



January 2, 1997

Amoco Production Company

Denver Region
1670 Broadway
P.O. Box 800
Denver, Colorado 80201
303-830-4040

Mr. William J. LeMay, Director
New Mexico Oil Conservation Division
2040 S. Pacheco Street
P. O. Box 6429
Santa Fe, NM 87505

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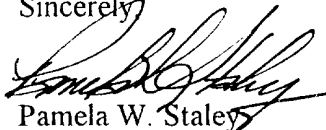
OIL CON. DIV.
DIST. 3

Application for Exception to Rule 303-C - Downhole Commingling
Berger #4 Well
Unit C Section 22-T26N-R11W
Gallegos Gallup and Basin Dakota Pools
San Juan County, New Mexico

Enclosed please find an administrative application form (C-107-A) and attachments for downhole commingling for the captioned well. By copy of this application by certified mail, return receipt requested, Amoco is notifying all offset operators in the formations captioned above as well as all affected interest owners if the ownership of those formations is not common. The Division Director may approve the proposed downhole commingling in the absence of a valid objection from any offset operator or any interest owner in those instances where ownership is not common in the zones to be commingled within 20 days after the receipt of the application if, in his opinion, waste will not result thereby, and correlative rights will not be violated.

Should there be questions concerning this matter, please contact me at (303) 830-5344.

Sincerely,


Pamela W. Staley

Enclosures

cc: Steve Webb
Pat Archuleta
Wellfile
Proration File
Frank Chavez, Supervisor
NMOCD District III
1000 Rio Brazos Road
Aztec, NM 87410

Duane Spencer
Bureau of Land Management
1235 La Plata Hwy.
Farmington, NM 87401

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

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

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

OIL CONSERVATION DIVISION

APPROVAL PROCESS:

x Administrative ___ Hearing

EXISTING WELLBORE
x YES ___ NO

APPLICATION FOR DOWNHOLE COMMINGLING

Amoco Production Company

PO Box 800 Denver, CO 80201

Operator Berger	4	Address C22, T26N-R11W	San Juan
Lease	Well No.	Unit Ltr. - Sec Twp - Rge	County

OGRID NO. 000778 Property Code 000315 API NO. 3004505792 Spacing Unit Lease Types: (check 1 or more)
Federal x , 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	Gallegos Gallup 26980		Basin Dakota 71599
2. Top and Bottom of Pay Section (Perforations)	5325'-5430'		6143'-6215'
3. Type of production (Oil or Gas)	Oil		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	(Current) 740 psi a. (Original) 1513 psi b.	a. b.	a. 939 psi b. 2361 psi
6. Oil Gravity (* API) or Gas BTU Content	1237 btu		1000 btu
7. Producing or Shut-In?	Shut-in		Producing
Production Marginal? (yes or no)	Yes		Yes
• If Shut-In, give data 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: 1/90 Rates: 6 MCFD 0 BOPD 0 BWPD	Date: Rates:	Date: Rates:
• If Producing, give date and oil/gas/water rates of recent test (within 60 days)	Date: Rates:	Date: Rates:	Date: 11/96 Rates: 60 MCFD 0.5 BOPD
8. Fixed Percentage Allocation Formula -% for each zone	Oil: 22 % Gas 22 %	Oil: % Gas %	Oil: 78 % Gas 78 %

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? ___x___ 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? ___x___ Yes ___ No

11. Will cross-flow occur? ___ Yes ___x___ 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. ___x___ Yes ___ No (If No, attach explanation)

12. Are all produced fluids from all commingled zones compatible with each other? ___x___ Yes ___ No

13. Will the value of production be decreased by commingling? ___ Yes ___x___ 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. ___x___ Yes ___ No SF-078641

15. NMOCD Reference Cases for Rule 303(D) Exceptions: ORDER NO(S):

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 Pamela W. Staley TITLE Regulatory Affairs Engineer DATE 1/2/97
TYPE OR PRINT NAME Pamela W. Staley TELEPHONE NO. (303) 830-5344

NEW MEXICO OIL CONSERVATION COMMISSION
Well Location and Acreage Dedication Plat

Section A.

