● CORE ANALYSIS ● WATER REPRESSURING ENGINEERING ● WATER ANALYSIS ● FLOODING WATER TREATMENT ● SURVEYING

OILFIELD RESEARCH LABORATORIES

- REGISTERED ENGINEERS -

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July 21, 1961

Schermerhorn Oil Corporation
P.O. Box 287
Tulsa, Oklahoma

Gentlemen:

Enclosed herewith is the report of the analysis of the Rotary core taken from the Eklund-Wiggans Lease, Well No. G-29, Wilson County, Kansas, and submitted to our laboratory on July 14, 1961.

Your business is greatly appreciated.

Very truly yours,

OILFIELD RESEARCH LABORATORIES

Carl L. Pate

Carl L. Pate

CLP:rf

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GENERAL INFORMATION & SUMMARY

Company Schermerhorn Oil Corp. Lease Eklund-Wiggans Well No. G-29

Location 1340' South of N. line and 330' West of E. line, NW¼

Section 17 Twp. 28S Rge. 17E County Wilson State Kansas

Name of Sand	Bartlesville
Top of Core	971.0
Bottom of Core	991.0
Top of Sand (Received)	971.0
Bottom of Pay Sand	989.6
Total Feet of Permeable Sand	20.0
Total Feet of Floodable Sand	

Distribution of Permeable Sand: Permeability Range Millidarcys	Feet	Cum. Ft.
0 - 20	3.4	3.4
20 - 50	5.0	8.4
50 - 100	4.0	12.4
100 - 150	3.6	16.0
150 & above	4.0	20.0

Average Permeability Millidarcys	90.0
Average Percent Porosity	19.4
Average Percent Oil Saturation	40.3
Average Percent Water Saturation	47.2
Average Oil Content, Bbls./A. Ft.	597.
Total Oil Content, Bbls./Acre	11,932.
Average Percent Oil Recovery by Laboratory Flooding Tests	10.3
Average Oil Recovery by Laboratory Flooding Tests, Bbls./A. Ft.	155.
Total Oil Recovery by Laboratory Flooding Tests, Bbls./Acre	2,727.
Total Calculated Oil Recovery, Bbls./Acre	2,886.
Packer Setting, Feet	
Viscosity, Centipoises @	
A. P. I. Gravity, degrees @ 60 °F	
Elevation, Feet	

Water was used as a circulating fluid in the coring of the sand in this well.

This core was sampled and sealed in tin cans by a representative of Oilfield Research Laboratories.

FORMATION CORED

The detailed log of the formation cored is as follows:

Depth Interval, Feet	Description
971.0 - 989.0	Brown slightly laminated shaley sandstone.
989.0 - 991.0	Brown to dark laminated shaley sandstone.

Coring was started at a depth of 971.0 feet in brown slightly laminated shaley sandstone and completed at 991.0 feet in brown to dark laminated shaley sandstone. This core shows a total of 20.0 feet of sandstone. For the most part, the pay is made up of brown slightly laminated shaley sandstone.

All depth measurements were taken from ground level.

PERMEABILITY

For the sake of distribution, the core was divided into two sections. The weighted average permeability of the upper and lower sections is 160.6 and 25.7 millidarcys respectively; the overall average being 90.5 (See Table III). By observing the data given on the coregraph, it is noticeable that the sand has a very irregular permeability profile. The permeability of the sand varies from 2.5 to a maximum of 435. millidarcys.

PERCENT SATURATION & OIL CONTENT

The sand in this core shows a good weighted average percent oil saturation, namely, 40.3. The weighted average percent oil saturation of the upper and lower sections is 40.4 and 40.2 respectively. The weighted average percent water saturation of both sections sections is 47.2 (See Table III). This gives an overall weighted average total fluid saturation of 87.5 percent.

Percent porosity	19.4
Performance factor	0.55

This core shows a rather clean sand section having a good oil saturation, a fairly high water saturation and a good permeability. No difficulty should be encountered in forcing the sand to take an ample volume of water.

