

T 25 S - R 33 E

T 26 S - R 33 E

EXHIBIT "B"

LEGEND

- RED HILLS UNIT OUTLINE
- INITIAL PARTICIPATING AREA FOR WOLFCAMP FORMATION
- FEDERAL LAND
- STATE OF NEW MEXICO LAND
- FEE LAND

Scale: 1" = 3000'

EXHIBIT "C"

SCHEDULE OF LANDS

(INITIAL PARTICIPATING AREA FOR THE
WOLFCAMP FORMATION)

RED HILLS UNIT

NOTE: Tracts are referred to by the numbers assigned in the Red Hills Unit Agreement.

TRACT NO. 22 (920.00 acres)

Lessor: U.S.A.

Lessee of Record: Continental Oil Company

Working Interest Owner: Continental Oil Company*

Serial or Lease No.: New Mexico-0127-A

Participating Acreage: 600.00 acres

Percent of Participation: 24.7040%

Description: Township 26 South, Range 33 East, N.M.P.M.

Section 4: N/2, N/2 S/2, S/2 SW/4,
SW/4 SE/4 600.00

(Subject to Texaco operating rights to 5300' under SW/4 SE/4 Sec. 4)

TRACT NO. 24 (40.00 acres)

Lessor: U.S.A.

Lessee of Record: Texaco Inc.

Working Interest Owner: Texaco Inc.*

Serial or Lease No.: New Mexico-0127-H

Participating Acreage: 40.00 acres

Percent of Participation: 1.6470%

Description: Township 26 South, Range 33 East, N.M.P.M.

Section 4: SE/4 SE/4 40.00

TRACT NO. 27 (1520.00 acres)

Lessor: U.S.A.

Lessee of Record: Texaco Inc.

Working Interest Owner: Texaco Inc.*

Serial or Lease No.: New Mexico-05792

Participating Acreage: 440.00 acres

Percent of Participation: 18.1163%

Description: Township 25 South, Range 33 East, N.M.P.M.

Section 33: E/2, SW/4 SW/4,
E/2 SW/4 440.00

TRACT NO. 28 (40.00 acres)

Lessor: U.S.A.

Lessee of Record: The Pure Oil Company

Working Interest Owner: The Pure Oil Company*

Serial or Lease No.: New Mexico-05792-A

Participating Acreage: 40.00 acres

Percent of Participation: 1.6470%

Description: Township 25 South, Range 33 East, N.M.P.M.

Section 33: NW/4 SW/4 40.00

TRACT NO. 31 (800.00 acres)

Lessor: U.S.A.

Lessee of Record: Howard W. Jennings, Inc.

Working Interest Owner: Richardson Oils (75%) and Perry R. Bass (25%)*

Serial or Lease No.: New Mexico-024368-A

Participating Acreage: 160.00 acres

Percent of Participation: 6.5877%

Description: Township 25 South, Range 33 East, N.M.P.M.

Section 33: NW/4 160.00

TRACT NO. 35 (240.00 acres)

Lessor: U.S.A.

Lessee of Record: Pan American Petroleum Corporation

Working Interest Owner: Pan American Petroleum Corporation*

Serial or Lease No.: New Mexico-0106040-A

Participating Acreage: 120.00 acres

Percent of Participation: 4.9409%

Description: Township 26 South, Range 33 East, N.M.P.M.

Section 5: S/2 NW/4, SW/4 NE/4 120.00

TRACT NO. 40 (1238.72 acres)

Lessor: U.S.A.

Lessee of Record: Pan American Petroleum Corporation

Working Interest Owner: Pan American Petroleum Corporation*

Serial or Lease No.: New Mexico-0160973

Participating Acreage: 240.00 acres

Percent of Participation: 9.8816%

Description: Township 26 South, Range 33 East, N.M.P.M.

Section 5: SW/4, W/2 SE/4 240.00

TRACT NO. 44 (640.00 acres)

Lessor: State of New Mexico

Lessee of Record: Pan American Petroleum Corporation

Working Interest Owner: Pan American Petroleum Corporation*

Serial or Lease No.: K-1459

Participating Acreage: 640.00 acres

Percent of Participation: 26.3510%

Description: Township 25 South, Range 33 East, N.M.P.M.

Section 32: All 640.00

TRACT NO. 51 (160.00 acres)

Lessor: Jerald M. Schuman et al

Lessee of Record: The Pure Oil Company and Pan American Petroleum Corporation

Working Interest Owner: The Pure Oil Company and Pan American Petroleum Corporation*

Serial or Lease No.: None

Participating Acreage: 85.00 acres (53.1250% of 160.00 acres)

Percent of Participation: 3.4997%

Description: Township 26 South, Range 33 East, N.M.P.M.

Section 5: E/2 E/2 85.00 Net

NOTE: Pure has Lease covering undivided 46.8750% of Tract. Pan American has Lease covering undivided 6.2500% of Tract. These Leases taken together total 53.1250% and are considered qualified and committed to Unit. The remaining 46.8750% represents unleased and uncommitted minerals owned by Saul A. Yeager and Barbara Ann Witten.

TRACT NO. 52 (120.00 acres)

Lessor: Jerald M. Schuman et al

Lessee of Record: The Pure Oil Company and Pan American Petroleum Corporation

Working Interest Owner: The Pure Oil Company and Pan American Petroleum Corporation*

Serial Or Lease No.: None

Participating Acreage: 63.75 acres (53.1250% of 120 acres)

Percent of Participation: 2.6248%

Description: Township 26 South, Range 33 East, N.M.P.M.

