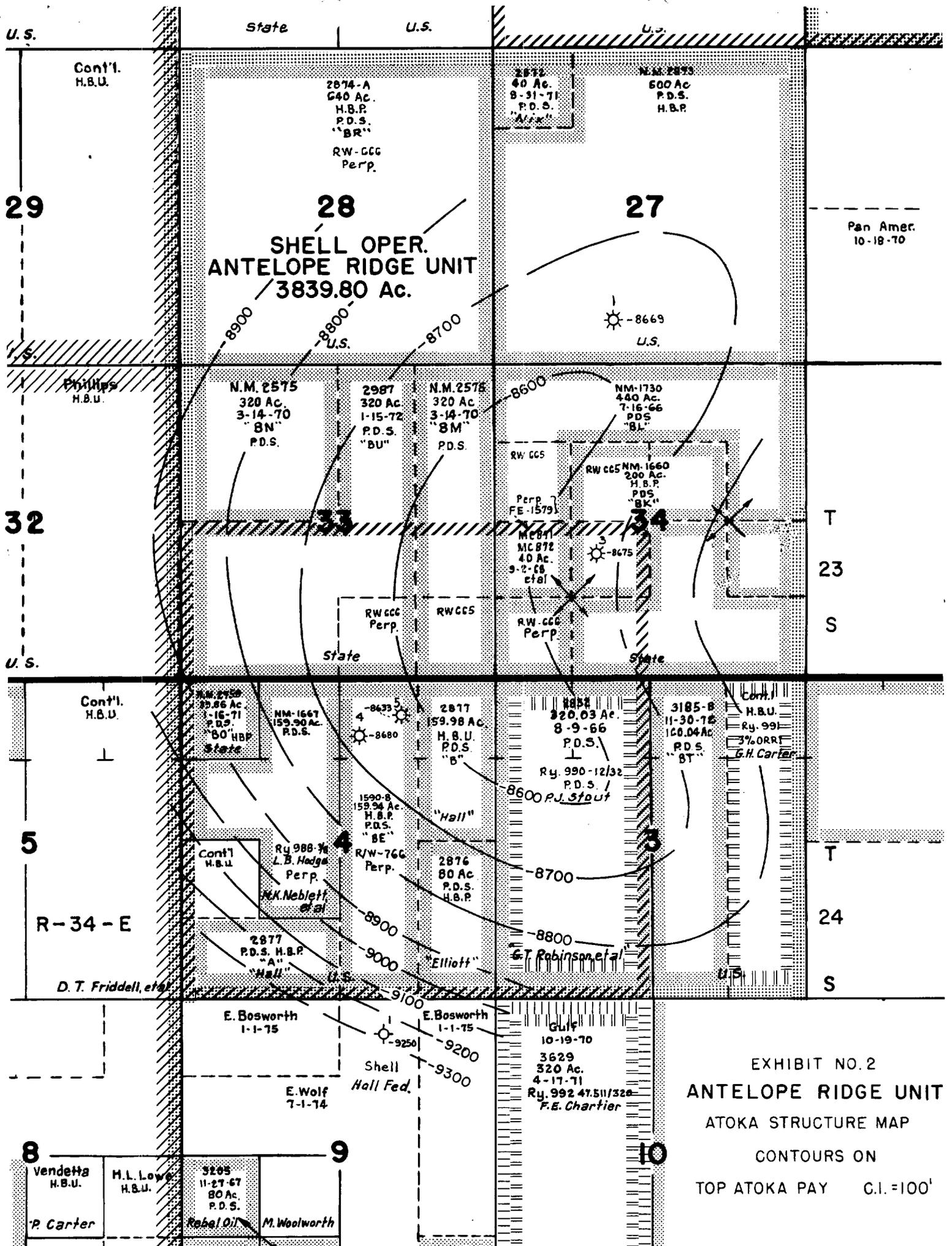


EXHIBIT NO. 2
ANTELOPE RIDGE UNIT
 ATOKA STRUCTURE MAP
 CONTOURS ON
 TOP ATOKA PAY C.I.=100'



**SHELL OPER.
ANTELOPE RIDGE UNIT
3839.80 Ac.**

EXHIBIT NO. 2
ANTELOPE RIDGE UNIT
 ATOKA STRUCTURE MAP
 CONTOURS ON
 TOP ATOKA PAY C.I. = 100'

N.M. 2575
 320 Ac.
 3-14-70
 "BN"
 P.D.S.

2987
 320 Ac.
 1-15-72
 P.D.S.
 "BU"

N.M. 2576
 320 Ac.
 3-14-70
 "BM"
 P.D.S.

N.M. 1730
 440 Ac.
 7-16-66
 P.D.S.
 "BL"

RW 665 NM-1660
 200 Ac.
 H.B.P.
 P.D.S.
 "BK"

MC 872
 40 Ac.
 9-2-68
 et al

N.M. 2558
 25.86 Ac.
 3-16-71
 P.D.S.
 "BO" H.B.P.
 State

N.M. 1667
 159.90 Ac.
 P.D.S.

2877
 159.98 Ac.
 H.B.U.
 P.D.S.
 "B"

2878
 320.03 Ac.
 8-9-66
 P.D.S.

3185-B
 11-30-72
 120.04 Ac.
 P.D.S.
 "BT"

Cont'l
 H.B.U.
 Ry. 991
 3% ORR
 G.H. Carter

1590-B
 159.94 Ac.
 H.B.P.
 P.D.S.
 "BE"

Cont'l
 H.B.U.
 Ry 988-7/8
 L.B. Hadge
 Perp.
 M.K. Neblett
 et al

R/W-766
 Perp.

2876
 80 Ac.
 P.D.S.
 H.B.P.

Ry. 990-12/32
 P.D.S.
 8600 P.J. Stout

2877
 P.D.S. H.B.P.
 "A"
 "Hall"

"Elliott"

G.T. Robinson et al

E. Bosworth
 1-1-75

E. Bosworth
 1-1-75

Gulf
 10-19-70
 3629
 320 Ac.
 4-17-71
 Ry. 992 47.51/320
 F.E. Chartier

E. Wolf
 7-1-74

Shell
 Hall Fed.

Vendetta
 H.B.U.
 P. Carter

H.L. Lowe
 H.B.U.

3205
 11-27-67
 80 Ac.
 P.D.S.
 Rebel Oil

M. Woolworth

Schedule I
Initial Participating Area
Morrow Formation - Antelope Ridge Unit
Lea County, New Mexico

Schedule Showing Percentage of Participation
and Ownership of Leases in the Participating Area

Lease:	Shell Oil Company
Working Interest Owner:	Shell Oil Company
Serial Number and Tract Number:	NM 07199-B (Tract 4)
Participating Acreage:	159.98 Acres
Percent of Participation:	11.11196
Description:	Section 4: Lot 1, SE/4 NE/4, S/2 SW/4, T-24-S, R-34-E, N.M.P.M.
Lease:	Shell Oil Company
Working Interest Owner:	Shell Oil Company
Serial Number and Tract Number:	NM 07199-C (Tract 5)
Participating Acreage:	80.00 Acres
Percent of Participation:	5.55668
Description:	Section 4: E/2 SE/4, T-24-S, R-34-E, N.M.P.M.
Lease:	Shell Oil Company
Working Interest Owner:	Shell Oil Company
Serial Number and Tract Number:	NM 021422 (Tract 6)
Participating Acreage:	159.94 Acres
Percent of Participation:	11.10918
Description:	Section 4: Lot 2, SW/4 NE/4, W/2 SE/4, T-24-S, R-34-E, N.M.P.M.
Lease:	Continental Oil Company
Working Interest Owner:	Continental Oil Company
Serial Number and Tract Number:	NM 045352 (Tract 7)
Participating Acreage:	40.00 Acres
Percent of Participation:	2.77833
Description:	Section 4: NW/4 SW/4, R-24-S, R-34-E, N.M.P.M.
Lease:	Shell Oil Company
Working Interest Owner:	Shell Oil Company
Serial Number and Tract Number:	E-8078 (Tract 10)
Participating Acreage:	80.00 Acres
Percent of Participation:	5.55668
Description:	Section 34: NE/4 SW/4, SW/4 SW/4, T-23-S, R-34-E, N.M.P.M.
Lease:	Shell Oil Company
Working Interest Owner:	Shell Oil Company
Serial Number and Tract Number:	OG-20 (Tract 11)
Participating Acreage:	80.00 Acres
Percent of Participation:	5.55668
Description:	Section 34: NW/4 SW/4, SE/4 SW/4, T-23-S, R-34-E, N.M.P.M.

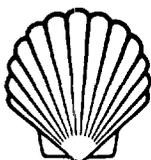
Lease:	Shell Oil Company	
Working Interest Owner:	Shell Oil Company	
Serial Number and Tract Number:	K-280 (Tract 12)	
Participating Acreage:	80.00 Acres	
Percent of Participation:	5.55668	
Description:	Section 33: E/2 SE/4, T-23-S, R-34-E, N.M.P.M.	
Lease:	Shell Oil Company	
Working Interest Owner:	Shell Oil Company	
Serial Number and Tract Number:	K-1124 (Tract 13)	
Participating Acreage:	39.86 Acres	
Percent of Participation:	2.76861	
Description:	Section 4: Lot 4, T-24-S, R-34-E, N.M.P.M.	
Lease:	Shell Oil Company	
Working Interest Owner:	Shell Oil Company	
Serial Number and Tract Number:	K-2149 (Tract 14)	
Participating Acreage:	240.00 Acres	
Percent of Participation:	16.67002	
Description:	Section 33: SW/4, W/2 SE/4, T-23-S, R-34-E, N.M.P.M.	
Lease:	Shell Oil Company	
Working Interest Owner:	Shell Oil Company	
Serial Number and Tract Number:	None (Tract 15)	
Participating Acreage:	320.03 Acres	
Percent of Participation:	22.22878	
Description:	Section 3: Lots 3 and 4, S/2 NW/4, SW/4, T-24-S, R-34-E, N.M.P.M.	
Lease:	Shell Oil Company	
Working Interest Owner:	Shell Oil Company	
Serial Number and Tract Number:	None (Tract 16)	
Participating Acreage:	159.90 Acres	
Percent of Participation:	11.10640	
Description:	Section 4: Lot 3, S/2 NW/4, NE/4 SW/4, T-24-S, R-34-E, N.M.P.M.	
Summary:		
	<u>Acres</u>	<u>Percent</u>
Total Federal Lands	439.92	30.55615
Total Indian Lands	0.00	0.00
Total State Lands	519.86	36.10867
Total Fee or Other Lands	<u>479.93</u>	<u>33.33518</u>
Subtotal	1439.71	100.00000
Uncommitted Acreage	<u>0.00</u>	
Total Productive Acreage	1439.71	

Schedule II
Initial Participating Area
Atoka Formation - Antelope Ridge Unit
Lea County, New Mexico

Schedule Showing the Percentage of Participation
and Ownership of Leases in the Participating Area

Lease:	Shell Oil Company
Working Interest Owner:	Shell Oil Company
Serial Number and Tract Number:	NM 07199-B (Tract 4)
Participating Acreage:	159.98 Acres
Percent of Participation:	11.11196
Description:	Section 4: Lot 1, SE/4 NE/4, S/2 SW/4, T-24-S, R-34-E, N.M.P.M.
Lease:	Shell Oil Company
Working Interest Owner:	Shell Oil Company
Serial Number and Tract Number:	NM 07199-C (Tract 5)
Participating Acreage:	80.00 Acres
Percent of Participation:	5.55668
Description:	Section 4: E/2 SE/4, T-24-S, R-34-E, N.M.P.M.
Lease:	Shell Oil Company
Working Interest Owner:	Shell Oil Company
Serial Number and Tract Number:	NM 021422 (Tract 6)
Participating Acreage:	159.94 Acres
Percent of Participation:	11.10918
Description:	Section 4: Lot 2: SW/4 NE/4, W/2 SE/4, T-24-S, R-34-E, N.M.P.M.
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Lease:	Shell Oil Company
Working Interest Owner:	Shell Oil Company
Serial Number and Tract Number:	E-8078 (Tract 10)
Participating Acreage:	80.00 Acres
Percent of Participation:	5.55668
Description:	Section 34: NE/4 SW/4, SW/4 SW/4, T-23-S, R-34-E, N.M.P.M.
Lease:	Shell Oil Company
Working Interest Owner:	Shell Oil Company
Serial Number and Tract Number:	OG-20 (Tract 11)
Participating Acreage:	80.00 Acres
Percent of Participation:	5.55668
Description:	Section 34: NW/4 SW/4, SE/4 SW/4, T-23-S, R-34-E, N.M.P.M.

