

Complex Reservoir Analysis

Company STOLTZ, WAGNER & BROWN
Well #1 ROSE
Field PANOMA Date 5-17-78
County KEARNEY State KANSAS

WAGNER AND BROWN
ROSE NO. 1 WELL
WILDCAT
KEARNY COUNTY, KANSAS

DATE: 5/5/78
FORMATION: AS NOTED
DRLG. FLUID: WATER BASE MUD
LOCATION: SEC. 34-21S-37W

FILE NO: 3402-9324
ENGINEER: PUGH
ELEVATION: 3295' GL

* INDICATES PLUG PERM

SMP. NO.	DEPTH	PERM. TO AIR MD. MAXIMUM 90 DEG	POROSITY PERCENT	FLUID SATS. OIL WTR.	GR. DEN.	DESCRIPTION
WHOLE CORE ANALYSIS						
CHASE FORMATION						
	2645.0-48.0					SLT, DOL, CLAY
	2648.0-49.0					SH, SLTY
	2649.0-55.0					SLT, DOL, CLAY
+ 1	2655.0-56.0 ✓	20.0 ✓ 9.3	16.4 ✓	0.0 71.4 ✓ 2.68 ✓		SLT, SL/DOL, CLAY
+ 2	2656.0-57.0 ✓	296.0 ✓ 290.0	15.2 ✓	0.0 73.8 ✓ 2.75 ✓		SLT, DOL, CLAY
3	2657.0-58.0 ✓	0.3 ✓ 0.1	13.9 ✓	0.0 63.3 ✓ 2.72 ✓		DOL, SLTY, CLAY
4	2658.0-59.0 ✓	8.0 ✓ 0.3	9.6 ✓	0.0 68.3 ✓ 2.81 ✓		DOL, SLTY, SDY, CLAY
5	2659.0-60.0 ✓	<0.1 ✓ <0.1	2.3 ✓	0.0 78.6 ✓ 2.82 ✓		DOL, SDY
6	2660.0-61.0 ✓	<0.1 ✓ <0.1	3.4 ✓	0.0 74.5 ✓ 2.82 ✓		DOL, SDY, PP VGS, FOSS
7	2661.0-62.0 ✓	<0.1 ✓ <0.1	3.8 ✓	0.0 73.8 ✓ 2.84 ✓		DOL, SDY, PP VGS, ANHY
8	2662.0-63.0 ✓	12.0 ✓ 12.0	16.4 ✓	0.0 45.1 ✓ 2.75 ✓		SD, DOL, MICA
9	2663.0-64.0 ✓	12.0 ✓ 11.0	14.0 ✓	0.0 50.8 ✓ 2.73 ✓		SD, DOL, MICA
10	2664.0-65.0 ✓	24.0 ✓ 21.0	19.3 ✓	0.0 46.2 ✓ 2.71 ✓		SD, DOL, MICA
11	2665.0-66.0 ✓	0.4 ✓ 0.3	6.7 ✓	0.0 54.2 ✓ 2.83 ✓		DOL, SDY, MICA
12	2666.0-67.0 ✓	7.5 ✓ 7.5	19.6 ✓	0.0 46.8 ✓ 2.72 ✓		SD, DOL, MICA
13	2667.0-68.0 ✓	0.6 ✓ 0.4	9.0 ✓	0.0 47.5 ✓ 2.75 ✓		DOL, SDY, MICA
14	2668.0-69.0 ✓	0.2 ✓ 0.1	8.0 ✓	0.0 50.9 ✓ 2.76 ✓		DOL, SDY, MICA
15	2669.0-70.0 ✓	<0.1 ✓ <0.1	12.8 ✓	0.0 45.2 ✓ 2.71 ✓		DOL, SHY, SDY, ANHY
16	2670.0-71.0 ✓	50.0 ✓ 31.0	14.0 ✓	0.0 62.7 ✓ 2.79 ✓		SLT, DOL, SH STKS, ANHY
+ 17	2671.0-72.0 ✓	3.1 ✓ 2.7	11.4 ✓	0.0 48.6 ✓ 2.81 ✓		SLT, DOL, SH STKS, ANHY
	2672.0-76.0					SH
	2676.0-78.0					SLT, DOL
	2678.0-04.0					SLT, DOL, CLAY, ANHY

CORE LABORATORIES, INC.
Petroleum Reservoir Engineering
DALLAS, TEXAS

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WAGNER AND BROWN
ROSE NO. 1 WELL