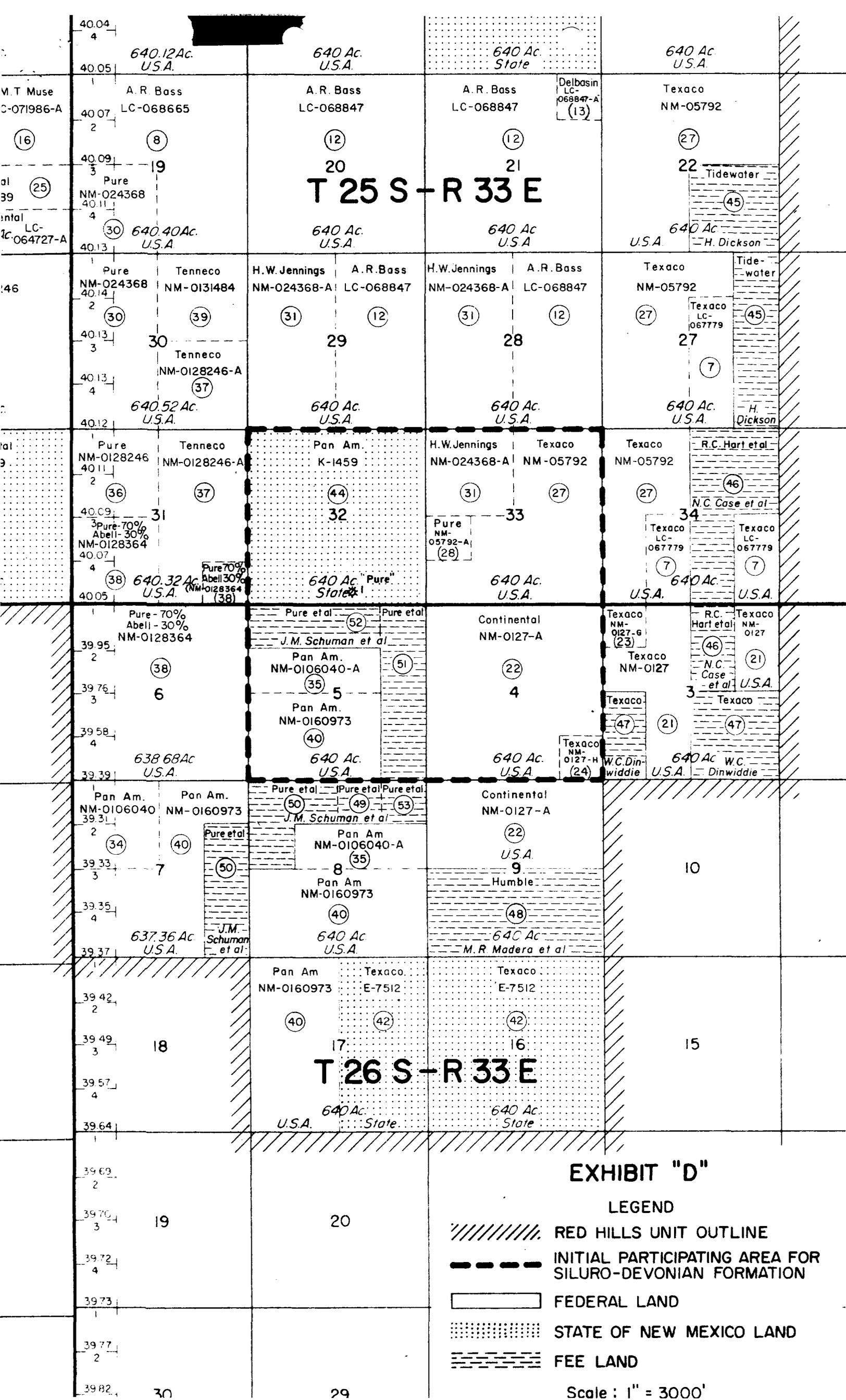
Section 5: N/2 NW/4, NW/4 NE/4 63.75 Net

NOTE: Pure has Lease covering undivided 46.8750% of Tract. Pan American has Lease covering undivided 6.2500% of Tract. These Leases taken together total 53.1250% and are considered qualified and committed to Unit. The remaining 46.8750% represents unleased and uncommitted minerals owned by Saul A. Yeager and Barbara Ann Witten.

SUMMARY

	<u>Acres</u>	<u>Percent</u>
Total Federal Lands	1640.00	64.0625
Total State Lands	640.00	25.0000
Total Fee Lands	<u>280.00</u>	<u>10.9375</u>
	2560.00	100.0000%
Subtotal Uncommitted Acreage	<u>131.25</u>	<u>0.0000%</u>
Total Participating Acreage	2428.75	100.0000%

*The Participating and Beneficial Interests of Working Interest Owners are determined by the provisions of the Red Hills Unit Operating Agreement and the right granted thereby to said parties, as among themselves, to make farmouts or other type agreements affecting the sharing of costs of drilling and the transfer of ownership between themselves.



T 25 S - R 33 E

30

29

32

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8

5

35

40

40

17

40

20

29

EXHIBIT "D"

LEGEND

- RED HILLS UNIT OUTLINE
- INITIAL PARTICIPATING AREA FOR SILURO-DEVONIAN FORMATION
- FEDERAL LAND
- STATE OF NEW MEXICO LAND
- FEE LAND

Scale : 1" = 3000'

EXHIBIT "E"

SCHEDULE OF LANDS

(INITIAL PARTICIPATING AREA FOR THE
SILURO-DEVONIAN FORMATION)

RED HILLS UNIT

NOTE: Tracts are referred to by the numbers assigned in the Red Hills Unit Agreement.