Lease:	Shell Oil Company
Working Interest Owner:	Shell Oil Company
Serial Number and Tract Number:	K-280 (Tract 12)
Participating Acreage:	80.00 Acres
Percent of Participation:	5.55668
Description:	Section 33: E/2 SE/4, T-23-S, R-34-E, N.M.P.M.
Lease:	Shell Oil Company
Working Interest Owner:	Shell Oil Company
Serial Number and Tract Number:	K-1124 (Tract 13)
Participating Acreage:	39.86 Acres
Percent of Participation:	2.76861
Description:	Section 4: Lot 4, T-24-S, R-34-E, N.M.P.M.
Lease:	Shell Oil Company
Working Interest Owner:	Shell Oil Company
Serial Number and Tract Number:	K-2149 (Tract 14)
Participating Acreage:	240.00 Acres
Percent of Participation:	16.67002
Description:	Section 33: SW/4, W/2 SE/4, T-23-S, R-34-E, N.M.P.M.
Lease:	Shell Oil Company
Working Interest Owner:	Shell Oil Company
Serial Number and Tract Number:	None (Tract 15)
Participating Acreage:	320.03 Acres
Percent of Participation:	22.22878
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Lease:	Shell Oil Company
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Serial Number and Tract Number:	None (Tract 16)
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Percent of Participation:	11.10640
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Summary:	<u>Acres</u> <u>Percent</u>
Total Federal Lands	439.92 30.55615
Total Indian Lands	0.00 0.00
Total State Lands	519.86 36.10867
Total Fee or Other Lands	<u>479.93</u> <u>33.33518</u>
Subtotal	1439.71 100.00000
Uncommitted Acreage	<u>0.00</u>
Total Productive Acreage:	1439.71



SHELL OIL COMPANY

WESTERN DIVISION
P. O. BOX 1509
MIDLAND, TEXAS 79704

2719
MAIN OFFICE OCC

FEB 14 AM 7:57

February 8, 1966

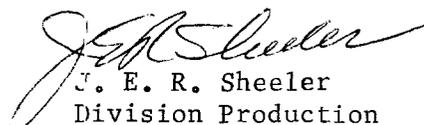
Subject: Antelope Ridge Unit
Lea County, New Mexico
Plan of Development - 1966

Oil Conservation Commission
State of New Mexico
P.O. Box 871
Santa Fe, New Mexico

Gentlemen:

Attached for your information are copies of the Plan of Development for the Antelope Ridge Unit for the year 1966, which have been ratified by the Regional Oil and Gas Supervisor, U.S.G.S. and the Commissioner of Public Lands.

Yours very truly,


J. E. R. Sheeler
Division Production
Manager

Attachments

PLAN OF DEVELOPMENT
ANTELOPE RIDGE UNIT (NO. 14-08-1000-8492)
LEA COUNTY, NEW MEXICO

FEB 14 AM 7:57

Oil and Gas Supervisor (6)
United States Geological Survey
P. O. Drawer 1857
Roswell, New Mexico

Commissioner of Public Lands (5)
State of New Mexico
State Land Building
Santa Fe, New Mexico

Oil Conservation Commission (5)
State of New Mexico
P. O. Box 871
Santa Fe, New Mexico

Gentlemen:

In compliance with Section 10 of the Antelope Ridge Unit Agreement, Shell Oil Company, as Unit Operator, hereby submits for your approval the Plan of Development for the Antelope Ridge Unit for the calendar year 1966.

As provided in the 1965 Plan of Development, Antelope Ridge Unit No. 4, NW/4 NE/4 Section 4, T-24-S, R-34-E, was drilled and completed as a Pennsylvanian gas producer for a calculated absolute open flow potential of 30.0 million cubic feet of gas per day. Liquid content was 26.5 barrels of 57.5 deg. API gravity condensate per million cubic feet of gas. This well provided a withdrawal point from a Pennsylvanian gas zone, which could not be effectively exploited in existing wells. Additionally, Antelope Ridge Unit No. 2 (formerly Federal BE No. 1) NW/4 NE/4 Section 4, T-24-S, R-34-E was reentered so as to dual the Siluro-Devonian pay with the existing Pennsylvanian pay in the well. The Devonian interval was perforated and completed for a calculated absolute open flow potential of 16.4 million cubic feet of gas per day. Liquid content was 25.9 barrels of 62.3 deg. API gravity condensate per million cubic feet of gas.

The Unit is now developed by four gas wells which provide three Devonian drainage points and two separate Pennsylvanian drainage points as follow:

<u>Well</u>	<u>Location</u>	<u>Formation</u>	<u>Depth - Feet</u>
No. 1	SE/4 SW/4 Sec. 27	Siluro-Devonian	14,662 - 14,840
No. 2	NW/4 NE/4 Sec. 4	Siluro-Devonian	14,667 - 14,798
		Pennsylvanian	12,898 - 13,151
No. 3	NE/4 SW/4 Sec. 34	Siluro-Devonian	14,695 - 14,830
No. 4	NW/4 NE/4 Sec. 4	Pennsylvanian	12,005 - 12,375

DEC 13 1966

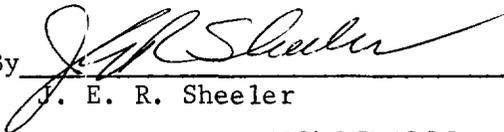
U. S. GEOLOGICAL SURVEY
WASHINGTON, D. C. 20540

In line with the original plan for Unit operations as set forth in our application for the Initial Participating Area for the Siluro-Devonian Formation, it is the intent of the Operator to produce gas from crestal positions on the structure and to eliminate unnecessary wells. The present gas sales contract is geared to this intent. Presently, the Unit is selling gas at the rate of about 40 million cubic feet of gas per day or about 8 million per drainage point. Terms of the sales contract are such that drilling of additional wells will not result in the production of additional gas within the Unit. A preliminary reserve determination is to be made near the end of 1965 for contractual purposes and a final determination is planned in 1968. It is expected that reservoir performance history will have a decided bearing on ultimate reserve estimates. As Operator, we are confident that the existing wells are now draining substantially in excess of 640 acres per well and that the drilling of additional down-flank wells would result in economic waste.

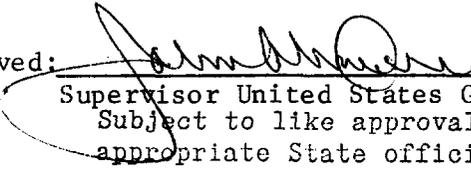
Therefore, it is the plan of the Operator not to drill any wells during 1966. It is understood, however, that if the occasion should arise that additional wells become necessary to validate reserves or that the Unit reserves may be jeopardized by competitive drainage, the Unit Operator will take appropriate and prudent action. This plan of development may be modified to cover such contingencies.

Shell Oil Company
Unit Operator

By


J. E. R. Sheeler

JAN 27 1966

Approved: 

Supervisor United States Geological Survey
Subject to like approval by the
appropriate State officials.

Approved: _____

Commissioner of Public Lands

Approved: _____

Oil Conservation Commission

PLAN OF DEVELOPMENT
ANTELOPE RIDGE UNIT (NO. 14-08-0001-8492)
LEA COUNTY, NEW MEXICO

MAIN OFFICE OCS
FEB 14 AM 7:59

Oil and Gas Supervisor (6)
United States Geological Survey
P. O. Drawer 1857
Roswell, New Mexico

Commissioner of Public Lands (5)
State of New Mexico
State Land Building
Santa Fe, New Mexico

Oil Conservation Commission (5)
State of New Mexico
P. O. Box 871
Santa Fe, New Mexico

Gentlemen:

In compliance with Section 10 of the Antelope Ridge Unit Agreement, Shell Oil Company, as Unit Operator, hereby submits for your approval the Plan of Development for the Antelope Ridge Unit for the calendar year 1966.

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No. 4	NW/4 NE/4 Sec. 4	Pennsylvanian	12,005 - 12,375

In line with the original plan for Unit operations as set forth in our application for the Initial Participating Area for the Siluro-Devonian Formation, it is the intent of the Operator to produce gas from crestal positions on the structure and to eliminate unnecessary wells. The present gas sales contract is geared to this intent. Presently, the Unit is selling gas at the rate of about 40 million cubic feet of gas per day or about 8 million per drainage point. Terms of the sales contract are such that drilling of additional wells will not result in the production of additional gas within the Unit. A preliminary reserve determination is to be made near the end of 1965 for contractual purposes and a final determination is planned in 1968. It is expected that reservoir performance history will have a decided bearing on ultimate reserve estimates. As Operator, we are confident that the existing wells are now draining substantially in excess of 640 acres per well and that the drilling of additional down-flank wells would result in economic waste.

Therefore, it is the plan of the Operator not to drill any wells during 1966. It is understood, however, that if the occasion should arise that additional wells become necessary to validate reserves or that the Unit reserves may be jeopardized by competitive drainage, the Unit Operator will take appropriate and prudent action. This plan of development may be modified to cover such contingencies.

Shell Oil Company
Unit Operator

By *J. E. R. Sheeler*
J. E. R. Sheeler

Approved: _____
Supervisor United States Geological Survey

Approved: *Leighton B. Hayes* *January 28, 1966*
Commissioner of Public Lands

Approved: _____
Oil Conservation Commission

RECEIVED
 JAN 28 1966
 PUBLIC LANDS
 DEPARTMENT OF THE INTERIOR
 WASHINGTON, D. C.

OIL CONSERVATION COMMISSION

P. O. BOX 2088

SANTA FE, NEW MEXICO

February 1, 1966

Shell Oil Company
P. O. Box 1509
Midland, Texas 79704

Attention: Mr. J. E. R. Sheeler

Re: 1966 Plan of Development,
Antelope Ridge Unit, Lea
County, New Mexico

Gentlemen:

This is to advise that the New Mexico Oil Conservation Commission has this date approved the 1966 Plan of Development dated December 13, 1965, for the Antelope Ridge Unit, Lea County, New Mexico, subject to like approval by the United States Geological Survey and the Commissioner of Public Lands of the State of New Mexico.

Four approved copies of the plan are returned herewith.

Very truly yours,

A. L. PORTER, Jr.,
Secretary-Director

ALP/JEK/g

cc: Commissioner of Public Lands - Santa Fe
U. S. Geological Survey - Roswell

C
O
P
Y

Drawer 1857
Roswell, New Mexico 88201

MAIN OFFICE OCC

JAN 31 AM 8:01

January 27, 1966

Shell Oil Company
P. O. Box 1509
Midland, Texas 79704

Attention: Mr. J. E. R. Sheeler

Gentlemen:

Your 1966 plan of development dated December 13, 1965, for the Antelope Ridge unit area, Lea County, New Mexico, proposing the drilling of no additional wells, has been approved on this date subject to like approval by the appropriate State officials.

Three approved copies of the plan are enclosed.

Sincerely yours,

(ORIG. SSB.) JOHN A. ANDERSON

JOHN A. ANDERSON
Regional Oil & Gas Supervisor

cc:
Washington (w/cy of plan)
Hobbs (w/cy of plan)
N.M.O.C.C. - Santa Fe (ltr. only) ✓
Com. of Pub. Lands - Santa Fe (ltr. only)



SHELL OIL COMPANY

WESTERN DIVISION
P. O. BOX 1509
MIDLAND, TEXAS 79704

December 13, 1965

Subject: Antelope Ridge Unit (No. 14-08-0001-8492)
Lea County, New Mexico
Proposed 1966 Plan of Development

Oil and Gas Supervisor
United States Geological Survey
P. O. Drawer 1857
Roswell, New Mexico

Commissioner of Public Lands
State of New Mexico
State Land Building
Santa Fe, New Mexico

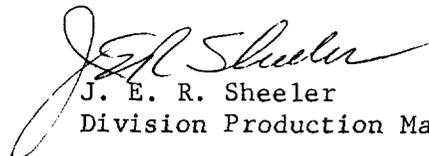
Oil Conservation Commission
State of New Mexico
P. O. Box 871
Santa Fe, New Mexico

Gentlemen:

Attached are copies of a proposed Plan of Development on the Antelope Ridge Unit, Lea County, New Mexico, for the calendar year 1966.

If this Plan of Development meets with your approval, please sign and return three ratified copies for further handling and distribution.

Yours very truly,


J. E. R. Sheeler
Division Production Manager

Attachments

PLAN OF DEVELOPMENT
ANTELOPE RIDGE UNIT (NO. 14-08-0001-8492)
LEA COUNTY, NEW MEXICO

Oil and Gas Supervisor (6)
United States Geological Survey
P. O. Drawer 1857
Roswell, New Mexico

Commissioner of Public Lands (5)
State of New Mexico
State Land Building
Santa Fe, New Mexico

Oil Conservation Commission (5)
State of New Mexico
P. O. Box 871
Santa Fe, New Mexico

Gentlemen:

In compliance with Section 10 of the Antelope Ridge Unit Agreement, Shell Oil Company, as Unit Operator, hereby submits for your approval the Plan of Development for the Antelope Ridge Unit for the calendar year 1966.

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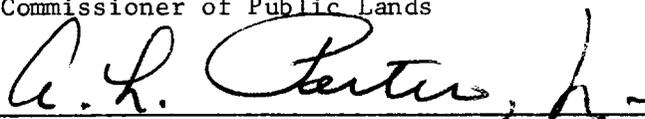
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Shell Oil Company
Unit Operator

By 
J. E. R. Sheeler

Approved: _____
Supervisor United States Geological Survey

Approved: _____
Commissioner of Public Lands

Approved: 
Oil Conservation Commission



SHELL OIL COMPANY

P. O. Box 1853
Roswell, New Mexico

2711
MAY 21 1964

May 20, 1964

Subject: Lea County, New Mexico
Antelope Ridge Unit
No. 14-08-0001-8492

Director, United States Geological Survey
Department of the Interior
Washington 25, D. C.

