

6-12-95

OIL CONSERVATION DIVISION  
RECEIVED

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May 19, 1995

Mr. William J. LeMay  
Oil Conservation Division  
2040 S. Pacheco  
Santa Fe, NM 87504

**Re: Application to Downhole Commingle Gallegos  
Gallup and Basin Dakota Gas Production in the  
Nassau No. 3, 1500' FNL & 1850' FEL, Unit G  
Sec. 23, T-26N, R-11W, San Juan County, New Mexico**

Dear Mr. LeMay:

It is proposed to downhole commingle the Gallup and Dakota zones in this well to maintain economic operation and to maximize the efficient and effective recovery of gas at this location. Economic evaluation of the continued operation of this well as a dual completion has shown that it can only be economically maintained if it can be downhole commingled and operated as a single completion.

The Gallup and Dakota gas producing rates have declined to current marginal levels of 102 and 101 MCF/GPD respectively. Elimination of excess operational equipment and operating expense associated with dual operation would contribute to the maximization of the producing lives and recoveries from each pool. Downhole commingling would permit the elimination of one tubing string, one separator and one tank now required for the operation of this dual completion and would eliminate maintenance costs of maintaining isolation of the two completions.

The following attachments are submitted in support of this application:

1. EXHIBIT A is a plat (a) showing all Gallup wells on the lease, (b) indicating the subject well, (c) identifying offset operators, and (d) outlining the current Gallup proration unit.
2. EXHIBIT B is a plat (a) showing all Dakota wells on the lease, (b) indicating the subject well, (c) identifying offset operators, and (d) outlining the current Dakota proration unit.
3. EXHIBIT C is a GOR test form (C-116) with projected producing rates for June 1995 based on past production history data for each completion.
4. EXHIBIT D and E are current decline curves for Gallup gas and oil production.
5. EXHIBIT F and G are current decline curves for Dakota gas and oil production.

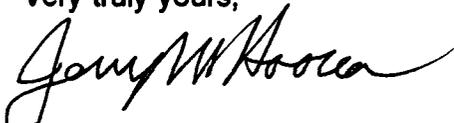
6. Bottom hole pressure at a common datum of 6000 feet are 439 and 503 psia for the Gallup and Dakota, respectively.
7. There is no significant water production associated with either of these completions.
8. Oil gravities for Gallup production is 60.3 °API and for Dakota is 44.3 °API. Since oil prices are the same for gravities over 40 °API, commingling will not result in any change in revenue for the small oil volumes from these completions.
9. WI, RI, and ORRI ownerships are identical for both pools.
10. EXHIBITS H and I are Gallup and Dakota gas analyses. BTU values are very similar for both pools and since sales are based on a \$/BTU rate, revenue for the combined gas stream will be the same as for the separated sales streams of the dual completion. therefore, there will be no revenue or royalty loss due to commingling.
11. Allocation percentages based on the projected 6/95 daily rates shown on the enclosed C-116 are proposed as follows:

	<u>Water</u>	<u>Oil</u>	<u>Gas</u>
Gallegos Gallup	0%	73%	50%
Basin Dakota	0%	27%	50%

Stable production declines have been historically established for both Gallup and Dakota production from this well and the above percentage formula should acheive a reasonably accurate allocation of the remaining reserves from both pools.

12. Copies of this application were sent by certified mail to each of the four offset operator as identified on EXHIBITS A and B and also to the Farmington Office of the Bureau of Land Management for their approval. Copies of the certified mail receipts to the offset operators are included as EXHIBIT J.

