

OIL FIELD RESEARCH LABORATORIES
CHANUTE, KANSAS

May 2, 1951

Deep Rock Oil Corporation
Atlas Life Building
Tulsa, Oklahoma

Attention: Mr. T. F. Lawry

Gentlemen:

Enclosed herewith is the report of the partial analysis of the Cable Tool core taken from the Gingsrich Lease, Well No. K-11, Franklin County, Kansas, and submitted to our laboratory on April 17, 1951.

In calculating the recovery for this well, an allowance was made for oil lost during coring, and it was assumed that the true water saturation of the sand is 35 percent. The relatively low calculated recovery is due to the irregular permeability profile and the short floodable sand section.

Very truly yours,

OIL FIELD RESEARCH LABORATORIES

Clayton A. Battier

CAK:pm

cc: Mr. Neil Henderson

DEEP ROCK OIL CORPORATION

CORE ANALYSIS REPORT

GINGRICH LEASE

WELL NO. K-11

FRANKLIN COUNTY, KANSAS

OIL FIELD RESEARCH LABORATORIES

CHANDLER, KANSAS

MAY 2, 1951

Oil Field Research Laboratories

GENERAL INFORMATION & SUMMARY

Company Deep Rock Oil Corporation Lease Gingrich Well No. K-11

Location _____

Section 16 Twp. 21 Rge. 29 County Franklin State Kansas
29 16s 21E

Name of Sand	Squirrel
Top of Core	601.90
Bottom of Core	639.10
Top of Sand	605.78
Bottom of Sand	637.80
Total Feet of Permeable Sand	8.44

Distribution of Permeable Sand: Permeability Range Millidarcys	Feet	Cum. Ft.
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Average Effective Permeability Millidarcys	8.62
Average Percent Porosity	18.95
Average Percent Oil Saturation	34.36
Average Percent Water Saturation	-
Average Oil Content, Bbls./A. Ft.	492.
Total Oil Content, Bbls./Acre	12,879.
Average Percent Oil Recovery by Laboratory Flooding Tests	10.01
Average Oil Recovery by Laboratory Flooding Tests, Bbls./A. Ft.	178.
Total Oil Recovery by Laboratory Flooding Tests, Bbls./Acre	1,509.
Total Calculated Oil Recovery, Bbls./Acre	1,300.
Packer Setting, Feet	-
Viscosity, Centipoises @	
A. P. I. Gravity, degrees @ 60 °F	

OIL FIELD RESEARCH LABORATORIES
CHANUTE, KANSAS

LOG

Company Deer Rock Oil Corporation Lease Gingrich Well No. K-11

<u>Depth Interval, Feet</u>	<u>Description</u>
601.90 - 603.40	- Gray sandy shale.
603.40 - 604.30	- Light brown fine grained micaceous shaley sandstone.
604.30 - 605.25	- Gray sandy shale.
605.25 - 605.52	- Brown fine grained micaceous sandstone.
605.52 - 605.78	- Gray sandy shale.
605.78 - 607.00	- Light brown fine grained micaceous sandstone.
607.00 - 607.80	- Light brown fine grained micaceous shaley sandstone.
607.80 - 607.90	- Gray sandy shale.
607.90 - 611.40	- Light brown fine grained micaceous shaley sandstone.
611.40 - 611.60	- Gray sandy shale.
611.60 - 612.30	- Light brown fine grained micaceous shaley sandstone.
612.30 - 612.60	- Laminated sandy shale.
612.60 - 614.20	- Brown fine grained micaceous shaley sandstone.
614.20 - 614.50	- Laminated sandstone and shale.
614.50 - 615.40	- Light brown fine grained micaceous shaley sandstone.
615.40 - 619.00	- Brown fine grained micaceous slightly shaley sandstone.
619.00 - 624.65	- Light brown fine grained micaceous shaley sandstone.
624.65 - 626.68	- Brown fine grained micaceous shaley sandstone.
626.68 - 626.85	- Laminated sandy calcareous shale.
626.85 - 628.50	- Laminated sandstone and shale.
628.50 - 628.90	- Brown fine grained micaceous slightly shaley sandstone.
628.90 - 632.58	- Dark brown fine grained micaceous sandstone.
632.58 - 632.70	- Limestone.
632.70 - 633.10	- Dark brown fine grained micaceous calcareous sandstone.