Commissioner of Public Lands
State of New Mexico
Santa Fe, New Mexico

Through: Regional Supervisor
United States Geological Survey
Department of the Interior
Roswell, New Mexico

Mr. A. L. Porter, Jr.
Secretary-Director
Oil Conservation Commission
P. O. Box 871
Santa Fe, New Mexico

Gentlemen:

Under date of December 31, 1963, Shell, as Unit Operator of the captioned unit, applied to the Director, United States Geological Survey, the Commissioner of Public Lands, and the Oil and Gas Conservation Commission for preliminary concurrence to its proposed expansion of the Unit Area to include Section 9, T-24-S, R-34-E. The Director, by letter of January 22, 1964, and the Commissioner, by letter of January 29, 1964, gave preliminary concurrence to the proposed expansion. Shell therefore, pursuant to Section 2 of the Unit Agreement, gave notice to all beneficial interest owners of its intention to expand the unit and at the same time ratifications were furnished to all of the necessary parties.

The reasons for the proposed expansion were explained in our letter dated January 28, 1964, addressed to the Director and the Commissioner, and copies of that letter were furnished to all royalty owners with the request for their ratifications of the expansion. As you now know, the Shell Hall Federal No. 1, located in the NW-1/4 NE-1/4 of Section 9, T-24-S, R-34-E, was completed as a dry hole, so that it will not now be feasible to expand the original unit as we had proposed.

This belated letter is to express to the Director, the Commissioner, and Oil and Gas Commission our appreciation for your cooperation in helping us in our efforts to expand the unit, even though the expansion is no longer in prospect. By copy of this letter, we wish to express to all of the parties who ratified the proposed expansion, or made no objections, our sincere appreciation for their cooperation, and our regret that the results of the well in Section 9 have made it necessary to dispense with our plans for enlarging the unit at this time. We are also returning to the ratifying parties the ratifications they executed.

Yours very truly,

Lee Farris
Roswell Division Land Department

ADDRESSEE LIST

MAIL OFFICE 200
1964 MAY 12 PM 1 03

- Miss Elizabeth Woolworth
403 West Avenue D
San Angelo, Texas
- Mrs. Martha W. Harris
704 East Main Street
Henderson, Texas
- Miss Myrtis Watkins
704 East Main Street
Henderson, Texas
- Rebel Oil Company
P. O. Box 96
Hobbs, New Mexico
- * Miss Joyce Ann Brown
410 West Palmer Road
Las Cruces, New Mexico
- * Mr. B. A. Christmas, Jr.
Trustee and Guardian
Chico Route
Raton, New Mexico
- Elliott, Incorporated
P. O. Box 703
Roswell, New Mexico
- * Mr. and Mrs. Dennis Nix
202 South Third Street
LaMesa, Texas
- * Mr. and Mrs. Fred Allen
240 Flower Street
Bakersfield, California
- * Mrs. Gracie T. Robinson
507 South Mesquite
Carlsbad, New Mexico
- * Mr. and Mrs. Edwin E. Merriman
P. O. Box 48
Lubbock, Texas
- * Mr. Gilbert J. Sevier
1115 East Elm Street
Hillsboro, Texas
- Mrs. Clyde Watkins Miller
c/o Mrs. Martha W. Harris
704 East Main Street
Henderson, Texas
- Miss May Woolworth
403 West Avenue D
San Angelo, Texas
- * Mrs. Joyce Christmas Brown
410 West Palmer Road
Las Cruces, New Mexico
- Mrs. Annie L. Christmas, Joint Trustee Under
The Will of B. A. Christmas, Sr., Deceased
410 West Palmer Road, Las Cruces, New Mexico
- * Mr. and Mrs. Ora R. Hall, Jr.
P. O. Box 1754
Roswell, New Mexico
- * Mrs. Helen O. Watson
411 South Mesa
Carlsbad, New Mexico
- Sunshine Royalty Company
P. O. Box 1535
Roswell, New Mexico
- * Mr. and Mrs. C. E. Strange
P. O. Box 61
Bakersfield, California
- * Mr. and Mrs. Lamar Lunt
Zia Road
Santa Fe, New Mexico
- * Mr. and Mrs. J. Hiram Moore
201 Wall Building Suite 519
Hobbs, New Mexico

* Mr. Roy G. Barton, Jr.
P. O. Box 968
Hobbs, New Mexico

Mr. and Mrs. Channing Brown
1316 Madeline Street
El Paso, Texas

Continental Oil Company
P. O. Box 1291
Roswell, New Mexico

* Mrs. Maizie K. Neblett
167 Bahia, 2717 Arrow Highway
LaVerne, California

* Mr. and Mrs. Frank O. Elliott
P. O. Box 703
Roswell, New Mexico

* Mr. and Mrs. George H. Hunker
1710 West Third Street
Roswell, New Mexico

* Mrs. Pearl O. Pipkin, Individually
and as Executrix of the Estate of
Eugene H. Pipkin, Deceased
P. O. Box 1174
Roswell, New Mexico

*Executed Ratification Returned



IN REPLY REFER TO:

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

Drawer 1857
Roswell, New Mexico 88201
1964 APR 22

271
April 20, 1964

Shell Oil Company
P. O. Box 1358
Roswell, New Mexico

Attention: Mr. T. E. Dwyer

Gentlemen:

The initial Pennsylvania participating area for the Antelope Ridge unit agreement, Los County, New Mexico, was approved on April 8, 1964, by the Acting Director, Geological Survey, effective as of September 12, 1963.

Two copies of the approved application are enclosed. You are requested to furnish the State of New Mexico and any other interested party with appropriate evidence of this approval.

Sincerely yours,

(ORIG. SGD) JOHN A. ANDERSON

JOHN A. ANDERSON
Regional Oil and Gas Supervisor

cc:

Washington (w/cy ltr. only)
BLM, Santa Fe (w/cy of approved appln.)
Hobbs (w/cy of approved appln.)
Com. of Pub. Lands, Santa Fe (ltr. only)
R2000, Santa Fe (ltr. only) ✓

2711
RECEIVED
131 APR 15 PM 1 27

Drawer 1857
Roswell, New Mexico 88201

April 14, 1964

Shell Oil Company
P. O. Box 1858
Roswell, New Mexico

Attention: Mr. T. H. Bryar

Gentlemen:

The first revision of the Silure-Devonian participating area for the Antelope Ridge unit agreement, Lea County, New Mexico, was approved on March 27, 1964, by the Acting Director, Geological Survey, effective as of March 1, 1963.

Two copies of the approved application are enclosed. You are requested to furnish the State of New Mexico and any other interested party with appropriate evidence of this approval.

Sincerely yours,

CARL C. TRAYWICK
Acting Oil & Gas Supervisor

cc:
Washington (ltr. only)
BLM - Santa Fe (w/cy of approved appln.)
Hobbs (w/cy of approved appln.)
Com. of Pub. Lands - Santa Fe (ltr. only)
EMOCC - Santa Fe (ltr. only)

Drawer 1857
Roswell, New Mexico 88201

April 14, 1964

Shell Oil Company
P. O. Box 1857
Roswell, New Mexico

Attention: Mr. T. H. Dwyer

Gentlemen:

The initial Siluro-Devonian participating area for the Antelope Ridge unit agreement, Lea County, New Mexico, was approved on March 27, 1964, by the Acting Director, Geological Survey, effective as of December 27, 1962.

Two copies of the approved application are enclosed. You are requested to furnish the State of New Mexico and any other interested party with appropriate evidence of this approval.

Sincerely yours,

CARL C. TRAYWICK
Acting Oil & Gas Supervisor

cc:
Washington (w/cy ltr. only)
RLM - Santa Fe (w/cy of approved appln.)
Hobbs (w/cy of approved appln.)
Com. of Pub. Lands - Santa Fe (ltr. only)
NMOCC - Santa Fe (ltr. only) ✓

OIL CONSERVATION COMMISSION

P. O. BOX 2088

SANTA FE, NEW MEXICO

2719

March 8, 1965

Shell Oil Company
P. O. Box 1858
Roswell, New Mexico

Attention: Mr. T. H. Dwyer

Re: 1965 Plan of Development,
Antelope Ridge Unit, Lea
County, New Mexico

Gentlemen:

This is to advise that the New Mexico Oil Conservation Commission has this date approved the 1965 Plan of Development for the Antelope Ridge Unit, Lea County, New Mexico, subject to like approval by the United States Geological Survey and the Commissioner of Public Lands of the State of New Mexico.

Three approved copies of the plan are returned herewith.

Very truly yours,

A. L. PORTER, Jr.,
Secretary-Director

ALP/JEK/ey

cc: Commissioner of Public Lands - Santa Fe
United States Geological Survey - Roswell

C
O
P
Y

Drawer 1857
Roswell, New Mexico 38201

201 FEB 17 1965

February 15, 1965

Shell Oil Company
P. O. Box 1858
Roswell, New Mexico

Attention: Mr. T. H. Dwyer

Gentlemen:

Your 1965 plan of development for the Antelope Ridge unit area, Lea County, New Mexico, proposing to complete unit well No. 4-2 in the ~~WANEZ~~ sec. 4, T. 24 S., R. 34 E., as an upper Pennsylvanian gas well and to recomplete unit well No. 4-1 as a dual lower Pennsylvanian-Devonian well, has been approved on this date subject to like approval by the appropriate State officials.

Three approved copies of the plan are enclosed.

Sincerely yours,
(ORIG. SGN) JOHN A. ANDERSON

JOHN A. ANDERSON
Regional Oil & Gas Supervisor

cc:
Washington (w/cy of plan)
Hobbs (w/cy of plan)
NMOCC - Santa Fe (ltr. only)
Com. of Pub. Lands - Santa Fe (ltr. only)

STATE OF NEW MEXICO
1965 JAN 8 AM 10:30

January 6, 1965

Shell Oil Company
P. O. Box 1858
Roswell, New Mexico

Re: Antelope Ridge Unit
Lea County, New Mexico
1965 Plan of Development

Attention: Mr. T. H. Dwyer

Gentlemen:

We have received your 1965 Plan of Development for the Antelope Ridge Unit Area. This Development Program covers the drilling of your No. 4-2 Unit Well in the Upper Pennsylvanian gas pay, to a depth of 12,400 feet; it also proposes to dual complete the Devonian with the currently producing Lower Pennsylvanian in Unit Well No. 4-1.

The Commissioner of Public Lands approves the 1965 Plan of Development for the Antelope Ridge Unit and we are returning three (3) copies of this Application.

Shell Oil Company
Attention: Mr. T. H. Dwyer
January 6, 1965
- page 2 -

Very truly yours,

WYTON B. HAYS
COMMISSIONER OF PUBLIC LANDS

BY:
Ted Bilberry, Director
Oil & Gas Department

GBH/mar/v

CC:

United States Geological Survey
P. O. DRAWER 1857
Roswell, New Mexico

New Mexico Oil Conservation Commission
P. O. Box 2088
Santa Fe, New Mexico

Shell Oil Company
Attention: Mr. T. H. Dwyer
January 6, 1965
- page 2 -

Very truly yours,

WYTON B. HAYS
COMMISSIONER OF PUBLIC LANDS

BT:
Ted Bilberry, Director
Oil & Gas Department

GBH/wmk/v

cc:

United States Geological Survey
P. O. DRAWER 1857
Roswell, New Mexico

New Mexico Oil Conservation Commission
P. O. Box 2088
Santa Fe, New Mexico

PLAN OF DEVELOPMENT
ANTELOPE RIDGE UNIT (NO. 14-08-0001-8492)
LEA COUNTY, NEW MEXICO

OIL AND GAS SUPERVISOR (6)
UNITED STATES GEOLOGICAL SURVEY
P. O. DRAWER 1857
ROSWELL, NEW MEXICO

COMMISSIONER OF PUBLIC LANDS (5)
STATE OF NEW MEXICO
STATE LAND BUILDING
SANTA FE, NEW MEXICO

OIL CONSERVATION COMMISSION (5)
STATE OF NEW MEXICO
P. O. BOX 871
SANTA FE, NEW MEXICO

Gentlemen:

In compliance with Section 10 of the Antelope Ridge Unit Agreement, Shell Oil Company, as Unit Operator, hereby submits for your approval a Plan of Development for the year 1965.

As provided in the 1964 Plan of Development, Antelope Ridge Unit 34-1 was completed as a Devonian gas producer September 51, 1964, for a calculated open flow potential of 19 million cubic feet of gas per day. The well is located in the NE/4 of the SW/4, Section 34, T-23-S, R-34-E. In addition, Antelope Ridge Unit 4-2 was spudded December 8, 1964, and will be drilled to a total depth of 12,400 feet in the upper Pennsylvanian gas pay. The completion information on Unit Well 27-1, Devonian, and Well 4-1, lower Pennsylvanian, was given in the 1964 Plan of Development.

During 1965 we propose to complete Antelope Ridge Unit 4-2 in the upper Pennsylvanian pay. The well, located in the NW/4 NE/4, Section 4, T-24-S, R-34-E, is presently drilling toward a projected total depth of 12,400 feet and will be completed during January 1965. We also propose to dual complete the Devonian with the currently producing lower Pennsylvanian in Unit Well 4-1, a twin well to Unit 4-2. The completion of these two wells will constitute our development plans for the Unit in 1965.

