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**EARLOUGHER ENGINEERING**

PETROLEUM CONSULTANTS - CORE ANALYSES

318 EAST FOURTH STREET

TULSA 9, OKLAHOMA

March 17, 1950

Mr. J. W. Chenoweth  
11 North Victor  
Tulsa, Oklahoma

Re - Core Analysis  
Ellis Well No. 1-A  
Sec. 7, T.21-N., R.13-E.  
Tulsa County, Oklahoma

Dear Mr. Chenoweth:

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

There are 13.1 net feet of clean Wilcox sand between depths 1668.9 and 1682.0 feet. The oil saturation is low and it is believed this area has been depleted by a nearby old Wilcox well. Insofar as these analyses are indicative, little to no oil production should be expected from the Wilcox sand in the area of which this core is representative.

Sections of the Mississippi lime and Arbuckle lime also were cored but the core was not analyzed as requested. The Mississippi lime was dry but the Arbuckle lime made an estimated  $3/4$  to 1 million cubic feet of gas per day while coring from 1728.0 to 1732.5 feet.

Yours very truly

EARLOUGHER ENGINEERING



R. C. Earlougher, Engineer

JMR 1  
Orig. & 2 to Bill Field  
1 copy to R. J. Strait, Jr.

J. W. CROMBETH

ELLIS WELL NO. 1-A

DESCRIPTION OF CORES

Mississippi Lime (1370.0 - 1396.0 feet) A total of 26 feet was cored in this section. The core recovered showed no staining and was not analyzed.

Depth		Remarks
From	To	
1370.0	1370.7	Core loss
1370.7	1371.5	Dense hard black shaly limestone
1371.5	1372.0	Hard black limestone
1372.0	1372.4	Hard black shaly limestone
1372.4	1373.4	Black slickensided shale
1373.4	1376.5	Core loss
1376.5	1377.5	Blue-black shale
1377.5	1379.0	Hard dense grey limestone
1379.0	1382.1	Slightly liny blue-black shale
1382.1	1382.4	Hard dense limestone
1382.4	1389.0	Core loss
1389.0	1392.5	Drilled
1392.5	1396.0	Core loss

Mississippi Lime (1505.0 - 1514.0 feet) A total of 4.5 feet was cored in this section but the core showed no staining and was not analyzed.

Depth		Remarks
From	To	
1505.0	1506.5	Hard dense limestone
1506.5	1506.9	Hard dense limestone, pyritic, cherty
1506.9	1509.0	Core loss
1509.0	1511.5	Hard dense black limestone
1511.5	1512.0	Core loss
1512.0	1514.0	Hard dense cherty black to brown limestone

Wilcox Sand (1660.0 - 1684.0 feet)

Depth		Remarks
From	To	
1660.0	1661.0	Hard dense slightly sandy limestone
1661.0	1661.5	Core loss
1661.5	1662.0	Hard dense slightly sandy limestone
1662.0	1662.5	Core loss
1662.5	1664.1	Very hard dense limestone
1664.1	1664.5	Chattanooga shale

J. W. Chemoweth  
 Ellis Well No. 1-A  
 Description of Cores  
 (Continued)

Depth		Remarks
From	To	
1664.5	1666.0	Core loss
1666.0	1667.6	Chattanooga shale
1667.6	1668.9	Hard dense pyritic black limy sand
1668.9	1670.0	Brown coarse-grained sand
1670.0	1672.0	Drilled
1672.0	1675.1	Brown coarse-grained sand
1675.1	1676.5	Core loss
1676.5	1681.5	Brown coarse-grained sand
1681.5	1682.0	Slightly limy brown coarse-grained sand
1682.0	1683.2	Grey limy sandstone
1683.2	1683.5	Shale
1683.5	1684.0	Core loss

Arbuckle Lime (1728.0 - 1733.5 feet) The Arbuckle lime was cored from 1728.0 to 1733.5 feet. The well was flowing water by heads and making approximately 3/4 to 1 million cubic feet of gas per day during coring.