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ENGINEER: PUGH

SMP. NO.	DEPTH	PERM. TO AIR MD. MAXIMUM 90 DEG	POROSITY PERCENT	FLUID SATS. OIL WTR.	GR. DEN.	DESCRIPTION
	2704.0-07.0 ✓					SH, LMY
18	2707.0-08.0 ✓	0.3 ✓	<0.1	14.6 ✓	0.0 68.1 ✓	2.86 ✓ DOL, SHY, SLTY, PP VGS
19	2708.0-09.0 ✓	0.9 ✓	0.8	13.3 ✓	0.0 57.3 ✓	2.77 ✓ SLT, DOL
20	2709.0-10.0 ✓	0.9 ✓	0.9	14.9 ✓	0.0 52.2 ✓	2.78 ✓ SLT, DOL, ANHY
21	2710.0-11.0 ✓	0.8 ✓	0.8	12.2 ✓	0.0 56.1 ✓	2.77 ✓ SLT, DOL, MICA
22	2711.0-12.0 ✓	0.2 ✓	0.2	10.9 ✓	0.0 51.1 ✓	2.76 ✓ SLT, DOL, MICA
23	2712.0-13.0 ✓	0.2 ✓	0.1	10.7 ✓	0.0 64.0 ✓	2.81 ✓ SLT, DOL, SH STKS, ANHY
24	2713.0-14.0 ✓	0.1 ✓	0.1	8.6 ✓	0.0 73.8 ✓	2.83 ✓ SLT, DOL, SL/SHY, ANHY
25	2714.0-15.0 ✓	<0.1 ✓	<0.1	7.3 ✓	0.0 75.5 ✓	2.87 ✓ SLT, DOL, SL/SHY, ANHY
+ 26	2715.0-16.0 ✓	37.0 ✓	19.0	10.6 ✓	0.0 55.3 ✓	2.84 ✓ DOL, SLTY, ANHY
27	2716.0-17.0 ✓	0.2 ✓	0.2	10.1 ✓	0.0 54.7 ✓	2.86 ✓ DOL, SLTY, ANHY
28	2717.0-18.0 ✓	<0.1 ✓	<0.1	8.5 ✓	0.0 70.1 ✓	2.86 ✓ DOL, SLTY, ANHY
+ 29	2718.0-19.0 ✓	17.0 ✓	7.7	15.3 ✓	0.0 73.1 ✓	2.69 ✓ SLT, DOL, SL/SHY, ANHY
30	2719.0-20.0 ✓	0.1 ✓	<0.1	8.6 ✓	0.0 75.9 ✓	2.74 ✓ SLT, SL/DOL, ANHY
31	2720.0-21.0 ✓	0.1 ✓	0.1	8.7 ✓	0.0 74.5 ✓	2.74 ✓ SLT, SL/DOL, ANHY
+ 32	2721.0-22.0 ✓	8.9 ✓	0.2	13.0 ✓	0.0 54.7 ✓	2.74 ✓ SLT, DOL
+ 33	2722.0-23.0 ✓	5.6 ✓	1.2	14.7 ✓	0.0 52.3 ✓	2.73 ✓ SLT, DOL
+ 34	2723.0-24.0 ✓	5.8 ✓	4.1	14.9 ✓	0.0 54.1 ✓	2.73 ✓ SLT, DOL
+ 35	2724.0-25.0 ✓	26.0 ✓	19.0	18.3 ✓	0.0 43.6 ✓	2.71 ✓ SLT, SL/DOL, ANHY
+ 36	2725.0-26.0 ✓	17.0 ✓	7.4	17.0 ✓	0.0 49.0 ✓	2.71 ✓ SLT, SL/DOL, ANHY
37	2726.0-27.0 ✓	0.3 ✓	0.3	13.5 ✓	0.0 53.9 ✓	2.74 ✓ SLT, DOL
+ 38	2727.0-28.0 ✓	<0.1 ✓	<0.1	10.8 ✓	0.0 63.9 ✓	2.82 ✓ SLT, SL/DOL, ANHY
	2728.0-92.0					SLT, DOL, ANHY, CLAY
+ 39	2792.0-93.0 ✓	<0.1 ✓	<0.1	13.4 ✓	0.0 63.0 ✓	2.74 ✓ SLT, DOL, CLAY
40	2793.0-94.0 ✓	0.1 ✓	<0.1	14.0 ✓	0.0 58.9 ✓	2.72 ✓ SLT, DOL, CLAY
41	2794.0-95.0 ✓	1.3 ✓	1.0	16.3 ✓	0.0 50.3 ✓	2.71 ✓ SLT, DOL, CLAY
42	2795.0-96.0 ✓	1.0 ✓	0.9	13.9 ✓	0.0 58.1 ✓	2.77 ✓ SLT, DOL, ANHY, CLAY
43	2796.0-97.0 ✓	2.9 ✓	1.6	14.3 ✓	0.0 58.8 ✓	2.77 ✓ SLT, DOL, ANHY, CLAY
44	2797.0-98.0 ✓	0.7 ✓	0.6	11.7 ✓	0.0 60.2 ✓	2.75 ✓ SLT, DOL, CLAY
45	2798.0-99.0 ✓	0.7 ✓	0.6	9.4 ✓	0.0 68.6 ✓	2.75 ✓ SLT, DOL, CLAY
46	2799.0-00.0 ✓	1.9 ✓	1.6	16.8 ✓	0.0 54.3 ✓	2.72 ✓ SLT, SL/DOL, CLAY
47	2800.0-01.0 ✓	17.0 ✓	0.9	15.0 ✓	0.0 55.4 ✓	2.74 ✓ SLT, SL/DOL, ANHY

