

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
 Lease San Juan 30-5 Unit #52M Well No. I, Sec. 15, T30N, R5W, Unit Ltr. - Sec - Twp - Rge Rio Arriba, NM
 OGRID NO. 017654 Property Code 009258 API NO. 30-039-25677 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)			7824 - 7972'
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	a. (Current) 1030 psi (est.)	a.	a. (24 hr. SI) 988 psi
Gas & Oil - Flowing: Measured Current	b. (Original) 1294 psi (est.)	b.	b. 3412 psi (est.)
All Gas Zones: Estimated Or Measured Original			
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	Date: Rates:	Date: Rates:	Date: Rates:
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: Estimate Rates: 400 mcf/d	Date: Rates:	Date: 2/4/98 Rates: 332 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?
 If not, have all working, overriding, and royalty interests been notified by certified mail?
 Have all offset operators been given written notice of the proposed downhole commingling? ☒ Yes ☐ No ☒ 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. 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 Mark W. Stodola TITLE Reservoir Engr. DATE 2/10/98

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

DISTRICT I
P.O. Box 1980, Hobbs, N.M. 88241-1980

DISTRICT II
P.O. Drawer DD, Artesia, N.M. 88211-0719

DISTRICT III
1000 Rio Brazos Rd., Artesia, N.M. 87410

DISTRICT IV
P.O. Box 2068, Santa Fe, NM 87504-2068

State of New Mexico
Energy, Minerals & Natural Resources Department

OIL CONSERVATION DIVISION

P.O. Box 2088
Santa Fe, NM 87504-2088

Form C-102

Revised February 21, 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

*API Number	*Pool Code 72319	*Pool Name Blanco Mesaverde
*Property Code 009258	*Property Name SAN JUAN 30-5 UNIT	*Well Number 52M
*GRID No. 017654	*Operator Name PHILLIPS PETROLEUM	*Elevation 6479

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
I	15	30-N	5-W		1456	SOUTH	851	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
I									
¹² Dedicated Acres 320 ac	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 R. A. Allred
		Printed Name Drilling & Production Superv
		Title 3-18-97
		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.
		NOVEMBER 1997
		Date of Survey
		Signature and Seal of Professional Surveyor
		Certificate Number

DISTRICT I
P.O. Box 1980, Hobbs, N.M. 88241-1980

State of New Mexico
Energy, Minerals & Natural Resources Department

Form C-102

Revised February 21, 1994

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DISTRICT II
P.O. Drawer DD, Artesia, N.M. 88211-0719

DISTRICT III
1000 Rio Brazos Rd., Aztec, N.M. 87410

DISTRICT IV
P.O. Box 2088, Santa Fe, NM 87504-2088

OIL CONSERVATION DIVISION

P.O. Box 2088

Santa Fe, NM 87504-2088

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

*API Number		*Pool Code	*Pool Name
		71599	Basin Dakota
*Property Code	*Property Name		*Well Number
009258	SAN JUAN 30-5 UNIT		52M
*OGRID No.	*Operator Name		*Elevation
017654	PHILLIPS PETROLEUM		6479

