REPORT

FOR

BELLEAIR OIL CORPORATION

ON

BARKER WELL NO. ~~O-22~~ W-22T

For Producing Oil well

Copy Four Date 9-6-51

DARLOUGHER ENGINEERING
PETROLEUM CONSULTANTS - CORE ANALYSES
319 EAST FOURTH STREET
TULSA 3 OKLAHOMA

4 7/8 cem. @ 729

EARLOUGHER ENGINEERING
PETROLEUM CONSULTANTS - CORE ANALYSES
319 EAST FOURTH STREET
TULSA 3, OKLAHOMA

September 6, 1951

Belleair Oil Corporation
44 Wall Street
Room 1009
New York City 5, New York

Attention - Mr. George W. Cain

Re - Core Analysis
Barker Well No. 0-22
Sec. 4, T.27-S., R.18-E.
Neosho 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 f
Encl - 1
2 cc - Lloyd Burton

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CORE SUMMARY

Company Belleair Oil Corporation Lease Barker Well No. 0-22

Location 675 feet South, 830 feet West of Center of Section

Section 4 Twp. 27-S Rge. 18-E County Neosho State Kansas

Formation Cored Bartlesville Sand Type Core No. 5 Baker Barrel

Date Cored 8/16, 17, 18/51 Date Shot _____ Coring Fluid Water

Depths:

Elevation, ground	921.0 Feet
Started coring, shale	715.0 "
Depleted oil sand	724.4 - 727.2 "
Top of oil pay sand	728.4 "
Bottom of oil pay sand	754.2 "
Net feet of oil pay sand	23.0 "
Black sand	754.2 - 754.9 "
Coal	754.9 - 755.2 "
Bottom of core, shale, SIM	756.7 "
Total cored	41.7 "
Feet analyzed	29.1 "

Shot Record: Set Packer _____ Feet

Depth, Feet From	Depth, Feet To	Feet	Shell Diameter	Quarts Per Foot	Quarts Total
732	748	16	4"	2.5	40.
748	753	5	3"	1.5	7.5
					47.5

4-7/8 inch casing set and cemented at 729.0 feet.
Plug back to 754.0 feet.

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. 5 Baker barrel from 715.0 to 756.7 feet and the core sampled at the well by Earlougher Engineering. Coring was commenced and stopped in shale.

This core shows 23.0 net feet of oil sand located between depths 728.4 and 754.2 feet. Above the oil sand there are 1.9 net feet of broken, variable depleted oil sand from 724.4 to 727.2 feet. At the base of the oil pay sand there are 0.7 net feet of non-floodable black sand between depths 754.2 and 754.9 feet.

(Continued following page)

Results of analysis are summarized in five separate sections with the depleted oil sand in section 1, oil pay sand in sections 2, 3 and 4 and non-floodable black sand in section 5. Permeability and porosity increase with depth through the oil pay section.

PERMEABILITY Weighted average permeability of the oil pay sand is 127 millidarcys with individual sections 2, 3 and 4 showing average values of 61, 134 and 228 millidarcys, respectively. Individual permeability values range from 4.4 to 448 millidarcys and permeability capacity is 2,927 foot-millidarcys. Average permeability of section 1 is 11 millidarcys and of section 5, 44 millidarcys.

POROSITY Weighted average porosity of the oil pay sand is 22.6 per cent with individual sections 2, 3 and 4 showing average values of 21.2, 22.1 and 25.3 per cent, respectively. Individual porosity values range from 18.5 to 27.7 per cent. Average porosity of sections 1 and 5 is 17.9 and 18.4 per cent, respectively.

PER CENT SATURATION The oil pay sand has an average oil saturation of 29 per cent and average core water saturation of 61 per cent. The relative magnitude of these two average saturation values together with the high average total core saturation of 91 per cent may indicate the presence of an accidental water flood in this immediate area or may be due to flushing of core by the cable tool core barrel. Average oil saturation and average core water saturation of sections 1 and 5 is 28 and 53 per cent, respectively, and 49 and 51 per cent, respectively.