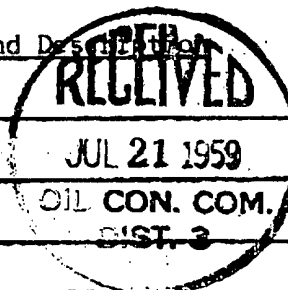
Date July 17, 1959

Operator TENNESSEE GAS TRANSMISSION CO. Lease USA W.O. BERGER
Well No. 4 Unit Letter C Section 22 Township 26 N Range 11 W N.M.P.M.
Located 790 Feet From north Line, 1800 Feet From west Line
County San Juan G. L. Elevation 6319 Dedicated Acreage _____ Acres
Name of Producing Formation Dakota Pool Undesignated

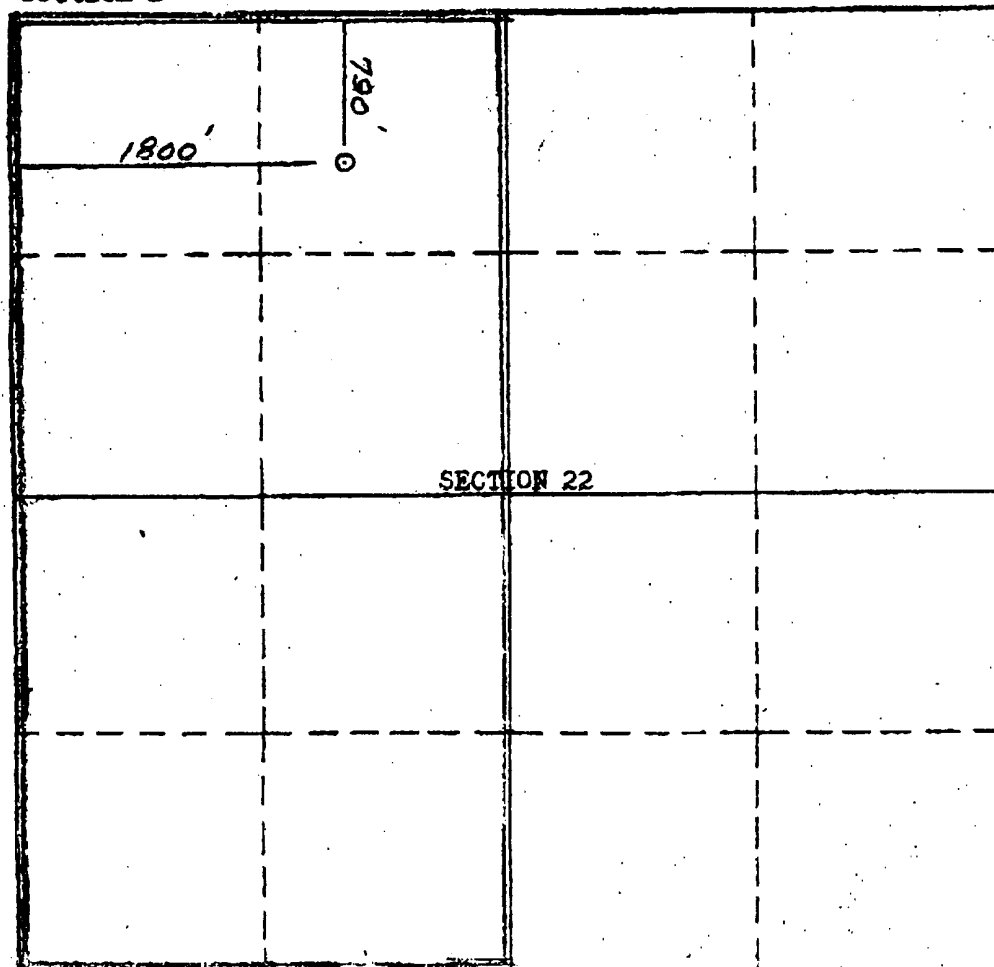
1. Is the Operator the only owner* in the dedicated acreage outlined on the plat below?
Yes X No _____.
2. If the answer to question one is "no," have the interests of all the owners been consolidated by communitization agreement or otherwise? Yes _____ No _____. If answer is "yes," Type of Consolidation _____
3. If the answer to question two is "no," list all the owners and their respective interests below:

Owner

Land Description



Section B



This is to certify that the information in Section A above is true and complete to the best of my knowledge and belief.

