

OIL FIELD RESEARCH LABORATORIES
CHANUTE, KANSAS

May 22, 1951

Sohio Petroleum Company
P. O. Box 247
Independence, Kansas

Gentlemen:

Attached hereto are the results of air permeability and porosity tests of the 3" Rotary core taken from the Hughes Lease, Well No. W-39, Butler County, Kansas, and submitted to our laboratory on May 19, 1951.

Very truly yours,

OIL FIELD RESEARCH LABORATORIES

Carl L. Pate

CLP:eam
c.c.

TWP 268 RGE 8H SEC 2

Oil Field Research Laboratories

GENERAL INFORMATION & SUMMARY

Company Sohio Petroleum Company Lease Hughes Well No. W-39
 Location 40' S. of N. Line & 10' W. of E. Line, W $\frac{1}{2}$ SE $\frac{1}{4}$
 Section 9 Twp. 26S Rge. 8E County Butler State Kansas

Name of Sand	Bartlesville
Top of Core	2435.00
Bottom of Core	2540.00
Top of Sand	2445.30
Bottom of Sand	2478.00
Total Feet of Permeable Sand	29.15

Distribution of Permeable Sand: Permeability Range Millidarcys	Feet	Cum. Ft.
0 - 10	8.60	8.60
10 - 20	2.65	11.25
20 - 30	3.80	15.05
30 - 40	5.65	20.70
40 - 50	1.95	22.65
50 & above	6.50	29.15

Air	
Average Permeability Millidarcys	36.47
Average Percent Porosity	18.50
Average Percent Oil Saturation	
Average Percent Water Saturation	
Average Oil Content, Bbls./A. Ft.	
Total Oil Content, Bbls./Acre	
Average Percent Oil Recovery by Laboratory Flooding Tests	
Average Oil Recovery by Laboratory Flooding Tests, Bbls./A. Ft.	
Total Oil Recovery by Laboratory Flooding Tests, Bbls./Acre	
Total Calculated Oil Recovery, Bbls./Acre	
Packer Setting, Feet	
Viscosity, Centipoises @	
A. P. I. Gravity, degrees @ 60 °F	
Elevation, Ground Level, Feet	1456.0
Elevation, Top of Sand, Feet	- 989.3
Elevation, Bottom of Sand, Feet	-1022.0

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LOG

Company Sohio Petroleum Company Lease Hughes Well No. W-39

<u>Depth Interval, Feet</u>	<u>Description</u>
2435.00 - 2444.00	- According to log, dark gray shale (discarded at well).
2444.00 - 2445.00	- According to log, dark gray sandy shale, (discarded at well).
2445.00 - 2445.30	- Laminated sandy shale.
2445.30 - 2448.00	- Brown fine grained micaceous sandstone.
2448.00 - 2448.30	- Brown fine grained micaceous conglomeratic sandstone.
2448.30 - 2452.00	- Brown fine grained slightly laminated micaceous shaley sandstone.
2452.00 - 2453.00	- Gray sandy shale.
2453.00 - 2454.00	- Brown fine grained micaceous sandstone.
2454.00 - 2455.00	- Brown fine grained micaceous conglomeratic sandstone.
2455.00 - 2456.00	- Brown fine grained micaceous sandstone.
2456.00 - 2459.50	- Brown fine grained micaceous conglomeratic sandstone.
2459.50 - 2460.00	- Gray shale.
2460.00 - 2462.00	- Brown fine grained micaceous conglomeratic sandstone.
2462.00 - 2464.00	- Brown fine grained slightly shaley micaceous sandstone.
2464.00 - 2466.00	- Brown fine grained slightly carbonaceous micaceous sandstone.
2466.00 - 2467.00	- Gray sandy shale.
2467.00 - 2468.00	- Light brown fine grained micaceous sandstone.
2468.00 - 2469.00	- Brown fine grained slightly carbonaceous micaceous sandstone.
2469.00 - 2470.00	- Brown fine grained micaceous sandstone.
2470.00 - 2471.00	- Light brown fine grained micaceous sandstone.
2471.00 - 2472.00	- Brown fine grained slightly carbonaceous micaceous sandstone.
2472.00 - 2473.00	- Brown fine grained micaceous sandstone.
2473.00 - 2473.15	- Brown fine grained slightly shaley micaceous sandstone.