Very truly yours,



Jerry W. Hoover  
Sr. Conservation Coordinator

# GALLUP PRODUCERS

R11W

T26N

<p>MONCRIEF COM * 00001E O H RANDEL * 000008</p> <p>B H P O H RANDEL * 000012</p> <p>15</p> <p>O H RANDEL * 000004</p>	<p>AMOCO</p> <p>O H RANDEL * 000001</p> <p>14</p> <p>BERGER * 000005</p>	<p>MERIDIAN</p> <p>DUGAN</p> <p>13</p>	
<p>BERGER * 000004</p> <p>AMOCO</p> <p>22</p> <p>AMOCO</p>	<p>BERGER * 000008</p> <p>AMOCO</p>	<p>NASSAU * 000003</p> <p>28</p> <p>CONOCO</p>	<p>DUGAN</p> <p>24</p> <p>DAVIS FEDERAL * 000001</p>
<p>AMOCO</p> <p>27</p> <p>AMOCO</p>	<p>TEXACO</p> <p>P L DAVIS * 000001</p> <p>26</p> <p>P L DAVIS * 000008</p> <p>TEXACO</p>	<p>MERIDIAN</p> <p>25</p>	

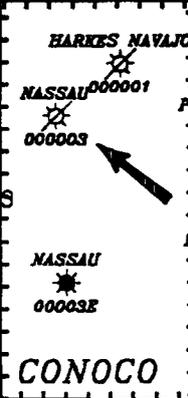
NASSAU 3

# DAKOTA PRODUCERS

R11W

<p><b>B H P</b></p> <p>O H RANDEL * 000007</p> <p>O H RANDEL * 000006</p> <p>15</p> <p>O H RANDEL * 00007E</p> <p>O H RANDEL * 00006E</p>	<p><b>AMOCO</b></p> <p>O H RANDEL * 000001</p> <p>14</p> <p>BERGER * 000005</p>	<p><b>MERIDIAN</b></p> <p><b>DUGAN</b></p> <p>13</p> <p>PLATERO NAVAJO * 000002</p> <p>P L DAVIS * 000003</p>	
<p><b>BERGER</b> * 000004</p> <p><b>AMOCO</b></p> <p>22</p> <p>BERGER * 000003</p> <p><b>AMOCO</b></p>	<p><b>BERGER</b> * 000008</p> <p>BERGER * 00002E</p> <p><b>AMOCO</b></p>	<p><b>HARKES NAVAJO</b> * 000001</p> <p><b>NASSAU</b> * 000003</p> <p><b>NASSAU</b> * 00003E</p> <p><b>CONOCO</b></p>	<p><b>DUGAN</b></p> <p>PLATERO NAVAJO * 000001</p> <p>24</p> <p>DAVIS FEDERAL * 000001</p>
<p><b>CARTNER</b> * 000001</p> <p><b>AMOCO</b></p> <p>27</p> <p>CALDWELL A * 000001</p> <p>CALDWELL A * 000001</p> <p><b>AMOCO</b></p>	<p><b>TEXACO</b></p> <p>P L DAVIS * 00001E</p> <p>P L DAVIS * 000001</p> <p>P L DAVIS * 000002</p> <p><b>TEXACO</b></p> <p>P L DAVIS * 00002E</p>	<p>P L DAVIS * 000002</p> <p><b>MERIDIAN</b></p> <p>25</p> <p>P L DAVIS * 00002E</p>	

T26N



NASSAU 3

Submit 2 copies to Appropriate District Office.  
 DISTRICT I  
 P.O. Box 1980, Hobbs, NM 88240  
 DISTRICT II  
 P.O. Drawer DD, Artesia, NM 88210  
 DISTRICT III  
 1000 Rio Brzozos Rd., Aztec, NM 87410