Tennessee Gas Transmission Co.
(Operator)

Russell R. N. Walker
(Representative)
P. O. Box 1714
Durango, Colorado
Address

This is to certify that the well location shown on the plat in Section B 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 July 16, 1959

STEPHEN J. ...
Registered Professional
Engineer and Land Surveyor.

Certificate No. 807

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.

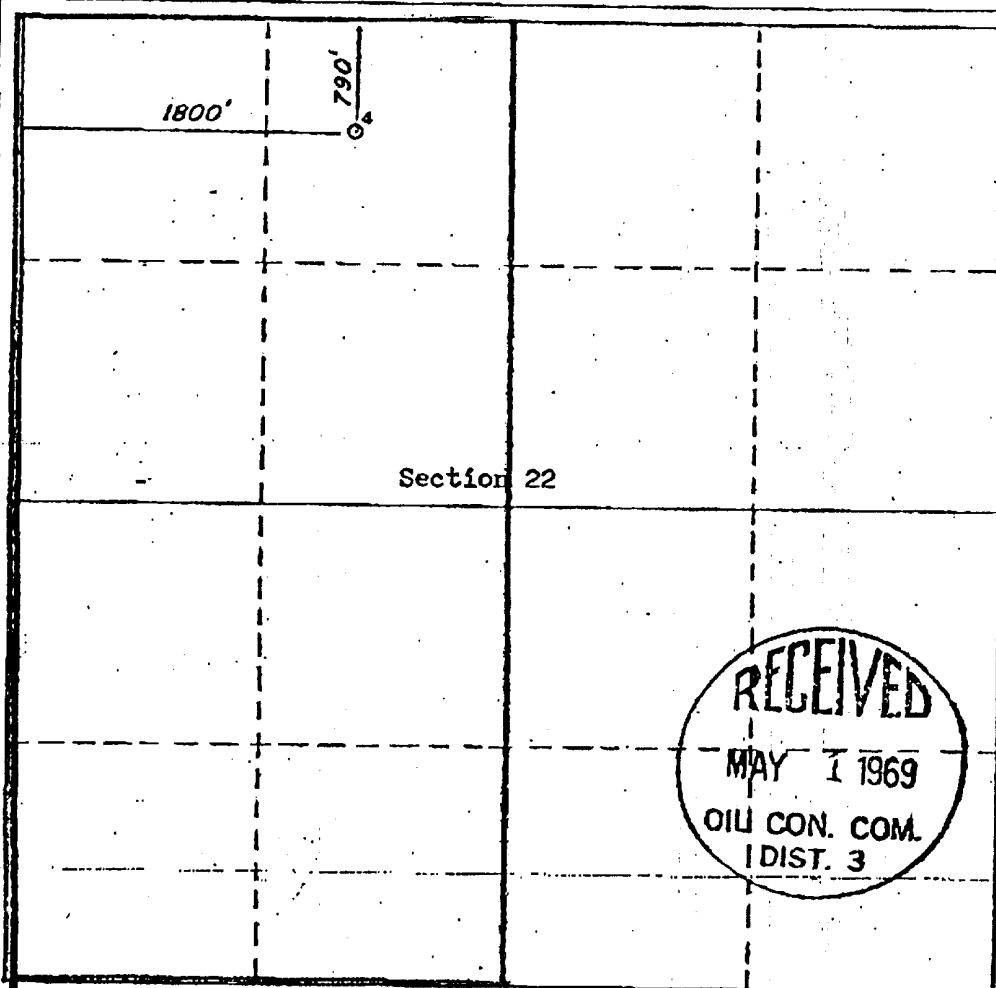
Operator Tenneco Oil Company		Lease U.S.A. 111-8 Berger		Well No. #4
Unit Letter C	Section 22	Township 26N	Range 11W	County San Juan
Actual Footage Location of Well: 790 feet from the North line and 1800 feet from the West line				
Ground Level Elev:	Producing Formation Gallup	Pool Gallegos Gallup Extension	Dedicated Acreage: 320 Acres	