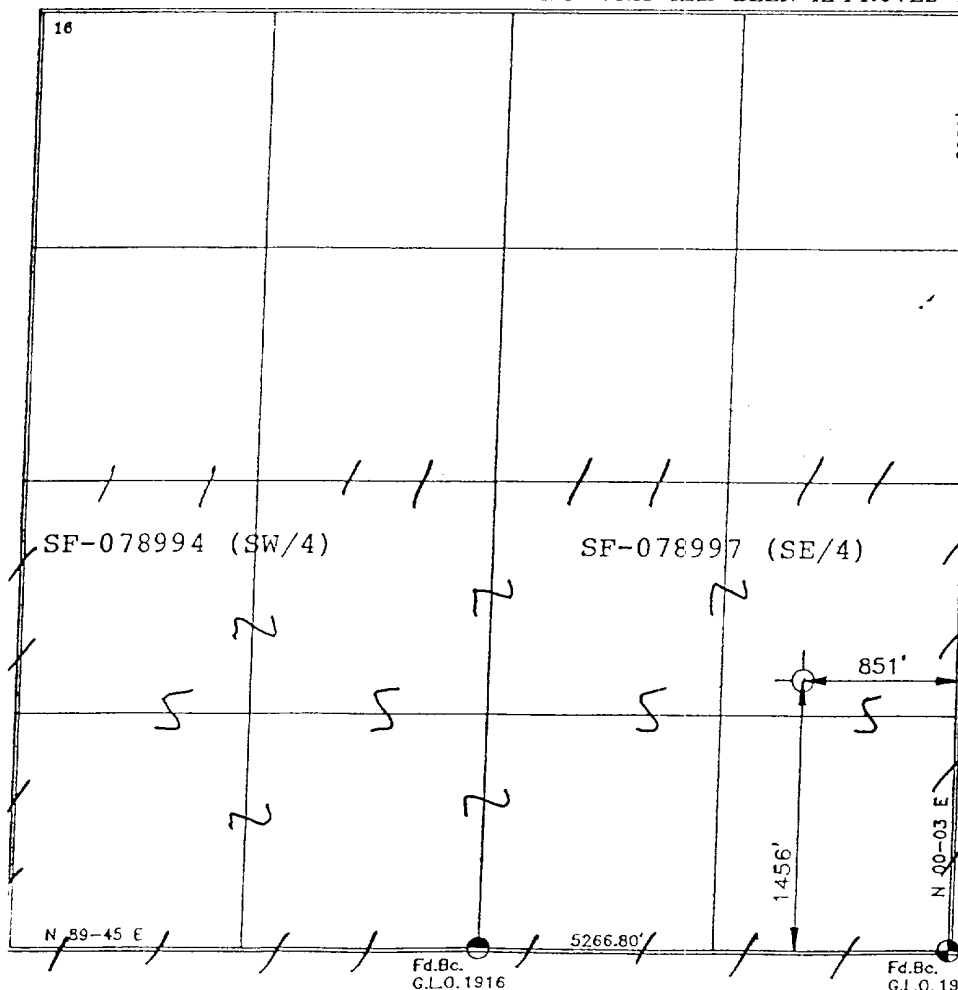
¹⁰ Surface Location

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
I	15	30-N	5-W		1456	SOUTH	851	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
I									
Dedicated Acres		Joint or Infill		Consolidation Code		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		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 Super.	
		Title 3-18-97	
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.	
		NOVEMBER 1997 Date of Survey	
		Signature and Seal of Professional Land Surveyor	
		8894	
		Certificate Number	

PHILLIPS PETROLEUM COMPANY
5505 HWY 64 NEU 3004
FARMINGTON, NEW MEXICO 87401

DATE: FEBRUARY 6, 1998

WELL NAME: SAN JUAN 30-5 # 52A
FORMATION: DAKOTA

TYPE TEST: STATIC GRADIENT

COUNTY: RIO ARriba
STATE: NEW MEXICO

ELEVATION: GL
TOTAL DEPTH: 7999'
PERFORATIONS: 7960' TO 7972'
TUBING SIZE: 2 3/8 TO 7907'
CASING SIZE: TO
PACKER:
OTHER: PRESSURE @ SHUT IN
CASING 800. TUBING 420

CASING PRESSURE: 890
TUBING PRESSURE: 890
OIL LEVEL:
WATER LEVEL:
TEMPERATURE:
AMERADA ELEMENT NUMBER: 87977
RANGE: 0-2500
WELL STATUS: SHUT IN 24 HRS
@ 12:00 2-5-98

INDIVIDUAL WELL DATA SHEET

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FLOWING GRADIENT TRAVERSE

DEPTH IN FEET	PRESSURE PSIG	GRADIENT PSI/FOOT
0	890	
2000	918	0.014
4000	944	0.013
6000	969	0.012
7566	985	0.010
7766	987	0.010
7966	988	0.005

