

OILFIELD RESEARCH LABORATORIES

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- REGISTERED ENGINEERS -

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September 22, 1959

Felmont Oil Corporation
706 Union Center Building
Wichita 2, Kansas

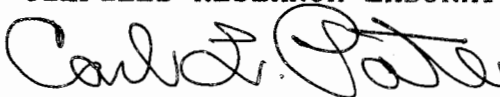
Gentlemen:

Enclosed herewith is the report of the analysis of the 3 $\frac{1}{2}$ " Rotary core taken from the Schemish Lease, Well No. WS-1, Butler County, Kansas, and submitted to our laboratory on September 12, 1959.

Your business is greatly appreciated.

Very truly yours,

OILFIELD RESEARCH LABORATORIES



Carl L. Pate

CLP:cs

2 c. to Mr. Kenneth Kirkland
Owensboro, Kentucky

Oilfield Research Laboratories

GENERAL INFORMATION & SUMMARY

Company Felmont Oil Corporation Lease Schemish Well No. WS-1

Location _____

Section 4 Twp. 29S Rge. 6E County Butler State Kansas

Name of Sand	- - - - -	Peru
Top of Core	- - - - -	2490.0
Bottom of Core	- - - - -	2518.0
Pay		
Top of Sand	- - - - -	2495.5
Bottom of Sand	- - - - -	2513.5
Total Feet of Permeable Sand	- - - - -	12.5
Total Feet of Floodable Sand	- - - - -	2.0

Distribution of Permeable Sand:
Permeability Range
Millidarcys

	Feet	Cum. Ft.
0 - 2	3.4	3.4
2 - 4	5.1	8.5
4 & above	4.0	12.5

Average Permeability Millidarcys	- - - - -	3.4
Average Percent Porosity	- - - - -	14.9
Average Percent Oil Saturation	- - - - -	17.8
Average Percent Water Saturation	- - - - -	57.2
Average Oil Content, Bbls./A. Ft.	- - - - -	212.
Total Oil Content, Bbls./Acre	- - - - -	4,018.
Average Percent Oil Recovery by Laboratory Flooding Tests	- - - - -	6.0
Average Oil Recovery by Laboratory Flooding Tests, Bbls./A. Ft.	- - - - -	77.
Total Oil Recovery by Laboratory Flooding Tests, Bbls./Acre	- - - - -	154.
Total Calculated Oil Recovery, Bbls./Acre (Primary)	- - - - -	700.
Packer Setting, Feet	- - - - -	
Viscosity, Centipoises @	- - - - -	
A. P. I. Gravity, degrees @ 60 °F	- - - - -	
Elevation, Feet	- - - - -	

Oilfield Research Laboratories

GENERAL INFORMATION & SUMMARY

Company Felmont Oil Corporation Lease Schemish Well No. WS-1

Location _____

Section 4 Twp. 29S Rge. 6E County Butler State Kansas

Name of Sand - - - - - Bartlesville

Top of Core - - - - - 2770.0

Bottom of Core - - - - - 2838.0

Pay
Top of Sand - - - - - 2794.2

Bottom of Sand - - - - - 2823.2

Total Feet of Permeable Sand - - - - - 30.1

Total Feet of Floodable Sand - - - - - 27.0

Distribution of Permeable Sand:
Permeability Range
Millidarcys

Feet

Cum. Ft.

0 - 2	3.1	3.1
2 - 4	2.5	5.6
4 - 8	5.0	11.5
8 - 16	8.6	20.1
16 - 32	6.0	26.1
32 & above	4.0	30.1

Average Permeability Millidarcys - - - - - 15.3

Average Percent Porosity - - - - - 17.6

Average Percent Oil Saturation - - - - - 21.5

Average Percent Water Saturation - - - - - 53.6

Average Oil Content, Bbls./A. Ft. - - - - - 295.

Total Oil Content, Bbls./Acre - - - - - 9,957.