1. Outline the acreage dedicated to the subject well by colored pencil or hatchure 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.) _____

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
David J. Cook
Position
Production Clerk
Company
Tenneco Oil Company
Date
April 29, 1969

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

Registered Professional Engineer and/or Land Surveyor

Certificate No.

0 330 660 990 1320 1650 1980 2310 2640 2970 3300 3630 3960 4290 4620 4950 5280 5610 5940 6270 6600

Dwights

12/03/96

Lease: BERGER (000004)

Retrieval Code: 151,045,1510452

10³
10³

10²
10²

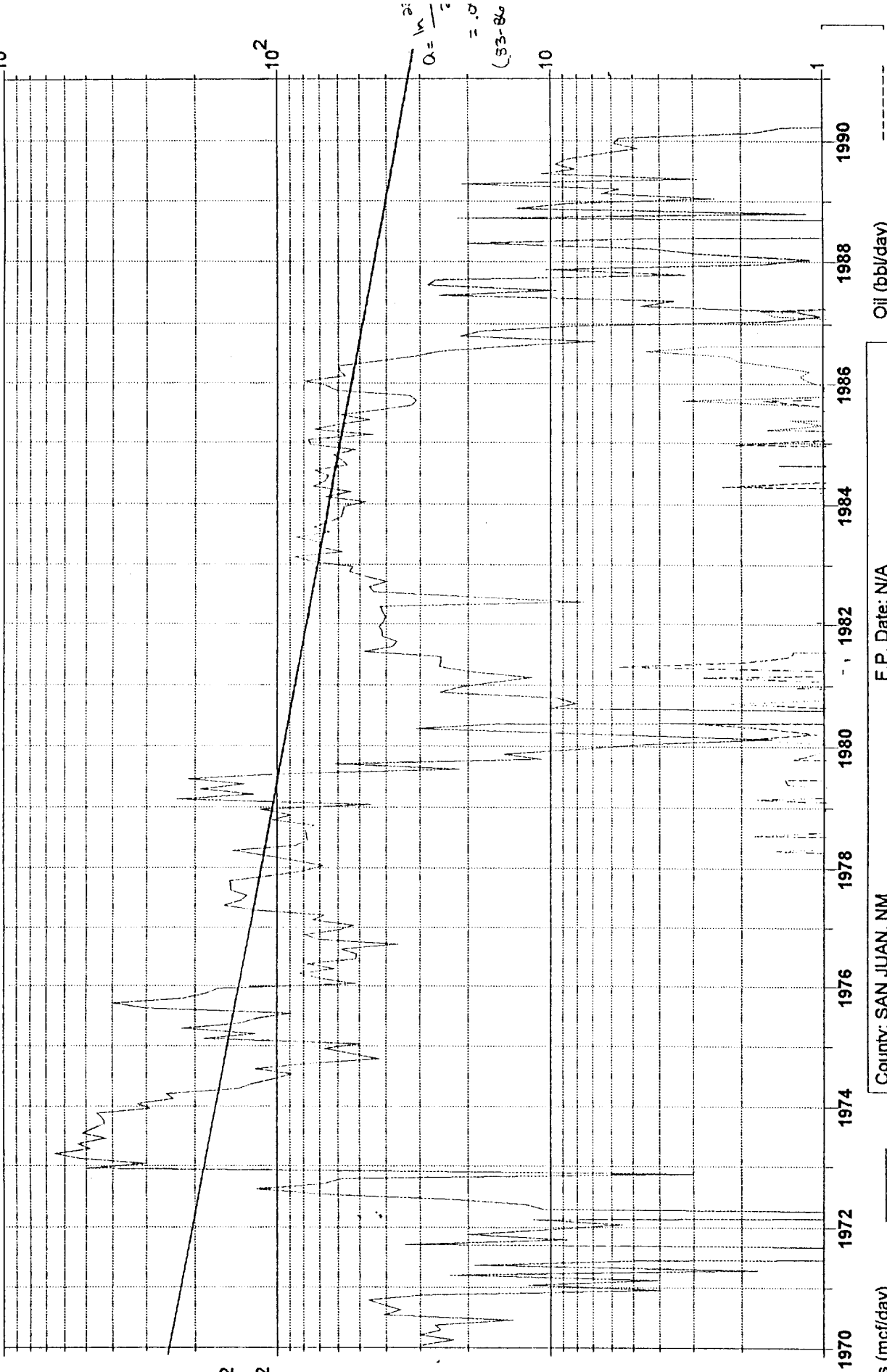
10
10

1
1

Gas (mcf/day)
Water (bbl/day)

Oil (bbl/day)

County: SAN JUAN, NM
Field: GALLEGOS (GALLUP) GP
Reservoir: GALLUP
Operator: AMOCO PRODUCTION CO
F.P. Date: N/A
Oil Cum: 10.54 mbbl
Gas Cum: 1287 mmcf
Location: 22C 26N 11W



