

May 14, 1949

Deep Rock Oil Corporation
Tulsa, Oklahoma

Attention: Mr. T. F. Lawry

Gentlemen:

Enclosed herewith is the report of the partial analysis of the No. 6 Baker barrel core taken from the Fenoughty Lease, Well No. C-15, Miami County, Kansas, and submitted to our laboratory on April 29, 1949.

In calculating the recovery for the sand within the vicinity of this well, no allowance was made for oil lost during coring; and, of course, it is assumed that the sand is not pressured up.

Very truly yours,

OIL FIELD RESEARCH LABORATORIES

Carl L. Pate

Carl L. Pate

CLP:cc

c.c. to Mr. Neil Henderson

C-15

Fenoughty

DEEP ROCK OIL CORPORATION

CORE ANALYSIS REPORT

FENOUGHTY LEASE WELL NO. C-15

MIAMI COUNTY, KANSAS

OIL FIELD RESEARCH LABORATORIES

CHANUTE, KANSAS

MAY 14, 1949.

Oil Field Research Laboratories

GENERAL INFORMATION & SUMMARY

Company Deep Rock Oil Corporation Lease Fenoughty Well No. C-15

Location 330' east of west line and 40' south of north line NW 1/4

Section 22 Twp. 17S Rge. 23E County Miami State Kansas

Name of Sand	Peru
Top of Core	348.00
Bottom of Core	373.35
Top of Sand	388.75
Bottom of Sand	371.70
Total Feet of Permeable Sand	11.35

Distribution of Permeable Sand:	Feet	Cum. Ft.
Permeable Range		
Millidarcys		

Effective Average Permeability, Millidarcys	5.90
Average Percent Porosity	20.80
Average Percent Oil Saturation	46.89
Average Percent Water Saturation	55.62
Average Oil Content, Bbls./A. Ft.	769.
Total Oil Content, Bbls./Acre	10,583.
Average Percent Oil Recovery by Laboratory Flooding Tests	26.14
Average Oil Recovery by Laboratory Flooding Tests, Bbls./A. Ft.	439.
Total Oil Recovery by Laboratory Flooding Tests, Bbls./Acre	4,985.
Total Calculated Oil Recovery, Bbls./Acre	3,900.
Packer Setting, Feet	356.5

Viscosity, Centipoises @

A. P. I. Gravity, degrees @ 60 °F

Note: The above averages are for that part of the sand section extending from the packer setting to the top of the cement plug.

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LOG

Company Deep Rock Oil Corporation Lease Fenoughy Well No. C-15

<u>Depth Interval,</u> <u>Feet</u>	<u>Description</u>
348.00 - 351.70	- Light brown fine grained micaceous calcareous sandstone.
351.70 - 352.35	- Sandy limestone.
352.35 - 354.25	- Soft light brown fine grained slightly laminated micaceous calcareous sandstone.
354.25 - 355.75	- Soft light brown fine grained laminated micaceous sandstone.
355.75 - 356.28	- Brown fine grained slightly laminated calcareous sandstone.
356.28 - 357.40	- Dark brown fine grained micaceous calcareous sandstone.
357.40 - 358.00	- Brown fine grained slightly laminated micaceous sandstone.
358.00 - 358.32	- Brown fine grained micaceous calcareous sandstone.
358.32 - 358.70	- Limestone.
358.70 - 359.00	- Brown fine grained micaceous calcareous sandstone.
359.00 - 360.20	- Brown fine grained micaceous slightly calcareous sandstone.
360.20 - 360.80	- Dark brown fine grained micaceous slightly calcareous sandstone.
360.80 - 360.90	- Limestone.
360.90 - 361.95	- Dark brown fine grained micaceous calcareous sandstone.
361.95 - 362.10	- Limestone.
362.10 - 362.60	- Dark brown fine grained micaceous calcareous sandstone.
362.60 - 362.97	- Dark brown fine grained micaceous calcareous slightly shaley sandstone.
362.97 - 364.00	- Dark brown fine grained micaceous slightly calcareous sandstone.

