

ABOVE THIS LINE FOR DIVISION USE ONLY

NEW MEXICO OIL CONSERVATION DIVISION

- Engineering Bureau -

2040 South Pacheco, Santa Fe, NM 87505



2532

ADMINISTRATIVE APPLICATION COVERSHEET

THIS COVERSHEET IS MANDATORY FOR ALL ADMINISTRATIVE APPLICATION FOR EXCEPTIONS TO DIVISION RULES AND REGULATIONS WHICH REQUIRE PROCESSING AT THE DIVISION LEVEL IN SANTA FE

Application Acronyms:

- [NSP-Non-Standard Proration Unit] [NSL-Non-Standard Location]  
 [DD-Directional Drilling] [SD-Simultaneous Dedication]  
 [DHC-Downhole Commingling] [CTB-Lease Commingling] [PLC-Pool/Lease Commingling]  
 [PC-Pool Commingling] [OLS - Off-Lease Storage] [OLM-Off-Lease Measurement]  
 [WFX-Waterflood Expansion] [PMX-Pressure Maintenance Expansion]  
 [SWD-Salt Water Disposal] [IPI-Injection Pressure Increase]  
 [EOR-Qualified Enhanced Oil Recovery Certification] [PPR-Positive Production Response]

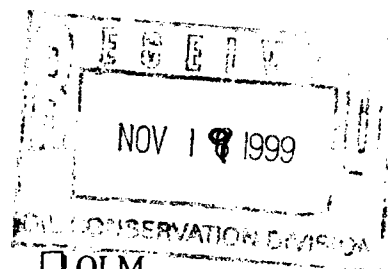
[1] TYPE OF APPLICATION - Check Those Which Apply for [A]

- [A] Location - Spacing Unit - Directional Drilling  
☐ NSL ☐ NSP ☐ DD ☐ SD

Check One Only for [B] or [C]

- [B] Commingling - Storage - Measurement  
☒ DHC ☐ CTB ☐ PLC ☐ PC ☐ OLS ☐ OLM

- [C] Injection - Disposal - Pressure Increase - Enhanced Oil Recovery  
☐ WFX ☐ PMX ☐ SWD ☐ IPI ☐ EOR ☐ PPR



[2] NOTIFICATION REQUIRED TO: - Check Those Which Apply, or ☐ Does Not Apply

- [A] ☐ Working, Royalty or Overriding Royalty Interest Owners  
 [B] ☐ Offset Operators, Leaseholders or Surface Owner  
 [C] ☐ Application is One Which Requires Published Legal Notice  
 [D] ☐ Notification and/or Concurrent Approval by BLM or SLO  
U.S. Bureau of Land Management - Commissioner of Public Lands, State Land Office  
 [E] ☐ For all of the above, Proof of Notification or Publication is Attached, and/or,  
 [F] ☐ Waivers are Attached

[3] INFORMATION / DATA SUBMITTED IS COMPLETE - Certification

I hereby certify that I, or personnel under my supervision, have read and complied with all applicable Rules and Regulations of the Oil Conservation Division. Further, I assert that the attached application for administrative approval is accurate and complete to the best of my knowledge and where applicable, verify that all interest (WI, RI, ORRI) is common. I understand that any omission of data (including API numbers, pool codes, etc.), pertinent information and any required notification is cause to have the application package returned with no action taken.

Note: Statement must be completed by an individual with managerial and/or supervisory capacity.

Mark Stodola  
 Print or Type Name

Mark Stodola  
 Signature

Reservoir Engr.  
 Title

11/18/99  
 Date

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 87505-8429

Form 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, New Mexico 87401  
San Juan 29-6 Unit #78 L, 22 29N 6W Rio Arriba  
Well No. Unit Ltr. - Sec - Twp - Rge County  
Lease Spacing Unit Lease Types: (check 1 or more)  
OGRID NO. 017654 Property Code 009257 API NO. 30-039-07578 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)	5095' - 5,620		7559' - 7725'
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) 750 psi (est.) b. (Original) 1280 psi (est.)	a.  b.	a. 1273 psi (measured in 29-6 #77) b. 3130 psi (est.)
6. Oil Gravity (°API) or Gas BTU Content	1150 Btu/scf		1020 Btu/scf
7. Producing or Shut-In?			Shut-in
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 • If Producing, give date and oil/gas/water rates of recent test (within 60 days)	Date: Rates:  Date: Rates: 450 mcf/d (est.)	Date: Rates:  Date: Rates:	Date: 10/97 Rates: 61 mcf/d, 1 bwpd  Date: Rates:
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