TRACT NO. 22 (920.00 acres)

Lessor: U.S.A.

Lessee of Record: Continental Oil Company

Working Interest Owner: Continental Oil Company*

Serial or Lease No.: New Mexico-0127-A

Participating Acreage: 600.00 acres

Percent of Participation: 24.7040%

Description: Township 26 South, Range 33 East, N.M.P.M.

Section 4: N/2, N/2 S/2, S/2 SW/4,
SW/4 SE/4 600.00

(Subject to Texaco operating rights to 5300' under SW/4 SE/4 Sec. 4)

TRACT NO. 24 (40.00 acres)

Lessor: U.S.A.

Lessee of Record: Texaco Inc.

Working Interest Owner: Texaco Inc.*

Serial or Lease No.: New Mexico-0127-H

Participating Acreage: 40.00 acres

Percent of Participation: 1.6470%

Description: Township 26 South, Range 33 East, N.M.P.M.

Section 4: SE/4 SE/4 40.00

TRACT NO. 27 (1520.00 acres)

Lessor: U.S.A.

Lessee of Record: Texaco Inc.

Working Interest Owner: Texaco Inc.*

Serial or Lease No.: New Mexico-05792

Participating Acreage: 440.00 acres

Percent of Participation: 18.1163%

Description: Township 25 South, Range 33 East, N.M.P.M.

Section 33: E/2, SW/4 SW/4,
E/2 SW/4 440.00

TRACT NO. 28 (40.00 acres)

Lessor: U.S.A.

Lessee of Record: The Pure Oil Company

Working Interest Owner: The Pure Oil Company*

Serial or Lease No.: New Mexico-05792-A

Participating Acreage: 40.00 acres

Percent of Participation: 1.6470%

Description: Township 25 South, Range 33 East, N.M.P.M.

Section 33: NW/4 SW/4 40.00

TRACT NO. 31 (800.00 acres)

Lessor: U.S.A.

Lessee of Record: Howard W. Jennings, Inc.

Working Interest Owner: Richardson Oils (75%) and Perry R. Bass (25%)*

Serial or Lease No.: New Mexico-024368-A

Participating Acreage: 160.00 acres

Percent of Participation: 6.5877%

Description: Township 25 South, Range 33 East, N.M.P.M.

Section 33: NW/4 160.00

TRACT NO. 35 (240.00 acres)

Lessor: U.S.A.

Lessee of Record: Pan American Petroleum Corporation

Working Interest Owner: Pan American Petroleum Corporation*

Serial or Lease No.: New Mexico-0106040-A

Participating Acreage: 120.00 acres

Percent of Participation: 4.9409%

Description: Township 26 South, Range 33 East, N.M.P.M.

Section 5: S/2 NW/4, SW/4 NE/4 120.00

TRACT NO. 40 (1238.72 acres)

Lessor: U.S.A.

Lessee of Record: Pan American Petroleum Corporation

Working Interest Owner: Pan American Petroleum Corporation*

Serial or Lease No.: New Mexico-0160973

Participating Acreage: 240.00 acres

Percent of Participation: 9.8816%

Description: Township 26 South, Range 33 East, N.M.P.M.

Section 5: SW/4, W/2 SE/4 240.00

TRACT NO. 44 (640.00 acres)

Lessor: State of New Mexico

Lessee of Record: Pan American Petroleum Corporation

Working Interest Owner: Pan American Petroleum Corporation*

Serial or Lease No.: K-1459

Participating Acreage: 640.00 acres

Percent of Participation: 26.3510%

Description: Township 25 South, Range 33 East, N.M.P.M.

Section 32: All 640.00

TRACT NO. 51 (160.00 acres)

Lessor: Jerald M. Schuman et al

Lessee of Record: The Pure Oil Company and Pan American Petroleum Corporation

Working Interest Owner: The Pure Oil Company and Pan American Petroleum Corporation*

Serial or Lease No.: None

Participating Acreage: 85.00 acres (53.1250% of 160.00 acres)

Percent of Participation: 3.4997%

Description: Township 26 South, Range 33 East, N.M.P.M.

Section 5: E/2 E/2 85.00 Net

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TRACT NO. 52 (120.00 acres)

Lessor: Jerald M. Schuman et al

Lessee of Record: The Pure Oil Company and Pan American Petroleum Corporation

Working Interest Owner: The Pure Oil Company and Pan American Petroleum Corporation*

Serial Or Lease No.: None

Participating Acreage: 63.75 acres (53.1250% of 120 acres)

Percent of Participation: 2.6248%

Description: Township 26 South, Range 33 East, N.M.P.M.

Section 5: N/2 NW/4, NW/4 NE/4 63.75 Net

NOTE: Pure has Lease covering undivided 46.8750% of Tract. Pan American has Lease covering undivided 6.2500% of Tract. These Leases taken together total 53.1250% and are considered qualified and committed to Unit. The remaining 46.8750% represents unleased and uncommitted minerals owned by Saul A. Yeager and Barbara Ann Witten.

SUMMARY

	<u>Acres</u>	<u>Percent</u>
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Total Fee Lands	<u>280.00</u>	<u>10.9375</u>
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Total Participating Acreage	2428.75	100.0000%

*The Participating and Beneficial Interests of Working Interest Owners are determined by the provisions of the Red Hills Unit Operating Agreement and the right granted thereby to said parties, as among themselves, to make farmouts or other type agreements affecting the sharing of costs of drilling and the transfer of ownership between themselves.