State of New Mexico  
 Energy, Minerals and Natural Resources Department

Form C-116  
 Revised 1/1/89

# OIL CONSERVATION DIVISION

P.O. Box 2088  
 Santa Fe, New Mexico 87504-2088

## GAS - OIL RATIO TEST

Operator		Pool		County										
Conoco Inc.		Gallegos Gallup / Basin Dakota		San Juan										
Address		TYPE OF TEST - (X)		Completion		Special								
10 Desta Drive West, Ste. 100W		SCHEDULED <input type="checkbox"/>		COMPLETED <input type="checkbox"/>		SPECIAL <input checked="" type="checkbox"/>								
LEASE NAME	WELL NO.	LOCATION			DATE OF TEST	CHOKE SIZE	TBG. PRESS.	DAILY ALLOW. ABLE	LENGTH OF TEST HOURS	PROD. DURING TEST			GAS - OIL RATIO CU.FT/BBL.	
		U	S	T						R	WATER BBL.S.	GRAV. OIL		OIL BBL.S.
Nassau No. 3 (Gallup)	3	G	23	26N	11W	6/95 avg.			month	0	60.3	2.4	102	
Nassau No. 3 (Dakota)	3	G	23	26N	11W	6/95 avg.			month	0	40	.9	101	

I hereby certify that the above information is true and complete to the best of my knowledge and belief.

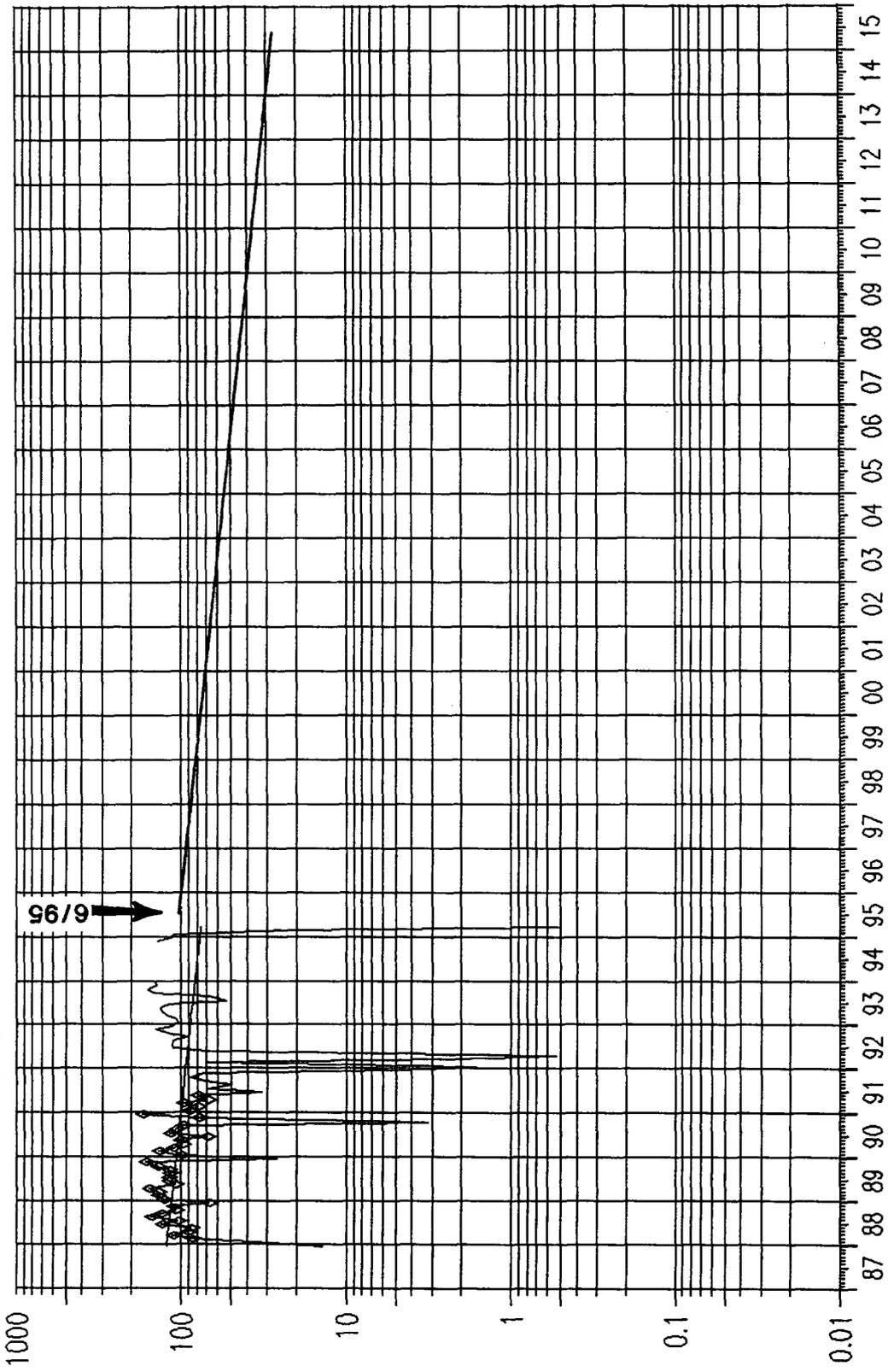
Signature: *Jerry M. Hoover*  
 Printed name and title: Jerry M. Hoover  
 Sr. Conservation Coordinator  
 Date: \_\_\_\_\_  
 Telephone No. \_\_\_\_\_

