

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 87401Lease San Juan 30-5 Unit Well No. #47M Unit Ltr. - Sec. - Twp. - Rge. F, Sec. 17, T30N, R5W, Rio Arriba CountyOGRID NO. 017654 Property Code 009258 API NO. 30-039-25678 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) | | | 7750' - 7896' |
| 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. b. | a. (24 hr SI) 1039 psi b. 3412 psi (est.) |
| 6. Oil Gravity ($^{\circ}$ API) or Gas BTU Content | 1030 btu/ft ³ | | 990 btu/ft ³ |
| 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: 400 mcf/d | Date: Rates: | Date: 3/16/98 Rates: 252 mcf/d |
| 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 ☐ No11. 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 ☐ No13. 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 ☐ No15. NMOC Reference Cases for Rule 303(D) Exceptions: ORDER NO(S). R-10770

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 Mark Stodola TITLE Reservoir Engr. DATE 3/23/98TYPE OR PRINT NAME Mark Stodola TELEPHONE NO. (505) 599-3455

1980, Hobbs, NM 88241-1980

State of New Mexico
Energy, Minerals & Natural Resources Department

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

act II
1 South First, Artesia, NM 88210
District III
1000 Rio Brazos Rd., Aztec, NM 87410
District IV
2040 South Pacheco, Santa Fe, NM 87505

OIL CONSERVATION DIVISION
2040 South Pacheco
Santa Fe, NM 87505

WELL LOCATION AND ACREAGE DEDICATION PLAT

| | | |
|--------------------------------------|--|--|
| ¹ All Number | ² Pool Code 71599 | ³ Pool Name Basin Dakota |
| ⁴ Property Code 009258 | ⁵ Property Name SAN JUAN 30-5 UNIT | ⁶ Well Number 47-M |
| ⁷ OGRID No. 017654 | ⁸ Operator Name PHILLIPS PETROLEUM COMPANY | ⁹ Elevation 6336 |

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 |
|---------------|---------|----------|-------|---------|---------------|------------------|---------------|----------------|------------|
| F | 17 | 30N | 5W | | 1780 | NORTH | 1825 | WEST | 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 |
|---------------|---------|----------|-------|---------|---------------|------------------|---------------|----------------|--------|
| F | | | | | | | | | |

| | | | |
|--------------------------------------|------------------------------------|---------------------------------------|-------------------------|
| 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

| | |
|--|---|
| | ¹⁷ OPERATOR CERTIFICATION I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief. <i>R. A. Allred</i> Signature R. A. Allred Printed Name Drilling/Production Spvr. Title April 11, 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. 04/02/97 Date of Survey Signature and Seal of Professional Surveyor: |

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O Box 1980, Hobbs, NM 88241-1980
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Santa Fe, NM 87505

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Submit to Appropriate District Office
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☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

| | | | | | |
|-----------------|--|----------------------------|--|------------------|---------------|
| 1 Well Number | | 2 Pool Code | | 3 Pool Name | |
| | | 72319 | | Blanco Mesaverde | |
| 4 Property Code | | 5 Property Name | | | 6 Well Number |
| 009258 | | SAN JUAN 30-5 UNIT | | | 47-M |
| 7 OGRID No. | | 8 Operator Name | | | 9 Elevation |
| 017654 | | PHILLIPS PETROLEUM COMPANY | | | 6336 |

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 |
| F | 17 | 30N | 5W | | 1780 | NORTH | 1825 | WEST | 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 |
| F | | | | | | | | | |
| 12 Dedicated Acres | | 13 Joint or Infill | | 14 Consolidation Code | | 15 Order No. | | | |
| 320 | | Y | | U | | | | | |

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 | | 5280.00' | | 17 OPERATOR CERTIFICATION | |
| | | I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief | | | |
| | | Signature R. A. Allred | | | |
| | | Printed Name Drilling/Production Sprv. | | | |
| | | Title April 11, 1997 | | | |
| Date | | 18 SURVEYOR CERTIFICATION | | | |
| 5280.00' | | 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. | | | |
| 5270.10' | | Date of Survey 04/02/97 | | | |
| | | Signature and Seal of Professional Surveyor: | | | |
| | | | | | |



PHILLIPS PETROLEUM COMPANY

FARMINGTON, NEW MEXICO 87401
5525 HWY. 64 NBU 3004

March 24, 1998

New Mexico Oil & Gas Conservation Div.
2040 South Pacheco
Santa Fe, New Mexico 87505-6429

Downhole Commingling Allocation Method
on the San Juan 30-5 Unit #47M

Dear Sirs:

Phillips is proposing to utilize the subtraction method on the subject well for approximately six months after actual commingling occurs. After the six month period we will convert to the ratio method as indicated in our commingling application. We believe this will be a more accurate method of allocating production considering that the Dakota interval has been producing for several months and that the production will not be stabilized on the Mesaverde for several months.

