

# OILFIELD RESEARCH LABORATORIES

536 NORTH HIGHLAND - CHANUTE, KANSAS 66720 - PHONE (316) 431-2650

September 30, 1980

Oaks Petroleum, Inc.  
c/o Calvin T. Oaks, Jr.  
R R # 2  
Stoystown, PA 15563

Gentlemen:

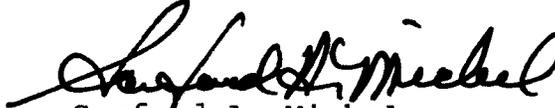
Enclosed herewith are the results of tests run on the rotary cores taken from the N. Freeman Lease, Well No. LO-20, Franklin County, Kansas and submitted to our laboratory on September 3, 1980.

The core was sampled and sealed in plastic bags by a representative of the client.

Your business is greatly appreciated.

Very truly yours,

OILFIELD RESEARCH LABORATORIES

  
Sanford A. Michel

SAM/ks

2 c to Stoystown, PA  
3 c to Paola, KS

**Oilfield Research Laboratories**  
**GENERAL INFORMATION & SUMMARY**

Company Oaks Petroleum, Inc. Lease N. Freeman Well No. LO-20  
 Location 440' NSL & 330' WEL SE $\frac{1}{4}$  SW $\frac{1}{4}$   
 Section 15 Twp. 17S Rge. 21E County Franklin State Kansas

Elevation, Feet	-	-	-
Name of Sand	Peru	Upper Squirrel	Lower Squirrel
Top of Core	362.0	517.0	596.0
Bottom of Core	374.0	531.1	599.0
Top of Sand	363.1	* 517.6	597.3
Bottom of Sand	374.0	529.8	598.0
Total Feet of Permeable Sand	10.9	11.8	0.7

**Distribution of Permeable Sand:**  
**Permeability Range**  
**Millidarcys**

	Feet	Cum. Ft.
<u>PERU SAND</u>		
0 - 90	2.9	2.9
100 - 200	3.0	5.9
200 & Above	5.0	10.9
<u>UPPER SQUIRREL SAND</u>		
0 - 15	6.9	6.9
15 - 30	1.4	8.3
30 - 60	2.5	10.8
90 & Above	1.0	11.8
<u>LOWER SQUIRREL SAND</u>		
10 & Above	0.7	0.7

Average Permeability Millidarcys	181.0	24.9	10.0
Average Percent Porosity	23.0	19.3	19.0
Average Percent Oil Saturation	26.1	36.2	19.0
Average Percent Water Saturation	49.5	48.4	48.0
Average Oil Content, Bbls./A. Ft.	473.	549.	280.
Total Oil Content, Bbls./Acre	5,674.	6,482.	196.

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LOGName Oaks Petroleum, Inc. Lease N. Freeman Well No. LO-20

<u>Depth Interval, Feet</u>	<u>Description</u>
	<u>PERU SAND</u>
362.0 - 363.1	Hard grayish light brown limestone.
363.1 - 364.8	Brown slightly calcareous sandstone.
364.8 - 367.0	Brown and gray laminated slightly calcareous sandstone and shale.
367.0 - 374.0	Brown slightly calcareous sandstone.
	<u>UPPER SQUIRREL SAND</u>
517.0 - 517.6	Grayish light brown very shaly sandstone.
517.6 - 518.2	Brown sandstone.
518.2 - 518.8	Brown slightly shaly sandstone.
518.8 - 519.2	Brown sandstone.
519.2 - 521.0	Grayish brown shaly sandstone.
521.0 - 526.0	Brown sandstone.
526.0 - 527.9	Brown and gray laminated sandstone and shale.
527.9 - 529.8	Brown sandstone.
529.8 - 531.1	Gray sandy shale.
	<u>LOWER SQUIRREL SAND</u>
596.0 - 597.3	Gray sandy shale.
597.3 - 598.0	Light brown sandstone.
598.0 - 599.0	Gray laminated sandstone and shale.

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RESULTS OF SATURATION & PERMEABILITY TESTS

TABLE 1-B

Company Oaks Petroleum, Inc.

