

State of New Mexico



W.R. HUMPHRIES
COMMISSIONER



Commissioner of Public Lands

SLO REF NO. OG-553

P.O. BOX 1148
SANTA FE, NEW MEXICO 87504-1148

November 4, 1987

Northwest Pipeline Corporation
ATTN: Mr. Darrell L. Gillen
P. O. Box 8900
Salt Lake City, Utah 84108-0900

Re: San Juan 30-5 Unit
Rio Arriba County, New Mexico

Gentlemen:

This office is in receipt of your letter of June 15, 1987, wherein you have requested approval of the eleventh through fifteenth revisions of the Dakota Formation Participating Area in the San Juan 30-5 Unit, Rio Arriba County, New Mexico.

Please be advised that the Commissioner of Public Lands has this date approved the following:

APPLICATION FOR APPROVAL OF THE ELEVENTH EXPANDED
PARTICIPATING AREA
Dakota Formation
Effective October 1, 1983

APPLICATION FOR APPROVAL OF THE TWELFTH EXPANDED
PARTICIPATING AREA
Dakota Formation
Effective November 1, 1983

APPLICATION FOR APPROVAL OF THE THIRTEENTH EXPANDED
PARTICIPATING AREA
Dakota Formation
Effective December 1, 1983

APPLICATION FOR APPROVAL OF THE FOURTEENTH EXPANDED
PARTICIPATING AREA
Dakota Formation
Effective February 1, 1984

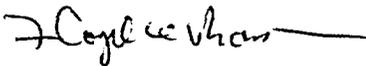
Northwest Pipeline Corporation
November 4, 1987
Page 2

APPLICATION FOR APPROVAL OF THE FIFTEENTH EXPANDED
PARTICIPATING AREA
Dakota Formation
Effective July 1, 1984

Please advise all interested parties of this action. If we
may be of further help please do not hesitate to call on us.

Very truly yours,

WILLIAM R. HUMPHRIES
COMMISSIONER OF PUBLIC LANDS

BY: 
FLOYD O. PRANDO, Director
Oil and Gas Division
(505) 827-5744

WRH/FOP/pm
encls.

cc: OCD-Santa Fe, New Mexico
BLM-Roswell, New Mexico
GULRAM
TRD-Oil and Gas Processing

State of New Mexico



W.R. HUMPHRIES
COMMISSIONER



Commissioner of Public Lands

SLO REF NO. OG-465

P.O. BOX 1148
SANTA FE, NEW MEXICO 87504-1148

September 25, 1987

Northwest Pipeline Corporation
ATTENTION: Mr. Darrell L. Gillen
P. O. Box 8900
Salt Lake City, Utah 84108-0900

Re: San Juan 30-5 Unit
Rio Arriba County, New Mexico]
Notice of Completion of Additional
Wells, Dakota Formation

Gentlemen:

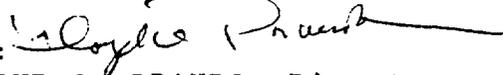
This office is in receipt of your letter of July 27, 1987, wherein you have advised this office that the following wells are capable of producing unitized substances in paying quantities from the Dakota formation. San Juan 30-5 Unit Well No. 87, located 830 FSL and 1070 FWL, Sec. 5-30N-5W, and the San Juan 30-5 Unit Well No. 90, located 1535 FNL and 1120 FEL of Sec. 22-30N-5W. Please be advised that this office concurs with your determination.

Since these wells were drilled within the existing Dakota Participating Area, the Participating Area is not enlarged by virtue of these commercial wells, and the percentages of participation remain the same.

If we may be of further help please do not hesitate to call on us.

Very truly yours,

W. R. HUMPHRIES
COMMISSIONER OF PUBLIC LANDS

BY: 
FLOYD O. PRANDO, Director
Oil and Gas Division
(505) 827-5744

WRH/FOP/pm
encls.

cc: OCD-Santa Fe, New Mexico
BLM-Roswell, New Mexico
OGAD-Santa Fe, New Mexico
Auditing Division



SEP 23 1987

San Juan 30-5
3180 (015)

Northwest Pipeline Corporation
ATTN: Darrell L. Gillen
PO Box 8900
Salt Lake City, UT 84108

Gentlemen:

By letter dated July 27, 1987, we received a notice of completion of additional wells in the Dakota Formation, San Juan 30-5 Unit, Rio Arriba County, New Mexico. Northwest Pipeline Corporation, as unit operator, has determined that the San Juan 30-5 Unit well No. 87 located 830 feet from the South line and 1070 feet from the West line, section 5, T. 32 N., R. 7 W., NMPH, and the San Juan 30-5 unit well No. 90 located 1535 feet from the North line and 1120 feet the East line, section 22, T. 30 N., R. 5 W., NMPH, are capable of producing unitized substances in paying quantities from the Dakota Formation. We concur with your determination.

The well was completed in the existing Dakota Participating Area and therefore, no revision is necessary. This notice is hereby accepted for record.

If you have any questions concerning this determination, please contact Gail Keller at the above address or telephone (505) 761-4503

Sincerely,

(Orig. Signed) - Sid Vogelpohl

Assistant District Manager
Mineral Resources

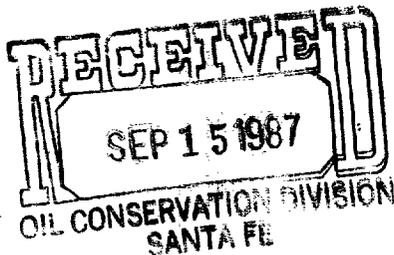
cc:

NM-016

Comm. of Public Lands

NM Oil Con. Div.

015:GKeller:rvh:9/21/87:3491M



SEP 11 1987

SJ 30-5 Unit
Dakota PA
3180 (015)

Northwest Pipeline Corporation
ATTN: Darrell L. Gillen
P.O. Box 8900
Salt Lake City, UT 84108-0900

Gentlemen:

We have received your letter of June 15, 1987, in which you requested approval of the eleventh through fifteenth revisions of the Dakota Formation Participating Area in the San Juan 30-5 Unit, Rio Arriba County, New Mexico.

The eleventh revision enlarges the Dakota Formation Participating Area 640.00 acres described as the S $\frac{1}{2}$ section 26 and the E $\frac{1}{2}$ section 28, T. 30 N., R. 5 W., NMPM. The revision is based on the completion of the San Juan 30-5 unit well Nos. 92 and 95. The eleventh revision is approved this date and is effective October 1, 1983.

The twelfth revision enlarges the Dakota Formation Participating Area 640.00 acres described as section 35, T. 30 N., R. 5 W., NMPM. The revision is based on the completion of the San Juan 30-5 unit well Nos. 86 and 101. The twelfth revision is approved this date and is effective as of November 1, 1983.

The thirteenth revision enlarges the Dakota Formation Participating Area 320.00 acres described as the E $\frac{1}{2}$ section 27, T. 30 N., R. 5 W., NMPM. The revision is based on the completion of the San Juan 30-5 unit well No. 94. The thirteenth revision is approved this date and is effective as of December 1, 1983.

The fourteenth revision enlarges the Dakota Formation Participating Area 960.00 acres described as the W $\frac{1}{2}$ section 18, the E $\frac{1}{2}$ section 19, the N $\frac{1}{2}$ section 29, T. 30 N., R. 5 W., NMPM. The revision is based on the San Juan 30-5 unit well Nos. 88, 89 and 97. The fourteenth revision is approved this date and is effective as of February 1, 1984.

The fifteenth revision enlarges the Dakota Formation Participating Area 217.76 acres described as Lots 1-4, W $\frac{1}{2}$ E $\frac{1}{2}$ (R $\frac{1}{2}$) section 13, T. 30 N., R. 5 W., NMPM. The revision is based on the San Juan 30-5 unit well No. 104. The fifteenth revision is approved this date and is effective as of July 1, 1984.

Copies of the approved request are being distributed to the appropriate Federal agencies and one copy is returned herewith. If you have any questions, please contact Shirley Bryant at the above address or telephone (05) 761-4503.

Sincerely,

Assistant District Manager
Mineral Resources

cc:
NM-016
✓ NMOCD w/o encl.
015:SBryant:js:9-10-87:3457M

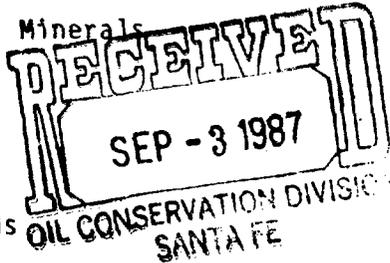
NORTHWEST PIPELINE CORPORATION 
ONE OF THE WILLIAMS COMPANIES

LAND DEPARTMENT

August 25, 1987

P O BOX 8900
SALT LAKE CITY UTAH 84108 0900
801-584-6669
801-584-7215

Assistant District Manager, Minerals
Bureau of Land Management
425 Montano N.E.
Albuquerque, NM 87107



State of New Mexico
Commissioner of Public Lands
Attn: Floyd O. Prando
P.O. Box 1148
Santa Fe, NM 87501

State of New Mexico
Oil Conservation Commission
Attn: Mr. William J. LeMay
P.O. Box 2088
Santa Fe, NM 87501

Re: San Juan 30-5 Unit #14-08-001-346
Rio Arriba County, New Mexico
Notice of Completion of Non-Commercial Well
Dakota Formation

Gentlemen:

The Notice of Completion of Non-Commercial Well, which was filed July 20, 1987 for the San Juan 30-5 #102 well, has been approved by the Bureau of Land Management on August 21, 1987.

Copies of this letter are being sent to the Working Interest Owners shown on the attached sheet.

Sincerely,

Darrell L. Gillen
Land/NGPA Supervisor

/sb

Attachments

cc: Working Interest Owners
K.J. Stracke
W.O. Curtis
W.S. West
L.G. Loving

C.N. Potter
L.G. Eaton
M.H. Johnson
R.P. Gregory

U56N2650
08/26/87

WORKING INTEREST OWNERS
SAN JUAN 30-5 UNIT DK

AMOCO PRODUCTION COMPANY
WESTERN DIVISION, PRODUCTION MGR
1660 BROADWAY
DENVER, CO
80202

MERIDIAN OIL PRODUCTION INC
PRODUCTION DEPARTMENT
P.O. BOX 4289
FARMINGTON, NM
87401

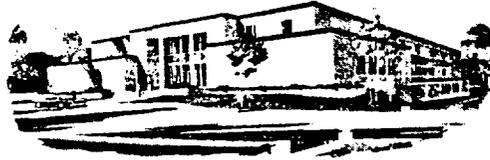
PHILLIPS PETROLEUM COMPANY
ATTN: LEASE GAS SALES ACCOUNTING
1040 PLAZA OFFICE BUILDING
BARTLESVILLE, OK
74004

TEXACO, INC.
ATTN: COMPTROLLERS DEPARTMENT
P. O. BOX 2100
DENVER, CO
80201

State of New Mexico



W.R. HUMPHRIES
COMMISSIONER



Commissioner of Public Lands

SLO REF NO. OG-446

P.O. BOX 1148
SANTA FE, NEW MEXICO 87504-1148

September 11, 1987

Northwest Pipeline Corporation
ATTENTION: Mr. Darrell L. Gillen
P. O. Box 8900
Salt Lake City, Utah 84108-0900

Re: San Juan 30-5 Unit
Non-Commercial Determination
Rio Arriba County, New Mexico

Gentlemen:

This office is in receipt of your letter of August 25, 1987, advising this office that the Notice of Completion of Non-Commercial Well, which was filed July 20, 1987 for the San Juan 30-5 Unit Well No. 102, was by the Bureau of Land Management on August 21, 1987.

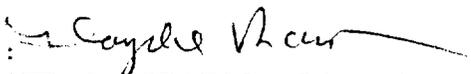
Please be advised that the Commissioner of Public Lands concurs with your determination that the San Juan 30-5 Unit Well No. 102, is not capable of producing unitized substances in paying quantities from the Dakota formation.

Enclosed is an approved copy for your files. Please submit a copy of the Bureau of Land Managements Approval Letter.

If we may be of further help please do not hesitate to call on us.

Very truly yours,

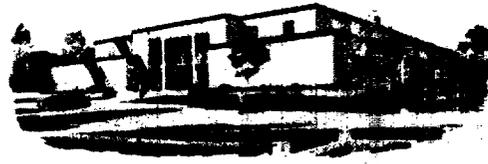
WILLIAM R. HUMPHRIES
COMMISSIONER OF PUBLIC LANDS

BY: 
FLOYD O. PRANDO, Director
Oil and Gas Division
(505) 827-5744

WRH/FOP/pm
encls.

cc: OCD-Santa Fe, New Mexico
BLM-Albuquerque, New Mexico Attn: Mr. Robert Kent
Gulram

State of New Mexico



SLO REF NO. OG-328

W.R. HUMPHRIES
COMMISSIONER

Commissioner of Public Lands

P.O. BOX 1148
SANTA FE, NEW MEXICO 87504-1148

August 12, 1987

Northwest Pipeline Corporation
ATTENTION: Mr. Darrell L. Gillen
P. O. Box 8900
Salt Lake City, Utah, 84108-0900

Re: Application for approval of 7th,
8th, 9th, and 10th Expanded
Participating areas for the
Dakota Formation, San Juan 30-5
Unit Rio Arriba County, New
Mexico

Gentlemen:

This office is in receipt of your letter of June 25, 1987, requesting approval of the above captioned expanded participating areas. The Commissioner of Public Lands concurs with the Bureau of Land Management and has this date also approved the Seventh, Amended Eighth, Ninth and Tenth Expanded Participating Areas for the Dakota Formation.

The Seventh revision is effective September 1, 1981 and is described as All Sec. 5-30N-5W containing 639.00 acres. This revision is predicated upon the successful completion of the Unit Well No. 79.

The Amended Eighth revision is effective October 1, 1987, and is described as the E/2 Sec. 22, W/2 Sec. 23, Lots 1, 2, 3, 4, W/2E/2 Sec. 36, Township 30 North, Range 5 West, containing 860.76 acres. This revision is predicated upon the successful completion of the Unit Well Nos. 77 and 83.

The Ninth revision is effective April 1, 1983 and is described as Lots 8, 9, 10, 11, S/2N/2 of Section 6-30N-5W containing 319.12 acres. This revision is predicated upon the successful completion of the Unit Well No. 80.

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Northwest Pipeline Corporation
August 12, 1987
page 2

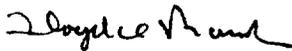
The Tenth revision is effective June 1, 1983, and is described as the N/2 of Section 26-30N-5W, containing 320.00 acres. This revision is predicted upon the successful completion of the Unit Well No. 93.

If we may be of further help please do not hesitate to call on us.

Very truly yours,

W. R. HUMPHRIES

COMMISSIONER OF PUBLIC LANDS

BY: 
FLOYD D. FRANDO, Director
Oil and Gas Division
(505) 827-5744

WRH/FOP/pm
encls.

cc: OGD-Santa Fe New Mexico
BLM-Albuquerque, New Mexico, Attn: Mr. Robert Kent
Gulram
OGAD

NORTHWEST PIPELINE CORPORATION 
ONE OF THE WILLIAMS COMPANIES

LAND DEPARTMENT

July 27, 1987

P.O. BOX 8900
SALT LAKE CITY, UTAH 84108-0900
801-584-6669
801-584-7215

Assistant District Manager, Minerals
Bureau of Land Management
425 Montano N.E.
Albuquerque, NM 87107

State of New Mexico
Commissioner of Public Lands
Attention: Mr. Floyd O. Prando
P.O. Box 1148
Santa Fe, NM 87501

State of New Mexico
Oil Conservation Division
Attention: Mr. William J. LeMay
P.O. Box 2088
Santa Fe, NM 87501

Re: San Juan 30-5 Unit #14-08-001-346
Rio Arriba County, New Mexico
NOTICE OF COMPLETION OF ADDITIONAL WELLS
Dakota Formation

Gentlemen:

Pursuant to the provisions of Section 11(a) of the San Juan 30-5 Unit Agreement, Northwest Pipeline Corporation as Unit Operator has determined that the following described wells are capable of producing unitized substances in paying quantities from the Dakota formation.