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- 633.10 - 633.30 - Hard dark brown fine grained micaceous calcareous sandstone.
- 633.30 - 633.55 - Dark brown fine grained micaceous sandstone.
- 633.55 - 633.73 - Limestone.
- 633.73 - 637.80 - Dark brown fine grained micaceous sandstone.
- 637.80 - 639.10 - Dark fine grained micaceous carbonaceous sandstone.

Oil Field Research Laboratories

RESULTS OF SATURATION TESTS

TABLE III

Company Deep Rock Oil Corporation Lease Gingrich Well No. K-11

Sat. No.	Depth, Feet	Effective Porosity Percent	Percent Saturation			Oil Content, Bbbs./A. Ft.	Feet of Core		Total Oil Content Bbbs./Acre
			Oil	Water	Total		Ft.	Cum. Ft.	
F-1	606.10	20.0	27.2	-	-	421	1.22	1.22	514
F-2	607.10	20.3	26.8	-	-	422	0.80	2.02	378
F-3	608.60	18.4	22.9	-	-	328	1.40	3.42	439
F-4	610.10	16.1	20.8	-	-	260	2.10	5.52	545
F-5A	612.74	19.2	31.6	-	-	472	0.73	6.27	354
F-6	614.00	19.2	30.3	-	-	452	0.86	7.12	386
F-7	615.80	19.9	35.2	-	-	564	1.20	8.32	653
F-8	617.40	17.4	37.5	-	-	482	1.53	9.87	706
F-9	618.90	17.7	39.2	-	-	538	1.13	11.02	619
F-10	619.70	18.0	36.6	-	-	512	1.20	12.22	615
F-11A	621.30	17.5	33.1	-	-	650	1.03	13.27	473
F-11	621.80	17.2	33.0	98.2	63.2	467	0.93	14.22	444
F-12	623.16	18.2	27.6	-	-	390	1.03	15.27	410
F-13	624.00	15.1	35.4	-	-	513	1.10	16.37	434
F-14	625.30	18.6	30.8	-	-	445	1.15	17.52	512
F-15	626.30	18.6	29.4	-	-	424	0.88	18.40	373
F-16A	628.64	24.0	43.9	-	-	855	0.40	18.80	342
F-16	630.00	10.1	55.0	-	-	431	1.50	20.30	646
F-17	630.90	24.1	53.8	-	-	1,006	1.60	21.90	1,610

Oil Field Research Laboratories

RESULTS OF SATURATION TESTS

TABLE III

Company Deep Rock Oil Corporation Lease Olingrath Well No. K-11

Sat. No.	Depth, Feet	Effective Porosity Percent	Percent Saturation			Oil Content, Bbls./A. Ft.	Feet of Core		Total Oil Content Bbls./Acre
			Oil	Water	Total		Ft.	Cum. Ft.	
F-18	633.20	13.5	37.5	-	-	393	0.20	22.10	79
F-19	635.14	20.0	36.1	-	-	561	1.62	23.72	909
F-20	635.60	22.6	25.3	-	-	443	0.85	24.57	376
F-21	636.84	23.2	39.1	-	-	704	1.00	25.57	704
F-21A	637.59	21.4	32.2	-	-	534	0.60	26.17	120
							Total	- - -	-12,879

Note: "A" samples were taken from the core after it was received in the laboratory.

Oil Field Research Laboratories

SUMMARY OF SATURATION TESTS

TABLE IV

Company	Lease	Well No.	Depth Interval, Feet	Feet of Core Analyzed	Average Percent Porosity	Average Percent Oil Saturation	Average Percent Water Saturation	Average Oil Content Bbls./A. Ft.	Total Oil Content Bbls./Acre
Deep Rock Oil Corporation	O'Griffin	K-11	605.78 - 626.68	18.40	18.53	36.78	-	429	7,893
			628.50 - 637.80	7.77	19.78	42.82	-	642	4,986
			605.78 - 637.80	26.17	18.95	34.36	-	692	12,879