Average Percent Oil Recovery by Laboratory Flooding Tests - - - - - 5.2

Average Oil Recovery by Laboratory Flooding Tests, Bbls./A. Ft. - - - - - 78.

Total Oil Recovery by Laboratory Flooding Tests, Bbls./Acre - - - - - 1,868.

Total Calculated Oil Recovery, Bbls./Acre - - - - - 5,050.

Packer Setting, Feet - - - - -

Viscosity, Centipoises @ - - - - -

A. P. I. Gravity, degrees @ 60 °F - - - - -

Elevation, Feet - - - - -

Fresh water mud was used as a circulating fluid in the coring of the sand in this well. Circulation was lost during the coring of the Bartlesville sand. We understand the Peru sand was cored in a virgin area.

The core was sampled and the samples were sealed in cans by a representative of Oilfield Research Laboratories.

PERU SAND

FORMATION CORED

The detailed log of the formation cored is as follows:

<u>Depth Interval, Feet</u>	<u>Description</u>
2490.0 - 2494.5	Gray sandy shale.
2494.5 - 2495.5	Gray shaley sandstone.
2495.5 - 2510.0	Gray and light brown shaley sandstone.
2510.0 - 2513.5	Grayish light brown shaley sandstone.
2513.5 - 2515.0	Laminated sandstone and shale.
2515.0 - 2518.0	Sandy shale (Discarded at well).

Coring was started at a depth of 2490.0 feet in gray sandy shale and completed at 2518.0 feet in sandy shale. This core shows a total of 19.0 feet of sandstone. For the most part, the pay is made up of gray and light brown shaley sandstone.

PERMEABILITY

The weighted average permeability of the sand section is 3.4 millidarcys (See Table III). By observing the data given on the coregraph, it is noticeable that the sand has a very irregular permeability profile. The permeability of the sand varies from impermeable to a maximum of 10 millidarcys.

PERCENT SATURATION & OIL CONTENT

The sand in this core shows a low weighted average percent oil saturation, namely, 17.8. The weighted average percent water saturation of the sand section is 57.2, thereby giving a total fluid saturation of 75.0 percent (See Table III). This fairly low total fluid saturation indicates some fluid was lost during coring which was probably oil.

The weighted average oil content of the sand section is 212 barrels per acre foot; while the total oil content, as shown by this core, is 4,018 barrels per acre (See Table III).

LABORATORY FLOODING TESTS

The sand in this core did not respond very well to laboratory flooding tests, as a total recovery of only 154 barrels of oil per acre was obtained from 2.0 feet of sand. The weighted average percent oil saturation was reduced from 23.0 to 17.0, or represents an average recovery of 6.0 percent. The weighted average effective permeability of the samples is 0.298 millidarcys, while the average initial fluid production pressure is 45.0 pounds per square inch (See Table V).

By observing the data given in Table IV, you will note that of the 19 samples tested, only 2 produced water and oil. This indicates that approximately 11 percent of the sand represented by these samples is floodable pay sand.

CONCLUSION

On the basis of the above data, it is evident that approximately 700 barrels of oil per acre can be recovered from the area, represented by this core, by efficient sand-fracturing and primary production methods. We do not believe it would be profitable to water-flood this zone unless a greater thickness of floodable oil-saturated sand can be found.

This core shows a thin and rather shaley sand section having a low oil saturation, a high water saturation and a low permeability.

BARTLESVILLE SANDFORMATION CORED

The detailed log of the formation cored is as follows:

<u>Depth Interval, Feet</u>	<u>Description</u>
2770.0 - 2790.0	- Shale (Discarded at well).
2790.0 - 2792.0	- Laminated sandy shale.
2792.0 - 2794.2	- Gray laminated shaley sandstone.
2794.2 - 2823.2	- Light brown shaley sandstone containing two vertical fractures.
2823.2 - 2825.0	- Chert (Discarded at well).
2825.0 - 2826.5	- Gray limestone.
2826.5 - 2828.0	- Shaley dolomite.
2828.0 - 2838.0	- Mississippi limestone (Discarded at well).

