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

October 27, 1981

Pathfinder Petroleum Corporation
10603 North Penn
Suite 300
Oklahoma City, Oklahoma 73120

Gentlemen:

Enclosed herewith is the report of the analysis of the rotary core taken from the Smith Lease, Well No. I-16, located in Neosho County, Kansas and submitted to our laboratory on October 13, 1981.

Your business is greatly appreciated.

Very truly yours,

OILFIELD RESEARCH LABORATORIES

Sanford A. Michel

SAM/kas

5 c to Oklahoma City, Oklahoma

Oilfield Research Laboratories

GENERAL INFORMATION & SUMMARY

Company Pathfinder Petroleum Corporation Lease Smith Well No. I-16

Location 1980' FSL & 3520' FEL

Section 34 Twp. 28S Rge. 19E County Neosho State Kansas

Elevation, Feet	
Name of Sand	Upper Bartlesville
Top of Core	663.0
Bottom of Core	674.8
Top of Sand (Tested)	663.4
Bottom of Sand	671.5
Total Feet of Permeable Sand	7.6
Total Feet of Floodable Sand	0.0

Distribution of Permeable Sand: Permeability Range Millidarcys	Feet	Cum. Ft.
0 - 5	2.4	2.4
8 - 15	4.0	6.4
50 - 52	1.2	7.6

Average Permeability Millidarcys	13.7
Average Percent Porosity	17.4
Average Percent Oil Saturation	32.6
Average Percent Water Saturation	37.0
Average Oil Content, Bbls./A. Ft.	430.
Total Oil Content, Bbls./Acre	3,269.
Average Percent Oil Recovery by Laboratory Flooding Tests	0.
Average Oil Recovery by Laboratory Flooding Tests, Bbls./A. Ft.	0.
Total Oil Recovery by Laboratory Flooding Tests, Bbls./Acre	0.
Total Calculated Oil Recovery, Bbls./Acre	0.

The core was sampled and the samples sealed in plastic bags by a representative of the client. Since the core did not respond to flooding susceptibility tests, no calculated recovery is given.

FORMATION CORED

The detailed log of the formation cored is as follows:

Depth Interval, Feet	Description
663.0 - 663.4	Brown and gray laminated sandstone and shale.
663.4 - 664.9	Light brown shaly sandstone.
664.9 - 665.4	Brown and gray laminated sandstone and shale.
665.4 - 666.9	Light brown shaly sandstone.
666.9 - 667.9	Light brown slightly shaly sandstone with shale partings.
667.9 - 670.1	Brown sandstone with intermittent shale partings.
670.1 - 671.5	Black carbonaceous shaly sandstone.
671.5 - 674.8	Gray shale with very fine sandstone partings.

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RESULTS OF SATURATION & PERMEABILITY TESTS

TABLE 1-B

Company Pathfinder Petroleum Corporation Lease Smith Well No. I-16

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	663.5	17.4	31	37	68	419	4.4	1.0	1.0	419	4.40
2	664.5	18.0	33	28	61	461	8.7	0.5	1.5	231	4.35
3	665.7	19.2	38	45	83	566	8.3	0.5	2.0	283	4.15
4	666.5	15.6	28	41	69	339	8.5	1.0	3.0	339	8.50
5	667.4	16.0	19	43	62	236	9.6	1.0	4.0	236	9.60
6	668.8	18.1	18	47	65	253	13.	1.0	5.0	253	13.00
7	669.4	20.0	18	42	60	279	50.	1.2	6.2	335	60.00
8	670.6	16.2	75	16	91	943	0.29	1.0	7.2	943	0.29
9	671.4	15.1	49	26	75	574	0.42	0.4	7.6	230	0.17

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SUMMARY OF PERMEABILITY & SATURATION TESTS

TABLE III

Company Pathfinder Petroleum Corporation Lease Smith Well No. I-16

Depth Interval, Feet	Feet of Core Analyzed	Average Permeability, Millidarcys	Permeability Capacity Ft. x Md.
663.4 - 671.5	7.6	13.7	104.46

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
663.4 - 671.5	7.6	17.4	32.6	37.0	430	3,269

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RESULTS OF LABORATORY FLOODING TESTS