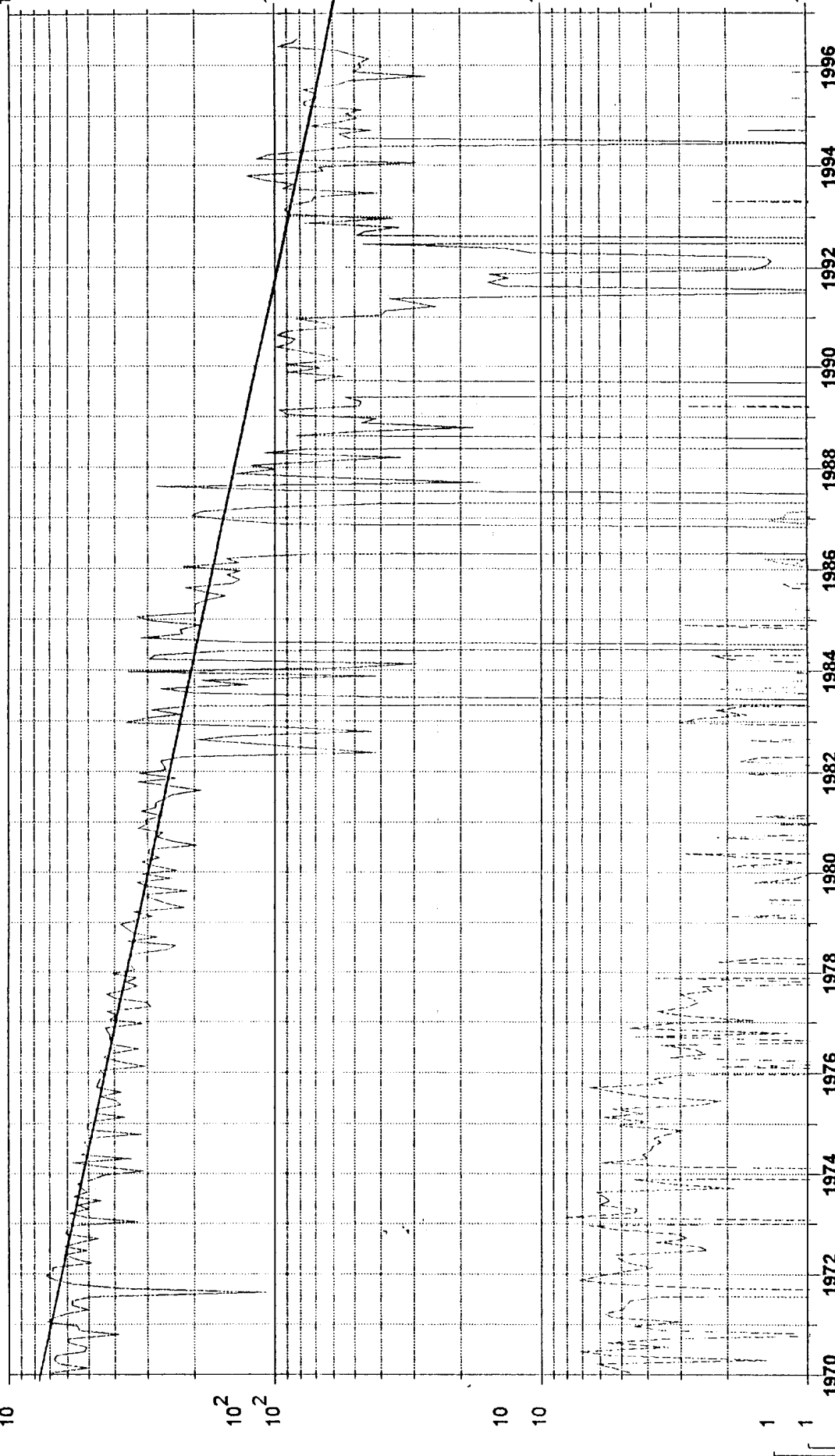
Dwights

Lease: BERGER (4)

12/03/96

Retrieval Code: 251,045,2510452

10³
10³



Gas (mcf/day)

Water (bbl/day)

Oil (bbl/day)

