



OILFIELD RESEARCH, INC.

Entered 6/19/91 15-1126

Clay 1126

WHOLE CORE ANALYSIS REPORT

Company Columbia Gas Transmission Corp. Elevation 930.68 K.B. File No. 75011025
 Lease Well 20317 Formation See Below Date Cored 11/11-12/75
 Field Grannys Creek Orig. Fluid FW Gel Date Report 11/18/75
 County Clay State W. Va. Type Of Core Diamond Permit No. _____
 Location (Waters) Summers Fork Remarks Sampled by client

LITHOLOGICAL ABBREVIATIONS

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

SAMPLE NUMBER	DEPTH FEET	PERMEABILITY MILLIDARCS		POROSITY PERCENT	LITHOLOGY AND REMARKS
		HORIZONTAL			
		MAX	90°		

INJUN					Percent Oil	Percent Water
1	1775.0-76.5	23.	23.	10.0	10.6	60.4
2	1776.5-78.0	20.	18.	15.2	12.0	55.8
3	1778.0-79.5	22.	15.	19.3	20.3	50.5
4	1779.5-80.8	36.	33.	17.0	14.1	54.0
5	1780.8-82.2	16.	14.	17.6	16.1	52.8
6	1782.2-83.6	3.3	3.3	16.6	18.5	53.9
7	1783.6-85.0	1.8	1.5	14.3	21.2	46.2
8	1785.0-86.5	0.38	0.36	9.5	18.0	48.8
9	1786.5-88.0	0.17	0.17	9.0	22.6	44.3
10	1788.0-89.2	0.33	0.33	6.9	18.0	54.0
11	1789.2-90.2	0.17	0.17	7.3	5.7	48.2
12	1790.2-91.5	<0.10	<0.10	4.5	3.5	90.6
13	1791.5-92.9	8.2	8.2	13.5	20.8	55.6
14	1792.9-94.1	<0.10	<0.10	9.9	15.6	70.0
15	1794.1-95.3	9.0	9.0	8.1	13.8	56.4
16	1795.3-96.6	12.	11.	9.4	15.6	47.2
17	1796.6-97.8	4.8	3.8	19.0	18.8	56.3
18	1797.8-99.0	2.2	1.9	16.1	22.6	57.0
19	1799.0-00.5	4.8	4.8	20.2	22.8	55.5
20	1800.5-02.0	14.	14.	22.6	18.2	52.7
21	1802.0-03.5	19.	19.	22.3	19.4	53.6
22	1803.5-04.8	16.	16.	21.2	19.9	56.7
23	1804.8-06.1	15.	15.	22.6	20.5	54.3
24	1806.1-07.3	17.	17.	18.2	18.2	55.2
25	1807.3-08.9	15.	14.	22.5	20.2	51.7
26	1808.9-10.3	14.	12.	18.5	18.8	54.0
27	1810.3-11.8	<0.10	<0.10	14.7	19.5	57.5
28	1811.3-13.1	6.1	5.8	19.4	19.6	55.5

These analyses, opinions or interpretations are based on observations and material 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 Oilfield Research, Inc. (all errors and omissions excepted) but Oilfield Research, Inc. and its officers and employees, accept no responsibility and claim no warranty or representation as to the accuracy or completeness of the data.

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WHOLE CORE ANALYSIS REPORT

Lease

Well No. 20317

SAMPLE NUMBER	DEPTH FEET	PERMEABILITY MILLIDARCYS		POROSITY PERCENT	LITHOLOGY AND REMARKS
		HORIZONTAL			
		MAX	90°		

SAMPLE NUMBER	DEPTH FEET	PERMEABILITY MILLIDARCYS MAX	PERMEABILITY MILLIDARCYS 90°	POROSITY PERCENT	Percent Oil	Percent Water
29	1813.1-14.5	7.1	7.1	20.4	17.1	56.3
30	1814.5-15.8	7.1	7.1	20.0	19.2	56.7
31	1815.8-17.0	1.9	1.5	19.5	19.8	59.3
32	1817.0-18.1	0.25	0.25	19.2	20.2	60.1
33	1818.1-19.5	<0.10	<0.10	17.6	22.1	61.6
34	1819.5-20.5	<0.10	<0.10	12.9	10.3	86.6
35	1821.3-22.3	<0.10	<0.10	10.8	9.1	87.1
36	1822.3-24.0	<0.10	<0.10	12.7	11.0	86.6
37	1824.9-25.5	<0.10	<0.10	17.1	11.9	71.5
38	1825.5-26.6	<0.10	<0.10	18.4	15.2	69.6
39	1826.6-28.0	<0.10	<0.10	16.9	17.9	63.3
SQUAW						
40	1860.0-61.2	23.	2.4	13.8	32.2	18.1
41	1861.2-62.4	1.1	0.89	20.0	28.4	24.4
42	1862.4-63.8	0.58	0.33	20.3	29.5	22.3
43	1863.8-65.0	0.76	0.44	20.5	34.1	19.9
44	1865.0-66.0	0.52	0.52	21.6	35.3	18.6
45	1866.0-66.9	0.42	0.42	21.3	28.1	18.1

AVERAGES

19.3'	1775.0-1796.6	11.	9.9	12.7	17.0	53.4	INJUN
21.5'	1796.6-1818.1	9.3	9.0	19.9	19.7	55.6	INJUN
6.9'	1860.0-1866.9	4.6	0.85	19.5	31.2	20.4	SQUAW