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Petroleum Reservoir Engineering
DALLAS, TEXAS

100-446-640
Pugh Pellet
PEL- 3

WAGNER AND BROWN
ROSE NO. 1 WELL

DATE: 5/5/78
FORMATION: AS NOTED

FILE NO: 3402-9324
ENGINEER: PUGH

SMP. NO.	DEPTH	PERM. TO AIR MD. MAXIMUM	90 DEG	POROSITY PERCENT	FLUID OIL	SATS. WTR.	GR. DEN.	DESCRIPTION
+ 48	2801.0-02.0 ✓	1151.0 ✓	822.0	13.6 ✓	0.0	72.8 ✓	2.68 ✓	SLT, SHY, ANHY
49	2802.0-03.0 ✓	1.4 ✓	1.2	14.0 ✓	0.0	55.0 ✓	2.85 ✓	DOL, SLTY, ANHY
50	2803.0-04.0 ✓	3.2 ✓	2.7	15.2 ✓	0.0	48.8 ✓	2.85 ✓	SLT, DOL, ANHY
51	2804.0-05.0 ✓	0.2 ✓	0.2	12.1 ✓	0.0	66.7 ✓	2.84 ✓	DOL, SLTY, ANHY
52	2805.0-06.0 ✓	0.3 ✓	0.2	14.2 ✓	0.0	64.4 ✓	2.84 ✓	DOL, SLTY, SHY, ANHY
53	2806.0-07.0 ✓	<0.1 ✓	<0.1	13.4 ✓	0.0	67.5 ✓	2.84 ✓	DOL, SLTY, SHY, ANHY
54	2807.0-08.0 ✓	0.1 ✓	<0.1	13.9 ✓	0.0	65.8 ✓	2.84 ✓	DOL, SLTY, SHY, ANHY
55	2808.0-09.0 ✓	<0.1 ✓	<0.1	10.6	0.0	70.3	2.83	DOL, SLTY, SHY, ANHY
56	2809.0-10.0 ✓	<0.1 ✓	<0.1	12.1 ✓	0.0	67.8 ✓	2.86 ✓	DOL, SLTY, SL, SHY, PEL
57	2810.0-11.0 ✓	<0.1 ✓	<0.1	11.0 ✓	0.0	69.2 ✓	2.85 ✓	DOL, SLTY, SL, SHY, PEL
58	2811.0-12.0 ✓	0.1 ✓	<0.1	9.9 ✓	0.0	73.7 ✓	2.85 ✓	DOL, SLTY, SL, SHY, PEL
59	2812.0-13.0 ✓	0.1 ✓	<0.1	10.4 ✓	0.0	66.6 ✓	2.86 ✓	DOL, SLTY, PEL, ANHY
60	2813.0-14.0 ✓	0.8 ✓	0.7	13.4 ✓	0.0	59.7 ✓	2.86 ✓	DOL, SLTY, PEL, ANHY
61	2814.0-15.0 ✓	<0.1 ✓	<0.1	11.9 ✓	0.0	66.6 ✓	2.82 ✓	DOL, SLTY, SL, SHY, PEL
62	2815.0-16.0 ✓	0.4 ✓	0.2	11.2 ✓	0.0	69.8 ✓	2.83 ✓	DOL, SLTY, SL, SHY, PEL
63	2816.0-17.0 ✓	0.1 ✓	0.1	13.9 ✓	0.0	66.5 ✓	2.83 ✓	DOL, SLTY, SL, SHY, PEL
64	2817.0-18.0 ✓	*	0.4 ✓	14.3 ✓	0.0	58.8 ✓	2.85 ✓	DOL, SLTY, SL, SHY, PEL
65	2818.0-19.0 ✓	0.3 ✓	0.2	14.7 ✓	0.0	56.6 ✓	2.85 ✓	DOL, SLTY, SL, SHY, PEL
66	2819.0-20.0 ✓	0.3 ✓	0.2	14.9 ✓	0.0	54.5 ✓	2.85 ✓	DOL, SLTY, PEL, ANHY
67	2820.0-21.0 ✓	0.1 ✓	<0.1	13.7 ✓	0.0	60.3 ✓	2.84 ✓	DOL, SLTY, PEL, ANHY
68	2821.0-22.0 ✓	0.4 ✓	0.3	13.4 ✓	0.0	61.7 ✓	2.86 ✓	DOL, SLTY, PEL, ANHY
69	2822.0-23.0 ✓	0.5 ✓	0.4	15.5 ✓	0.0	51.4 ✓	2.83 ✓	DOL, SLTY, PEL, ANHY
70	2823.0-24.0 ✓	2.1 ✓	1.7	17.9 ✓	0.0	49.2 ✓	2.84 ✓	DOL, SLTY, PEL, ANHY
71	2824.0-25.0 ✓	*	0.3 ✓	15.9 ✓	0.0	50.2 ✓	2.89 ✓	DOL, SLTY, PEL, ANHY
72	2825.0-26.0 ✓	6.2 ✓	5.0	13.9 ✓	0.0	53.1 ✓	2.86 ✓	DOL, SLTY, PEL, ANHY
73	2826.0-27.0 ✓	12.0 ✓	10.0	15.3 ✓	0.0	49.9 ✓	2.86 ✓	DOL, SLTY, PEL, ANHY
74	2827.0-28.0 ✓	5.2 ✓	4.0	14.5 ✓	0.0	49.8 ✓	2.86 ✓	DOL, SLTY, PEL, ANHY
75	2828.0-29.0 ✓	22.0 ✓	20.0	18.1 ✓	0.0	41.0 ✓	2.85 ✓	DOL, SLTY, PEL, ANHY
76	2829.0-30.0 ✓	9.3 ✓	8.2	14.2 ✓	0.0	48.8 ✓	2.86 ✓	DOL, SLTY, PEL, ANHY
77	2830.0-31.0 ✓	11.0 ✓	10.0	15.2 ✓	0.0	51.9 ✓	2.85 ✓	DOL, SLTY, PEL, ANHY
78	2831.0-32.0 ✓	8.3 ✓	6.9	14.5 ✓	0.0	58.7 ✓	2.85 ✓	DOL, SLTY, PEL, ANHY
79	2832.0-33.0 ✓	2.4 ✓	1.9	14.1 ✓	0.0	54.9 ✓	2.86 ✓	DOL, SLTY, PEL, ANHY

