

OILFIELD RESEARCH LABORATORIES

536 NORTH HIGHLAND - CHANUTE, KANSAS - PHONE HE1-2650

February 26, 1966

Brazos Oil & Gas Company
P.O. Box 22468
Houston, Texas

Attn: Mr. G.P. Huston

Gentlemen:

Enclosed herewith are the results of tests run on the Rotary core taken from the D.W. Long Lease, Well No. 10, Woodson County, Kansas, and submitted to our laboratory on February 12, 1966.

This core was sampled and the samples sealed in plastic bags by a representative of Oilfield Research Laboratories.

Your business is greatly appreciated.

Very truly yours,

OILFIELD RESEARCH LABORATORIES

John L. Pate
John L. Pate

JLP:rf

8 c. - Houston, Texas
1 c. - Chanute, Kansas

Oilfield Research Laboratories

GENERAL INFORMATION & SUMMARY

Company Brazos Oil & Gas Company Lease D.W. Long Well No. 10

Location 1417' WEL & 2291' NSL

Section 11 Twp. 24S Rge. 16E County Woodson State Kansas

Name of Sand	Squirrel
Top of Core	1014.0
Bottom of Core	1055.0
Top of Sand	1017.3
Bottom of Sand	1053.5
Total Feet of Permeable Sand	6.8
Total Feet of Floodable Sand	3.9

Distribution of Permeable Sand:
Permeability Range
Millidarcys

	Feet	Cum. Ft.
0 - 1	1.7	1.7
1 - 10	0.5	2.2
10 & above	4.6	6.8

Average Permeability Millidarcys	22.6
Average Percent Porosity	17.2
Average Percent Oil Saturation	46.9
Average Percent Water Saturation	22.0
Average Oil Content, Bbls./A. Ft.	623.
Total Oil Content, Bbls./Acre	4,241.
Average Percent Oil Recovery by Laboratory Flooding Tests	3.8
Average Oil Recovery by Laboratory Flooding Tests, Bbls./A. Ft.	51.
Total Oil Recovery by Laboratory Flooding Tests, Bbls./Acre	200.
Total Calculated Oil Recovery, Bbls./Acre	
Packer Setting, Feet	
Viscosity, Centipoises @	
A. P. I. Gravity, degrees @ 60 °F	
Elevation, Feet	1096.8

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-LOG-

Company Brazos Oil & Gas Company Lease D.W. Long Well No. 10

Depth Interval, <u>Feet</u>	<u>Description</u>
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1014.0 - 1017.3 - Sandy shale.

1017.3 - 1018.0 - Brown shaly sandstone.

1018.0 - 1019.0 - Sandy shale.

1019.0 - 1021.0 - Brown, slightly shaly sandstone.

1021.0 - 1021.7 - Sandy shale.

1021.7 - 1022.2 - Brown shaly sandstone.

1022.2 - 1043.6 - Sandy shale.

1043.6 - 1045.5 - Dark brown, laminated, slightly shaly sandstone.

1045.5 - 1050.0 - Sandy shale.

1050.0 - 1051.0 - Laminated sandstone and shale.

1051.0 - 1052.8 - Sandy shale.

1052.8 - 1053.5 - Laminated sandstone and shale.

1053.5 - 1055.0 - Shale.

RESULTS OF SATURATION & PERMEABILITY TESTS

TABLE 1-B

[illegible]

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SUMMARY OF PERMEABILITY & SATURATION TESTS

TABLE III

Company	Brazos Oil & Gas Company		Lease	D.W. Long		Well No.
						10
Depth Interval, Feet	Depth Interval, Feet	Feet of Core Analyzed	Average Permeability, Millidarcys	Permeability Capacity Ft. x Md.		
1017.3 - 1022.2	1017.3 - 1022.2	3.2	30.4	97.50		
1043.6 - 1053.5	1043.6 - 1053.5	3.6	15.5	55.84		
1017.3 - 1053.5	1017.3 - 1053.5	6.8	22.6	153.34		
Depth Interval, Feet	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
1017.3 - 1022.2	1017.3 - 1022.2	3.2	17.1	38.0	507	1,625
1043.6 - 1053.5	1043.6 - 1053.5	3.6	17.2	54.6	725	2,616
1017.3 - 1053.5	1017.3 - 1053.5	6.8	17.2	46.9	623	4,241

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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	Bbls./A. Ft.			
2	1019.5	17.8	40	552	2	28	38	44	524	49	1.22	30
3	1020.5	17.5	41	556	2	27	39	45	529	50	1.40	30
5	1044.4	17.6	54	736	6	82	48	29	654	10	0.400	40
6	1045.3	17.2	44	586	5	67	39	44	519	4	0.200	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.

