OILFIELD RESEARCH LABORATORIES
536 NORTH HIGHLAND - CHANUTE, KANSAS - PHONE HE1-2650

October 4, 1967

Russell Operating Company
614 Adolphus Tower
Dallas, Texas 75202

Gentlemen:

Enclosed herewith are the results of permeability and porosity tests run on the Rotary core taken from the C. McGhee Lease, Well No. O-14, Anderson County, Kansas, and submitted to our laboratory on September 28, 1967. This core was sampled after being received in the laboratory.

Your business is greatly appreciated.

Very truly yours,

OILFIELD RESEARCH LABORATORIES

Carl L. Pate
by BJO
Carl L. Pate

CLP:bjo

2 c. - Dallas, Texas
2 c. - Houston, Texas
1 c. - Chanute, Kansas
1 c. - Iola, Kansas

Oilfield Research Laboratories

GENERAL INFORMATION & SUMMARY

Company Russell Operating Company Lease C. McGhee Well No. O-14

Location 1030' FWL & 1390' FNL, NW/4

Section 31 Twp. 22S Rge. 18E County Anderson State Kansas

Name of Sand	Squirrel
Top of Core	857.0
Bottom of Core (Received)	892.2
Top of Oil Sand	874.8
Bottom of Sand	892.0
Total Feet of Permeable Sand (Analyzed)	16.9
Total Feet of Floodable Sand	

Distribution of Permeable Sand: Permeability Range Millidarcys	Feet	Cum. Ft.
0 - 5	2.6	2.6
5 - 10	7.3	9.9
10 - 20	4.0	13.9
20 & above	3.0	16.9

Average Permeability Millidarcys	12.0
" Vertical Permeability, Millidarcys	7.9
Average Percent Porosity	18.3
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, Feet (Ground Level)	1,046.0

OILFIELD RESEARCH LABORATORIES

- LOG -

Company Russell Operating Company Lease C. McGhee Well No. C-14

Depth Interval, Feet	Description
857.0 - 860.4	Gray slightly calcareous sandy shale.
860.4 - 866.0	Gray shale.
866.0 - 866.7	Light brown laminated shaly sandstone.
866.7 - 870.1	Gray slightly sandy shale.
870.1 - 871.3	Light brown shaly sandstone.
871.3 - 872.1	Gray shale.
872.1 - 872.7	Light brown sandstone.
872.7 - 874.8	Gray and brown laminated shaly sandstone.
874.8 - 880.6	Light brown laminated shaly sandstone.
880.6 - 880.9	Gray finely laminated shaly sandstone.
880.9 - 892.0	Light to dark brown slightly shaly sandstone.
892.0 - 892.2	Dark calcareous shale.

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RESULTS OF PERMEABILITY AND POROSITY TESTS

TABLE I A

Company Russell Operating Company Lease C. McGhee Well No. O-14

Sample No.	Depth Feet	Permeability Millidarcys	Feet of Core		Permeability Capacity Ft. x Md.	Percent Porosity
			Ft.	Cum. Ft.		
1	875.5	6.0	1.2	1.2	7.20	20.0
2	876.5	3.8	1.0	2.2	3.80	16.9
3	877.5	5.3	1.0	3.2	5.30	19.9
4	878.5	8.2	1.0	4.2	8.20	20.9
5	879.5	5.0	1.0	5.2	5.00	18.6
6	880.5	1.7	0.6	5.8	1.02	14.2
7	881.5	6.3	1.1	6.9	6.93	19.4
8	882.5	8.3	1.0	7.9	8.30	20.0
9	883.5	11.	1.0	8.9	11.00	19.4
10	884.5	15.	1.0	9.9	15.00	20.1
11	885.5	29.	1.0	10.9	29.00	19.7
12	886.5	14.	1.0	11.9	14.00	15.6
13	887.5	31.	1.0	12.9	31.00	17.3
14	888.5	0.83	1.0	13.9	0.83	12.1
15	889.5	31.	1.0	14.9	31.00	19.4
16	890.5	8.9	1.0	15.9	8.90	18.1
17	891.5	17.	1.0	16.9	17.00	18.0

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RESULTS OF PERMEABILITY AND POROSITY TESTS

TABLE I A A

Company Russell Operating Company Lease C. McGhee Well No. O-14

Vertical

Sample No.	Depth Feet	Permeability Millidarcys	Feet of Core		Permeability Capacity Ft. x Md.	Percent Porosity
			Ft.	Cum. Ft.		
1	875.5	0.68				
2	876.5	0.83				
3	877.5	1.5				
4	878.5	3.7				
5	879.5	1.2				
6	880.5	0.71				
7	881.5	2.6				
8	882.5	5.0				
9	883.5	8.8				
10	884.5	12.				
11	885.5	18.				
12	886.5	19.				
13	887.5	21.				
14	888.5	13.				
15	889.5	11.				
16	890.5	3.9				
17	891.5	11.				

