

CORE LABORATORIES, INC.

Petroleum Reservoir Engineering
DALLAS, TEXAS

1059

15-1059

CORE ANALYSIS RESULTS

Company ERDA, MORGANTOWN ENERGY RESEARCH CENTER File 3402-8355
Well COLUMBIA GAS TRANSMISSION CORPORATIONS' GERRY WELL NO. 20274 Date Report 7-8-75
Field _____ Drilling Fluid _____ Analytsts PUGH
County CLAY State WEST VIRGINIA Location _____

Lithological Abbreviations

SAND-SD SHALE-SH LIME-LM DOLOMITE-DOL CHERT-CH GYPSUM-GYP ANHYDRITE-ANHY CONGLOMERATE-CONG FOSSILIFEROUS-FOSS SANDY-SBY 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-SL/ VERY-V/ WITH-W/

SAMPLE NUMBER	DEPTH FEET	PERMEABILITY, MILLIDARCY\$			POROSITY PER CENT	RESIDUAL SATURATION PER CENT PORE		GRAIN DENS.	SAMPLE DESCRIPTION AND REMARKS	NaCl ppm
		N-S	E-W	VERT.		OIL	TOTAL WATER			
WHOLE-CORE ANALYSIS										
1	1978.0-79.0	<0.1	<0.1	<0.1	10.4	20.0	61.7	2.88	Do1	202,000
2	1979.0-80.0	0.1	0.1	0.1	7.9	14.5	73.4	2.67	Sd, lmy	150,600
3	1980.0-81.0	5.2	6.1	5.5	12.1	6.4	72.2	2.66	Sd, shy, lmy	33,110
4	1981.0-82.0	0.3	0.3	0.3	8.8	6.4	67.4	2.66	Sd, silty, lmy	72,860
5	1982.0-83.0	10.1	11.2	6.4	15.5	7.3	52.9	2.65	Sd	16,320
6	1983.0-84.0	6.8	7.4	2.7	13.9	7.8	54.5	2.65	Sd, silty	27,380
7	1984.0-85.0	18.2	19.9	11.2	16.8	14.3	46.4	2.65	Sd	11,390
8	1985.0-86.0	0.3	0.2	0.3	8.2	14.4	54.4	2.65	Sd, silty	33,260
9	1986.0-87.0	0.2	<0.1	0.1	3.9	12.8	50.2	2.67	Sd, shy, lmy	91,770
10	1987.0-88.0	<0.1	<0.1	<0.1	4.7	14.2	42.6	2.67	Sd, silty, shy, lmy	169,500
11	1988.0-89.0	0.6	0.2	0.5	5.9	11.1	43.0	2.66	Sd, silty, shy	247,000
12	1989.0-90.0	<0.1	0.1	0.1	6.9	12.3	59.2	2.67	Sd, shy, lmy	110,600
13	1990.0-91.0	0.3	0.2	0.3	7.2	15.2	50.7	2.66	Sd, silty, shy	179,300
14	1991.0-92.0	<0.1	<0.1	<0.1	8.0	13.2	54.9	2.67	Sd, silty, lmy	124,300
15	1992.0-93.0+	19.0	8.4	<0.1	4.2	8.4	58.0	2.65	Sd, silty	237,500
16	1993.0-94.0	1.0	1.2	0.3	11.6	18.5	46.7	2.65	Sd, silty	40,230
17	1994.0-95.0	28.0*	4.7*	<0.1*	13.1	25.3	33.2	2.66	Sd, silty	135,400
18	1995.0-96.0	0.1	0.1	0.1	8.6	23.9	34.3	2.65	Sd, silty	173,200
19	1996.0-97.0+	1.3	3.4	0.5	4.7	22.1	38.7	2.65	Sd, silty	115,500
20	1997.0-98.0	0.9	0.9	0.8	7.2	23.1	35.7	2.66	Sd, silty	176,700
	1998.0-99.0								Not received	
21	1999.0-00.0	0.1	0.1	0.4	5.1	20.4	38.5	2.66	Sd, silty	196,500
22	2000.0-01.0	0.2	0.2	0.2	6.0	20.6	33.7	2.65	Sd, silty	139,000
23	2001.0-02.0	0.3	0.3	0.2	5.6	15.2	35.7	2.66	Sd, silty	93,600
24	2002.0-03.0	2.9	2.8	0.4	6.3	15.9	40.0	2.67	Sd, shy, lmy	127,000
25	2003.0-04.0	14.1	16.0	5.0	10.2	18.9	34.0	2.66	Sd, silty, shy	44,480
26	2004.0-05.0	<0.1	<0.1	<0.1	5.4	15.2	51.7	2.67	Sd, silty, lmy	158,900
27	2005.0-06.0	5.5	5.9	0.6	17.5	11.5	57.5	2.70	Sd, lmy	192,100
28	2006.0-07.0	9.3	10.0	6.0	15.1	10.7	50.0	2.67	Sd, lmy	88,860
29	2007.0-08.0+	31.6	69.5	2.5	17.0	14.3	49.6	2.65	Sd	55,260
30	2008.0-09.0	6.4	5.3	6.1	18.3	10.8	57.7	2.69	Sd, silty, lmy	48,470
31	2009.0-10.0	0.8	0.8	0.5	16.8	17.7	47.7	2.69	Sd, silty, shy, lmy	72,820
32	2010.0-11.0	1.2	1.2	0.2	16.4	17.2	48.5	2.68	Sd, silty, lmy	172,100
33	2011.0-12.0	1.2	0.7	0.2	17.2	14.3	48.1	2.68	Sd, silty, lmy	161,500
34	2012.0-13.0	0.4	0.5	0.3	14.7	14.1	63.0	2.73	Sd, silty, lmy	262,800
35	2013.0-14.0	2.1	2.2	2.1	18.8	13.6	57.3	2.68	Sd, silty, shy, lmy	188,100
36	2014.0-15.0	4.8	4.8	4.5	19.3	10.9	58.2	2.68	Sd, silty, lmy	187,900
37	2015.0-16.0	5.4	5.2	5.0	18.5	10.8	57.4	2.68	Sd, silty, lmy	190,700
38	2016.0-17.0	10.1	10.2	9.7	19.4	9.2	59.1	2.67	Sd, silty, lmy	45,380
39	2017.0-18.0	8.1	8.4	7.3	19.8	9.3	61.1	2.68	Sd, silty, lmy	56,380

