

Ewing H-16 13, 21 20 E

May 23, 1949

Deep Rock Oil Corporation  
Tulsa, Oklahoma

Attention: Mr. F. F. Laury

Gentlemen:

Enclosed herewith is the report of the partial analysis of the Keystone barrel core taken from the Ewing Lease, Well No. H-16, Anderson County, Kansas, and submitted to our laboratory on May 7, 1949.

In calculating the recovery for the sand within the vicinity of this well, no allowance was made for oil lost during coring. The principle drawback of this core is the fact that it contains only 5.20 feet of good floodable sand.

Very truly yours,

OIL FIELD RESEARCH LABORATORIES

Carl L. Fats

CLP:bb

c.c. to Mr. Neil Henderson  
Mr. Jack McQueeney



DEWE ROCK OIL CORPORATION

CORE ANALYSIS REPORT

EWING LEASE

WELL NO. H-16

ANDERSON COUNTY, KANSAS

OIL FIELD RESEARCH LABORATORIES

CHENITE, KANSAS

MAY 21, 1949

# Oil Field Research Laboratories

## GENERAL INFORMATION & SUMMARY

Company Deep Rock Oil Corporation Lease Ewing Well No. H-16

Location 2900' West of East Line & 1150' North of South Line,

Section 13 Twp. 21 Rge. 20 County Anderson State Kansas

Name of Sand	Squirrel
Top of Core	645.40
Bottom of Core	689.90
Top of Sand	667.22
Bottom of Sand	684.15
Total Feet of Permeable Sand <u>Analysed</u>	7.40

Distribution of Permeable Sand:  
Permeability Range  
Millidarcys

	Feet	Cum. Ft.
0 - 4	0.75	0.75
4 - 8	2.15	3.90
8 - 12	1.55	5.45
12 - 20	0.95	6.40
20 & above	1.00	7.40

Average Permeability, Millidarcys	10.42
Average Percent Porosity	17.68
Average Percent Oil Saturation	33.11
Average Percent Water Saturation	57.50
Average Oil Content, Bbls./A. Ft.	467.
Total Oil Content, Bbls./Acre	5,510.
Average Percent Oil Recovery by Laboratory Flooding Tests	6.96
Average Oil Recovery by Laboratory Flooding Tests, Bbls./A. Ft.	105.
Total Oil Recovery by Laboratory Flooding Tests, Bbls./Acre	583.
Total Calculated Oil Recovery, Bbls./Acre	850.
Packer Setting, Feet	668.0

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 cement plug.

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LOG

Company Deep Rock Oil Corporation Lease Swing Well No. H-16

<u>Depth Interval,</u> <u>Feet</u>	<u>Description</u>
645.40 - 667.22	- Gray shale.
667.22 - 670.50	- Brown fine grained micaceous sandstone.
670.50 - 672.40	- Gray sandy shale.
672.40 - 672.75	- Brown fine grained micaceous sandstone.
672.75 - 673.10	- Light brown fine grained laminated micaceous sandstone.
673.10 - 673.50	- Brown fine grained micaceous sandstone.
673.50 - 674.75	- Gray sandy shale.
674.75 - 675.10	- Brown fine grained micaceous sandstone.
675.10 - 676.90	- Brown fine grained finely laminated carbonaceous sandstone.
676.90 - 677.35	- Brown fine grained micaceous sandstone.
677.35 - 677.60	- Gray sandy shale.
677.60 - 679.10	- Brown fine grained micaceous sandstone.
679.10 - 679.90	- Finely laminated sandstone and shale.
679.90 - 680.50	- Gray sandy shale.
680.50 - 684.15	- Light brown finely laminated sandstone and shale.
684.15 - 685.80	- Gray shale.
685.80 - 689.90	- Gray sandy shale.