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. NMOCD Reference Cases for Rule 303(D) Exceptions: ORDER NO(S). R-11187

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 11/18/99

TYPE OR PRINT NAME Mark Stodola TELEPHONE NO. ( 505 ) 599-3455



# PHILLIPS PETROLEUM COMPANY

FARMINGTON, NEW MEXICO 87401  
5525 HWY. 64 NBU 3004

November 17, 1999

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

Downhole Commingling Allocation Method  
On the San Juan 29-6 Unit #78

Dear Sirs:

Phillips Petroleum is proposing to utilize the subtraction method on the subject well for approximately twelve months after actual commingling occurs. After the 12<sup>th</sup> 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 the Dakota interval has been producing for years and that the production will not be stabilized on the Mesaverde for several months. Please note that a bottomhole pressure (BHP) was not obtained on this well because a slickline could not get down the tubing due to fill. In lieu of a measured BHP on this well, we have provided three offset BHPs in the Dakota.

## Dakota Production Forecast

December 1999	2,165	January 2000	2,156
February 2000	1,940	March 2000	2,139
April 2000	2,061	May 2000	2,121
June 2000	2,044	July 2000	2,104
August 2000	2,095	September 2000	2,019
October 2000	2,078	November 2000	2,002

For example, if the total volume for December 1999 were 16,115 mcf, then the Dakota would be allocated 2,165 mcf and the Mesaverde 13,950 mcf. And subsequently, the Dakota would be allocated  $(2,165/16,115)$  or 13.43 and the Mesaverde would be allocated  $(13,950/16,115)$  or 86.57%.

Sincerely,

PHILLIPS PETROLEUM COMPANY

Mark Stodola  
Reservoir Engineer

MS/pc

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

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

DATE: NOVEMBER 2, 1999

WELL NAME: SAN JUAN 29-6 # 77  
FORMATION: DAKOTA

TYPE TEST: STATIC GRADIENT

COUNTY: RIO ARriba  
STATE: NEW MEXICO

TOTAL DEPTH: PBD @ 7793'  
PERFS: 7620' TO 7777'  
TUBING: 2 3/8 TO 7755'  
CASING SIZE:  
PACKER:  
OTHER: PIN COLLAR @ 7724'  
PRESSURED UP @ 12:00

CASING PRESSURE:  
TUBING PRESSURE: 1080  
OIL LEVEL:  
WATER LEVEL:  
TEMPERATURE:  
ELEMENT NO. 86484  
ELEMENT RANGE 0 TO 3000