Coring was started at a depth of 2770.0 feet in shale and completed at 2838.0 feet in limestone. This core shows a total of 31.2 feet of sandstone. For the most part, the pay is made up of light brown shaley sandstone.

The core shows two vertical fractures in the interval extending from a depth of 2819.0 to 2823.2 feet.

PERMEABILITY

For the sake of distribution, the core was divided into three sections. The weighted average permeability of the upper, middle and lower sections is 2.8, 12.1 and 31.4 millidarcys respectively; the overall average being 15.3 (See Table III). By observing the data given on the coregraph, it is noticeable that the sand has a very irregular permeability profile. The permeability of the sand varies from impermeable to a maximum of 63 millidarcys.

PERCENT SATURATION & OIL CONTENT

The sand in this core shows a fairly low weighted average percent oil saturation, namely, 21.5. The weighted average percent oil saturation of the upper, middle and lower sections is 18.0, 19.8, and 26.6 respectively. The weighted average percent water saturation of the upper, middle and lower sections is 61.0, 53.1 and 48.7 respectively; the overall average being 53.6 (See Table III). This gives an overall weighted average total fluid saturation of 75.1 percent. This fairly low total fluid saturation indicates some fluid was lost during coring which was probably oil.

The weighted average oil content of the upper, middle and lower sections is 226, 276 and 373 barrels per acre foot respectively; the overall average being 295. The total oil content, as shown by this core, is 9,957 barrels per acre (See Table III).

LABORATORY FLOODING TESTS

When taking into consideration that the sand in the core has a fairly low oil saturation, part of the sand responded very well to laboratory flooding tests, as a total recovery of 1,868 barrels of oil per acre was obtained from 24.0 feet of sand. The weighted average percent oil saturation was reduced from 22.8 to 17.6, or represents an average recovery of 5.2 percent. The weighted average effective permeability of the samples is 0.995 millidarcys, while the average initial fluid production pressure is 29.8 pounds per square inch (See Table V).

By observing the data given in Table IV, you will note that of the 34 samples tested, 28 produced water and 24 oil. This indicates that approximately 71 percent of the sand represented by these samples is floodable pay sand. The tests also show that most of the sand has a comparatively uniform effective permeability.

CONCLUSION

On the basis of the above data, we believe an efficient water-flood, within the vicinity of this well, will recover approximately 5,050 barrels of oil per acre or an average of 187 barrels per acre foot from the 27.0 feet of floodable pay sand analyzed. In calculating the above oil recovery value, the following factors and assumptions were employed:

Original formation volume factor	1.10
Present formation volume factor	1.03
True water saturation, percent	40.0
Primary oil recovery, percent	12.0
Present oil saturation, percent	44.2
Oil saturation at abandonment, percent	19.0
Percent porosity	17.6
Net feet of pay sand	27.0
Performance factor (permeability distribution and sweep efficiency)	0.56

This core shows a somewhat shaley sand section having a fairly low oil saturation, a high water saturation and a comparatively uniform effective permeability. Chances are, considerable flushing of the sand occurred during coring. This would partly account for the fairly low oil saturation and high water saturation.