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SHOT RECOMMENDATION

Company Deep Rock Oil Corporation Lease Ewing Well No. H-16

<u>Depth Interval,</u> <u>Feet</u>	<u>Feet of</u> <u>Sand</u>	<u>Size of Shell</u> <u>Inches</u>	<u>Gts./Ft.</u>	<u>Total Gts.</u>
673.0 - 684.5	11.5	4.0	2.5	28.75

Recommended Packer Setting - 668.0 feet.  
Note: Plug hole back to 684.5 feet.

**Oil Field Research Laboratories**  
**RESULTS OF PERMEABILITY TESTS**  
**TABLE I**

Company Deep Rock Oil Corporation Lease Spring Well No. M-16

Sample No.	Depth, Feet	Permeability Millidarcys	Feet of Core		Permeability Capacity Ft. x Md.
			Ft.	Cum. Ft.	
1	667.25	2.1	0.18	0.18	0.38
2	667.53	11.	0.60	0.78	6.60
3	668.34	5.8	0.70	1.48	4.06
4	669.25	26.	0.63	2.13	16.90
5	669.43	17.	0.45	2.58	7.65
6	669.99	10.	0.20	2.78	2.00
7	670.04	13.	0.50	3.28	6.50
8	671.45	Imp.	0.50	3.78	0.00
9	671.94	Imp.	0.70	4.48	0.00
10	672.80	Imp.	0.15	4.63	0.00
11	673.03	6.9	0.20	4.83	1.35
12	673.83	7.2	0.60	5.43	4.32
13	674.36	Imp.	0.40	5.83	0.00
14	674.70	4.1	0.25	6.08	1.03
15	675.15	9.5	0.50	6.58	4.75
16	675.90	Imp.	0.60	7.18	0.00
17	676.50	7.2	0.70	7.88	5.04
18	677.40	3.0	0.25	8.13	0.75
19	677.64	9.4	0.30	8.43	2.82
20	678.15	25.	0.35	8.78	8.75
21	678.35	6.4	0.45	9.23	2.88
22	678.90	6.7	0.25	9.48	1.68
23	679.00	9.7	0.15	9.63	1.46
24	679.17	9.0	0.40	10.03	3.60
25	680.55	3.1	0.50	10.53	1.55
26	681.25	Imp.	0.35	10.88	0.00
27	681.50	Imp.	0.45	11.33	0.00
28	682.14	Imp.	0.55	11.88	0.00
29	682.59	Broken	0.30	12.18	-

## Oil Field Research Laboratories

### SUMMARY OF PERMEABILITY TESTS

TABLE II

Company Deep Rock Oil Corporation Lease Swi. Well No. H-16

Depth Interval Feet	Feet of Core Analyzed	Average Permeability, Millidarcys	Permeability Capacity, Ft. x Md.
667.22 - 670.50	3.28	13.44	44.09
672.40 - 679.90	4.40	8.74	38.46
680.50 - 684.15	0.50	3.10	1.55
668.00 - 665.50	7.40	10.42	77.12

**Oil Field Research Laboratories**  
**RESULTS OF SATURATION TESTS**

TABLE III

Company Deep Rock Oil Corporation Lease Living Well No. H-16

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.	
F-25	667.80	19.5	41.4	-	626	1.06	1.06	676
F-26	668.95	17.7	27.4	43.5	376	0.95	2.03	357
F-27	669.70	20.5	45.2	-	720	0.75	2.78	540
F-28	670.30	21.2	32.6	72.7	639	0.50	3.28	320
F-30	672.52	20.5	43.7	-	696	0.55	3.83	244
F-31	673.20	15.9	29.0	64.1	313	0.40	4.23	125
F-33	674.95	19.1	19.6	-	290	0.35	4.58	102
F-34	676.20	15.0	13.6	83.3	101	1.80	6.38	290
F-35	677.23	20.3	30.5	44.0	481	0.45	6.83	216
F-36	677.90	20.6	45.2	-	729	0.65	7.48	474
F-37	678.60	19.3	50.6	36.4	761	0.65	8.13	648
F-38	679.80	17.0	42.2	-	558	0.80	8.93	446
F-40	681.00	16.6	38.3	-	421	0.85	9.78	358
F-41	681.80	16.4	27.0	-	344	0.95	10.73	327
F-42	682.93	16.1	24.6	-	309	0.85	11.58	262
F-43	583.60	17.1	46.2	-	613	1.00	12.58	613
							Total - - -	5,998

