

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

State of New Mexico  
Energy, Minerals and Natural Resources Department

Form C-107-A  
New 3-12-96

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

OIL CONSERVATION DIVISION

APPROVAL PROCESS:

2040 S. Pacheco  
Santa Fe, New Mexico 87505-6429

Administrative  Hearing

DISTRICT III  
1000 Rio Brazos Rd, Aztec, NM 87410-1693

APPLICATION FOR DOWNHOLE COMMINGLING

EXISTING WELLBORE  
 YES  NO

Phillips Petroleum Company 5525 Hwy. 64, Farmington, NM 87401  
Operator Address  
San Juan 29-6 Unit 106 M, 31 - T29N, R6W Rio Arriba  
Lease Well No. Unit Ltr. - Sec - Twp - Rge County  
OGRID NO. 017654 Property Code 009267 API NO. 30-039-21039 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	Blanco Mesaverde		Basin Dakota
2. Top and Bottom of Pay Section (Perforations)	4250' - 6000'		7882' - 8016'
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: Estimated Current Gas & Oil - Flowing: Measured Current All Gas Zones: Estimated Or Measured Original	a. (Current) 600 psi (est.)	a.	a. 721 psi
	b. (Original) 1280 psi (est.)	b.	b. 3130 psi (est.)
6. Oil Gravity (°API) or Gas BTU Content	1150 BTU/mscf		1010 BTU/mscf
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  * If Producing, give date and oil/gas/water rates of recent test (within 60 days)	Date: Rates:	Date: Rates:	Date: Rates:
	Date: 860 mcf/d Rates: 0.5 bopd (estimated)	Date: Rates:	Date: 4/30/99 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
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 6/8/99

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

ABOVE THIS LINE FOR DIVISION USE ONLY

**NEW MEXICO OIL CONSERVATION DIVISION**  
 - Engineering Bureau -  
 2040 South Pacheco, Santa Fe, NM 87505



2385

**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

JUN 11 1999

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

6/8/99  
 Date

District I  
 PO Box 1900, Hobbs, NM 88241-1900  
 District II  
 811 South First, Artesia, NM 88210  
 District III  
 1000 Rio Brazos Rd., Aztec, NM 87410  
 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 30-039-21039		2 Pool Code 72319		3 Pool Name Blanco Mesaverde	
4 Property Code 009257		5 Property Name San Juan 29-6 Unit			6 Well Number #106
7 OGRID No. 017654		8 Operator Name Phillips Petroleum Company			9 Elevation 6822'