The well data is as follows:

The San Juan 30-5 Unit #87 well is located 830 feet from the South line and 1070 feet from the West line, Section 5, Township 30 North, Range 5 West, N.M.P.M., Rio Arriba County, New Mexico. This well was spudded on March 8, 1983. The Dakota formation was completed on April 3, 1983. The Dakota formation was perforated with 1 shot per foot over the following intervals:

7780' - 7801' and 7826' - 7830'

a total of 27 holes were shot.

These perforations were fractured with 120,500 gallons pad water carrying 60,000 pounds of 40/60 sand and 5,000 pounds of 20/40 sand. The well was tested on April 19, 1983 using a positive choke in a three-hour test. A flow rate of 3425 MCFD was measured with a calculated AOF of 3777 MCFD. The ISIP was measured at 2562 psig.

Bureau of Land Management
Commissioner of Public Lands
Oil Conservation Commission
July 21 1987
Page 2

The San Juan 30-5 Unit #90 well is located 1535 feet from the North line and 1120 feet from the East line of Section 22, Township 30 North, Range 5 West, N.M.P.M., Rio Arriba County, New Mexico. The well was spudded on November 2, 1983. The Dakota formation was completed on November 26, 1983. The Dakota formation was perforated with 1 shot per foot over the following intervals:

8002' - 8028' and 8046' - 8050'

a total of 32 holes were shot.

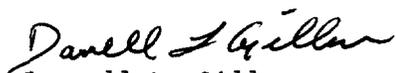
The formation was treated and sand water fractured using 2506 bbls of treated fluid carrying 60,000 pounds of 40/60 sand and 10,000 pounds of 20/40 sand. On December 19, 1983, the well was tested for three hours using a positive choke. During this test, the well produced at a rate of 3602 MCFD with a light mist of water. Both the SITP and the SICP were 2645 psig. The calculated AOF was 3982 MCFD.

Since these wells were drilled within the existing Dakota Participating Area, the Participating Area is not enlarged by virtue of these commercial wells, and the percentages of participation remain the same.

If these determinations meet with your approval, please so indicate such approval in the space provided and return an approved copy for our files. Copies of this letter are being sent to the Working Interest Owners shown on the attached sheet.

Sincerely,

NORTHWEST PIPELINE CORPORATION



Darrell L. Gillen
Supervisor, Land/NGPA

/sb
2064-30

cc: Working Interest Owners
K.J. Stracke 10329
W.O. Curtis 10329
L.G. Loving 10496
C.N. Potter 10334
L.G. Eaton 10333
M.H. Johnson 10329
W.S. West 10329
R.P. Gregory 10496
H.E. Hanson 10334

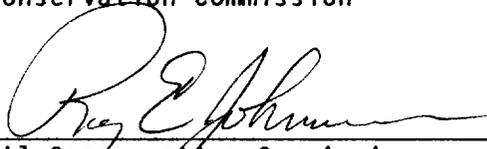
Bureau of Land Management
Commissioner of Public Lands
Oil Conservation Commission
July 21 1987
Page 3

Approved: _____
Assistant District Manager, Minerals
Bureau of Land Management
Subject to like approval by Commissioner of
Public Lands and Oil Conservation Commission

Date: _____

Approved: _____
Commissioner of Public Lands
Subject to like approval by Assistant
District Manager, Minerals and Oil
Conservation Commission

Date: _____

Approved:  _____
Oil Conservation Commission
Subject to like approval by Assistant
District Manager, Minerals and Commissioner
of Public Lands

Date: 8-3-87

The foregoing is the approval of Notice of Completion of Additional Wells, San Juan 30-5 Well No. 87 Dakota and San Juan 30-5 Well No. 90 Dakota.

WORKING INTEREST OWNERS

Phillips Petroleum Company
Attention: Dave S. Smith
8055 E. Tufts Avenue Parkway
Denver, CO 80237

Amoco Production Company
Western Division, Production Manager
1670 Broadway
Denver, CO 80202

Texaco, Inc.
Manager, Petroleum Engineering
P.O. Box 2100
Denver, CO 80201

LAND DEPARTMENT

464-86

P.O. BOX 8900
SALT LAKE CITY, UTAH 84108-0900
801-584-6669
801-584-7215

July 20, 1987

Assistant District Manager, Minerals
Bureau of Land Management
425 Montano N.E.
Albuquerque, NM 87107

State of New Mexico
Commissioner of Public Lands
Attn: Mr. Floyd O. Prando
P. O. Box 1148
Santa Fe, NM 87501

State of New Mexico
Oil Conservation Division
Attn: Mr. William J. LeMay
P. O. Box 2088
Santa Fe, NM 87501

Re: San Juan 30-5 Unit #14-08-001-346
Rio Arriba County, New Mexico
NOTICE OF COMPLETION OF NON-COMMERCIAL WELL
Dakota Formation

Gentlemen:

Pursuant to the provisions of Section 11(a) of the San Juan 30-5 Unit Agreement, Northwest Pipeline, as Unit Operator, has determined that the following described well is not capable of producing unitized substances in paying quantities from the Dakota formation.

The well data is as follows:

The San Juan 30-5 Unit #102 well is located 2220 feet from the West line 1970 feet from the South line of section 34, Township 30 North, Range 5 West, N.M.P.M., Rio Arriba County, New Mexico. The Dakota formation was completed on September 6, 1984. The Dakota formation was perforated with a total of 14 holes at the following depths:

8192', 8194', 8195', 8196', 8197'
8226', 8227', 8228', 8229', 8230'
8240', 8241', 8242', 8243'

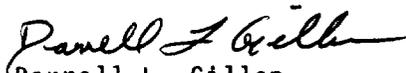
Bureau of Land Management
Commissioner of Public Lands
Oil Conservation Commission
July 20, 1987
Page 2

These perforations were treated with 92,459 pounds of 20/40 sand and 50,000 pounds of 40/60 sand suspended in slick water. On September 21, 1984 a 3-hour flow test was performed on the commingled Gallup/Dakota production. The well was shut in for 15 days prior to this test. During the test the well produced 370 Mcf of dry gas through a two inch I.D. flow line with a .75 inch choke. The flowing tubing pressure was 143 psig with a flowing casing pressure of 572 psig. Since initial delivery on December 12, 1985, the well has produced 1,119 Mcf of dry gas and has a producing rate of 29 Mcf/D as of May 1987.

If this determination meets with your approval, please so indicate such approval in the space provided and return an approved copy for our files. Copies of this letter are being sent to the Working Interest Owners shown on the attached sheet.

Sincerely,

NORTHWEST PIPELINE CORPORATION


Darrell L. Gillen
Supervisor, Land/NGPA

/sb
2064-6

cc: Working Interest Owners
K. J. Stracke
W. O. Curtis
W. S. West
L. G. Loving
C. N. Potter
L. G. Eaton
M. H. Johnson
R. P. Gregory

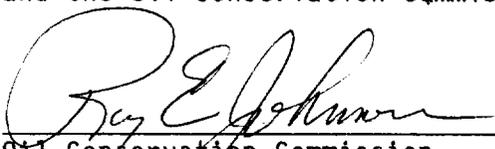
Bureau of Land Management
Commissioner of Public Lands
Oil Conservation Commission
July 20, 1987
Page 3

APPROVED: _____
Assistant District Manager, Minerals,
Bureau of Land Management
Subject to like approval by the
Commissioner of Public Lands
and the Oil Conservation Commission

DATE _____

APPROVED: _____
Commissioner of Public Lands
Subject to like approval by
the Assistant District Manager, Minerals,
and the Oil Conservation Commission

DATE _____

APPROVED:  _____
Oil Conservation Commission
Subject to like approval by the
Assistant District Manager, Minerals,
and the Commissioner of Public Lands

DATE 8-3-87

The foregoing is for the approval of Notice of Completion of Non-Commercial
Well S.J. 30-5 Well No. 102 Dakota.

WORKING INTEREST OWNERS

Phillips Petroleum Company
Attention: Dave S. Smith
8055 E. Tufts Avenue Parkway
Denver, CO 80237

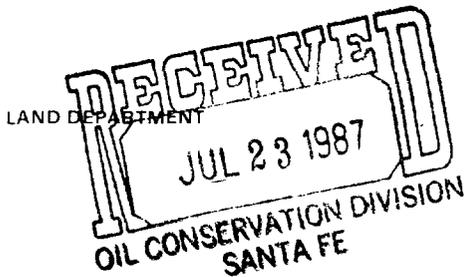
Amoco Production Company
Western Division, Production Manager
1670 Broadway
Denver, CO 80202

Texaco, Inc.
Manager, Petroleum Engineering
P. O. Box 2100
Denver, CO 80201

Meridian Oil
Land Department
P. O. Box 4289
Farmington, NM 87499

0043t

NORTHWEST PIPELINE CORPORATION
 ONE OF THE WILLIAMS COMPANIES 



July 17, 1987

P.O. BOX 8900
 SALT LAKE CITY, UTAH 84108-0900
 801-584-6669
 801-584-7215

Assistant District Manager, Minerals
 Bureau of Land Management
 425 Montano N.E.
 Albuquerque, New Mexico 87107

State of New Mexico
 Commissioner of Public Lands
 Attention: Mr. Floyd O. Prando
 P. O. Box 1148
 Santa Fe, New Mexico 87501

State of New Mexico
 Oil Conservation Division
 Attention: Mr. William J. LeMay
 P. O. Box 2088
 Santa Fe, New Mexico 87501

Re: San Juan 30-5 Unit #14-08-001-346
 Rio Arriba County, New Mexico

APPROVAL OF THE SEVENTH EXPANDED PARTICIPATING AREA

Dakota Formation
 Effective September 1, 1981

APPROVAL OF THE AMENDED EIGHTH EXPANDED PARTICIPATING AREA

Dakota Formation
 Effective October 1, 1981

APPROVAL OF THE NINTH EXPANDED PARTICIPATING AREA

Dakota Formation
 Effective April 1, 1983

APPROVAL OF THE TENTH EXPANDED PARTICIPATING AREA

Dakota Formation
 Effective June 1, 1983

Gentlemen:

The referenced approvals of the Seventh, Amended Eighth, Ninth and Tenth Expanded Participating Areas in the San Juan 30-5 Dakota Unit have been approved by the Bureau of Land Management on July 14, 1987 and the Oil Conservation Commission on July 8, 1987.

Bureau of Land Management
Commissioner of Public Lands
Oil Conservation Division
July 17, 1987
Page 2

Copies of this letter are being sent to the Working Interest Owners shown on the attached sheet.

Sincerely,


Darrell L. Gillen
Land/NGPA Supervisor

Attachment

cc: Working Interest Owners
K. J. Stracke
W. O. Curtis
L. G. Loving
C. N. Potter
L. G. Eaton
M. H. Johnson
W. S. West
H. E. Hanson

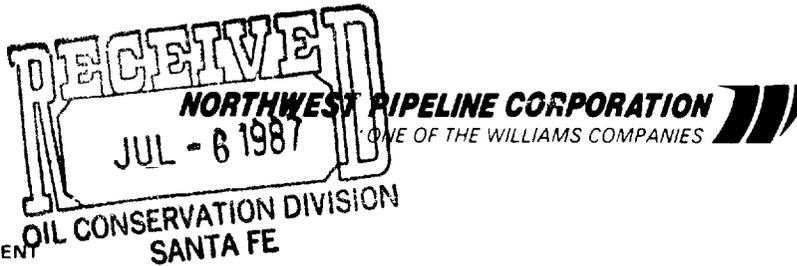
WORKING INTEREST OWNERS

Phillips Petroleum Company
Attention: Dave S. Smith
8055 E. Tufts Avenue Parkway
Denver, CO 80237

Amoco Production Company
Western Division, Production Manager
1670 Broadway
Denver, CO 80202

Texaco, Inc.
Manager, Petroleum Engineering
P.O. Box 2100
Denver, CO 80201

#417



P.O. BOX 8900
 SALT LAKE CITY, UTAH 84108-0900
 801 584-6669
 801 584 7215

June 25, 1987

3048t

Assistant District Manager, Minerals
 Bureau of Land Management
 425 Montano N.E.
 Albuquerque, New Mexico 87107

*D -
 Unit letter
 The
 Ry*

State of New Mexico
 Commissioner of Public Lands
 Attention: Mr. Floyd O. Prando
 P.O. Box 1148
 Santa Fe, New Mexico 87501

State of New Mexico
 Oil Conservation Division
 Attention: Mr. William J. LeMay
 P.O. Box 2088
 Santa Fe, New Mexico 87501

Re: San Juan 30-5 Unit #14-08-001-346
 Rio Arriba County, New Mexico

APPLICATION FOR APPROVAL OF THE SEVENTH EXPANDED PARTICIPATING AREA
 Dakota Formation
 Effective September 1, 1981

APPLICATION FOR APPROVAL OF THE AMENDED EIGHTH EXPANDED PARTICIPATING AREA
 Dakota Formation
 Effective October 1, 1981

APPLICATION FOR APPROVAL OF THE NINTH EXPANDED PARTICIPATING AREA
 Dakota Formation
 Effective April 1, 1983

APPLICATION FOR APPROVAL OF THE TENTH EXPANDED PARTICIPATING AREA
 Dakota Formation
 Effective June 1, 1983

Gentlemen:

Pursuant to the provisions of Section 11(b) of the San Juan 30-5 Unit Agreement #14-08-001-346, approved November 7, 1952, NORTHWEST PIPELINE CORPORATION, as Unit Operator, hereby respectfully requests approval of the Seventh, Amended Eighth, Ninth, and Tenth Expanded Participating Areas for the Dakota Formation.

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These proposed revisions of the participating area for the Dakota Formation are predicated upon the determination by Northwest Pipeline Corporation, as Unit Operator, that the following San Juan 30-5 Unit Dakota wells, which were completed outside the limits of the existing Dakota Participating Area, are capable of producing unitized substances in paying quantities for the Dakota Formation.

SEVENTH EXPANDED PARTICIPATING AREA - Effective September 1, 1981

<u>Description of Lands</u>	<u>No. of Acres</u>
<u>Township 30 North, Range 5 West, N.M.P.M.</u> Section 5: All	639.00

The well data is as follows:

The San Juan 30-5 Unit well No. 79 is located 1000 feet from the North line and 1720 feet from the East line, Section 5, Township 30 North, Range 5 West, N.M.P.M., Rio Arriba County, New Mexico. This well was spudded on April 20, 1981 and completed on September 3, 1981. The Dakota Formation was perforated with 19 holes between the following depths:

7932' and 8028'

These perforations were treated with 1500 gallons HCl and fractured with 70,000 pounds of 40/60 sand, 10,000 pounds of 20/40 sand, and 20,000 gallons of pad water. This well has one tubing string. The well was shut in with a SIPT of 2492 psig and SIPC of 2473 psig. On September 3, 1981 the well was tested, and after flowing for three hours through a 3/4-inch variable choke on the 2 3/8-inch tubing, the well gauged 2366 Mcf/d with a calculated AOF of 2549 Mcf/d.