WELL STATUS: SHUT IN

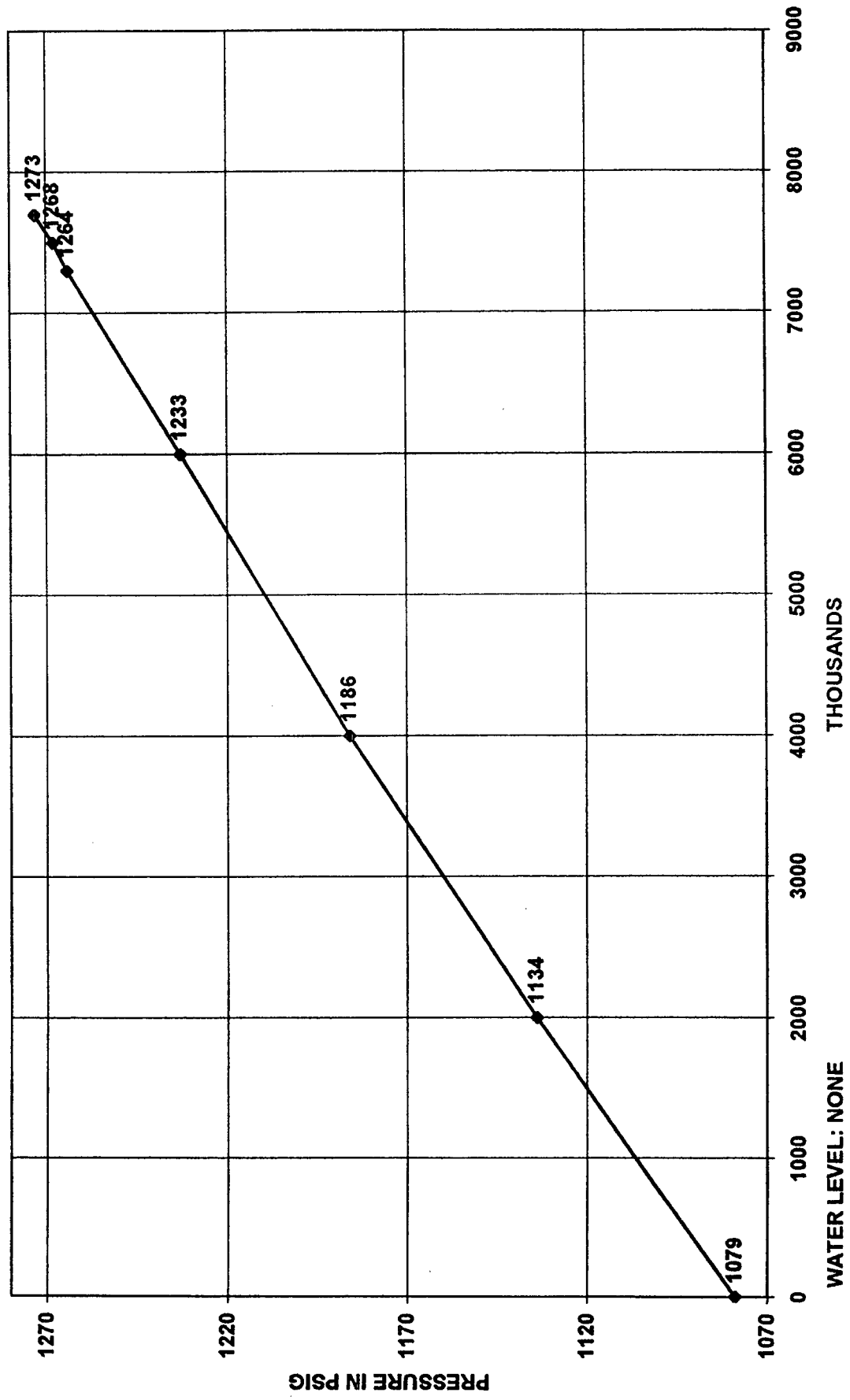
DEPTH IN FEET	PRESSURE PSIG	GRADIENT PSI/FOOT
0	1079	
2000	1134	0.028
4000	1186	0.026
6000	1233	0.024
7299	1264	0.023
7499	1268	0.020
7699	1273	0.025

SLM @ 7704'

H & H WIRELINE SERVICE INC.  
P. O. BOX 899  
FLORA VISTA, NEW MEXICO 87415  
OPERATOR: CHARLES HUGHES  
UNIT NO. T-11

PHILLIPS PETROLEUM SAN JUAN 29-6 # 77

DATE: NOVEMBER 2, 1999



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

DATE: NOVEMBER 2, 1999

WELL NAME: SAN JUAN 29-6 # 86  
FORMATION: DAKOTA

TYPE TEST: STATIC GRADIENT

COUNTY: RIO ARRIBA  
STATE: NEW MEXICO

TOTAL DEPTH: PBTD @ 7764'  
PERFS: 7555' TO 7658'  
TUBING: 2 3/8 TO 7626'  
CASING SIZE:  
PACKER:  
OTHER: NO SEAT NIPPLE  
PRESSURED UP @ 10:00

CASING PRESSURE: 830  
TUBING PRESSURE: 100  
OIL LEVEL:  
WATER LEVEL: 5681'  
TEMPERATURE:  
ELEMENT NO. 86484  
ELEMENT RANGE 0 TO 3000

