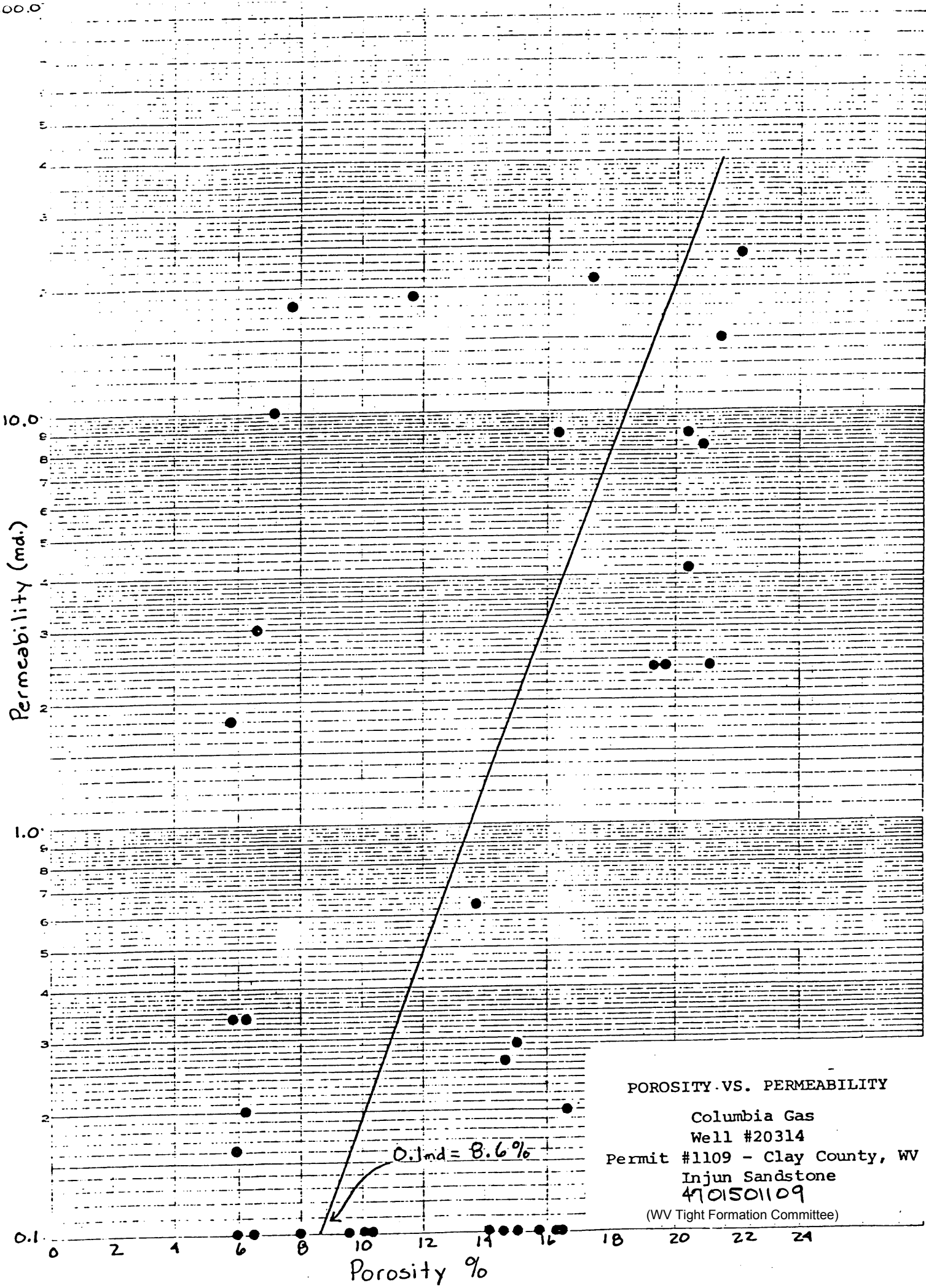


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POROSITY VS. PERMEABILITY

Columbia Gas
Well #20314
Permit #1109 - Clay County, WV
Injun Sandstone
4701501109
(WV Tight Formation Committee)

42-54

@/ay-1109



OILFIELD RESEARCH, INC.

