

CORE ANALYSIS RESULTS

Company AMOCO PRODUCTION COMPANY Formation COUNCIL GROVE File CP-1-7625
Well ENDSLEY GAS UNIT NO. 2 Core Type DIAMOND Date Report 7-25-72
Field PANOMA COUNCIL GROVE Drilling Fluid WATER BASE MUD Analysts BOYLE
County STANTON State KANSAS Elev. 3140' GL Location 1480' FSL & 1250' FEL SEC. 36-27S-39W

Lithological Abbreviations

SAMPLE NUMBER	DEPTH FEET	PERMEABILITY MILLIDARCS		POROSITY PER CENT	RESIDUAL SATURATION PER CENT PORE		SAMPLE DESCRIPTION AND REMARKS
		PERM. MAX.	PERM. 90°		OIL	TOTAL WATER	

WHOLE-CORE ANALYSIS

1	2578-79	1.4	<0.1	3.8	0.0	63.4	Lm, vert frac
2	79-80	<0.1	<0.1	4.8	0.0	69.0	Lm, sl/shy
3	80-81	0.2	0.1	7.6	0.0	50.0	Lm, vert frac
4	81-82	<0.1	<0.1	5.1	0.0	56.5	Lm, vert frac
5	82-83	<0.1	<0.1	3.6	0.0	77.4	Lm, shy, anhy, vert frac
6	83-84	<0.1	<0.1	2.9	0.0	83.0	Lm, shy
	2584-91						Sh, red
7	91-92	0.2	0.2	13.5	0.0	81.0	Sd, lmy, silty, w/anhy incl
8	92-93	0.3	0.2	14.1	0.0	79.0	Sd, lmy, silty, w/anhy incl
9	93-94	0.4	0.3	15.4	0.0	69.0	Sd, lmy, silty, w/anhy incl
10	94-95	0.2	0.2	13.5	0.0	69.0	Sd, lmy, silty, w/anhy incl
11	95-96	0.4	0.3	14.5	0.0	70.0	Sd, lmy, silty, w/anhy incl
12	96-97	0.3	0.3	14.3	0.0	78.0	Sd, lmy, silty, w/anhy incl
13	97-98	0.2	0.2	11.1	0.0	81.0	Sd, lmy, silty, w/anhy incl
14	98-99	0.1	0.1	10.0	0.0	81.0	Sd, silty
15	99-00	0.2	0.2	12.7	0.0	85.0	Sd, silty
	2600-01						Sh, red
16	01-02	<0.1	<0.1	7.5	0.0	81.0	Siltstone, lmy, shy
17	02-03	<0.1	<0.1	6.3	0.0	81.0	Siltstone, lmy, shy
18	03-04	<0.1	<0.1	7.3	0.0	81.0	Siltstone, lmy, shy
19	04-05	<0.1	<0.1	7.5	0.0	80.0	Siltstone, lmy, shy
	2605-07						Sh, red
20	07-08	<0.1	<0.1	5.1	0.0	71.0	Lm, stylolitic, w/anhy incl
21	08-09	<0.1	<0.1	4.3	0.0	69.0	Lm, w/few anhy incl
22	09-10	<0.1	<0.1	2.7	0.0	60.0	Lm, w/few anhy incl
23	10-11	<0.1	<0.1	5.5	0.0	56.0	Lm, w/anhy incl
24	11-12	<0.1	<0.1	2.8	0.0	68.0	Lm, w/anhy incl
25	12-13	<0.1	<0.1	1.9	0.0	77.0	Lm, sl/shy
	2613-16						Sh, red
26	16-17	<0.1	<0.1	2.0	0.0	84.0	Lm, shy
27	17-18	<0.1	<0.1	1.0	0.0	64.0	Lm
28	18-19	<0.1	<0.1	0.8	0.0	67.0	Lm
	2619-21						Sh, red
29	21-22	<0.1	<0.1	1.9	0.0	74.0	Lm, shy, w/chert incl
30	22-23	<0.1	<0.1	6.6	0.0	36.0	Lm
31	23-24	<0.1	<0.1	8.6	0.0	55.0	Lm
32	24-25	<0.1	<0.1	3.3	0.0	79.0	Lm, shy
33	25-26	11	<0.1	4.3	0.0	81.0	Lm, shy, vert frac
34	26-27	<0.1	<0.1	2.6	0.0	80.0	Lm, shy
35	2627-28	<0.1	<0.1	3.9	0.0	85.0	Lm, v/shy

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CORE LABORATORIES, INC.