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SUMMARY OF PERMEABILITY & POROSITY TESTS

TABLE II A

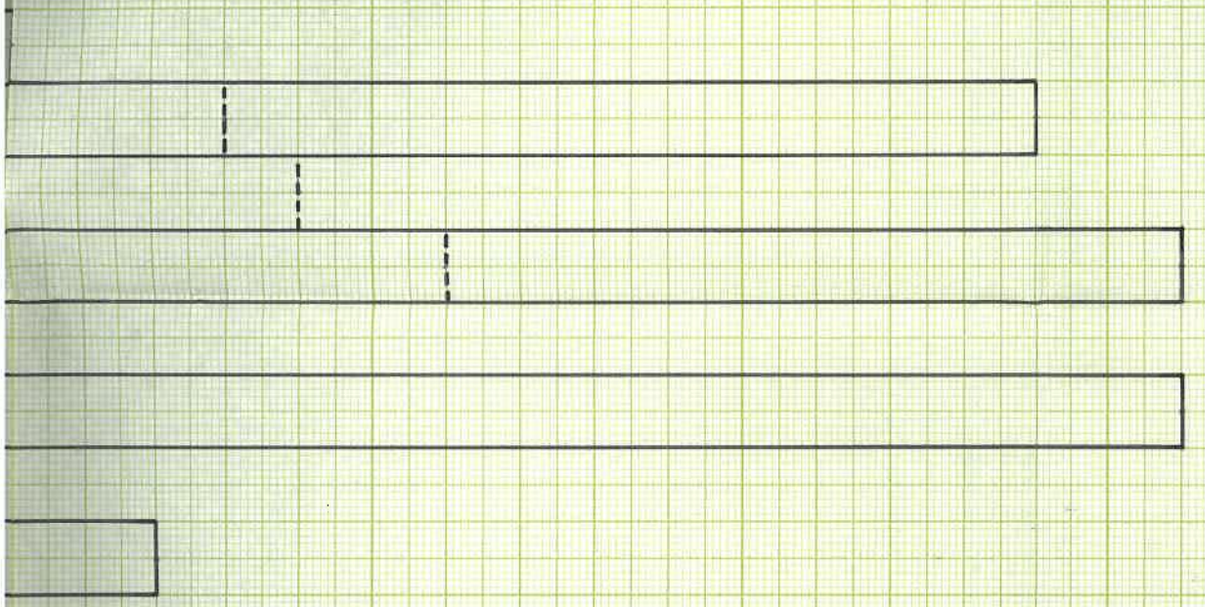
Company Russell Operating Company Lease C. McGhee Well No. C.14

Vertical

Depth Interval, Feet	Feet of Core Analyzed	Average Air Permeability, Millidarcys	~~Average Effective~~ Permeability, Millidarcys	Permeability Capacity Ft. x Md.	Average Percent Porosity
874.8 - 883.0	7.9	5.8	2.1	45.75	19.0
883.0 - 892.0	9.0	17.5	13.1	157.73	17.7
874.8 - 892.0	16.9	12.0	7.9	203.48	18.3