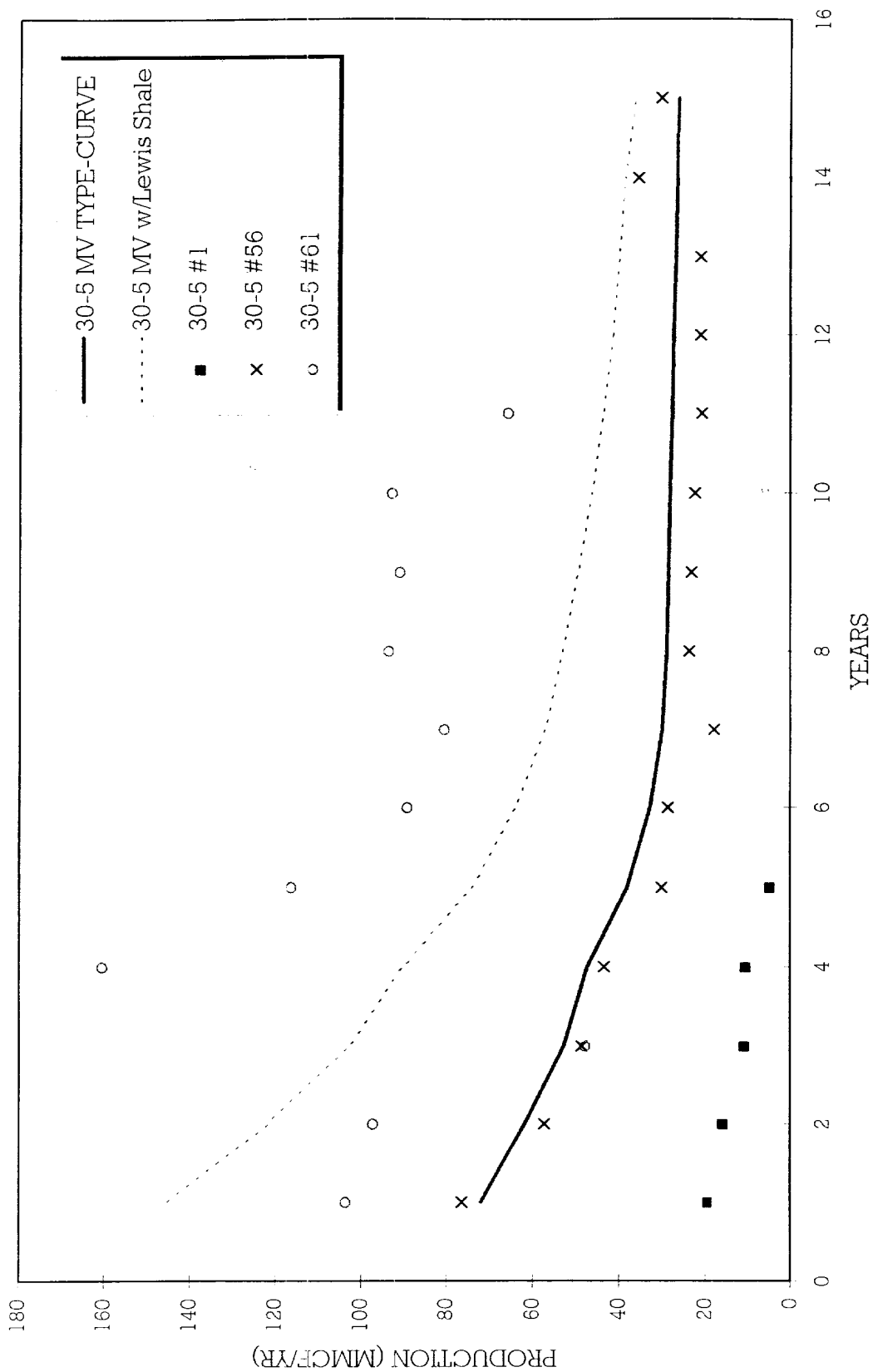
H & H WIRELINE SERVICE INC.
P. O. BOX 899
FLORA VISTA, N. MEX. 87415
OPERATOR: CHARLES HUGHES
UNIT NO. T-10

Dakota Production Forecast for 30-5 Unit
Well #52M

Year	Month	Gas (MCF)
Feb. 98	1	8,327
Mar	2	9,138
Apr	3	8,766
May	4	8,979
Jun	5	8,613
Jul	6	8,823
Aug	7	8,746
Sep	8	8,390
Oct	9	8,593
Nov	10	8,243
Dec	11	8,444
1999	12	8,370
Feb	13	7,494
Mar	14	8,224
Apr	15	7,889
May	16	8,081
Jun	17	7,752
Jul	18	7,940