Oil Field Research Laboratories

RESULTS OF LABORATORY FLOODING TESTS

TABLE V

Company Deep Rock Oil Corporation Lease Gingrich Well No. K-11

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.
			Percent	Bbls./A. Ft.	Percent	Bbls./A. Ft.	% Oil	% Water	Bbls./A. Ft.			
1	606.10	20.0	27.2	421	2.8	45	24.4	74.0	378	123	2.56	15
2	607.10	20.3	26.8	422	1.1	17	25.7	64.2	405	16	0.561	25
3	608.60	18.4	22.9	328	0.0	0	22.9	68.2	328	0	Imp.	50 f
4	610.10	16.1	20.8	260	0.0	0	20.8	78.0	260	0	Imp.	50 f
5A	612.74	19.2	31.6	472	0.0	0	31.6	63.4	472	0	Imp.	50 f
6	614.00	19.2	30.3	452	0.0	0	30.3	61.1	452	0	Imp.	50 f
7	615.80	19.9	35.2	544	8.2	98	29.0	64.7	448	0	0.007	50
8	617.40	17.4	37.5	482	0.0	0	37.5	61.2	482	0	0.001	50
9	618.90	17.7	39.2	538	0.0	0	39.2	52.2	538	0	Imp.	50 f
10	619.70	18.0	38.6	512	0.0	0	38.6	57.3	512	0	Imp.	50 f
11A	621.30	17.5	33.1	450	0.0	0	33.1	60.2	450	0	Imp.	50 f
12	623.16	18.2	27.6	390	0.0	0	27.6	62.5	390	0	Imp.	50 f
13	624.00	15.1	35.4	413	0.0	0	35.4	64.6	413	1	0.098	50
14	625.30	18.6	30.8	445	0.0	0	30.8	63.8	445	0	Imp.	50 f
15	626.30	18.6	29.4	424	0.0	0	29.4	66.6	424	0	Imp.	50 f
16A	628.64	24.0	45.9	855	18.4	343	27.5	69.2	512	112	11.60	10
16	630.00	10.1	55.0	431	0.0	0	55.0	28.1	431	0	Imp.	50 f
17	630.90	24.1	55.8	1,006	27.4	513	26.4	72.0	493	59	22.80	10
18	633.20	13.5	37.5	393	0.0	0	37.5	48.3	393	0	Imp.	50 f
19	635.14	20.0	36.1	561	4.1	64	32.0	56.0	497	174	12.40	10
20	635.60	22.8	25.3	443	0.0	0	25.3	70.7	443	108	11.20	10
21	636.64	23.2	39.1	704	10.3	166	28.8	67.4	518	158	6.84	10
21A	637.59	21.4	32.2	534	7.9	131	24.3	71.6	403	167	3.46	20

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.
 "A" - Samples were taken from the core after they were received in the laboratory.

Oil Field Research Laboratories

SUMMARY OF LABORATORY FLOODING TESTS

TABLE VI

Company	Lease	Gingrich	Well No.
	605.78 - 616.60	628.50 - 637.80	605.78 - 637.80
Depth Interval, Feet	3.22	5.22	8.44
Feet of Core Analyzed	20.03	22.32	21.45
Average Percent Porosity	30.09	44.70	37.69
Average Percent Original Oil Saturation	1.63	16.19	10.01
Average Percent Oil Recovery	26.46	28.51	27.68
Average Percent Residual Oil Saturation	68.13	65.84	66.72
Average Percent Residual Water Saturation	94.59	94.35	94.40
Average Percent Total Residual Fluid Saturation	468.	744.	638.
Average Original Oil Content, Bbbs./A. Ft.	57.	254.	178.
Average Oil Recovery, Bbbs./A. Ft.	611.	490.	460.
Average Residual Oil Content, Bbbs./A. Ft.	1,306.	3,886.	5,392.
Total Original Oil Content, Bbbs./Acre	182.	1,327.	1,509.
Total Oil Recovery, Bbbs./Acre	1,324.11	2,559.	3,883.
Total Residual Oil Content, Bbbs./Acre	30.0	14.88	0.88
Average Effective Permeability, Millidarcys		18.0	18.8
Average Initial Fluid Production Pressure, p.s.i.			

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