This Plan of Development shall constitute the drilling obligations of the Unit Operator under the terms of the Antelope Ridge Unit Agreement for the period ending December 31, 1965. Before this plan expires, another plan of development for the Unit will be submitted.

It is understood that portions of the Plan of Development herein outlined are dependent upon certain information to be gained subsequent to drilling, and, therefore, this Plan of Development may be modified from time to time, with like approval to meet changing conditions.

SHELL OIL COMPANY
Unit Operator

By: J. R. Gollnick
For T. H. Dwyer
Division Production Manager

Approved: _____ Date: _____
Supervisor, United States Geological Survey

Approved: _____ Date: _____
Commissioner of Public Lands

Approved: A. L. [Signature] Date: March 8, 1964
Oil Conservation Commission

PLAN OF DEVELOPMENT
ANTELOPE RIDGE UNIT (NO. 14-03-0001-8492)
LEA COUNTY, NEW MEXICO

OIL AND GAS SUPERVISOR (6)
UNITED STATES GEOLOGICAL SURVEY
P. O. DRAWER 1857
ROSWELL, NEW MEXICO

COMMISSIONER OF PUBLIC LANDS (5)
STATE OF NEW MEXICO
STATE LAND BUILDING
SANTA FE, NEW MEXICO

OIL CONSERVATION COMMISSION (5)
STATE OF NEW MEXICO
P. O. BOX 871
SANTA FE, NEW MEXICO

64 DEC 29 AM 6 10

Gentlemen:

In compliance with Section 10 of the Antelope Ridge Unit Agreement, Shell Oil Company, as Unit Operator, hereby submits for your approval a Plan of Development for the year 1965.

As provided in the 1964 Plan of Development, Antelope Ridge Unit 34-1 was completed as a Devonian gas producer September 51, 1964, for a calculated open flow potential of 19 million cubic feet of gas per day. The well is located in the NE/4 of the SW/4, Section 34, T-23-S, R-34-E. In addition, Antelope Ridge Unit 4-2 was spudded December 8, 1964, and will be drilled to a total depth of 12,400 feet in the upper Pennsylvanian gas pay. The completion information on Unit Well 27-1, Devonian, and Well 4-1, lower Pennsylvanian, was given in the 1964 Plan of Development.

During 1965 we propose to complete Antelope Ridge Unit 4-2 in the upper Pennsylvanian pay. The well, located in the NW/4 NE/4, Section 4, T-24-S, R-34-E, is presently drilling toward a projected total depth of 12,400 feet and will be completed during January 1965. We also propose to dual complete the Devonian with the currently producing lower Pennsylvanian in Unit Well 4-1, a twin well to Unit 4-2. The completion of these two wells will constitute our development plans for the Unit in 1965.

This Plan of Development shall constitute the drilling obligations of the Unit Operator under the terms of the Antelope Ridge Unit Agreement for the period ending December 31, 1965. Before this plan expires, another plan of development for the Unit will be submitted.

It is understood that portions of the Plan of Development herein outlined are dependent upon certain information to be gained subsequent to drilling, and, therefore, this Plan of Development may be modified from time to time, with like approval to meet changing conditions.

SHELL OIL COMPANY
Unit Operator

By: J. R. Golbruck
For: T. H. Dwyer
Division Production Manager

Approved: _____ Date: _____
Supervisor, United States Geological Survey

Approved: _____ Date: _____
Commissioner of Public Lands

Approved: A. L. Carter, Jr. Date: March 8, 1961
Oil Conservation Commission

OIL CONSERVATION COMMISSION

P. O. BOX 2088

SANTA FE, NEW MEXICO

March 3, 1965

Shell Oil Company
P. O. Box 1509
Midland, Texas

Attention: Mr. J. R. Fairchild

Gentlemen:

Administrative Order H.C-19

Reference is made to your application dated January 28, 1965, wherein you request authority to commingle Antelope Ridge-Pennsylvanian and Antelope Ridge-Devonian gas and condensate production from your Antelope Ridge Unit in Sections 27, 28, 33, and 34, Township 23 South, Range 34 East, and Sections 3 and 4, Township 24 South, Range 34 East, Lea County, New Mexico, after separately metering the high- and low-pressure gas and condensate from each pool (and participating area). The wet stream from each well will also be continuously metered prior to commingling.

We assume that the gas derived from the stabilizer will be allocated back to the Pennsylvanian and Devonian pools in the proportion that the liquid metered downstream from each of the low-pressure separators bears to the total liquids going into the stabilizer. Further, that the gas, gasoline, and LPG obtained downstream from the dehydrator, absorber, and fractionator will also be allocated back to each participating area in the proportion that each one is calculated to contribute.

The regional supervisor from the United States Geological Survey previously approved the original plan which you submitted November 13, 1964. The Commissioner of Public Lands for the State of New Mexico has now approved the plan as amended.

Pursuant to the authority granted me under the provisions of Rule 303 (b) and Rule 309-B of the Commission Rules and Regulations, you are hereby authorized to commingle the production from the aforesaid pools and participating areas in the above-described manner. Provided, however, that the installation shall be operated in accordance with the provisions of the Commission "Manual for the Installation and Operation of Commingling Facilities. You are also requested to notify the Hobbs District Office of the Commission at such time as the installation is complete in order that an inspection may be made of the installation prior to putting it in operation.

Very truly yours,

A. L. Porter, Jr.
Secretary-Director

ALL:Don:sg

cc: Oil Conservation Commission - Hobbs
Oil & Gas Engineering Committee - Hobbs
United States Geological Survey - Roswell
Commissioner of Public Lands - Santa Fe
Oil & Gas Accounting Commission - Santa Fe
Case File 2719



SHELL OIL COMPANY

P. O. Box 1858
Roswell, New Mexico

2719

February 20, 1964

Subject: Lea County, New Mexico
Antelope Ridge Unit Expansion

Your Case No. 2719
Order No. R-2389

Mr. A. L. Porter, Jr., Secretary-Director
Oil Conservation Commission
P. O. Box 871
Santa Fe, New Mexico

Dear Sir:

In your letter of February 1, 1964, received by us on February 12, 1964, you called our attention to Commission Order No. R-2389, whereby you approved our Antelope Ridge Unit expansion, and to paragraph 4 (b) of said order, which provides that administrative approval for expansion or contraction of the unit area must be obtained from the Secretary-Director of the Commission.

We regret having overlooked sending you copies of our letter of December 31, 1963, addressed to the Director of the United States Geological Survey and to the Commissioner of Public Lands, requesting preliminary approval of our proposed expansion of this unit. In accordance with your letter of February 1, 1964, we are now enclosing two copies of the letter of December 31, 1963, and will appreciate your furnishing us with a Decision at the earliest possible date. As you know, the Director of the United States Geological Survey gave his concurrence to the proposed expansion by letter of January 22, 1964, and the Commissioner of Public Lands gave concurrence by letter dated January 29, 1964.

Yours very truly,

Lee Farris
Roswell Division Land Department



SHELL OIL COMPANY

P. O. Box 1858
Roswell, New Mexico

December 31, 1963

Handwritten notes:
APAC
1/1
+
J. J. ...
1/1

Director, United States Geological Survey
Department of the Interior
Washington 25, D. C.

In Re: Antelope Ridge Unit
No. 14-08-001-8492
Lea County, New Mexico

Through: Regional Supervisor
United States Geological Survey
Department of the Interior
Roswell, New Mexico

Commissioner of Public Lands
State of New Mexico
P. O. Box 791
Santa Fe, New Mexico

Attention Mrs. Marian M. Rhea, Supervisor Unit Division

Gentlemen:

Shell Oil Company, Unit Operator of captioned unit, which was approved by you on December 27, 1962, proposes under the provisions of Section 2 of the Unit Agreement to expand the Unit Area covered thereby to include Section 9, T-24-S, R-34-E, N.M.P.M., Lea County, New Mexico, and would like to obtain your preliminary concurrence thereto. Attached hereto as Exhibit 1 is a map showing the present Unit Area and the proposed addition thereto. Also attached are Exhibit 2, being a Pennsylvanian Structure Map and Exhibit 3, being a Devonian Structure Map.

The reasons for the proposed expansion are: The original Unit Area covered the acreage which at the time of the formation of the unit could reasonably be expected to be productive from the Siluro-Devonian reservoir which was the only reservoir in such acreage then known to be capable of commercial production. However, the Shell et al Federal BE No. 1 well located in Lot 2 of Section 4, T-24-S, R-34-E, was completed for commercial production from the Lower Pennsylvanian formation and we now consider the said Lower Pennsylvanian formation as a primary objective of drilling in the southern part of the Unit Area and in the lands in the vicinity thereof. The Shell-Hall Federal No. 1, which is now being drilled in the NW-1/4 NE-1/4 Section 9, T-24-S, R-34-E, has as its principal objective the Lower Pennsylvanian formation. Expansion of the Unit Area to include the Section on which that well is located will prevent that well from having to be operated in competition with the unit as to the Lower Pennsylvanian reservoir, and will consequently avoid the loss (as to the said Lower Pennsylvanian reservoir) of the efficiency in reservoir management that results from unit operation of a reservoir. It should also assure equitable distribution of revenue from the said Lower Pennsylvanian reservoir.

We shall appreciate an early reply thereto as we would like to make the expansion effective February 1, 1964, and this will require that the formal notice of the expansion be mailed prior to January 31, 1964.

Very truly yours,

SHELL OIL COMPANY

By *C. V. Lawrence*
Roswell Division Land Manager

Attachments

2874-A
640 Ac.
3-31-65
P.D.S.
"BR"
RW-GGG
Perp.

2872
30 Ac.
8-31-71
P.D.S.

N.M. 2873
600 Ac.
12-31-63
P.D.S.

28

27

26

ANTELOPE RIDGE UNIT
3839.80 Ac.

U.S.

-11,357 T.D.
-11,179 - 5 1/2"
-11,179 (176) OH AT(2)
VIII-62 | 41 M + 608 Cond.
S.I

3483 * "Harris-Fed."
U.S.

Pan Amer.
10-18-70

State

N.M. 2575
320 Ac.
3-14-70
"BN"
P.D.S.

2987
320 Ac.
1-15-72
P.D.S.

N.M. 2575
320 Ac.
3-14-70
"BM"
P.D.S.

NM-1730
440 Ac.
7-16-66
P.D.S.
"BL"

Pan Amer.
2-17-69

33

34

35

T
23
S

R-34-E

State RW GGG
Perp.

MC871
MC872
40 Ac.
9-2-68
etal

RW-GGG
Perp.

NM-1660
200 Ac.
4-19-64
P.D.S.
"BK"

State

State

N.M. 2759
39.86 Ac.
1-16-71
P.D.S.
"BO"

NM-1667
159.90 Ac.
8-1-64
P.D.S.

2877
159.98 Ac.
4-30-64
P.D.S.

2832
320.03 Ac.
8-9-66, etal
P.D.S.

3185-B
11-30-72
160.04 Ac.
P.D.S.
"BT"

Cont'l
2-27-64

2996
320.16 Ac.
1-15-72
P.D.S.

-14,328 T.D.
-11,423 P.B.
-13,865 - 5/2"
-13,865 (41) OH AT(5)
-12,573 (80) OH AT(2)
-11,649 (32) OH AT(2)
-11,450 (57) OH AT(2)
-933 (253) OH AT(2)
IX-63 | 38 M + 9b/m (CAOP)

1590-B
159.94 Ac.
9-30-64
P.D.S.
"BE"

"Hall"

Ry. 990-1232
P.D.S.
P.J. Stout

3

Cont'l.
9-15-69

T
24
S

Cont'l
2-1-64

Ry 988-78
L.B. Hodge
Perp.

2876
80 Ac.
4-30-64
P.D.S.

"Elliott"

"G.T. Robinson"

U.S.

State

2877
4-30-64
P.D.S.
"Hall" "A"

U.S.

NM-1590-C
200 Ac.
12-26-64
U.S.

P.D.S.
"BG"

N.M. 3453
80 Ac.
4-30-64
P.D.S.

NM-1590-C
200 Ac.
12-26-64
P.D.S.
"BF"

Gulf
10-19-70

N.M. 2892
10-11-70
P.D.S.

3185-A
520.81 Ac.
11-30-72
P.D.S.

Gulf
10-17-65

Cont'l
12-27-64

9

10

3205
11-27-67
80 Ac.
P.D.S.

NM-1595
40 Ac.
7-9-64
P.D.S.
May
Woolworth

3185-A
520.81 Ac.
10-30-72
P.D.S.
U.S.

J.R. Alexander, etal

EXHIBIT 4
PROPOSED EXPANSION TO ANTELOPE
RIDGE UNIT NO. 14-08-0001-8492

-  - Present Unit Area
-  - Proposed Expanded Area

OIL CONSERVATION COMMISSION
P. O. BOX 871
SANTA FE, NEW MEXICO

2719

February 19, 1964

Shell Oil Company
P. O. Box 1858
Roswell, New Mexico

Attention: Mr. T. H. Dwyer

Re: 1964 Plan of Development,
Antelope Ridge Unit, Lea
County, New Mexico

Gentlemen:

This is to advise that the New Mexico Oil Conservation Commission has this date approved the 1964 Plan of Development dated January 29, 1964, for the Antelope Ridge Unit, Lea County, New Mexico, subject to like approval by the United States Geological Survey and the Commissioner of Public Lands of the State of New Mexico.

