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

April 4, 1979

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 Minckley B Section 10 Lease, Well No. 110, Anderson County, Kansas, and submitted to our laboratory on March 29, 1979.

Your business is greatly appreciated.

Very truly yours,

OILFIELD RESEARCH LABORATORIES

Benjamin R. Pearman

Benjamin R. Pearman

SAM:km
3 c to Abilene, Texas
2 c to Chanute, Kansas

Oilfield Research Laboratories

GENERAL INFORMATION & SUMMARY

Company James E. Russell Petroleum Inc. Lease Minckley B Sec. 10 Well No. 110

Location 1540' EWL & 1980' SNL NW¼

Section 10 Twp. 23S Rge. 19E County Anderson State Kansas

Name of Sand	Squirrel
Top of Core	734.0
Bottom of Core	774.0
Top of Sand	734.0
Bottom of Sand (Tested)	764.6
Total Feet of Permeable Sand	23.9
Total Feet of Floodable Sand	-0-

Distribution of Permeable Sand: Permeability Range Millidarcys	Feet	Cum. Ft.
0 - 2	12.9	12.9
2 - 4	3.0	15.9
4 - 6	6.0	21.9
6 - 10	2.0	23.9

Average Permeability Millidarcys	2.8
Average Percent Porosity	13.3
Average Percent Oil Saturation	23.9
Average Percent Water Saturation	59.5
Average Oil Content, Bbls./A. Ft.	236.
Total Oil Content, Bbls./Acre	6,350.
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-
Packer Setting, Feet	
Viscosity, Centipoises @	
A. P. I. Gravity, degrees @ 60 °F	
Elevation, Feet (Ground Level)	1068.5

The core was sampled by a representative of Oilfield Research Laboratories. The drilling fluid consisted of fresh water mud. The core was reported to be from a virgin area.

Since the core did not respond to floodpot testing, no calculated recovery is given.

FORMATION CORED

The detailed log of the formation cored is as follows:

Depth Interval, Feet	Description
734.0 - 736.0	Grayish light brown laminated sandstone and shale; 20% sandstone.
736.0 - 737.4	Gray laminated sandstone and shale.
737.4 - 746.7	Grayish light brown laminated sandstone and shale; 30% sandstone.
746.7 - 753.0	Light brown laminated sandstone and shale; 60% sandstone.
753.0 - 753.7	Grayish light brown laminated sandstone and shale; 10% sandstone.
753.7 - 755.3	Gray sandy shale.
755.3 - 760.6	Light brown laminated sandstone and shale; 60% sandstone.
760.6 - 761.3	Gray shale.
761.3 - 761.7	Light brown sandstone.
761.7 - 763.0	Gray laminated sandstone and shale; 10% sandstone.
763.0 - 764.6	Dark carbonaceous shaly sandstone.
764.6 - 764.9	Gray shale.
764.9 - 765.3	Gray shaly sandstone.
765.3 - 774.0	Gray shale.

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RESULTS OF SATURATION & PERMEABILITY TESTS

TABLE 1-B

Company James E. Russell Petroleum, Inc. Lease Minckley B Section 10 Well No. 110

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	734.5	10.6	17	75	92	140	2.1	1.0	1.0	140	2.10
2	735.5	11.8	12	82	94	110	Imp.	1.0	2.0	110	0.00
3	737.5	16.2	22	45	67	277	4.7	0.6	2.6	166	2.82
4	738.5	17.3	16	49	65	215	5.0	1.0	3.6	215	5.00
5	739.5	15.4	12	58	70	143	10.	1.0	4.6	143	10.00
6	740.5	14.7	13	58	71	148	9.3	1.0	5.6	148	9.30
7	741.5	14.6	23	52	75	261	2.6	1.0	6.6	261	2.60
8	742.5	14.5	15	59	74	169	5.0	1.0	7.6	169	5.00
9	743.5	16.0	17	50	67	211	5.1	1.0	8.6	211	5.10
10	744.5	13.5	28	56	84	293	4.1	1.0	9.6	293	4.10
11	745.5	13.2	28	59	87	289	0.87	1.0	10.6	289	0.87
12	746.5	13.6	19	65	84	201	0.77	0.7	11.3	141	0.54
13	747.5	14.4	13	62	75	145	0.13	1.3	12.6	189	0.17
14	748.5	12.2	39	55	95	369	0.37	1.0	13.6	369	0.37
15	749.5	14.0	20	63	83	217	1.2	1.0	14.6	217	1.20
16	750.5	12.8	17	76	93	169	Imp.	1.0	15.6	169	0.00
17	751.5	13.4	21	72	93	218	1.6	1.0	16.6	218	1.60
18	752.5	15.2	21	61	82	248	0.41	1.0	17.6	248	0.41
19	753.5	12.3	4	91	95	38	5.0	0.7	18.3	27	3.50
20	755.5	15.8	43	39	82	527	4.2	0.7	19.0	369	2.94
21	756.5	15.3	36	47	83	427	1.0	1.0	20.0	427	1.00
22	757.5	12.4	17	77	94	164	1.1	1.0	21.0	164	1.10
23	758.5	15.5	24	55	79	289	0.27	1.0	22.0	289	0.27
24	759.5	10.6	41	52	93	337	2.1	1.0	23.0	337	2.10
25	760.5	15.0	30	50	80	349	1.9	0.6	23.6	209	1.14
26	761.5	13.4	42	37	79	437	0.90	0.4	24.0	175	0.36
27	762.5	8.9	6	89	95	41	2.0	1.3	25.3	53	2.60
28	763.5	5.6	77	16	93	335	Imp.	1.0	26.3	335	0.00
29	764.5	11.1	52	42	94	448	0.63	0.6	26.9	269	0.38

