

22-17-22E

June 29, 1949

Deep Rock Oil Corporation
Tulsa, Oklahoma

Attention: Mr. T. F. Lavry

Gentlemen:

Enclosed herewith is the report of the partial analysis of the No. 6 Baker barrel core taken from the Humphrey Lease, Well No. U-1, Miami County, Kansas, and submitted to our laboratory on June 14, 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

GLP:bb

c.c. to Mr. Neil Henderson

Humphrey U-1

DEEP ROCK OIL CORPORATION

CORE ANALYSIS REPORT

HUMPHREY LEASE

WELL NO. U-1

MIAMI COUNTY, KANSAS

OIL FIELD RESEARCH LABORATORIES

CHANUTE, KANSAS

JUNE 30, 1949

Oil Field Research Laboratories

GENERAL INFORMATION & SUMMARY

Company Deep Rock Oil Corporation Lease Rumphrey Well No. U-1

Location _____

Section 22 Twp 17 Rge 22 County Miami State Kansas

Name of Sand	<u>Peru</u>
Top of Core	<u>325.00</u>
Bottom of Core	<u>349.30</u>
Top of Sand <u>Pay</u>	<u>335.90</u>
Bottom of Sand	<u>348.30</u>
Total Feet of Permeable Sand	<u>9.28</u>

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

Average <u>Effective</u> Permeability, Millidarcys	<u>5.21</u>
Average Percent Porosity	<u>19.12</u>
Average Percent Oil Saturation	<u>46.65</u>
Average Percent Water Saturation	<u>44.14</u>
Average Oil Content, Bbls./A. Ft.	<u>692.</u>
Total Oil Content, Bbls./Acre	<u>6,852.</u>
Average Percent Oil Recovery by Laboratory Flooding Tests	<u>18.94</u>
Average Oil Recovery by Laboratory Flooding Tests, Bbls./A. Ft.	<u>279.</u>
Total Oil Recovery by Laboratory Flooding Tests, Bbls./Acre	<u>2,587.</u>
Total Calculated Oil Recovery, Bbls./Acre	<u>2,250.</u>

Packer Setting, Feet

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.

338.0

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LOG

Company Deep Rock Oil Corporation Lease Humphrey Well No. U-1

Depth Interval, Description
Feet

325.00 - 325.30 - Soft light brown fine grained micaceous sandstone.
325.30 - 325.43 - Laminated sandstone and shale.
325.43 - 326.56 - Soft light brown fine grained laminated micaceous sandstone.
326.56 - 327.15 - Laminated sandstone and shale.
327.15 - 327.58 - Soft light brown fine grained laminated micaceous sandstone.
327.58 - 328.00 - Soft light brown fine grained micaceous sandstone.
328.00 - 329.60 - Loss.
329.60 - 329.90 - Laminated sandstone and shale.
329.90 - 330.10 - Gray sandy shale.
330.10 - 331.40 - Limestone.
331.40 - 331.85 - Brown fine grained laminated micaceous calcareous sandstone.
331.85 - 332.70 - Laminated sandstone and shale.
332.70 - 334.15 - Laminated shale and sandstone.
334.15 - 334.80 - Laminated sandstone and shale.
334.80 - 335.90 - Limestone.
335.90 - 336.80 - Brown fine grained laminated micaceous calcareous sandstone.
336.80 - 337.60 - Sandy limestone.
337.60 - 337.90 - Brown fine grained micaceous calcareous sandstone.
337.90 - 338.75 - Brown fine grained laminated micaceous calcareous sandstone.
338.75 - 340.67 - Dark brown fine grained slightly laminated micaceous calcareous sandstone.

340.67 - 345.68 - Dark brown fine grained micaceous calcareous sandstone.

345.68 - 348.30 - Brown fine grained slightly laminated micaceous sandstone.

348.30 - 349.30 - Gray shale.

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SHOT RECOMMENDATION

Company	<u>Deen Rock Oil Corporation</u>	Lease	<u>Humphrey</u>	Well No.	<u>U-1</u>
Depth Interval, <u>Feet</u>	<u>Feet of Sand</u>	Size of Shell <u>Inches</u>	<u>Gts./Ft.</u>	<u>Total Gts.</u>	
343.00 - 347.00	4.0	4 $\frac{1}{2}$	3.1	12.4	

Recommended Packer Setting - 338.00 feet
Note: Plug hole back to 348.00 feet.

