

EARLOUGHER ENGINEERING

PETROLEUM CONSULTANTS - CORE ANALYSES

3316 EAST 21ST STREET

TULSA, OKLAHOMA

September 30, 1953

Schermerhorn Oil Corporation
714 First National Building
Tulsa, Oklahoma

Attention - Mr. H. A. Sherman

Re - Core Analysis
North Unit Well No. 0-10
Sec. 4, T. 21-S., R. 21-E.
Anderson County, Kansas

Gentlemen:

Attached are results of analysis, together with profile and summary,
covering core received from your above well.

Yours very truly

EARLOUGHER ENGINEERING



R. C. Earlougher, Engineer

JMR s

Encl - 1

cc - Garnett Office

EARLOUGH ENGINEERING
CORE SUMMARY

Company Schermerhorn Oil Corporation Lease North Unit Well No. 0-10
Location 860 feet East; 2170 feet North of Center
Section 4 Twp. 21-S. Rge. 21-E. County Anderson State Kansas
Formation Cored Bartlesville Type Core No. 6 Baker
Date Cored 9-17-53 Date Shot 9-17-53 Coring Fluid Water

Depths:	Elevation, ground	993.0 feet
	Started coring, depleted oil sand,	
	S. L. M.	721.0 "
	Top of oil pay sand	729.6 "
	Bottom of oil pay sand	739.6 "
	Net feet of depleted oil sand cored	8.6
	Net feet of oil pay sand	10.0
	Bottom of core, very carbonaceous	
	sand	740.0 "
	Total feet cored	19.0
	Feet analyzed	18.6

Shot Record:

Set Packer _____ Feet

Depth, Feet		Feet	Shell Diameter	Quarts Per Foot	Quarts Total
From	To				

Completion Data:

Hrs. well stood after coring _____; Feet Fluid in Hole _____ (Oil _____ Water _____)

Clean-out time, hrs. _____; Initial production, bbls. day _____ (Oil _____ Water _____)

Remarks: The Bartlesville section was cored with No. 6 Baker barrel from 721.0 to 740.0 feet and core sampled at the well by Earlougher Engineering. Coring was commenced in depleted oil sand and stopped in very carbonaceous sand.

Results of analyses indicate 8.6 net feet of depleted oil sand from 721.0 to 729.6 feet represented by section one and 10.0 net feet of oil pay sand from 729.6 to 739.6 feet as summarized in section two.

(Continued following page)

PERMEABILITY Average permeability of the oil pay sand is 111 millidarcys with individual values ranging from 43 to 245 millidarcys. Average permeability of section one is 146 millidarcys.

POROSITY Average porosity of the oil pay sand is 22.8 per cent and individual values range from 18.5 to 25.6 per cent. Average porosity of section one is 24.1 per cent.

PER CENT SATURATION The oil pay sand has an average oil saturation of 39 per cent and average core water saturation of 41 per cent. Average oil saturation and average core water saturation of section one is 24 and 51 per cent, respectively. It is possible that this immediate area has been somewhat affected by flood water encroachment.

OIL CONTENT Average oil content of the oil pay sand is 697 barrels per acre-foot with individual values ranging from 550 to 870 barrels per acre-foot. Average oil content of section one is 455 barrels per acre-foot.

LABORATORY FLOODING TESTS Laboratory water flooding tests indicated an average oil recovery of 343 barrels per acre-foot or a total oil recovery of 3430 barrels per acre based on 10.0 net feet of oil pay sand. Average residual oil saturation was 20 per cent and permeability to water was good.

Average indicated oil recovery from section one was 81 barrels per acre-foot and average residual oil saturation was 20 per cent.

CONCLUSIONS

1. Net feet of oil pay sand is 10.0 from 729.6 to 739.6 feet.
2. Average oil saturation is 39 per cent, average core water saturation 41 per cent and average permeability 111 millidarcys.
3. Total indicated flood pot oil recovery was 3430 barrels per acre and average residual oil saturation was 20 per cent.
4. The top 8.6 feet of sand cored from 721.0 to 729.6 feet is depleted oil sand. Average oil saturation is 24 per cent, average core water saturation 51 per cent and average permeability 146 millidarcys.
5. Estimated oil recovery by water flooding in the field is 2400 barrels per acre from the area of which this core is representative.