Lease N. Freeman

Well No. LO-20

Sample No.	Depth, Feet	Effective Porosity Percent	Percent Saturation			Oil Content Bbls. / A Ft.	Perm., Mill.	Feet of Sand		Total Oil Content	Perm. Capacity Ft. X md.
			Oil	Water	Total			Ft.	Cum. Ft.		
1	362.5	19.2	14	50	64	<u>PERU SAND</u> 209	Imp.	1.1	1.1	230	0.00
2	363.7	22.6	26	55	81	456	87.	1.0	2.1	456	87.00
3	364.5	20.6	26	67	93	416	59.	0.7	2.8	291	41.30
4	365.5	23.2	21	67	88	378	42.	1.2	4.0	454	50.40
5	366.5	22.6	29	51	80	509	324.	1.0	5.0	509	324.00
6	367.5	24.2	28	44	72	526	127.	1.0	6.0	526	127.00
7	368.4	24.6	32	41	73	611	181.	1.0	7.0	611	181.00
8	369.5	24.0	23	50	73	428	231.	1.0	8.0	428	231.00
9	370.5	23.8	34	44	78	628	305.	1.0	9.0	628	305.00
10	371.4	25.3	28	36	64	550	305.	1.0	10.0	550	305.00
11	372.5	26.1	34	35	69	688	208.	1.0	11.0	688	208.00
12	373.5	19.5	20	56	76	303	113.	1.0	12.0	303	113.00
13	517.9	17.4	26	72	98	<u>UPPPER SQUIRREL SAND</u> 351	10.	0.6	0.6	211	6.00
14	518.7	21.3	48	31	79	793	7.2	0.6	1.2	476	4.32
15	519.5	21.9	13	57	70	221	5.2	1.0	2.2	221	5.20
16	520.9	17.6	63	27	90	860	0.87	0.8	3.0	688	0.70
17	521.4	15.3	21	77	98	249	50.	0.5	3.5	125	25.00
18	521.9	22.8	23	48	71	407	54.	1.0	4.5	407	54.00
19	522.9	22.4	38	33	71	660	26.	0.5	5.0	330	13.00
20	523.1	21.3	70	18	88	1157	96.	1.0	6.0	1157	96.00
21	524.2	18.6	27	53	80	390	34.	1.0	7.0	390	34.00
22	525.3	17.3	10	74	84	134	14.	1.0	8.0	134	14.00
23	526.4	23.2	54	26	80	972	4.2	1.0	9.0	972	4.20
24	527.3	17.4	42	53	95	567	0.78	0.9	9.9	510	0.70
25	528.7	16.5	42	52	94	538	26.	0.9	10.8	484	23.40
26	529.5	16.2	30	62	92	377	13.	1.0	11.8	377	13.00
27	597.9	19.0	19	48	67	<u>LOWER SQUIRREL SAND</u> 280	10.	0.7	0.7	196	7.00

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## SUMMARY OF PERMEABILITY & SATURATION TESTS

TABLE III

Company Oaks Petroleum, Inc. Lease N. Freeman Well No. LO-20

Depth Interval, Feet	Feet of Core Analyzed	Average Permeability, Millidarcys	Permeability Capacity Ft. x Md.		
<u>PERU SAND</u>					
362.0 - 374.0	10.9	181.0	1972.70		
<u>UPPER SQUIRREL SAND</u>					
517.6 - 529.8	11.8	24.9	293.52		
<u>LOWER SQUIRREL SAND</u>					
597.3 - 598.0	0.7	10.0	7.00		
Depth Interval, Feet	Feet of Core Analyzed	Average Percent Oil Saturation	Average Percent Water Saturation	Average Oil Content Bbl./A. Ft.	Total Oil Content Bbls./Acre
<u>PERU SAND</u>					
362.0 - 374.0	12.0	23.0	26.1	473	5,674
<u>UPPER SQUIRREL SAND</u>					
517.6 - 529.8	11.8	19.3	36.2	549	6,482
<u>LOWER SQUIRREL SAND</u>					
597.3 - 598.0	0.7	19.0	19.0	280	196