OIL CONTENT The oil pay sand has an average oil content of 510 barrels per acre-foot with individual values ranging from 390 to 710 barrels per acre-foot. Average oil content of sections 1 and 5 is 395 and 710 barrels per acre-foot, respectively.

LABORATORY FLOODING TESTS Laboratory water flooding tests indicated an average oil recovery of 172 barrels per acre-foot or a total oil recovery of 3,970 barrels per acre based on 23.0 net feet of oil pay sand. However, the actual average flood pot oil recovery was a relatively high 250 barrels per acre-foot compared to the average indicated oil recovery of 172 barrels per acre-foot. This variation is somewhat greater than normal and may be due in this instance to the small size flood samples obtainable from a No. 5 Baker barrel core. Average residual oil saturation was 19 per cent and permeability to water was good. Indicated average oil recovery from the depleted oil sand was only 33 barrels per acre-foot.

CONCLUSIONS

1. Net feet of oil pay sand is 23.0 located between depths 728.4 and 754.2 feet.

2. Average oil saturation is 29 per cent, average core water saturation 61 per cent and average permeability 127 millidarcys.

3. Total indicated flood pot oil recovery was 3,970 barrels per acre and average residual oil saturation was 19 per cent.

4. The high water saturation may indicate the presence of an accidental water flood in this immediate area or it may be due to flushing with the cable tool core barrel.

5. Estimated oil recovery by water flooding in the field is 174 barrels per acre-foot or 4,000 barrels per acre from the area of which this core is representative.

Respectfully submitted

EARLOUGHER ENGINEERING

J M Robinson

J. M. Robinson, Engineer

JL f

Earlougher Engineering

Summary of Core Analyses Data

COMPANY Belleair Oil Corporation LEASE Barker WELL NO. 0-22

Sec.	Formation	Depth, Ft. From	Depth, Ft. To	Net Ft. of Sand	Avg. Por.	Avg. Core Saturation Oil	Avg. Core Saturation Water	Core Oil Content Avg. B/A. Ft.	Core Oil Content Total B/Ac.	Permeability Avg. Md.	Permeability Capacity Ft. x Md.	Flood Pot Residuals Saturation Oil	Flood Pot Residuals Saturation Water	Flood Pot Residuals Oil Content B/A. Ft.	Flood Pot Residuals Oil Content B/Ac.	Oil Recovery Bbl./Acre Diff.	Oil Recovery Bbl./Acre Flood Pot
	BARTLESVILLE																
1	Depl.Oil Sd.	724.4	727.2	1.9	17.9	28.	53.	395.	750	11.	20.	26.	74.	362.	690.	60.	130.
2	Oil Pay Sd.	728.4	740.7	10.0	21.2	30.	54.	487.	4,870	61.	606.	21.	75.	346.	3,460.	1,410.	2,620.
3	Oil Pay Sd.	740.7	747.8	6.8	22.1	29.	68.	490.	3,330	134.	907.	17.	83.	292.	1,990.	1,340.	1,740.
4	Oil Pay Sd.	748.0	754.2	6.2	25.3	29.	66.	571.	3,540	228.	1,414.	19.	78.	373.	2,320.	1,220.	1,390.
5	Black Sand	754.2	754.9	0.7	18.4	49.	51.	710.	500	44.	31.	--	--	--	--	--	--
2-4	Oil Pay Sand	728.4	754.2	23.0	22.6	29.	61.	510.	11,740	127.	2,927.	19.	78.	338.	7,770.	3,970.	5,750.

