



## PHILLIPS PETROLEUM COMPANY

ODESSA, TEXAS 79761  
PHILLIPS BUILDING

NATURAL RESOURCES GROUP  
Exploration and Production

April 14, 1976

Application for Exception to Statewide  
Rule No. 303-C to Down-Hole Commingle  
Production from the Ranger Lake Bough  
and Ranger Lake Penn Pools - Ranger Well  
No. 10, Lea County, New Mexico

File: W4-Ta-198-76

New Mexico Oil Conservation Commission - 2  
P. O. Box 2083  
Santa Fe, New Mexico 87501

Attention: Mr. Joe D. Ramey,  
Secretary-Director

Gentlemen:

We respectfully request administrative approval, subject to the twenty day waiting period, to down-hole commingle production from the Ranger Lake Bough and Ranger Lake Penn Pools in our Ranger Well No. 10, located in Unit D, 660' FN line and 660' FW line of Section 26, T-12-S, R-34-E, Lea County, New Mexico, as provided by Statewide Rule No. 303-C. Pertinent well and production data follows:

1. Both zones to be commingled in the well bore are classified as oil zones and both zones require artificial lift.
2. The total daily production from the two zones before commingling does not exceed 80 BOPD as allowed for the deepest perforations in the lower zone. Further, neither zone produces more water than the combined oil limit as determined above.
3. The Penn zone of this well bore was completed in October of 1959 through perforations 10,203' to 10,310'. Our last official well test on the Penn zone was in June of 1974, producing 11 BOPD, 44 BWP, GOR TSTM, Gravity - 40.0 Degrees. The Penn zone was temporarily abandoned and the well bore recompleted in the Bough zone in July, 1974. Bough zone completion is through selected perforations between 9926' and 9956'. On test dated April 4, 1976, the Bough produced 3 BOPD, 36 BWP, with a GOR of 1000/1 and oil gravity of 40.9 degrees. The oil and/or water production is compatible one zone with the other and there should be no undue formation of precipitates from combined produced waters or hydrocarbons. We attach formation water analysis on each zone.

4. Crude gravities are; Bough-40.9 degrees, Penn-40.0 degrees. These crudes are classified as intermediate sweet with a posted price of \$12.68 for 40 degrees gravity (and above) crude. Consequently, there would be no difference in the price of combined crude over that of the crudes produced and sold separately. Royalty and working interest are common throughout and there is no overriding royalty. The State royalty beneficiary is Common School Land.
5. Bottom hole pressures are estimated at 2000 psi for the Bough and 2500 psi for the Penn.
6. Our forecast of production is; first year, Bough-5 BOPD, 35 BWPD; Penn-10 BOPD, 40 BWPD. Second year, Bough-5 BOPD, 40 BWPD; Penn-10 BOPD, 40 BWPD. We attach prior production statistics on each zone.
7. Completion history; spudded on 8-8-59; TD of 10,352' on 9-25-59 Elevation-4165' RKB. 8-5/8" casing set in 12 1/4" hole at 2000' and cemented with 505 sacks regular cement with 10% DD and 2% CaCl<sub>2</sub> followed by 150 sacks regular cement with 1% CaCl<sub>2</sub> and cement circulated at the surface; 5-1/2" casing set in 7-7/8" hole at 10,351', cemented with 1187 sacks regular cement with 40% DD and 150 sacks TrIF. Temperature survey TOC at 308'. Penn-October, 1959 - 1000 gals 15% HCL acid at maximum pressure of 1000#; November, 1959 - 12,000 gals retarded acid at maximum pressure of 4000#; January, 1960 - 2000 gals 15% HCL Acid at maximum pressure of 1000#. Bough-August, 1974 - 1000 gals 15% HCL acid at maximum pressure of 4800#.

We propose to allocate production to each zone based on the individual well test established herein and reflected on the attached Form C-116.

Since the Penn zone has been temporarily abandoned, no application for the multiple completion of these zones has been filed. We have filed Form C-103 with the Hobbs District office covering the proposal to down-hole commingle these zones in the well bore. Your approval of this down-hole commingle without the formality of an approved multiple completion is requested. Subject to your approval, the operation of down-hole commingling these zones will be performed.

Offset operators are hereby notified, with the request that their original waivers of objections be mailed direct to your attention, and a copy sent to this office. Mr. R. J. Stringer, telephone Odessa (915) 337-8611, will answer any questions on this application.

