OILFIELD RESEARCH LABORATORIES

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January 5, 1981

Rantoul Energy Corporation
Box 516
Hutchinson, Kansas 67501

Gentlemen:

Enclosed herewith is the report of the analysis of the rotary core taken from the Jackman Lease, Well No. 34-A, located in Franklin County, Kansas and submitted to our laboratory on November 3, 1980.

Your business is greatly appreciated.

Very truly yours,

OILFIELD RESEARCH LABORATORIES

Sanford A. Michel

SAM/kas

5 c to Hutchinson, Kansas

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GENERAL INFORMATION & SUMMARY

Company Rantoul Energy Corporation Lease Jackman Well No. 34-A

Location 2860' NSL & 1100' WEL

Section 7 Twp. 18S Rge. 21E County Franklin State Kansas

Elevation, Feet	-
Name of Sand	Squirrel
Top of Core	620.0
Bottom of Core	640.0
Top of Sand	621.9
Bottom of Sand	640.0
Total Feet of Permeable Sand	8.5
Total Feet of Floodable Sand	2.7

Distribution of Permeable Sand: Permeability Range Millidarcys	Feet	Cum. Ft.
0 - 5	3.8	3.8
5 - 50	2.6	6.4
50 & Above	2.1	8.5

Average Permeability Millidarcys	31.4
Average Percent Porosity	13.5
Average Percent Oil Saturation	39.0
Average Percent Water Saturation	42.5
Average Oil Content, Bbls./A. Ft.	425.
Total Oil Content, Bbls./Acre	7,697.
Average Percent Oil Recovery by Laboratory Flooding Tests	6.7
Average Oil Recovery by Laboratory Flooding Tests, Bbls./A. Ft.	104.
Total Oil Recovery by Laboratory Flooding Tests, Bbls./Acre	281.
Total Calculated Oil Recovery, Bbls./Acre	See "Calculated Recovery" Section

The core was sampled and the samples sealed in plastic bags by a representative of the client.

FORMATION CORED

The detailed log of the formation cored is as follows:

Depth Interval, Feet	Description
620.0 - 621.9	Gray sandy shale.
621.9 - 624.3	Grayish light brown very shaly sandstone.
624.3 - 626.9	Brown shaly sandstone.
626.9 - 630.1	Grayish brown very shaly slightly calcareous sandstone.
630.1 - 634.2	Brown slightly calcareous sandstone.
634.2 - 640.0	Grayish brown shaly sandstone.

LABORATORY FLOODING TESTS

The sand in this core responded to laboratory flooding tests, as a total recovery of 281 barrels of oil per acre was obtained from 2.7 feet of sand. The weighted average percent oil saturation was reduced from 45.5 to 38.8, or represents an average recovery of 6.7 percent. The weighted average effective permeability of the samples is 10.40 millidarcys, while the average initial fluid production pressure is 31.7 pounds per square inch (See Table V).

By observing the data given in Table IV, you will note that of the 18 samples tested, 3 produced water and oil, and 2 samples produced water only. This indicates that approximately 17 percent of the sand represented by these samples is floodable pay sand.

CALCULATED RECOVERY

It would appear from a study of the core data, that efficient primary and waterflood operations in the vicinity of this well should recover approximately 400 barrels of oil per acre. This is an average recovery of 149 barrels per acre foot from 2.7 feet of floodable sand analyzed in this core.

Original formation volume factor, estimated	1.04
Reservoir water saturation, percent, estimated	40.0
Average porosity, percent	20.4
Oil saturation after flooding, percent	38.8
Performance factor, percent, estimated	50.0
Net floodable sand, feet	2.7

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RESULTS OF SATURATION & PERMEABILITY TESTS

TABLE 1-B

Company Rantoul Energy Corporation Lease Jackman Well No. 34-A

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	622.5	12.1	16	80	96	150	Imp.	1.0	1.0	150	0.00
2	623.5	8.4	22	72	94	143	Imp.	1.4	2.4	200	0.00
3	624.5	15.5	47	40	87	565	1.8	1.0	3.4	565	1.80
4	625.5	16.1	45	22	67	562	4.7	1.0	4.4	562	4.70
5	626.5	18.2	49	32	81	692	5.8	0.6	5.0	415	3.48
6	627.5	6.2	51	42	93	245	Imp.	1.0	6.0	245	0.00
7	628.5	5.5	13	69	82	56	Imp.	1.0	7.0	56	0.00
8	629.5	6.7	66	30	96	343	Imp.	1.2	8.2	343	0.00
9	630.5	16.3	44	40	84	556	14.	1.0	9.2	556	14.00
10	631.5	19.5	45	29	74	681	26.	1.0	10.2	681	26.00
11	632.5	21.2	44	33	77	724	121.	1.0	11.2	724	121.00
12	633.5	22.3	44	33	77	761	83.	1.1	12.3	837	91.30
13	634.5	14.5	35	56	91	394	3.8	1.0	13.3	394	3.80
14	635.5	13.5	38	57	95	398	Imp.	1.0	14.3	398	0.00
15	636.5	15.6	34	57	91	412	Imp.	1.0	15.3	410	0.00
16	637.5	13.2	62	30	92	635	Imp.	1.0	16.3	635	0.00
17	638.5	11.9	42	51	93	388	Imp.	1.0	17.3	388	0.00
18	639.5	11.1	20	72	92	172	0.52	0.8	18.1	138	0.42