AMENDED EIGHTH EXPANDED PARTICIPATING AREA - Effective October 1, 1981

The BLM has determined that the Dakota Production from the San Juan 30-5 Unit well No. 77, located in the E/2 of Section 36, Township 30 North, Range 5 West, previously submitted as the Initial "B" Dakota Participating Area, is part of the existing Dakota pool and should be included with the existing Dakota Participating Area. Therefore, the San Juan 30-5 Unit well No. 77 will enlarge the Eighth Expanded Participating Area by 220.76 acres, as indicated below.

<u>Description of Additional Lands</u>	<u>No. of Acres</u>
<u>Township 30 North, Range 5 West, N.M.P.M.</u> Section 36: Lots 1, 2, 3, 4, W/2E/2	220.76

<u>Description of Existing Lands</u>	<u>No. of Acres</u>
<u>Township 30 North, Range 5 West, N.M.P.M.</u> Section 22: E/2 Section 23: W/2	640.00

The well data is as follows:

The San Juan 30-5 Unit well No. 77 is located 1640 feet from the North line and 870 feet from the East line, Section 36, Township 30 North, Range 5 West, N.M.P.M., Rio Arriba County, New Mexico. This well was spudded on May 14 1981. The Dakota Formation was completed on October 23, 1981. This formation was perforated with 17 holes between the following depths:

8618' to 8634'

These perforations were fractured with 20,000 gallons of pad water carrying 40,000 pounds of 40/60 sand and 10,000 pounds of 20/40 sand. This well was initially tested on October 23, 1981 using a positive choke in a three-hour test. The SITP was 2791 psig with a flowing tubing pressure of 143 psig producing at a rate of 1927 Mcf/d. The calculated AOF was 2019 Mcf/d.

The San Juan 30-5 Unit well No. 83 is located 1480 feet from the South line and 950 feet from the West line, Section 23, Township 30 North, Range 5 West, N.M.P.M., Rio Arriba County, New Mexico. This well was spudded on May 6, 1981 and completed on October 13, 1981. The Dakota Formation was perforated with 12 holes between the following depths:

8092' to 8184'

These perforations were fractured with 20,000 gallons of pad water and 22,600 pounds of 40/60 sand. This well has one tubing string. The well was shut in with a SIPT of 2720 psig and SIPC of 2731 psig. On October 13, 1981 the well was tested, and after flowing for three hours through a 3/4-inch variable choke on the 2 3/8-inch tubing, the well gauged 3407 Mcf/d with a calculated AOF of 3804 Mcf/d.

NINTH EXPANDED PARTICIPATING AREA - Effective April 1, 1983

<u>Description of Lands</u>	<u>No. of Acres</u>
<u>Township 30 North, Range 5 West, N.M.P.M.</u> Section 6: Lots 8, 9, 10, 11, S/2N/2	319.12

The well data is as follows:

The San Juan 30-5 Unit well No. 80 is located 800 feet from the South line and 800 feet from the East line, Section 6, Township 30 North, Range 5 West, N.M.P.M., Rio Arriba County, New Mexico. This well was spudded on January 15, 1983. The Dakota Formation was completed on March 21, 1983. The Dakota Formation was perforated with 21 holes at the following depths:

7884', 7886', 7888', 7890', 7892', 7894', 7896',
7898', 7900', 7902', 7904', 7931', 7933', 7935',
7937', 7939', 7941', 7943', 7945', 7947', 7949'

These perforations were fractured with 121,400 gallons of pad water carrying 60,000 pounds of 40/60 sand. The well was tested on April 8, 1983 using a positive choke in a three-hour test. The well was tested at a 2429 Mcf/d flow rate with a calculated AOF of 2518 Mcf/d. The ISIP was measured at 2695 psig.

TENTH EXPANDED PARTICIPATING AREA - Effective June 1, 1983

<u>Description of Lands</u>	<u>No. of Acres</u>
<u>Township 30 North, Range 5 West, N.M.P.M.</u> Section 26: N/2	320.00

The well data is as follows:

The San Juan 30-5 Unit well No. 93 is located 790 feet from the North line and 890 feet from the East line, Section 26, Township 30 North, Range 5 West, N.M.P.M., Rio Arriba County, New Mexico. This well was spudded on April 19, 1983. The Dakota Formation was completed on May 26, 1983. The Dakota Formation was perforated with 16 holes between the following depths:

8411' to 8423' and 8447' to 8449'

These perforations were fractured with 156,000 gallons of pad water carrying 40,000 pounds of 40/60 sand and 32,860 pounds of 20/40 sand. The well was tested on June 28, 1983 using a positive choke in a three-hour test. A flow rate of 1065 Mcf/d was measured with a calculated AOF of 1082 Mcf/d. The ISIP was measured at 2734 psig.

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In support of these applications, the following listed Exhibits are made a part thereof:

Exhibit "A"

Ownership maps reflecting the boundaries of the Unit and the Proposed Seventh through Tenth Expansions of the Participating Area of the Dakota Formation within the San Juan 30-5 Unit.

Exhibit "B"

Geological Reports on the above cited Participating Areas of the Dakota Formation within the San Juan 30-5 Unit.

Exhibit "C"

Figure No. 1: San Juan 30-5 Dakota Structure Map
Figure No. 2: San Juan 30-5 Dakota Isopach Map

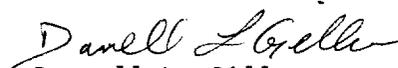
Exhibit "D"

Table No. 1: Schedule of San Juan 30-5 Unit Dakota Production

Attached are Schedules VIII, IX, X, and XI showing the proposed expansions cited above for the Dakota Formation in the San Juan 30-5 Unit Area. These Schedules describe the participating area, show the percentage of unitized substances allocated to each unitized tract, and the percentage of ownership in the tracts.

If these applications referenced above meet with your approval, please indicate such approval in the space provided on the attached sheet and return an approved copy for our files.

Sincerely,


Darrell L. Gillen
Land/NGPA Supervisor

DLG:sb

Attachments

cc: K.J. Stracke 10329
W.O. Curtis 10329
L.G. Loving 10496
C.N. Potter 10334
L.G. Eaton 10333
M.H. Johnson 10329
W.S. West 10329

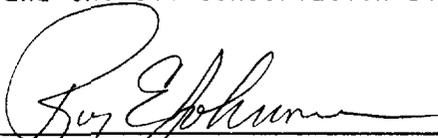
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APPROVED _____
Assistant Director Manager, Minerals
Subject to like approval by the
Commissioner of Public Lands and the
Oil Conservation Division

DATE _____

APPROVED _____
Commissioner of Public Lands
Subject to like approval by the
Assistant District Manager, Minerals
and the Oil Conservation Division

DATE _____

APPROVED  _____
Oil Conservation Division
Subject to like approval by the
Assistant District Manager, Minerals
and the Commissioner of Public Lands

DATE 7-7-87

The foregoing are approvals for the SEVENTH through TENTH EXPANDED PARTICIPATING AREAS Dakota Formation in the San Juan 30-5 Unit.

WORKING INTEREST OWNERS

Phillips Petroleum Company
Attention: Dave S. Smith
8055 E. Tufts Avenue Parkway
Denver, CO 80237

Amoco Production Company
Western Division, Production Manager
1670 Broadway
Denver, CO 80202

Texaco, Inc.
Manager, Petroleum Engineering
P.O. Box 2100
Denver, CO 80201

SCHEDULE VIII
SEVENTH EXPANDED PARTICIPATING AREA FOR THE DAKOTA FORMATION
SAN JUAN 30-5 UNIT AREA

<u>SERIAL NUMBER</u>	<u>DESCRIPTION</u>	<u>NUMBER OF ACRES</u>	<u>DRILLING BLOCK OWNERSHIP</u>	<u>PERCENTAGE</u>	<u>PERCENTAGE COMMITTED</u>	<u>PRESENT ACTUAL PARTICIPATION</u>
<u>TRACT 4</u>						
SF-078739	<u>T-30-N, R-5-W</u> Sec. 21: E/2, SW/4	800.00	Royalty	12.500000%	12.500000%	11.365251%
			Working Interest			
			Phillips Petroleum Co.	84.500000%	84.500000%	
			ORRI	3.000000%	3.000000%	
			Total	<u>100.000000%</u>	<u>100.000000%</u>	
	<u>T-30-N, R-5-W</u> Sec. 22: W/2		Royalty	12.500000%	12.500000%	
			Working Interest			
			Phillips Petroleum Co.	85.000000%	85.000000%	
			ORRI	2.500000%	2.500000%	
			Total	<u>100.000000%</u>	<u>100.000000%</u>	
<u>TRACT 5</u>						
SF-078740	<u>T-30-N, R-5-W</u> Sec. 20: E/2	320.00	Royalty	12.500000%	12.500000%	4.546100%
			Working Interest			
			Phillips Petroleum Co.	82.500000%	82.500000%	
			ORRI	5.000000%	5.000000%	
			Total	<u>100.000000%</u>	<u>100.000000%</u>	
<u>TRACT 6</u>						
SF-078994	<u>T-30-N, R-5-W</u> Sec. 15: SW/4, SW/4NW/4 Sec. 17: SW/4, S/2NW/4 Sec. 18: E/2	760.00	Royalty	12.500000%	12.500000%	10.796988%
			Working Interest			
			Phillips Petroleum Co.	82.500000%	82.500000%	
			ORRI	5.000000%	5.000000%	
			Total	<u>100.000000%</u>	<u>100.000000%</u>	

SCHEDULE VIII
SEVENTH EXPANDED PARTICIPATING AREA FOR THE DAKOTA FORMATION
SAN JUAN 30-5 UNIT AREA

<u>SERIAL NUMBER</u>	<u>DESCRIPTION</u>	<u>NUMBER OF ACRES</u>	<u>DRILLING BLOCK OWNERSHIP</u>	<u>PERCENTAGE</u>	<u>PERCENTAGE COMMITTED</u>	<u>PRESENT ACTUAL PARTICIPATION</u>
<u>TRACT 7</u>						
SF-078997	T-30-N, R-5-W Sec. 6: S/2SE/4, SE/4SW/4 Sec. 7: N/2, NW/4SW/4, N/2SE/4, SE/4SE/4 Sec. 8: NW/4, N/2SW/4 Sec. 9: A11 Sec. 10: A11 Sec. 15: E/2, E/2NW/4, NW/4NW/4	2560.00	Royalty Working Interest Phillips Petroleum Co. ORRI Total	12.500000% 82.500000% 5.000000% <u>100.000000%</u>	12.500000% 82.500000% 5.000000% <u>100.000000%</u>	36.368803%
<u>TRACT 11</u>						
SF-080066	T-30-N, R-5-W Sec. 5: A11 Sec. 6: N/2S/2, SW/4SW/4	839.00	Royalty Working Interest Phillips Petroleum Co. ORRI Total	12.500000% 82.500000% 5.000000% <u>100.000000%</u>	12.500000% 82.500000% 5.000000% <u>100.000000%</u>	11.919307%
<u>TRACT 17</u>						
E-347-41	T-30-N, R-5-W Sec. 16: NE/4	160.00	Royalty Working Interest Amoco Production Co. ORRI Total	12.500000% 87.500000% 00.000000% <u>100.000000%</u>	12.500000% 87.500000% 00.000000% <u>100.000000%</u>	2.273050%
<u>TRACT 17-A</u>						
E-347-40	T-30-N, R-5-W Sec. 16: N/2NW/4	80.00	Royalty Working Interest Texaco ORRI Total	12.500000% 82.750000% 4.750000% <u>100.000000%</u>	12.500000% 82.750000% 4.750000% <u>100.000000%</u>	1.136525%

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SCHEDULE VIII
SEVENTH EXPANDED PARTICIPATING AREA FOR THE DAKOTA FORMATION
SAN JUAN 30-5 UNIT AREA

<u>SERIAL NUMBER</u>	<u>DESCRIPTION</u>	<u>NUMBER OF ACRES</u>	<u>DRILLING BLOCK OWNERSHIP</u>	<u>PERCENTAGE</u>	<u>PERCENTAGE COMMITTED</u>	<u>PRESENT ACTUAL PARTICIPATION</u>
<u>TRACT 17-D</u>						
E-347-41	<u>T-30-N, R-5-W</u> Sec. 16: S/2NW/4	80.00	Royalty Working Interest Amoco Production Co. ORRI Total	12.500000% 82.500000% 5.000000% <u>100.000000%</u>	12.500000% 82.500000% 5.000000% <u>100.000000%</u>	1.136525%
<u>TRACT 17-F</u>						
E-347-39	<u>T-30-N, R-5-W</u> Sec. 16: S/2	320.00	Royalty Working Interest Phillips Petroleum Co. ORRI Total	12.500000% 82.500000% 5.000000% <u>100.000000%</u>	12.500000% 82.500000% 5.000000% <u>100.000000%</u>	4.546100%
<u>TRACT 18</u>						
Fee	<u>T-30-N, R-5-W</u> Sec. 8: E/2	320.00	Royalty Working Interest Amoco Production Co. ORRI Total	12.500000% 87.500000% 00.000000% <u>100.000000%</u>	12.500000% 87.500000% 00.000000% <u>100.000000%</u>	4.546100%
<u>TRACT 19</u>						
Fee	<u>T-30-N, R-5-W</u> Sec. 7: S/2SW/4, NE/4SW/4, SW/4SE/4	160.00	Royalty Working Interest Amoco Production Co. ORRI Total	12.500000% 87.500000% 00.000000% <u>100.000000%</u>	12.500000% 87.500000% 00.000000% <u>100.000000%</u>	2.273050%
<u>TRACT 20</u>						
Fee	<u>T-30-N, R-5-W</u> Sec. 17: NE/4	160.00	Royalty Working Interest Amoco Production Co. ORRI Total	12.500000% 87.500000% 00.000000% <u>100.000000%</u>	12.500000% 87.500000% 00.000000% <u>100.000000%</u>	2.273050%

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SCHEDULE VIII
SEVENTH EXPANDED PARTICIPATING AREA FOR THE DAKOTA FORMATION
SAN JUAN 30-5 UNIT AREA

<u>SERIAL NUMBER</u>	<u>DESCRIPTION</u>	<u>NUMBER OF ACRES</u>	<u>DRILLING BLOCK OWNERSHIP</u>	<u>PERCENTAGE</u>	<u>PERCENTAGE COMMITTED</u>	<u>PRESENT ACTUAL PARTICIPATION</u>
<u>TRACT 21</u>						
Fee	<u>T-30-N, R-5-W</u> Sec. 17: SE/4	160.00	Royalty Working Interest Amoco Production Co. ORRI Total	12.500000% 87.500000% 00.000000% <u>100.000000%</u>	12.500000% 87.500000% 00.000000% <u>100.000000%</u>	2.273050%
<u>TRACT 22</u>						
Fee	<u>T-30-N, R-5-W</u> Sec. 21: NW/4	160.00	Royalty Working Interest Amoco Production Co. ORRI Total	12.500000% 87.500000% 00.000000% <u>100.000000%</u>	12.500000% 87.500000% 00.000000% <u>100.000000%</u>	2.273050%
<u>TRACT 25</u>						
Fee	<u>T-30-N, R-5-W</u> Sec. 8: S/2SW/4 Sec. 17: N/2NW/4 (less the 4 acres in NW/4NW/4)	156.00	Royalty Working Interest Amoco Production Co. Phillips Petroleum Co. ORRI Total	12.500000% 43.750000% 43.750000% 00.000000% <u>100.000000%</u>	12.500000% 43.750000% 43.750000% 00.000000% <u>100.000000%</u>	2.216224%
<u>TRACT 25-A</u>						
Fee	<u>T-30-N, R-5-W</u> Sec. 17: a tract of land 1200' long by 450' wide in NW/4NW/4	4.00	Royalty Working Interest Amoco Production Co. Phillips Petroleum Co. ORRI Total	12.500000% 43.750000% 43.750000% 00.000000% <u>100.000000%</u>	12.500000% 43.750000% 43.750000% 00.000000% <u>100.000000%</u>	0.056827%

SCHEDULE VIII
SEVENTH EXPANDED PARTICIPATING AREA FOR THE DAKOTA FORMATION
SAN JUAN 30-5 UNIT AREA

R E C A P I T U L A T I O N

Township 30 North, Range 5 West, N.M.P.M.