Oilfield Research Laboratories
RESULTS OF PERMEABILITY TESTS
TABLE I

Company Felmont Oil Corporation Lease Schemish Well No. WS-1

Sample No.	Depth Feet	Permeability Millidarcys	Feet of Core		Permeability Capacity Ft. x Md.
			Ft.	Cum. Ft.	
		<u>PERU SAND</u>			
1	2494.8	Imp.	0.5	0.5	0.00
2	2495.3	Imp.	0.5	1.0	0.00
3	2495.8	2.5	0.5	1.5	1.25
4	2496.3	5.1	0.6	2.1	3.06
5	2496.8	2.3	0.5	2.6	1.15
6	2497.3	1.3	0.5	3.1	0.65
7	2497.8	0.95	0.5	3.6	0.47
8	2498.3	1.1	0.5	4.1	0.55
9	2498.8	2.6	0.5	4.6	1.30
10	2499.3	Imp.	0.5	5.1	0.00
11	2499.8	0.37	0.5	5.6	0.18
12	2500.3	Imp.	0.5	6.1	0.00
13	2500.8	5.0	0.5	6.6	2.50
14	2501.3	Imp.	0.5	7.1	0.00
15	2501.8	2.8	0.5	7.6	1.40
16	2502.3	Fractured	0.5	8.1	-
17	2502.8	10.	0.5	8.6	5.00
18	2503.3	4.7	0.5	9.1	2.35
19	2503.8	Imp.	0.5	9.6	0.00
20	2504.3	Imp.	0.5	10.1	0.00
21	2504.8	2.8	0.5	10.6	1.40
22	2505.3	2.7	0.5	11.1	1.35
23	2505.8	Imp.	0.5	11.6	0.00
24	2506.3	1.4	0.5	12.1	0.70
25	2506.8	Imp.	0.5	12.6	0.00
26	2507.3	2.8	0.5	13.1	1.40
27	2507.8	Imp.	0.5	13.6	0.00
28	2508.3	Imp.	0.5	14.1	0.00
29	2508.8	Imp.	0.5	14.6	0.00
30	2509.3	0.56	0.5	15.1	0.28
31	2509.8	0.97	0.4	15.5	0.39
32	2510.3	2.3	0.6	16.1	1.38
33	2510.8	3.4	0.5	16.6	1.70
34	2511.3	6.1	0.5	17.1	3.05
35	2511.8	7.1	0.5	17.6	3.55
36	2512.3	6.9	0.5	18.1	3.45
37	2512.8	2.4	0.5	18.6	1.20
38	2513.3	6.2	0.4	19.0	2.48

Oilfield Research Laboratories
RESULTS OF PERMEABILITY TESTS
TABLE I

Company Felmont Oil Corporation Lease Schemish Well No. WS-1

Sample No.	Depth Feet	Permeability Millidarcys	Feet of Core		Permeability Capacity Ft. x Md.
			Ft.	Cum. Ft.	
		<u>BARTLESVILLE SAND</u>			
39	2792.3	Imp.	0.6	19.6	0.00
40	2792.8	Imp.	0.5	20.1	0.00
41	2793.3	0.81	0.5	20.6	0.40
42	2793.8	0.80	0.6	21.2	0.48
43	2794.3	4.5	0.4	21.6	1.80
44	2794.8	3.3	0.5	22.1	1.65
45	2795.3	4.5	0.5	22.6	2.25
46	2795.8	5.8	0.5	23.1	2.90
47	2796.3	0.54	0.5	23.6	0.27
48	2796.8	2.0	0.5	24.1	1.00
49	2797.3	4.0	0.5	24.6	2.00
50	2797.8	2.0	0.5	25.1	1.00
51	2798.3	4.8	0.5	25.6	2.40
52	2798.8	4.8	0.5	26.1	2.40
53	2799.3	4.3	0.5	26.6	2.15
54	2799.8	1.0	0.5	27.1	0.50
55	2800.3	0.29	0.5	27.6	0.14
56	2800.8	19.	0.5	28.1	9.50
57	2801.3	31.	0.5	28.6	15.50
58	2801.8	22.	0.5	29.1	11.00
59	2802.3	24.	0.5	29.6	12.00
60	2802.8	7.4	0.5	30.1	3.70
61	2803.3	10.	0.5	30.6	5.00
62	2803.8	6.6	0.5	31.1	3.30
63	2804.3	8.8	0.5	31.6	4.40
64	2804.8	7.6	0.5	32.1	3.80
65	2805.3	10.	0.5	32.6	5.00
66	2805.8	13.	0.5	33.1	6.50
67	2806.3	13.	0.5	33.6	6.50
68	2806.8	20.	0.5	34.1	10.00
69	2807.3	17.	0.5	34.6	8.50
70	2807.8	6.8	0.5	35.1	3.40
71	2808.3	12.	0.5	35.6	6.00
72	2808.8	7.8	0.5	36.1	3.90
73	2809.3	8.0	0.5	36.6	4.00
74	2809.8	9.0	0.5	37.1	4.50
75	2810.3	16.	0.5	37.6	8.00
76	2810.8	1.4	0.5	38.1	0.70
77	2811.3	15.	0.5	38.6	7.50
78	2811.8	2.5	0.5	39.1	1.25
79	2812.3	10.	0.5	39.6	5.00
80	2812.8	11.	0.5	40.1	5.50