**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
<b>Deep Rock Oil Corporation</b>	<b>Wink</b>	<b>N-16</b>	667.22-670.50	3.28	19.45	37.80	40.21	577	1,893
			672.40-679.90	5.65	17.56	31.66	64.66	452	2,545
			680.50-684.15	3.65	16.63	32.96	-	427	1,560
			668.00-685.50	11.80	17.68	33.11	57.50	467	5,510

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RESULTS OF LABORATORY

TABLE

Company Deep Rock Oil Corporation Lease 371

Sample No.	Depth, Feet	Effective Porosity Percent	Original Oil Saturation		Oil Recovery	
			Percent	Bbls./A. Ft.	Percent	Bbls./A. Ft.
25	667.60	19.8	41.4	626	15.2	230
27	669.70	20.5	45.2	720	16.2	242
28	670.30	21.5	38.9	650	2.8	47
30	672.52	20.5	43.7	696	5.4	66
33	674.95	19.1	19.6	290	2.9	43
36	677.90	20.8	45.2	729	11.6	191
38	679.80	17.0	42.2	558	3.9	52
40	681.00	16.8	32.3	421	0.0	0
42	682.93	16.1	24.6	309	0.6	7
43	683.60	17.1	46.2	613	7.0	93

Notes: -cc- cubic centimeter  
\*Volume of water of maximum oil

\*\*Determined by gas which still content

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ORY FLOODING TESTS

LE V

Well No. **H-16**

Residual Saturation			Volume of Water Recovered cc*	** Effective Permeability, Millidarcys	Initial Fluid Production Pressure Lbs./Sq. In.
% Oil	% Water	Bbls./A. Ft.			
26.2	71.0	396	55	1.30	15
30.0	67.9	478	42	1.67	20
36.1	62.0	603	32	1.49	25
38.3	59.7	610	38	1.31	25
16.7	74.6	247	7	0.715	30
33.4	65.2	538	20	0.678	20
38.3	57.0	506	2	0.116	45
32.3	66.9	421	23	0.367	25
24.2	73.7	302	0	0.001	50
39.2	58.8	520	27	0.65	20

er  
recovered at the time  
covery.

aining water through sample  
ains residual oil.

# Oil Field Research Laboratories

## SUMMARY OF LABORATORY FLOODING TESTS

TABLE VI

Company	Lease	Swing	Well No.
<b>Deep Rock Oil Corporation</b>	<b>667.22 - 670.50</b>	<b>672.40 - 679.90</b>	<b>682.30 - 684.15</b>
Depth Interval, Feet	2.33	2.15	1.85
Feet of Core Analyzed	20.26	19.07	16.65
Average Percent Porosity	42.10	39.67	36.37
Average Percent Original Oil Saturation	12.53	6.37	4.05
Average Percent Oil Recovery	29.57	33.30	32.32
Average Percent Residual Oil Saturation	68.03	62.79	65.62
Average Percent Residual Water Saturation	97.60	96.09	97.94
Average Percent Total Residual Fluid Saturation	661.	550.	473.
Average Original Oil Content, Bbls./A. Ft.	194.	98.	54.
Average Oil Recovery, Bbls./A. Ft.	467.	482.	419.
Average Residual Oil Content, Bbls./A. Ft.	1,540.	1,267.	875.
Total Original Oil Content, Bbls./Acre	452.	211.	99.
Total Oil Recovery, Bbls./Acre	1,088.	1,056.	776.
Total Residual Oil Content, Bbls./Acre	1.52	0.56	0.35
Average Effective Permeability, Millidarcys	20.0	30.0	35.0
Average Initial Fluid Production Pressure, p.s.i.			27.8

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