Section 6: S/2

Sections 5, 7, 8, 9, 10, 15, 16, 17, 21: All

Sections 18, 20: E/2

Section 22: W/2

Total Number of Acres in Participating Area: 7,039.00

Total Number of Acres Committed in Participating Area: 7,039.00

SCHEDULE IX
EIGHTH EXPANDED PARTICIPATING AREA FOR THE DAKOTA FORMATION
SAN JUAN 30-5 UNIT AREA

<u>SERIAL NUMBER</u>	<u>DESCRIPTION</u>	<u>NUMBER OF ACRES</u>	<u>DRILLING BLOCK OWNERSHIP</u>	<u>PERCENTAGE</u>	<u>PERCENTAGE COMMITTED</u>	<u>PRESENT ACTUAL PARTICIPATION</u>
<u>TRACT 3</u>						
SF-078738	<u>T-30-N, R-5-W</u> Sec. 23: W/2	320.00	Royalty Working Interest Phillips Petroleum Co. ORRI Total	12.500000% 82.500000% 5.000000% <u>100.000000%</u>	12.500000% 82.500000% 5.000000% <u>100.000000%</u>	4.050756%
<u>TRACT 4</u>						
SF-078739	<u>T-30-N, R-5-W</u> Sec. 21: E/2, SW/4 Sec. 22: E/2	1120.00	Royalty Working Interest Phillips Petroleum Co. ORRI Total	12.500000% 84.500000% 3.000000% <u>100.000000%</u>	12.500000% 84.500000% 3.000000% <u>100.000000%</u>	14.177646%
	<u>T-30-N, R-5-W</u> Sec. 22: W/2		Royalty Working Interest Phillips Petroleum Co. ORRI Total	12.500000% 85.000000% 2.500000% <u>100.000000%</u>	12.500000% 85.000000% 2.500000% <u>100.000000%</u>	
<u>TRACT 5</u>						
SF-078740	<u>T-30-N, R-5-W</u> Sec. 20: E/2	320.00	Royalty Working Interest Phillips Petroleum Co. ORRI Total	12.500000% 82.500000% 5.000000% <u>100.000000%</u>	12.500000% 82.500000% 5.000000% <u>100.000000%</u>	4.050756%
<u>TRACT 6</u>						
SF-078994	<u>T-30-N, R-5-W</u> Sec. 15: SW/4, SW/4NW/4 Sec. 17: SW/4, S/2NW/4 Sec. 18: E/2	760.00	Royalty Working Interest Phillips Petroleum Co. ORRI Total	12.500000% 82.500000% 5.000000% <u>100.000000%</u>	12.500000% 82.500000% 5.000000% <u>100.000000%</u>	9.620545%

SCHEDULE IX
EIGHTH EXPANDED PARTICIPATING AREA FOR THE DAKOTA FORMATION
SAN JUAN 30-5 UNIT AREA

<u>SERIAL NUMBER</u>	<u>DESCRIPTION</u>	<u>NUMBER OF ACRES</u>	<u>DRILLING BLOCK OWNERSHIP</u>	<u>PERCENTAGE</u>	<u>PERCENTAGE COMMITTED</u>	<u>PRESENT ACTUAL PARTICIPATION</u>
<u>TRACT 7</u>						
SF-078997	<u>T-30-N, R-5-W</u> Sec. 6: S/2SE/4, SE/4SW/4 Sec. 7: N/2, NW/4SW/4, N/2SE/4, SE/4SE/4 Sec. 8: NW/4, N/2W/4 Sec. 9: All Sec. 10: All Sec. 15: E/2, E/2NW/4, NW/4NW/4	2560.00	Royalty Working Interest Phillips Petroleum Co. ORRI Total	12.500000% 82.500000% 5.000000% <u>100.000000%</u>	12.500000% 82.500000% 5.000000% <u>100.000000%</u>	32.406048%
<u>TRACT 11</u>						
SF-080066	<u>T-30-N, R-5-W</u> Sec. 5: All Sec. 6: N/2S/2, SW/4SW/4	839.00	Royalty Working Interest Phillips Petroleum Co. ORRI Total	12.500000% 82.500000% 5.000000% <u>100.000000%</u>	12.500000% 82.500000% 5.000000% <u>100.000000%</u>	10.620576%
<u>TRACT 17</u>						
E-347-41	<u>T-30-N, R-5-W</u> Sec. 16: NE/4	160.00	Royalty Working Interest Amoco Production Co. ORRI Total	12.500000% 87.500000% 00.000000% <u>100.000000%</u>	12.500000% 87.500000% 00.000000% <u>100.000000%</u>	2.025378%
<u>TRACT 17-A</u>						
E-347-40	<u>T-30-N, R-5-W</u> Sec. 16: N/2NW/4	80.00	Royalty Working Interest Texaco ORRI Total	12.500000% 82.750000% 4.750000% <u>100.000000%</u>	12.500000% 82.750000% 4.750000% <u>100.000000%</u>	1.012689%

Effective October 1, 1981

SCHEDULE IX
EIGHTH EXPANDED PARTICIPATING AREA FOR THE DAKOTA FORMATION
SAN JUAN 30-5 UNIT AREA

<u>SERIAL NUMBER</u>	<u>DESCRIPTION</u>	<u>NUMBER OF ACRES</u>	<u>DRILLING BLOCK OWNERSHIP</u>	<u>PERCENTAGE</u>	<u>PERCENTAGE COMMITTED</u>	<u>PRESENT ACTUAL PARTICIPATION</u>
<u>TRACT 17-D</u>						
E-347-41	<u>T-30-N, R-5-W</u> Sec. 16: S/2NW/4	80.00	Royalty Working Interest Amoco Production Co. ORRI Total	12.500000% 82.500000% 5.000000% <u>100.000000%</u>	12.500000% 82.500000% 5.000000% <u>100.000000%</u>	1.012689%
<u>TRACT 17-F</u>						
E-347-39	<u>T-30-N, R-5-W</u> Sec. 16: S/2 Sec. 36: Lots 1, 2, 3, 4, W/2E/2	540.76	Royalty Working Interest Phillips Petroleum Co. ORRI Total	12.500000% 82.500000% 5.000000% <u>100.000000%</u>	12.500000% 82.500000% 5.000000% <u>100.000000%</u>	6.845271%
<u>TRACT 18</u>						
Fee	<u>T-30-N, R-5-W</u> Sec. 8: E/2	320.00	Royalty Working Interest Amoco Production Co. ORRI Total	12.500000% 87.500000% 00.000000% <u>100.000000%</u>	12.500000% 87.500000% 00.000000% <u>100.000000%</u>	4.050756%

Effective October 1, 1981

SCHEDULE IX
EIGHTH EXPANDED PARTICIPATING AREA FOR THE DAKOTA FORMATION
SAN JUAN 30-5 UNIT AREA

<u>SERIAL NUMBER</u>	<u>DESCRIPTION</u>	<u>NUMBER OF ACRES</u>	<u>DRILLING BLOCK OWNERSHIP</u>	<u>PERCENTAGE</u>	<u>PERCENTAGE COMMITTED</u>	<u>PRESENT ACTUAL PARTICIPATION</u>
<u>TRACT 19</u>						
Fee	<u>T-30-N, R-5-W</u> Sec. 7: S/2SW/4, NE/4SW/4, SW/4SE/4	160.00	Royalty Working Interest Amoco Production Co. ORRI Total	12.500000% 87.500000% 00.000000% <u>100.000000%</u>	12.500000% 87.500000% 00.000000% <u>100.000000%</u>	2.025378%
<u>TRACT 20</u>						
Fee	<u>T-30-N, R-5-W</u> Sec. 17: NE/4	160.00	Royalty Working Interest Amoco Production Co. ORRI Total	12.500000% 87.500000% 00.000000% <u>100.000000%</u>	12.500000% 87.500000% 00.000000% <u>100.000000%</u>	2.025378%
<u>TRACT 21</u>						
Fee	<u>T-30-N, R-5-W</u> Sec. 17: SE/4	160.00	Royalty Working Interest Amoco Production Co. ORRI Total	12.500000% 87.500000% 00.000000% <u>100.000000%</u>	12.500000% 87.500000% 00.000000% <u>100.000000%</u>	2.025378%
<u>TRACT 22</u>						
Fee	<u>T-30-N, R-5-W</u> Sec. 21: NW/4	160.00	Royalty Working Interest Amoco Production Co. ORRI Total	12.500000% 87.500000% 00.000000% <u>100.000000%</u>	12.500000% 87.500000% 00.000000% <u>100.000000%</u>	2.025378%

Effective October 1, 1981

SCHEDULE IX
EIGHTH EXPANDED PARTICIPATING AREA FOR THE DAKOTA FORMATION
SAN JUAN 30-5 UNIT AREA

<u>SERIAL NUMBER</u>	<u>DESCRIPTION</u>	<u>NUMBER OF ACRES</u>	<u>DRILLING BLOCK OWNERSHIP</u>	<u>PERCENTAGE</u>	<u>PERCENTAGE COMMITTED</u>	<u>PRESENT ACTUAL PARTICIPATION</u>
<u>TRACT 25</u>						
Fee	T-30-N, R-5-W Sec. 8: S/2SW/4 Sec. 17: N/2NW/4 (less the 4 acres in NW/4NW/4)	156.00	Royalty Working Interest Amoco Production Co. Phillips Petroleum Co. ORRI Total	12.500000% 43.750000% 43.750000% <u>00.000000%</u> <u>100.000000%</u>	12.500000% 43.750000% 43.750000% <u>00.000000%</u> <u>100.000000%</u>	1.974744%
<u>TRACT 25-A</u>						
Fee	T-30-N, R-5-W Sec. 17: a tract of land 1200' long by 450' wide in NW/4NW/4	4.00	Royalty Working Interest Amoco Production Co. Phillips Petroleum Co. ORRI Total	12.500000% 43.750000% 43.750000% <u>00.000000%</u> <u>100.000000%</u>	12.500000% 43.750000% 43.750000% <u>00.000000%</u> <u>100.000000%</u>	0.050634%

SCHEDULE IX
EIGHTH EXPANDED PARTICIPATING AREA FOR THE DAKOTA FORMATION
SAN JUAN 30-5 UNIT AREA

RECAPITULATION

Township 30 North, Range 5 West, N.M.P.M.

Section 6: S/2

Sections 5, 7, 8, 9, 10, 15, 16, 17, 21, 22: All

Sections 18, 20: E/2

Section 23: W/2

Section 36: Lots 1, 2, 3, 4, W/2E/2

Total Number of Acres in Participating Area: 7,899.76

Total Number of Acres Committed in Participating Area: 7,899.76

SCHEDULE X
NINTH EXPANDED PARTICIPATING AREA FOR THE DAKOTA FORMATION
SAN JUAN 30-5 UNIT AREA

<u>SERIAL NUMBER</u>	<u>DESCRIPTION</u>	<u>NUMBER OF ACRES</u>	<u>DRILLING BLOCK OWNERSHIP</u>	<u>PERCENTAGE</u>	<u>PERCENTAGE COMMITTED</u>	<u>PRESENT ACTUAL PARTICIPATION</u>
<u>TRACT 3</u>						
SF-078738	<u>T-30-N, R-5-W</u> Sec. 23: W/2	320.00	Royalty Working Interest Phillips Petroleum Co. ORRI Total	12.500000% 82.500000% 5.000000% <u>100.000000%</u>	12.500000% 82.500000% 5.000000% <u>100.000000%</u>	3.893475%
<u>TRACT 4</u>						
SF-078739	<u>T-30-N, R-5-W</u> Sec. 21: E/2, SW/4 Sec. 22: E/2	1120.00	Royalty Working Interest Phillips Petroleum Co. ORRI Total	12.500000% 84.500000% 3.000000% <u>100.000000%</u>	12.500000% 84.500000% 3.000000% <u>100.000000%</u>	13.627161%
	<u>T-30-N, R-5-W</u> Sec. 22: W/2		Royalty Working Interest Phillips Petroleum Co. ORRI Total	12.500000% 85.000000% 2.500000% <u>100.000000%</u>	12.500000% 85.000000% 2.500000% <u>100.000000%</u>	
<u>TRACT 5</u>						
SF-078740	<u>T-30-N, R-5-W</u> Sec. 20: E/2	320.00	Royalty Working Interest Phillips Petroleum Co. ORRI Total	12.500000% 82.500000% 5.000000% <u>100.000000%</u>	12.500000% 82.500000% 5.000000% <u>100.000000%</u>	3.893475%
<u>TRACT 6</u>						
SF-078994	<u>T-30-N, R-5-W</u> Sec. 15: SW/4, SW/4NW/4 Sec. 17: SW/4, S/2NW/4 Sec. 18: E/2	760.00	Royalty Working Interest Phillips Petroleum Co. ORRI Total	12.500000% 82.500000% 5.000000% <u>100.000000%</u>	12.500000% 82.500000% 5.000000% <u>100.000000%</u>	9.247002%

Effective April 1, 1983

SCHEDULE X
NINTH EXPANDED PARTICIPATING AREA FOR THE DAKOTA FORMATION
SAN JUAN 30-5 UNIT AREA

<u>SERIAL NUMBER</u>	<u>DESCRIPTION</u>	<u>NUMBER OF ACRES</u>	<u>DRILLING BLOCK OWNERSHIP</u>	<u>PERCENTAGE</u>	<u>PERCENTAGE COMMITTED</u>	<u>PRESENT ACTUAL PARTICIPATION</u>
<u>TRACT 7</u>						
SF-078997	<u>T-30-N, R-5-W</u> Sec. 6: S/2SE/4, SE/4SW/4 Sec. 7: N/2, NW/4SW/4, N/2SE/4, SE/4SE/4 Sec. 8: NW/4, N/2SW/4 Sec. 9: All Sec. 10: All Sec. 15: E/2, E/2NW/4, NW/4NW/4	2560.00	Royalty Working Interest Phillips Petroleum Co. ORRI Total	12.500000% 82.500000% 5.000000% <u>100.000000%</u>	12.500000% 82.500000% 5.000000% <u>100.000000%</u>	31.147796%
<u>TRACT 11</u>						
SF-080066	<u>T-30-N, R-5-W</u> Sec. 5: All Sec. 6: Lots 8, 9, 10, 11, S/2N/2, N/2S/2, SW/4SW/4	1158.12	Royalty Working Interest Phillips Petroleum Co. ORRI Total	12.500000% 82.500000% 5.000000% <u>100.000000%</u>	12.500000% 82.500000% 5.000000% <u>100.000000%</u>	14.090971%
<u>TRACT 17</u>						
E-347-41	<u>T-30-N, R-5-W</u> Sec. 16: NE/4	160.00	Royalty Working Interest Amoco Production Co. ORRI Total	12.500000% 87.500000% 00.000000% <u>100.000000%</u>	12.500000% 87.500000% 00.000000% <u>100.000000%</u>	1.946737%
<u>TRACT 17-A</u>						
E-347-40	<u>T-30-N, R-5-W</u> Sec. 16: N/2NW/4	80.00	Royalty Working Interest Texaco ORRI Total	12.500000% 82.750000% 4.750000% <u>100.000000%</u>	12.500000% 82.750000% 4.750000% <u>100.000000%</u>	0.973369%