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SUMMARY OF PERMEABILITY & SATURATION TESTS

TABLE III

Company James E. Russell Petroleum, Inc. Lease Minckley B Section 10 Well No. 110

Depth Interval, Feet	Feet of Core Analyzed	Average Permeability, Millidarcys	Permeability Capacity Ft. x Md.
734.0 - 748.0	11.6	4.1	47.60
748.0 - 753.7	4.7	1.5	7.08
755.3 - 764.6	7.6	1.6	11.89
734.0 - 764.6	23.9	2.8	66.57

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
734.0 - 748.0	12.6	14.2	17.8	59.6	196	2,475
748.0 - 753.7	5.7	13.4	21.2	68.5	219	1,248
755.3 - 764.6	8.6	12.0	34.8	53.5	305	2,627
734.0 - 764.6	26.9	13.3	23.9	59.5	236	6,350

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RESULTS OF LABORATORY FLOODING TESTS

TABLE IV

Company James E. Russell Petroleum, Inc. Lease Minckley B Section 10 Well No. 110

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	734.5	10.8	16	134	0	0	16	76	134	0	Imp.	–
2	735.5	11.7	14	127	0	0	14	80	127	0	Imp.	–
3	737.5	16.4	19	242	0	0	19	66	242	10	0.08	40
4	738.5	17.2	17	227	0	0	17	72	229	14	0.23	40
5	739.5	15.9	10	123	0	0	10	79	123	14	0.30	40
6	740.5	14.7	13	148	0	0	13	70	148	0	Imp.	–
7	741.5	14.7	22	251	0	0	22	67	251	0	Imp.	–
8	742.5	15.0	17	198	0	0	17	70	198	5	0.08	45
9	743.5	15.8	18	220	0	0	18	62	220	6	0.08	45
10	744.5	13.0	30	303	0	0	30	66	303	9	0.15	40
11	745.5	13.2	28	289	0	0	28	59	287	0	Imp.	–
12	746.5	13.4	20	208	0	0	20	68	208	0	Imp.	–
13	747.5	14.2	14	154	0	0	14	72	154	0	Imp.	–
14	748.5	12.3	38	362	0	0	38	55	362	0	Imp.	–
15	749.5	14.0	22	239	0	0	22	66	239	0	Imp.	–
16	750.5	12.7	18	178	0	0	18	72	178	0	Imp.	–
17	751.5	13.5	20	209	0	0	20	70	209	0	Imp.	–
18	752.5	15.0	22	256	0	0	22	67	256	0	Imp.	–
19	753.5	12.5	6	58	0	0	6	87	58	0	Imp.	–
20	755.5	15.9	41	506	0	0	41	44	506	0	Imp.	–
21	756.5	15.3	37	439	0	0	37	50	439	0	Imp.	–
22	757.5	12.6	17	166	0	0	17	77	166	0	Imp.	–
23	758.5	15.6	23	279	0	0	23	59	279	0	Imp.	–
24	759.5	10.8	39	327	0	0	39	54	327	0	Imp.	–
25	760.5	15.0	30	349	0	0	30	55	349	0	Imp.	–
26	761.5	13.5	40	419	0	0	40	42	419	0	Imp.	–
27	762.5	9.0	7	49	0	0	7	86	49	0	Imp.	–
28	763.5	5.6	75	326	0	0	75	18	326	0	Imp.	–
29	764.5	11.0	53	452	0	0	53	42	452	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.