



OILFIELD RESEARCH LABORATORIES

536 NORTH HIGHLAND - CHANUTE, KANSAS - PHONE HE1-2650

September 6, 1967

CRA, Inc.
Box 98
Wellington, Kansas 67152

Gentlemen:

Enclosed herewith are the results of tests run on the Rotary core taken from the Ellington Lease, Well No. 7, Bourbon County, Kansas, and submitted to our laboratory on August 30, 1967.

The upper sand was sampled and the samples sealed in plastic bags by a representative of Oilfield Research Laboratories. The lower sand was submitted to our laboratory by a representative of the client and sampled after it was received by us. Approximately 5 feet of lower sand was drilled before coring was started.

Your business is greatly appreciated.

Very truly yours,

OILFIELD RESEARCH LABORATORIES

Carl L. Pate

CLP:bl
5 c.

- REGISTERED ENGINEERS -

CORE ANALYSIS - WATER ANALYSIS - REPRESSURING ENGINEERING - SURVEYING & MAPPING - PROPERTY EVALUATION & OPERATION

Oilfield Research Laboratories

GENERAL INFORMATION & SUMMARY

Company CRA, Inc. Lease Ellington Well No. 7
 Location 165' SNL and 330' EWL, NE $\frac{1}{4}$
 Section 1 Twp. 25S Rge. 21E County Bourbon State Kansas
 Name of Sand - - - - - Upper Bartlesville
 Top of Core - - - - - 643.0
 Bottom of Core - - - - - 665.0
 Pay
 Top of Sand - - - - - 649.9
 Bottom of Sand - - - - - 661.4
 (Analyzed)
 Total Feet of Permeable Sand - - - - - 13.3
 Total Feet of Floodable Sand - - - - - -
 Distribution of Permeable Sand:

Permeability Range Millidarcys	Feet	Cum. Ft.
0 - 10	2.3	2.3
10 - 25	1.6	3.9
25 - 50	7.4	11.3
50 & Above	2.0	13.3

 Average Permeability Millidarcys - - - - - 33.2
 Average Percent Porosity - - - - - 19.7
 Average Percent Oil Saturation - - - - - 30.0
 Average Percent Water Saturation - - - - - 30.8
 Average Oil Content, Bbls./A. Ft. - - - - - 463.
 Total Oil Content, Bbls./Acre - - - - - 6,155.
 Average Percent Oil Recovery by Laboratory Flooding Tests - - - - -
 Average Oil Recovery by Laboratory Flooding Tests, Bbls./A. Ft. - - - - -
 Total Oil Recovery by Laboratory Flooding Tests, Bbls./Acre - - - - -
 Total Calculated Oil Recovery, Bbls./Acre - - - - -
 Packer Setting, Feet - - - - -
 Viscosity, Centipoises @ - - - - -
 A. P. I. Gravity, degrees @ 60 °F - - - - -
 Elevation, Feet - - - - -

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GENERAL INFORMATION & SUMMARY

Company CRA, Inc. Lease Ellington Well No. 7

Location 165' SNL and 330' EWL, NE $\frac{1}{4}$

Section 1 Twp. 25S Rge. 21E County Bourbon State Kansas

Name of Sand	- - - - -	Lower Bartlesville
Top of Core	- - - - -	690.0
Bottom of Core	- - - - -	695.6
Top of Sand	- - - - -	690.0
Bottom of Sand	- - - - -	693.5
Total Feet of Permeable Sand	- - - - -	3.5
Total Feet of Floodable Sand	- - - - -	
Distribution of Permeable Sand:		
Permeability Range	Feet	Cum. Ft.
Millidarcys		
<hr/>		
Average Permeability Millidarcys	- - - - -	30.5
Average Percent Porosity	- - - - -	25.8
Average Percent Oil Saturation	- - - - -	15.8
Average Percent Water Saturation	- - - - -	79.6
Average Oil Content, Bbls./A. Ft.	- - - - -	330.
Total Oil Content, Bbls./Acre	- - - - -	1,155.
Average Percent Oil Recovery by Laboratory Flooding Tests	- - - - -	
Average Oil Recovery by Laboratory Flooding Tests, Bbls./A. Ft.	- - - - -	
Total Oil Recovery by Laboratory Flooding Tests, Bbls./Acre	- - - - -	
Total Calculated Oil Recovery, Bbls./Acre	- - - - -	
Packer Setting, Feet	- - - - -	
Viscosity, Centipoises @	- - - - -	
A. P. I. Gravity, degrees @ 60 °F	- - - - -	
Elevation, Feet	- - - - -	

