CORE ANALYSIS RESULTS

Company AMOCO PRODUCTION COMPANY | Formation COUNCIL GROVE | File CP-1-7646
Well GLENN A-2 | Core Type DIAMOND 4" | Date Report 9-4-72
Field PANOMA | Drilling Fluid WATER BASE MUD | Analysts BOYLE
County STANTON State KANSAS Elev. 3132' KB Location SEC. 15-28S-39W

Lithological Abbreviations

SAND-SD, SHALE-SH, LIME-LM | DOLOMITE-DOL, CHERT-CH, GYPSUM-GYP | ANHYDRITE-ANHY, CONGLOMERATE-CONG, FOSSILIFEROUS-FOSS | SANDY-SDY, SHALY-SHY, LIMY-LMY | FINE-FN, MEDIUM-MED, COARSE-CSE | CRYSTALLINE-XLN, GRAIN-GRN, GRANULAR-GRNL | BROWN-BRN, GRAY-GY, VUGGY-VGY | FRACTURED-FRAC, LAMINATION-LAM, STYLOLITIC-STY | SLIGHTLY-, VERY-V/, WITH-W/

SAMPLE NUMBER	DEPTH FEET	PERMEABILITY MILLIDARCYS		POROSITY PER CENT	RESIDUAL SATURATION PER CENT PORE		SAMPLE DESCRIPTION AND REMARKS
		PERM. MAX.	PERM. 90°		OIL	TOTAL WATER	
	WHOLE-CORE ANALYSIS						
1	2542-43	<0.1	<0.1	3.9	0.0	71.1	Lm, sl/shy
2	43-44	<0.1	<0 1	2.7	0.0	82.1	Lm, shy
3	44-45	<0.1	<0.1	2.9	0.0	82.9	Lm, shy
4	45-46	<0.1	<0.1	2.9	0.0	82.9	Lm, sl/shy, sl/anhy
5	46-47	<0.1	<0.1	4.6	0.0	88.9	Lm, sl/shy
6	47-48	<0.1	<0 1	6.2	0.0	81.7	Lm, sl/shy, vert frac
7	48-49	<0.1	<0.1	4.2	0.0	81.0	Lm, shy, vert frac
8	49-50	<0.1	<0.1	3.8	0.0	73.0	Lm, sl/shy
9	50-51	<0.1	<0.1	5.6	0.0	68.1	Lm, sl/shy
10	51-52	<0.1	<0.1	4.0	0.0	80.0	Lm, sl/shy, vert frac
	52-59	Top of C.G. 2555					Sh, silty, lmy, red
11	59-60	0.1	<0.1	8.9	0.0	92.3	Sd, lmy, silty
12	60-61	0.1	<0.1	14.0	0.0	93.4	Sd, sl/lmy, silty
13	61-62	0.4	0.3	16.5	0.0	95.7	Sd, sl/lmy, silty
14	62-63	1.0	0.9	19.4	0.0	79.1	Sd, sl/lmy, silty
15	63-64	0.3	0.3	17.2	0.0	87.6	Sd, sl/lmy, silty
16	64-65	0.4	0.4	17.8	0.0	79.5	Sd, sl/lmy, silty
17	65-66	0.3	0.3	15.4	0.0	84.5	Sd, sl/lmy, silty
18	66-67	0.1	0.1	12.5	0.0	90.4	Sd, sl/lmy, silty
19	67-68	<0.1	<0.1	10.3	0.0	90.2	Sd, sl/lmy, silty
	68-70						Sh, silty, sl/lmy, red
20	70-71	<0.1	<0.1	9.4	0.0	93.5	Siltstone, lmy, shy
21	71-72	<0.1	<0.1	9.4	0.0	94.3	Siltstone, lmy, shy
22	72-73	0.1	0.1	10.5	0.0	97.1	Siltstone, lmy, shy
	73-77						Sh, silty, lmy, red
23	77-78	0.4	0.4	9.7	0.0	60.8	Lm, anhy
24	78-79	0.4	0.4	11.0	0.0	57.3	Lm, anhy
25	79-80	0.4	0.1	7.0	0.0	77.6	Lm, anhy
26	80-81	0.1	<0.1	7.7	0.0	73.4	Lm, anhy
27	81-82	<0.1	<0.1	2.3	0.0	80.0	Lm, dse
	82-86						Sh, lmy, w/lm incl, gray
28	86-87	<0.1	<0.1	1.1	0.0	81.8	Lm, dse
29	87-88	<0.1	<0.1	0.9	0.0	62.5	Lm, dse
30	88-89	<0.1	<0.1	5.9	0.0	91.8	Lm, v/shy
	89-91						Sh, lmy, w/anhy incl, gray
31	91-92	<0.1	<0.1	0.8	0.0	66.7	Lm, dse
32	92-93	0.4	<0.1	1.0	0.0	70.0	Lm, dse, vert frac
33	93-94	0.1	<0.1	7.5	0.0	94.6	Lm, v/shy, vert frac
34	94-95	<0.1	<0.1	6.9	0.0	92.4	Lm, v/shy
35	2595-96	0.1	0.1	7.6	0.0	90.8	Lm, v/shy