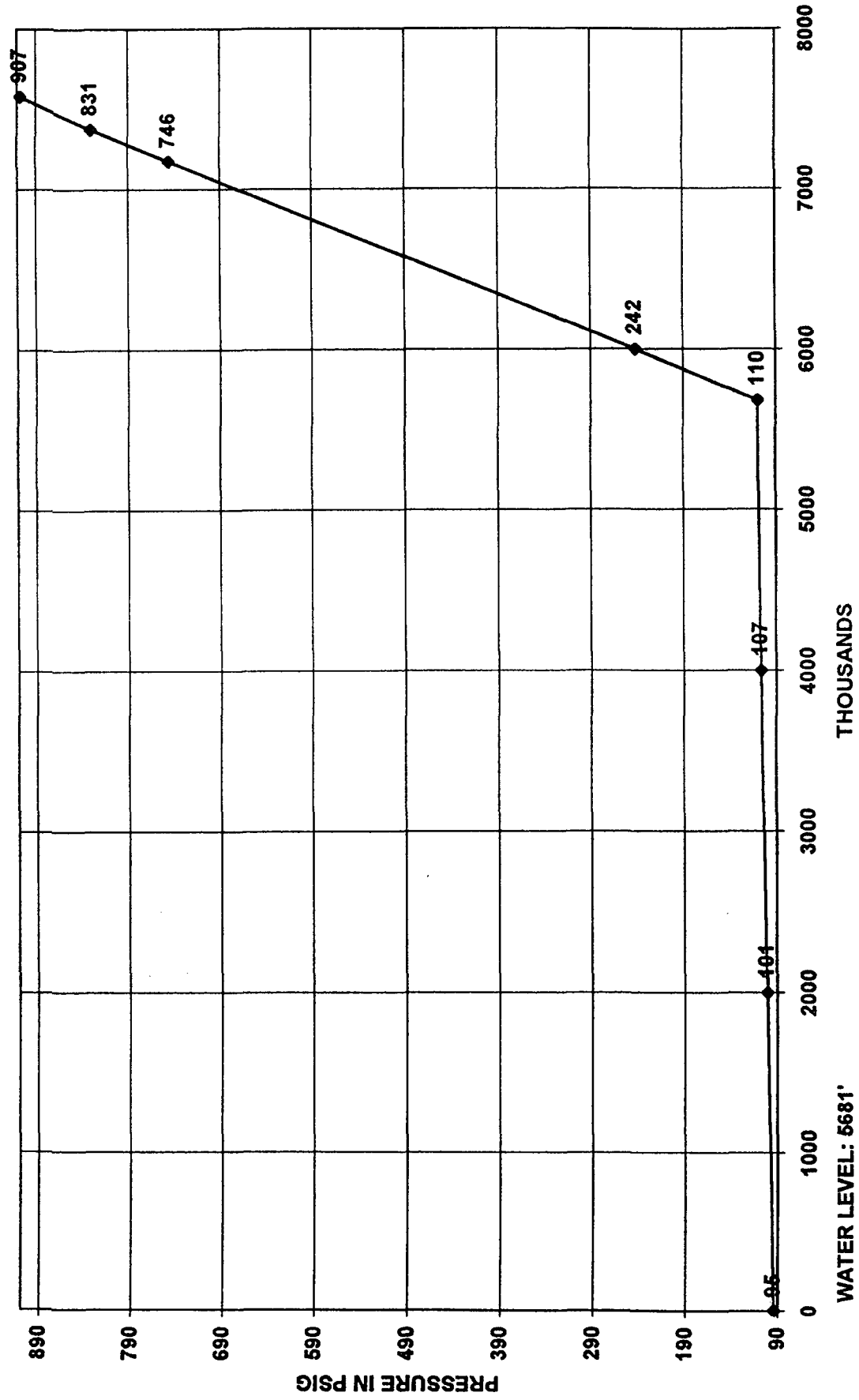
WELL STATUS: SHUT IN

DEPTH IN FEET	PRESSURE PSIG	GRADIENT PSI/FOOT
0	95	
2000	101	0.003
4000	107	0.003
6000	242	0.068
7175	746	0.418
7375	831	0.425
7575	907	0.380

SLM @ 7582'

H & H WIRELINE SERVICE INC.  
P. O. BOX 899  
FLORA VISTA, NEW MEXICO 87415  
OPERATOR: CHARLES HUGHES  
UNIT NO. T-11

PHILLIPS PETROLEUM SAN JUAN 29-6 # 86  
DATE: NOVEMBER 2, 1999



PHILLIPS PETROLEUM COMPANY  
5525 HWY 84 NBU 3004  
FARMINGTON, NEW MEXICO 87401

DATE: NOVEMBER 15, 1999

WELL NAME: SAN JUAN 29-6 # 88  
FORMATION: DAKOTA

TYPE TEST: STATIC GRADIENT

COUNTY: RIO ARriba  
STATE: NEW MEXICO

TOTAL DEPTH: 7885'  
PERFS: 7550' TO 7646'  
TUBING: 2 3/8 TO 7675'  
CASING SIZE:  
PACKER:  
OTHER:  
PRESSURED UP @ 08:45