Oilfield Research Laboratories
RESULTS OF PERMEABILITY TESTS
TABLE I

Company Felmont Oil Corporation Lease Schemish Well No. WS-1

Sample No.	Depth Feet	Permeability Millidarcys	Feet of Core		Permeability Capacity Ft. x Md.
			Ft.	Cum. Ft.	
81	2813.3	14.	0.5	40.6	7.00
82	2813.8	12.	0.5	41.1	6.00
83	2814.3	2.9	0.5	41.6	1.45
84	2814.8	28.	0.5	42.1	14.00
85	2815.3	20.	0.5	42.6	10.00
86	2815.8	15.	0.5	43.1	7.50
87	2816.3	50.	0.5	43.6	25.00
88	2816.8	39.	0.5	44.1	19.50
89	2817.3	20.	0.5	44.6	10.00
90	2817.8	37.	0.5	45.1	18.50
91	2818.3	57.	0.5	45.6	28.50
92	2818.8	63.	0.5	46.1	31.50
93	2819.3	62.	0.5	46.6	31.00
94	2819.8	38.	0.5	47.1	19.00
95	2820.3	25.	0.5	47.6	12.50
96	2820.8	34.	0.5	48.1	17.00
97	2821.3	12.	0.5	48.6	6.00
98	2821.8	14.	0.5	49.1	7.00
99	2822.3	16.	0.5	49.6	8.00
100	2822.8	8.4	0.6	50.2	5.04
101	2825.8	Imp.	0.5	50.7	0.00
102	2826.3	Imp.	0.5	51.2	0.00
103	2826.8	Imp.	0.5	51.7	0.00
104	2827.3	Imp.	0.5	52.2	0.00

Oilfield Research Laboratories

RESULTS OF SATURATION TESTS

TABLE II

Company Falcon Oil Corporation Lease Schemish Well No. WS-1

Sat. No.	Depth, Feet	Effective Porosity Percent	Percent Saturation		Oil Content Bbls./A. Ft.	Feet of Core		Total Oil Content Bbls./Acre
			Oil	Water		Th.	Cum. Ft.	
1	2495.1	12.5	19	70	184	1.0	1.0	184
2	2496.1	15.5	18	52	216	1.1	2.1	238
3	2497.1	15.4	21	49	251	1.0	3.1	251
4	2498.1	15.5	14	62	168	1.0	4.1	168
5	2499.1	8.7	10	75	68	1.0	5.1	68
6	2500.1	14.9	11	72	127	1.0	6.1	127
7	2501.1	15.7	24	51	292	1.0	7.1	292
8	2502.1	14.2	12	74	132	1.0	8.1	132
9	2503.1	17.7	25	43	343	1.0	9.1	343
10	2504.1	15.4	15	67	179	1.0	10.1	179
11	2505.1	15.9	24	45	296	1.0	11.1	296
12	2506.1	15.6	29	46	351	1.0	12.1	351
13	2507.1	14.6	17	74	193	1.0	13.1	193
14	2508.1	12.4	12	63	115	1.0	14.1	115
15	2509.1	14.1	9	80	99	1.4	15.5	139
16	2510.1	15.3	18	58	214	0.6	16.1	128
17	2511.1	16.6	22	50	284	1.0	17.1	284
18	2512.1	16.9	24	46	314	1.0	18.1	314
19	2513.1	16.3	19	52	240	0.9	19.0	216
20	2792.1	14.7	4	76	46	0.6	19.6	28
21	2793.1	12.1	15	62	141	1.0	20.6	141
22	2794.1	11.9	25	64	231	0.6	21.2	139
23	2795.1	19.1	20	55	296	1.4	22.6	414