**10 Surface Location**

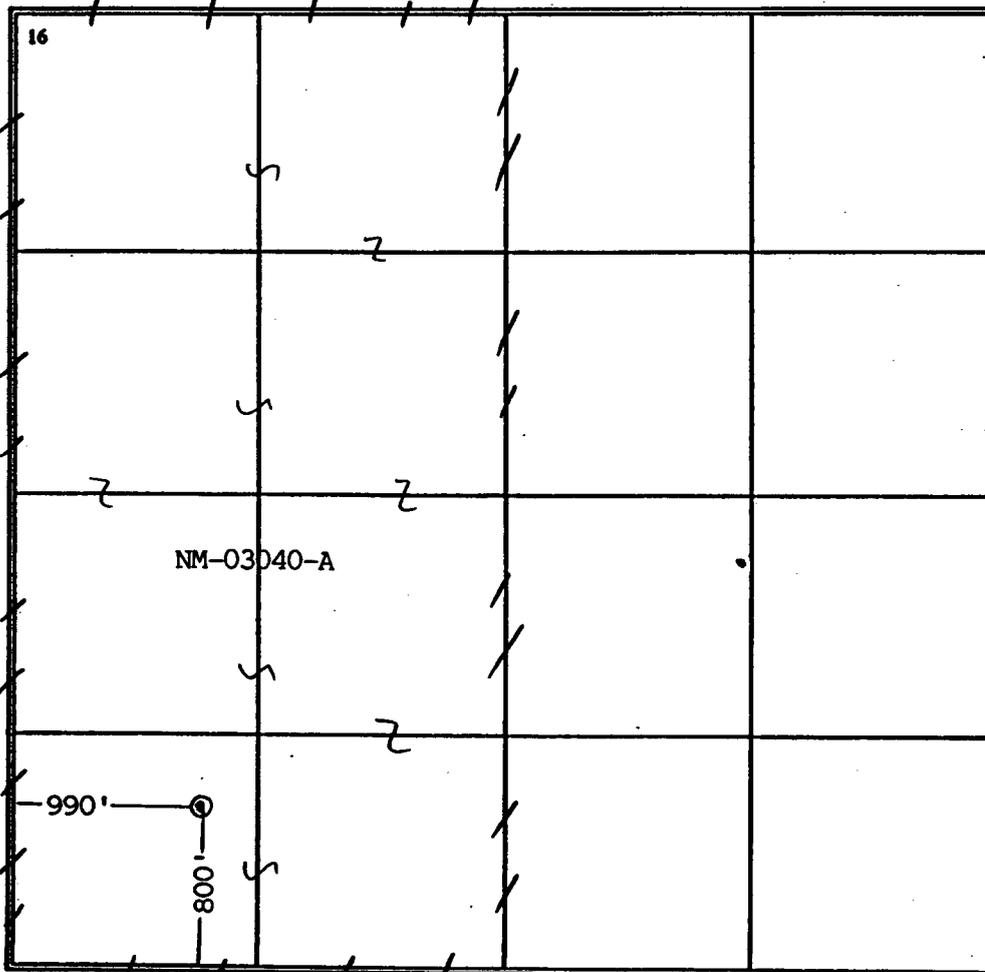
UL or lot no.	Section	Township	Range	Lot Ida	Feet from the	North/South line	Feet from the	East/West line	County
M	31	29N	6W		800	South	990	West	Rio Arriba

**11 Bottom Hole Location If Different From Surface**

UL or lot no.	Section	Township	Range	Lot Ida	Feet from the	North/South line	Feet from the	East/West line	County
M									

13 Dedicated Acres 320 W/2	14 Joint or Infill I	15 Consolidation Code U	16 Order No. 29-6 Unit DHC - Order No. R-11187
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**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*

*Patsy Clugston*  
 Signature  
 Patsy Clugston  
 Printed Name  
 Regulatory Assistant  
 Title  
 June 9, 1999  
 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.*

11/29/1971  
 Date of Survey  
 Signature and Seal of Professional Surveyer:

See original Dakota C102  
 signed by David O. Vilven  
 dated 11/29/1971

1760  
 Certificate Number

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 <i>Northwest Pipeline Corp's</i> EL PASO NATURAL GAS COMPANY		Lease SAN JUAN 29-6 UNIT (H-03040-A)		Well No. 105
Unit Letter H	Section 31	Township 29-N	Range 6-W	County RIO ARriba
Actual Footage Location of Well: 800 feet from the SOUTH line and 990 feet from the WEST line				
Ground Level Elev. 6822	Producing Formation DAKOTA	Pool BASTEN DAKOTA	Dedicated Acreage: 320.00 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.) SW 1/4 SW/4 Section 31, T29N, R6W

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 *O.B. Whitenburg*  
O.B. Whitenburg

Position  
Production & Drilling Engineer

Company  
Northwest Pipeline Corp.