One approved copy of the plan is returned herewith.

Very truly yours,

A. L. PORTER, Jr.,
Secretary-Director

ALP/JEK/og

cc: Commissioner of Public Lands - Santa Fe
United States Geological Survey - Farmington

RECEIVED FEB 11 1964

January 30, 1964

Shell Oil Company
P. O. Box 1858
Roswell, New Mexico

Re: Antelope Ridge Unit
Lea County, New Mexico
1964 Plan of Development

Attention: Mr. T. W. Dwyer

Gentlemen:

The Commissioner of Public Lands approves as of January 30, 1964, the 1964 Plan of Development for the Antelope Ridge Unit, Lea County, New Mexico.

This Plan provides for the drilling of a 15,000 foot Siluro-Devonian well in the NE/4SW/4 of Section 34, Township 23 South, Range 34 East during the 1964 Calendar Year.

We are returning three approved copies of this Application.

Very truly yours,

E. S. JOHNNY WALKER
COMMISSIONER OF PUBLIC LANDS

BY:
(Mrs.) Marian M. Rhea, Supervisor
Unit Division

ESW/mar/v

cc: Oil Conservation Commission

United States Geological Survey
Roswell, New Mexico

**Dresser 1857
Roswell, New Mexico 88201**

February 6, 1964

**Shell Oil Company
P. O. Box 1858
Roswell, New Mexico**

Attention: Mr. T. H. Dwyer

Gentlemen:

Your 1964 plan of development for the Antelope Ridge unit area, Lea County, New Mexico, proposing the drilling of one Siluro-Devonian test well, has been approved on this date subject to like approval by the appropriate State officials.

Three approved copies of the plan are enclosed.

Sincerely yours,

(ORIG. SGD.) JOHN A. ANDERS

**JOHN A. ANDERSON
Regional Oil and Gas Supervisor**

**cc:
Washington (w/cy of plan)
Hobbs (w/cy of plan)
MROCC-Santa Fe (ltr. only) ✓
Com. of Pub. Lands-Santa Fe (ltr. only)**



SHELL OIL COMPANY

P. O. Box 1858
Roswell, New Mexico

January 29, 1964

Subject: Proposed 1964 Plan of Development
Antelope Ridge Unit
Lea County, New Mexico

Oil and Gas Supervisor
United States Geological Survey
P. O. Drawer 1857
Roswell, New Mexico

Commissioner of Public Lands
State of New Mexico
State Land Building
Santa Fe, New Mexico

Oil Conservation Commission
State of New Mexico
P. O. Box 871
Santa Fe, New Mexico

Gentlemen:

Attached are copies of a proposed Plan of Development on the Antelope Ridge Unit, Lea County, New Mexico, for the remainder of 1964.

If this Plan of Development meets with your approval, please sign and return one copy for our file.

Yours very truly,

T. H. Dwyer
Division Production Manager

Attachments

PLAN OF DEVELOPMENT
ANTELOPE RIDGE UNIT (NO. 14-08-0001-8492)
LEA COUNTY, NEW MEXICO

OIL AND GAS SUPERVISOR (6)
UNITED STATES GEOLOGICAL SURVEY
P. O. DRAWER 1857
ROSWELL, NEW MEXICO

COMMISSIONER OF PUBLIC LANDS (5)
STATE OF NEW MEXICO
STATE LAND BUILDING
SANTA FE, NEW MEXICO

OIL CONSERVATION COMMISSION (5)
STATE OF NEW MEXICO
P. O. BOX 871
SANTA FE, NEW MEXICO

Gentlemen:

In compliance with Section 10 of the Antelope Ridge Unit Agreement, Shell Oil Company, as Unit Operator, hereby submits for your approval a Plan of Development for the remainder of 1964.

Antelope Ridge Unit 27-1 (formerly Harris Federal 1), the first well in the Unit Area located in the SE/4 SW/4 of Section 27-23S-34E, was completed on August 9, 1962, as a Siluro-Devonian gas discovery with a calculated absolute open-flow potential rate of 41 million cubic feet of gas per day from the open hole interval 14,655 to 14,832 feet.

The initial test according to terms of the Unit Agreement is Antelope Ridge Unit 4-1 (formerly Federal BE-1) located in the NW/4 NE/4 of Section 4-24S-34E. The well was drilled to a total depth of 17,895 feet in the pre-Cambrian and completed September 12, 1963, from lower Pennsylvanian perforations 12,898 to 13,153 feet with a calculated absolute open-flow potential rate of 38 million cubic feet of gas per day. Although Unit 4-1 is now completed as a single zone Pennsylvanian well, it will at some later date be completed as a conventional Pennsylvanian/Siluro-Devonian dual. On March 22, 1962, a DST of the Siluro-Devonian interval 14,660 to 14,900 feet flowed gas at a calculated absolute open-flow potential rate of 11 million cubic feet per day without stimulation.

By letter dated December 13, 1963, the Regional Oil and Gas Supervisor for the U.S.G.S. concurred with the determination that Antelope Ridge Unit 27-1 (formerly Harris Federal 1) is capable of producing unitized substances in paying quantities from the Siluro-Devonian and that Antelope Ridge Unit 4-1 (formerly Federal BE-1) is capable of producing unitized substances in paying quantities from the Pennsylvanian and the Siluro-Devonian formations. Applications for the following participating areas have been submitted to the Director of the U.S.G.S.:

1. A 2560-acre initial participating area for the Siluro-Devonian to be effective December 27, 1962, the effective date of the Antelope Ridge Unit.
2. A 1280-acre first enlargement to the initial participating area for the Siluro-Devonian to be effective March 1, 1963.
3. A 1440-acre initial participating area for the lower Pennsylvanian to be effective September 12, 1963.

The Unit Operator proposes to drill Antelope Ridge Unit 34-1 as a 15,000-foot Siluro-Devonian test in the NE/4 SW/4 of Section 34-23S-34E during 1964. This will be the third Siluro-Devonian test on the Antelope Ridge Unit.

This plan of development shall constitute the drilling obligations of the Unit Operator under the terms of the Antelope Ridge Unit Agreement for the period ending December 31, 1964. Before this plan expires, another plan for further development of the Unit Area will be submitted.

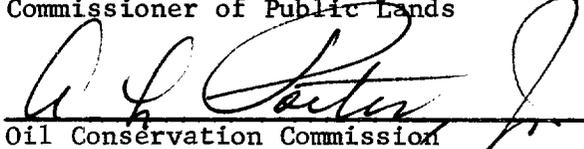
It is understood that portions of the plan of development herein outlined are dependent upon certain information to be gained prior and subsequent to drilling and, therefore, this plan of development may be modified from time to time, with like approval to meet changing conditions.

SHELL OIL COMPANY
Unit Operator

By 
T. H. Ewyer
Division Production Manager

Approved _____ Date _____
Supervisor, United States Geological Survey

Approved _____ Date _____
Commissioner of Public Lands

Approved  _____ Date 2-19-64
Oil Conservation Commission

January 10, 1964

Shell Oil Company
P. O. Box 1858
Roswell, New Mexico

Re: Antelope Ridge Unit
Lea County, New Mexico

Attention: Mr. G. V. Lawrence

Gentlemen:

In reference to your letter of December 31, 1963, and my conversation with you and Mr. Robinson as of this date concerning your proposal for an expansion of the Antelope Ridge Unit Area and your request for our concurrence thereto.

Under the terms of the Unit Agreement the Operator must file a Plan of Development as provided for under section 10 of the Unit Agreement. We will expect this Plan of Development to provide for further drilling within the present unit boundaries.

If the Unit was expanded to include section 9 and the well now drilling should be completed as a commercial well, as defined by the Unit Agreement, we would not consider this well a development well under section 10 of the Unit Agreement. We are also inclined to

Shell Oil Company
Attention: Mr. O. V. Lawrence
January 10, 1964
- page 2 -

believe the Unit Operator should wait until this well is completed as a producing well before requesting an expansion of the Unit Area for if this is a dry hole there will be no problem concerning the well being operated in competition with the unit well as to the Lower Pennsylvanian reservoir, which the Operator sites as his main reason for this expansion.

Very truly yours,

E. S. JOHNNY WALKER
COMMISSIONER OF PUBLIC LANDS

BY:
(Mrs.) Marian M. Rhea, Supervisor
Unit Division

ESW/mmr/v
cc:

Oil Conservation Commission
Santa Fe, New Mexico

United States Geological Survey
Roswell, New Mexico



UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
WASHINGTON 25, D. C.

101-11179-111-10

JAN 22 1964

Shell Oil Company
P. O. Box 1858
Roswell, New Mexico

Attention: Mr. O. V. Lawrence

Gentlemen:

Your application of December 31, 1963, filed on January 2, 1964, with the Regional Oil and Gas Supervisor, Roswell, New Mexico, requests preliminary approval of a proposed expansion of the Antelope Ridge unit area, Lea County, New Mexico.

The Antelope Ridge unit area was approved on December 22, 1962, and two wells capable of producing unitized substances in paying quantities have been completed in the unit area. Applications for the initial Siluro-Devonian and Pennsylvanian participating areas and the first revision of the Siluro-Devonian participating area have been filed with the Regional Oil and Gas Supervisor.

The proposed expansion of 640 acres, including 480 acres of Federal land and 160 acres of fee land, will increase the Antelope Ridge unit area from 3,839.80 to 4,479.80 acres, more or less. The expansion is regarded as acceptable on the basis of the geologic information accompanying your application.

Accordingly, no objection will be offered to the proposed expansion if accomplished in accordance with the applicable provisions of Section 2 of the unit agreement within a reasonable period of time. When you progress to subsection 2(c), at least five copies of the application for final approval should be filed accompanied by joinders which must be filed for all new lands in order for such lands to be considered committed regardless of whether any owner of a new tract is already committed as to an old tract.

The format of the sample exhibits attached to the 1961 reprint of the standard form should be closely followed in the preparation of Exhibits A and B. Do not renumber existing tracts.

Sincerely yours,



Acting Director

cc:

Com. Pub. Lands, Santa Fe (w/cy land plat)
BLM, Santa Fe (w/cy land plat)
NMOCC, Santa Fe (ltr. only) ✓
Roswell (2)

ERWyatt:cn:1-3-64

SERIALS:

NM 07199-A
07199-D
0359181
0359182

January 29, 1964

Shell Oil Company
P. O. Box 1858
Roswell, New Mexico

Re: Antelope Ridge Unit
Lea County, New Mexico

Attention: Mr. O. V. Lawrence

Gentlemen:

Your Application dated December 31, 1963, requests preliminary concurrence of a proposed expansion of the Antelope Ridge Unit Area, Lea County, New Mexico.

This office will not object and will approve such expansion in accordance with our understanding that the well now drilling on the proposed expansion will not be considered as a development well and that your 1964 Plan of Development will provide for the drilling of a development well on the present Unit Area.

Very truly yours,

E. E. JOHNNY WALKER
COMMISSIONER OF PUBLIC LANDS

BY:
(Mrs.) Marian M. Rhea, Supervisor
Unit Division

ESW/mmr/v
cc: Oil Conservation Commission

United States Geological Survey
P. O. Drawer 1857
Roswell, New Mexico

All of said lands are situated in Lea County, New Mexico, and the Unit Area will then contain 4,479.80 acres, more or less.

A map is attached as Exhibit "A" hereto, which map shows the Unit Area as it will be when the proposed expansion thereof becomes effective. We are also attaching hereto as Exhibit "B" a schedule showing, to the extent known to the Unit Operator, the acreage, percentage and kind of ownership of oil and gas interests in all lands in the Unit Area after the expansion becomes effective, and this schedule shall be considered a revised Exhibit "B" to the Unit Agreement as of the effective date of the said expansion of the Unit Area.

The reasons for the proposed expansion are: The original Unit Area covered the acreage which at the time of the formation of the Unit could reasonably be expected to be productive from the Siluro-Devonian reservoir which was the only reservoir in such acreage then known to be capable of commercial production. However, the Shell et al Federal BE No. 1 well located in Lot 2 of Section 4, T-24-S, R-34-E was completed for commercial production from the Lower Pennsylvanian formation as a primary objective of drilling in the southern part of the Unit Area and in the lands in the vicinity thereof. The Shell Hall Federal No. 1, which is now being drilled in the NW/4 NE/4 Section 9, T-24-S, R-34-E, has as its principal objective the Lower Pennsylvanian formation. Expansion of the Unit Area to include the section on which that well is located will prevent that well from having to be operated in competition with the unit as to the Lower Pennsylvanian reservoir and will consequently avoid the loss (as to the said Lower Pennsylvanian reservoir) of the efficiency in reservoir management that results from unit operation of a reservoir. It should also assure equitable distribution of revenue from the said Lower Pennsylvanian reservoir.

Copies hereof are being this day mailed to the last known address of each working interest owner, lessee, and lessor whose interests are affected by the Antelope Ridge Unit Agreement as it will be after the effective date of the proposed expansion advising that thirty (30) days will be allowed for submission to the Unit Operator of any objections thereto.