Dakota Production Forecast

| | | | |
|-------------|-------|----------------|-------|
| April 1998 | 7,434 | September 1998 | 7,115 |
| May 1998 | 7,615 | October 1998 | 7,288 |
| June 1998 | 7,305 | November 1998 | 6,991 |
| July 1998 | 7,483 | December 1998 | 7,161 |
| August 1998 | 7,417 | January 1999 | 7,099 |

For example, if the total volume for September 1998 were 13,420 mcf, then the Dakota would be allocated 7,115 mcf and the Mesaverde 6,305 mcf. And subsequently, the Dakota would be allocated $(7,115/13,420)$ or 53.02%, and Mesaverde would be allocated $(6,305/13,420)$ or 46.98%.

Sincerely,

PHILLIPS PETROLEUM COMPANY

Mark W. Stodola
Reservoir Engineer

MS/pc

cc: OCD – Aztec
BLM- Farmington
NM Commissioner of Public Lands – Santa Fe

Dakota Production Forecast for 30-5 Unit
Well #47M

| Year | Month | Gas (MCF) |
|---------|-------|-----------|
| Apr. 98 | 1 | 7,434 |
| May | 2 | 7,615 |
| Jun | 3 | 7,305 |
| Jul | 4 | 7,483 |
| Aug | 5 | 7,417 |
| Sep | 6 | 7,115 |
| Oct | 7 | 7,288 |
| Nov | 8 | 6,991 |
| Dec | 9 | 7,161 |
| 1999 | 10 | 7,099 |
| Feb | 11 | 6,356 |
| Mar | 12 | 6,975 |
| Apr | 13 | 6,691 |
| May | 14 | 6,854 |
| Jun | 15 | 6,575 |
| Jul | 16 | 6,734 |
| Aug | 17 | 6,675 |
| Sep | 18 | 6,404 |

Initial Rate = 250 MCF/D

| ADJ | | PRODUCED | | | DAYS | | WELL | | |
|-----|---------|-----------|-----------|-------------|-------|----|------|----|----|
| FLG | DATE | OIL (BBL) | GAS (MCF) | WATER (BBL) | PROD | OP | ST | CL | TY |
| | 1997-05 | 0.00 | 0 | 0 | 0.00 | 0 | 82 | 11 | 2 |
| | 1997-06 | 0.00 | 0 | 0 | 0.00 | 0 | 87 | 11 | 2 |
| | 1997-07 | 0.00 | 0 | 0 | 0.00 | 0 | 50 | 11 | 2 |
| | 1997-08 | 0.00 | 315 | 0 | 31.00 | 31 | 11 | 11 | 2 |
| | 1997-09 | 0.00 | 303 | 0 | 30.00 | 30 | 11 | 11 | 2 |
| * | 1997-10 | 0.00 | 174 | 0 | 31.00 | 11 | 11 | 11 | 2 |
| * | 1997-11 | 0.00 | 178 | 0 | 30.00 | 30 | 11 | 11 | 2 |
| | 1997-12 | 0.00 | 214 | 0 | 31.00 | 31 | 11 | 11 | 2 |
| | 1998-01 | 0.00 | 233 | 0 | 31.00 | 31 | 11 | 11 | 2 |

PA1=ICE PA2=Exit PF1=Help PF3=End PF11=GRAPH
Transfer-> PF7=Backward PF8=Forward PF'4=PREV SCREEN PF12=LOG GRAPH

PHILLIPS PETROLEUM COMPANY
5525 HWY 64 NBU 3004
FARMINGTON, NEW MEXICO 87401

DATE: MARCH 18, 1998

WELL NAME: SAN JUAN 30-5 # 47M
FORMATION: DAKOTA

TYPE TEST: STATIC GRADIENT

COUNTY: RIO ARriba
STATE: NEW MEXICO

| | | | |
|-------------------------------------|----------------|-------------------------|----------------|
| ELEVATION: | GL | CASING PRESSURE: | 890 |
| TOTAL DEPTH: | 7880' | TUBING PRESSURE: | 710 |
| PERFORATIONS: | 7750' TO 7897' | OIL LEVEL: | |
| TUBING SIZE: | 2 3/8 TO 7759' | WATER LEVEL: | 6963' |
| CASING SIZE: | TO | TEMPERATURE: | |
| PACKER: | | AMERADA ELEMENT NUMBER: | 87977 |
| OTHER: BEGINING PRESSURE CAS @ 780. | | RANGE: | 0-2500 |
| TUBING @ 480 MCF 210 | | WELL STATUS: | SHUT IN 25 HRS |