Oilfield Research Laboratories

RESULTS OF SATURATION TESTS

TABLE II

Company	Sat. No.	Depth, Feet	Effective Porosity Percent	Percent Saturation		Oil Content Bbls./A. Ft.	Feet of Core		Total Oil Content Bbls./Acre
				Oil	Water		Ft.	Cum. Ft.	
Felmont Oil Corporation	24	2796.1	16.9	24	58	314	1.0	23.6	314
	25	2797.1	17.6	16	62	218	1.0	24.6	218
Schemish	26	2798.1	18.2	16	60	226	1.0	25.6	226
	27	2799.1	17.9	16	57	222	1.0	26.6	222
Lease	28	2800.1	14.0	22	64	239	1.0	27.6	239
	29	2801.1	20.5	18	49	287	1.0	28.6	287
Well No.	30	2802.1	19.9	18	46	278	1.0	29.6	278
	31	2803.1	18.3	13	51	185	1.0	30.6	185
WS-1	32	2804.1	16.8	19	57	248	1.0	31.6	248
	33	2805.1	17.4	17	53	230	1.0	32.6	230
	34	2806.1	18.2	22	52	310	1.0	33.6	310
	35	2807.1	18.0	17	53	238	1.0	34.6	238
	36	2808.1	17.0	13	58	171	1.0	35.6	171
	37	2809.1	16.7	18	55	233	1.0	36.6	233
	38	2810.1	18.7	29	50	421	1.0	37.6	421
	39	2811.1	16.0	21	59	261	1.0	38.6	261
	40	2812.1	18.1	25	53	351	1.0	39.6	351
	41	2813.1	18.2	16	53	226	1.0	40.6	226
	42	2814.1	17.9	31	55	431	1.0	41.6	431
	43	2815.1	20.4	35	44	544	1.0	42.6	544
	44	2816.1	20.4	37	43	585	1.0	43.6	585
	45	2817.1	20.8	27	43	436	1.0	44.6	436
	46	2818.1	20.4	18	47	285	1.0	45.6	285
	47	2819.1	21.1	22	40	360	1.0	46.6	360
	48	2820.1	21.6	34	44	570	1.0	47.6	570
	49	2821.1	19.3	20	49	300	1.0	48.6	300
	50	2822.1	18.7	22	49	319	1.0	49.6	319

Oilfield Research Laboratories

RESULTS OF SATURATION TESTS

TABLE II

Company			Lease			Schemish		Well No.		WS-1	
Sat. No.	Depth, Feet	Effective Porosity Percent	Percent Saturation			Oil Content Bbls./A. Ft.	Feet of Core		Total Oil Content Bbls./Acre		
			Oil	Water	Total		Ft.	Cum. Ft.			
51	2823.1	17.0	28	48	76	370	0.6	50.2	222		
52	2826.1	12.0	18	64	82	168	1.0	51.2	168		
53	2827.1	10.2	30	59	89	238	1.5	52.7	357		
							Total	- - - - -	-13,975		