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 representations, as to the productivity, proper operations, or profitability of any oil, gas or other mineral well or sand in connection with which such report is used or relied upon.

CORE ANALYSIS RESULTS

SAMPLE NUMBER	DEPTH FEET	PERMEABILITY, MILLIDARCYs			POROSITY PER CENT	RESIDUAL SATURATION PER CENT PORE		GRAIN DENS.	SAMPLE DESCRIPTION AND REMARKS	NaCl ppm
		N-S	E-W	VERT.		OIL	TOTAL WATER			
40	2018.0-19.0	4.1	4.1	3.4	18.1	10.1	60.2	2.69	Sd, silty, lmy	203,800
41	2019.0-20.0	2.6	2.5	1.8	17.9	17.3	51.9	2.70	Sd, silty, lmy	265,700
42	2020.0-21.0	1.0	1.0	0.7	17.5	17.0	53.9	2.71	Sd, silty, shy, lmy	323,100
43	2021.0-22.0	0.2	0.2	0.1	16.9	15.8	64.2	2.72	Sd, silty, shy, lmy	231,900
44	2022.0-23.0	0.1	0.1	<0.1	15.7	15.1	62.0	2.74	Sd, silty, shy, lmy	225,600
45	2023.0-24.0	0.1	0.1	<0.1	14.6	14.2	63.8	2.75	Sd, silty, shy, lmy	321,100
46	2024.0-25.0	<0.1	<0.1	<0.1	14.6	20.3	58.7	2.79	Sd, dol, silty, shy	371,400
47	2025.0-26.0	<0.1	<0.1	<0.1	14.1	19.8	61.1	2.78	Sd, dol, silty, shy	370,000
48	2026.0-27.0	<0.1	<0.1	<0.1	9.1	16.7	72.3	2.81	Dol, sdy, silty, shy	446,400
49	2027.0-28.0	<0.1	0.1	<0.1	9.8	17.0	64.9	2.83	Dol, sdy, silty, shy	467,400

