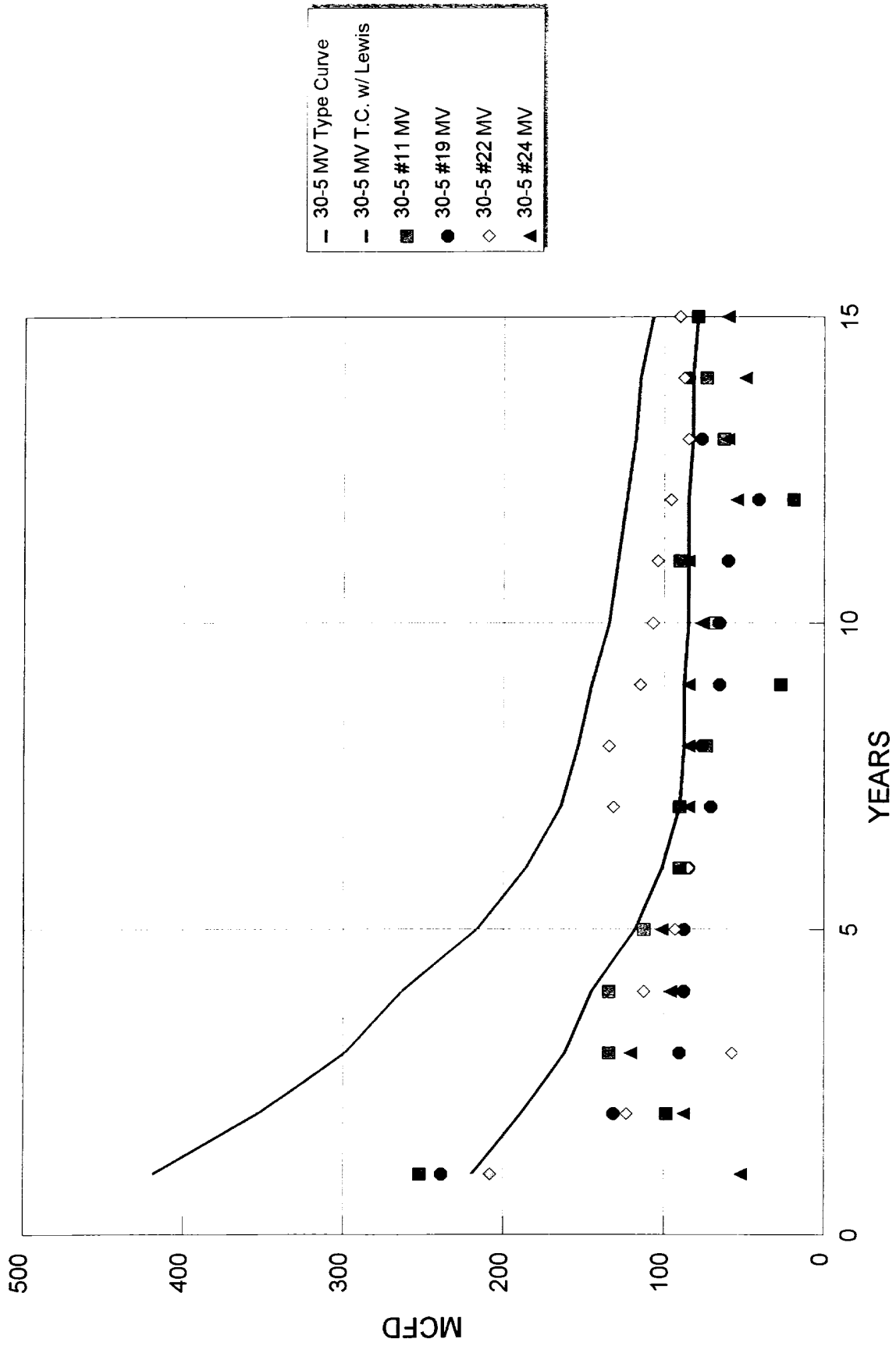


AVERAGE ONTIME = 0.989

LEASE- 650262 : SAN JUAN 30-5 DAKOTA UNIT
RESVR- 076 : BASIN DAKOTA
WELL - 000090 CUM MCF = 382490.

L990101
ZONE-650262076000090 L990101
API-30039231730000 THRU 97/01

SAN JUAN 30-5 UNIT
MESAVARDE



Production Allocation Methodology

◆ Adding New Zone to Existing Zone - Initially Subtraction Method followed by Fixed Allocation Method

- Subtraction Method (+/- 1st 12 months)
 - Forecast production rate by month for existing zone utilizing established decline curve for zone
 - Subtract forecasted rate from commingled rate to define new zone rate
 - Utilize subtraction method for +/- 12 months until new zone rate stabilizes, then utilize fixed allocation method with current rates
- Fixed Allocation Method (after Subtraction Method)
 - Utilize forecasted rate from established decline curve for lower zone
 - Calculate upper zone rate by subtracting lower zone rate from commingled rate
 - Lower zone allocation = $\frac{\text{Lower zone rate}}{\text{Commingled rate}}$
 - Upper zone allocation = $\frac{(\text{Commingled rate} - \text{Lower zone rate})}{\text{Commingled rate}}$

Attachment

OCD Form C-107A (3/12/96)

Item No. 12 - additional explanation:

Based on water analysis from the Mesaverde and Dakota zones and discussions with the chemical treating/analysis company the water from these two zones are compatible. Lab analysis of the individual waters from both the Mesaverde and Dakota formations resulted in positive scaling indices for barium sulfate. There was a slight increase in the barium sulfate scaling index of the combined waters relative to the scaling index of the individual waters.

None of the waters, combined or individual, had meaningful scaling tendencies and combined with the fact that typical water production from either of these zones in San Juan 30-5 are 0-1 BWPD and no barium sulfate scale has been detected to date, no negative impacts to the formations are anticipated.