CASING PRESSURE: 1140  
TUBING PRESSURE: 550  
OIL LEVEL:  
WATER LEVEL: 6476'  
TEMPERATURE:  
ELEMENT NO. 86484  
ELEMENT RANGE 0 TO 3000

WELL STATUS: SHUT IN

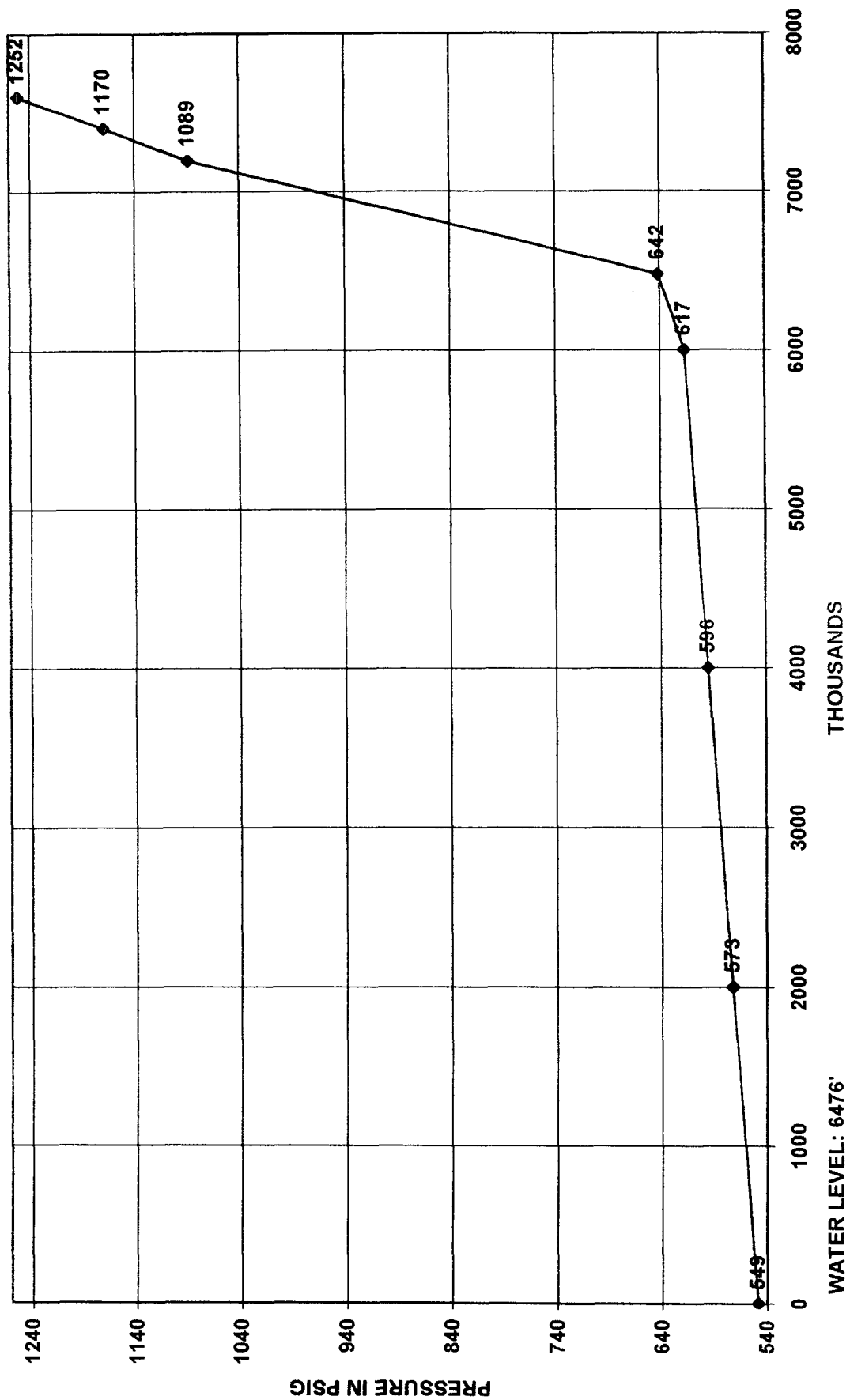
DEPTH IN FEET	PRESSURE PSIG	GRADIENT PSI/FOOT
0	549	
2000	573	0.012
4000	596	0.011
6000	617	0.010
7198	1089	0.394
7398	1170	0.410
7598	1252	0.415