**CAUTIONS:**  
 During gas-oil ratio test, each well shall be produced at a rate not exceeding the top unit allowable for the pool in which the well is located by more than 25 percent. Operator is encouraged to take advantage of this 25 percent tolerance in that well can be assigned increased allowables when authorized by the Division.  
 Gas volumes must be reported in MCF measured at a pressure base of 15.025 psia and a temperature of 60° F.  
 Specific gravity base will be 0.60.  
 Report casing pressure in lieu of tubing pressure for any well producing through casing.  
 Rule 301, Rule 1116 & appropriate pool rules.)

**EXHIBIT C**

LEASE : NASSAU WNUM : 000003 CPD : NONE

WELL: 26N11W23G00GP CDATE: 0 ZONE : GLLP NRI : 0.773333



Gas Rate (Calendar Day) (Mscf)

Decline Rate (frac) Nominal: 0.005503 Effective: 0.005488 Annual: 0.063905

Current Gas rate: 102.00 Mscf/d 6/95

Economic Limit: 1.020 Mscf/d

Cumulative Gas Produced: 227.93 MMscf

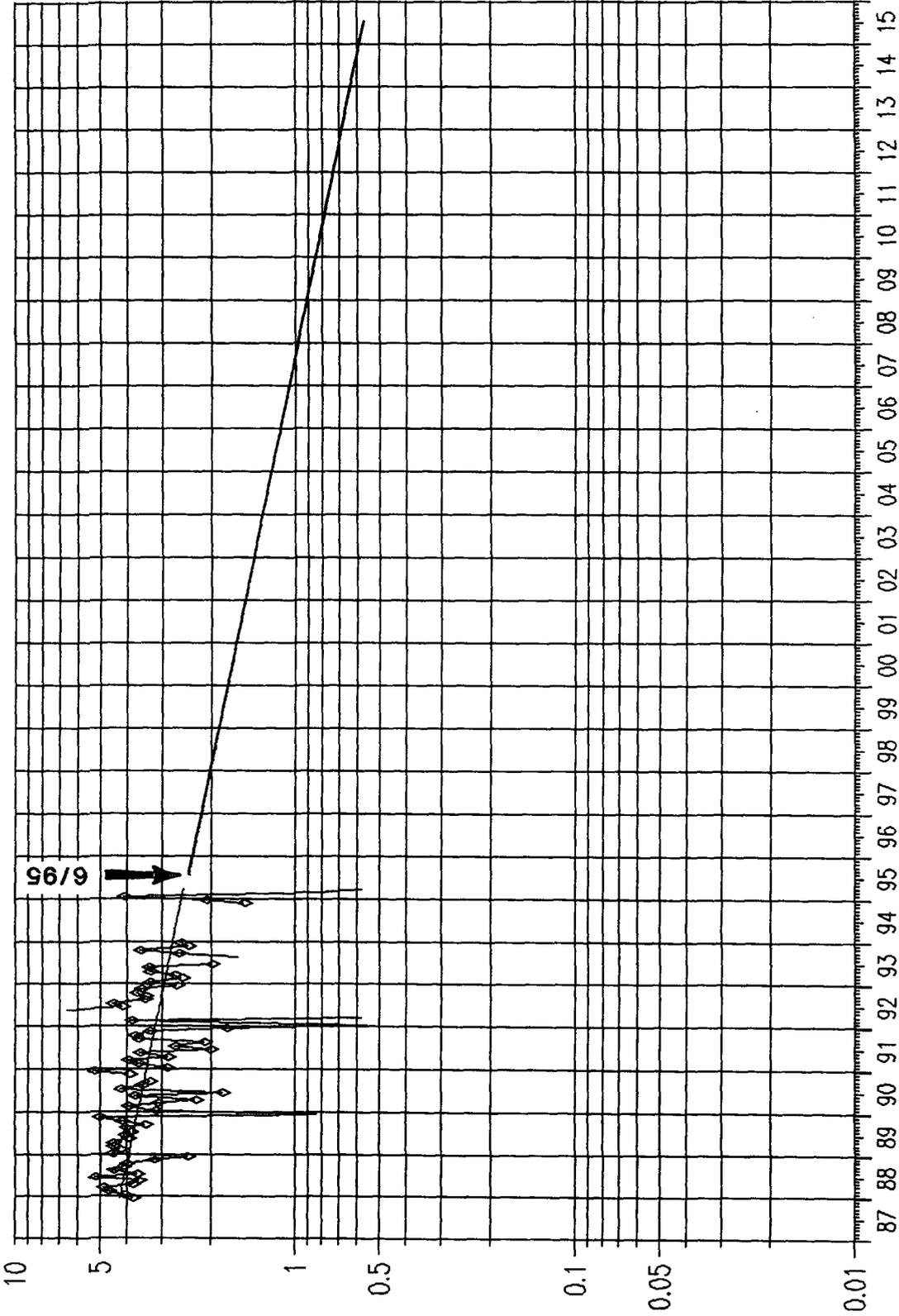
Remaining Reserves: 413.3 MMscf

Total Reserves: 641.2 MMscf - At End of Forecast

# NASSAU NO. 3

## Gallup Gas Production

LEASE : NASSAU WNUM : 000003 CPD : NONE  