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RESULTS OF SATURATION TESTS

TABLE III

Company Deep Rock Oil Corporation Lease Rumphrey Well No. U-1

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-2	331.72	17.5	26.9	-	-	365	0.45	0.45	164
F-5	336.02	15.5	33.6	-	-	405	0.90	1.35	364
F-6	337.75	16.3	65.2	-	-	824	1.15	2.50	946
F-7	339.38	22.2	52.9	-	-	910	0.95	3.45	865
8	340.15	21.1	47.2	42.5	89.7	772	0.87	4.32	672
F-9	341.35	19.7	40.5	-	-	619	1.13	5.45	699
F-10	342.26	18.0	29.9	-	-	419	0.90	6.35	377
F-11	343.25	18.1	57.0	-	-	802	1.00	7.35	802
F-12	344.15	20.0	51.4	-	-	799	0.90	8.25	719
F-13	345.06	19.2	52.2	-	-	779	1.08	9.33	840
14	345.95	19.8	42.2	45.3	87.5	649	0.62	9.95	402
15	346.75	20.5	36.0	45.0	81.0	574	0.90	10.85	515
F-16	347.88	14.5	38.4	-	-	432	1.10	11.95	475
							Total	- - - -	7,840

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SUMMARY OF SATURATION TESTS

TABLE IV

Company Deep Rock Oil Corporation Lease Humphrey Well No. U-1

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
335.90-341.80	5.00	18.86	48.44	42.53	709	3,546
341.80-348.30	6.50	18.42	44.22	45.07	633	4,130
338.00-348.00	9.90	19.12	46.65	44.14	692	4,852

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RESULTS OF LABORATORY FLOODING TESTS

TABLE V

Company Deep Rock Oil Corporation Lease Humphrey Well No. U-1

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.			
2	331.72	17.5	26.9	365	0.0	0	26.9	70.2	365	2	Imp.	50
5	336.02	15.5	33.6	405	6.8	82	26.8	63.2	323	67	2.74	25
6	337.75	16.3	65.2	824	40.6	513	24.8	70.0	311	207	5.44	15
7	339.38	22.2	52.9	910	21.1	363	31.8	64.7	547	100	2.48	15
8	340.15	21.5	47.2	788	19.3	322	27.9	64.8	466	63	1.86	20
9	341.35	19.7	40.5	619	10.7	164	29.8	63.9	455	101	6.94	10
10	342.26	18.0	29.9	419	6.9	97	25.0	73.0	322	18	0.665	25
11	343.25	18.1	57.0	802	27.2	383	29.8	69.5	419	89	10.55	10
12	344.15	20.0	51.4	799	26.4	411	25.0	71.5	388	82	13.25	5
13	345.06	19.2	52.2	779	22.4	334	29.8	69.3	445	207	5.75	10
15	346.75	19.5	34.1	516	7.9	119	26.2	69.4	297	41	1.22	25
16	347.88	14.5	38.4	432	9.7	109	28.7	59.5	323	121	2.56	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.

Oil Field Research Laboratories

SUMMARY OF LABORATORY FLOODING TESTS

TABLE VI

Company	Deep Rock Oil Corporation			Lease	Humphrey			Well No.	U-1		
Depth Interval, Feet	335.90 - 341.80			341.80 - 348.30			338.00 - 348.00				
Feet of Core Analyzed	5.00			5.88			9.28				
Average Percent Porosity	18.94			18.15			19.46				
Average Percent Original Oil Saturation	48.40			44.14			46.77				
Average Percent Oil Recovery	20.32			16.87			18.94				
Average Percent Residual Oil Saturation	28.08			27.27			27.83				
Average Percent Residual Water Saturation	65.48			68.38			67.42				
Average Percent Total Residual Fluid Saturation	93.56			95.65			95.25				
Average Original Oil Content, Bbls./A. Ft.	713.			626.			691.				
Average Oil Recovery, Bbls./A. Ft.	295.			243.			279.				
Average Residual Oil Content, Bbls./A. Ft.	418.			383.			412.				
Total Original Oil Content, Bbls./Acre	3,561.			3,678.			6,413.				
Total Oil Recovery, Bbls./Acre	1,473.			1,427.			2,587.				
Total Residual Oil Content, Bbls./Acre	2,088.			2,251.			3,826.				
Average Effective Permeability, Millidarcys	4.11			5.61			5.21				
Average Initial Fluid Production Pressure, p.s.i.	17.0			15.9			15.5				

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