50th YEAR



THE PURE OIL COMPANY

SOUTHERN PRODUCING DIVISION AREA CODE 713-FA 39351
FIRST CITY NATIONAL BANK BLDG. • HOUSTON, TEXAS 77002

December 18, 1964

DEC 28 AM 10

2671

United States Geological Survey
P. O. Box 1887
Roswell, New Mexico

Attention: Mr. John A. Anderson,
Regional Oil and Gas Supervisor

RE: Red Hills Unit Area,
No. 14-08-0001-8496
Leon County, New Mexico

Gentlemen:

Please refer to our letter of December 1, 1964, addressed to the Commissioner of Public Lands, State of New Mexico, four (4) copies of which were furnished your office; and letter dated December 8, 1964, from the Commissioner of Public Lands, State of New Mexico, addressed to Pure, four (4) reproduced copies thereof being enclosed herewith, whereby the Commissioner concurred in our determination that a valuable discovery has been made on the captioned and that the Red Hills Unit Well No. 1 is capable of producing unitized substances in paying quantities.

We respectfully request your early written concurrence to the above referenced determination, and request that the Bureau of Land Management be advised thereof in order for all committed tracts to be deemed to have a producing status.

Very truly yours,

THE PURE OIL COMPANY

By 
W. K. Lowright, Division
Manager, Southern Producing
Division

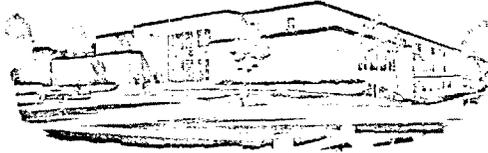
ILLEGIBLE

EW:md

cc: ✓ New Mexico Oil Conservation Commission
P. O. Box 2008
Santa Fe, New Mexico
Attn: Mr. A. L. Foster, Jr.

Commissioner of Public Lands
State of New Mexico
P. O. Box 1148
Santa Fe, New Mexico
Attn: Mrs. Marian N. Khan

State of New Mexico



Commissioner of Public Lands

E. S. JOHNNY WALKER
COMMISSIONER



P. O. BOX 791
SANTA FE, NEW MEXICO

DEC 20 1964

December 8, 1964

The Pure Oil Company
First City National Bank Building
Houston, Texas

Re: Red Hills Unit Area
Lea County, New Mexico

Attention: Mr. E. B. Wright

Gentlemen:

Pursuant to your letter of December 1, 1964 regarding the Red Hills Unit Well No. 1. Please be advised that the Commissioner of Public Lands concurs with your determination that a valuable discovery has been made and that the Red Hills Unit Well No. 1 located in the SW/4SE/4 of Section 32, Township 25 South, Range 33 East, Lea County, New Mexico, is capable of producing unitized substances in paying quantities as provided for under Section 9 of the Unit Agreement.

Very truly yours,

E. S. JOHNNY WALKER
COMMISSIONER OF PUBLIC LANDS

ESW/mmr/v
cc:

New Mexico Oil Conservation Commission
Santa Fe, New Mexico

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



MAIL ROOM

64 DEC 9 AM 3

2671

December 8, 1964

The Pure Oil Company
First City National Bank Building
Houston, Texas

Re: Red Hills Unit Area
Lea County, New Mexico

Attention: Mr. E. B. Wright

Gentlemen:

Pursuant to your letter of December 1, 1964 regarding the Red Hills Unit Well No. 1. Please be advised that the Commissioner of Public Lands concurs with your determination that a valuable discovery has been made and that the Red Hills Unit Well No. 1 located in the SW/4SE/4 of Section 32, Township 25 South, Range 33 East, Lea County, New Mexico, is capable of producing unitized substances in paying quantities as provided for under Section 9 of the Unit Agreement.

Very truly yours,

E. S. JOHNEY WALKER
COMMISSIONER OF PUBLIC LANDS

ESW/nmr/v

cc:

New Mexico Oil Conservation Commission
Santa Fe, New Mexico

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

50th YEAR



THE PURE OIL COMPANY

SOUTHERN PRODUCING DIVISION AREA CODE 713-FA 3-9351
FIRST CITY NATIONAL BANK BLDG. • HOUSTON, TEXAS 77002

December 1, 1964

Mr. E. S. Johnny Walker
Commissioner of Public Lands
State of New Mexico
P. O. Box 1148
Santa Fe, New Mexico

Attention: Mrs. Marian M. Rhea,
Supervisor Unit Division

RE: Red Hills Unit Area,
No. 14-08-0001-8496
Lea County, New Mexico

Dear Sir:

The #1 Red Hills Unit Well located in the SW/4 SE/4 of Section 32, Township 25 South, Range 33 East, N.M.P.M., Lea County, New Mexico, and on State of New Mexico Lease No. K-1459, was spudded on February 24, 1963, and reached a total depth of 21,321 feet in weathered basement rock on August 9, 1964.

Based on information obtained during the drilling of this well to total depth, and by subsequent production testing through production casing, The Pure Oil Company, Unit Operator, has determined that a valuable discovery of unitized substances has been made and that the Red Hills #1 Unit Well is capable of producing unitized substances in paying quantities. In support of this determination, we submit herewith the following:

- (1) Exhibit "A", Resume of Production Tests of Productive Zones;
- (2) Exhibit "B", Gas Analysis of Wolfcamp Production;
- (3) Exhibit "C", Gas Analysis of Pennsylvanian Production;
- (4) Exhibit "D", Economic and Reserve Calculations;
- (5) Exhibit "E", Well Cost Estimate Wolfcamp-Penn. Dual

Page 2
Mr. E. S. Johnny : ker
December 1, 1964

Unit Operator is presently installing completion equipment and will, subject to an approving order by the Oil Conservation Commission, dually complete the #1 Unit Well from the Pennsylvanian and Wolfcamp Formations prior to December 15, 1964.