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RESULTS OF SATURATION TESTS

COMPANY Belleair Oil Corporation WELL Barker No. 0-22

Sat. 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	716.2	3.6	19.	81.	100.	53.	0.6*		
2	717.9	14.8	22.	67.	89.	250.	1.1*		
3	719.4	16.5	20.	61.	81.	250.	0.4*		
4	720.6	15.2	22.	62.	84.	260.	0.6*		
5	723.5	13.1	30.	70.	100.	300.	0.4*		
6	724.7	17.4	37.	46.	83.	500.	0.5	0.5	250.
7	725.0	16.5	24.	52.	76.	310.	0.2	0.7	60.
11	725.9	19.4	23.	56.	79.	350.	0.8	1.5	280.
8	726.9	16.4	32.	57.	89.	400.	0.4	1.9	160.
9	728.2	16.6	16.	55.	71.	200.	0.4*		
10	728.9	18.8	30.	45.	75.	440.	0.9	2.8	400.
12	730.4	21.8	25.	54.	79.	420.	1.0	3.8	420.
13	731.5	23.0	26.	55.	81.	460.	0.7	4.5	320.
14	732.5	23.0	28.	44.	72.	500.	0.8	5.3	400.
15	733.8	22.3	24.	43.	67.	420.	1.2	6.5	500.
16	734.9	22.1	24.	58.	82.	400.	0.7	7.2	280.
17	735.8	22.8	40.	45.	85.	710.	0.9	8.1	640.
18	736.9	21.6	32.	68.	100.	530.	0.6	8.7	320.
19	737.6	21.6	29.	69.	98.	480.	1.1	9.8	530.
20	738.7	18.5	46.	38.	84.	660.	0.9	10.7	590.
21	740.2	18.7	27.	73.	100.	390.	1.2	11.9	470.
22	741.2	23.9	25.	66.	91.	450.	0.8	12.7	360.
23	742.2	22.3	29.	63.	92.	510.	0.9	13.6	460.
25	743.1	23.3	23.	77.	100.	410.	0.9	14.5	370.
26	744.1	21.2	31.	60.	91.	510.	1.4	15.9	710.
27	745.2	20.8	36.	74.	100.	580.	0.9	16.8	520.
24	746.3	21.9	32.	63.	95.	540.	0.9	17.7	490.
28	747.2	22.1	25.	75.	100.	420.	1.0	18.7	420.
29	748.3	24.6	30.	68.	98.	570.	0.7	19.4	400.
30	749.3	24.1	30.	70.	100.	570.	0.9	20.3	510.
31	750.2	23.9	30.	70.	100.	560.	0.8	21.1	450.
32	751.2	27.7	28.	71.	99.	590.	1.1	22.2	650.
33	752.2	25.6	30.	63.	93.	590.	0.9	23.1	530.
34	753.2	25.3	27.	61.	88.	530.	1.2	24.3	640.
35	754.1	25.2	31.	56.	87.	600.	0.6	24.9	360.
36	754.8	18.4	49.	51.	100.	710.	0.7	25.6	500.

*Not included in cumulative feet of sand.

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RESULTS OF LABORATORY FLOODING TESTS