Petroleum Reservoir Engineering

DALLAS, TEXAS

File CP-1-7625 Page No. 2Well ENDSLEY GAS UNIT NO. 2

CORE ANALYSIS RESULTS

SAMPLE NUMBER	DEPTH FEET	PERMEABILITY MILLIDARCYs MAX. 90°		POROSITY PER CENT	RESIDUAL SATURATION PER CENT PORE		SAMPLE DESCRIPTION AND REMARKS
					OIL	TOTAL WATER	
	2628-29						Sh, red
36	29-30	<0.1	<0.1	9.9	0.0	84.0	Lm, v/shy
37	30-31	<0.1	<0.1	4.0	0.0	84.0	Lm, shy
	2631-33						Sh, red
38	33-34	<0.1	<0.1	3.6	0.0	83.0	Lm, shy
	2634-35						Sh, red
39	35-36	<0.1	<0.1	3.0	0.0	78.0	Lm, shy
40	36-37	<0.1	<0.1	3.6	0.0	80.0	Lm, shy
	2637-40						Sh, red
41	40-41	<0.1	<0.1	7.9	0.0	76.0	Siltstone, lmy, shy
42	41-42	<0.1	<0.1	7.0	0.0	78.0	Sd, lmy, silty
43	42-43	<0.1	<0.1	7.2	0.0	73.0	Sd, lmy, silty
44	43-44	<0.1	<0.1	7.2	0.0	75.0	Sd, lmy, silty
45	44-45	0.1	<0.1	8.6	0.0	80.0	Sd, lmy, silty
46	45-46	<0.1	<0.1	6.3	0.0	72.0	Sd, lmy, silty
47	46-47	0.1	<0.1	8.6	0.0	77.0	Sd, lmy, silty
48	47-48	0.1	<0.1	9.0	0.0	75.0	Sd, lmy, silty
	2648-53						Sh, red
49	53-54	<0.1	<0.1	2.4	0.0	70.0	Lm, sdy, shy
50	54-55	0.2	0.1	5.2	0.0	56.0	Sd, v/lmy, silty
51	55-56	27	5.9	12.1	0.0	45.0	Sd, lmy, silty, vert frac
52	56-57	6.6	5.3	13.2	0.0	43.0	Sd, lmy, silty
53	57-58	18	17	15.9	0.0	51.0	Sd, lmy, sl/silty
54	58-59	33	32	17.5	0.0	50.0	Sd, lmy, sl/silty
55	59-60	36	35	18.9	0.0	50.0	Sd, lmy
56	60-61	47	40	21.5	0.0	56.0	Sd, sl/lmy
57	61-62	29	28	20.2	0.0	59.0	Sd, sl/lmy
58	62-63	30	28	20.8	0.0	51.0	Sd, sl/lmy
59	63-64	25	18	18.3	0.0	53.0	Sd, lmy, silty
60	64-65	7.0	6.3	15.3	0.0	55.0	Sd, lmy, shy, silty
61	65-66	9.1	6.5	15.2	0.0	52.0	Sd, lmy, shy, silty
62	66-67	5.9	4.9	13.5	0.0	69.0	Sd, lmy, shy, silty
63	67-68	1.7	1.7	13.3	0.0	66.0	Sd, lmy, shy, silty
64	68-69	1.0	0.6	13.1	0.0	76.0	Sd, lmy, shy, silty
65	69-70	0.6	0.5	13.7	0.0	66.0	Sd, lmy, shy, silty
66	70-71	1.4	1.3	14.2	0.0	62.0	Sd, lmy, shy, silty
67	71-72	2.6	2.2	17.0	0.0	72.0	Sd, lmy, shy, silty, anhy
68	72-73	0.8	0.8	10.6	0.0	68.0	Sd, lmy, shy, silty
69	73-74	0.1	0.1	7.5	0.0	86.0	Sd, lmy, v/shy, silty
70	74-75	<0.1	<0.1	5.8	0.0	80.0	Sd, lmy, shy, silty
71	75-76	<0.1	<0.1	3.0	0.0	74.0	Sd, v/lmy, shy, silty
72	76-77	<0.1	<0.1	2.3	0.0	64.0	Sd, v/lmy, silty
73	77-78	<0.1	<0.1	2.5	0.0	72.0	Lm
74	78-79	<0.1	<0.1	1.5	0.0	75.0	Lm, sl/shy
75	79-80	<0.1	<0.1	3.6	0.0	77.0	Lm, shy
76	80-81	<0.1	<0.1	1.9	0.0	79.0	Lm, sl/shy
77	81-82	1.3	<0.1	0.8	0.0	56.0	Lm, w/anhy incl, vert frac
78	2682-83	<0.1	<0.1	3.2	0.0	82.0	Lm, shy

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CORE LABORATORIES, INC.
Petroleum Reservoir Engineering
DALLAS, TEXAS