SCHEDULE X
NINTH EXPANDED PARTICIPATING AREA FOR THE DAKOTA FORMATION
SAN JUAN 30-5 UNIT AREA

<u>SERIAL NUMBER</u>	<u>DESCRIPTION</u>	<u>NUMBER OF ACRES</u>	<u>DRILLING BLOCK OWNERSHIP</u>	<u>PERCENTAGE</u>	<u>PERCENTAGE COMMITTED</u>	<u>PRESENT ACTUAL PARTICIPATION</u>
<u>TRACT 17-D</u>						
E-347-41	<u>T-30-N, R-5-W</u> Sec. 16: S/2NW/4	80.00	Royalty Working Interest Amoco Production Co. ORRI Total	12.500000% 82.500000% 5.000000% <u>100.000000%</u>	12.500000% 82.500000% 5.000000% <u>100.000000%</u>	0.973369%
<u>TRACT 17-F</u>						
E-347-39	<u>T-30-N, R-5-W</u> Sec. 16: S/2 Sec. 36: Lots 1, 2, 3, 4, W/2E/2	540.76	Royalty Working Interest Phillips Petroleum Co. ORRI Total	12.500000% 82.500000% 5.000000% <u>100.000000%</u>	12.500000% 82.500000% 5.000000% <u>100.000000%</u>	6.579485%
<u>TRACT 18</u>						
Fee	<u>T-30-N, R-5-W</u> Sec. 8: E/2	320.00	Royalty Working Interest Amoco Production Co. ORRI Total	12.500000% 87.500000% 00.000000% <u>100.000000%</u>	12.500000% 87.500000% 00.000000% <u>100.000000%</u>	3.893475%
<u>TRACT 19</u>						
Fee	<u>T-30-N, R-5-W</u> Sec. 7: S/2SW/4, NE/4SW/4, SW/4SE/4	160.00	Royalty Working Interest Amoco Production Co. ORRI Total	12.500000% 87.500000% 00.000000% <u>100.000000%</u>	12.500000% 87.500000% 00.000000% <u>100.000000%</u>	1.946737%

SCHEDULE X
NINTH EXPANDED PARTICIPATING AREA FOR THE DAKOTA FORMATION
SAN JUAN 30-5 UNIT AREA

<u>SERIAL NUMBER</u>	<u>DESCRIPTION</u>	<u>NUMBER OF ACRES</u>	<u>DRILLING BLOCK OWNERSHIP</u>	<u>PERCENTAGE</u>	<u>PERCENTAGE COMMITTED</u>	<u>PRESENT ACTUAL PARTICIPATION</u>
<u>TRACT 20</u>						
Fee	<u>T-30-N, R-5-W</u> Sec. 17: NE/4	160.00	Royalty	12.500000%	12.500000%	1.946737%
			Working Interest			
			Amoco Production Co.	87.500000%	87.500000%	
			ORRI	<u>00.000000%</u>	<u>00.000000%</u>	
			Total	<u>100.000000%</u>	<u>100.000000%</u>	
<u>TRACT 21</u>						
Fee	<u>T-30-N, R-5-W</u> Sec. 17: SE/4	160.00	Royalty	12.500000%	12.500000%	1.946737%
			Working Interest			
			Amoco Production Co.	87.500000%	87.500000%	
			ORRI	<u>00.000000%</u>	<u>00.000000%</u>	
			Total	<u>100.000000%</u>	<u>100.000000%</u>	
<u>TRACT 22</u>						
Fee	<u>T-30-N, R-5-W</u> Sec. 21: NW/4	160.00	Royalty	12.500000%	12.500000%	1.946737%
			Working Interest			
			Amoco Production Co.	87.500000%	87.500000%	
			ORRI	<u>00.000000%</u>	<u>00.000000%</u>	
			Total	<u>100.000000%</u>	<u>100.000000%</u>	
<u>TRACT 25</u>						
Fee	<u>T-30-N, R-5-W</u> Sec. 8: S/2SW/4 Sec. 17: N/2NW/4 (less the 4 acres in NW/4NW/4)	156.00	Royalty	12.500000%	12.500000%	1.898069%
			Working Interest			
			Amoco Production Co.	43.750000%	43.750000%	
			Phillips Petroleum Co.	43.750000%	43.750000%	
			ORRI	<u>00.000000%</u>	<u>00.000000%</u>	
			Total	<u>100.000000%</u>	<u>100.000000%</u>	
<u>TRACT 25-A</u>						
Fee	<u>T-30-N, R-5-W</u> Sec. 17: a tract of land 1200' long by 450' wide in NW/4NW/4	4.00	Royalty	12.500000%	12.500000%	0.048668%
			Working Interest			
			Amoco Production Co.	43.750000%	43.750000%	
			Phillips Petroleum Co.	43.750000%	43.750000%	
			ORRI	<u>00.000000%</u>	<u>00.000000%</u>	
			Total	<u>100.000000%</u>	<u>100.000000%</u>	

SCHEDULE X
NINTH EXPANDED PARTICIPATING AREA FOR THE DAKOTA FORMATION
SAN JUAN 30-5 UNIT AREA

RECAPITULATION

Township 30 North, Range 5 West, N.M.P.M.

Sections 5, 6, 7, 8, 9, 10, 15, 16, 17, 21, 22: All

Sections 18, 20: E/2

Section 23: W/2

Section 36: Lots 1, 2, 3, 4, W/2E/2

Total Number of Acres in Participating Area: 8,218.88

Total Number of Acres Committed in Participating Area: 8,218.88

SCHEDULE XI
TENTH EXPANDED PARTICIPATING AREA FOR THE DAKOTA FORMATION
SAN JUAN 30-5 UNIT AREA

<u>SERIAL NUMBER</u>	<u>DESCRIPTION</u>	<u>NUMBER OF ACRES</u>	<u>DRILLING BLOCK OWNERSHIP</u>	<u>PERCENTAGE</u>	<u>PERCENTAGE COMMITTED</u>	<u>PRESENT ACTUAL PARTICIPATION</u>
<u>TRACT 3</u>						
SF-078738	<u>T-30-N, R-5-W</u> Sec. 23: W/2 Sec. 26: NE/4	640.00	Royalty Working Interest Phillips Petroleum Co. ORRI Total	12.500000% 82.500000% 5.000000% <u>100.000000%</u>	12.500000% 82.500000% 5.000000% <u>100.000000%</u>	7.495128%
	<u>T-30-N, R-5-W</u> Sec. 26: NW/4		Royalty Working Interest Phillips Petroleum Co. ORRI Total	12.500000% 84.000000% 3.500000% <u>100.000000%</u>	12.500000% 84.000000% 3.500000% <u>100.000000%</u>	
<u>TRACT 4</u>						
SF-078739	<u>T-30-N, R-5-W</u> Sec. 21: E/2, SW/4 Sec. 22: E/2	1120.00	Royalty Working Interest Phillips Petroleum Co. ORRI Total	12.500000% 84.500000% 3.000000% <u>100.000000%</u>	12.500000% 84.500000% 3.000000% <u>100.000000%</u>	13.116474%
	<u>T-30-N, R-5-W</u> Sec. 22: W/2		Royalty Working Interest Phillips Petroleum Co. ORRI Total	12.500000% 85.000000% 2.500000% <u>100.000000%</u>	12.500000% 85.000000% 2.500000% <u>100.000000%</u>	
<u>TRACT 5</u>						
SF-078740	<u>T-30-N, R-5-W</u> Sec. 20: E/2	320.00	Royalty Working Interest Phillips Petroleum Co. ORRI Total	12.500000% 82.500000% 5.000000% <u>100.000000%</u>	12.500000% 82.500000% 5.000000% <u>100.000000%</u>	3.747564%

Effective June 1, 1983

SCHEDULE XI
TENTH EXPANDED PARTICIPATING AREA FOR THE DAKOTA FORMATION
SAN JUAN 30-5 UNIT AREA

<u>SERIAL NUMBER</u>	<u>DESCRIPTION</u>	<u>NUMBER OF ACRES</u>	<u>DRILLING BLOCK OWNERSHIP</u>	<u>PERCENTAGE</u>	<u>PERCENTAGE COMMITTED</u>	<u>PRESENT ACTUAL PARTICIPATION</u>
<u>TRACT 6</u>						
SF-078994	T-30-N, R-5-W Sec. 15: SW/4, SW/4NW/4 Sec. 17: SW/4, S/2NW/4 Sec. 18: E/2	760.00	Royalty Working Interest Phillips Petroleum Co. ORRI Total	12.500000% 82.500000% 5.000000% <u>100.000000%</u>	12.500000% 82.500000% 5.000000% <u>100.000000%</u>	8.900465%
<u>TRACT 7</u>						
SF-078997	T-30-N, R-5-W Sec. 6: S/2SE/4, SE/4SW/4 Sec. 7: N/2, NW/4SW/4, N/2SE/4, SE/4SE/4 Sec. 8: NW/4, N/2SW/4 Sec. 9: All Sec. 10: All Sec. 15: E/2, E/2NW/4, NW/4NW/4	2560.00	Royalty Working Interest Phillips Petroleum Co. ORRI Total	12.500000% 82.500000% 5.000000% <u>100.000000%</u>	12.500000% 82.500000% 5.000000% <u>100.000000%</u>	29.980513%
<u>TRACT 11</u>						
SF-080066	T-30-N, R-5-W Sec. 5: All Sec. 6: Lots 8, 9, 10, 11, S/2N/2, N/2S/2, SW/4SW/4	1158.12	Royalty Working Interest Phillips Petroleum Co. ORRI Total	12.500000% 82.500000% 5.000000% <u>100.000000%</u>	12.500000% 82.500000% 5.000000% <u>100.000000%</u>	13.562903%
<u>TRACT 17</u>						
E-347-41	T-30-N, R-5-W Sec. 16: NE/4	160.00	Royalty Working Interest Amoco Production Co. ORRI Total	12.500000% 87.500000% 00.000000% <u>100.000000%</u>	12.500000% 87.500000% 00.000000% <u>100.000000%</u>	1.873782%

UNIT AREA EXPANSION SCHEDULE

SCHEDULE XI
TENTH EXPANDED PARTICIPATING AREA FOR THE DAKOTA FORMATION
SAN JUAN 30-5 UNIT AREA

<u>SERIAL NUMBER</u>	<u>DESCRIPTION</u>	<u>NUMBER OF ACRES</u>	<u>DRILLING BLOCK OWNERSHIP</u>	<u>PERCENTAGE</u>	<u>PERCENTAGE COMMITTED</u>	<u>PRESENT ACTUAL PARTICIPATION</u>
<u>TRACT 17-A</u>						
E-347-40	<u>T-30-N, R-5-W</u> Sec. 16: N/2NW/4	80.00	Royalty Working Interest Texaco ORRI Total	12.500000% 82.750000% 4.750000% <u>100.000000%</u>	12.500000% 82.750000% 4.750000% <u>100.000000%</u>	0.936891%
<u>TRACT 17-D</u>						
E-347-41	<u>T-30-N, R-5-W</u> Sec. 16: S/2NW/4	80.00	Royalty Working Interest Amoco Production Co. ORRI Total	12.500000% 82.500000% 5.000000% <u>100.000000%</u>	12.500000% 82.500000% 5.000000% <u>100.000000%</u>	0.936891%
<u>TRACT 17-F</u>						
E-347-39	<u>T-30-N, R-5-W</u> Sec. 16: S/2 Sec. 36: Lots 1, 2, 3, 4, W/2E/2	540.76	Royalty Working Interest Phillips Petroleum Co. ORRI Total	12.500000% 82.500000% 5.000000% <u>100.000000%</u>	12.500000% 82.500000% 5.000000% <u>100.000000%</u>	6.332915%
<u>TRACT 18</u>						
Fee	<u>T-30-N, R-5-W</u> Sec. 8: E/2	320.00	Royalty Working Interest Amoco Production Co. ORRI Total	12.500000% 87.500000% 00.000000% <u>100.000000%</u>	12.500000% 87.500000% 00.000000% <u>100.000000%</u>	3.747564%
<u>TRACT 19</u>						
Fee	<u>T-30-N, R-5-W</u> Sec. 7: S/2SW/4, NE/4SW/4, SW/4SE/4	160.00	Royalty Working Interest Amoco Production Co. ORRI Total	12.500000% 87.500000% 00.000000% <u>100.000000%</u>	12.500000% 87.500000% 00.000000% <u>100.000000%</u>	1.873782%

SCHEDULE XI
TENTH EXPANDED PARTICIPATING AREA FOR THE DAKOTA FORMATION
SAN JUAN 30-5 UNIT AREA

<u>SERIAL NUMBER</u>	<u>DESCRIPTION</u>	<u>NUMBER OF ACRES</u>	<u>DRILLING BLOCK OWNERSHIP</u>	<u>PERCENTAGE</u>	<u>PERCENTAGE COMMITTED</u>	<u>PRESENT ACTUAL PARTICIPATION</u>
<u>TRACT 20</u>						
Fee	<u>T-30-N, R-5-W</u> Sec. 17: NE/4	160.00	Royalty	12.500000%	12.500000%	1.873782%
			Working Interest			
			Amoco Production Co.	87.500000%	87.500000%	
			ORRI	00.000000%	00.000000%	
			Total	<u>100.000000%</u>	<u>100.000000%</u>	
<u>TRACT 21</u>						
Fee	<u>T-30-N, R-5-W</u> Sec. 17: SE/4	160.00	Royalty	12.500000%	12.500000%	1.873782%
			Working Interest			
			Amoco Production Co.	87.500000%	87.500000%	
			ORRI	00.000000%	00.000000%	
			Total	<u>100.000000%</u>	<u>100.000000%</u>	
<u>TRACT 22</u>						
Fee	<u>T-30-N, R-5-W</u> Sec. 21: NW/4	160.00	Royalty	12.500000%	12.500000%	1.873782%
			Working Interest			
			Amoco Production Co.	87.500000%	87.500000%	
			ORRI	00.000000%	00.000000%	
			Total	<u>100.000000%</u>	<u>100.000000%</u>	
<u>TRACT 25</u>						
Fee	<u>T-30-N, R-5-W</u> Sec. 8: S/2SW/4 Sec. 17: N/2NW/4 (less the 4 acres in NW/4NW/4)	156.00	Royalty	12.500000%	12.500000%	1.826937%
			Working Interest			
			Amoco Production Co.	43.750000%	43.750000%	
			Phillips Petroleum Co.	43.750000%	43.750000%	
			ORRI	00.000000%	00.000000%	
			Total	<u>100.000000%</u>	<u>100.000000%</u>	
<u>TRACT 25-A</u>						
Fee	<u>T-30-N, R-5-W</u> Sec. 17: a tract of land 1200' long by 450' wide in NW/4NW/4	4.00	Royalty	12.500000%	12.500000%	0.046845%
			Working Interest			
			Amoco Production Co.	43.750000%	43.750000%	
			Phillips Petroleum Co.	43.750000%	43.750000%	
			ORRI	00.000000%	00.000000%	
			Total	<u>100.000000%</u>	<u>100.000000%</u>	

SCHEDULE XI
TENTH EXPANDED PARTICIPATING AREA FOR THE DAKOTA FORMATION
SAN JUAN 30-5 UNIT AREA

RECAPITULATION

Township 30 North, Range 5 West, N.M.P.M.