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SUMMARY OF LABORATORY FLOODING TESTS

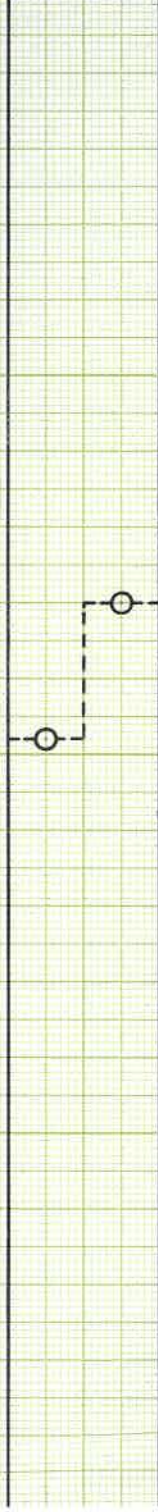
TABLE V

Company	Brazos Oil & Gas Company	Lease	D.W. Long	Well No.
		1019.0 - 1045.5		10
Depth Interval, Feet				
Feet of Core Analyzed		3.9		
Average Percent Porosity		17.5		
Average Percent Original Oil Saturation		45.3		
Average Percent Oil Recovery		3.8		
Average Percent Residual Oil Saturation		41.5		
Average Percent Residual Water Saturation		39.6		
Average Percent Total Residual Fluid Saturation		81.1		
Average Original Oil Content, Bbls./A. Ft.		616.		
Average Oil Recovery, Bbls./A. Ft.		51.		
Average Residual Oil Content, Bbls./A. Ft.		565.		
Total Original Oil Content, Bbls./Acre		2,401.		
Total Oil Recovery, Bbls./Acre		200.		
Total Residual Oil Content, Bbls./Acre		2,201.		
Average Effective Permeability, Millidarcys		0.83		
Average Initial Fluid Production Pressure, p.s.i.		36.2		

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

----- EFFECTIVE PERMEABILITY, IN MILLIDARCY'S ○

AIR PERMEABILITY, IN MILLIDARCY'S		EFFECTIVE PERMEABILITY, IN MILLIDARCY'S									
12	16	20	24	28	32	36	40	44	48	52	
0.4	0.6	0.8	1.0	1.2	1.4	1.6	1.8	2.0	2.2	2.4	2.6