 WELL: 26N11W23G00GP CDATE: 0 ZONE : GLLP NRI : 0.773333



Decline Rate (frac) Nominal: 0.005997 Effective: 0.005979 Annual: 0.069438

Current Oil rate: 2.4 bbls/d 6/95

Economic Limit: 0.0 bbls/d

Cumulative Oil Produced: 7.7 Mbbls

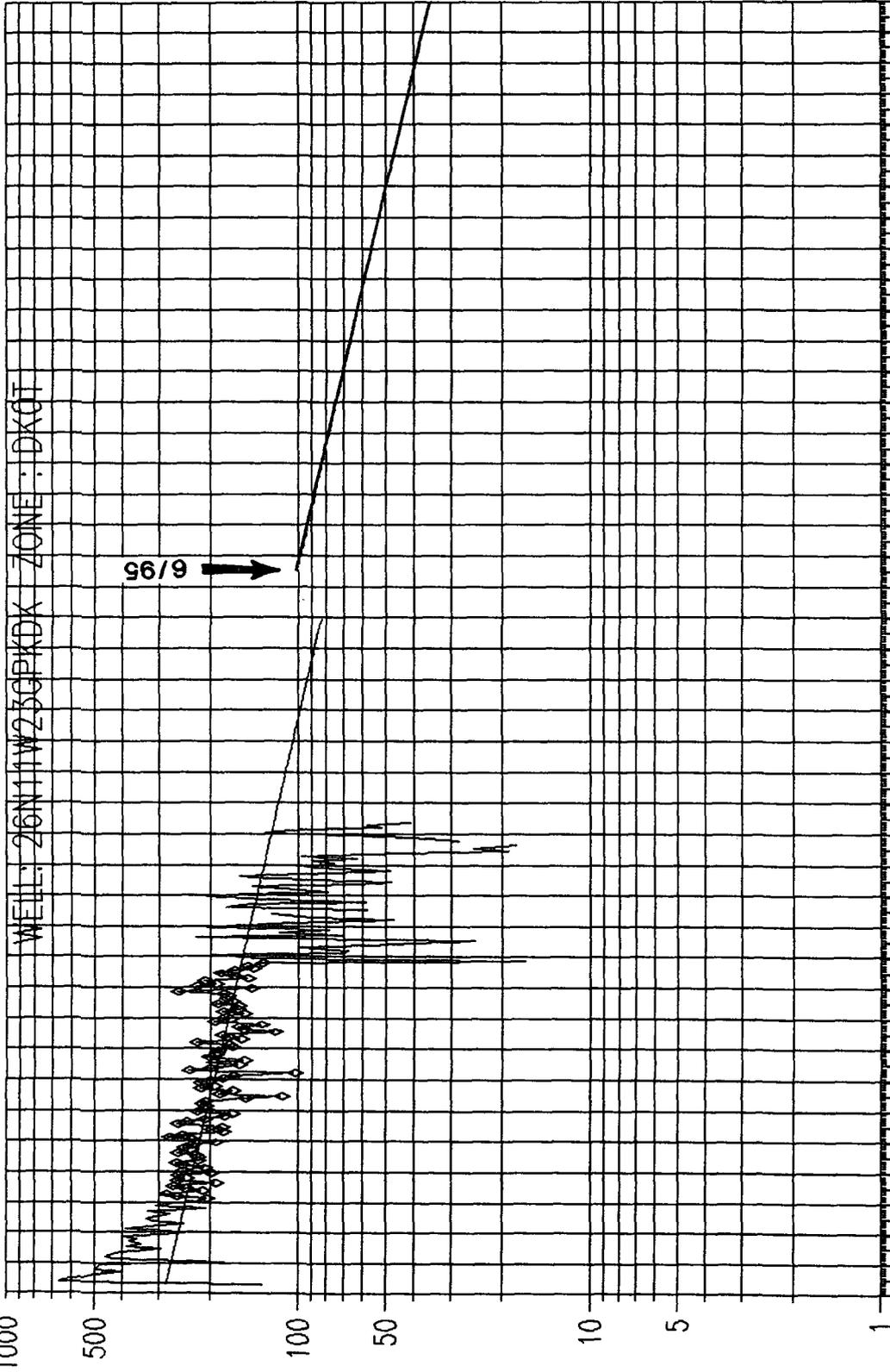
Remaining Reserves: 9.3 Mbbls

Total Reserves: 16.9 Mbbls - At End of Forecast

**NASSAU NO. 3**  
**Gallup Oil Production**

NASSAU 000003

STDATE : 7204 STATUS : INA LEASE : NASSAU WNUM : 000003



72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 00 01 02 03 04 05 06 07 08 09 10 11 12 13