Respectfully submitted

EARLOUGHER ENGINEERING



J. M. Robinson, Engineer

JL s

EARLOUGHER ENGINEERING
SUMMARY OF CORE ANALYSES DATA

COMPANY Schermmerhorn Oil Corporation

LEASE North Unit

WELL NO. 0-10

Sec.	Formation	Depth, Ft.		Net Ft. of Sand	Avg. Por.	Avg. Core Saturation		Core Oil Content		Permeability		Flood Pot Residuals				Oil Recovery Bbl./Acre	
		From	To			Oil	Water	Avg. B/A. Ft.	Total B/Ac.	Avg. Md.	Capacity Ft. x Md.	Saturation		Oil Content		Diff.	Flood Pot
												Oil	Water	B/A. Ft.	B/Ac.		
1	<u>BARTLESVILLE</u> Depl oil sd	721.0	729.6	8.6	24.1	24.	51.	455.	3910.	146.	1258.	20.	78.	374.	3220.	690.	1210.
2	Oil pay sand	<u>729.6</u>	<u>739.6</u>	<u>10.0</u>	<u>22.8</u>	<u>39.</u>	<u>41.</u>	<u>697.</u>	<u>6970.</u>	<u>111.</u>	<u>1108.</u>	<u>20.</u>	<u>79.</u>	<u>354.</u>	<u>3540.</u>	<u>3430.</u>	<u>4250.</u>
1-2	Oil sand	721.0	739.6	18.6	23.4	32.	46.	584.	10880.	127.	2366.	20.	79.	364.	6760.	4120.	5460.

EARLOUGHER ENGINEERING
RESULTS OF SATURATION TESTS

COMPANY Schermerhorn Oil Corporation WELL North Unit No. 0-10

Sot. No.	Depth Feet	Porosity Per Cent	Per Cent Saturation			Avg. Oil Content Bbl./A. Ft.	Feet of Sand		Total Oil Content Bbl./Acre
			Oil	Water	Total		Ft.	Cum.	
1	722.0	23.1	25.	49.	74.	450.	1.2	1.2	540.
2	723.0	24.5	23.	52.	75.	450.	1.2	2.4	540.
3	724.0	24.5	23.	59.	82.	430.	1.1	3.5	470.
4	725.2	24.5	22.	42.	64.	420.	1.1	4.6	460.
5	726.1	24.5	23.	51.	74.	440.	1.4	6.0	620.
6	727.2	25.1	27.	49.	76.	530.	0.8	6.8	420.
7	728.2	23.5	26.	54.	80.	470.	0.7	7.5	330.
8	729.2	23.3	27.	54.	81.	480.	1.1	8.6	530.
9	730.2	25.6	30.	50.	80.	590.	1.0	9.6	590.
10	732.2	23.0	31.	49.	80.	550.	1.7	11.3	940.
F10	732.4	23.0	38.	--	--	680.	0.6	11.9	410.
11	733.2	22.4	45.	41.	86.	780.	0.6	12.5	470.
12	734.2	21.9	33.	46.	79.	560.	0.9	13.4	500.
13	735.2	25.3	37.	36.	73.	720.	1.1	14.5	790.
14	736.2	24.2	40.	34.	74.	750.	0.8	15.3	600.
15	737.2	18.5	61.	42.	103.	870.	1.0	16.3	870.
16	738.4	21.7	45.	38.	83.	750.	1.5	17.8	1130.
17	739.3	22.1	49.	34.	83.	840.	0.8	18.6	670.