364.00 - 365.10 - Brown fine grained laminated micaceous sandstone.

365.10 - 369.70 - Dark brown fine grained micaceous sandstone.

369.70 - 371.70 - Brown fine grained slightly laminated micaceous sandstone.

371.70 - 373.35 - Soft gray shale.

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SHOT RECOMMENDATION

Company Deep Rock Oil Corp. Lease Feneughty Well No. C-15

<u>Depth Interval,</u> <u>Feet</u>	<u>Feet of</u> <u>Sand</u>	<u>Size of Shell,</u> <u>Inches</u>	<u>qts./ft.</u>	<u>Total qts.</u>
361.5 - 370.0	8.5	4.0	2.5	21.25

Recommended Packer Setting - 355.5 feet
Note: Plug hole back to 371.5 feet

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RESULTS OF SATURATION TESTS

TABLE III

Company Deep Rock Oil Corporation Lease Fenoughty Well No. C-15

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-3	351.65	16.2	21.8	-	-	274	0.80	0.80	219
F-4	353.45	16.7	22.4	-	-	290	1.25	2.05	362
F-5	354.70	13.4	23.2	-	-	241	0.80	2.85	193
F-6	355.40	26.1	18.4	-	-	372	0.70	3.55	260
F-7	356.10	23.4	37.3	-	-	678	0.53	4.08	360
F-8	357.05	21.5	38.1	-	-	637	1.12	5.20	715
9	357.90	24.2	30.1	62.4	92.5	565	0.92	6.12	520
F10	358.65	17.0	34.6	-	-	356	0.30	6.42	107
11	359.50	18.8	30.5	-	-	445	0.80	7.22	356
12	360.10	23.4	43.4	51.4	94.8	790	0.40	7.62	316
F13	361.10	12.5	41.7	-	-	405	0.50	8.12	202
F14	361.80	10.3	26.8	-	-	214	0.55	8.67	118
F15	362.75	16.6	67.0	-	-	865	0.87	9.54	753
16	363.35	20.0	65.5	-	-	1,016	1.03	10.57	1,048
17	364.50	20.3	30.7	63.9	94.6	483	1.10	11.67	531
F18	365.25	24.0	62.4	-	-	1,164	0.55	12.22	641
F19	366.05	27.3	66.2	-	-	1,402	0.95	13.17	1,332
F20	367.15	21.8	46.3	-	-	784	0.80	13.97	626

Oil Field Research Laboratories

RESULTS OF SATURATION TESTS

TABLE III

Company Deep Rock Oil Corporation Lease Fenoughty Well No. C-15

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.	
21	367.70	24.1	57.6	37.3	94.9	1,079	0.75	14.72	809
F22	368.65	26.5	50.2	-	-	1,032	0.95	15.67	982
F23	369.50	20.5	51.1	-	-	814	0.60	16.27	489
F24	370.60	18.9	42.7	-	-	627	1.25	17.52	785
F25	371.30	18.6	49.6	-	-	717	0.75	18.27	<u>538</u>
							Total	- - - - -	12,262

Oil Field Research Laboratories

SUMMARY OF SATURATION TESTS

TABLE IV

Company Deep Rock Oil Corporation Lease Fenoughty Well No. C-15

Depth Interval, Feet	Feet of Core Analyzed	Average Percent Porosity	Average Percent Oil Saturation	Average Percent Water Saturation	Average Oil Content Bbbls./A. Ft.	Total Oil Content Bbbls./Acre
350.90 - 355.75	3.55	17.72	21.66	-	291	1,034
355.75 - 361.95	5.12	19.55	34.73	59.09	526	2,694
362.10 - 371.70	9.60	21.57	52.70	53.14	889	8,534
356.50 - 371.50	13.77	20.80	46.89	55.62	769	10,583