Sections 5, 6, 7, 8, 9, 10, 15, 16, 17, 21, 22: All

Sections 18, 20: E/2

Section 23: W/2

Section 26: N/2

Section 36: Lots 1, 2, 3, 4, W/2E/2

Total Number of Acres in Participating Area: 8,538.88

Total Number of Acres Committed in Participating Area: 8,538.88

EXHIBIT "B"

SAN JUAN 30-5 UNIT
RIO ARriba COUNTY, NEW MEXICO

GEOLOGIC REPORT
DAKOTA PRODUCING INTERVAL

SEVENTH THROUGH TENTH EXPANSIONS OF THE
DAKOTA PARTICIPATING AREA

Prepared by Carolyn Firth

NORTHWEST PIPELINE CORPORATION

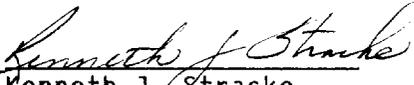
APPROVED BY: 
Kenneth J. Stracke
Director
Production Division

EXHIBIT "B"
SAN JUAN 30-5 UNIT
RIO ARriba COUNTY, NEW MEXICO
GEOLOGIC REPORT
DAKOTA PRODUCING INTERVAL

SEVENTH THROUGH TENTH EXPANSIONS OF THE
DAKOTA PARTICIPATING AREA

GENERAL INFORMATION

The San Juan 30-5 Unit is located near the east edge of the productive area of the San Juan Basin. The unit includes 20,092.24 acres in Township 30 North, Range 5 West. All or parts of sections 1, 2, 3, 4, and 12 (2329.56 acres) have been eliminated from the unit.

Within the unit area, the "Dakota Producing Interval" has been tested in 47 wells, resulting in 7 noncommercial wells, 2 plugged and abandoned wells, 36 commercial wells, and 2 wells awaiting pipeline connection. Seventeen of the 47 wells participate in the Dakota Participating Area, and 2 wells (Schalk 57-1 and 57-1E) participate in the Dakota "A" Participating Area.

The "Dakota Producing Interval" consists of the Graneros Shale, the Dakota Sandstone, and the Upper Morrison Formation. This interval has been defined and the lithology and stratigraphy have been discussed in geologic reports for adjacent units. Within the San Juan 30-5 Unit, the productive sands of the "Dakota Producing Interval" are restricted to the upper (marine) and middle (fluvial) Dakota Sands.

Included in this report as Exhibit "C" are two maps (Figures 1 and 2). Figure 1 is a Dakota structure map contoured on the top of the Graneros Shale using mean sea level as the datum plane and a contour interval of 20 feet. The major structural features include an anticlinal nose plunging northward through the east half of the unit, which is bordered on the west by a north-to-northeast plunging syncline. Regional strike is approximately N65°W, and regional dip is approximately 50 feet per mile (0.5°) to the northeast.

Figure 2 is an isopachous map of the net productive upper Dakota Sandstone as determined from radioactive and electric logs of wells drilled within the unit and the surrounding area. Sand bodies generally trend northwest-southeast. Net sand thickness decreases to zero in the southern part of the unit.

Of the 17 wells included in the Dakota Participating Area, 11 are completed in the upper sandstone only. The best areas for Dakota production generally correspond to areas with good upper sand development. With one exception (the No. 27 well, completed in 1959 with a small sand-oil frac) all of the non-commercial wells are located in areas with little or no net upper sand. This correlation of well productivity with net upper sand thickness demonstrates the validity of the parameters used to define "net" sand, and suggests that the middle Dakota interval contributes only minor amounts of gas.

San Juan 30-5 Expansion
June 1987
Page Two

Exhibit "D" (Table 1) is a tabulation of the Dakota gas production for all wells within the Unit boundary. Monthly gas production for the 12-month period ending May 31, 1987 is shown, as well as cumulative production. The San Juan 30-5 Unit has produced 10,804,709 Mcf of gas from the Dakota Producing Interval as of June 1, 1987.

PROPOSED SEVENTH EXPANSION OF THE DAKOTA PARTICIPATING AREA

Effective Date: September 1, 1981
Proposed Acreage: Township 30 North, Range 5 West, N.M.P.M.
Section 5 (639 acres)

The Seventh Expansion of the Dakota Participating Area is based on log interpretation and 12 months of production of the Northwest Pipeline Corporation San Juan 30-5 Unit well #79. From this data, it is inferred that the proposed acreage is capable of producing unitized substances in commercial quantities from the Dakota Producing Interval. The well is described as follows:

The San Juan 30-5 Unit #79 well is located 1000 feet from the North line and 1720 feet from the East line, Section 5, Township 30 North, Range 5 West, N.M.P.M., Rio Arriba County, New Mexico. This well was spudded on April 20, 1981 and completed on September 3, 1981. The Dakota Formation was perforated with 19 holes between the following depths:

7932' and 8028'

These perforations were treated with 1500 gal HCl and fractured with 70000 lbs. of 40/60 sand, 10000 lbs of 20/40 sand, and 20000 gallons of pad water. This well has one tubing string. The well was shut in with a SIPT of 2492 psig and SIPC of 2473 psig. On September 3, 1981 the well was tested, and after flowing for three hours through a 3/4-inch variable choke on the 2 3/8-inch tubing, the well gauged 2366 Mcf/d with a calculated AOF of 2549 Mcf/d.

On the basis of this well and the surrounding geology, Section 5 (639 acres) is recommended as the Seventh Expansion of the Dakota Participating Area.

PROPOSED EIGHTH EXPANSION OF THE DAKOTA PARTICIPATING AREA

Effective Date: October 1, 1981
Proposed Acreage: Township 30 North, Range 5 West, N.M.P.M.
Section 22: E/2 (320 acres)
Section 23: W/2 (320 acres)
Section 36: Lots 1, 2, 3, 4, and W/2 E/2 (220.76 acres)
Total Acres: 860.76

The Eighth Expansion of the Dakota Participating Area is based on log interpretation, initial test results, and 12 months of production of the Northwest Pipeline Corporation San Juan 30-5 Unit wells #83 and #77. Production histories and log interpretation from surrounding wells were also used in determining the extent of this expansion. From this data, it is inferred that the proposed acreage is capable of producing unitized substances in commercial quantities from the Dakota Producing Interval. The wells are described as follows:

The San Juan 30-5 Unit #83 well is located 1480 feet from the South line and 950 feet from the West line, Section 23, Township 30 North, Range 5 West, N.M.P.M., Rio Arriba County, New Mexico. This well was spudded on May 6, 1981 and completed on October 13, 1981. The Dakota Formation was perforated with 12 holes between the following depths:

8092' and 8184'

These perforations were fractured with 20000 gallons of pad water and 22600 lbs. of 40/60 sand. This well has one tubing string. The well was shut in with a SIPT of 2720 psig and SIPC of 2731 psig. On October 13, 1981 the well was tested, and after flowing for three hours through a 3/4-inch variable choke on the 2 3/8-inch tubing, the well gauged 3407 Mcf/d with a calculated AOF of 3804 Mcf/d.

On the basis of the above well and the surrounding geology, the E/2 of Section 22 (320 acres) and the W/2 of Section 23 (320 acres) are recommended for inclusion in the Eighth Expansion of the Dakota Participating Area.

The San Juan 30-5 Unit well No. 77 is located 1640 feet from the North line and 870 feet from the East line, Section 36, Township 30 North, Range 5 West, N.M.P.M., Rio Arriba County, New Mexico. This well was spudded on May 14, 1981. The Dakota formation was completed on October 23, 1981. This formation was perforated with 17 holes between the following depths.

8618' to 8634'

These perforations were fractured with 20000 gallons of pad water carrying 40000 pounds of 40/60 sand and 10000 pounds of 20/40 sand. This well was initially tested on October 23, 1981 using a positive choke in a three-hour test. The SIPC was 2791 psig with a flowing tubing pressure of 143 psig producing at a rate of 1927 Mcf/d. The calculated AOF was 2019 Mcf/d.

San Juan 30-5 Expansion
June 1987
Page Four

On the basis of the above well and the surrounding geology, Lots 1, 2, 3, 4, and W/2 E/2 of Section 36 (220.76 acres) are recommended for inclusion in the Eighth Expansion of the Dakota participating Area.

NINTH EXPANSION OF THE DAKOTA PARTICIPATING AREA

Effective Date: April 1, 1983
Proposed Acreage: Township 30 North, Range 5 West, N.M.P.M. Section 6,
N/2 (319.12 acres)

The Ninth Expansion of the Dakota Participating Area is based on interpretation of the well logs, initial test results, and production history of the San Juan 30-5 Unit well No. 80. From this data, it is inferred that the proposed acreage is capable of producing unitized substances in commercial quantities from the Dakota Producing Interval. The well is described as follows:

The San Juan 30-5 Unit well No. 80 is located 800 feet from the South line and 800 feet from the East line, Section 6, Township 30 North, Range 5 West, N.M.P.M., Rio Arriba County, New Mexico. This well was spudded on January 15, 1983. The Dakota Formation was completed on March 21, 1983. The Dakota Formation was perforated with 21 holes at the following depths:

7884', 7886', 7888', 7890', 7892', 7894', 7896',
7898', 7900', 7902', 7904', 7931', 7933', 7935',
7937', 7939', 7941', 7943', 7945', 7947', 7949'

These perforations were fractured with 121400 gallons of pad water carrying 60000 pounds of 40/60 sand. The well was tested on April 8, 1983 using a positive choke in a three-hour test. The well was tested at a 2429 Mcf/d flow rate with a calculated AOF of 2518 Mcf/d. The ISIP was measured at 2695 psig.

On the basis of this well, the N/2 of Section 6 (319.12 acres) is recommended as the Ninth Expansion of the Dakota Participating Area.

TENTH EXPANSION OF THE DAKOTA PARTICIPATING AREA

Effective Date: June 1, 1983
Proposed Acreage: Township 30 North, Range 5 West, N.M.P.M. Section 26,
N/2 (320 acres)

The Tenth Expansion of the Dakota Participating Area is based on initial test results and production history of the San Juan 30-5 Unit well No. 93. From this data, it is inferred that the proposed acreage is capable of producing unitized substances in commercial quantities from the Dakota Producing Interval. The well is described as follows:

The San Juan 30-5 Unit well No. 93 is located 790 feet from the North line and 890 feet from the East line, Section 26, Township 30 North, Range 5 West, N.M.P.M., Rio Arriba County, New Mexico. This well was spudded on April 19, 1983. The Dakota Formation was completed on May 26, 1983. The Dakota Formation was perforated with 16 holes at the following depths:

8411', 8412', 8413', 8414', 8415', 8416', 8417', 8418',
8419', 8420', 8421', 8422', 8423', 8447', 8448', 8449'

These perforations were fractured with 156000 gallons of pad water carrying 40000 pounds of 40/60 sand and 32860 pounds of 20/40 sand. The well was tested on June 28, 1983 using a positive choke in a three-hour test. A flow rate of 1065 Mcf/d was measured with a calculated AOF of 1082 Mcf/d. The ISIP was measured at 2734 psig.

On the basis of this well, the N/2 of Section 26 (320 acres) is recommended as the Tenth Expansion of the Dakota Participating Area.

EXHIBIT "D"

TABLE NO. 1
SAN JUAN 30-5 UNIT: DAKOTA GAS PRODUCTION
RIO ARRIBA COUNTY, NEW MEXICO
GAS VOLUMES IN MCF @ 14.73 PSIA & 60 DEG. F

UNIT WELL NO.	LOCATION	I.D. DATE	GAS VOLUMES IN MCF @ 14.73 PSIA & 60 DEG. F												CUMULATIVE PRODUCTION TO 6/1/87
			JUN 86	JUL 86	AUG 86	SEP 86	OCT 86	NOV 86	DEC 86	JAN 87	FEB 87	MAR 87	APR 87	MAY 87	
79	5B 30N 5W	4/82	4258	548	4551	3177	2672	1545	3703	3092	2570	3040	2596	2205	201529
87	5M 30N 5W	11/83	6852	0	0	7780	13597	5286	8735	8922	6871	4192	2976	7622	239407
80	6A 30N 5W	9/83	0	0	0	10440	12997	4578	7803	7942	3466	3280	1266	7715	178263
50	6M 30N 5W	7/81	5017	506	0	0	6100	1416	3293	3528	3513	3967	1487	3731	226132
39	7G 30N 5W	7/77	2648	849	0	0	4454	1062	1682	1596	1155	2	0	0	243304
78	7L 30N 5W	10/83	4544	2134	4698	4819	5003	2638	3494	3424	1937	4957	1650	3880	188081
37	8K 30N 5W	2/74	1780	1280	0	3594	3961	764	2880	1759	1097	0	0	0	691376
70	9A 30N 5W	8/81	5344	453	0	5241	252	0	5151	6799	4602	4784	3912	4248	264179
49	9M 30N 5W	9/81	2926	378	0	2816	2359	983	2703	3411	2687	2499	1493	2277	159047
73	10B 30N 5W	9/81	5930	835	0	4337	3	0	6323	5285	7292	6152	3931	4853	291831
72	10M 30N 5W	12/81	17438	1645	0	15403	14664	7369	12843	16772	13903	14102	9632	10730	684503
57-1E	12A 30N 5W	11/81	5744	1947	0	6079	7732	6403	5439	5611	5077	4260	0	6725	298389
57-1	12C 30N 5W	10/74	4676	1399	0	3856	5185	4218	3782	3734	3651	3236	0	4402	703790
104	13G 30N 5W	10/84	0	0	0	0	97	0	0	0	0	0	0	0	77925
76	15A 30N 5W	10/83	16108	0	0	26508	28525	9576	21671	29997	23754	24684	9656	18734	412092
52	15N 30N 5W	9/81	0	0	0	12114	6820	3015	5948	5644	4626	5760	2003	4214	297680
53	16L 30N 5W	6/81	0	0	0	9992	8386	863	9518	13367	10668	11295	6787	6959	470707
47	17L 30N 5W	7/77	6485	771	0	4534	6322	1761	1749	1849	1386	0	0	0	466590
38	18G 30N 5W	6/81	6062	734	0	4357	3178	2458	2650	5408	5780	4984	3229	3701	287146
88	18L 30N 5W	10/84	6194	702	0	5834	6960	2587	5666	5942	4297	4132	2996	4338	170991
89	19H 30N 5W	7/84	0	0	0	11015	10151	3434	3895	0	7963	13859	8320	6250	180534
48	20B 30N 5W	6/81	0	0	0	20128	15302	7995	14543	15336	12979	8631	6227	10470	682215
27*	20M 30N 5W	5/60	0	0	0	0	406	0	955	991	701	848	85	702	296422
51	21B 30N 5W	6/81	0	0	0	10818	12576	4013	8701	15307	11850	12521	9266	8379	510671
75	21L 30N 5W	4/84	0	0	0	7090	7283	9212	5955	8945	8016	4773	5915	6494	224828
90	22H 30N 5W	5/84	0	0	0	16338	8953	2083	5733	4431	3201	4210	1519	4311	146174
71	22M 30N 5W	10/81	2727	599	0	3244	2426	539	2095	2512	1293	2334	881	1960	160582
83	23L 30N 5W	4/82	3957	134	4192	3108	2426	2215	3047	2970	3050	3334	1002	1434	221230
82*	25D 30N 5W	4/82	1941	182	1737	1205	1487	1013	1342	1395	1026	1088	624	1049	94898
91*	25L 30N 5W	8/84	828	160	0	47	69	6	41	49	44	38	694	1139	94804
93	26A 30N 5W	11/83	0	2790	0	6558	5575	1526	5440	7002	6623	6661	2306	5275	140658
92	26K 30N 5W	3/84	0	0	0	6613	5223	5619	4484	4304	3818	4179	1601	4003	112434
94	27B 30N 5W	4/84	5359	303	0	5936	4401	2703	2570	3463	2816	4439	997	3051	163225
81*	27L 30N 5W	4/82	4	0	0	1015	2284	1576	2757	2304	1896	2624	1107	1287	131269
95	28H 30N 5W	4/84	4824	0	0	6712	4398	3977	4834	3701	4224	4480	1854	4013	141034
96*	28L 30N 5W	7/84	3852	300	0	3327	3063	1099	360	3274	2524	3884	2934	2742	87567
97	29H 30N 5W	8/84	2993	357	0	3574	2475	497	2473	3274	2802	3350	2782	2998	98557
100*	34A 30N 5W	5/85	0	0	5504	3794	3523	0	2676	2521	2280	2284	953	3094	56267
102	34K 30N 5W	12/85	0	0	0	0	0	18	109	314	182	20	14	0	1119
101	35A 30N 5W	5/84	0	0	0	12937	13499	5492	10302	13132	10572	10554	4147	8908	208742
86	35M 30N 5W	10/84	7804	1541	0	8836	6514	5969	4572	0	4382	9001	2538	5215	179121
77	36G 30N 5W	6/82	0	0	25976	7242	13729	6206	6203	0	0	0	0	6654	378898
85*	36M 30N 5W	5/84	8	4	6	8	1084	1053	725	679	847	821	327	401	7198
TOTAL			10804709												