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Petroleum Reservoir Engineering
DALLAS, TEXAS

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WAGNER AND BROWN
ROSE NO. 1 WELL

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ENGINEER: PUGH

SMP. NO.	DEPTH	PERM. TO AIR MD. MAXIMUM 90 DEG	POROSITY PERCENT	FLUID SATS. OIL WTR.	GR. DEN.	DESCRIPTION
110	2882.0-83.0 ✓	<0.1 ✓	<0.1	6.8 ✓	0.0 70.9 ✓	2.76 ✓ LM, SLTY, ANHY
111	2883.0-84.0 ✓	2.0 ✓	0.8	15.2 ✓	0.0 65.1 ✓	2.78 ✓ SLT, DOL
112	2884.0-85.0 ✓	0.8 ✓	0.8	15.8 ✓	0.0 60.4 ✓	2.80 ✓ SLT, DOL, ANHY
113	2885.0-86.0 ✓	0.1 ✓	<0.1	15.1 ✓	0.0 64.7 ✓	2.80 ✓ SLT, DOL, ANHY
114	2886.0-87.0 ✓	<0.1 ✓	<0.1	11.3 ✓	0.0 63.5 ✓	2.77 ✓ SLT, DOL, SL/LMY, ANHY
	2887.0-94.0					SH
#+115	2894.0-95.0 ✓	24.0 ✓	<0.1	10.8 ✓	0.0 66.5 ✓	2.70 ✓ SLT, SL/DOL, ANHY, CLAY
+ 116	2895.0-96.0 ✓	3.2 ✓	<0.1	9.5 ✓	0.0 75.7 ✓	2.72 ✓ SLT, SL/DOL, CLAY
117	2896.0-97.0 ✓	0.1 ✓	0.1	10.0 ✓	0.0 73.2 ✓	2.72 ✓ SLT, SL/DOL, CLAY
118	2897.0-98.0 ✓	0.1 ✓	<0.1	10.8 ✓	0.0 71.1 ✓	2.73 ✓ SLT, SL/DOL, CLAY
119	2898.0-99.0 ✓	1443.0 ✓	0.1	12.2 ✓	0.0 67.8 ✓	2.76 ✓ SLT, SL/DOL, ANHY, CLAY
120	2899.0-00.0 ✓	0.1 ✓	0.1	13.8 ✓	0.0 63.2 ✓	2.71 ✓ SLT, SL/DOL, CLAY
121	2900.0-01.0 ✓	1.0 ✓	0.9	17.6 ✓	0.0 57.6 ✓	2.71 ✓ SLT, SL/DOL, CLAY
122	2901.0-02.0 ✓	0.6 ✓	0.5	16.9 ✓	0.0 61.9 ✓	2.71 ✓ SLT, SL/DOL, ANHY, CLAY
123	2902.0-03.0 ✓	6.6 ✓	5.5	21.1 ✓	0.0 54.9 ✓	2.71 ✓ SLT, SL/DOL, CLAY
124	2903.0-04.0 ✓	6.2 ✓	6.2	20.8 ✓	0.0 52.8 ✓	2.70 ✓ SLT, SL/DOL, CLAY
125	2904.0-05.0 ✓	6.0 ✓	6.0	20.9 ✓	0.0 56.3 ✓	2.70 ✓ SLT, SL/DOL, ANHY, CLAY
+ 126	2905.0-06.0 ✓	26.0 ✓	24.0	22.4 ✓	0.0 51.5 ✓	2.72 ✓ SLT, SL/DOL, ANHY, CLAY
127	2906.0-07.0 ✓	16.0 ✓	12.0	20.0 ✓	0.0 54.6 ✓	2.74 ✓ SLT, SL/DOL, ANHY, CLAY
128	2907.0-08.0 ✓	7.9 ✓	7.9	22.4 ✓	0.0 50.9 ✓	2.72 ✓ SLT, SL/DOL, ANHY, CLAY
129	2908.0-09.0 ✓	13.0 ✓	9.7	23.7 ✓	0.0 51.6 ✓	2.71 ✓ SLT, SL/DOL, ANHY, CLAY
130	2909.0-10.0 ✓	10.0 ✓	9.7	20.3 ✓	0.0 57.5 ✓	2.71 ✓ SLT, SL/DOL, ANHY, CLAY
131	2910.0-11.0 ✓	* ✓	12.0 ✓	19.0 ✓	0.0 60.7 ✓	2.71 ✓ SLT, SL/DOL, ANHY, CLAY
132	2911.0-12.0 ✓	* ✓	20.0	20.2 ✓	0.0 56.9 ✓	2.71 ✓ SLT, SL/DOL, ANHY, CLAY
133	2912.0-13.0 ✓	2.6 ✓	1.9	18.3 ✓	0.0 61.5 ✓	2.72 ✓ SLT, SL/DOL, ANHY, CLAY
134	2913.0-14.0 ✓	2.1 ✓	2.0	18.9 ✓	0.0 63.2 ✓	2.72 ✓ SLT, SL/DOL, CLAY
135	2914.0-15.0 ✓	1.1 ✓	0.8	17.1 ✓	0.0 65.5 ✓	2.72 ✓ SLT, SL/DOL, CLAY
#+136	2915.0-16.0 ✓	138.0 ✓	0.4	13.1 ✓	0.0 71.8 ✓	2.72 ✓ SLT, SL/DOL, CLAY
137	2916.0-17.0 ✓	* ✓	0.3 ✓	12.7 ✓	0.0 73.0 ✓	2.66 ✓ SLT, SL/DOL, SHY
138	2917.0-18.0 ✓	0.1 ✓	0.1	11.7 ✓	0.0 74.0 ✓	2.71 ✓ SLT, DOL
	2918.0-23.0					SH
139	2923.0-24.0 ✓	1.0 ✓	0.7	13.9 ✓	0.0 68.2 ✓	2.73 ✓ LM, SL/DOL, SLTY