SLM @ 7642'

H & H WIRELINE SERVICE INC.  
P. O. BOX 899  
FLORA VISTA, NEW MEXICO 87415  
OPERATOR: CHARLES HUGHES  
UNIT NO. T-11



PHILLIPS PETROLEUM SAN JUAN 29-6 # 88  
DATE: NOVEMBER 15, 1999

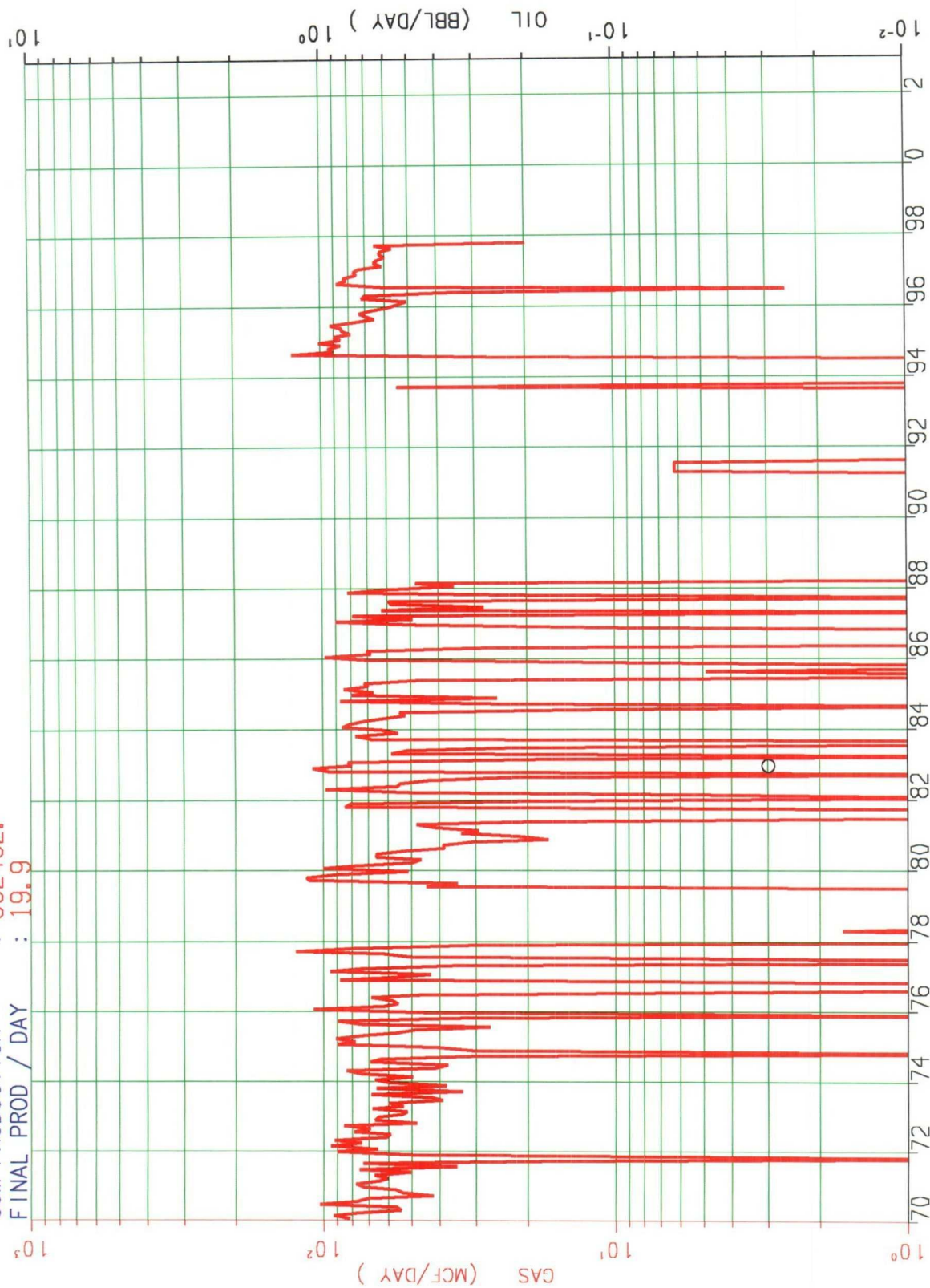


1/70-10/97

INITIAL PROD / DAY : 81.7  
REMAINING LIFE : 27.83  
CUM PRODUCTION : 392452.  
FINAL PROD / DAY : 19.9

ASSOC.