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SUMMARY OF PERMEABILITY & SATURATION TESTS

TABLE III

Company Rantoul Energy Corporation Lease Jackman Well No. 34-A

Depth Interval, Feet	Feet of Core Analyzed	Average Permeability, Millidarcys	Permeability Capacity Ft. x Md.
621.9 - 631.1	3.6	6.7	23.98
631.1 - 640.0	4.9	49.5	242.52
621.9 - 640.0	8.5	31.4	266.50

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
621.9 - 631.1	9.2	11.0	37.2	39.5	336	3,092
631.1 - 640.0	8.9	16.0	40.9	45.7	517	4,605
621.9 - 640.0	18.1	13.5	39.0	41.5	425	7,697

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RESULTS OF LABORATORY FLOODING TESTS

TABLE IV

Company Rantoul Energy Corporation Lease Jackman Well No. 34-A

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	622.5	12.4	15	144	0	0	15	81	144	0	Imp.	-
2	623.5	8.3	22	142	0	0	22	73	142	0	Imp.	-
3	624.5	15.1	48	562	0	0	48	41	562	0	Imp.	-
4	625.5	16.0	45	559	0	0	45	25	559	0	Imp.	-
5	626.5	18.2	49	692	9	127	40	47	565	8	0.30	50
6	627.5	6.4	50	248	0	0	50	43	248	0	Imp.	-
7	628.5	5.2	14	56	0	0	14	70	56	0	Imp.	-
8	629.5	6.7	66	343	0	0	66	31	343	0	Imp.	-
9	630.5	16.8	43	560	0	0	43	55	560	40	0.60	35
10	631.5	19.5	45	681	6	91	39	58	590	302	6.45	25
11	632.5	21.1	44	720	0	0	44	48	720	10	0.60	50
12	633.5	22.4	44	765	6	104	38	57	765	384	19.49	20
13	634.5	14.9	34	393	0	0	34	58	393	0	Imp.	-
14	635.5	13.2	39	399	0	0	39	56	399	0	Imp.	-
15	636.5	15.6	34	411	0	0	34	59	411	0	Imp.	-
16	637.5	13.3	62	640	0	0	62	31	640	0	Imp.	-
17	638.5	12.1	41	385	0	0	41	52	385	0	Imp.	-
18	639.5	10.8	21	176	0	0	21	71	176	0	Imp.	-

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 Rantoul Energy Corporation Lease Jackman Well No. 34-A