CONVENTIONAL ANALYSIS

50	2028.0-29.0		0.3		17.0	8.5	57.6		Sd, silty, shy	138,100
51	2029.0-30.0		0.3		10.3	10.5	51.3		Sd, silty, shy	394,300

WHOLE-CORE ANALYSIS

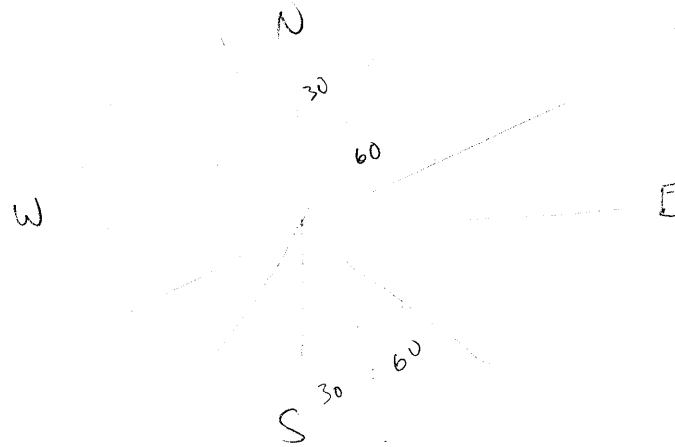
52	2030.0-31.0	<0.1	<0.1	<0.1	13.8	19.5	54.1	2.71	Sd, silty, lmy	267,600
53	2031.0-31.5+ 2031.5-59.0	0.3	0.3	<0.1	4.6	2.5	56.8	2.78	Sd, dol, shy, lmy Not received	378,500
54	2059.0-60.0+	0.7	0.4	<0.1	4.6	2.5	57.9	2.70	Sd, silty, lmy	188,200
55	2060.0-61.0+	0.4	0.8	<0.1	14.3	5.7	31.8	2.66	Sd, silty, shy	72,130
56	2061.0-62.0+	0.5	0.8	<0.1	15.0	5.7	30.6	2.67	Sd, silty, lmy	53,040
57	2062.0-63.0+	0.7	2.3	<0.1	14.2	11.7	31.6	2.65	Sd, silty	114,400
58	2063.0-64.0+	0.1	0.2	<0.1	14.0	12.4	31.8	2.65	Sd, silty	119,300
59	2064.0-65.0+	0.3	0.3	<0.1	14.8	12.8	30.0	2.67	Sd, silty, lmy	78,730
60	2065.0-66.0+	1.0	0.5	<0.1	14.6	12.2	31.7	2.65	Sd, silty	97,270
61	2066.0-67.0+	0.3	0.2	<0.1	13.8	11.6	33.0	2.65	Sd, silty	83,680

+ DENOTES HORIZONTAL CRACK

* DENOTES PLUG PERMEABILITY

CORE ANALYSIS RESULTS

SAMPLE NUMBER	DEPTH FEET	Permeability, Millidarcys					
		N-S	N30°E	N60°E	E-W	E30°S	E60°S
✓ 6	1983-84	6.8	6.6	7.1	7.4	7.7	7.2
✓ 8	1985-86	0.3	0.2	0.2	0.2	0.3	0.3
✓ 14	1991-92	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
✓ 19	1996-97+	1.3	1.9	2.7	3.4	0.8	0.8
✓ 24	2002-03	2.9	3.0	3.5	2.8	2.6	2.7
✓ 30	2008-09	6.4	6.0	6.2	6.2	6.2	5.6
✓ 35	2013-14	2.1	2.1	2.1	2.2	2.2	2.2
✓ 40	2018-19	4.1	4.1	4.1	4.1	4.0	4.0
✓ 45	2023-24	0.1	0.1	0.1	0.1	<0.1	0.1



+ DENOTES HORIZONTAL CRACK

PRELIMINARY REPORT