Oilfield Research Laboratories

SUMMARY OF PERMEABILITY & SATURATION TESTS

TABLE III

Company	Felmont Oil Corporation	Lease	Schemish	Well No.	WS-1	
Depth Interval, Feet	Feet of Core Analyzed	Average Permeability, Millidarcys	Permeability Capacity Ft. x Md.			
PERU SAND						
2495.5 - 2513.5	12.5	3.4	42.19			
BARTLESVILLE SAND						
2793.1 - 2800.6	7.5	2.8	21.34			
2800.6 - 2814.6	14.0	12.1	168.90			
2814.6 - 2823.2	8.6	31.4	270.04			
2793.1 - 2823.2	30.1	15.3	460.28			
Depth Interval, Feet	Feet of Core Analyzed	Average Percent Porosity	Average Percent Oil Saturation	Average Percent Water Saturation	Average Oil Content Bbl./A. Ft.	Total Oil Content Bbls./Acre
PERU SAND						
2494.5 - 2513.5	19.0	14.9	17.8	57.2	212	4,018
BARTLESVILLE SAND						
2792.0 - 2800.6	8.6	16.2	18.0	61.0	226	1,941
2800.6 - 2814.6	14.0	18.0	19.8	53.1	276	3,870
2814.6 - 2828.0	11.1	18.0	26.6	48.7	373	4,146
2792.0 - 2828.0	33.7	17.6	21.5	53.6	295	9,957

Oilfield Research Laboratories

RESULTS OF LABORATORY FLOODING TESTS

TABLE IV

Company			Felmont Oil Corporation			Lease		Schemish			Well No.		WS-1	
Sample No.	Depth, Feet	Effective Porosity Percent	Original Oil Saturation		Oil Recovery		Residual Saturation		Volume of Water Recovered cc*	Effective Permeability Millidarcys**	Initial Fluid Production Pressure Lbs./Sq./In.			
			%	Bbls./A. Ft.	%	Bbls./A. Ft.	% Oil	% Water						

Notes: cc—cubic centimeter.

*—Volume of water recovered at the time of maximum oil recovery.

**—Determined by passing water through sample which still contains residual oil.

Oilfield Research Laboratories

RESULTS OF LABORATORY FLOODING TESTS

TABLE IV

Sample No.	Depth, Feet	Effective Porosity Percent	Original Oil Saturation		Oil Recovery		Residual Saturation		Volume of Water Recovered cc*	Effective Permeability Millidarcys**	Initial Fluid Production Pressure Lbs./Sq./In.
			%	Bbls./A. Ft.	%	Bbls./A. Ft.	% Oil	% Water			
24	2796.1	16.5	22	282	0	0	22	64	0	Imp.	50+
25	2797.1	17.8	18	249	0	0	18	75	3	0.101	45
26	2798.1	18.5	16	230	2	29	14	70	16	0.397	35
27	2799.1	17.9	16	222	1	14	15	69	15	0.400	35
28	2800.1	13.6	22	232	2	21	20	71	3	0.101	45
29	2801.1	20.2	18	282	4	63	14	79	93	1.70	25
30	2802.1	20.0	18	280	3	47	15	73	71	1.32	25
31	2803.1	17.8	15	207	0	0	15	71	43	0.813	25
32	2804.1	17.1	19	253	2	27	17	65	27	0.605	25
33	2805.1	17.4	17	229	0	0	17	69	37	0.700	25
34	2806.1	17.8	22	304	7	97	15	71	40	0.700	25
35	2807.1	18.4	17	243	2	29	15	71	47	0.915	25
36	2808.1	17.6	12	164	0	0	12	73	33	0.800	25
37	2809.1	17.1	18	239	1	13	17	72	26	0.610	25
38	2810.1	18.3	29	412	14	199	15	73	42	0.908	25
39	2811.1	16.6	21	400	4	52	17	65	12	0.400	35
40	2812.1	17.8	25	346	7	97	18	65	4	0.205	50
41	2813.1	18.5	16	229	1	14	15	69	27	0.610	30
42	2814.1	17.4	31	418	4	54	27	63	3	0.101	50
43	2815.1	20.0	35	543	17	264	18	71	67	1.41	25
44	2816.1	20.5	37	588	18	286	19	68	90	2.20	15
45	2817.1	20.5	27	429	6	95	21	68	106	2.64	15
46	2818.1	20.4	18	285	1	16	17	66	99	2.39	15
47	2819.1	21.1	22	360	6	98	16	72	112	3.54	25
48	2820.1	21.2	34	559	14	230	20	70	27	0.706	30
49	2821.1	19.7	20	306	2	31	18	75	41	1.09	25
50	2822.1	18.3	22	312	2	28	20	64	22	0.400	30
51	2823.1	16.5	28	358	3	38	25	55	4	0.203	45