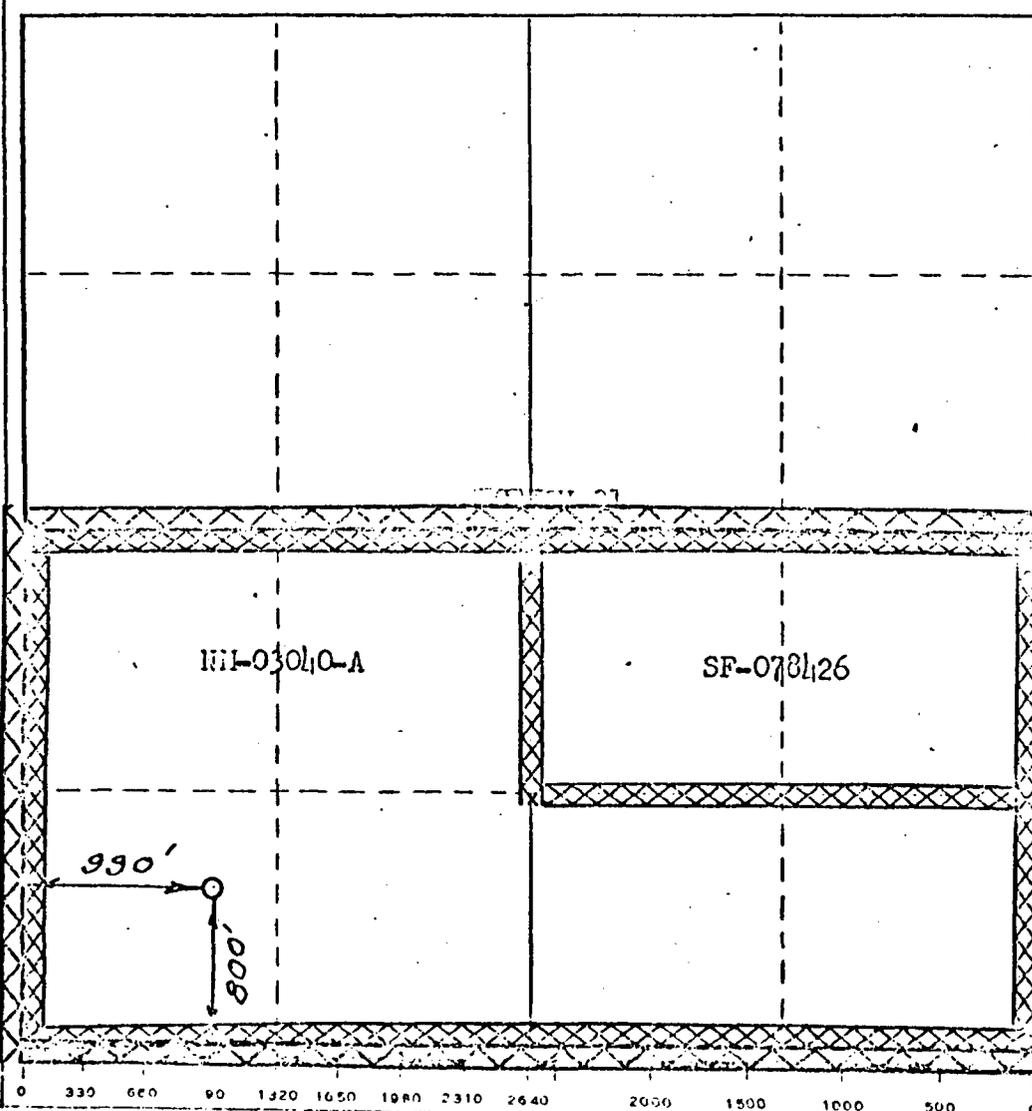
Date  
October 25, 1974

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 29, 1971

Registered Professional Engineer  
and/or Land Surveyor

Certificate No. 1760





# PHILLIPS PETROLEUM COMPANY

FARMINGTON, NEW MEXICO 87401  
5525 HWY. 64 NBU 3004

June 9, 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 #106

Dear Sirs:

Phillips is proposing to utilize the subtraction method on the subject well for approximately twelve months after actual commingling occurs. After the twelve 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 years and that the production will not be stabilized on the Mesaverde for several months.