LAMINATED SANDSTONE & SHALE

SANDY SHALE

GAS COMPANY

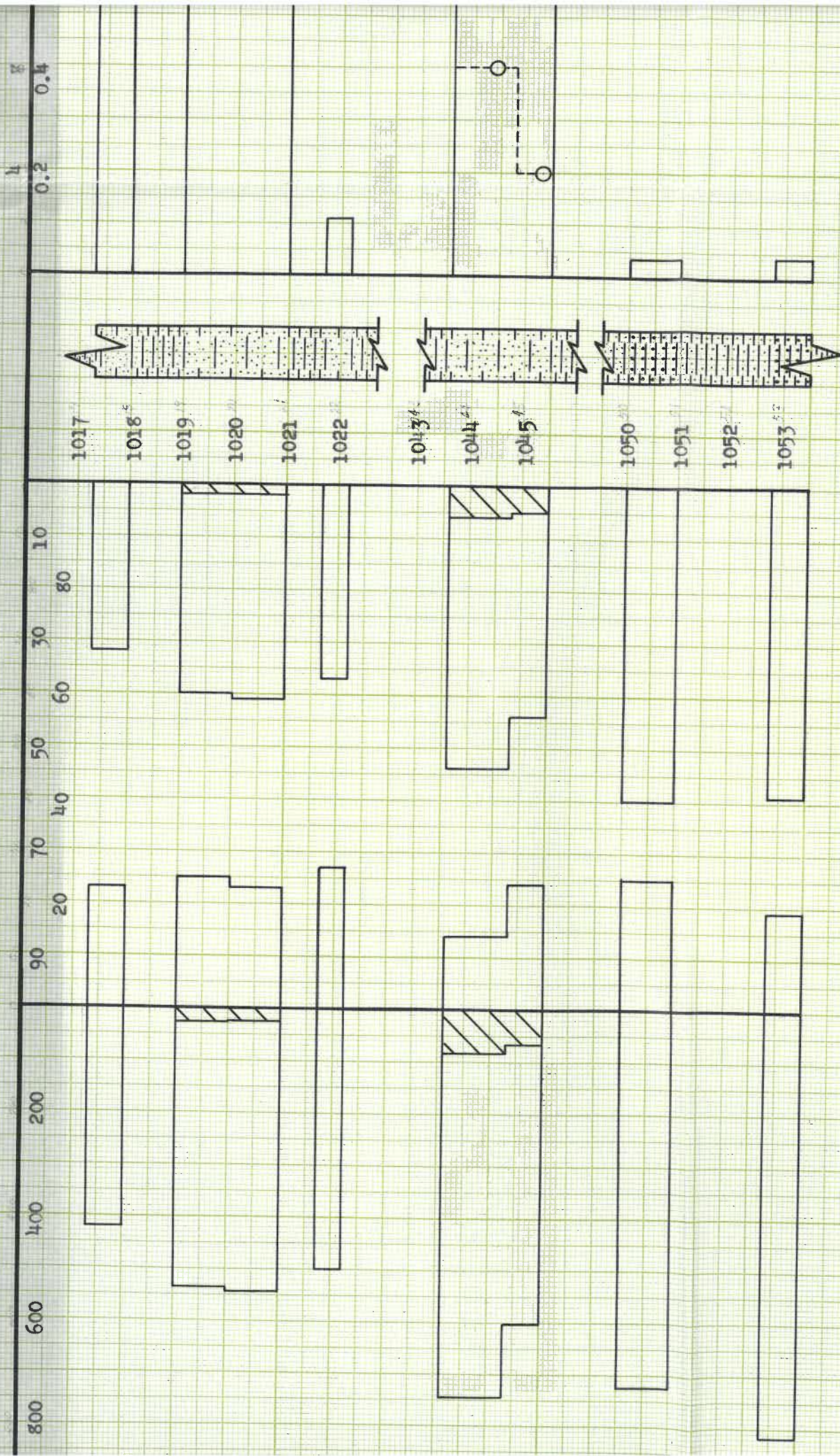
WELL NO. 10

KANSAS

PER ON	AVG. OIL CONTENT BBL'S./A. FT.	TOTAL OIL CONTENT BBL'S./ACRE	AVG. AIR PERMEABILITY, MILLIDARCY'S	CALCULATED OIL RECOVERY, BBL'S./ACRE
507	1.625	30.4	15.5	200
725	2.616	4,241	22.6	
623				

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CHANUTE, KANSAS
FEBRUARY, 1966

OIL CONTENT,
BBL.S./A. FT. WATER SAT.,
PERCENT OIL SAT.,
PERCENT



FLOOD POT RECOVERY

SHALE

SHALY SANDSTONE

BRAZOS OIL & GAS

D.W. LONG LEASE

WOODSON COUNTY, KANSAS

DEPTH INTERVAL, FEET	FEET OF CORE ANALYZED	AVERAGE POROSITY, PERCENT	AVG. OIL SATURATION PERCENT	AVG. WATER SATURATION PERCENT	AVG. OIL CONTENT BBL.S./A. FT.
1017.3 - 1022.2	3.2	17.1	38.0	24.2	507
1043.6 - 1053.5	3.6	17.2	54.6	20.0	725
1017.3 - 1053.5	6.8	17.2	46.9	22.0	623