Yours very truly,

SHELL OIL COMPANY

By 

O. V. Lawrence
Division Land Manager

Attachments

All of said lands are situated in Lea County, New Mexico, and the Unit Area will then contain 4,479.80 acres, more or less.

A map is attached as Exhibit "A" hereto, which map shows the Unit Area as it will be when the proposed expansion thereof becomes effective. We are also attaching hereto as Exhibit "B" a schedule showing, to the extent known to the Unit Operator, the acreage, percentage and kind of ownership of oil and gas interests in all lands in the Unit Area after the expansion becomes effective, and this schedule shall be considered a revised Exhibit "B" to the Unit Agreement as of the effective date of the said expansion of the Unit Area.

The reasons for the proposed expansion are: The original Unit Area covered the acreage which at the time of the formation of the Unit could reasonably be expected to be productive from the Siluro-Devonian reservoir which was the only reservoir in such acreage then known to be capable of commercial production. However, the Shell et al Federal BE No. 1 well located in Lot 2 of Section 4, T-24-S, R-34-E was completed for commercial production from the Lower Pennsylvanian formation as a primary objective of drilling in the southern part of the Unit Area and in the lands in the vicinity thereof. The Shell Hall Federal No. 1, which is now being drilled in the NW/4 NE/4 Section 9, T-24-S, R-34-E, has as its principal objective the Lower Pennsylvanian formation. Expansion of the Unit Area to include the section on which that well is located will prevent that well from having to be operated in competition with the unit as to the Lower Pennsylvanian reservoir and will consequently avoid the loss (as to the said Lower Pennsylvanian reservoir) of the efficiency in reservoir management that results from unit operation of a reservoir. It should also assure equitable distribution of revenue from the said Lower Pennsylvanian reservoir.

Copies hereof are being this day mailed to the last known address of each working interest owner, lessee, and lessor whose interests are affected by the Antelope Ridge Unit Agreement as it will be after the effective date of the proposed expansion advising that thirty (30) days will be allowed for submission to the Unit Operator of any objections thereto.

Yours very truly,

SHELL OIL COMPANY

By 

O. V. Lawrence
Division Land Manager

Attachments

Sunray D-X
8-16-65

2874-A
640 Ac.
3-31-65
P.D.S.
"BR"

RW-CCG
Perp.

28

ANTELOPE RIDGE UNIT
3839.80 Ac.

U.S.

2872
40 Ac.
8-31-71
P.D.S.

N.M. 2873
600 Ac.
12-31-63
P.D.S.

27

-11,351 T.D.
-11,179 - 5 1/2"
-11,179 (170) OH AT(2)
VIII-62 | 41 M + 608 Cond.
| S.I

3483 *Harris-Fed.
U.S.

26

Pan Amer.
10-18-70

State

N.M. 2575
320 Ac.
3-14-70
"BN"
P.D.S.

2987
320 Ac.
1-15-72
P.D.S.

N.M. 2575
320 Ac.
3-14-70
"BM"
P.D.S.

NM-1730
440 Ac.
7-16-66
P.D.S.
"BL"

Pan Amer.
2-17-69

33

34

35

T
23
S

R-34-E

State
RW CCG
Perp.

MC 871
MC 872
40 Ac.
9-2-68
etal

RW-CCG
Perp.

State

State

N.M. 2759
39.86 Ac.
1-16-71
P.D.S.
"BO"

NM-1667
159.90 Ac.
8-1-64
P.D.S.

2877
159.98 Ac.
4-30-64
P.D.S.

2832
320.03 Ac.
8-9-66, etal
P.D.S.

3185-B
11-30-72
160.04 Ac.
P.D.S.
"BT"

Cont'l
2-27-64

2986
320.16 Ac.
1-15-72
P.D.S.

-14,328 T.D.
-11,423 P.B.
-13,865 - 5/2"
-13,865 (411) OH AT(5)
-12,573 (80/36) < AT(2) >
-11,649 (32/26) < AT(2) >
-11,450 (57/71) < AT(2) >
-9,331 (253/19) < AT(2) >
IX-63 | 38 M + 9b/m (CAD)

Cont'l
2-1-64

Ry 988 7/8
B. Hodge
Perp.

W.K. Nabilatt
etal

1590-B
159.94 Ac.
9-30-64
P.D.S.
"BE"

"Hall"

2876
80 Ac.
4-30-64
P.D.S.

Ry. 990-12'32
P.D.S.
R.J. Stout

3

Cont'l.
9-15-69

2

T
24
S

2877
4-30-64
P.D.S.
"Hall" "A"

U.S.

"Elliott"

etal
"G.T. Robinson"

U.S.

State

NM-1590-C
200 Ac.
12-26-64
U.S.
P.D.S.
"BG"

N.M. 3453
80 Ac.
4-30-64
P.D.S.
"O"

NM-1590-C
12-26-64
200 Ac.
P.D.S.
"BF"

Gulf
10-19-70

N.M. 2892
10-11-70
P.D.S.

3185-A
520.01 Ac.
11-30-72
P.D.S.

Gulf
10-17-65

Cont'l.
12-27-64

9

10

3205
11-27-67
80 Ac.
P.D.S.

NM-1595
40 Ac.
7-9-64
P.D.S.
May
Woolworth

3206-3/4
40 Ac.
11-26-67
P.D.S.

Christmas Rebel Oil

3185-A
520.01 Ac.
10-30-72
P.D.S.
U.S.

J.R. Alexander, etal

EXHIBIT A
PROPOSED EXPANSION TO ANTELOPE
RIDGE UNIT NO. 14-08-0001-8492

-  - Present Unit Area
-  - Proposed Expanded Area

Exhibit B - Antelope Ridge Unit Area, Lea County, N w Mexico, T-23 and 24-S, R-34-E

Tract No.	Description of Land	Number of Acres	Serial No. and Date of Lease		Basic Royalty and Percentage	Lessee of Record	Overriding Royalty and Percentage		Working Interest and Percentage
			Serial No.	Date			Royalty and Percentage		
<u>FEDERAL LAND</u>									
1.	ALL Section 28, T-23-S, R-34-E	640.00	Ias Cruces Serials 067715 5-1-51		U. S. - ALL	Shell Oil Company	Elliott, Inc. 4%, Helen O. Watson 1%		Shell Oil Company - ALL
2.	E-1/2, E-1/2 W-1/2, SW-1/4 NW-1/4, W-1/2 SW-1/4 Sec. 27, T-23-S, R-34-E	600.00	071949 2-1-50		U. S. - ALL	Shell Oil Company	Sunshine Royalty Co. 1% Elliott, Inc. 4%		Shell Oil Company - ALL
New Mexico Serials									
3.	Lot 1, SE-1/4 NE-1/4 E-1/2 SE-1/4 Sec. 3, T-24-S, R-34-E	160.05	02377 4-1-52		U. S. - ALL	Continental Oil Company	Shell Oil Company - 3%		Continental Oil Company - ALL
4.	Lot 1, SE-1/4 NE-1/4, S-1/2 SW-1/4 Sec. 4, T-24-S, R-34-E	159.98	07199-B 6-1-52		U. S. - ALL	Shell Oil Company	Edna Ione & Ora R. Hall, Jr. 5%		Shell Oil Company - ALL
5.	E-1/2 SE-1/4 Sec. 4, T-24-S, R-34-E	80.00	07199-C 6-1-52		U. S. - ALL	Shell Oil Company	Frank O. & Elizabeth Ann Elliott 5%		Shell Oil Company - ALL
6.	Lot 2, SW-1/4 NE-1/4, W-1/2 SE-1/4 Sec. 4, T-24-S, R-34-E	159.94	021422 11-1-50		U. S. - ALL	Shell Oil Company	Pearl O. Pipkin, Individually and as Executrix Under Will of Eugene H. Pipkin \$479,860.00 Out of 5% of Prod.		Shell Oil Company - ALL
7.	NW-1/4 SW-1/4 Sec. 4, T-24-S, R-34-E	40.00	045352 2-1-59		U. S. - ALL	Continental Oil Company	Channing Brown 3%		Continental Oil Company - ALL
8.	NW-1/4 NW-1/4 Sec. 27, T-23-S, R-34-E	40.00	0155160 9-1-61		U. S. - ALL	Shell Oil Company	Dennis & Adren Nix 5%		Shell Oil Company - ALL

Exhibit "B" Continued

Tract No.	Description of Land	Number of Acres	Serial No. and Date of Lease	Basic Royalty and Percentage	Lessee of Record	Overriding Royalty and Percentage	Working Interest and Percentage
9.	Lot 2, SW-1/4 NE-1/4, W-1/2 SE-1/4 Sec. 3, T-24-S, R-34-E	160.04	0327106 12-1-62	U. S. - All	Shell Oil Company	Marion Allen, et ux, 2.5% C. E. Strange, et ux, 2.5%	Shell Oil Company - A
17.	N-1/2 NW-1/4, E-1/2 NE-1/4, NE-1/4 SE-1/4 Sec. 9, T-24-S, R-34-E	200.00	021422 11-1-50	U. S. - All	Shell Oil Company	Pearl O. Pipkin, Ind. and as Exec. Under Will of Eugene H. Pipkin, Deceased 5%	Shell Oil Company - A
18.	W-1/2 NE-1/4 Sec. 9, T-24-S, R-34-E	80.00	07199 6-1-52	U. S. - All	Shell Oil Company	Edna Ione Hall and Ora R. Hall, Jr. 5%	Shell Oil Company - A
19.	S-1/2 NW-1/4 & W-1/2 SE-1/4 Sec. 9, T-24-S, R-34-E	160.00	07199-A 6-1-52	U. S. - All	Shell Oil Company	Frank O. & Elizabeth Ann Elliott - 5%	Shell Oil Company - A
20.	SE-1/4 SE-1/4 Sec. 9, T-24-S, R-34-E	40.00	0327106 12-1-62	U. S. - All	Shell Oil Company	C. E. & Sherrie R. Strange 2.5% Marion & Fred Allen 2.5%	Shell Oil Company - A

13 Federal Tracts 2,520.01 Acres or 56.252% of Unit Area

STATE OF NEW MEXICO LANDS

10.	SW-1/4 NE-1/4, SE-1/4 NW-1/4, NE-1/4 SW-1/4, SW-1/4 SW-1/4, NE-1/4 SE-1/4 Sec. 34, T-23-S, R-34-E	200.00	E-8078 4-20-54	State of New Mexico - All	Shell Oil Company	None	Shell Oil Company - A
11.	N-1/2 NE-1/4, SE-1/4 NE-1/4, N-1/2 NW-1/4, SW-1/4 NW-1/4, NW-1/4 SW-1/4, SE-1/4 SW-1/4, S-1/2 NW-1/4 SE-1/4, S-1/2 SE-1/4 Sec. 34, T-23-S, R-34-E	440.00	OG-20 7-17-56	State of New Mexico - All	Shell Oil Company	None	Shell Oil Company - A

Tract No.	Description of Land	Number of Acres	Serial No. and Date of Lease	Basic Royalty and Percentage	Lessee of Record	Overriding Royalty and Percentage	Working Interest and Percentage	Per Cent of Unit Area (Tract Participation)
12.	E-1/2 E-1/2 and NW-1/4 Sec. 33, T-23-S, R-34-E	320.00	K-280 3-15-60	State of New Mexico - All	Shell Oil Company	None	Shell Oil Company - All	8.3338
13.	Lot 4, Section 4, T-24-S, R-34-E	39.86	K-1124 1-17-61	State of New Mexico - All	Shell Oil Company	None	Shell Oil Company - All	1.0381
14.	W-1/2 E-1/2 and SW-1/4 Sec. 33, T-23-S, R-34-E	320.00	K-2149 1-16-62	State of New Mexico - All	Shell Oil Company	None	Shell Oil Company - All	8.3338

5 State of New Mexico Tracts 1, 319.86 Acres or 29.462% of Unit Area

PAYMENTED LANDS

15.	Lots 3 and 4, S-1/2 NW-1/4, SW-1/4 Sec. 3, T-24-S, R-34-E	320.03	8-16-61	1/8 Basic Roy. owned Lamar Lunt & Lucille C. Lunt - 28.125% Gracie T. Robinson - 6.25% Edwin E. & Elsie L. Merriman - 15.625% J. Hiram Moore and Betty Moore - 1.5625% Roy G. Barton, Jr. 1.5625% Shell Oil Company 37.5% Gilbert J. Sevier 9.375%	Shell Oil Company	None	Shell Oil Company - All	
16.	Lot 3, S-1/2 NW-1/4, NE-1/4 SW-1/4 Sec. 4, T-24-S, R-34-E	159.90	5-1-59	1/8 Basic Roy. Owned: Shell Oil Company - 37.5% George H. and Margaret K. Hunker - 25.00% Maizie K. (Moore) Neblett - 37.5%	Shell Oil Company	None	Shell Oil Company - All	