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Well ENDSLEY GAS UNIT NO. 2

CORE ANALYSIS RESULTS

SAMPLE NUMBER	DEPTH FEET	PERMEABILITY MILLIDARCYs		POROSITY PER CENT	RESIDUAL SATURATION PER CENT PORE		SAMPLE DESCRIPTION AND REMARKS
		MAX.	90°		OIL	TOTAL WATER	
79	2683-84	<0.1	<0.1	3.8	0.0	84.0	Siltstone, lmy, shy
80	84-85	0.1	0.1	7.5	0.0	87.0	Siltstone, lmy, shy
	2685-94						Sh, red
81	94-95	0.1	0.1	9.2	0.0	95.0	Siltstone, lmy, shy, anhy
82	95-96	<0.1	<0.1	5.1	0.0	94.0	Siltstone, lmy, shy, anhy
83	96-97	0.1	<0.1	7.6	0.0	93.0	Siltstone, lmy, shy, anhy
	2697-98						Sh, red
84	98-99	1.2	<0.1	22.1	0.0	86.0	Dol, chalky, pp vugs
85	99-00	<0.1	<0.1	1.4	0.0	85.0	Lm
86	2700-01	<0.1	<0.1	1.8	0.0	82.0	Lm, stylolitic, vert frac
87	01-02	<0.1	<0.1	2.1	0.0	86.0	Lm, sl/shy, stylolitic
88	02-03	<0.1	<0.1	2.3	0.0	82.0	Lm, vert frac
89	03-04	<0.1	<0.1	2.2	0.0	77.0	Lm
	2704-08						Sh, red
90	08-09	1.1	1.0	16.3	0.0	86.0	Sd, shy
91	09-10	1.2	1.0	17.3	0.0	89.0	Sd, shy
92	10-11	0.1	<0.1	8.4	0.0	89.0	Siltstone, w/lm incl, shy
93	11-12	0.2	0.1	9.8	0.0	86.0	Siltstone, w/lm incl, shy
94	12-13	<0.1	<0.1	7.4	0.0	86.0	Siltstone, w/lm incl, shy
95	13-14	<0.1	<0.1	6.6	0.0	87.0	Siltstone, w/lm incl, shy
96	14-15	0.1	<0.1	7.0	0.0	88.0	Siltstone, lmy, shy
	2715-17						Sh, red
97	17-18	<0.1	<0.1	6.1	0.0	90.0	Siltstone, lmy, shy
98	18-19	<0.1	<0.1	6.6	0.0	93.0	Siltstone, lmy, shy
99	19-20	<0.1	<0.1	5.9	0.0	92.0	Siltstone, lmy, shy
	2720-23						Sh, red
100	23-24	<0.1	<0.1	2.9	0.0	87.0	Lm
101	24-25	<0.1	<0.1	4.4	0.0	88.0	Lm, stylolitic, anhy
102	25-26	<0.1	<0.1	6.0	0.0	89.0	Lm, pp vugs, anhy
103	26-27	<0.1	<0.1	4.8	0.0	90.0	Lm, sdy, silty
104	27-28	0.1	0.1	11.1	0.0	92.0	Sd, lmy, shy, silty
105	28-29	<0.1	<0.1	8.0	0.0	91.0	Sd, lmy, silty
106	29-30	0.3	0.3	10.6	0.0	90.0	Sd, lmy, silty
	2730-32						Sh, red
107	32-33	<0.1	<0.1	8.5	0.0	87.0	Sd, lmy, silty
108	33-34	<0.1	<0.1	8.2	0.0	89.0	Sd, lmy, silty
109	34-35	0.1	0.1	12.1	0.0	86.0	Sd, lmy, silty
110	35-36	0.1	0.1	12.2	0.0	86.0	Sd, lmy, silty
111	36-37	0.1	<0.1	8.8	0.0	85.0	Sd, lmy, silty
112	37-38	0.1	0.1	8.9	0.0	87.0	Sd, lmy, silty
	2738-40						Sh, red
113	40-41	<0.1	<0.1	2.1	0.0	87.0	Lm
114	41-42	0.2	0.1	5.4	0.0	59.0	Lm, anhy, vert frac
115	42-43	0.4	0.3	6.3	0.0	47.0	Lm, anhy, vert frac
116	43-44	<0.1	<0.1	5.9	0.0	76.0	Lm, anhy
117	44-45	0.1	0.1	10.5	0.0	80.0	Sd, shy, silty, anhy
118	45-46	<0.1	<0.1	6.9	0.0	82.0	Siltstone, sl/lmy, shy, anhy
	2746-53						Sh, red

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CORE LABORATORIES, INC.
Petroleum Reservoir Engineering
DALLAS, TEXAS