INDIVIDUAL WELL DATA SHEET

=====

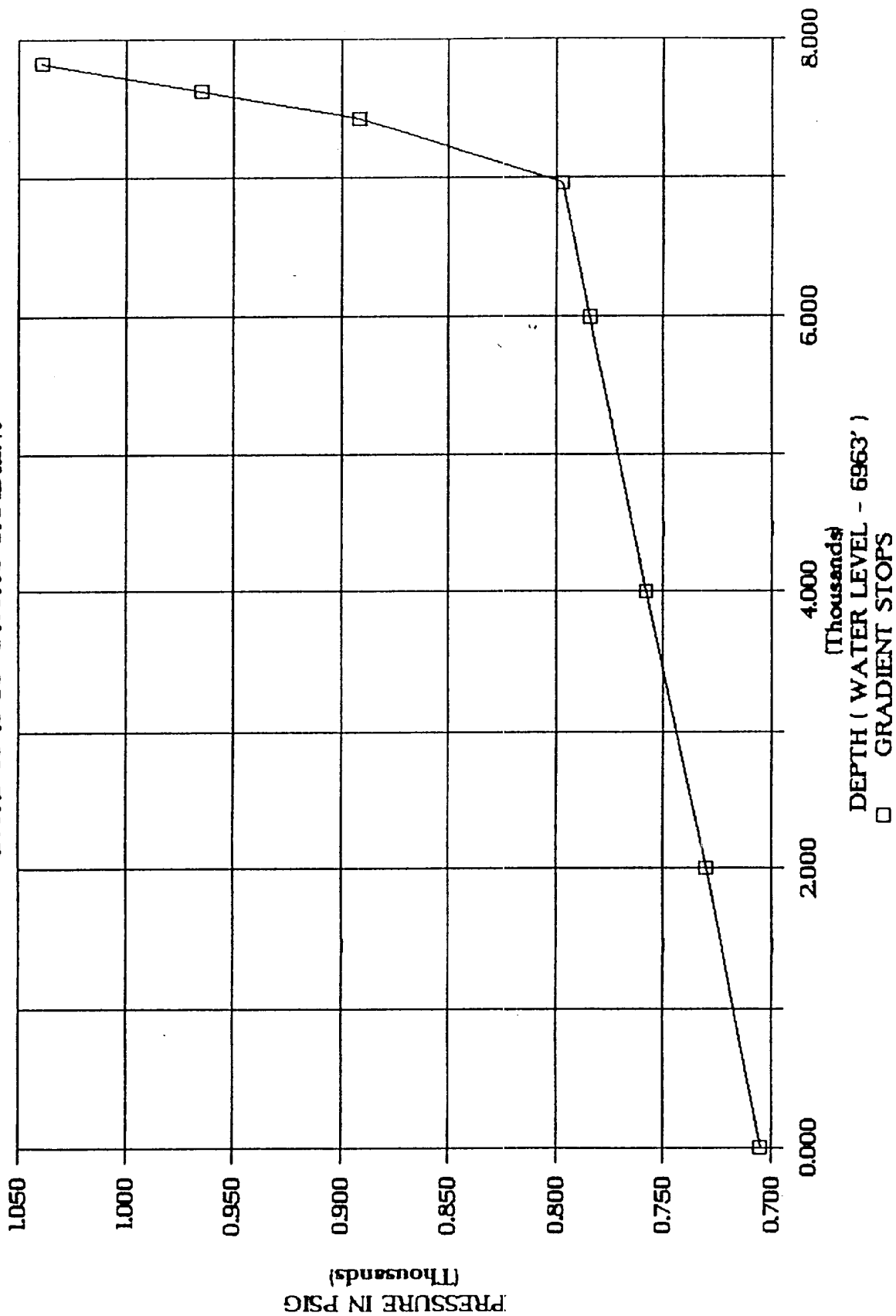
FLOWING GRADIENT TRAVERSE

| DEPTH IN FEET | PRESSURE PSIG | GRADIENT PSI/FOOT |
|------------------|------------------|----------------------|
| 0 | 705 | |
| 2000 | 730 | 0.013 |
| 4000 | 758 | 0.014 |
| 6000 | 784 | 0.013 |
| 7424 | 892 | 0.076 |
| 7624 | 965 | 0.365 |
| 7824 | 1039 | 0.370 |