These analyses, opinions or interpretations are based on observations and materials supplied by the client to whom, and for whose exclusive and confidential use, this report is made. The interpretations or opinions expressed represent the best judgment of Core Laboratories, Inc. (all errors and omissions excepted); but Core Laboratories, Inc. and its officers and employees, assume no responsibility and make no warranty or

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ROSE NO. 1 WELL

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ENGINEER: PUGH

SMP. NO.	DEPTH	PERM. TO AIR MD. MAXIMUM 90 DEG	POROSITY PERCENT	FLUID SATS. OIL WTR.	GR. DEN.	DESCRIPTION
140	2924.0-25.0 ✓	0.7 ✓ 0.5	13.8 ✓	0.0 66.4 ✓	2.73 ✓	LM, SLTY
141	2925.0-26.0 ✓	0.4 ✓ 0.4	12.8 ✓	0.0 66.3 ✓	2.72 ✓	LM, SLTY
142	2926.0-27.0 ✓	<0.1 ✓ <0.1	12.1 ✓	0.0 73.8 ✓	2.82 ✓	DOL, SLT STKS, FOSS
143	2927.0-28.0 ✓	0.5 ✓ 0.2	10.9 ✓	0.0 61.6 ✓	2.74 ✓	LM, SLTY, ANHY
144	2928.0-29.0 ✓	1.2 ✓ 1.1	12.5 ✓	0.0 66.5 ✓	2.76 ✓	LM, SLTY
145	2929.0-30.0 ✓	0.9 ✓ 0.8	13.8 ✓	0.0 64.7 ✓	2.74 ✓	LM, SLTY, SH STKS
146	2930.0-31.0 ✓	0.5 ✓ 0.4	12.8 ✓	0.0 65.0 ✓	2.73 ✓	LM, SLTY
147	2931.0-32.0 ✓	0.7 ✓ 0.6	12.6 ✓	0.0 63.1 ✓	2.74 ✓	LM, SLTY
148	2932.0-33.0	0.5 ✓ 0.5	9.3 ✓	0.0 62.0 ✓	2.75 ✓	LM, SL/SLTY
149	2933.0-34.0	0.1 ✓ 0.1	5.5 ✓	0.0 75.8 ✓	2.81 ✓	LM, SL/SLTY, FOSS
150	2934.0-35.0	0.1 ✓ 0.1	9.4 ✓	0.0 68.8 ✓	2.73 ✓	LM, SLTY, SH STKS, FOSS
151	2935.0-36.0	<0.1 ✓ <0.1	5.9 ✓	0.0 73.1 ✓	2.77 ✓	LM, SLTY, FOSS, ANHY
	2936.0-38.0					SH
152	2938.0-39.0	<0.1 ✓ <0.1	8.2 ✓	0.0 69.5 ✓	2.71 ✓	LM, SLTY, FOSS
153	2939.0-40.0	0.7 ✓ 0.7	10.4 ✓	0.0 61.1 ✓	2.72 ✓	LM, SLTY, FOSS
154	2940.0-41.0	0.6 ✓ 0.6	12.0 ✓	0.0 63.1 ✓	2.73 ✓	LM, SLTY, FOSS
155	2941.0-42.0	0.6 ✓ 0.5	11.4 ✓	0.0 59.1 ✓	2.72 ✓	LM, SLTY, FOSS
156	2942.0-43.0	<0.1 ✓ <0.1	6.1 ✓	0.0 76.8 ✓	2.73 ✓	LM, SHY, SLTY, FOSS, PEL
157	2943.0-44.0	<0.1 ✓ <0.1	6.7 ✓	0.0 72.1 ✓	2.72 ✓	LM, SL/DOL, SLT STKS
158	2944.0-45.0	<0.1 ✓ <0.1	4.3 ✓	0.0 79.0 ✓	2.70 ✓	LM, SLT STKS
# 159	2945.0-46.0	6.7 ✓ 6.3	11.5 ✓	0.0 69.6 ✓	2.77 ✓	SLT, DOL, ANHY
#+160	2946.0-47.0	* 0.1 ✓	8.0 ✓	0.0 77.9 ✓	2.73 ✓	SLT, LMY
	2947.0-55.0					SH
161	2955.0-56.0	0.3 ✓ 0.2	12.3 ✓	0.0 71.3 ✓	2.73 ✓	SLT, DOL, ANHY, CLAY
162	2956.0-57.0	0.2 ✓ 0.2	12.4 ✓	0.0 61.7 ✓	2.69 ✓	SLT, DOL, CLAY
163	2957.0-58.0	1.1 ✓ 0.3	14.0 ✓	0.0 67.1 ✓	2.69 ✓	SLT, DOL, CLAY
164	2958.0-59.0	0.4 ✓ 0.3	13.7 ✓	0.0 65.1 ✓	2.70 ✓	SLT, DOL, CLAY
165	2959.0-60.0	0.3 ✓ 0.3	13.5 ✓	0.0 64.5 ✓	2.69 ✓	SLT, DOL, CLAY
166	2960.0-61.0	0.2 ✓ 0.1	11.0 ✓	0.0 69.1 ✓	2.69 ✓	SLT, DOL, CLAY
167	2961.0-62.0	0.9 ✓ 0.7	14.4 ✓	0.0 61.0 ✓	2.70 ✓	SLT, DOL, CLAY
168	2962.0-63.0	0.3 ✓ 0.2	15.6 ✓	0.0 62.5 ✓	2.72 ✓	SLT, DOL, CLAY
169	2963.0-64.0	0.1 ✓ 0.1	12.2 ✓	0.0 68.3 ✓	2.69 ✓	SLT, DOL, CLAY

These analyses, opinions or interpretations are based on observations and materials supplied by the client to whom, and for whose exclusive and confidential use, this report is made. The interpretations or opinions expressed represent the best judgment of Core Laboratories, Inc. (all errors and omissions excepted); but Core Laboratories, Inc. and its officers and employees, assume no responsibility and make no warranty or

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WAGNER AND BROWN
ROSE NO. 1 WELL