Exhibit "B" Continued

Tract No.	Description of Land	Number of Acres	Serial No. and Date of Lease	Basic Royalty and Percentage	Lessee of Record	Overriding Royalty and Percentage	Working Interest and Percentage	Per Unit / Part
21.	SE-1/4 SW-1/4 and NW-1/4 SW-1/4 Sec. 9, T-24-S, R-34-E	80.00	11-28-62	3/16 Basic Royalty Owned: Rebel Oil Company - 66.6667% J. Hiram Moore and Betty Moore 33.3333%	Shell Oil Company	None	Shell Oil Company - ALL	
22.	NE-1/4 NW-1/4 Sec. 9, T-24-S, R-34-E	40.00	6-2-59	1/8 Basic Royalty Owned: May Woolworth - 75% Clyde Watkins Miller, Myrtis Watkins and Martha W. Harris 25%	Shell Oil Company	None	Shell Oil Company - ALL	
23.	SW-1/4 SW-1/4 Sec. 9, T-24-S, R-34-E	40.00	11-27-62 12-7-63	3/16 Basic Royalty Owned: B. A. Christmas, Jr. and Annie L. Christmas, Joint Trustees Under Will of B. A. Christmas, Sr., dec'd - 40% Joyce Christmas Brown - 25% Joyce Ann Brown - 10% B. A. Christmas, Jr., Guardian of the Estates of Mary Theresa Christmas, Bradford Ace Christmas, Candy Christmas, and Helen Jane Christmas, minors - 25%	Shell Oil Company	None	Shell Oil Company - ALL	

5 Patented Tracts 639.93 Acres or 14.284% of Unit Area

OIL CONSERVATION COMMISSION

P. O. BOX 871

SANTA FE, NEW MEXICO

111

January 6, 1964

Shell Oil Company
P. O. Box 1858
Roswell, New Mexico

Attention: Mr. T. H. Dwyer

Re: Participating Areas,
Antelope Ridge Unit,
Lea County, New Mexico

Gentlemen:

This is to advise that the New Mexico Oil Conservation Commission has this date approved the Initial Participating Area, Pennsylvania Formation, Initial and First Enlargement of Participating Area, Siluro-Devonian Formation for the Antelope Ridge Unit, Lea County, New Mexico, subject to like approval by the United States Geological Survey and the Commissioner of Public Lands of the State of New Mexico.

Three approved copies of each application are returned herewith.

<
Very truly yours,

A. L. PORTER, Jr.,
Secretary-Director

ALP/JEK/og

cc: Commissioner of Public Lands - Santa Fe
Director, United States Geological Survey - Roswell



IN REPLY REFER TO:

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
Drawer 1857
Roswell, New Mexico 88201

December 13, 1963

Shell Oil Company
P. O. Box 1858
Roswell, New Mexico

Attention: Mr. T. H. Dwyer

Gentlemen:

Your letter of December 4 requests our concurrence with your following determinations concerning the two wells drilled in the Antelope Ridge unit, Lea County, New Mexico:

1. Well No. 1 Harris Federal in the ~~SE1/4~~ sec. 27, T. 23 S., R. 34 E., N.M.P.M., is capable of producing unitized substances in paying quantities from the Devonian.
2. The effective date of the initial Devonian participating area, including the lands proved productive by the completion of the Harris Federal No. 1 well, should be December 27, 1962, the effective date of the Antelope Ridge unit agreement.
3. The Federal BE No. 1 well in the ~~NW1/4~~ sec. 4, T. 24 S., R. 34 E., N.M.P.M., is capable of producing unitized substances in paying quantities from the lower Pennsylvanian and from the Siluro-Devonian.

You have filed the following applications with this office for approval by the Director:

1. Application for approval of the initial Siluro-Devonian participating area effective as of December 27, 1962, the effective date of the unit agreement, based on the completion of the Harris No. 1 Federal well in the Devonian.
2. Application for approval of the initial Pennsylvanian participating area effective as of September 12, 1963, the date of completion of the Federal BE-1 well in the lower Pennsylvanian.

3. Application for approval of the first revision of the Siluro-Devonian participating area effective as of March 1, 1963, the first of the month in which the Federal BE-1 well was tested in the Siluro-Devonian.

The above described applications contain engineering and geologic information contributed by the completion of the two wells drilled in the Antelope Ridge unit area. Based on this information, we concur in your determination that the Harris Federal No. 1 well is capable of producing unitized substances in paying quantities from the Siluro-Devonian and that the Federal BE No. 1 well is capable of producing unitized substances in paying quantities from the Pennsylvanian and from the Siluro-Devonian.

Our interpretation of the unit agreement indicates that the initial Siluro-Devonian participating area, based on the information contributed by the Federal Harris well No. 1, should be effective as of December 27, 1962, the effective date of the Antelope Ridge unit agreement.

Sincerely yours,



JOHN A. ANDERSON
Regional Oil and Gas Supervisor

cc:
Com. Pub. Lands
N.M.O.C.C. ✓
Washington
Hobbs

December 18, 1963

Shell Oil Company
P. O. Box 1858
Roswell, New Mexico

Re: Antelope Ridge Unit
Lea County, New Mexico

Attention: Mr. T. H. Dwyer

Gentlemen:

This office received a copy of a letter dated December 13, 1963 from Mr. John A. Anderson, Regional Oil & Gas Supervisor, United States Geological Survey, to Shell Oil Company in which they concur with your determinations concerning Harris Federal Well No. 1 and Federal BE No. 1 Well.

Therefore the Commissioner of Public Lands has approved as of this date the following Applications subject to like approval by the United States Geological Survey and the Oil Conservation Commission.

1. Initial Silure-Devonian participating area effective as of December 27, 1962, the effective date of the Unit Agreement based on the completion of the Harris No. 1 Federal well in the Devonian.

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- page 2 -

Shell Oil Company

Attention: Mr. T. H. Dwyer

December 18, 1963

2. First Revision of the Siluro-Devonian participating area effective as of March 1, 1963, the first of the month in which the Federal BE-1 well was tested in the Siluro-Devonian.
3. Initial Pennsylvanian participating area effective as of September 12, 1963, the date of completion of the Federal BE-1 well in the lower Pennsylvanian.

We are handing four copies of each of these Applications to the Oil Conservation Commission requesting them to return three copies to your office. Please furnish this office one fully executed copy of each Application.

Very truly yours,

H. S. JOHNNY WALKER
COMMISSIONER OF PUBLIC LANDS

BY:

(Mrs.) Marian M. Rhea, Supervisor
Unit Division

ESW/mmx/v

CC:

Oil Conservation Commission
Santa Fe, New Mexico

United States Geological Survey
P. O. Drawer 1857
Roswell, New Mexico
Attention: Mr. John A. Anderson



SHELL OIL COMPANY

2717

P. O. Box 1858
Roswell, New Mexico

November 29, 1963

Subject: Antelope Ridge Unit (14-08-0001-8492)
Lea County, New Mexico

The Director
United States Geological Survey
Washington 25, D.C.

Commissioner of Public Lands
State of New Mexico
Santa Fe, New Mexico

Through:

Regional Director
United States Geological Survey
P. O. Drawer 1857
Roswell, New Mexico

Oil Conservation Commission
State of New Mexico
Santa Fe, New Mexico

Gentlemen:

Attached for your consideration are applications for participating areas in the Antelope Ridge Unit as follow:

1. Application for Initial Participating Area Pennsylvanian Formation.
2. Application for Initial Participating Area Siluro-Devonian Formation.
3. Application for First Enlargement of Initial Participating Area Siluro-Devonian Formation.

If you approve, will each of you please ratify two copies of each application (without attachments) and return them to us for further handling. We are sending the package to each agency concurrently to expedite the formation of participating areas since gas sales are scheduled to commence before the end of 1963. When these copies are ratified by all concerned agencies, we will send to each of you copies of the fully-executed applications. We have received prior approval of these applications from Continental Oil Company, the only other joint working interest owner in the Antelope Ridge Unit.

Very truly yours,

T. H. Dwyer
Division Production Manager

Attachments



SHELL OIL COMPANY

P. O. Box 1858
Roswell, New Mexico

October 31, 1963

Subject: Antelope Ridge Unit (14-08-0001-8492)
Lea County, New Mexico
Application for Approval of
First Enlargement to Initial
Participating Area
Siluro-Devonian Formation

The Director
United States Geological Survey
Washington 25, D.C.

Commissioner of Public Lands
State of New Mexico
Santa Fe, New Mexico

Through:

Regional Director
United States Geological Survey
P. O. Drawer 1857
Roswell, New Mexico

Oil Conservation Commission
State of New Mexico
Santa Fe, New Mexico

Gentlemen:

In compliance with the requirements of Section 11 of the Antelope Ridge Unit Agreement No. 14-08-0001-8492 approved December 27, 1962, by the acting Director, United States Geological Survey, Shell Oil Company as Unit Operator, submits Schedule I, attached hereto and requests that the land described therein be approved as the acreage which will participate in production from the Siluro-Devonian reservoir effective March 1, 1963, the first day of the month in which Shell et al Federal BE-1, located NW/4 NE/4 Section 4, T-24-S, R-34-E, was tested capable of producing unitized substances from the Siluro-Devonian formation.

The acreage dedicated to the Siluro-Devonian reservoir according to the Initial Participating Area is described as follows:

All Sections 27, 28, 33 and 34, Township 23 South,
Range 34 East, N.M.P.M., Lea County, New Mexico

The First Enlargement to the Initial Participating Area is predicated on the results of a multi-point back pressure test which was run in the Siluro-Devonian formation on a 4-hour and 10-minute drill stem test taken through drill pipe over the gross open hole interval of 14,660 to 14,900 feet on March 22, 1963, in Shell et al Federal BE-1. This test was witnessed by the District Supervisor, United States Geological Survey, Hobbs, New Mexico. The well was tested without formation stimulation for a CAOF potential rate of 11.0 MMCF gas per day with a liquid to gas ratio of 21.5 barrels per MMCF gas.

Since Federal BE-1 is located beyond the limits of the Initial Participating Area and since the aforementioned test is considered valid evidence to show that the well is capable of producing unitized substances in paying quantities, the Operator respectfully requests that the Initial Participating Area be enlarged to include the following acreage effective March 1, 1963:

All Sections 27, 28, 33 and 34, Township 23 South, Range 34 East; All Sections 3 and 4, Township 24 South, Range 34 East, N.M.P.M., Lea County, New Mexico, totaling 3839.80 acres.

The land described above is unitized and constitutes all of the land which can be regarded as being reasonably proved or indicated to be productive of unitized substances in paying quantities from the Siluro-Devonian formation.

In support of this application we are submitting the following exhibits:

1. A Geological and engineering report giving pertinent data acquired as the result of drilling Federal BE-1.
2. A structural map covering the Antelope Ridge Unit contoured on top of the Siluro-Devonian formation.
3. A Southwest-Northeast Cross-Section showing structural and stratigraphic relationships of formations penetrated to date.
4. An ownership plat showing Tract Numbers and indicating the areas covered by the Initial Participating Area and the proposed First Enlargement of the Initial Participating Area.
5. Calculated Absolute Open Flow Potential Test of the Siluro-Devonian formation conducted in Federal BE-1.
6. Schedule I, showing the participating percentage of each lease included in the proposed enlarged participating area.

Very truly yours,



T. H. Dwyer
Division Production Manager

Approved: _____
Director, United States Geological Survey

Date: _____

Approved: E. Smucker
Commissioner of Public Lands

Date: December 18, 1963

Approved: A. D. Carter
Oil Conservation Commission

Date: 1-6-64

EXHIBIT NO. 1
ANTELOPE RIDGE UNIT
GEOLOGICAL AND ENGINEERING REPORT
IN SUPPORT OF FIRST ENLARGEMENT TO
INITIAL PARTICIPATING AREA
SILURO-DEVONIAN RESERVOIR

The drilling of Shell et al Federal BE-1, located 660' FNL and 1650' FEL, Section 4, T-24-S, R-34-E, Lea County, New Mexico, has confirmed the Siluro-Devonian structural interpretation of the seismic prospect covering the Antelope Ridge Unit, and further has established firm evidence that the Siluro-Devonian reservoir is capable of producing unitized substances in paying quantities at the outstep location. This test reached a total depth of 17,895 feet in the pre-Cambrian and has found the lower Pennsylvanian as well as the primary objective, Siluro-Devonian, to be capable of producing unitized substances in paying quantities. A test of the Ellenburger revealed the presence of a gas accumulation, but a production test of this measure showed that the formation cannot be produced economically at this location. On a 39-hour flow test after stimulation treatment in the open hole interval from 17,432 to 17,840 feet, the gas rate declined from a maximum of 2.3 MMCF/Day to 0.95 MMCF/Day. On a 24-hour pressure build-up survey the pressure reached only 4835 psi, compared to a calculated reservoir pressure of 6350 psi. All other formations are indicated to be either water bearing or devoid of porosity.

The well was designed to be completed as a conventional dual Pennsylvanian/Siluro-Devonian producer. Completion in the Siluro-Devonian has been deferred, however, after it was established by production testing that the lower Pennsylvanian reservoir has an abnormally high pressure gradient of 0.70 psi. per foot of depth. (Please refer to Application for Initial Participating Area for the Lower Pennsylvanian Formation). The Operator has elected not to attempt a dual completion until the Pennsylvanian reservoir is produced down to a safe level of pressure which will permit production from both reservoirs without imposing a serious risk of mechanical damage and possible loss of the well because of equipment limitations.