Notes: cc—cubic centimeter.

*—Volume of water recovered at the time of maximum oil recovery.

**—Determined by passing water through sample which still contains residual oil.

Oilfield Research Laboratories

RESULTS OF LABORATORY FLOODING TESTS

TABLE IV

Company			Felmont Oil Corporation			Lease		Schemish			Well No.		WS-1	
Sample No.	Depth, Feet	Effective Porosity Percent	Original Oil Saturation		Oil Recovery		Residual Saturation			Volume of Water Recovered cc*	Effective Permeability Millidarcys**	Initial Fluid Production Pressure Lbs./Sq./In.		
			%	Bbls./A. Ft.	%	Bbls./A. Ft.	% Oil	% Water	Bbls./A. Ft.					
52	2826.1	11.4	17	150	0	0	17	72	150	0	Imp.	50+		
53	2827.1	9.8	27	205	0	0	27	65	205	0	Imp.	50+		

Notes: cc—cubic centimeter.

*—Volume of water recovered at the time of maximum oil recovery.

**—Determined by passing water through sample which still contains residual oil.

Oilfield Research Laboratories

SUMMARY OF LABORATORY FLOODING TESTS

TABLE V

Company	Felmont Oil Corporation		Lease	Schemish	Well No.	WS-1
	PERU SAND			BARTLESVILLE SAND		
Depth Interval, Feet	2510.6 - 2512.6	2794.2 - 2800.6	2800.6 - 2814.6	2814.6 - 2823.2	2794.2 - 2823.2	2794.2 - 2823.2
Feet of Core Analyzed	2.0	4.4	11.0	8.6	24.0	24.0
Average Percent Porosity	16.8	17.3	18.1	20.0	18.6	18.6
Average Percent Original Oil Saturation	23.0	18.7	21.2	27.0	22.8	22.8
Average Percent Oil Recovery	6.0	1.8	4.4	7.9	5.2	5.2
Average Percent Residual Oil Saturation	17.0	16.9	16.8	19.1	17.6	17.6
Average Percent Residual Water Saturation	62.5	69.6	69.6	68.2	69.1	69.1
Average Percent Total Residual Fluid Saturation	79.5	86.5	86.4	87.3	86.7	86.7
Average Original Oil Content, Bbls./A. Ft.	299.	247.	309.	418.	337.	337.
Average Oil Recovery, Bbls./A. Ft.	77.	24.	63.	124.	78.	78.
Average Residual Oil Content, Bbls./A. Ft.	222.	223.	246.	294.	259.	259.
Total Original Oil Content, Bbls./Acre	599.	1,089.	3,406.	3,597.	8,092.	8,092.
Total Oil Recovery, Bbls./Acre	154.	105.	692.	1,071.	1,868.	1,868.
Total Residual Oil Content, Bbls./Acre	445.	984.	2,714.	2,526.	6,224.	6,224.
Average Effective Permeability, Millidarcys	0.298	0.299	0.734	1.68	0.995	0.995
Average Initial Fluid Production Pressure, p.s.i.	45.0	37.5	30.9	25.0	29.8	29.8

NOTE: Only those samples which recovered oil were used in calculating the above averages.