Current Cums  
591134. MCF GAS  
1. BBL OIL  
2295. BBL H2O



SAN JUAN 29 6 UNIT

RESVR-  
WELL -

004 : BASIN (DAKOTA)

78 CUM MCF =591556.

22L 29N 6W

DWIGHTS INA

251,039,29N06W22L00DK API-300390757800

PHILLIPS PETROLEUM CO THRU 10/97

MEP81-01

PARPI - WELLZONE PRODUCTION BROWSE

Date: 11/11/99

YEARLY TOTALS

User: MWSTODO

Wellzone F0570 01 Yr: 1991 Mth: 01 Property: 650299 SAN JUAN 29-6 DAKOTA

Screen: 1 (1-Prod, 2-Inj, 3-Both) Well No: 000078

Type: T (T-Total, D-Daily Avg) Field: 042233 BASIN

Period: Y (M-Mnthly, Y-Yrly, C-Cum) Resvr: 20076 DAKOTA

ADJ	FLG	DATE	OIL (BBL)	GAS (MCF)	WATER (BBL)	PROD	OP	ST	CL	TY
		1991	IC	0.00	756	0	122.00	122		
		1992		0.00	0	0	0.00	0		
		1993		0.00	0	0	0.00	0		
		1994		0.00	16,074	570	154.00	154		
		1995		0.00	28,195	700	360.00	360		
		1996		0.00	23,048	535	329.00	329		
		1997		0.00	17,969	415	294.00	281		
		1998		0.00	0	0	365.00	0		
		1999		0.00	0	0	273.00	0		

NO MORE DATA AVAILABLE

PA1=ICE PA2=Exit PF1=Help PF3=End PF5=INITIAL CUM PF11=GRAPH  
 Transfer-> PF7=Backward PF8=Forward PF4=PREV SCREEN PF12=LOG GRAPH

MEP81-01

PARPI - WELLZONE PRODUCTION BROWSE

Date: 11/11/99

DAILY AVERAGE BY YEAR

User: MWSTODO

Wellzone F0570 01 Yr: 1991 Mth: 01 Property: 650299 SAN JUAN 29-6 DAKOTA

Screen: 1 (1-Prod, 2-Inj, 3-Both) Well No: 000078

Type: D (T-Total, D-Daily Avg) Field: 042233 BASIN

Period: Y (M-Mnthly, Y-Yrly, C-Cum) Resvr: 20076 DAKOTA

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ADJ      ----- PRODUCED ----- DAYS ----- - WELL -
FLG DATE      OIL (BBL)      GAS (MCF)      WATER (BBL)      PROD      OP ST CL TY
1991      IC      0.00      6      0      122.00      122
1992      0.00      0      0      0.00      0
1993      0.00      0      0      0.00      0
1994      0.00      104      3      154.00      154
1995      0.00      78      1      360.00      360
1996      0.00      70      1      329.00      329
1997      0.00      61      1      294.00      281
1998      0.00      0      0      365.00      0
1999      0.00      0      0      273.00      0
  
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PA1=ICE PA2=Exit PF1=Help PF3=End PF5=INITIAL CUM PF11=GRAPH  
 Transfer-> PF7=Backward PF8=Forward PF4=PREV SCREEN PF12=LOG GRAPH