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RESULTS OF SATURATION & PERMEABILITY TESTS

TABLE 1-B

Company Sehermerhorn Oil Corp. Lease Eklund-Wiggans Well No. G-29

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.		
1	971.1	17.5	35	62	97	475	105.	0.6	0.6	285	63.00
2	972.1	17.9	54	42	96	750	138.	1.0	1.6	750	138.00
3	973.1	22.1	44	44	88	754	134.	1.0	2.6	754	134.00
4	974.1	19.5	43	30	73	651	105.	1.0	3.6	651	105.00
5	975.1	17.8	51	35	86	704	175.	1.0	4.6	704	175.00
6	976.1	16.5	40	45	85	512	435.	1.0	5.6	512	435.00
7	977.1	21.9	32	57	89	544	80.	1.0	6.6	544	80.00
8	978.1	19.0	35	50	85	516	161.	1.0	7.6	516	161.00
9	979.1	22.5	38	50	88	663	99.	1.0	8.6	663	99.00
10	980.1	22.7	30	62	92	528	152.	1.0	9.6	528	152.00
11	981.1	19.7	29	60	89	444	45.	1.0	10.6	444	45.00
12	982.1	17.2	31	54	85	414	11.	1.0	11.6	414	11.00
13	983.1	18.1	52	35	87	730	14.	1.0	12.6	730	14.00
14	984.1	19.7	33	54	87	504	91.	1.0	13.6	504	19.00
15	985.1	18.4	28	58	86	400	33.	1.0	14.6	400	33.00
16	986.1	19.8	34	51	85	522	25.	1.0	15.6	522	25.00
17	987.1	18.7	50	38	88	726	55.	1.0	16.6	726	55.00
18	988.1	18.4	50	38	88	714	25.	1.4	18.0	1,000	35.00
19	989.1	19.2	42	49	91	626	45.	0.6	18.6	376	27.00
20	990.1	17.8	47	42	89	649	2.5	1.4	20.0	909	3.50

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SUMMARY OF PERMEABILITY & SATURATION TESTS

TABLE III - B

Company Schermerhorn Oil Corp. **Lease** Eklund-Wiggans **Well No.** G-29

Depth Interval, Feet	Feet of Core Analyzed	Average Permeability, Millidarcys	Permeability Capacity Ft. x Md.
971.0 - 980.6	9.6	160.6	1,542.00
980.6 - 991.0	10.4	25.7	267.50
971.0 - 991.0	20.0	90.5	1,809.50

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
971.0 - 980.6	9.6	19.8	40.4	47.2	616	5,907
980.6 - 991.0	10.4	18.6	40.2	47.2	580	6,025
971.0 - 991.0	20.0	19.4	40.3	47.2	597	11,932

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RESULTS OF LABORATORY FLOODING TESTS

TABLE IV

Company Schermerhorn Oil Corp. Lease Eklund-Wiggans Well No. G-29

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.
			%	Bbls./A. Ft.	%	Bbls./A. Ft.	% Oil	% Water	Bbls./A. Ft.			
1	971.1	17.2	35	477	8	117	27	70	360	75	1.55	20
2	972.1	18.2	54	763	25	353	29	68	410	157	3.76	20
3	973.1	21.9	44	748	21	357	23	67	391	347	21.75	10
4	974.1	20.0	43	667	18	279	25	65	388	190	6.94	20
5	975.1	17.9	51	709	21	292	30	66	417	242	20.40	10
6	976.1	16.8	40	521	7	91	33	59	430	86	2.37	20
7	977.1	21.3	32	529	7	116	25	67	413	178	4.25	10
8	978.1	19.3	35	524	5	75	30	61	449	37	0.898	25
9	979.1	23.0	38	677	8	142	30	64	535	195	18.90	10
10	980.1	22.3	30	519	4	69	26	69	450	232	8.98	10
11	981.1	20.3	29	456	3	47	26	68	409	236	14.00	10
12	982.1	17.5	31	421	1	14	30	64	407	15	0.408	30
13	983.1	17.6	49	669	0	0	49	45	669	0	Imp.	50
14	984.1	20.1	33	515	5	78	28	66	437	136	3.17	10
15	985.1	18.2	28	395	1	14	27	63	381	150	3.17	10
16	986.1	19.2	34	506	7	104	27	63	402	20	0.490	20
17	987.1	18.4	50	713	11	157	39	53	556	3	0.163	45
18	988.1	18.8	50	729	22	321	28	66	408	27	0.735	25
19	989.1	20.0	42	652	2	31	40	54	621	36	0.816	25
20	990.1	17.2	43	574	0	0	43	50	574	0	Imp.	-

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.

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SUMMARY OF LABORATORY FLOODING TESTS

TABLE V

Company Schermerhorn Oil Corp. Lease Eklund-Wiggans Well No. G-29

Depth Interval, Feet	971.0 - 980.6	980.6 - 991.0	971.0 - 991.0
Feet of Core Analyzed	9.6	8.0	17.6
Average Percent Porosity	19.9	18.9	19.4
Average Percent Original Oil Saturation	40.4	37.5	39.1
Average Percent Oil Recovery	12.6	7.5	10.3
Average Percent Residual Oil Saturation	27.8	30.0	28.8
Average Percent Residual Water Saturation	68.7	62.7	65.9
Average Percent Total Residual Fluid Saturation	96.5	92.7	94.7
Average Original Oil Content, Bbls./A. Ft.	614.	552.	587.
Average Oil Recovery, Bbls./A. Ft.	192.	110.	155.
Average Residual Oil Content, Bbls./A. Ft.	422.	442.	432.
Total Original Oil Content, Bbls./Acre	5,899	4,419.	10,318.
Total Oil Recovery, Bbls./Acre	1,844.	883.	2,727.
Total Residual Oil Content, Bbls./Acre	4,055.	3,536.	7,591.
Average Effective Permeability, Millidarcys	10.13	1.29	6.11
Average Initial Fluid Production Pressure, p.s.i.	15.3	21.9	18.3

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