WHOLE CORE ANALYSIS REPORT

Company Columbia Gas Transmission Corporation Elevation N.A. File No. 75011018
 Lease _____ Well 20314 Formation See Below Date Cored 11/1/75
 Field Grannys Fork Drlg. Fluid FW Gel Date Report 11/7/75
 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-W/
 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°		

					Oil Percent	Water Percent
	INJUN					
1	1880.0-81.5	19.	17.	11.7	26.5	47.0
2	1881.5-82.8	<0.10	<0.10	6.4	31.8	43.2
3	1882.8-84.2	<0.10	<0.10	6.0	21.2	51.8
4	1884.2-85.4	0.20	0.16	6.2	18.3	50.0
5	1885.4-86.3	0.38	0.26	5.9	25.0	57.2
6	1886.3-87.4	<0.10	<0.10	8.0	22.5	50.6
7	1887.4-89.4	0.30	0.20	6.2	12.4	51.2
8	1889.4-90.9	0.16	0.16	6.0	17.3	46.5
9	1890.9-92.2	3.0	2.6	6.7	11.7	53.0
10	1892.2-93.5	10.	9.7	7.2	16.3	50.0
11	1893.5-95.0	1.8	1.5	4.8	14.9	49.6
12	1895.0-96.5	17.	15.	7.7	12.5	50.0
13	1896.5-97.8	8.8	8.3	16.4	20.9	52.2
14	1897.8-99.2	24.	23.	22.1	18.9	50.7
15	1899.2-00.6	8.2	7.5	20.9	19.0	55.1
16	1900.6-02.3	21.	21.	17.4	19.9	55.6
17	1902.3-03.3	2.4	1.7	21.1	23.2	53.0
18	1903.3-04.4	15.	15.	21.5	20.4	50.4
19	1904.4-05.8	0.64	0.64	13.8	18.3	56.9
20	1905.8-06.9	8.9	8.2	20.4	16.8	52.4
21	1906.9-08.4	4.2	4.2	20.4	20.8	54.2
22	1908.4-10.0	2.4	2.0	19.8	23.6	56.6
23	1910.0-11.4	<0.10	<0.10	16.5	19.9	62.0
24	1911.4-12.7	2.4	2.0	19.5	26.2	53.8
25	1912.7-14.0	<0.10	<0.10	14.2	20.2	67.4
26	1914.0-15.1	<0.10	<0.10	16.3	22.3	59.5
27	1915.1-16.7	0.26	0.26	14.8	20.9	60.8

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, assume no responsibility and make no warranty or representations as to the productivity or proper

WHOLE CORE ANALYSIS REPORT

Loose _____

20314

Well No. _____

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

					Oil Percent	Water Percent
28	1916.7-18.2	0.20	<0.10	16.7	19.5	57.7
29	1918.2-19.6	<0.10	<0.10	13.7	22.7	72.0
30	1919.6-21.2	0.29	0.20	15.1	15.2	68.9
31	1921.2-22.9	<0.10	<0.10	14.7	17.0	75.2
32	1922.9-24.0	<0.10	<0.10	15.8	18.3	69.0
33	1924.0-25.3	<0.10	<0.10	15.1	18.0	72.8
34	1925.3-26.4	<0.10	<0.10	13.4	8.4	76.6
35	1926.4-27.5	<0.10	<0.10	9.6	4.0	91.9
36	1927.5-29.0	<0.10	<0.10	10.1	2.9	94.0
37	1929.0-30.6	<0.10	<0.10	10.4	2.7	93.9

SQUAW

38	1959.0-60.2	1.8	1.7	21.6	32.4	27.9
39	1960.2-61.2	0.82	0.73	20.6	34.7	20.7

AVERAGES

1880.0 - 1896.5	4.6	4.2	6.9	18.7	49.8	(16.5')
1896.5 - 1925.3	4.7	4.6	17.3	20.0	60.1	(28.8')