### Dakota Production Forecast

July 1999	1,235	August 1999	1,226
September 1999	1,178	October 1999	1,208
November 1999	1,160	December 1999	1,190
January 2000	1,181	February 2000	1,097
March 2000	1,164	April 2000	1,118
May 2000	1,147	June 2000	1,102

For example, if the total volume for August 1999 were 4,230 mcf, then the Dakota would be allocated 1,226 mcf and the Mesaverde 3,004 mcf. And subsequently, the Dakota would be allocated  $(1,226/4,230)$  or 28.98%, and Mesaverde would be allocated  $(3,004/4,230)$  or 71.02%.

Sincerely,

PHILLIPS PETROLEUM COMPANY

Mark W. 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: JUNE 3, 1999

WELL NAME: SAN JUAN 29-6 # 106  
FORMATION: DAKOTA

TYPE TEST: STATIC GRADIENT

COUNTY: RIO ARRIBA  
STATE: NEW MEXICO

TOTAL DEPTH:  
PERFS:  
TUBING SIZE: 1 1/2 TO 8013'  
CASING SIZE:  
PACKER:  
OTHER: SN @ 7981'  
ENGAGED @ 02:16

CASING PRESSURE:  
TUBING PRESSURE: 600  
OIL LEVEL:  
WATER LEVEL:  
TEMPERATURE:  
ELEMENT NO.  
ELEMENT RANGE 0 TO 3500