Unit Operator has signed a gas contract with El Paso Natural Gas Company under the terms of which, and subject to Federal Power Commission approval, El Paso will commence taking gas from the #1 Unit Well on December 15, 1964.

In the absence of: (1) additional drilling operations being conducted at the time, or; (2) an approved initial participating area, or; (3) a producing status, approximately 7680 acres of federal leases in the unit area will expire in February, 1965. Inasmuch as we do not contemplate additional drilling operations during the month of February, 1965, and since it is unlikely that an initial participating area will be approved by that time, we respectfully request your early concurrence with this determination, and request that this unit be deemed to have a producing status.

In response hereto, would you please furnish copies to the New Mexico Oil Conservation Commission and the United States Geological Survey at the addresses indicated below.

Very truly yours,

THE PURE OIL COMPANY

By



Division Manager,
Southern Producing Division

EBW:md

cc: New Mexico Oil Conservation Commission
P. O. Box 2088
Santa Fe, New Mexico
Attention: Mr. A. L. Porter, Jr.

The Director, (4)
United States Geological Survey
Through: Mr. John A. Anderson,
Regional Oil and Gas Supervisor
United States Geological Survey
P. O. Box 1857
Roswell, New Mexico

RED HILLS UNIT WELL #1

Resume of Production Tests of Productive Zones

The Devonian formation, from perforations 17,476'-17,492' and 17,523'-17,544', after treating with 5,000 gal. regular acid, flowed, on a 5½ hour test, at a stabilized rate of 7.8 MMCFG per day on a 20/64" choke with 4300 psi tubing pressure. On the next test of 3 hours duration, the well flowed at a stabilized rate of 10.4 MMCFG per day on a 24/64" choke. Shut-in tubing pressure in 2½ hours was 5900 psi.

A Pennsylvanian zone, from perforations 14,840'-14,864', was produced at 3.30 MMCFG per day with 430 psi surface pressure initially. After acidizing with 5,000 gal. regular acid, the zone produced for 12 hours at 4.53 MMCFG per day on a 1/2" choke with 600 psi surface pressure and 1451 psi bottom hole pressure. Approximately 25 barrels of water per MMCFG, some of which was acid water, was produced. The well was then shut-in for 4-1/4 hours for a pressure buildup. The maximum surface pressure was 8500 psi and the maximum bottom hole pressure was 10,294 psi.

A Pennsylvanian zone, from perforations 14,607'-14,788', was produced at 8.8 MMCFG per day on 16/64" choke with 5400 psi tubing pressure. This flow rate was maintained for 18 hours and was stabilized. The well was then open on an 18/64" choke and produced 10.72 MMCFG per day with 5100 psi tubing pressure. Liquid production was estimated at 11 bbls. per MMCFG.

A Wolfcamp zone, from perforations 13,622'-13,667', was produced on 18/64" choke at 9.0 MMCFG per day and 4750 psi tubing pressure for 6-1/4 hours. Liquid production was 24.9 Bbl/MMCFG. The well was then put on 28/64" choke and flowed at 12.1 MMCFG per day with 2400 psi tubing pressure for 4-1/2 hours. Liquid recovery at this flow rate was 28 Bbl/MMCFG.

A Wolfcamp zone, from perforations 13,440'-13,512', was flowed 14-1/2 hours on 18/64" choke at 6.27 MMCFG per day with 5125 psi tubing pressure. Condensate production was 30 Bbl/MMCFG in the tank with another 10 Bbl/MMCFG estimated being vented. Next, an attempt to flow the well at a stabilized rate of approximately 12.5 MMCF per day was interrupted by unloading slugs of mud.

By extrapolation of the data obtained from the above tests, the Pennsylvanian formation (14,840'-14,864' and 14,607'-14,788') estimated to have an absolute calculated open flow of 75 MMCFG per day; and the Wolfcamp formation (13,622'-13,677' and 13,440'-13,512') is estimated to have an absolute calculated open flow of 25 MMCFG per day.



Fractional Distillation Analysis Results Summary

Petroleum Analytical Laboratory Service, Inc.

P. O. Box 388

Phone EM 6-2866

ODESSA, TEXAS

No.
Run No. 7754
DATE OF RUN 11-5-64
Date Secured 11-4-64

AND HEAVY UNIT #1

A Sample of ... HIGH STAGE, FROM ...

Secured from ... Oil Company 13,059-13,697

At ... Secured by ...

Time ... Date 11-2-64

Sampling conditions Press. 1200psi

Temp. 72°F

FRACTIONAL DISTILLATION

Percentage Composition

Table with columns MOL% and LIQ.% listing components like Carbon Dioxide, Air, Nitrogen, Oxygen, Hydrogen sulf., Hydrogen, Methane, Ethane, Propane, Butanes, Iso-Butane, N-Butane, Pentanes, Iso-Pentane, N-Pentane, Hexanes, Heptanes, and TOTAL 100.00%

Calc. Sp. Gr. .643
Calc. A.P.I.
Calc. Vapor Press. Lb./Sq. In.
Sp. Gr.
Mol. Wt.

Liquid Content

Table with columns Method and G.P.M. showing values for Butanes (0.335), Pentanes & Heavier (0.101), Propanes (0.094), and Ethane.