COMPANY Belleair Oil Corporation LEASE Barker WELL NO. O-22

Sample No.	Depth	Porosity	Perm. Approx.	Before Flooding 1/			Max. Press. Psi.	Water Through C.C.	Time Min.	Flood Pot Residual			Flood Pot Oil Recovery Bbl./A. Ft.	
				Oil Sat.	Water Sat.	Oil Content Bbl./A. Ft.				Oil Sat.	Water Sat.	Oil Content Bbl./A. Ft.		
F- 6	724.8	17.4	6.0	31.	--	420.	40.	748.	435.	26.	74.	350.	67.	
F-12	730.4	21.8	11.	28.	--	470.	40.	1,034.	435.	20.	71.	340.	125.	
F-17	735.8	22.8	120.	29.	--	510.	40.	628.	615.	17.	73.	290.	219.	
F-19	737.6	21.6	8.0	39.	--	660.	40.	1,462.	615.	17.	83.	280.	377.	
F-20	738.7	18.5	10.	60.	--	860.	40.	600.	555.	26.	74.	370.	493.	
F-21	740.2	18.7	35.	34.	--	490.	40.	595.	555.	27.	73.	390.	97.	
F-22	741.2	23.9	170.	29.	--	530.	40.	708.	555.	17.	81.	310.	216.	
F-23	742.2	22.3	120.	26.	--	450.	40.	1,120.	495.	17.	83.	290.	164.	
F-26	744.1	21.2	90.	36.	--	590.	40.	982.	495.	17.	83.	280.	312.	
F-24	746.3	21.9	141.	35.	--	590.	40.	790.	555.	14.	86.	240.	352.	
LF- A	746.7	21.9	154.	33.	--	560.	40.	577.	555.	19.	81.	320.	235.	
LF- B	749.9	23.9	140.	31.	--	570.	40.	1,823.	555.	19.	78.	350.	224.	

1/ Unless otherwise noted, oil content and saturation before flooding equals flood pot oil recovery plus flood pot residual.

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RESULTS OF PERMEABILITY TESTS

COMPANY Belleair Oil Corporation WELL Barker No. O-22

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	716.5	-0-	0.6*			28	741.0	186.	0.8	12.7	149.
2	717.7	0.2	1.1*			29	741.5	105.	0.3	13.0	32.
3	719.2	0.3	0.4*			30	741.9	124.	0.6	13.6	74.
4	720.4	1.7	0.6*			31	742.5	114.	0.4	14.0	46.
5	723.3	0.3	0.4*			32	742.9	126.	0.5	14.5	63.
6	724.6	8.2	0.5	0.5	4.1	33	743.4	157.	0.3	14.8	47.
7	725.1	3.6	0.2	0.7	0.7	34	743.9	76.	0.5	15.3	38.
8	725.7	21.	0.4	1.1	8.4	35	744.5	123.	0.6	15.9	74.
9	726.3	16.	0.4	1.5	6.4	36	745.0	92.	0.9	16.8	83.
10	727.0	1.0	0.4	1.9	0.4	37	746.0	129.	0.4	17.2	52.
11	728.5	4.4	0.6	2.5	2.6	38	746.5	150.	0.5	17.7	75.
12	728.7	-0-	0.1*			39	747.0	161.	0.5	18.2	81.
13	729.3	20.	0.3	2.8	6.0	40	747.6	186.	0.5	18.7	93.
14	730.7	29.	1.0	3.8	29.	41	748.5	247.	0.7	19.4	173.
15	731.3	53.	0.7	4.5	37.	42	748.9	163.	0.9	20.3	147.
16	732.2	104.	0.8	5.3	83.	43	749.6	133.	0.3	20.6	40.
17	732.8	72.	0.6	5.9	43.	44	750.0	145.	0.5	21.1	73.
18	733.6	70.	0.6	6.5	42.	45	750.5	76.	0.3	21.4	23.
19	734.6	50.	0.3	6.8	15.	46	751.0	264.	0.4	21.8	106.
20	735.0	64.	0.4	7.2	26.	47	751.5	312.	0.4	22.2	125.
21	735.6	148.	0.9	8.1	133.	48	751.9	233.	0.9	23.1	210.
22	736.7	48.	0.6	8.7	29.	49	752.4	25.	0.3	23.4	7.5
23	737.3	70.	0.6	9.3	42.	50	753.0	252.	0.5	23.9	126.
24	738.2	93.	0.5	9.8	47.	51	753.6	287.	0.4	24.3	114.
25	739.1	32.	0.9	10.7	29.	52	754.0	448.	0.6	24.9	269.
26	739.7	12.	0.5	11.2	6.0	53	754.4	74.	0.3	25.2	22.
27	740.6	51.	0.7	11.9	36.	54	754.7	22.	0.4	25.6	8.8

*Not included in cumulative feet of sand.

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