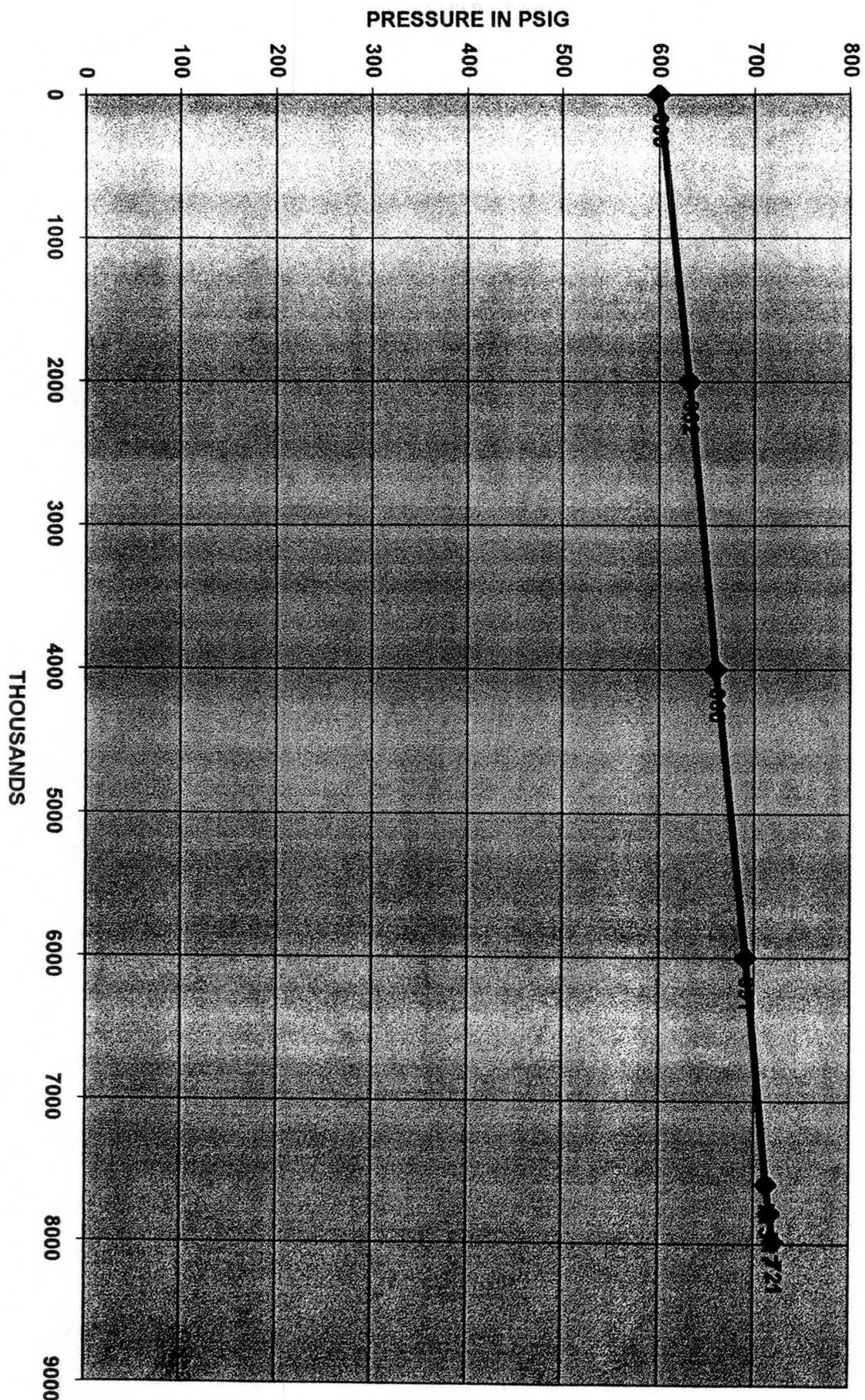
WELL STATUS: SHUT IN

DEPTH IN FEET	PRESSURE PSIG	GRADIENT PSI/FOOT
0	600	
2000	632	0.016
4000	660	0.014
6000	691	0.015
7581	713	0.014
7781	717	0.020
7981	721	0.020

RAN SLM @ 7981'

H & H WIRELINE SERVICE INC.  
P. O. BOX 899  
FLORA VISTA, NEW MEXICO 87415  
OPERATOR: STEVEN HODGES  
UNIT NO. T-8

PHILLIPS PETROLEUM SAN JUAN 29-6 # 106  
DATE: JUNE 3, 1999



**29-6 Unit #106 Dakota Forecast**

<i>Initial Production Rate</i>	=	<b>40 MCFD</b>
<i>Hyperbolic Exponent</i>	=	<b>0.33</b>
<i>Decline Rate</i>	=	<b>9 %</b>

	Month	<b>Monthly MCF</b>
1999	Jul	<b>1,235</b>
	Aug	<b>1,226</b>
	Sep	<b>1,178</b>
	Oct	<b>1,208</b>
	Nov	<b>1,160</b>
	Dec	<b>1,190</b>
2000	Jan	<b>1,181</b>
	Feb	<b>1,097</b>
	Mar	<b>1,164</b>
	Apr	<b>1,118</b>
	May	<b>1,147</b>
	Jun	<b>1,102</b>
	Jul	<b>1,130</b>
	Aug	<b>1,122</b>
	Sep	<b>1,078</b>
	Oct	<b>1,106</b>
	Nov	<b>1,062</b>
	Dec	<b>1,090</b>

MEP81-01

PARPI - WELLZONE PRODUCTION BROWSE

Date: 6/08/99

DAILY AVERAGE BY YEAR

User: MWSTODO

Wellzone L9958 01 Yr: 1991 Mth: 05 Property: 650266 SAN JUAN 29-6 UNIT DK #106  
 Screen: 1 (1-Prod, 2-Inj, 3-Both) Well No: 000106  
 Type: D (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	DAYS	OP	ST	CL	TY
	1991	0.00	110	0	135.04	136				
	1992	0.00	81	0	349.00	354				
	1993	0.00	65	0	352.00	352				
	1994	0.00	61	0	359.00	359				
	1995	0.00	55	0	361.00	361				
	1996	0.00	59	0	356.00	356				
	1997	0.00	79	0	320.00	320				
	1998	0.00	70	0	365.00	365				
	1999	0.00	47	0	120.00	120				

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



## 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.