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LOGCompany CRA, Inc. Lease Ellington Well No. 7Depth Interval, Description
Feet _____UPPER SAND

643.0 - 643.5 - Gray laminated shaly sandstone.

643.5 - 646.5 - Brownish gray fine grained sandstone.

646.5 - 647.0 - Gray finely laminated sandy shale.

647.0 - 649.9 - Brownish gray shaly sandstone containing a conglomeratic sandstone streak.

649.9 - 651.4 - Light brown shaly sandstone.

651.4 - 661.4 - Brown fine grained sandstone.

661.4 - 661.8 - Gray shale.

661.8 - 665.0 - Gray shale (Discarded at well).

LOWER SAND

690.0 - 693.5 - Grayish brown coarse grained sandstone containing a fracture.

693.5 - 694.4 - Coal.

694.4 - 695.6 - Gray shale.

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RESULTS OF SATURATION & PERMEABILITY TESTS

TABLE 1-B

Company CRA, Inc. Lease Ellington Well No. 7

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.		
						<u>Upper Sand</u>					
1	644.5	21.0	9	31	40	146	59.	1.0	1.0	146	59.00
2	649.5	17.0	16	36	52	211	5.6	0.9	1.9	190	5.04
3	650.8	18.8	21	37	58	306	5.8	1.4	3.3	428	8.12
4	651.5	18.4	36	30	66	514	20.	0.6	3.9	308	12.00
5	652.5	20.7	32	30	62	514	28.	1.0	4.9	514	28.00
6	653.5	19.1	30	32	62	444	31.	1.0	5.9	444	31.00
7	654.5	19.2	37	29	66	551	35.	1.0	6.9	551	35.00
8	655.5	20.6	26	31	57	415	27.	1.0	7.9	415	27.00
9	656.5	18.4	32	34	66	456	21.	1.0	8.9	456	21.00
10	657.5	19.8	29	33	62	444	47.	1.0	9.9	444	47.00
11	658.5	21.2	41	24	65	674	70.	1.0	10.9	674	70.00
12	659.5	19.8	33	29	62	506	34.	1.0	11.9	506	34.00
13	660.5	21.6	46	25	71	771	46.	1.4	13.3	1,079	64.40
						<u>Lower Sand</u>					
14	690.5	26.0	17	80	97	342	45.	1.0	14.3	342	45.00
15	691.5	19.2	10	86	96	149	7.7	1.0	15.3	149	7.70
16	692.5	30.1	19	75	94	443	36.	1.5	16.8	664	54.00
								Total	--	7,310	

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SUMMARY OF PERMEABILITY & SATURATION TESTS

TABLE III

Company CRA, Inc. Lease Ellington Well No. 7

Depth Interval, Feet	Feet of Core Analyzed	Average Permeability, Millidarcys	Permeability Capacity Ft. x Md.
<u>Upper Sand</u>			
644.0 - 651.4	3.3	21.8	72.16
651.4 - 661.4	10.0	36.9	369.40
644.0 - 661.4	13.3	33.2	441.56
<u>Lower Sand</u>			
690.0 - 693.5	3.5	30.5	106.70

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
<u>Upper Sand</u>						
644.0 - 651.4	3.3	19.0	16.0	34.9	231	764
651.4 - 661.4	10.0	20.0	34.6	29.5	539	5,391
644.0 - 661.4	13.3	19.7	30.0	30.8	463	6,155
<u>Lower Sand</u>						
690.0 - 693.5	3.5	25.8	15.8	79.6	330	1,155