Heating Value

British Thermal Units Per Cu. Ft. at 14.65 p.s.i. at 60 °F

Table with columns Method, Gal., Dry Basis, and Wet Basis. Values: 1141, 1121

Run by Simpson & Berry Checked by Approved by

Additional Data and Remarks

Table with columns for additional data: E2H .004, E2M .004, RSR .001, RSRR .001, Total .005, .010

EXHIBIT "B"



Fractional Distillation Analysis Results Summary

Petroleum Analytical Laboratory Service, Inc.

P. O. Box 388

Phone EM 6-2866

ODESSA, TEXAS

No.
Run No. 7587
DATE OF RUN 10-20-64
Date Secured 10-20-64

A Sample of GAS, FROM RED HILLS UNIT #1, PENN GAS, 14607-14788 TEST SEP.
Secured from Pure Oil Company
At Midland, Texas
Secured by C.E. Speight
Time 11:30AM Date 10-19-64
Sampling conditions Press. 175psi on container.
Temp.

FRACTIONAL DISTILLATION

Percentage Composition

Table with 2 columns: MOL%, LIQ.% and rows for Carbon Dioxide, Air, Nitrogen, Oxygen, Hydrogen sulf., Hydrogen, Methane, Ethane, Propane, Butanes, Iso-Butane, N-Butane, Pentanes, Iso-Pentane, N-Pentane, Hexanes, Heptanes, and TOTAL.

Calc. Sp. Gr. .572
Calc. A.P.I.
Calc. Vapor Press. Lb./Sq. In.
Sp. Gr.
Mol. Wt.

Liquid Content

Table with 2 columns: Method, G.P.M. and rows for Based on Analysis (Butanes), Based on Analysis (Pentanes & Heavier), Based on Analysis (Propanes), Based on Analysis (Ethane).

Heating Value
British Thermal Units Per
Cu. Ft.
at 14.65 p.s.i.
at 60 °F

Table with 3 columns: Method, Gal., Dry Basis, Wet Basis and rows for Based on % Composition.

Run by H. Berry Checked by T.M. Simpson Approved by [Signature]

Additional Data and Remarks

EXHIBIT "C"

RED HILLS UNIT

ECONOMIC CALCULATIONS
FOR A TYPICAL WOLFCAMP-PENN DUAL COMPLETION
(ESTIMATED WELL COST OF \$1,100,000)

WOLFCAMP RESERVES	640 Acres
Gas Reserves - MMMCF	10.065
Liquid Reserves - Thousands Ebls.	402.4
Net Gas Revenue @ \$146/MMCF Average	\$1,469,490
Net Liquid Revenue @ \$2.00/Bbl. Average	\$ 804,800
Total Net Revenue	\$2,274,290

PENNSYLVANIAN RESERVES

Gas Reserves - MMMCF	14.524
Liquid Reserves - Thousands Ebls.	46.84
Net Gas Revenue @ \$146/MMCF Average	\$2,120,504
Net Liquid Revenue @ \$2.00/Bbl. Average	\$ 93,680
Total Net Revenue	\$2,214,184

Net Value of Production	\$4,488,474
Investment	\$1,100,000
Profit	\$3,388,474
Profit to Investment	3.08 to 1

Net Value of Production 10% Disc.	\$2,256,000
Investment	\$1,100,000
Profit @ 10% Disc.	\$1,156,000
Profit @ 10% Disc. to Investment	1.05 to 1

All values are net to operator assuming 80% Net to Gross ratio and before Federal Income Tax.

Note: Inasmuch as the #1 Unit Well will not be completed from the Devonian Formation at this time, the reserves attributable thereto are not used in this economic calculation. However, Unit Operator has calculated the gas reserves of the Devonian Formation under 640 acres to be 12 MMMCF.

RED HILLS UNIT
WELL COST ESTIMATE WOLFCAMP-PENN DUAL

Labor, Transportation, District Expense	\$ 30,000
Location, Roads, ROW, Damages	20,000
Contract Rig	300,000
Drilling Mud	200,000
Cementing Service & Cement	50,000
Logging, Perforating, Coring, & Testing	50,000
Bits	20,000
Stimulation	10,000
Miscellaneous	20,000
Casing:	
550' - 20"	7,000
5,000' - 13-3/8"	45,000
13,000' - 10-3/4"	150,000
3,000' - 7-5/8"	20,000
Tubing:	
27,000' - 2-7/8"	60,000
Control Equipment & Christmas Tree	35,000
Float Equipment, Centralizers, etc.	18,000
Packers & Down Hole Equipment	10,000
Miscellaneous	20,000
Surface Equipment	<u>45,000</u>
TOTAL	\$1,100,000



1963 MAR 27 11 21 AM
1963 MAR 27 11 21 AM
THE PURE OIL COMPANY

SOUTHERN PRODUCING DIVISION
FIRST CITY NATIONAL BANK BLDG. • HOUSTON 2, TEXAS • FAIRFAX 3-9351

3671
March 27, 1963

Mr. E. S. Johnny Walker
Commissioner of Public Lands
State of New Mexico
P. O. Box 791
Santa Fe, New Mexico
Attn: Mrs. Marian M. Rhea

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

Re: No. 14-08-0001-8496
Red Hills Unit
28,796.48 Acres
Lea County, New Mexico

Gentlemen:

To each of you is attached hereto a copy of Ratification of and Joinder in Unit Agreement and Unit Operating Agreement for the Red Hills Unit Area executed by Frances C. Fox and Stanley H. Fox, her husband, by which they ratify the Unit Agreement and Unit Operating Agreement and thereby commit Tract 7 as described in the Unit Agreement to the unit. There is also enclosed herewith a copy of letter dated March 25, 1963, from the Regional Supervisor of the U. S. Geological Survey wherein Tract 7 is considered as being effectively committed to the unit upon the filing of the ratification with the Commissioner and the Conservation Commission.