Oil Field Research Laboratories
RESULTS OF LABORATORY FLOODING TESTS

TABLE V

Company Deep Rock Oil Corporation Lease Penanghty Well No. C-15

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.			
3	351.65	16.2	21.8	274	4.0	50	17.8	77.6	224	97	16.80	10
4	353.45	16.7	22.4	290	3.7	74	16.7	70.0	216	151	17.99	5
5	354.70	15.4	23.2	241	7.5	78	15.7	67.7	168	131	4.04	10
6	355.40	16.1	18.4	572	0.0	0	18.4	72.4	372	71	22.13	5
7	355.10	23.4	37.3	678	9.9	190	27.4	68.4	498	86	18.39	10
8	357.08	21.5	38.1	637	14.7	246	25.4	71.9	291	110	5.22	10
10	358.88	17.0	54.6	386	7.6	99	27.1	69.2	257	165	7.97	10
11A	359.50	18.8	30.3	446	6.9	101	28.6	70.1	344	66	6.76	10
13	361.10	12.5	41.7	406	10.6	106	30.9	48.1	300	14	0.497	30
14	361.80	10.3	26.8	214	7.9	63	18.9	66.5	181	6	0.163	33
15	362.75	18.5	47.0	848	37.4	483	29.6	69.9	382	189	8.86	5
16A	365.55	20.0	65.8	1,016	34.7	538	30.9	48.3	478	108	7.96	10
18	365.85	14.0	52.4	1,164	32.1	300	30.3	65.3	564	183	6.09	10
19	366.05	27.3	66.2	1,402	45.2	1,020	18.0	70.0	322	114	14.40	5
20	367.15	21.8	46.3	784	36.7	486	17.6	79.2	298	64	2.42	10
21A	367.70	24.0	21.3	956	29.5	550	21.8	70.0	408	111	11.00	10
22	368.65	25.5	30.2	1,032	22.9	294	21.3	66.9	433	93	6.03	10
23	369.50	20.5	51.1	814	30.9	452	20.2	71.9	222	94	4.64	10
24A	370.60	18.9	42.7	627	22.2	226	20.4	75.8	299	16	0.337	25
25	371.50	18.6	49.6	717	27.5	296	22.1	69.7	319	14	0.591	15

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.

Oil Field Research Laboratories

SUMMARY OF LABORATORY FLOODING TESTS

TABLE VI

Company	Deep Rock Oil Corporation			Lease	Penoughty			Well No.	C-15			
Depth Interval, Feet	350.90 - 355.05			355.75 - 361.95			362.10 - 371.70			356.50 - 371.50		
Feet of Core Analyzed	2.85			3.80			8.50			11.35		
Average Percent Porosity	15.61			18.05			21.73			20.48		
Average Percent Original Oil Saturation	22.42			35.00			55.01			49.55		
Average Percent Oil Recovery	5.72			10.37			31.93			26.14		
Average Percent Residual Oil Saturation	16.70			24.63			23.08			23.41		
Average Percent Residual Water Saturation	71.51			65.03			70.60			68.82		
Average Percent Total Residual Fluid Saturation	88.21			89.66			93.68			92.23		
Average Original Oil Content, Bbls./A. Ft.	271.			489.			929.			803.		
Average Oil Recovery, Bbls./A. Ft.	68.			150.			546.			439.		
Average Residual Oil Content, Bbls./A. Ft.	203.			339.			383.			364.		
Total Original Oil Content, Bbls./Acre	774.			1,857.			7,903.			9,119.		
Total Oil Recovery, Bbls./Acre	195.			570.			4,643.			4,985.		
Total Residual Oil Content, Bbls./Acre	579.			1,287.			3,260.			4,134.		
Average Effective Permeability, Millidarcys	13.67			6.00			6.18			5.90		
Average Initial Fluid Production Pressure, p.s.i.	8.3			17.5			11.0			13.7		

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