File CP-1-7625 Page No. 4

Well ENDSLEY GAS UNIT NO. 2

CORE ANALYSIS RESULTS

SAMPLE NUMBER	DEPTH FEET	PERMEABILITY MILLIDARCYs		POROSITY PER CENT	RESIDUAL SATURATION PER CENT PORE		SAMPLE DESCRIPTION AND REMARKS
		MAX.	90°		OIL	TOTAL WATER	
119	2753-54	0.4	0.4	14.2	0.0	91.0	Dol, lmy, shy
120	54-55	0.7	0.5	15.1	0.0	91.0	Dol, lmy, shy
121	55-56	<0.1	<0.1	4.7	0.0	85.0	Lm, sl/shy
122	56-57	0.2	0.2	8.8	0.0	64.0	Lm, chalky, w/anhy incl
123	57-58	3.0	2.9	15.8	0.0	50.0	Lm, chalky, w/anhy incl
124	58-59	2.9	2.8	12.6	0.0	49.0	Lm, chalky, w/anhy incl
125	59-60	3.1	3.1	13.6	0.0	59.0	Lm, chalky, w/anhy incl
126	60-61	3.6	2.8	21.1	0.0	61.0	Lm, chalky, w/anhy incl
127	61-62	3.9	3.9	20.4	0.0	62.0	Lm, chalky, w/anhy incl
128	62-63	2.7	2.5	19.2	0.0	71.0	Lm, chalky, w/anhy incl
129	63-64	0.5	0.3	10.3	0.0	80.0	Lm, chalky
130	64-65	0.5	0.4	11.6	0.0	81.0	Lm, chalky
131	65-66	0.4	0.3	12.8	0.0	86.0	Lm, chalky, vert frac
132	66-67	0.5	0.5	14.0	0.0	84.0	Lm, chalky
133	67-68	<0.1	<0.1	2.2	0.0	71.0	Lm, sl/shy
134	68-69	<0.1	<0.1	1.6	0.0	69.0	Lm
135	2769-70	<0.1	<0.1	1.3	0.0	73.0	Lm, sl/shy, w/anhy incl
	2770-85						Sh, red
	2785-86						Lost core

PRELIMINARY REPORT

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Small Core

Lab. No. 4536

Date 4-2-73

Core Analysis Data Record

Well Endsley 36-27-39

Field Panama

State Kansas

Sample Number	Depths	Description	Permeability-Millidarcys		Effective Porosity	Saturation % Pore		Grain Density
			Horizontal	Vertical		Oil	Water	
A	2608-09	LM	< .05		6.0			2.71
B	2609-10	LM	< .05		5.4			2.81
C	2610-11	LM	< .05		4.7			2.78
D	2611-12	LM	< .05		2.1			2.72
E	2612-13	LM	< .05		2.5			2.71
F	2677-78	LM	< .05		6.3			2.71
G	2678-79	LM	< .05		2.3			2.72
H	2679-80	LM	.18		3.2			2.70
I	2680-81	LM	.14		3.6			2.71
J	2681-82	LM	< .05		1.7			2.74
K	2682-83	LM	< .05		4.6			2.70
L	2699-2700	LM	< .05		3.8			2.70
M	2700-01	LM	< .05		4.2			2.71
N	2701-02	LM	< .05		3.9			2.71
O	2702-03	LM	< .05		3.9			2.72
P	2703-04	LM	< .05		3.9			2.70
Q								
R								
S	cc: W. R. Walton							
T	M. S. Kraemer							
U	John Wilson							
V								
W								
X								
Y								
Z								

Proctor & Kelly

Small Core

Lab. No. 4536

Date 9-13-73

Core Analysis Data RecordWell Endsley Gas Unit #2 Field Panoma Council Grove State Kansas

Sample Number	Depths	Description	Permeability-Millidarcys		Effective Porosity*	Saturation % Pore		Grain Density
			Horizontal	Vertical		Oil	Water	
1	2591-92		.64		16.2			2.68
2	2592-93		.15		11.8			2.68
3	2593-94		1.68		14.8			2.67
4	2594-95		.30		12.8			2.68
5	2595-96		.34		13.2			2.67
6	2596-97		.17		13.5			2.67
7	2597-98		.41		8.0			2.80
8	2598-99		.09		10.1			2.68
9	2599-2600		.06		10.6			2.68
10	2641-42		<.05		6.6			2.67
11	2642-43		<.05		6.7			2.66
12	2643-44		.13		7.7			2.66
13	2644-45		.15		8.8			2.66
14	2645-46		.09		10.6			2.67
15	2646-47		<.05		6.8			2.67
16	2647-48		.07		8.2			2.66
17	2708-09	Unsuitable for analysis						
18	2709-10		<.05		15.5			2.66
19	2710-11	Unsuitable for analysis						
20	2711-12	Unsuitable for analysis						
21	2712-13		<.05		8.9			2.68
22	2713-14		<.05		6.0			2.70
23	2714-15		<.05		6.0			2.69
24	2717-18		<.05		7.4			2.68
25	2718-19		<.05		5.1			2.66
26	2719-20		<.05		7.1			2.68

Lab. No. 4536
Date 9-13-73

Date 9-13-73

State Kansas

[illegible]