DATE: 5/5/78
FORMATION: AS NOTED

FILE NO: 3402-9324
ENGINEER: PUGH

SMP. NO.	DEPTH	PERM. TO AIR MD. MAXIMUM 90 DEG	POROSITY PERCENT	FLUID SATS. OIL WTR.	GR. DEN.	DESCRIPTION
# 170	2964.0-65.0	12.0 ✓	1.3	11.9 ✓	0.0 71.0 ✓	2.69 ✓ SLT, DOL
	2965.0-69.0					SH
171	2969.0-70.0	0.5 ✓	0.4	9.4 ✓	0.0 73.5 ✓	2.78 ✓ LM, SLTY, ANHY
172	2970.0-71.0	0.2 ✓	0.1	4.9 ✓	0.0 80.9 ✓	2.72 ✓ LM, SLTY, FOSS
+ 173	2971.0-72.0	103.0 ✓	7.5	5.9 ✓	0.0 78.8 ✓	2.77 ✓ LM, SLTY, ANHY
174	2972.0-73.0	1.8 ✓	1.8	15.5 ✓	0.0 66.6 ✓	2.80 ✓ LM, SLTY, ANHY
175	2973.0-74.0	2.2 ✓	2.1	17.0 ✓	0.0 70.2 ✓	2.79 ✓ LM, SLTY
176	2974.0-75.0	0.1 ✓	0.1	12.9 ✓	0.0 72.3 ✓	2.77 ✓ LM, SLTY, ANHY
177	2975.0-76.0	0.1 ✓	0.1	15.7 ✓	0.0 62.0 ✓	2.78 ✓ LM, SL/DOL, SLTY
	2976.0-80.0					SH
178	2980.0-81.0	<0.1 ✓	<0.1	8.5 ✓	0.0 72.5 ✓	2.71 ✓ SLT, DOL, ANHY, CLAY
179	2981.0-82.0	<0.1 ✓	<0.1	6.0 ✓	0.0 81.9 ✓	2.71 ✓ SLT, DOL, CLAY
180	2982.0-83.0	<0.1 ✓	<0.1	16.3 ✓	0.0 62.3 ✓	2.81 ✓ SLT, DOL, ANHY, CLAY
181	2983.0-84.0	<0.1 ✓	<0.1	15.2 ✓	0.0 64.5 ✓	2.80 ✓ SLT, DOL, ANHY, CLAY
	2984.0-90.0					SH
182	2990.0-91.0	<0.1 ✓	<0.1	5.1 ✓	0.0 79.1 ✓	2.68 ✓ SLT, LMY, ANHY, CLAY
183	2991.0-92.0	<0.1 ✓	<0.1	4.9 ✓	0.0 83.6 ✓	2.69 ✓ SLT, LMY, ANHY, CLAY
# 184	2992.0-93.0	0.1 ✓	0.1	6.0 ✓	0.0 77.9 ✓	2.71 ✓ SLT, LMY, ANHY, CLAY
	2993.0-03.0					SH, SLTY
185	3003.0-04.0	<0.1 ✓	<0.1	10.7 ✓	0.0 69.7 ✓	2.74 ✓ SLT, DOL, ANHY
	3004.0-13.0					SLT, SHY, ANHY, CLAY
	3013.0-14.0					SH
	3014.0-21.0					SLT, DOL, ANHY, CLAY
	3021.0-23.0					SH
3023.0-3090.0 DRILLED						
COUNCIL GROVE FORMATION						
	3090.0-00.0					SH, SLTY, SL/LMY
186	3100.0-01.0	0.5 ✓	0.4	10.7 ✓	0.0 72.4 ✓	2.73 ✓ LM, SLTY, ANHY
187	3101.0-02.0	<0.1 ✓	<0.1	6.2 ✓	0.0 82.0 ✓	2.74 ✓ LM, SLTY, ANHY

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Petroleum Reservoir Engineering
DALLAS, TEXAS

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WAGNER AND BROWN
ROSE NO. 1 WELL