Depth		Remarks
From	To	
1728.0	1729.8	Cored hard dense limestone
1729.8	1731.5	Core loss
1731.5	1732.5	Cored hard dense limestone
1732.5	1733.5	Drilled hard dense mottled limestone
1733.5	1766.0	Drilled, probably hard dense limestone

**EARLOUGHER ENGINEERING  
SUMMARY OF CORE ANALYSIS DATA**

WELL NO. 1-A

LEASE Ellis

COMPANY J. W. Cheneveth

Sec.	Formation	Depth, Ft.		Net Ft. of Sand	Avg. Por.	Avg. Core Saturation		Core Oil Content		Permeability		Flood Pot Residuals		Oil Recovery Bbl./Ac.			
		From	To			Oil	Water	Avg. B/A. Fl.	Total B/Ac.	Avg. Md.	Capacity FL x Md.	Oil	Water	B/A. Fl.	B/Ac.	Diff.	Flood Pot
1	Wilson Sand	1668.9	1682.0	9.7	11.7	19.	31.	170.	1650.	246.	2388.	17.	73.	154.	1490.	160.	150.
1	Wilson Sand	1668.9	1682.0	9.7	11.7	19.	31.	170.	2230.	246.	3223.	17.	73.	154.	2020.	210.	200.
<p>** Includes 3.4' core loss and section drilled, probably sand.</p>																	
<p align="center"> <math display="block">\frac{5}{4} = \frac{e}{96}</math> </p>																	

**EARLOUCHER ENGINEERING**  
RESULTS OF PERMEABILITY TESTS

COMPANY J. W. Cheneveth

WELL Ellis No. 1-A

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	1669.0	168.	0.3	0.3	50.	14	1678.1	87.	0.2	6.0	17.
2	1669.2	244.	0.3	0.6	73.	15	1678.4	222.	0.2	6.2	44.
3	1669.6	133.	0.3	0.9	40.	16	1678.6	230.	0.3	6.5	69.
4	1670.0	175.	0.2	1.1	35.	17	1679.0	165.	0.4	6.9	66.
5	1672.2	124.	0.5	1.6	62.	18	1679.4	248.	0.4	7.3	99.
6	1672.8	47.	0.5	2.1	24.	19	1679.7	571.	0.3	7.6	171.
7	1673.2	111.	0.6	2.7	67.	20	1680.0	606.	0.2	7.8	121.
8	1673.7	271.	0.5	3.2	136.	21	1680.5	424.	0.6	8.4	255.
9	1674.3	456.	0.5	3.7	228.	22	1681.1	27.	0.8	9.2	22.
10	1674.7	648.	0.5	4.2	324.	23	1681.6	56.	0.2	9.4	11.
11	1676.9	18.	0.5	4.7	9.0	24	1682.0	20.	0.3	9.7	6.0
12	1677.4	441.	0.6	5.3	264.	25	1682.5	0.1	0.7*		
13	1677.7	390.	0.5	5.8	195.	26	1682.8	Imp.	0.5*		

\*Not included in cumulative feet of sand.

**EARLOUCHER ENGINEERING**  
RESULTS OF SATURATION TESTS

COMPANY J. W. Chenoweth

WELL Ellis No. 1-A

Sat. No.	Depth Feet	Porosity Per Cent	Per Cent Saturation			Avg. Oil Content Bbl./A. Ft.	Ft. of Sand		Total Oil Content Bbl./Acres
			Oil	Water	Total		Ft.	Cum.	
1	1669.1	10.6	18.	57.	75.	150.	0.6	0.6	90.
2	1669.8	11.6	19.	47.	66.	170.	0.5	1.1	85.
F-3	1672.1	10.9	28.	--	--	230.	0.5	1.6	120.
4	1672.7	9.8	41.	59.	100.	310.	0.5	2.1	160.
5	1673.4	10.2	30.	37.	67.	240.	0.6	2.7	140.
6	1674.0	13.2	12.	28.	40.	120.	0.5	3.2	60.
F-7	1674.6	14.2	22.	--	--	240.	0.5	3.7	120.
8	1674.9	14.2	13.	19.	32.	150.	0.5	4.2	75.
9	1676.7	7.3	16.	11.	27.	91.	0.5	4.7	46.
10	1677.2	12.1	15.	21.	36.	140.	0.6	5.3	84.
11	1677.8	12.2	20.	21.	41.	190.	0.5	5.8	95.
12	1678.3	10.4	23.	24.	47.	180.	0.4	6.2	72.
F-13	1678.7	11.7	13.	--	--	120.	0.7	6.9	84.
14	1679.5	13.4	15.	23.	38.	150.	0.4	7.3	60.
F-15	1679.8	14.0	10.	--	--	110.	0.5	7.8	55.
16	1680.3	14.4	11.	23.	34.	120.	0.6	8.4	72.
17	1680.9	11.5	16.	23.	39.	150.	0.8	9.2	120.
18	1681.8	10.3	27.	34.	61.	220.	0.5	9.7	110.
19	1682.6	8.2	25.	75.	100.	160.	0.7*		
20	1683.1	2.8	12.	59.	71.	26.	0.5*		

\*Not included in cumulative feet of sand.