Yours very truly,

C. B. Sabin

CBS/jb

cc: United States Geological Survey
Drawer 1857
Roswell, New Mexico
Attn: Mr. John A. Anderson



IN REPLY REFER TO:

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

Drawer 1857
Roswell, New Mexico

March 25, 1963

The Pure Oil Company
P. O. Box 239
Houston 1, Texas

Attention: Mr. C. B. Sabin

Gentlemen:

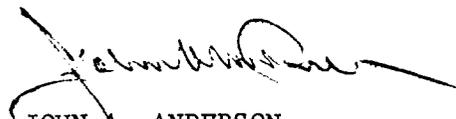
We hereby acknowledge receipt of the following described ratification and joinder relating to the Red Hills unit agreement No. 14-08-0001-8496, New Mexico:

<u>Joinder To</u>	<u>Date Received</u>	<u>Executed by:</u>
Unit and unit operating agreement	3-15-63	Frances C. and Stanley M. Fox, offerors for the record title and working interest in Federal land unit tract 7

Section 29 of the Red Hills unit agreement requires that copies of such ratification and joinder be filed with the Commissioner of Public Lands, State of New Mexico, and the New Mexico Oil and Gas Conservation Commission. Subject to your compliance with the foregoing requirement, Federal land unit tract 7 is considered effectively committed to the Red Hills unit agreement as of the effective date of lease New Mexico 0340232.

Copies of the ratification and joinder are being distributed to the appropriate Federal offices.

Very truly yours,



JOHN A. ANDERSON

Regional Oil and Gas Supervisor



RATIFICATION OF AND JOINDER IN
UNIT AGREEMENT AND UNIT OPERATING AGREEMENT
FOR THE
RED HILLS UNIT AREA
LEA COUNTY, NEW MEXICO

In consideration of the execution of the Unit Agreement and the Unit Operating Agreement for the Red Hills Unit Area, Lea County, New Mexico, by The Pure Oil Company, as the Unit Operator, and other working interest owners in said area, each of which agreements is dated as of November 20, 1962, the undersigned owner or owners of lands, interests in lands, oil and gas leases, interests in leases or working interests in production located in said Red Hills Unit Area and described as subject to said agreements, hereby severally, each to the extent of his or its particular ownership or interest, consent to the inclusion of said lands or leases or other interests within the Unit Area and approve and adopt the terms of said agreements as applicable to said lands, leases or other interests, and hereby ratify, join in and adopt said agreements and all of the terms and provisions thereof as though they were original signatory parties thereto, and hereby commit said lands, leases or other interests to said agreements and hereby assume all of the rights and obligations incident thereto under said agreements, further acknowledging receipt of a copy of each of said agreements.

Date: March 12, 1963

Frances C. Fox
Frances C. Fox

~~Witness:~~

~~By~~ Stanley H. Fox
Stanley H. Fox

Address: 2312 Cuthbert
Midland, Texas

STATE OF Texas)
COUNTY OF Midland) ss

The foregoing instrument was acknowledged before me this 12 day of March, 1963, by Frances C. Fox and husband, Stanley H. Fox.

My Commission Expires:
June 1, 1963

Lucille Bateman
Notary Public

STATE OF _____)
COUNTY OF _____) ss

The foregoing instrument was acknowledged before me this _____ day of _____, 1962, by _____, _____ of _____, a Corporation, on behalf of said Corporation.

My Commission Expires:

Notary Public



2671
MAIN OFFICE OCC

THE PURE OIL COMPANY

SOUTHERN PRODUCING DIVISION

1963 MAR 4 AM 8:23

FIRST CITY NATIONAL BANK BLDG. • HOUSTON 2, TEXAS • FAIRFAX 3-9351

March 1, 1963

Mr. Perry R. Bass
Fort Worth National Bank Bldg.
Fort Worth, Texas
Attn: Mr. W. P. Duncan, Jr.

Mr. George T. Abell
P. O. Box 430
Midland, Texas
Attn: Mr. James I. Trott

Pan American Petroleum Corporation
P. O. Box 1410
Fort Worth 1, Texas
Attn: Mr. D. B. Mason, Jr.

Tidewater Oil Company
P. O. Box 1231
Midland, Texas
Attn: Mr. J. R. Creswell

Continental Oil Company
P. O. Box 1377
Roswell, New Mexico
Attn: Mr. W. R. Hall

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

Texaco Inc.
P. O. Box 3109
Midland, Texas
Attn: Mr. R. T. Maxwell

Mr. E. S. Johnny Walker
Commissioner of Public Lands
State of New Mexico
P. O. Box 791
Santa Fe, New Mexico
Attn: Mrs. Marian M. Rhea

Tenneco Oil Company
P. O. Box 1039
Midland, Texas
Attn: Mr. T. J. Hussion

Re: No. 14-08-0001-8496
Red Hills Unit
28,796.48 Acres
Lea County, New Mexico

Gentlemen:

Each of you were recently advised of our filing with the U. S. Geological Survey a Consent, Ratification and Joinder by D. Miller, owner of a production payment under Tracts 27 and 28 of the Red Hills Unit.

In connection therewith there is attached hereto a reproduced copy of letter dated February 21, 1963, from the Supervisor of the U.S.G.S. which reflects his approval as to the commitment of the interests owned by D. Miller.