TABLE IV

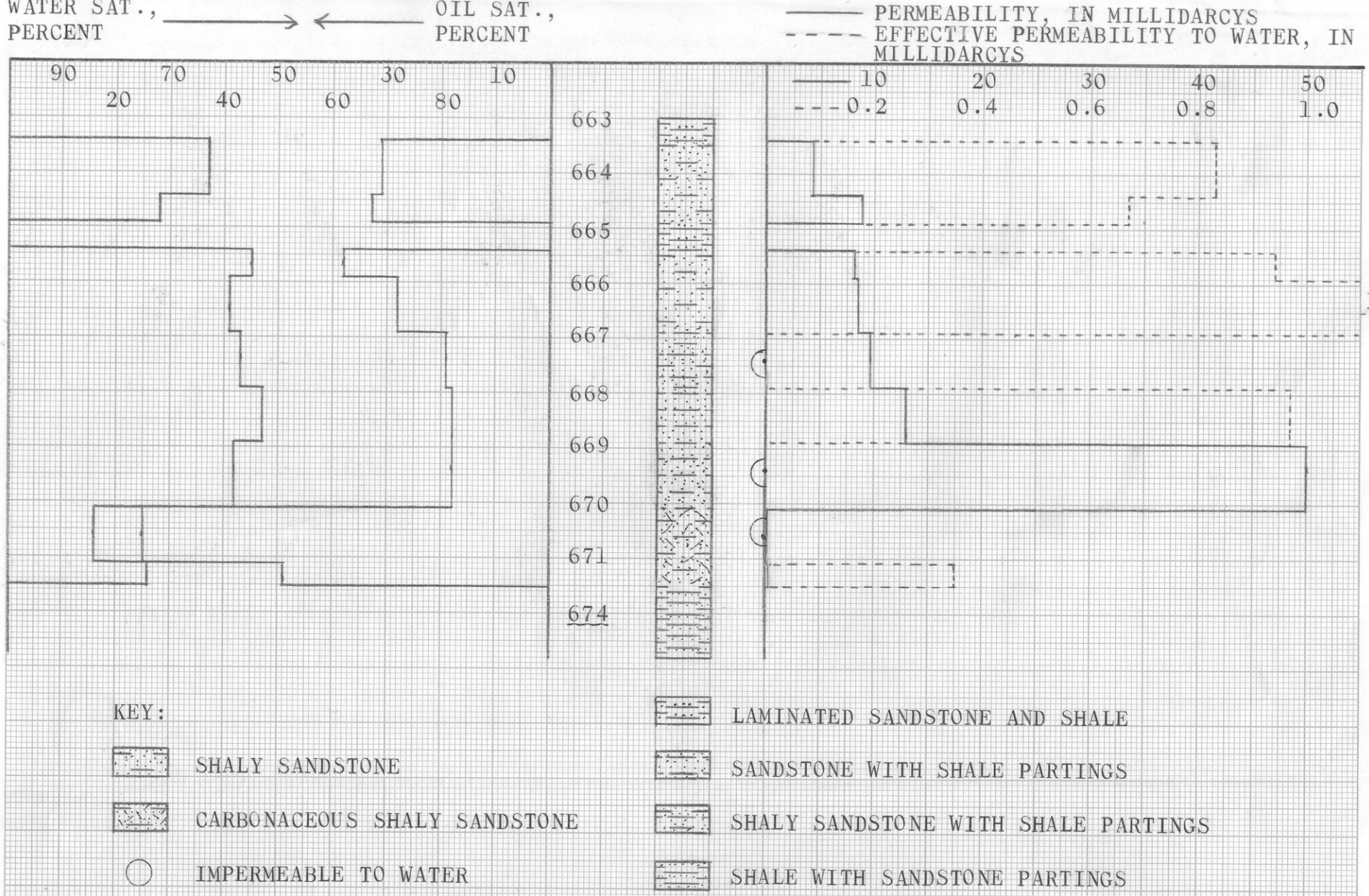
Company Pathfinder Petroleum Corporation Lease Smith Well No. I-16

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	663.5	17.6	31	423	0	0	31	49	423	18	0.83	45
2	664.5	18.1	33	463	0	0	33	33	463	18	0.67	45
3	665.7	19.3	38	569	0	0	38	46	569	24	0.94	40
4	666.5	16.1	27	337	0	0	27	50	337	40	1.12	40
5	667.4	15.9	19	234	0	0	19	44	234	0	Imp.	-
6	668.8	18.2	18	254	0	0	18	63	254	58	0.97	40
7	669.4	19.9	18	278	0	0	18	51	278	0	Imp.	-
8	670.6	16.3	75	948	0	0	75	17	948	0	Imp.	-
9	671.4	15.2	49	578	0	0	49	27	578	12	0.35	40

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.



KEY:

- SHALY SANDSTONE
- CARBONACEOUS SHALY SANDSTONE
- IMPERMEABLE TO WATER
- LAMINATED SANDSTONE AND SHALE
- SANDSTONE WITH SHALE PARTINGS
- SHALY SANDSTONE WITH SHALE PARTINGS
- SHALE WITH SANDSTONE PARTINGS

PATHFINDER PETROLEUM CORPORATION

SMITH LEASE

WELL NO. I-16

NEOSHO COUNTY, KANSAS

 CARBONACEOUS SHALY SANDSTONE

 SHALY SANDSTONE WITH SHALE PARTINGS

 IMPERMEABLE TO WATER

 SHALE WITH SANDSTONE PARTINGS

PATHFINDER PETROLEUM CORPORATION

SMITH LEASE — WELL NO. I-16

NEOSHO COUNTY, KANSAS

DEPTH INTERVAL, FEET	FEET OF CORE ANALYZED	AVERAGE PERCENT POROSITY	AVG. OIL SATURATION PERCENT	AVG. WATER SATURATION PERCENT	AVERAGE PERMEABILITY, MILLIDARCYS	CALCULATED OIL RECOVERY BBLS. / ACRE
663.4 - 671.5	7.6	17.4	32.6	37.0	13.7	-

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CHANUTE, KANSAS
OCTOBER, 1981

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