County: SAN JUAN, NM

F.P. Date: 12/59

Field: BASIN (DAKOTA) DK

Oil Cum: 34.82 mbbl

Reservoir: DAKOTA

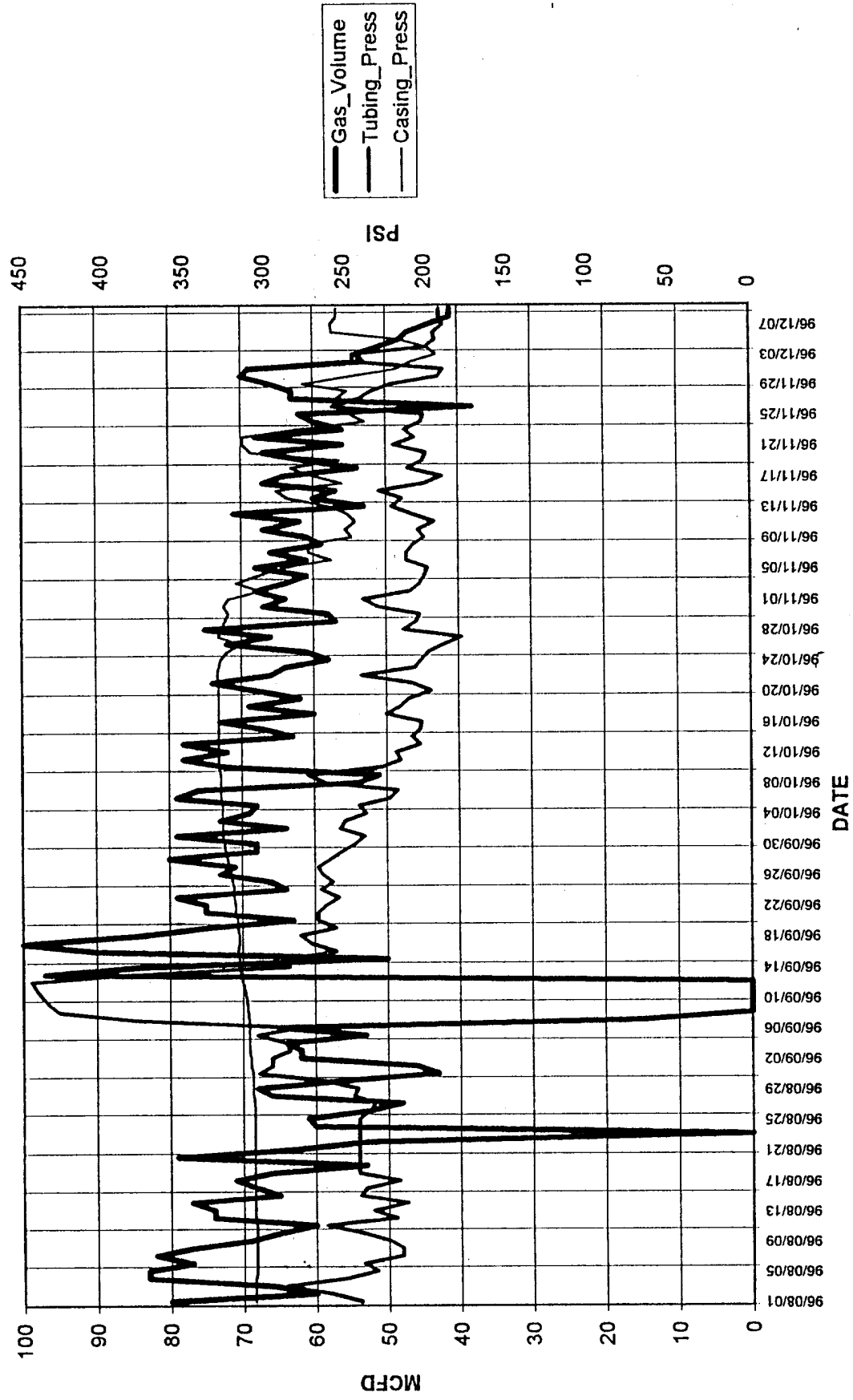
Gas Cum: 4220 mmcf

Operator: AMOCO PRODUCTION CO

Location: 22C 26N 11W

Chart1

Well: BERGER 004-DK (97840701)



BOTTOMHOLE PRESSURE CALCULATIONS

Gallup

$$\text{SICP} = 310 \text{ PSIG } 9/96$$

$$\text{Mid-Perforation depth} = 5378'$$

$$\text{Fluid Gradient} = 0.08 \text{ PSI/FT}$$

$$\text{BHP} = 310 + (0.08) (5378)$$

$$\text{BHP} = 740 \text{ PSI}$$

Dakota

$$\text{SICP} = 445 \text{ PSIG } 9/96$$

$$\text{Mid-Perforation depth} = 6179'$$

$$\text{Fluid Gradient} = 0.08 \text{ PSI/FT}$$

$$\text{BHP} = 445 + (0.08) (6179)$$

$$\text{BHP} = 939 \text{ PSI}$$

PROPOSED PRODUCTION ALLOCATION METHOD
BERGER #4

The subject well has been producing from the Gallup formation since 1969 and the Dakota formation since 1959. This well has been configured as a dual completion for some time. The Gallup formation was temporarily abandoned in 1990 due to liquid loading and the resulting poor performance. Downhole commingling will assist in stabilizing the lift of these fluids and hopefully return the Gallup to it's former production rates. Current production rates for each formation is as follows:

	MCFD	BOPD
Gallup	0	0
Dakota	60	0.5

The recommended allocation method for gas production is by percentage allocation for these two formations as their gas decline rates are virtually identical. (Gallup = 0.095/yr and Dakota = 0.094/yr) This percentage allocation would be based on anticipated production rates from each formation which are shown below and incorporate the capacity of the Gallup to produce before the formation was shut-in in 1990 as well as the former producing capacity of the Dakota.

	MCFD	% GAS	BOPD	%OIL
Gallup	60	22	0.5	22%
Dakota	<u>210</u>	<u>78</u>	<u>1.7</u>	<u>78%</u>
	270	100	2.2	100

OFFSET OPERATORS

Berger #4

Burlington Resources Oil and Gas Co.
P.O. Box 4289
Farmington, NM 87499