Decline Rate (frac) Nominal: 0.004708 Effective: 0.004697 Annual: 0.054928

Current Gas rate: 101.00 Mscf/d 6/95

Economic Limit: 1.010 Mscf/d

Cumulative Gas Produced: 1088.47 MMscf

Remaining Reserves: 441.7 MMscf

Total Reserves: 1530.2 MMscf - At End of Forecast

# NASSAU NO. 3

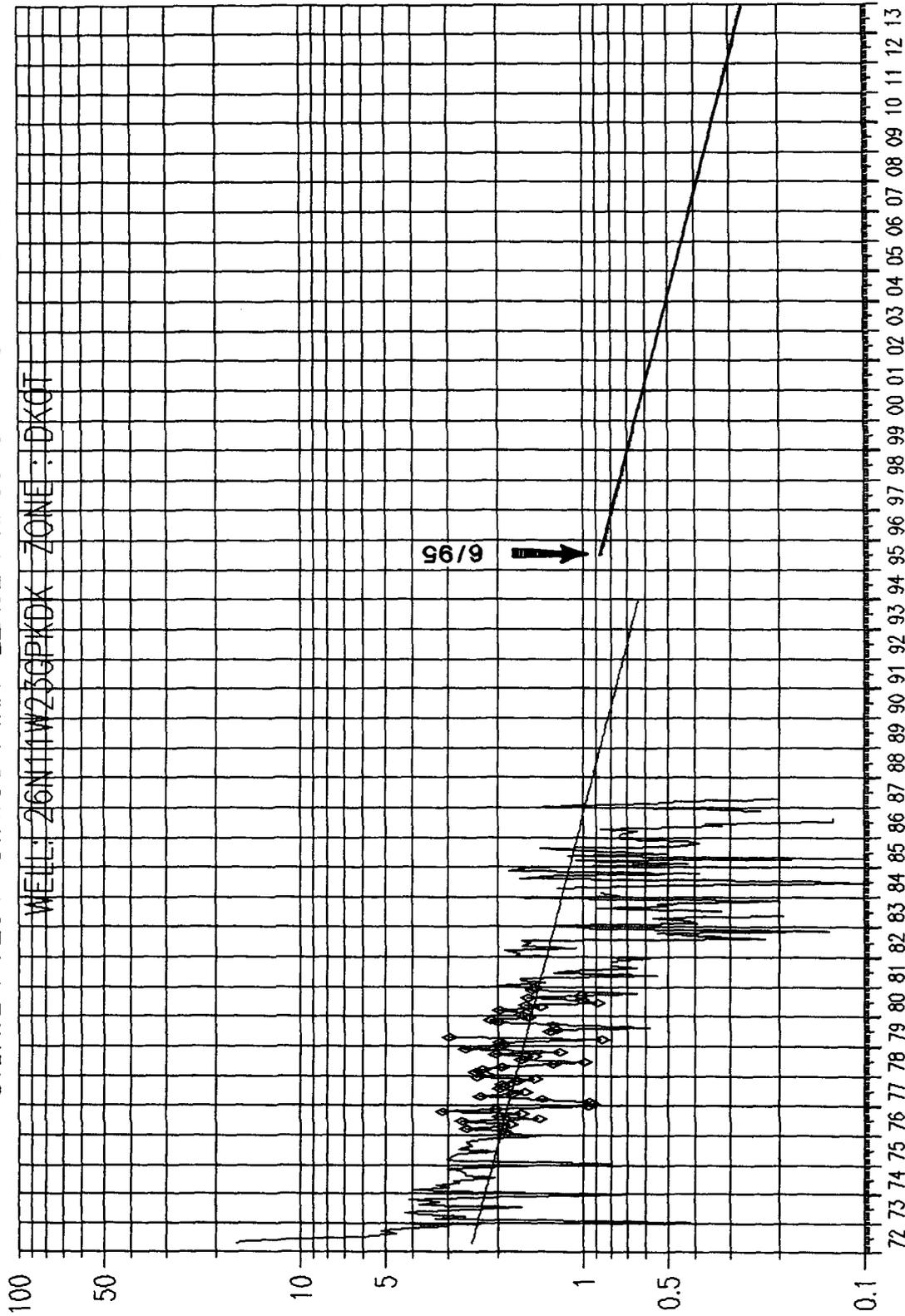
## Dakota Gas Production

NASSAU 000003

STDATE : 7204 STATUS : INA LEASE : NASSAU WNUM : 000003

WELL: 26N11W23GPKDK ZONE: DKOT

Oil Rate (Calendar Day) (bbls)



