OILFIELD RESEARCH LABORATORIES

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

September 1, 1983

James E. Russell Petroleum, Inc.
P. O. Box 2618
Abilene, Texas 79604

Gentlemen:

Enclosed herewith is the report of the analysis of the rotary core taken from the Nelson Lease, Well No. RW-17, located in Allen County, Kansas and submitted to our laboratory on August 22, 1983.

Your business is greatly appreciated.

Very truly yours,

OILFIELD RESEARCH LABORATORIES

Sanford A. Michel

SAM/rmc

3 c to Abilene, Texas
2 c to Chanute, Kansas

Oilfield Research Laboratories

GENERAL INFORMATION & SUMMARY

Company James E. Russell Petroleum, Inc. Lease Nelson Well No. RW-17

Location 420' WEL & 820' SNL, NW¼

Section 28 Twp. 26S Rge. 21E County Allen State Kansas

Elevation, Feet Datum: Mean Sea Level (Ground Level)	1081.89
Name of Sand	Bartlesville
Top of Core	653.0
Bottom of Core	687.7
Top of Sand	653.4
Bottom of Sand	681.2
Total Feet of Permeable Sand	15.4
Total Feet of Net Sand	13.5
Total Feet Productive Sand	4.7

Distribution of Permeable Sand: Permeability Range Millidarcys	Feet	Cum. Ft.
0 - 2	6.2	6.2
2 - 4	2.4	8.6
4 - 8	2.7	11.3
8 - 10	2.3	13.6
17 - 27	1.8	15.4

	Laboratory Results	Net Sand	Productive Sand
Average Permeability Millidarcys	5.9	6.6	8.8
Average Percent Porosity	15.9	16.2	16.1
Average Percent Oil Saturation	27.4	27.7	40.7
Average Percent Water Saturation	51.1	48.8	45.1
Average Oil Content, Bbls./A. Ft.	337.	350.	512.
Total Oil Content, Bbls./Acre	5,286.	4,684.	2,407.
Average Percent Oil Recovery by Laboratory Flooding Tests	9.2	-	-
Average Oil Recovery by Laboratory Flooding Tests, Bbls./A. Ft.	120.	-	-

The core was sampled by a representative of Oilfield Research Laboratories. Salt water mud was used as a drilling fluid.

FORMATION CORED

The detailed log of the formation cored is as follows:

Depth Interval, Feet	Description
653.0 - 653.4	Shale, gray, slightly sandy.
653.4 - 655.5	Sandstone, very shaly, light grayish brown, with scattered shale and mica partings.
655.5 - 656.0	Sandstone, shaly, slightly carbonaceous, brownish black.
656.0 - 658.0	Shale, gray.
658.0 - 658.7	Sandstone, shaly, light grayish brown, with scattered coal partings.
658.7 - 660.8	Shale, gray.
660.8 - 661.4	Shale, gray, slightly sandy.
661.4 - 662.4	Sandstone, shaly, grayish brown.
662.4 - 663.0	Sandstone, very shaly, light grayish brown, with scattered shale and mica partings.
663.0 - 663.4	Sandstone, shaly, light grayish brown, with scattered shale and mica partings.
663.4 - 665.5	Shale, gray.
665.5 - 666.0	Sandstone, very shaly, light grayish brown, with scattered shale and mica partings.
666.0 - 666.3	Sandstone, brown.
666.3 - 668.3	Sandstone, very shaly, light grayish brown, with scattered shale and mica partings.
668.3 - 670.0	Sandstone, very shaly, grayish brown, with scattered shale and mica partings.
670.0 - 670.9	Sandstone, very shaly, light grayish brown, with scattered shale and mica partings.
670.9 - 671.7	Shale, gray, with scattered brown sandstone partings.

Depth Interval, Feet	Description
671.7 - 672.0	Sandstone, very shaly, grayish brown.
672.0 - 672.5	Shale, gray, with scattered brown sandstone partings.
672.5 - 673.3	Sandstone, brown, with scattered shale and mica partings.
673.3 - 674.0	Shale, gray, with scattered brown sandstone partings.
674.0 - 675.0	Sandstone, brown, with scattered shale and mica partings.
675.0 - 675.8	Sandstone, slightly shaly, dark grayish brown, with scattered shale and mica partings.
675.8 - 676.1	Shale, gray, slightly sandy.
676.1 - 677.1	Sandstone, slightly shaly, grayish brown, with scattered shale and mica partings.
677.1 - 677.5	Sandstone, brownish black, slightly shaly, slightly carbonaceous.
677.5 - 678.8	Shale, gray, with scattered brown sandstone partings.
678.8 - 679.9	Sandstone, slightly shaly, grayish brown, with scattered shale nodules.
679.9 - 680.2	Shale, gray.
680.2 - 681.2	Sandstone, very shaly, dark grayish brown, with widely scattered shale nodules.
681.2 - 681.6	Coal.
681.6 - 683.2	Shale, gray.
683.2 - 684.6	Shale, light gray, sandy, with scattered brown sandstone partings.
684.6 - 685.5	Shale, light gray, sandy.
685.5 - 686.3	Shale, light gray, sandy calcareous.
686.3 - 687.7	Shale, light gray.