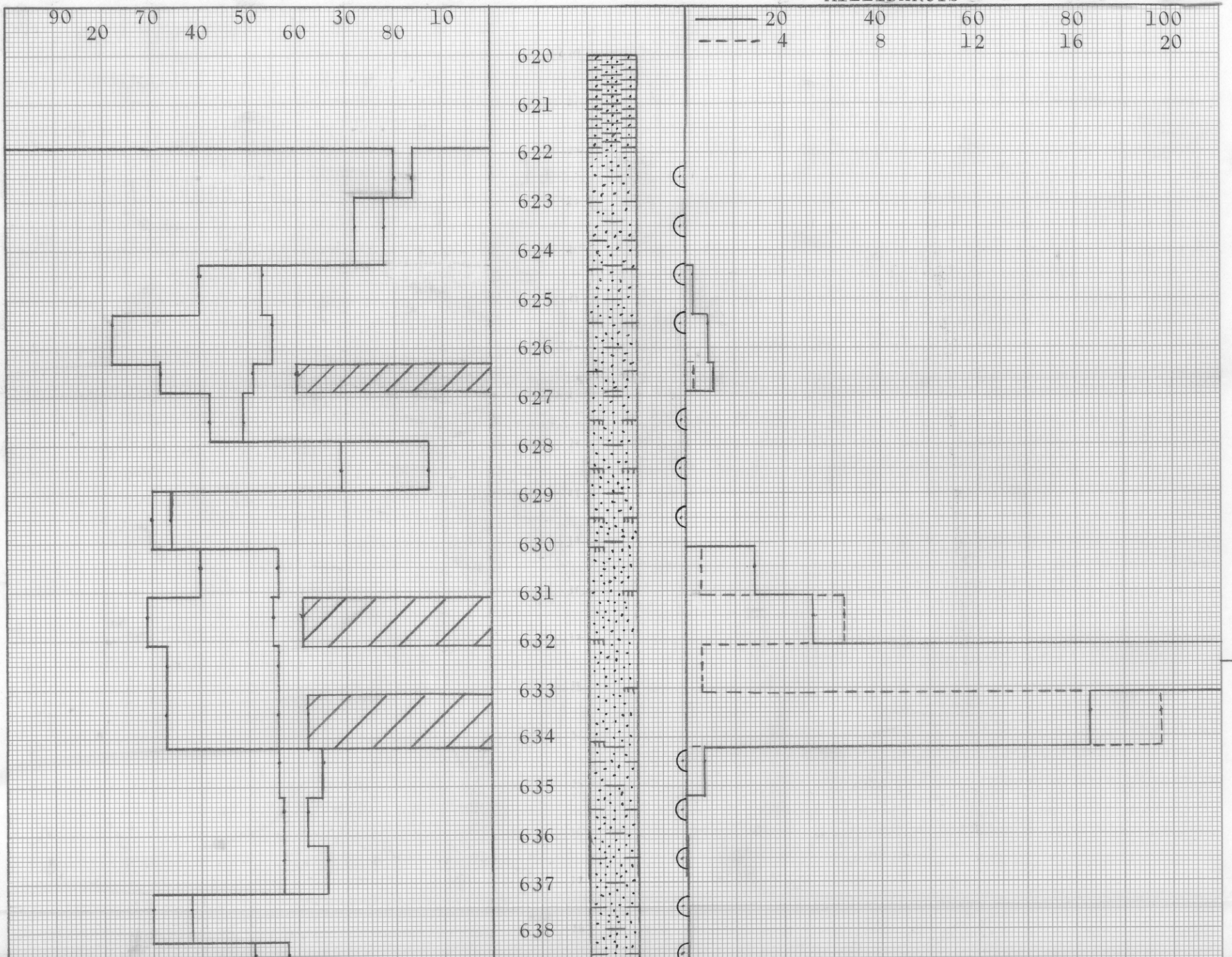
Depth Interval, Feet	621.9 - 631.1	631.1 - 640.0	621.9 - 640.0
Feet of Core Analyzed	0.6	2.1	2.7
Average Percent Porosity	18.2	21.0	20.4
Average Percent Original Oil Saturation	49.0	44.5	45.5
Average Percent Oil Recovery	9.0	6.0	6.7
Average Percent Residual Oil Saturation	40.0	38.5	38.8
Average Percent Residual Water Saturation	47.0	57.5	55.2
Average Percent Total Residual Fluid Saturation	87.0	96.0	94.0
Average Original Oil Content, Bbls./A. Ft.	692.	780.	730.
Average Oil Recovery, Bbls./A. Ft.	127.	98.	104.
Average Residual Oil Content, Bbls./A. Ft.	565.	682.	626.
Total Original Oil Content, Bbls./Acre	415.	1557.	1972.
Total Oil Recovery, Bbls./Acre	76.	205.	281.
Total Residual Oil Content, Bbls./Acre	339.	1352.	1691.
Average Effective Permeability, Millidarcys	0.30	13.28	10.40
Average Initial Fluid Production Pressure, p.s.i.	50.0	22.5	31.7

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

WATER SAT., PERCENT → ← OIL SAT., PERCENT

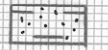
——— PERMEABILITY, IN MILLIDARCYS

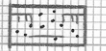
– – – – – EFFECTIVE PERMEABILITY TO WATER, IN MILLIDARCYS



KEY:

 CALCAREOUS SANDSTONE

 SHALY SANDSTONE

 SHALY CALCAREOUS SANDSTONE

 SANDY SHALE

 FLOODPOT RESIDUAL OIL SATURATION

 IMPERMEABLE TO WATER

RANTOUL ENERGY CORP.

JACKMAN LEASE

WELL NO. 34 - A

FRANKLIN 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
621.9 - 631.1	9.2	11.0	37.2	39.5	6.7	
631.1 - 640.0	8.9	16.0	40.9	45.7	49.5	
621.9 - 640.0	18.1	13.5	39.0	42.5	31.4	400 (PRIMARY AND WATERFLOODING)