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

April 24, 1967

W. H. Pitts
413 Parkview
Jonesboro, Arkansas 72401

Dear Sir:

Enclosed herewith is the report of the analysis of the Rotary core taken from the Sells Lease, Well No. 1, Bourbon County, Kansas and submitted to our laboratory on April 20, 1967.

This core was sampled and the samples sealed in plastic bags by a representative of Oilfield Research Laboratories. The well was drilled in virgin territory.

The results of the laboratory tests indicate that efficient primary and secondary operations in the vicinity of this well should recover approximately 640 barrels per acre or an average of 278 barrels per acre foot from the 2.3 feet of floodable pay sand analyzed in this core. These recovery values were calculated using the following data and assumptions:

Original formation volume factor	1.02
Reservoir water saturation, percent	40.0
Average porosity, percent	21.5
Oil saturation after flooding, percent	26.0
Performance factor, percent	50.0
Net floodable pay sand, feet	2.3

The above recovery values were calculated assuming that satisfactory water injection rates will be maintained throughout the flood life of the property.

Very truly yours,

OILFIELD RESEARCH LABORATORIES

Benjamin R. Pearman

Benjamin R. Pearman

BRP:rf
3 c. - Jonesboro, Ark.
2 c. - Ft. Scott, Kansas

Oilfield Research Laboratories

GENERAL INFORMATION & SUMMARY

Company W. H. Pitts Lease Sells Well No. 1

Location SW NW SE

Section 33 Twp. 23S Rge. 25E County Bourbon State Kansas

Name of Sand	Lower Bartlesville
Top of Core	233.2
Bottom of Core	252.2
Top of Sand (Analyzed)	233.2
Bottom of Sand	236.5
Total Feet of Permeable Sand	3.3
Total Feet of Floodable Sand	2.3

Distribution of Permeable Sand: Permeability Range Millidarcys	Feet	Cum. Ft.
8 - 18	3.3	3.3

Average Permeability Millidarcys	13.2
Average Percent Porosity	21.4
Average Percent Oil Saturation	32.4
Average Percent Water Saturation	47.8
Average Oil Content, Bbls./A. Ft.	539.
Total Oil Content, Bbls./Acre	1,773.
Average Percent Oil Recovery by Laboratory Flooding Tests	6.6
Average Oil Recovery by Laboratory Flooding Tests, Bbls./A. Ft.	110.
Total Oil Recovery by Laboratory Flooding Tests, Bbls./Acre	253.
Total Calculated Oil Recovery, Bbls./Acre - (Primary & Secondary)	640.
Packer Setting, Feet	
Viscosity, Centipoises @	
A. P. I. Gravity, degrees @ 60 °F	
Elevation, Feet	

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Company W. H. Pitts Lease Sells Well No. 1

Depth Interval, Feet	Description
233.2 - 236.5	Brown, slightly shaly sandstone.
236.5 - 252.1	Gray shale.
252.1 - 252.3	Coal.

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RESULTS OF SATURATION & PERMEABILITY TESTS

TABLE 1-B

Company W. H. Pitts Lease Sells Well No. 1

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	233.3	20.9	40	42	82	648	18.	0.3	0.3	194	5.40
2	234.3	21.5	31	48	79	517	12.	1.0	1.3	517	12.00
3	235.3	20.4	32	49	81	506	8.2	1.0	2.3	506	8.20
4	236.3	22.4	32	48	80	556	18.	1.0	3.3	556	18.00
								Total	------	1,773	

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SUMMARY OF PERMEABILITY & SATURATION TESTS

TABLE III

Company W. H. Pitts Lease Sells Well No. 1

Depth Interval, Feet	Feet of Core Analyzed	Average Permeability, Millidarcys	Permeability Capacity Ft. x Md.
233.2 - 236.5	3.3	13.2	43.60

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
233.2 - 236.5	3.3	21.4	32.4	47.8	539	1,773

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RESULTS OF LABORATORY FLOODING TESTS

TABLE IV

Company W. H. Pitts Lease Sells Well No. 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.			
1	233.3	21.0	40	651	14	228	26	68	423	12	0.475	40
2	234.3	21.2	31	509	4	66	27	63	443	4	0.190	50
3	235.3	20.2	33	516	0	0	33	51	516	0	Imp.	-
4	236.3	22.0	32	544	7	119	25	67	425	5	0.286	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.

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SUMMARY OF LABORATORY FLOODING TESTS

TABLE V

Company W. H. Pitts Lease Sells Well No. 1

Depth Interval, Feet	233.3 - 236.5
Feet of Core Analyzed	2.3
Average Percent Porosity	21.5
Average Percent Original Oil Saturation	32.6
Average Percent Oil Recovery	6.6
Average Percent Residual Oil Saturation	26.0
Average Percent Residual Water Saturation	65.5
Average Percent Total Residual Fluid Saturation	91.5
Average Original Oil Content, Bbls./A. Ft.	543.
Average Oil Recovery, Bbls./A. Ft.	110.
Average Residual Oil Content, Bbls./A. Ft.	433.
Total Original Oil Content, Bbls./Acre	1,248.
Total Oil Recovery, Bbls./Acre	253.
Total Residual Oil Content, Bbls./Acre	995.
Average Effective Permeability, Millidarcys	0.269
Average Initial Fluid Production Pressure, p.s.i.	46.7

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