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CORE ANALYSIS RESULTS

SAMPLE NUMBER	DEPTH FEET	PERMEABILITY MILLIDARCYS MAX.	PERMEABILITY MILLIDARCYS 90°	POROSITY PER CENT	RESIDUAL SATURATION PER CENT PORE OIL	RESIDUAL SATURATION PER CENT PORE TOTAL WATER	SAMPLE DESCRIPTION AND REMARKS
36	2596-97	<0.1	<0.1	2.6	0.0	88.9	Lm, shy
37	97-98	<0.1	<0.1	2.6	0.0	89.5	Lm, shy
	98-2602						Sh, lmy, vert frac, gray
38	2602-03	<0.1	<0.1	3.3	0.0	85.7	Lm, shy
39	03-04	<0.1	<0.1	4.7	0.0	90.0	Lm, shy
40	04-05	<0.1	<0.1	3.4	0.0	93.6	Lm, shy
41	05-06	<0.1	<0.1	3.6	0.0	83.9	Lm, shy
42	06-07	<0.1	<0.1	7.5	0.0	86.4	Siltstone, lmy, shy
43	07-08	<0.1	<0.1	7.4	0.0	83.3	Siltstone, lmy, shy
	08-11						Sh, lmy, red
44	11-12	<0.1	<0.1	6.0	0.0	85.0	Siltstone, lmy, shy
45	12-13	0.1	<0.1	8.6	0.0	76.5	Sd, lmy, v/silty, anhy
46	13-14	0.3	0.3	11.3	0.0	70.7	Sd, lmy, v/silty, anhy
47	14-15	0.1	0.1	10.4	0.0	72.2	Sd, lmy, silty
48	15-16	0.2	0.2	12.1	0.0	73.8	Sd, lmy, silty
49	16-17	0.2	0.2	12.5	0.0	74.4	Sd, lmy, silty
50	17-18	0.2	0.2	11.6	0.0	78.7	Sd, lmy, silty
	18-22						Sh
51	22-23	0.3*		12.6	0.0	71.9	Sd, lmy, silty
52	23-24	0.9	0.9	9.2	0.0	36.3	Sd, v/lmy, silty
53	24-25	4.8	4.8	11.2	0.0	36.6	Sd, lmy, silty
54	25-26	5.7	5.2	13.6	0.0	53.2	Sd, v/lmy, silty
55	26-27	24	24	17.9	0.0	48.6	Sd, sl/lmy, sl/silty
56	27-28	36	34	17.6	0.0	45.4	Sd, sl/lmy
57	28-29	43	42	18.4	0.0	48.0	Sd, sl/lmy
58	29-30	35	33	17.9	0.0	46.2	Sd, sl/lmy
59	30-31	35	35	18.2	0.0	40.5	Sd, sl/lmy
60	31-32	17	14	15.7	0.0	44.8	Sd, lmy, sl/silty
61	32-33	21	20	19.0	0.0	49.5	Sd, lmy, sl/silty
62	33-34	37	33	19.2	0.0	46.9	Sd, lmy, sl/silty
63	34-35	20	18	18.5	0.0	46.5	Sd, lmy, sl/silty
64	35-36	3.4	3.4	14.5	0.0	66.4	Sd, sl/lmy, silty
65	36-37	3.4	3.1	14.3	0.0	63.4	Sd, sl/lmy, silty
66	37-38	22	21	15.9	0.0	51.4	Sd, sl/lmy, sl/silty
67	38-39	3.0	2.8	15.3	0.0	60.0	Sd, sl/lmy, silty
68	39-40	0.1	0.1	10.0	0.0	77.6	Sd, lmy, silty
69	40-41	0.1	0.1	12.9	0.0	79.2	Sd, lmy, v/shy, silty
70	41-42	0.1	0.1	11.7	0.0	80.0	Sd, lmy, shy, silty
71	42-43	0.1	0.1	10.7	0.0	77.2	Sd, lmy, shy, silty
72	43-44	0.1	0.1	11.1	0.0	84.3	Sd, lmy, silty
73	44-45	<0.1	<0.1	8.3	0.0	82.8	Sd, lmy, silty
74	45-46	<0.1	<0.1	4.9	0.0	75.0	Lm, sdy, shy
75	46-47	<0.1	<0.1	5.1	0.0	81.0	Lm, dse, sl/shy
76	47-48	<0.1	<0.1	3.4	0.0	77.8	Lm, dse
77	48-49	1.1	<0.1	1.3	0.0	75.0	Lm, dse, vert frac
	49-50						Sh
78	2650-51	<0.1	<0.1	0.8	0.0	85.7	Lm, dse