LABORATORY FLOODING TESTS

The sand in this core responded to laboratory flooding tests, as a total recovery of 444 barrels of oil per acre was obtained from 3.7 feet of sand. The weighted average percent oil saturation was reduced from 42.8 to 33.6, or represents an average recovery of 9.2 percent. The weighted average effective permeability of the samples is 0.35 millidarcys, while the average initial fluid production pressure is 37.0 pounds per square inch.

PRIMARY RECOVERY

A detailed analysis of the core data would indicate that the pay sand section is from 668.3 feet to 681.2 feet. A well in this area should produce approximately 44 barrels of oil per acre foot by primary methods. These recovery estimates assume a pressured, virgin reservoir.

Any oil previously produced from the area represented by this core should be deducted from the above estimate.

WATERFLOOD RECOVERY

The estimated additional oil recovery from a well in this vicinity by waterflood is approximately 182 barrels per acre foot.

	PRIMARY AND SECONDARY		
Oil Recovery Barrels Stock Tank	Solution Gas Energy	Increase By Waterflood After Primary	Total
Barrels per Acre Foot	44	182	226

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RESULTS OF SATURATION & PERMEABILITY TESTS

Company James E. Russell Petroleum, Inc. Lease Nelson Well No. RW-17

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	654.5	16.3	15	40	55	190	1.7	1.2	1.2	228	2.04
2	655.3	17.0	22	50	72	290	0.69	0.9	2.1	261	0.62
3	658.3	18.6	21	39	60	303	6.5	0.7	2.8	212	4.55
4	662.3	16.5	27	55	82	346	5.6	1.0	3.8	346	5.60
5	663.3	17.2	24	55	79	320	3.9	0.4	4.2	128	1.56
6	665.6	15.0	17	69	86	198	1.8	0.5	4.7	99	0.90
7	666.6	17.2	11	53	64	147	3.3	1.0	5.7	147	3.30
8	667.4	12.8	23	73	96	228	1.3	1.0	6.7	228	1.30
9	668.4	17.3	31	55	86	416	1.6	0.7	7.4	291	1.12
10	669.3	15.0	25	61	86	291	2.5	1.0	8.4	291	2.50
11	670.3	15.2	19	55	74	224	1.6	0.9	9.3	202	1.44
12	671.8	11.0	44	53	97	376	Imp.	0.3	9.6	113	0.00
13	672.8	17.2	37	51	88	494	26.	0.8	10.4	395	20.80
14	674.3	16.9	20	45	65	262	17.	1.0	11.4	262	17.00
15	675.4	17.3	51	27	78	685	8.7	0.8	12.2	548	6.96
16	676.5	15.0	46	41	87	535	7.4	1.0	13.2	535	7.40
17	677.3	17.5	51	28	79	692	9.4	0.4	13.6	277	3.76
18	679.5	14.6	29	55	84	329	8.3	1.1	14.7	362	9.13
19	680.5	14.1	33	59	92	361	1.2	1.0	15.7	361	1.20
			AVERAGES							TOTALS	
	653.4 - 668.3	16.2	19.6	53.4			3.0		6.7	1,649	19.87
	668.3 - 681.2	15.6	33.2	49.3			8.2		9.0	3,637	71.31
	653.4 - 681.2	15.9	27.4	51.1			5.9		15.7	5,286	91.18

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RESULTS OF LABORATORY FLOODING TESTS

Company James E. Russell Petroleum, Inc. Lease Nelson Well No. RW-17

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	654.5	16.2	15	189	0	0	15	42	189	0	Imp.	-
2	655.3	17.0	22	290	0	0	22	44	290	6	0.08	50
3	658.3	18.5	21	301	0	0	21	75	301	143	1.82	20
4	662.3	16.6	27	348	0	0	27	60	348	13	0.22	45
5	663.3	17.0	25	330	0	0	25	55	330	0	Imp.	-
6	665.6	15.0	17	198	0	0	17	73	198	15	0.30	45
7	666.6	17.2	11	147	0	0	11	79	147	6	0.45	50
8	667.4	13.2	22	225	0	0	22	74	225	0	Imp.	-
9	668.4	17.2	31	414	2	27	29	65	387	41	0.47	25
10	669.3	14.8	26	299	0	0	26	61	299	0	Imp.	-
11	670.3	15.4	18	215	0	0	18	57	215	0	Imp.	-
12	671.8	10.8	45	377	0	0	45	53	377	0	Imp.	-
13	672.8	17.1	37	491	4	53	33	62	438	85	0.97	35
14	674.3	16.9	20	262	0	0	20	74	262	7	0.15	45
15	675.4	17.2	51	681	19	254	32	60	427	0	0.02	40
16	676.5	15.1	46	539	7	82	39	51	457	0	0.01	50
17	677.3	17.5	51	692	18	244	33	56	448	23	0.37	35
18	679.5	14.1	30	328	0	0	30	55	328	15	0.25	25
19	680.5	14.0	33	358	0	0	33	59	358	0	Imp.	-
						AVERAGES						
	668.3 - 681.2	16.6			9.2	120	33.6	58.5	432		0.35	37.0

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.