*NON-COMMERCIAL

NORTHWEST PIPELINE CORPORATION
 GAS RESERVES DEPARTMENT ECONOMIC STUDY
 COMMERCIALITY OF SJU 30-5 #79 DK

WED NOVEMBER 6, 1985
 1:14:37 PM

WORKING INT. B/PAYOUT.....%	100.0	ANNUAL COST INFLATION.....%	0.0
WORKING INT. A/PAYOUT.....%	100.0	ANNUAL PRICE INFLATION.....%	0.0
INCOME TAX.....%	48.0	NEG INC TAX USED AS FUTURE CREDIT	
UNIT OF PRODUCTION DEPRECIATION			

GAS PRODUCTION FROM SJU 30-5 #79 DK			
LAND OWNER ROYALTY.....%	12.5	OVERRIDING ROYALTY.....	0.0
AD VALOREM AND SEV TAXES...%	0.0	OPERATING COSTS (\$/MO).....	277.0
MONTH OF CAPITAL EXPENSE....	7	OPERATING COSTS (% OF PROD).	0.0
DRILLING COSTS (\$1000).....	407.3	TANGIBLE \$ (% OF DRILLING \$)	37.0
SALVAGE VALUE (\$1000).....	0.0		

INITIAL MONTH	MCF/D	% DECLINE	TO MCF/D	ENDING MONTH
17	293.0	72.1	125.0	25
25	125.0	21.6	98.0	37
37	98.0	29.6	69.0	49
49	69.0	-34.8	93.0	61
61	93.0	6.3	90.0	67
67	90.0	5.8	35.0	257
257	35.0	100.0	0.0	258

YEAR	PRICE \$/ MCF	AVG MCF/D	ANNUAL MCF	ROYALTY MCF	REVENUE AFTER ROYALTY \$1000
1981	2.66	0	0.	0.	0.
1982	2.66	139	50624.	6328.	118.
1983	2.66	112	40938.	5117.	95.
1984	2.66	84	30633.	3829.	71.
1985	2.66	79	29004.	3625.	68.
1986	2.66	90	32988.	4124.	77.
1987	2.66	85	31051.	3881.	72.
1988	2.66	80	29253.	3657.	68.
1989	2.66	75	27559.	3445.	64.
1990	2.66	71	25963.	3245.	60.
1991	2.66	67	24459.	3057.	57.
1992	2.66	63	23043.	2880.	54.
1993	2.66	59	21709.	2714.	51.
1994	2.66	56	20452.	2556.	48.
1995	2.66	53	19267.	2408.	45.
1996	2.66	50	18152.	2269.	42.
1997	2.66	47	17101.	2138.	40.
1998	2.66	44	16110.	2014.	37.
1999	2.66	42	15178.	1897.	35.
2000	2.66	39	14299.	1787.	33.
2001	2.66	37	13471.	1684.	31.
2002	2.66	15	5380.	672.	13.
TOTAL.....			506624.	63328.	1179.

NORTHWEST PIPELINE CORPORATION
 GAS RESERVES DEPARTMENT ECONOMIC STUDY
 COMMERCIALITY OF SJU 30-5 #79 DK

WED NOVEMBER 6, 1985
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WORKING INT. B/PAYOUT.....%	100.0	ANNUAL COST INFLATION.....%	0.0
WORKING INT. A/PAYOUT.....%	100.0	ANNUAL PRICE INFLATION.....%	0.0
INCOME TAX.....%	48.0	NEG INC TAX USED AS FUTURE CREDIT	

DISCOUNT	****PRESENT VALUE****	DISCOUNTED PROFIT TO**
RATE	***** \$1000 *****	***INVESTMENT RATIO***
*** % **	BEFORE TAX AFTER TAX	BEFORE TAX AFTER TAX
17.8	0.	0.00
11.4	0.	0.0 RATE OF RETURN B.T.
15.0	35. -50.	-0.12

YEAR	INCOME	**PROJECT EXPENSES IN \$1000*				****CASH FLOW ANALYSIS IN \$1000****				
	\$1000	**	****	AD.V.	****	*****	**CUM	*****	*****	*****
NET*	CAPITAL*	**	SEV.	PROD.	*****	BEFORE	BEFORE	TAXED	INCOME	AFTER
*****	*TAL*	DEPR.	TAXES	COSTS	*****	*TAXES	TAXES	INCOME	TAXES	TAXES
1981	0	407	0	0	0	-407	-407	-257	0	-407
1982	118	0	15	0	2	116	-292	101	0	116
1983	95	0	12	0	3	92	-200	80	0	92
1984	71	0	9	0	3	68	-132	59	0	68
1985	68	0	9	0	3	64	-68	56	18	46
1986	77	0	10	0	3	73	6	64	31	43
1987	72	0	9	0	3	69	75	60	29	40
1988	68	0	9	0	3	65	139	56	27	38
1989	64	0	8	0	3	61	200	53	25	36
1990	60	0	8	0	3	57	257	49	24	33
1991	57	0	7	0	3	54	311	46	22	31
1992	54	0	7	0	3	50	361	43	21	29
1993	51	0	6	0	3	47	408	41	20	28
1994	48	0	6	0	3	44	453	38	18	26
1995	45	0	6	0	3	42	494	36	17	24
1996	42	0	5	0	3	39	533	34	16	23
1997	40	0	5	0	3	36	569	31	15	21
1998	38	0	5	0	3	34	604	29	14	20
1999	35	0	5	0	3	32	636	27	13	19
2000	33	0	4	0	3	30	666	26	12	18
2001	31	0	4	0	3	28	694	24	12	16
2002	13	0	2	0	1	11	705	10	5	7
TOTAL	1179	407	151	0	67	705	0	705	338	366

PAYOUT DURING MONTH 12 OF YEAR 6

NORTHWEST PIPELINE CORPORATION
 GAS RESERVES DEPARTMENT ECONOMIC STUDY
 COMMERCIALITY OF SJ 30-5 UNIT #77 DK

TUE MARCH 11, 1986
 12:32:31 PM

WORKING INT. B/PAYOUT.....%	100.0	ANNUAL COST INFLATION.....%	0.0
WORKING INT. A/PAYOUT.....%	100.0	ANNUAL PRICE INFLATION.....%	0.0
INCOME TAX.....%	48.0	NEG INC TAX OFFSET BY OTHER INCOME	

UNIT OF PRODUCTION DEPRECIATION

GAS PRODUCTION FROM SJ 30-5 UNIT #77 DK

LAND OWNER ROYALTY.....%	12.5	OVERRIDING ROYALTY.....	0.0
AD VALOREM AND SEV TAXES...%	0.0	OPERATING COSTS (\$/MO).....	500.0
MONTH OF CAPITAL EXPENSE....	10	OPERATING COSTS (% OF PROD).	0.0
DRILLING COSTS (\$1000).....	424.0	TANGIBLE \$ (% OF DRILLING \$)	39.0
SALVAGE VALUE (\$1000).....	0.0		

INITIAL MONTH	MCF/D	% DECLINE	TO MCF/D	ENDING MONTH
19	780.0	89.2	371.0	23
23	371.0	61.5	270.0	27
27	270.0	44.4	222.0	31
31	222.0	34.3	193.0	35
35	193.0	28.0	173.0	39
39	173.0	22.4	159.0	43
43	159.0	21.0	147.0	47
47	147.0	17.3	138.0	51
51	138.0	16.4	130.0	55
55	130.0	15.3	123.0	59
59	123.0	11.7	118.0	63
63	118.0	12.2	113.0	67
67	113.0	12.7	108.0	71
71	108.0	8.1	105.0	75
75	105.0	11.0	101.0	79
79	101.0	8.6	98.0	83
83	98.0	8.9	95.0	87
87	95.0	9.2	92.0	91
91	92.0	6.4	90.0	95
95	90.0	6.4	57.0	178
178	57.0	6.3	37.0	258
258	37.0	100.0	0.0	259

YEAR	PRICE \$/ MCF	AVG MCF/D	ANNUAL MCF	ROYALTY MCF	REVENUE AFTER ROYALTY \$1000
1981	2.66	0	0.	0.	0.
1982	2.66	261	95151.	11894.	221.
1983	2.66	236	86379.	10797.	201.
1984	2.66	162	59066.	7383.	137.
1985	2.66	131	47987.	5998.	112.
1986	2.66	114	41511.	5189.	97.
1987	2.66	102	37161.	4645.	86.
1988	2.66	93	33852.	4232.	79.
1989	2.66	86	31549.	3944.	73.
1990	2.66	81	29533.	3692.	69.
1991	2.66	76	27646.	3456.	64.
1992	2.66	71	25879.	3235.	60.
1993	2.66	66	24225.	3028.	56.

1994	2.66	62	22677.	2835.	53.
1995	2.66	58	21228.	2654.	49.
1996	2.66	54	19888.	2486.	46.
1997	2.66	51	18640.	2330.	43.
1998	2.66	48	17470.	2184.	41.
1999	2.66	45	16374.	2047.	38.
2000	2.66	42	15346.	1918.	36.
2001	2.66	39	14383.	1798.	33.
TOTAL.....			685939.	85740.	1596.

NORTHWEST PIPELINE CORPORATION
 GAS RESERVES DEPARTMENT ECONOMIC STUDY
 COMMERCIALITY OF SJ 30-5 UNIT #77 DK

TUE MARCH 11, 1986
 12:32:31 PM

WORKING INT. B/PAYOUT.....%	100.0	ANNUAL COST INFLATION.....%	0.0
WORKING INT. A/PAYOUT.....%	100.0	ANNUAL PRICE INFLATION.....%	0.0
INCOME TAX.....%	48.0	NEG INC TAX OFFSET BY OTHER INCOME	

DISCOUNT	****PRESENT VALUE****		DISCOUNTED PROFIT TO**	
RATE	***** \$1000 *****		***INVESTMENT RATIO***	
*** % **	BEFORE TAX	AFTER TAX	BEFORE TAX	AFTER TAX
38.0	0.		0.00	
27.0		0.		RATE OF RETURN B.T.
15.0	271.	103.	0.64	0.0 RATE OF RETURN A.T.
				0.24

YEAR	INCOME	**PROJECT EXPENSES IN \$1000*				****CASH FLOW ANALYSIS IN \$1000****				
	*\$1000	*****	*****	AD.V.	*****	*****	**CUM	*****	*****	*****
	NET*	CAPI-	***	SEV.	PROD.	BEFORE	BEFORE	TAXED	INCOME	AFTER
	*****	*TAL*	DEPR.	TAXES	COSTS	*TAXES	TAXES	INCOME	TAXES	TAXES
1981	0	424	0	0	0	-424	-424	-259	-124	-300
1982	221	0	23	0	3	218	-206	196	94	125
1983	201	0	21	0	6	195	-11	174	84	111
1984	137	0	14	0	6	131	121	117	56	75
1985	112	0	12	0	6	106	227	94	45	60
1986	97	0	10	0	6	91	317	81	39	52
1987	87	0	9	0	6	80	398	72	34	46
1988	79	0	8	0	6	73	470	65	31	42
1989	73	0	8	0	6	67	538	60	29	39
1990	69	0	7	0	6	63	601	56	27	36
1991	64	0	7	0	6	58	659	52	25	34
1992	60	0	6	0	6	54	713	48	23	31
1993	56	0	6	0	6	50	763	45	21	29
1994	53	0	5	0	6	47	810	41	20	27
1995	49	0	5	0	6	43	854	38	18	25
1996	46	0	5	0	6	40	894	35	17	23
1997	43	0	4	0	6	37	931	33	16	22
1998	41	0	4	0	6	35	966	30	15	20
1999	38	0	4	0	6	32	998	28	14	19
2000	36	0	4	0	6	30	1028	26	12	17
2001	33	0	3	0	6	27	1055	24	12	16
TOTAL	1597	424	165	0	117	1055	0	1055	507	549

PAYOUT DURING MONTH 1 OF YEAR 4

NORTHWEST PIPELINE CORPORATION
 GAS RESERVES DEPARTMENT ECONOMIC STUDY
 COMMERCIALITY OF SJU 30-5 #83 DK

WED NOVEMBER 6, 1985
 1:54:29 PM

WORKING INT. B/PAYOUT.....%	100.0	ANNUAL COST INFLATION.....%	0.0
WORKING INT. A/PAYOUT.....%	100.0	ANNUAL PRICE INFLATION.....%	0.0
INCOME TAX.....%	48.0	NEG INC TAX USED AS FUTURE CREDIT	

UNIT OF PRODUCTION DEPRECIATION

GAS PRODUCTION FROM SJU 30-5 #83 DK

LAND OWNER ROYALTY.....%	12.5
AD VALOREM AND SEV TAXES...%	0.0
MONTH OF CAPITAL EXPENSE....	8
DRILLING COSTS (\$1000).....	398.1
SALVAGE VALUE (\$1000).....	0.0

OVERRIDING ROYALTY.....	0.0
OPERATING COSTS (\$/MO).....	315.0
OPERATING COSTS (% OF PROD).	0.0
TANGIBLE \$ (% OF DRILLING \$)	38.0

INITIAL MONTH	MCF/D	% DECLINE	TO MCF/D	ENDING MONTH
17	500.0	89.0	115.0	25
25	115.0	25.2	86.0	37
37	86.0	-51.2	130.0	49
49	130.0	63.1	48.0	61
61	48.0	-213.6	85.0	67
67	85.0	6.4	30.0	257
257	30.0	100.0	0.0	258

YEAR	PRICE \$/ MCF	AVG MCF/D	ANNUAL MCF	ROYALTY MCF	REVENUE AFTER ROYALTY \$1000
1981	2.66	0	0.	0.	0.
1982	2.66	191	69826.	8728.	163.
1983	2.66	101	36895.	4612.	86.
1984	2.66	105	38229.	4779.	89.
1985	2.66	86	31326.	3916.	73.
1986	2.66	73	26583.	3323.	62.
1987	2.66	80	29155.	3644.	68.
1988	2.66	75	27299.	3412.	64.
1989	2.66	70	25561.	3195.	59.
1990	2.66	66	23934.	2992.	56.
1991	2.66	61	22410.	2801.	52.
1992	2.66	57	20984.	2623.	49.
1993	2.66	54	19648.	2456.	46.
1994	2.66	50	18397.	2300.	43.
1995	2.66	47	17226.	2153.	40.
1996	2.66	44	16129.	2016.	38.
1997	2.66	41	15102.	1888.	35.
1998	2.66	39	14141.	1768.	33.
1999	2.66	36	13241.	1655.	31.
2000	2.66	34	12398.	1550.	29.
2001	2.66	32	11609.	1451.	27.
2002	2.66	13	4616.	577.	11.
TOTAL.....			494702.	61838.	1151.