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79	2651-52	<0.1	<0.1	1.6	0.0	86.7	Lm, dse
80	52-53	<0.1	<0.1	3.9	0.0	80.0	Lm, shy
81	53-54	<0.1	<0.1	5.2	0.0	81.4	Siltstone, v/lmy, shy
82	54-55	<0.1	<0.1	6.8	0.0	83.9	Siltstone, lmy, shy
83	55-56	<0.1	<0.1	8.1	0.0	84.3	Siltstone, lmy, shy
84	56-57	0.2*		14.2	0.0	84.9	Siltstone, sl/lmy
85	57-58	<0.1	<0.1	4.8	0.0	85.4	Siltstone, lmy, shy
86	58-59	<0.1	<0.1	6.7	0.0	90.6	Siltstone, lmy, shy
	59-61						Sh
	61-62						Lost core
	62-65						Sh
87	65-66	<0.1	<0.1	4.2	0.0	80.0	Siltstone, v/lmy, shy
88	66-67	<0.1	<0.1	3.9	0.0	76.7	Siltstone, v/lmy, shy
	67-69						Sh
89	69-70	0.6	0.5	12.9	0.0	64.9	Lm, anhy, sl/vuggy
90	70-71	0.2	0.2	9.4	0.0	68.9	Lm, anhy, sl/vuggy
91	71-72	<0.1	<0.1	1.3	0.0	71.4	Lm, anhy
92	72-73	6.3	<0.1	1.3	0.0	69.2	Lm, vert frac, anhy
93	73-74	<0.1	<0.1	1.1	0.0	61.5	Lm, sl/anhy
94	74-75	<0.1	<0.1	1.2	0.0	57.1	Lm, anhy
95	75-76	0.2	<0.1	1.1	0.0	72.7	Lm, vert frac, anhy
96	76-77	9.3	<0.1	1.4	0.0	62.5	Lm, vert frac
97	77-78	<0.1	<0.1	7.2	0.0	76.9	Siltstone, lmy, shy
98	78-79	0.1	0.1	8.1	0.0	77.6	Siltstone, lmy, shy
	79-81						Sh
99	81-82	<0.1	<0.1	5.1	0.0	74.6	Sd, lmy, v/silty
100	82-83	0.1	0.1	6.9	0.0	78.1	Sd, lmy, v/silty
	83-85						Sh
101	85-86	0.2	0.1	14.4	0.0	79.7	Siltstone, shy
102	86-87	0.2	0.2	17.3	0.0	68.2	Sd, v/silty
103	87-88	0.6	0.5	17.8	0.0	67.5	Sd, v/silty
	88-89						Sh
104	89-90	<0.1	<0.1	5.6	0.0	72.0	Sd, lmy, v/silty
105	90-91	<0.1	<0.1	4.9	0.0	65.3	Sd, lmy, v/silty
106	2691-92	<0.1	<0.1	4.3	0.0	60.0	Sd, lmy, silty

PRELIMINARY REPORT

* DENOTES PLUG PERMEABILITY