Initial Rate = 300 MCF/D

30-5 UNIT MESAVERDE





PHILLIPS PETROLEUM COMPANY

FARMINGTON, NEW MEXICO 87401
5525 HWY. 64 NBU 3004

February 10, 1998

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

Downhole Commingling Allocation Method
on the San Juan 30-5 Unit # 52M

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

February 1998	8,327	March 1998	9,183
April 1998	8,766	May 1998	8,979
June 1998	8,613	July 1998	8,823
August 1998	8,746	September 1998	8,390
October 1998	8,593	November 1998	8,243

For example, if the total volume for September 1998 were 15,500 mcf, then the Dakota would be allocated 8,390 mcf and the Mesaverde 7,110 mcf. And subsequently, the Dakota would be allocated $8,390/15,500$ or 54.13%, and Mesaverde would be allocated $(7,110/15,500)$ or 45.87%.

Sincerely,
PHILLIPS PETROLEUM COMPANY

Mark W. Stodola

Mark W. Stodola
Reservoir Engineer

MS/pc

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



NEW MEXICO ENERGY, MINERALS
& NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION
AZTEC DISTRICT OFFICE
AZTEC NM 87410
(505) 334-6178 FAX: (505) 334-6170
[http://nemrds.state.nm.us/ocd/District III/3district.htm](http://nemrds.state.nm.us/ocd/District%20III/3district.htm)

GARY E. JOHNSON
GOVERNOR

Jennifer A. Salisbury
CABINET SECRETARY

January 6, 1998

Mr Mark W Stodola
Phillips Petroleum Co
5525 Hwy 64 NBU 3004
Farmington NM 87401

Re: San Juan 30-5 Unit #110M, API# 30-039-25658, E-16-30N-05W, DHC

Dear Mr. Stodola:

Your recommended allocation of commingled production using the subtraction method for the referenced well is hereby accepted through the month of June 1998. Beginning in July you will submit a recommended allocation formula based on historical production values.

If you have any questions, please contact me.

Yours truly,

Ernie Busch
District Geologist/Deputy O&G Inspector

EB/sh

cc: well file



PHILLIPS PETROLEUM COMPANY

FARMINGTON, NEW MEXICO 87401
5525 HWY 64 NBU 3004

December 17, 1997

NM Oil & Gas Conservation Division
1000 Rio Brazos Rd.
Aztec, NM 87410

Downhole Commingling Allocation Method
on the 30-5 Unit #110M

Dear Sirs:

Phillips proposes to utilize the subtraction method through June 1998, and then convert to the ratio method after June 1998. We believe this will be a more accurate method of allocating production considering that the production will not be stabilized on the Mesaverde for several months.

Dakota Production Forecast

Dec. 1997	6879 mcf
Jan. 1998	6814 mcf
Feb. 1998	6097 mcf
March 1998	6687 mcf
April 1998	6410 mcf
May 1998	6561 mcf
June 1998	6290 mcf

For example, if the total June 1998 were to be 12,290 mcf, then the Dakota would be allocated 6290 mcf and the Mesaverde 6000 mcf. And subsequently, the Dakota would be allocated $(6290/12,290)$ or 51.18%, and the Mesaverde would be allocated $(6000/12,290)$ or 48.82%.

Sincerely,

PHILLIPS PETROLEUM COMPANY

Mark W. Stodola

Mark W. Stodola
Reservoir Engineer *ms*

ADJ	DATE	OIL (BBL)	GAS (MCF)	WATER (BBL)	PROD	OP	ST	CL	TY
*	1997-05	0.00	21	0	10.00	10	11	11	2
	1997-06	0.00	344	0	30.00	30	11	11	2
	1997-07	0.00	224	0	31.00	31	11	11	2
	1997-08	0.00	139	0	31.00	31	11	11	2
	1997-09	0.00	102	0	30.00	30	11	11	2
*	1997-10	0.00	169	12	31.00	11	11	11	2
*	1997-11	0.00	511	0	30.00	30	11	11	2
	1997-12	0.00	339	0	31.00	31	11	11	2

PA1=ICE PA2=Exit PF1=Help PF3=End 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 = $\frac{(\text{Commingled rate} - \text{Lower zone rate})}{\text{Commingled rate}}$

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.