EARLOUGHER ENGINEERING
RESULTS OF PERMEABILITY TESTS

COMPANY Schermerhorn Oil Corporation

WELL North Unit No. 0-10

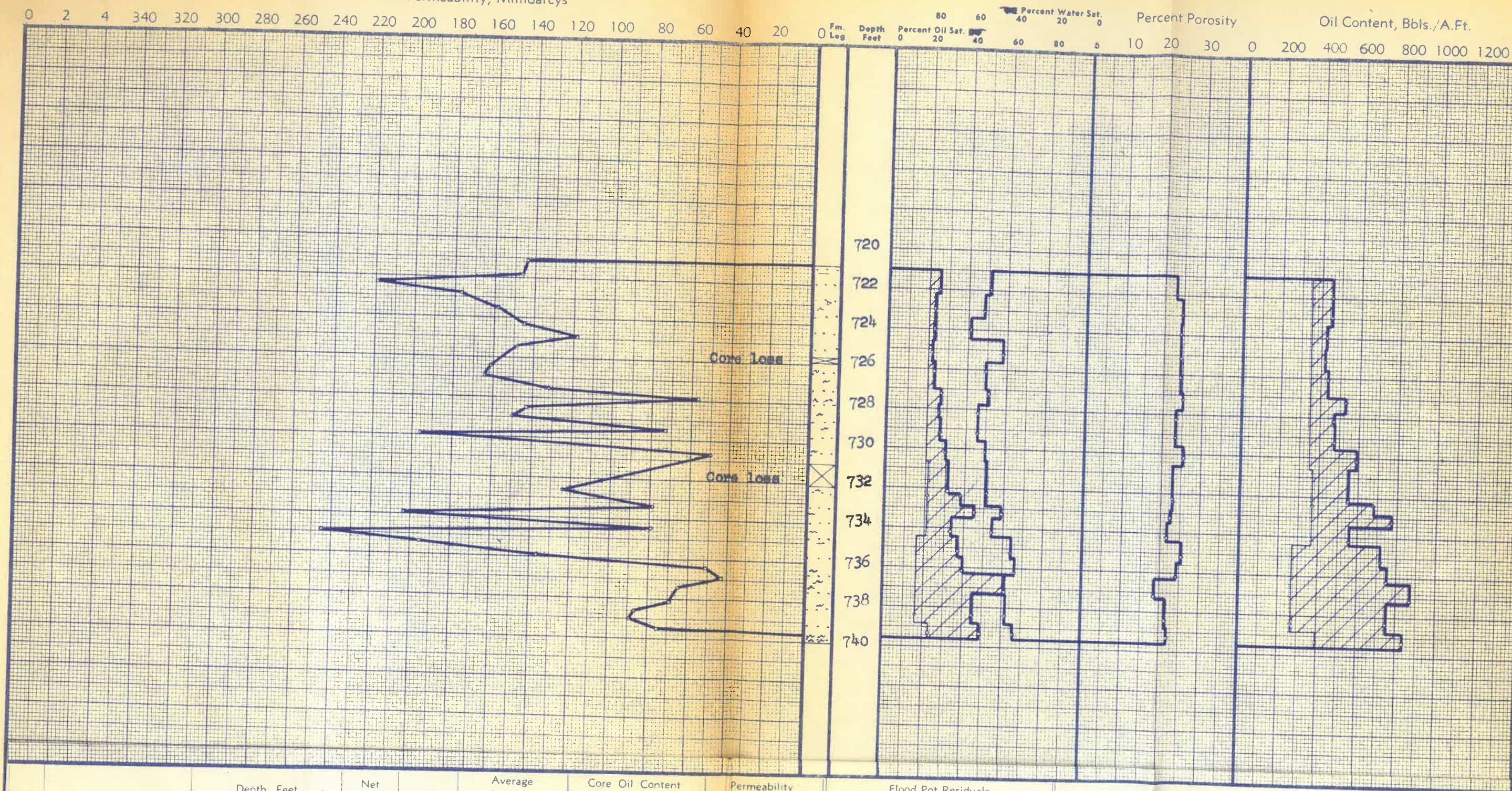
Sample No.	Depth Feet	Permeability Millidarcys	Feet of Sand		Capacity Ft. X Md.	Sample No.	Depth Feet	Permeability Millidarcys	Feet of Sand		Capacity Ft. X Md.
			Ft.	Cum. Ft.					Ft.	Cum. Ft.	
1	721.1	144.	0.4	0.4	58.	17	730.7	50.	1.7	11.3	85.
2	721.8	146.	0.8	1.2	117.	18	732.6	124.	0.6	11.9	73.
3	722.3	219.	0.6	1.8	131.	19	733.4	79.	0.6	12.5	47.
4	722.8	177.	0.6	2.4	106.	20	733.9	203.	0.5	13.0	102.
5	723.5	158.	0.5	2.9	79.	21	734.4	79.	0.4	13.4	32.
6	724.3	145.	0.6	3.5	87.	22	734.9	245.	0.6	14.0	147.
7	724.9	118.	0.6	4.1	71.	23	735.4	195.	0.5	14.5	98.
8	725.4	148.	0.5	4.6	74.	24	735.9	136.	0.8	15.3	109.
9	726.4	161.	0.8	5.4	129.	25	736.4	51.	0.2	15.5	10.
10	726.9	164.	0.6	6.0	98.	26	736.9	43.	0.8	16.3	34.
11	727.5	132.	0.8	6.8	106.	27	737.4	65.	0.7	17.0	46.
12	727.9	57.	0.2	7.0	11.	28	738.1	69.	0.4	17.4	28.
13	728.5	143.	0.5	7.5	72.	29	738.6	87.	0.4	17.8	35.
14	728.9	150.	0.5	8.0	75.	30	739.0	89.	0.4	18.2	36.
15	729.5	73.	0.6	8.6	44.	31	739.5	75.	0.4	18.6	30.
16	729.9	196.	1.0	9.6	196.						

NORTH UNIT 0-10



Recommended
Shot, Qts. Ft.

Permeability, Millidarcys



Sec.	Sand	Depth, Feet		Net Ft. of Sand	Avg. Por.	Average Core Sat.		Core Oil Content		Permeability		Flood Pot Residuals			
		From	To			Oil	Water	Avg. B./A.Ft.	Total Bbl./Ac.	Avg. Mds.	Capacity Ft. x Md.	Saturation		Oil Content	
												Oil	Water	B./A.Ft.	Bbl./Ac.
	<u>BARTLESVILLE</u>														
1	Depl. oil sand	721.0	729.6	8.6	24.1	24.	51.	455.	3,910.	146.	1,258.	20.	78.	374.	3,220.
2	Oil pay sand	729.6	739.6	10.0	22.8	39.	41.	697.	6,970.	111.	1,108.	20.	79.	354.	3,540.
1-2	Oil sand	721.0	739.6	18.6	23.4	32.	46.	584.	10,880.	127.	2,366.	20.	79.	364.	6,760.

COMPANY SCHERMERHORN OIL CORPORATION
 LEASE NORTH UNIT WELL NO. Q-10
 LOCATION 860' East; 2170' North of Center
 SEC. 4 T. 21-SR 21-E COUNTY Anderson
 STATE Kansas DATE 9-30-53
 EARLOUGHER ENGINEERING TULSA, OKLAHOMA