Federal BE-1 encountered the top of Siluro-Devonian at 11,081 feet subsea or 77 feet high to Harris Federal 1, the discovery well located SE/4 SW/4, Section 27, T-23-S, R-34-E. This is considered good confirmation of the original seismic interpretation. The two wells are located on the axis of the seismic anomaly, each slightly offset from the crestal area which is estimated to be located between the wells, near the common boundary of Sections 33 and 34.

The vertical limits of the Siluro-Devonian reservoir in Federal BE-1 have been reasonably established by the testing program conducted during the course of drilling and by confirming tests for water level through perforations prior to completion in the lower Pennsylvanian. The presence of hydrocarbons in paying quantities was established on March 22, 1963, by a multi-point back pressure test taken on a 4-hour and 10-minute drill stem test over the interval 14,660 (-11,093) to 14,900 (-11,333) feet. The well was tested for a CAOF potential rate of 11.0 MMCF gas per day with a liquid to gas ratio of 20.5 barrels per MMCF gas. Bottom hole pressure performance indicated bore hole

damage, and it is probable that a substantial improvement in well capacity can be realized by a stimulation treatment when the zone is opened to production. The water level in the Siluro-Devonian has been tentatively established at 11,450 feet subsea on the basis of a drill stem test and a confirming test through perforations. The drill stem test over the interval 14,970 (-11,403) to 15,048 (-11,481) feet flowed gas at the rate of 295 MCF per day. Recovery from the tool was 615 feet of heavily mud and gas cut sulphur water. A subsequent production test through perforations 15,107 (-11,450) to 15,074 (-11,507) feet over a 21-hour swabbing period after stimulation recovered 192 barrels of water over load and 27 barrels of oil under load. Maximum closure above the water level of 11,450 feet subsea is estimated to be from 350 to 400 feet. The areal extent of the Siluro-Devonian gas accumulation is postulated to be of the order of 6 to 7 square miles and it is located, for the most part, within the boundaries of the Antelope Ridge Unit.

Formation tops encountered in Federal BE-1 are as follow:

Base Red Beds	1,045' (+ 2,522')
Delaware Limestone	5,131' (- 1,564')
Delaware Sandstone	5,170' (- 1,603')
Bone Spring	8,727' (- 5,160')
Wolfcamp	11,518' (- 7,951')
Pennsylvanian	11,866' (- 8,299')
Des Moines	11,948' (- 8,381')
Atoka	12,092' (- 8,525')
Mississippian Limestone	14,062' (-10,495')
Woodford Shale	14,432' (-10,865')
Siluro-Devonian	14,648' (-11,081')
Montoya	16,316' (-12,749')
Simpson	16,672' (-13,105')
McKee	17,027' (-13,460')
Ellenburger	17,428' (-13,861')
Granite Wash	17,849' (-14,282')
Total Depth	17,895' (-14,328')

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SANTA FE CO.
SANTA FE, N.M.

Schedule I
First Enlargement
Initial Siluro-Devonian Participating Area
Antelope Ridge Unit
Lea County, New Mexico

Schedule Showing the Percentage of Participation
and Ownership of Leases in the Participating Area

Lease:	Shell Oil Company
Working Interest Owner:	Shell Oil Company
Serial Number and Tract Number:	LC 067715 (Tract 1)
Participating Acreage:	640.00 Acres
Percent of Participation:	16.66754
Description:	Section 28: All T-23-S, R-34-E, N.M.P.M.
Lease:	Shell Oil Company
Working Interest Owner:	Shell Oil Company
Serial Number and Tract Number:	LC 071949 (Tract 2)
Participating Acreage:	600.00 Acres
Percent of Participation:	15.62581
Description:	Section 27: E/2, E/2 W/2, SW/4 NW/4, W/2 SW/4, T-23-S, R-34-E, N.M.P.M.
Lease:	Continental Oil Company
Working Interest Owner:	Continental Oil Company
Serial Number and Tract Number:	NM 02377 (Tract 3)
Participating Acreage:	160.05 Acres
Percent of Participation:	4.16819
Description:	Section 3: Lot 1, SE/4 NE/4 E/2 SE/4, T-24-S, R-34-E, N.M.P.M.
Lease:	Shell Oil Company
Working Interest Owner:	Shell Oil Company
Serial Number and Tract Number:	NM 07199-B (Tract 4)
Participating Acreage:	159.98 Acres
Percent of Participation:	4.16636
Description:	Section 4: Lot 1, SE/4 NE/4, S/2 SW/4, T-24-S, R-34-E, N.M.P.M.
Lease:	Shell Oil Company
Working Interest Owner:	Shell Oil Company
Serial Number and Tract Number:	NM 07199-C (Tract 5)
Participating Acreage:	80.00 Acres
Percent of Participation:	2.08344
Description:	Section 4: E/2 SE/4 T-24-S, R-34-E, N.M.P.M.
Lease:	Shell Oil Company
Working Interest Owner:	Shell Oil Company
Serial Number and Tract Number:	NM 021422 (Tract 6)
Participating Acreage:	159.94 Acres
Percent of Participation:	4.16532
Description:	Section 4: Lot 2, SW/4 NE/4, W/2 SE/4 T-24-S, R-34-E, N.M.P.M.

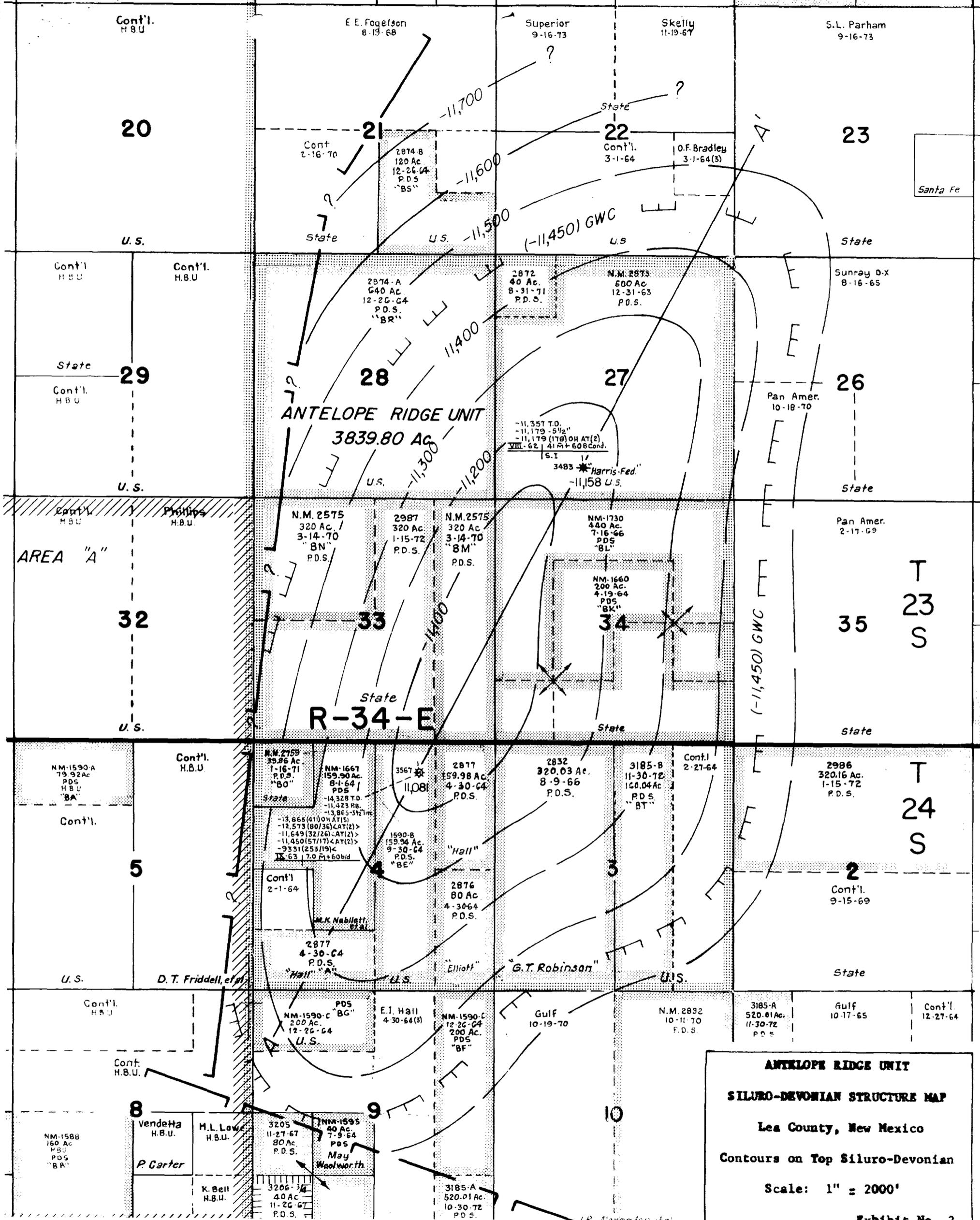
Schedule I

REC
 DEC 5 1977
 STATE OF NEW MEXICO
 SANTA FE, N.M.

Lease:	Shell Oil Company
Working Interest Owner:	Shell Oil Company
Serial Number and Tract Number:	K-1124 (Tract 13)
Participating Acreage:	39.86 Acres
Percent of Participation:	1.03807
Description:	Section 4: Lot 4 T-24-S, R-34-E, N.M.P.M.
Lease:	Shell Oil Company
Working Interest Owner:	Shell Oil Company
Serial Number and Tract Number:	K-2149 (Tract 14)
Participating Acreage:	320.00 Acres
Percent of Participation:	8.33377
Description:	Section 33: W/2 E/2, SW/4 T-23-S, R-34-E, N.M.P.M.
Lease:	Shell Oil Company
Working Interest Owner:	Shell Oil Company
Serial Number and Tract Number:	None (Tract 15)
Participating Acreage:	320.03
Percent of Participation:	8.33455
Description:	Section 3: Lots 3 and 4, S/2 NW/4, SW/4, T-24-S, R-34-E, N.M.P.M.
Lease:	Shell Oil Company
Working Interest Owner:	Shell Oil Company
Serial Number and Tract Number:	None (Tract 16)
Participating Acreage:	159.90 Acres
Percent of Participation:	4.16428
Description:	Section 4: Lot 3, S/2 NW/4, NE/4 SW/4, T-24-S, R-34-E, N.M.P.M.

Summary:	<u>Acres</u>	<u>Percent</u>
Total Federal Lands	2040.01	53.12803
Total Indian Lands	0.00	
Total State Lands	1319.86	34.37314
Total Fee or Other Lands	<u>479.93</u>	<u>12.49883</u>
Subtotal	3839.80	100.00000
Uncommitted Acreage	<u>0.00</u>	
Total Productive Acreage	3839.80	

Lease:	Continental Oil Company
Working Interest Owner:	Continental Oil Company
Serial Number and Tract Number:	NM 045352 (Tract 7)
Participating Acreage:	40.00 Acres
Percent of Participation:	1.04172
Description:	Section 4: NW/4 SW/4 T-24-S, R-34-E, N.M.P.M.
Lease:	Shell Oil Company
Working Interest Owner:	Shell Oil Company
Serial Number and Tract Number:	NM 0155160 (Tract 8)
Participating Acreage:	40.00 Acres
Percent of Participation:	1.04172
Description:	Section 27: NW/4 NW/4 T-23-S, R-34-E, N.M.P.M.
Lease:	Shell Oil Company
Working Interest Owner:	Shell Oil Company
Serial Number and Tract Number:	NM 0327106 (Tract 9)
Participating Acreage:	160.04 Acres
Percent of Participation:	4.16793
Description:	Section 3: Lot 2, SW/4 NE/4 W/2 SW/4, T-24-S, R-34-E, N.M.P.M.
Lease:	Shell Oil Company
Working Interest Owner:	Shell Oil Company
Serial Number and Tract Number:	E-8078 (Tract 10)
Participating Acreage:	200.00 Acres
Percent of Participation:	5.20860
Description:	Section 34: SW/4 NE/4, SE/4 NW/4, NE/4 SW/4, SW/4 SW/4, NE/4 SE/4, T-23-S, R-34-E, N.M.P.M.
Lease:	Shell Oil Company
Working Interest Owner:	Shell Oil Company
Serial Number and Tract Number:	OG-20 (Tract 11)
Participating Acreage:	440.00 Acres
Percent of Participation:	11.45893
Description:	Section 34: N/2 NE/4, SE/4 NE/4 N/2 NW/4, SW/4 NW/4, NW/4 SW/4; SE/4 SW/4, NW/4 SE/4, S/2 SE/4, T-23-S, R-34-E, N.M.P.M.
Lease:	Shell Oil Company
Working Interest Owner:	Shell Oil Company
Serial Number and Tract Number:	K-280 (Tract 12)
Participating Acreage:	320.00 Acres
Percent of Participation:	8.33377
Description:	Section 33: E/2 E/2, NW/4 T-23-S, R-34-E, N.M.P.M.



ANTELOPE RIDGE UNIT
SILURO-DEVONIAN STRUCTURE MAP
 Lea County, New Mexico
 Contours on Top Siluro-Devonian
 Scale: 1" = 2000'
 Exhibit No. 2