NORTHWEST PIPELINE CORPORATION
 GAS RESERVES DEPARTMENT ECONOMIC STUDY
 COMMERCIALITY OF SJU 30-5 #83 DK

WED NOVEMBER 6, 1985
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WORKING INT. B/PAYOUT.....%	100.0	ANNUAL COST INFLATION.....%	0.0
WORKING INT. A/PAYOUT.....%	100.0	ANNUAL PRICE INFLATION.....%	0.0
INCOME TAX.....%	48.0	NEG INC TAX USED AS FUTURE CREDIT	

UNIT OF PRODUCTION DEPRECIATION

DISCOUNT	****PRESENT VALUE****	DISCOUNTED PROFIT TO**
RATE	***** \$1000 *****	***INVESTMENT RATIO***
*** % **	BEFORE TAX	AFTER TAX
20.0%	0.	0.00
13.1	0.	0.0 RATE OF RETURN B.T.
15.0	69.	-22.
		0.17
		-0.06

YEAR	INCOME	**PROJECT EXPENSES IN \$1000*			****CASH FLOW ANALYSIS IN \$1000****					
	\$1000	***	*****	AD.V. *****	*****	**CUM	*****	*****	*****	
NET*	CAPI-	***	SEV.	PROD.	BEFORE	BEFORE	TAXED	INCOME	AFTER	
*****	*TAL*	DEPR.	TAXES	COSTS	*TAXES	TAXES	INCOME	TAXES	TAXES	
1981	0	398	0	0	0	-398	-398	-247	0	-398
1982	163	0	21	0	3	160	-238	139	0	160
1983	86	0	11	0	4	82	-156	71	0	82
1984	89	0	12	0	4	85	-71	73	17	68
1985	73	0	10	0	4	69	-2	60	29	41
1986	62	0	8	0	4	58	56	50	24	34
1987	68	0	9	0	4	64	120	55	26	38
1988	64	0	8	0	4	60	180	51	25	35
1989	60	0	8	0	4	56	236	48	23	33
1990	56	0	7	0	4	52	288	45	21	31
1991	52	0	7	0	4	48	336	42	20	28
1992	49	0	6	0	4	45	381	39	19	26
1993	46	0	6	0	4	42	423	36	17	25
1994	43	0	6	0	4	39	462	33	16	23
1995	40	0	5	0	4	36	498	31	15	21
1996	38	0	5	0	4	34	532	29	14	20
1997	35	0	5	0	4	31	564	27	13	19
1998	33	0	4	0	4	29	593	25	12	17
1999	31	0	4	0	4	27	620	23	11	16
2000	29	0	4	0	4	25	645	21	10	15
2001	27	0	4	0	4	23	668	20	9	14
2002	11	0	1	0	2	9	677	8	4	5
TOTAL	1152	398	151	0	76	677	0	677	325	352

PAYOUT DURING MONTH 1 OF YEAR 6

NORTHWEST PIPELINE CORPORATION
 GAS RESERVES DEPARTMENT ECONOMIC STUDY
 COMMERCIALITY OF SJ 30-5 UNIT #80 DK

TUE MARCH 11, 1986
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WORKING INT. B/PAYOUT.....%	100.0	ANNUAL COST INFLATION.....%	0.0
WORKING INT. A/PAYOUT.....%	100.0	ANNUAL PRICE INFLATION.....%	0.0
INCOME TAX.....%	48.0	NEG INC TAX OFFSET BY OTHER INCOME	
UNIT OF PRODUCTION DEPRECIATION			

GAS PRODUCTION FROM SJ 30-5 UNIT #80 DK

LAND OWNER ROYALTY.....%	12.5	OVERRIDING ROYALTY.....	0.0
AD VALOREM AND SEV TAXES...%	8.3	OPERATING COSTS (\$/MO).....	500.0
MONTH OF CAPITAL EXPENSE....	2	OPERATING COSTS (% OF PROD).	0.0
DRILLING COSTS (\$1000).....	379.2	TANGIBLE \$ (% OF DRILLING \$)	42.8
SALVAGE VALUE (\$1000).....	0.0		

INITIAL MONTH	MCF/D	% DECLINE	TO MCF/D	ENDING MONTH
10	344.0	54.3	265.0	14
14	265.0	53.7	205.0	18
18	205.0	13.9	195.0	22
22	195.0	4.7	180.0	42
42	180.0	9.7	174.0	46
46	174.0	10.0	168.0	50
50	168.0	7.0	164.0	54
54	164.0	8.9	159.0	58
58	159.0	5.6	156.0	62
62	156.0	7.5	152.0	66
66	152.0	5.8	149.0	70
70	149.0	5.9	146.0	74
74	146.0	6.0	143.0	78
78	143.0	5.9	60.0	249
249	60.0	100.0	0.0	250

YEAR	PRICE \$/ MCF	AVG MCF/D	ANNUAL MCF	ROYALTY MCF	REVENUE AFTER ROYALTY \$1000
1983	3.62	81	29470.	3684.	93.
1984	3.62	220	80220.	10027.	254.
1985	3.62	188	68848.	8606.	218.
1986	3.62	178	65114.	8139.	206.
1987	3.62	163	59616.	7452.	189.
1988	3.62	152	55485.	6936.	176.
1989	3.62	143	52113.	6514.	165.
1990	3.62	134	49025.	6128.	155.
1991	3.62	126	46127.	5766.	146.
1992	3.62	119	43399.	5425.	137.
1993	3.62	112	40833.	5104.	129.
1994	3.62	105	38419.	4802.	122.
1995	3.62	99	36147.	4518.	114.
1996	3.62	93	34010.	4251.	108.
1997	3.62	88	31999.	4000.	101.
1998	3.62	82	30107.	3763.	95.
1999	3.62	78	28327.	3541.	90.
2000	3.62	73	26652.	3331.	84.
2001	3.62	69	25076.	3135.	79.
2002	3.62	65	23593.	2949.	75.

2003	3.62	46	16775.	2097.	53.
TOTAL.....			881349.	110165.	2792.

NORTHWEST PIPELINE CORPORATION
 GAS RESERVES DEPARTMENT ECONOMIC STUDY
 COMMERCIALITY OF SJ 30-5 UNIT #80 DK

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WORKING INT. B/PAYOUT.....%	100.0	ANNUAL COST INFLATION.....%	0.0
WORKING INT. A/PAYOUT.....%	100.0	ANNUAL PRICE INFLATION....%	0.0
INCOME TAX.....%	48.0	NEG INC TAX OFFSET BY OTHER INCOME	
UNIT OF PRODUCTION DEPRECIATION			

DISCOUNT	****PRESENT VALUE****	DISCOUNTED PROFIT TO**
RATE	***** \$1000 *****	***INVESTMENT RATIO***
*** % **	BEFORE TAX AFTER TAX	BEFORE TAX AFTER TAX
52.1	0.	0.00
37.6		
15.0	604.	268.
		1.59
		0.71
		RATE OF RETURN B.T.
		0.0 RATE OF RETURN A.T.

YEAR	INCOME	**PROJECT EXPENSES IN \$1000*				****CASH FLOW ANALYSIS IN \$1000****				
	\$1000	***	*****	AD.V.	*****	*****	**CUM	*****	*****	*****
**NET*	CAPITAL*	DEPR.	TAXES	PROD. COSTS	BEFORE TAX	BEFORE TAX	TAXED INCOME	TAXES	TAXES	AFTER TAXES
1983	93	379	5	8	2	-295	-295	-138	-66	-229
1984	254	0	15	21	6	227	-68	212	102	125
1985	218	0	13	18	6	194	126	181	87	107
1986	206	0	12	17	6	183	309	171	82	101
1987	189	0	11	16	6	167	476	156	75	92
1988	176	0	10	15	6	155	631	145	70	86
1989	165	0	10	14	6	145	777	136	65	80
1990	155	0	9	13	6	136	913	127	61	75
1991	146	0	9	12	6	128	1041	119	57	71
1992	137	0	8	11	6	120	1161	112	54	66
1993	129	0	8	11	6	113	1274	105	50	62
1994	122	0	7	10	6	106	1379	98	47	58
1995	115	0	7	10	6	99	1478	92	44	55
1996	108	0	6	9	6	93	1571	86	42	51
1997	101	0	6	8	6	87	1658	81	39	48
1998	95	0	6	8	6	81	1739	76	36	45
1999	90	0	5	7	6	76	1815	71	34	42
2000	84	0	5	7	6	71	1887	66	32	39
2001	79	0	5	7	6	67	1954	62	30	37
2002	75	0	4	6	6	63	2016	58	28	35
2003	53	0	3	4	5	44	2060	41	20	24
TOTAL	2792	379	162	232	120	2060	0	2060	989	1071

PAYOUT DURING MONTH 5 OF YEAR 3

2001	3.62	46	16948.	2118.	54.
2002	3.62	43	15886.	1986.	50.
2003	3.62	34	12475.	1559.	40.
TOTAL.....			625661.	78206.	1982.

NORTHWEST PIPELINE CORPORATION
 GAS RESERVES DEPARTMENT ECONOMIC STUDY
 COMMERCIALITY OF SJ 30-5 UNIT #93 DK

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WORKING INT. B/PAYOUT.....%	100.0	ANNUAL COST INFLATION.....%	0.0
WORKING INT. A/PAYOUT.....%	100.0	ANNUAL PRICE INFLATION.....%	0.0
INCOME TAX.....%	48.0	NEG INC TAX OFFSET BY OTHER INCOME	
UNIT OF PRODUCTION DEPRECIATION			

GAS PRODUCTION FROM SJ 30-5 UNIT #93 DK

LAND OWNER ROYALTY.....%	12.5	OVERRIDING ROYALTY.....	0.0
AD VALOREM AND SEV TAXES...%	8.3	OPERATING COSTS (\$/MO).....	500.0
MONTH OF CAPITAL EXPENSE....	5	OPERATING COSTS (% OF PROD).	0.0
DRILLING COSTS (\$1000).....	418.3	TANGIBLE \$ (% OF DRILLING \$)	34.5
SALVAGE VALUE (\$1000).....	0.0		

INITIAL MONTH	MCF/D	% DECLINE	TO MCF/D	ENDING MONTH
11	246.0	47.9	198.0	15
15	198.0	29.8	176.0	19
19	176.0	22.0	162.0	23
23	162.0	17.4	152.0	27
27	152.0	15.0	144.0	31
31	144.0	12.0	138.0	35
35	138.0	12.5	132.0	39
39	132.0	10.9	127.0	43
43	127.0	11.4	122.0	47
47	122.0	7.2	119.0	51
51	119.0	9.7	115.0	55
55	115.0	5.1	113.0	59
59	113.0	7.8	110.0	63
63	110.0	8.0	107.0	67
67	107.0	5.5	105.0	71
71	105.0	6.3	40.0	250
250	40.0	100.0	0.0	251

YEAR	PRICE \$/ MCF	AVG MCF/D	ANNUAL MCF	ROYALTY MCF	REVENUE AFTER ROYALTY \$1000
1983	3.62	40	14580.	1822.	46.
1984	3.62	183	66719.	8340.	211.
1985	3.62	146	53224.	6653.	169.
1986	3.62	128	46647.	5831.	148.
1987	3.62	116	42382.	5298.	134.
1988	3.62	108	39329.	4916.	125.
1989	3.62	101	36838.	4605.	117.
1990	3.62	95	34530.	4316.	109.
1991	3.62	89	32367.	4046.	103.
1992	3.62	83	30339.	3792.	96.
1993	3.62	78	28438.	3555.	90.
1994	3.62	73	26656.	3332.	84.
1995	3.62	68	24986.	3123.	79.
1996	3.62	64	23421.	2928.	74.
1997	3.62	60	21954.	2744.	70.
1998	3.62	56	20578.	2572.	65.
1999	3.62	53	19289.	2411.	61.
2000	3.62	50	18081.	2260.	57.

NORTHWEST PIPELINE CORPORATION
 GAS RESERVES DEPARTMENT ECONOMIC STUDY
 COMMERCIALITY OF SJ 30-5 UNIT #93 DK

TUE MARCH 11, 1986
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WORKING INT. B/PAYOUT.....%	100.0	ANNUAL COST INFLATION.....%	0.0
WORKING INT. A/PAYOUT.....%	100.0	ANNUAL PRICE INFLATION....%	0.0
INCOME TAX.....%	48.0	NEG INC TAX OFFSET BY OTHER INCOME	

DISCOUNT	****PRESENT VALUE****		DISCOUNTED PROFIT TO**	
RATE	***** \$1000 *****		***INVESTMENT RATIO***	
*** % **	BEFORE TAX	AFTER TAX	BEFORE TAX	AFTER TAX
	34.1	0.	0.00	
	25.8			RATE OF RETURN B.T.
	15.0	298.	117.	0.0 RATE OF RETURN A.T.
			0.71	0.28

YEAR	INCOME	**PROJECT EXPENSES IN \$1000*				****CASH FLOW ANALYSIS IN \$1000****				
	\$1000	***	*****	AD.V.	*****	*****	**CUM	*****	*****	*****
NET*	CAPI-	***	SEV.	PROD.	BEFORE	BEFORE	TAXED	INCOME	AFTER	
*****	*TAL*	DEPR.	TAXES	COSTS	*TAXES	TAXES	INCOME	TAXES	TAXES	
1983	46	418	3	4	1	-377	-377	-236	-113	-264
1984	211	0	15	18	6	188	-189	172	83	105
1985	169	0	12	14	6	149	-41	136	65	83
1986	148	0	11	12	6	129	89	119	57	72
1987	134	0	10	11	6	117	206	107	52	66
1988	125	0	9	10	6	108	314	99	48	61
1989	117	0	9	10	6	101	415	92	44	57
1990	109	0	8	9	6	94	509	86	41	53
1991	103	0	7	9	6	88	597	81	39	49
1992	96	0	7	8	6	82	680	75	36	46
1993	90	0	7	7	6	77	756	70	34	43
1994	84	0	6	7	6	71	828	65	31	40
1995	79	0	6	7	6	67	894	61	29	37
1996	74	0	5	6	6	62	956	57	27	35
1997	70	0	5	6	6	58	1014	53	25	32
1998	65	0	5	5	6	54	1068	49	24	30
1999	61	0	4	5	6	50	1118	46	22	28
2000	57	0	4	5	6	46	1164	42	20	26
2001	54	0	4	4	6	43	1207	39	19	24
2002	50	0	4	4	6	40	1247	36	18	23
2003	40	0	3	3	5	31	1279	28	14	18
TOTAL	1982	418	144	165	120	1279	0	1278	614	665

PAYOUT DURING MONTH 4 OF YEAR 4