Phillips Petroleum Company  
Production Statistics - Oil  
Ranger No. 10.

Ranger Lake (Penn)

1-1-71 through 4-30-73 Shut down.

<u>Month/Year</u>	<u>BO</u>
5-73	213
6-73	522
7-73	474
8-73	521
9-73	1405
10-73	754
11-73	942
12-73	1106
1-74	635
2-74	774
3-74	1007
4-74	1038
5-74	1084
6-74	1050

Shut down-temporarily abandoned

Ranger Lake (Bough)

<u>Month/Year</u>	<u>BO</u>
7-74	1189
8-74	2777
9-74	2162
10-74	1930
11-74	1441
12-74	1117
1-75	922
2-75	765
3-75	523
4-75	1084
5-75	682
6-75	—
7-75	764
8-75	590
9-75	356
10-75	529
11-75	483
12-75	434
1-76	647
2-76	309

HALLIBURTON DIVISION LABORATORY  
HALLIBURTON COMPANY  
LOVINGTON, NEW MEXICO

HARRIS FILE

## LABORATORY WATER ANALYSIS

No. W74-677

To Phillips Petroleum Co.

Date 9-11-74

Box 1178

Lovington, N. Mex.

This report is the property of Halliburton Company and neither it nor any part thereof nor a copy thereof is to be published or disclosed without first securing the express written approval of laboratory management; it may however, be used in the course of regular business operations by any person or concern and employees thereof receiving such report from Halliburton Company.

Submitted by

Date Rec. 9-10-74

Well No. As Indicated

Depth

Formation

Bough

County

Field

RANGER LAKE

Source

	Ranger #10	Ranger #15	
Resistivity .....	0.082 @ 70°F	0.090 @ 70°F	
Specific Gravity .....	1.068	1.062	
pH .....	7.1	7.3	
Calcium (Ca) .....	4635	3330	*MPL
Magnesium (Mg) .....	941	684	
Chlorides (Cl) .....	62500	55000	
Sulfates (SO <sub>4</sub> ) .....	1130	1540	
Bicarbonates (HCO <sub>3</sub> ) .....	159	256	
Soluble Iron (Fe) .....	Light to Moderate	Nil	
.....			
.....			
.....			

Remarks:

\*Milligrams per liter

Respectfully submitted,

Analyst: Griffin

HALLIBURTON COMPANY

cc:

By

*Richard Griffin*  
CHEMIST

## NOTICE

This report is limited to the described sample tested. Any user of this report agrees that Halliburton shall not be liable for any loss or damage, whether it be to act or omission, resulting from such report or its use.

# HALLIBURTON DIVISION LABORATORY

HALLIBURTON COMPANY  
LOVINGTON, NEW MEXICO

No. W3-165-64

## LABORATORY REPORT

Date March 9, 1964

TO Phillips Petroleum Company  
Box 1178  
Lovington, New Mexico

This report is the property of Halliburton Company and neither it nor any part thereof nor a copy thereof is to be published or disclosed without first securing the express written approval of laboratory management; it may however, be used in the course of regular business operations by any person or concern and employees thereof receiving such report from Halliburton Company

Date Received \_\_\_\_\_

Well & Lease ? Depth \_\_\_\_\_ Formation Penn

Location \_\_\_\_\_ Field Ranger Lake Source Heater Treater  
Heater Treater Fresh Water

Specific gravity 60/60 °F	<u>1.094</u>	<u>1.003</u>
Color, filtrate	<u>Colorless</u>	<u>Colorless</u>
pH	<u>5.9</u>	<u>7.8</u>
Resistivity °F	<u>ND</u>	<u>ND</u>
Chlorides, Cl ppm (mpl)	<u>80,000</u>	<u>140</u>
Sulfates, SO <sub>4</sub>	<u>2,800</u>	<u>1,500</u>
Alkalinity, HCO <sub>3</sub>	<u>ND</u>	<u>ND</u>
Calcium, Ca	<u>8,800</u>	<u>65</u>
Magnesium, Mg	<u>1,260</u>	<u>29</u>
Iron, Fe	<u>Negl.</u>	<u>Negl.</u>
Sodium, Na <sup>+</sup>	<u>40,800</u>	<u>690</u>
Sulfides, H <sub>2</sub> S	<u>Negl.</u>	<u>Negl.</u>

Remarks \_\_\_\_\_

ppm equals Parts per million uncorrected or milligrams per liter  
\* includes Potassium as Na.