Yours very truly,

C. B. Sabin

CBS/jb
Encl.

cc: Mr. M. T. Peyton



UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

Drawer 1857
Roswell, New Mexico

February 21, 1963

The Pure Oil Company
First City National Bank Building
Houston 2, Texas

Attention: Mr. C. B. Sabin

Gentlemen:

We hereby acknowledge receipt of the following described ratification and joinder relating to the Red Hills unit agreement, No. 14-08-0001-8496, New Mexico:

<u>Joinder to</u>	<u>Date Received</u>	<u>Executed by</u>
Unit agreement	1-28-63	D. Miller, owner of a production payment in Federal land unit tracts 27 and 28

Section 29 of the Red Hills unit agreement requires that copies of such ratification and joinder be filed with the Commissioner of Public Lands, State of New Mexico, and the New Mexico Oil and Gas Conservation Commission. Subject to your compliance with the foregoing requirement, the D. Miller interests are considered committed to the Red Hills unit agreement as of February 1, 1963.

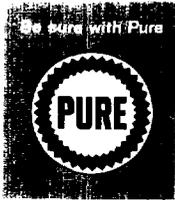
Copies of the ratification and joinder are being distributed to the appropriate Federal offices. All copies surplus to our needs are returned herewith.

Very truly yours,

JOHN A. ANDERSON

Regional Oil and Gas Supervisor





2891
MAIL OFFICE OCC
THE PURE OIL COMPANY

SOUTHERN PRODUCING 1963 FEB 13 AM 8:25
FIRST CITY NATIONAL BANK BLDG. • HOUSTON 2, TEXAS • FAIRFAX 3-9351

February 11, 1963

Re: No. 14-08-0001-8496
Red Hills Unit
28,796.48 Acres
Lea County, New Mexico

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

Gentlemen:

Please find enclosed herewith a copy of the final CERTIFICATION - -
DETERMINATION dated January 22, 1963, issued and executed by Mr.
Arthur A. Baker, Acting Director, United States Geological Survey.

Yours very truly,

C. B. Sabin
C. B. Sabin

CBS/jb
Encl.



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

JAN 22 1963

Pure Oil Company
Post Office Box 239
Houston 2, Texas

Gentlemen:

On January 22, 1963, Arthur A. Baker, Acting Director of the Geological Survey, approved the Red Hills unit agreement, Lea County, New Mexico, filed by your company as unit operator. This agreement has been designated No. 14-08-0001-8496, and is effective as of the date of approval.

We are returning all copies of the joinder of George L. Buckles, working interest owner of 28.2921% interest in fee tract 46 in accordance with your letter of January 21.

Enclosed are three copies of the approved unit agreement for your records. It is requested that you furnish the State of New Mexico and any other interested principal with whatever evidence of this approval is deemed appropriate.

Sincerely yours,

For the Director

Enclosures

RECEIVED
JAN 9 1963

U. S. GEOLOGICAL SURVEY
ROSWELL, NEW MEXICO



CERTIFICATION - - DETERMINATION

114-08-0001 8496

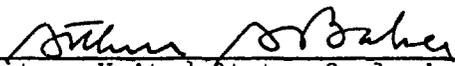
Pursuant to the authority vested in the Secretary of Interior, under the act approved February 25, 1920, 41 Stat. 437, as amended, 30 U. S. C. secs. 181, et seq., and delegated to the Director of the Geological Survey pursuant to Departmental Order No. 2365 of October 8, 1947, I do hereby:

A. Approve the attached agreement for the development and operation of the Red Hills Unit Area, State of New Mexico.

B. Certify and determine that the unit plan of development and operation contemplated in the attached agreement is necessary and advisable in the public interest for the purpose of more properly conserving the natural resources.

C. Certify and determine that the drilling, producing, rental, minimum royalty, and royalty requirements of all Federal leases committed to said agreement are hereby established, altered, changed, or revoked to conform with the terms and conditions of this agreement.

Dated JAN 22 1963.


Director, United States Geological Survey



THE PURE OIL COMPANY

SOUTHERN PRODUCING DIVISION

FIRST CITY NATIONAL BANK BLDG. • HOUSTON 2, TEXAS • FAIRFAX 3-9360

MAIN OFFICE OCC
1963 JAN 29 PM 1:30
2671

January 28, 1963

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

Re: Case No. 2671
Order No. R-2350
Red Hills Unit
28,796.48 Acres
Lea County, New Mexico

Gentlemen:

Reference is made to your Order No. R-2350, Case No. 2671, such Order being dated October 31, 1962, wherein you approved the Red Hills Unit Agreement for the operation and development of the Red Hills Unit Area.

In compliance with this Order, we enclose herewith a copy of each of the following:

1. Unit Agreement dated November 20, 1962.
2. Unit Operating Agreement dated November 20, 1962.
3. Ratification and Joinder in Unit Agreement and Unit Operating Agreement executed by various working interest owners, as well as Consent, Ratification and Joinder executed by owners of royalty, overriding royalty and production payments.
4. Certificate of Approval dated January 8, 1963, issued by Commissioner of Public Lands of the State of New Mexico.

I quote from a letter dated January 22, 1963, from the U. S. Geological Survey to the undersigned as follows:

"On January 22, 1963, Arthur A. Baker, Acting Director of the Geological Survey, approved the Red Hills unit agreement, Lea County, New Mexico, filed by your company as unit operator. This agreement has been designated No. 14-08-0001-8496, and is effective as of the date of approval."

Oil Conservation Commission

Page -2-

January 28, 1963

We have not received the formal CERTIFICATION -- DETERMINATION from the U. S. Geological Survey, however, immediately upon receipt thereof you will be provided a copy.

Yours very truly,

A handwritten signature in cursive script that reads "C. B. Sabin". The signature is written in dark ink and is positioned above the printed name.

C. B. Sabin

CBS/jb
Encls.