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

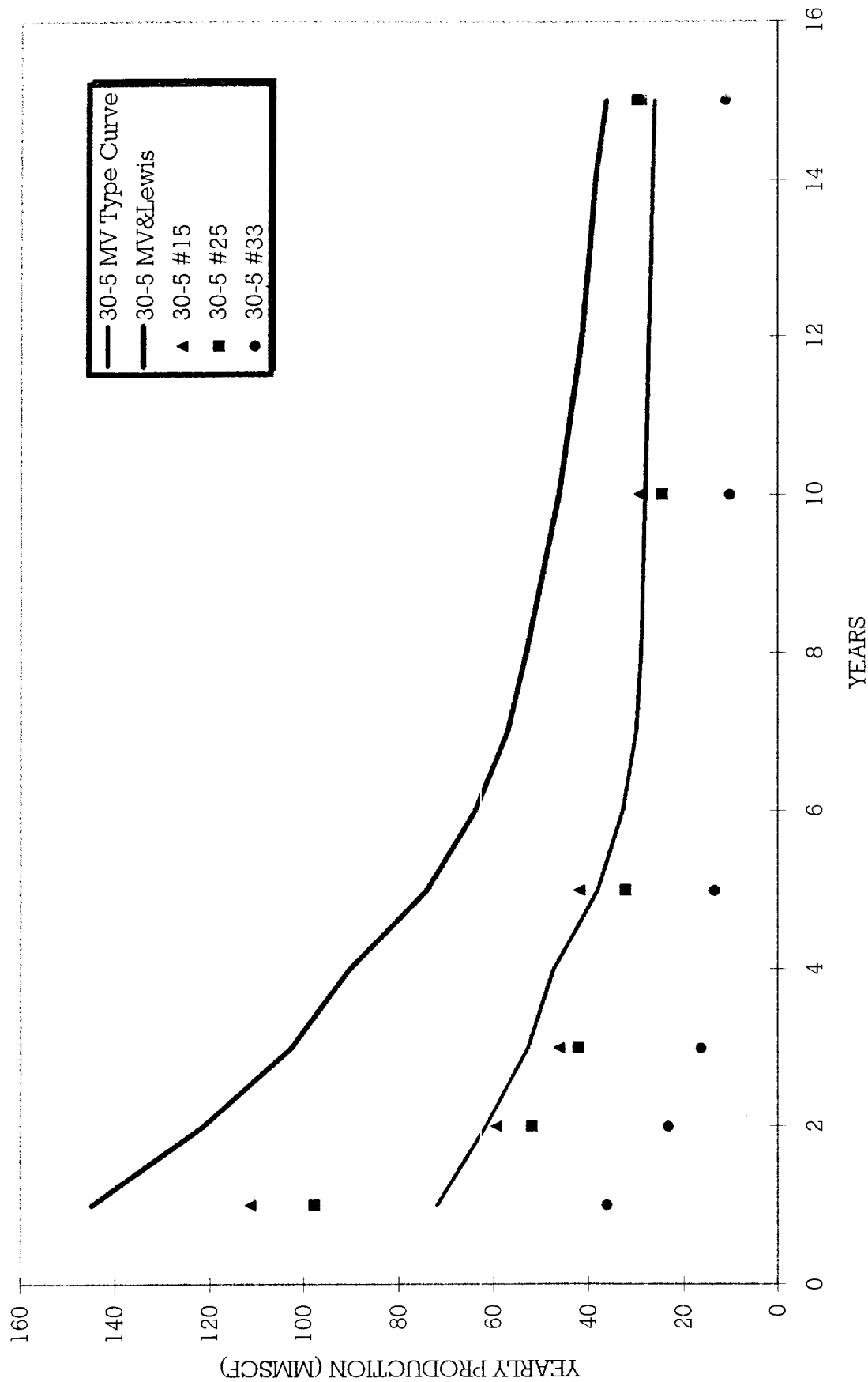
PHILLIPS PETROLEUM SAN JUAN 30-5 # 47M

DATE: 03-18-98 STATIC GRADIENT



30-5 MV

30-5 UNIT MESAVERDE



MWS

30-5mvtc

03/23/98

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 = $(\text{Commingled rate} - \text{Lower zone rate}) / \text{Commingled rate}$

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.