Respectfully submitted,

HALLIBURTON COMPANY

By Dave Sutton, Division Chemist

Laboratory Analyst

Brewer

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This report is limited to the described sample tested. Any user of this report agrees that Halliburton shall not be liable for any loss or damage, whether due to act or omission, resulting from such report or its use.

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U.S. CONSERVATION COMM.  
HOBBE H M

**NEW MEXICO OIL CONSERVATION COMMISSION  
GAS-OIL RATIO TESTS**

C-116  
Revised 1-1-63

Operator Phillips Petroleum Company		Well Ranger Lake		County Lea									
Address		TYPE OF TEST - (X)		Completion <input type="checkbox"/> Special <input checked="" type="checkbox"/>									
LEASE NAME	WELL NO.	LOCATION			DATE OF TEST	CHOKE SIZE	TBG. PRESS.	DAILY ALLOW-ABLE	LENGTH OF TEST HOURS	PROD. DURING TEST			GAS - OIL RATIO CU.FT./BBL
		U	S	T						R	WATER BBLs	GRAV. OIL BBLs	
Ranger	10	'D	26	12S	34E	6/74	P		24	44	40	11	TS TM
Test for down-hole comingling allocation													

No well will be assigned an allowable greater than the amount of oil produced on the official test.

During gas-out ratio test, each well shall be produced at a rate not exceeding the top unit allowable for the pool in which well is located by more than 25 percent. Operator is encouraged to take advantage of this 25 percent tolerance in order that well can be assigned increased allowables when authorized by the Commission.

Gas volumes must be reported in MCF measured at a pressure base of 14.7 psia and a temperature of 60° F. Specific gravity base will be 0.60.

Report casing pressure in lieu of tubing pressure for any well producing through casing.

Mail original and one copy of this report to the district office of the New Mexico Oil Conservation Commission in accordance with Rule 301 and appropriate rules.

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

  
W. J. Mueller  
(Signature)

Engineering Advisor

(Title)

L-15-76

(Initials)

RECEIVED

APR 31, 1970

OIL CONSERVATION COMM.  
HOBBY, H. M.



NEW MEXICO OIL CONSERVATION COMMISSION  
GAS-OIL RATIO TESTS

C-116  
Revised 1-1-65

Operator Phillips Petroleum Company		County Lea												
Address Room 806 Phillips Building, Odessa, Texas 79761		TYPE OF TEST - (X) <input checked="" type="checkbox"/> Scheduled <input type="checkbox"/> Completion <input type="checkbox"/> Special <input checked="" type="checkbox"/>												
LEASE NAME	WELL NO.	LOCATION			DATE OF TEST	CHOKE SIZE	TBG. PRESS.	DAILY ALLOWABLE	LENGTH OF TEST HOURS	PROD. DURING TEST			GAS - OIL RATIO CU.FT./BBL.	
		U	S	T						R	WATER BBL.S	GRAV. OIL		OIL BBL.S
Ranger	10	D	26	12S	34E	4-4-76	P		24	36	40.9	3	3	1000
Test for down-hole commingling allocation.														

No well will be assigned an allowable greater than the amount of oil produced on the official test.

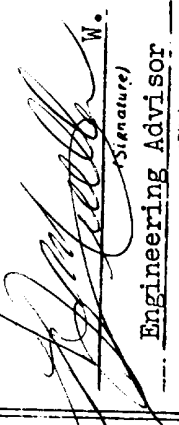
During gas-oil ratio test, each well shall be produced at a rate not exceeding the top-out allowable for the pool in which well is located by more than 25 percent. Operator is encouraged to take advantage of this 25 percent tolerance in order that well can be assigned increased allowables when authorized by the Commission.

Gas volumes must be reported in MCF measured at a pressure base of 15.025 psia and a temperature of 60° F. Specific gravity base will be 0.60.

Report casing pressure in lieu of tubing pressure for any well producing through casing.

Mail original and one copy of this report to the district office of the New Mexico Oil Conservation Commission in accordance with Rule 301 and appropriate rules.

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

 W. J. Mueller  
(Signature)  
Engineering Advisor  
(Title)  
4-15-76

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APR 20 1976

OIL CONSERVATION COMM.  
HOBBS, N. M.