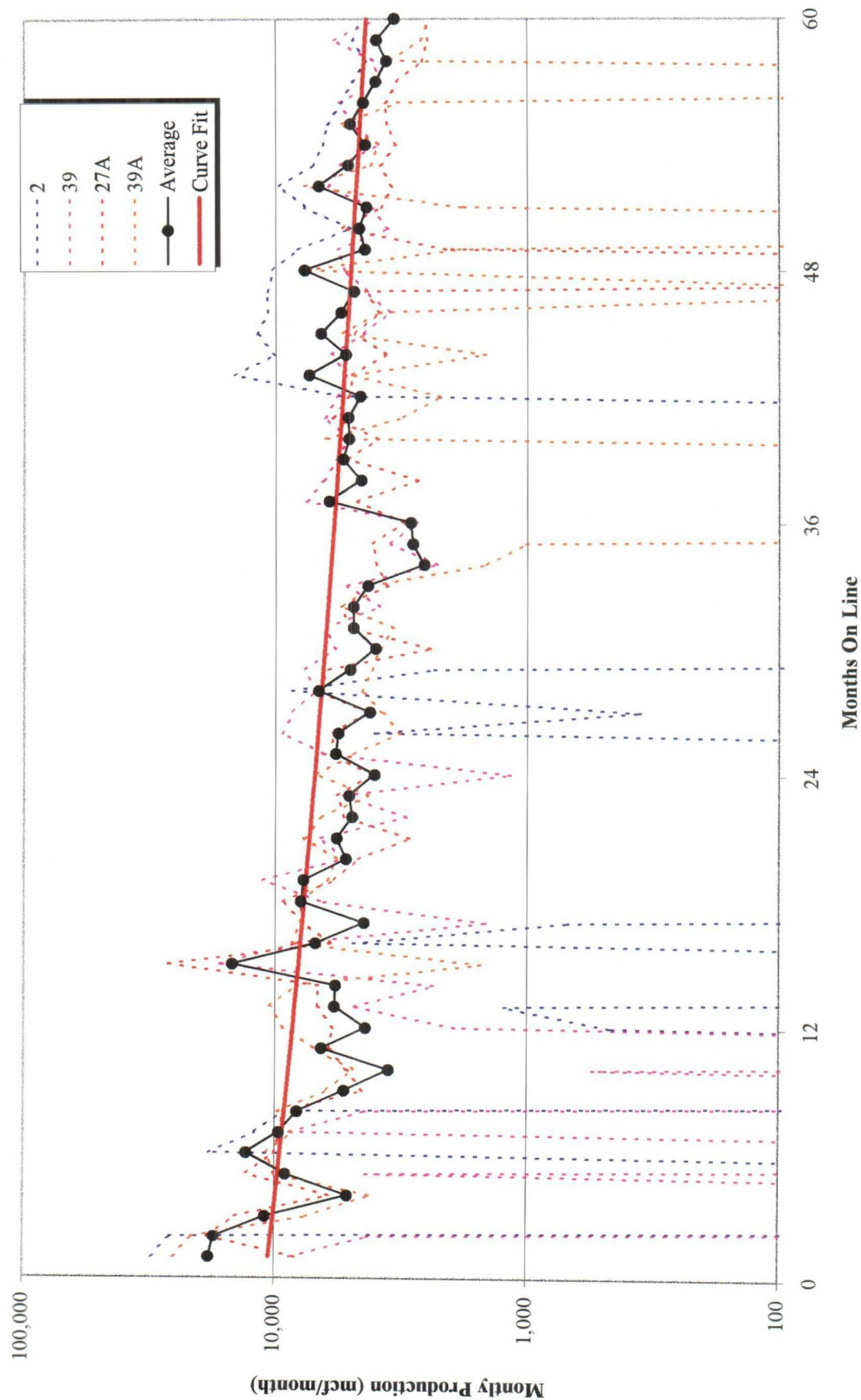
### 29-6 Unit #78 Dakota Forecast

<i>Initial Production Rate</i>	=	70 MCFD
<i>Hyperbolic Exponent</i>	=	0.33
<i>Decline Rate</i>	=	5 %

	Month	<b>Monthly MCF</b>
1999	Dec	<b>2,165</b>
2000	Jan	<b>2,156</b>
	Feb	<b>1,940</b>
	Mar	<b>2,139</b>
	Apr	<b>2,061</b>
	May	<b>2,121</b>
	Jun	<b>2,044</b>
	Jul	<b>2,104</b>
	Aug	<b>2,095</b>
	Sep	<b>2,019</b>
	Oct	<b>2,078</b>
	Nov	<b>2,002</b>
	Dec	<b>2,061</b>
2001	Jan	<b>2,052</b>
	Feb	<b>1,846</b>
	Mar	<b>2,036</b>
	Apr	<b>1,962</b>
	May	<b>2,019</b>

Use subtraction method for +/- 12 months based on this Dakota forecast.

# San Juan 29-6 Unit Mesaverde Production Near the 29-6 #78



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