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- 2473.15 - 2476.70 - Brown fine grained micaceous sandstone.
- 2476.70 - 2477.00 - Brown fine grained slightly carbonaceous micaceous sandstone.
- 2477.00 - 2477.70 - Brown fine grained micaceous sandstone.
- 2477.70 - 2478.00 - Brown fine grained conglomeratic micaceous sandstone.
- 2478.00 - 2489.00 - **According** to log, shale (discarded at well).
- 2489.00 - 2540.00 - Drilled.

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RESULTS OF PERMEABILITY AND POROSITY TESTS

TABLE I A

Company Sohio Petroleum Company Lease Hughes Well No. W-39

Sample No.	Depth, Feet	Permeability Millidarcys	Feet of Core		Permeability Capacity Ft. x Md.	Percent Porosity
			Ft.	Cum. Ft.		
1	2445.45	14.	0.70	0.70	9.80	21.2
2	2446.45	32.	0.95	1.65	30.40	21.1
3	2447.45	30.	1.05	2.70	31.50	22.8
4	2448.45	37.	0;60	3.30	22.20	22.6
5	2449.45	35.	1.05	4.35	36.75	20.9
6	2450.45	37.	1.00	5.35	37.00	20.7
7	2451.45	5.3	1.05	6.40	5.57	18.0
8	2452.45	Imp.	1.00	7.40	0.00	-
9	2453.45	59.	1.00	8.40	59.00	20.6
10	2454.45	23.	1.00	9.40	23.00	19.3
11	2455.45	5.8	1.00	10.40	5.80	19.0
12	2456.45	17.	0.95	11.35	16.15	20.0
13	2457.45	8.4	1.00	12.35	8.40	18.3
14	2458.45	0.94	1.00	13.35	0.90	15.7
15	2459.45	8.5	0.55	13.90	4.68	15.6
16	2460.45	8.9	0.95	14.85	8.46	16.9
17	2461.45	10.	1.00	15.85	10.00	17.5
18	2462.45	4.5	1.00	16.85	4.50	18.1
19	2463.45	1.9	1.05	17.90	2.00	17.1
20	2464.45	50.	0.95	18.85	47.50	20.3
21	2465.45	72.	1.05	19.90	75.60	21.3
22	2466.45	Imp.	1.00	20.90	0.00	-
23	2467.45	48.	1.00	21.90	48.00	21.5
24	2468.45	28.	1.00	22.90	28.00	20.6
25	2469.45	11.	1.00	23.90	11.00	18.2
26	2470.45	110.	1.00	24.90	110.00	20.6
27	2471.45	26.	1.00	25.90	26.00	17.1
28	2472.45	79.	1.00	26.90	79.00	18.8
29	2473.45	29.	0.80	27.70	23.20	18.8
30	2474.45	34.	1.00	28.70	34.00	19.6
31	2475.45	102.	1.00	29.70	102.00	20.7
32	2476.45	120.	0.75	30.45	90.00	19.8
33	2477.45	104.	0.70	31.15	72.80	18.3

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SUMMARY OF PERMEABILITY & POROSITY TESTS

TABLE II A

Company	Depth Interval, Feet	Feet of Core Analyzed	Average Air Permeability, Millidarcys	Average Effective Permeability, Millidarcys	Permeability Capacity Ft. x Md.	Average Percent Porosity
Sohio Petroleum Company	2445.30 - 2455.00	8.40	30.38	-	255.22	20.68
	2455.00 - 2464.00	8.50	7.16	-	60.89	17.68
	2464.00 - 2477.70	12.25	60.99	-	747.10	19.71
	2445.30 - 2477.70	29.15	36.47	-	1063.21	19.40

Well No. **W-39**