EABILITY, MILLIDARCYS
PERMEABILITY IN MILLIDARCYS

5 20 25 30 35 40



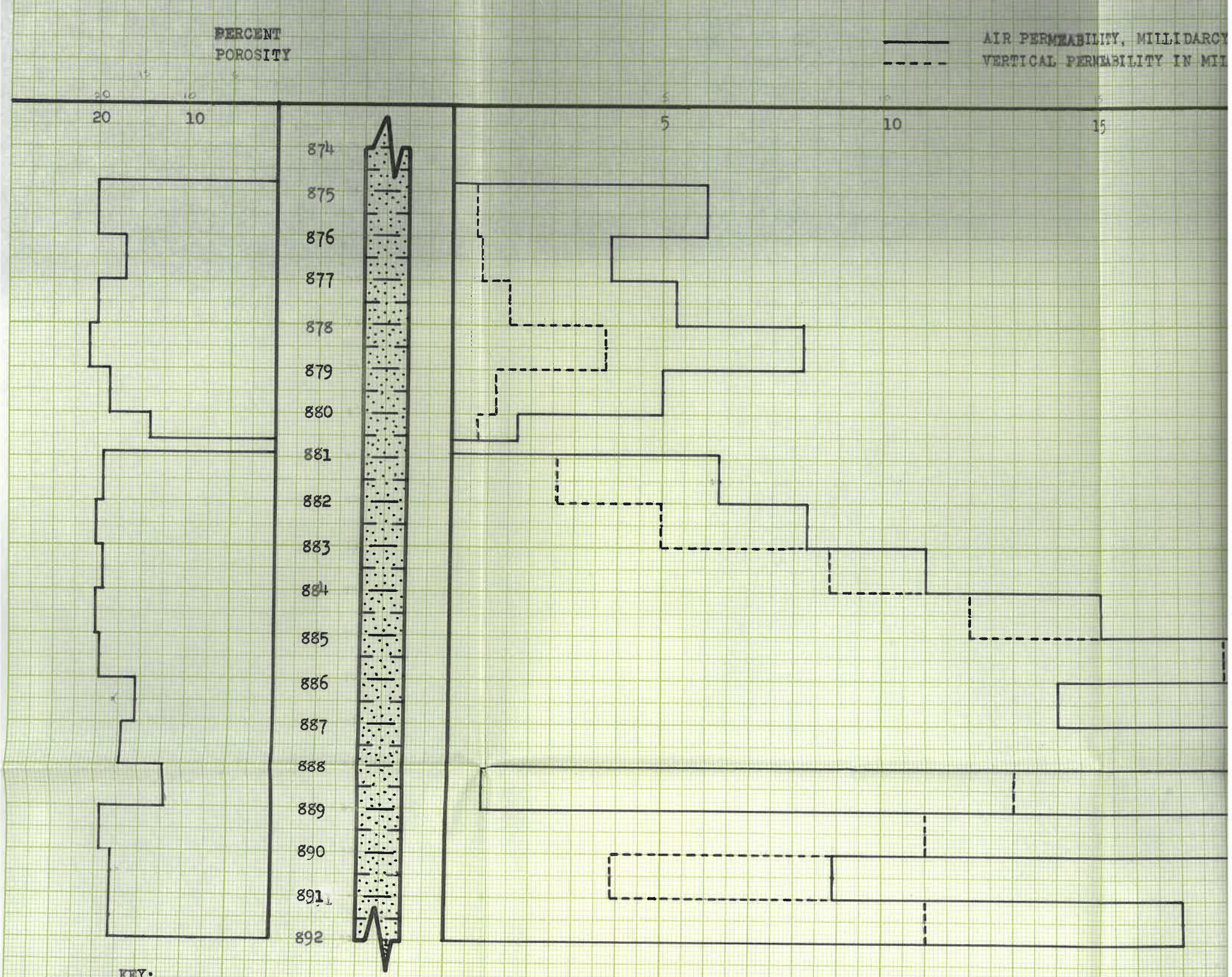
CALCAREOUS SHALE

G COMPANY

WELL NO. O-14

RAGE AIR EABILITY LLIDARCYS	VERTICAL PERMEABILITY MILLIDARCYS	AVERAGE PERCENT POROSITY
5.8	2.1	19.0
17.5	13.1	17.7
12.0	7.9	18.3

OILFIELD RESEARCH LABORATORIES
CHANUTE, KANSAS
October, 1967



KEY:
SHALY SANDSTONE

CALCAREO

RUSSELL OPERATING CO

C. MCGHEE LEASE WELL NO. 0-
ANDERSON COUNTY, KANSAS

DEPTH INTERVAL FEET	FEET OF CORE ANALYZED	AVERAGE AIR PERMEABILITY MILLIDARCYS	VE PER MI
874.8 - 883.0	7.9	5.8	
883.0 - 892.0	9.0	17.5	
874.8 - 892.0	16.9	12.0	