DATE: 5/5/78
FORMATION: AS NOTED

FILE NO: 3402-9324
ENGINEER: PUGH

SMP. NO.	DEPTH	PERM. TO AIR MD. MAXIMUM 90 DEG	POROSITY PERCENT	FLUID SATS. OIL WTR.	GR. DEN.	DESCRIPTION
188	3102.0-03.0	<0.1 ✓	<0.1	5.7 ✓	0.0 86.9 ✓	2.70 ✓ LM, SLTY, ANHY
189	3103.0-04.0	0.1 ✓	<0.1	7.4 ✓	0.0 79.2 ✓	2.70 ✓ LM, SLTY, ANHY
190	3104.0-05.0	0.1 ✓	0.1	12.0 ✓	0.0 71.0 ✓	2.70 ✓ LM, SL/DOL, SLTY, ANHY
191	3105.0-06.0	0.1 ✓	<0.1	10.2 ✓	0.0 71.2 ✓	2.71 ✓ LM, SL/DOL, SLTY, ANHY
+ 192	3106.0-07.0	2.0 ✓	0.7	12.2 ✓	0.0 70.3 ✓	2.72 ✓ LM, SL/DOL, SLTY, ANHY
193	3107.0-08.0	0.1 ✓	<0.1	13.3 ✓	0.0 70.5 ✓	2.73 ✓ LM, SL/DOL, SLTY, ANHY
194	3108.0-09.0	0.1 ✓	<0.1	11.4 ✓	0.0 72.7 ✓	2.74 ✓ DOL, SL/LMY, SLTY, ANHY
195	3109.0-10.0	0.1 ✓	0.1	13.6 ✓	0.0 68.4 ✓	2.78 ✓ DOL, SLTY, ANHY
196	3110.0-11.0	0.5 ✓	0.5	16.7 ✓	0.0 75.4 ✓	2.78 ✓ DOL, SLTY, ANHY
197	3111.0-12.0	0.1 ✓	0.1	16.9 ✓	0.0 75.5 ✓	2.77 ✓ SLT, DOL, ANHY
198	3112.0-13.0	0.2 ✓	0.2	17.3 ✓	0.0 77.1 ✓	2.77 ✓ SLT, DOL, ANHY
199	3113.0-14.0	0.6 ✓	0.4	18.3 ✓	0.0 74.3 ✓	2.75 ✓ SLT, DOL, ANHY
200	3114.0-15.0	<0.1 ✓	<0.1	16.2 ✓	0.0 74.3 ✓	2.77 ✓ SLT, DOL, ANHY
201	3115.0-16.0	0.8 ✓	0.1	14.7 ✓	0.0 71.1 ✓	2.76 ✓ SLT, DOL, ANHY
202	3116.0-17.0	<0.1 ✓	<0.1	9.8 ✓	0.0 73.3 ✓	2.72 ✓ SLT, DOL, ANHY
203	3117.0-18.0	<0.1 ✓	<0.1	8.4 ✓	0.0 74.9 ✓	2.71 ✓ SLT, DOL, SL/LMY, ANHY
+ 204	3118.0-19.0	5.7 ✓	<0.1	7.9 ✓	0.0 76.0 ✓	2.70 ✓ SLT, DOL, SL/LMY, ANHY
205	3119.0-20.0	<0.1 ✓	<0.1	6.9 ✓	0.0 75.8 ✓	2.69 ✓ SLT, LMY, SL/DOL
+ 206	3120.0-21.0	16.0 ✓	0.1	5.9 ✓	0.0 79.3 ✓	2.70 ✓ SLT, LMY, SL/DOL
+ 207	3121.0-22.0	5.0 ✓	<0.1	4.8 ✓	0.0 81.8 ✓	2.67 ✓ SLT, LMY