Decline Rate (frac) Nominal: 0.005211 Effective: 0.005198 Annual: 0.060621

Current Oil rate: 0.9 bbls/d 6/95

Economic Limit: 0.0 bbls/d

Cumulative Oil Produced: 10.0 Mbbls

Remaining Reserves: 3.6 Mbbls

Total Reserves: 13.6 Mbbls - At End of Forecast

**NASSAU NO. 3**

**Dakota Oil Production**

EL PASO NATURAL GAS COMPANY  
 VOLUME ACCOUNTING DEPARTMENT  
 MEASUREMENT DIVISION  
 POST OFFICE BOX 1492  
 EL PASO, TEXAS 79878  
 PHONE: (915) 541-5287  
 CHROMATOGRAPHIC GAS ANALYSIS REPORT

DATE 9/08/94

MAILEE  
 55300

NASSAU RESOURCES INCORPORATED  
 SUITE 1225  
 650 SOUTH CHERRY STREET  
 DENVER, CO 80222-9999

Gallup Gas

METER NUMBER 92178 - NASSAU #3  
 OPERATOR 8302 - NASSAU RESOURCES INC

ANALYSIS DATE 8/09/94 TYPE CODE 2 - ACTUAL  
 SAMPLE DATE 8/05/94 H2S GRAINS 0  
 EFFECTIVE DATE 9/01/94 LOCATION D - DANIELS FM  
 EFFECTIVE FOR 6 MONTHS

COMPONENTS	NORMALIZED MOL %	GPM
CO2	.98	.000
H2S	.00	.000
N2	.79	.000
METHANE	72.03	.000
ETHANE	13.21	3.534
PROPANE	8.22	2.285
ISO-BUTANE	.81	.265
NORM-BUTANE	2.39	.754
ISO-PENTANE	.51	.187
NORM-PENTANE	.54	.196
HEXANE PLUS	<u>.52</u>	<u>.227</u>
	100.00	7.428

SPECIFIC GRAVITY .794  
 MIXTURE HEATING VALUE  
 (BTU @ 14.73 DRY) 1350  
 RATIO OF SPECIFIC HEATS .000  
 NO TEST SECURED FOR H2S CONTENT



Z 111 000 199



**Receipt for Certified Mail**

No Insurance Coverage Provided  
Do not use for International Mail

Dugan Production Corp.  
P.O. Box 420  
Farmington, NM 87499

PS Form 3800, March 1993

Postage	\$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to Whom & Date Delivered	
Return Receipt Showing to Whom, Date, and Addressee's Address	
TOTAL Postage & Fees	\$
Postmark or Date 5/19/95	

Z 111 000 198



**Receipt for Certified Mail**

No Insurance Coverage Provided  
Do not use for International Mail

Amoco  
P.O. Box 3092  
Houston, Texas 77253

PS Form 3800, March 1993

Postage	\$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to Whom & Date Delivered	
Return Receipt Showing to Whom, Date, and Addressee's Address	
TOTAL Postage & Fees	\$
Postmark or Date 5/19/95	

Z 111 000 201



**Receipt for Certified Mail**

No Insurance Coverage Provided  
Do not use for International Mail

Texaco Prod. Inc.  
P.O. Box 3109  
Midland, Texas 77702

PS Form 3800, March 1993

Postage	\$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to Whom & Date Delivered	
Return Receipt Showing to Whom, Date, and Addressee's Address	
TOTAL Postage & Fees	\$
Postmark or Date 5/19/95	

Z 111 000 200



**Receipt for Certified Mail**

No Insurance Coverage Provided  
Do not use for International Mail

Meridian Oil Inc.  
3300 N. "A" Street  
Midland, TX 79705

PS Form 3800, March 1993

Postage	\$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to Whom & Date Delivered	
Return Receipt Showing to Whom, Date, and Addressee's Address	
TOTAL Postage & Fees	\$
Postmark or Date 5/19/95	