+ 208	3122.0-23.0	4.6 ✓	<0.1	6.1 ✓	0.0 80.6 ✓	2.68 ✓ SLT, LMY
209	3123.0-24.0	<0.1 ✓	<0.1	6.0 ✓	0.0 79.4 ✓	2.70 ✓ SLT, LMY
# 210	3124.0-25.0	1.3 ✓	1.2	6.2 ✓	0.0 79.0 ✓	2.71 ✓ SLT, LMY
#+211	3125.0-26.0	7.9 ✓	6.1	6.9 ✓	0.0 78.3 ✓	2.73 ✓ SLT, LMY
	3126.0-32.0					SH
212	3132.0-33.0	0.1 ✓	0.1	10.6 ✓	0.0 63.4 ✓	2.70 ✓ LM, SLTY
213	3133.0-34.0	0.2 ✓	0.2	9.9 ✓	0.0 73.1 ✓	2.69 ✓ LM, SLTY, ANHY
+ 214	3134.0-35.0	0.4 ✓	0.4	8.6 ✓	0.0 69.6 ✓	2.73 ✓ LM, SLTY, ANHY
215	3135.0-36.0	0.1 ✓	<0.1	7.3 ✓	0.0 69.7 ✓	2.72 ✓ LM, SLTY, SHY, PEL, ANHY
	3136.0-40.0					SH
+ 216	3140.0-41.0	0.9 ✓	0.6	6.5 ✓	0.0 72.2 ✓	2.73 ✓ LM, SLTY, FOSS, ANHY
+ 217	3141.0-42.0	4.2 ✓	0.3	11.3 ✓	0.0 68.5 ✓	2.73 ✓ LM, SLTY, FOSS, ANHY

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WAGNER AND BROWN
 ROSE NO. 1 WELL

DATE: 5/5/78
 FORMATION: AS NOTED

FILE NO: 3402-9324
 ENGINEER: PUGH

SMP. NO.	DEPTH	PERM. TO AIR MD. MAXIMUM	90 DEG	POROSITY PERCENT	FLUID SATS. OIL WTR.	GR. DEN.	DESCRIPTION
218	3142.0-43.0	0.6 ✓	0.5	10.9 ✓	0.0 69.0 ✓	2.74 ✓	LM, SLTY, ANHY
219	3143.0-44.0	0.4 ✓	0.3	11.8 ✓	0.0 66.1 ✓	2.75 ✓	LM, SLTY, ANHY
220	3144.0-45.0	0.2 ✓	0.1	8.9 ✓	0.0 71.0 ✓	2.72 ✓	LM, SLTY
221	3145.0-46.0	0.2 ✓	0.2	9.0 ✓	0.0 71.7 ✓	2.72 ✓	LM, SLTY
222	3146.0-47.0	0.2 ✓	0.1	9.5 ✓	0.0 70.9 ✓	2.72 ✓	LM, SLTY, ANHY
223	3147.0-48.0	0.1 ✓	0.1	7.1 ✓	0.0 74.0 ✓	2.74 ✓	LM, SLTY, SL/SHY, ANHY
+ 224	3148.0-49.0	14.0 ✓	0.4	8.4 ✓	0.0 70.0 ✓	2.72 ✓	LM, SLT STKS, ANHY
225	3149.0-50.0	6.7 ✓	0.1	10.2 ✓	0.0 69.1 ✓	2.72 ✓	LM, SLT STKS

+ DENOTES HORIZONTAL CRACKS
 # DENOTES CHAOTIC FISSURES