

# Methane Adsorption Isotherm

Kansas Geological Survey

Well: Douglas Co. Corehole #1

Sample: Drywood Coal

Depth: 1193' 2.5"-1194' 8.5"

Raw Basis

Sample Weight = 106.95 g	Ash Content = 15.40 %
Particle Size = < 20 Mesh	EQ. Moisture Content = 6.50%
Temperature = 72.0°F (22.2°C)	

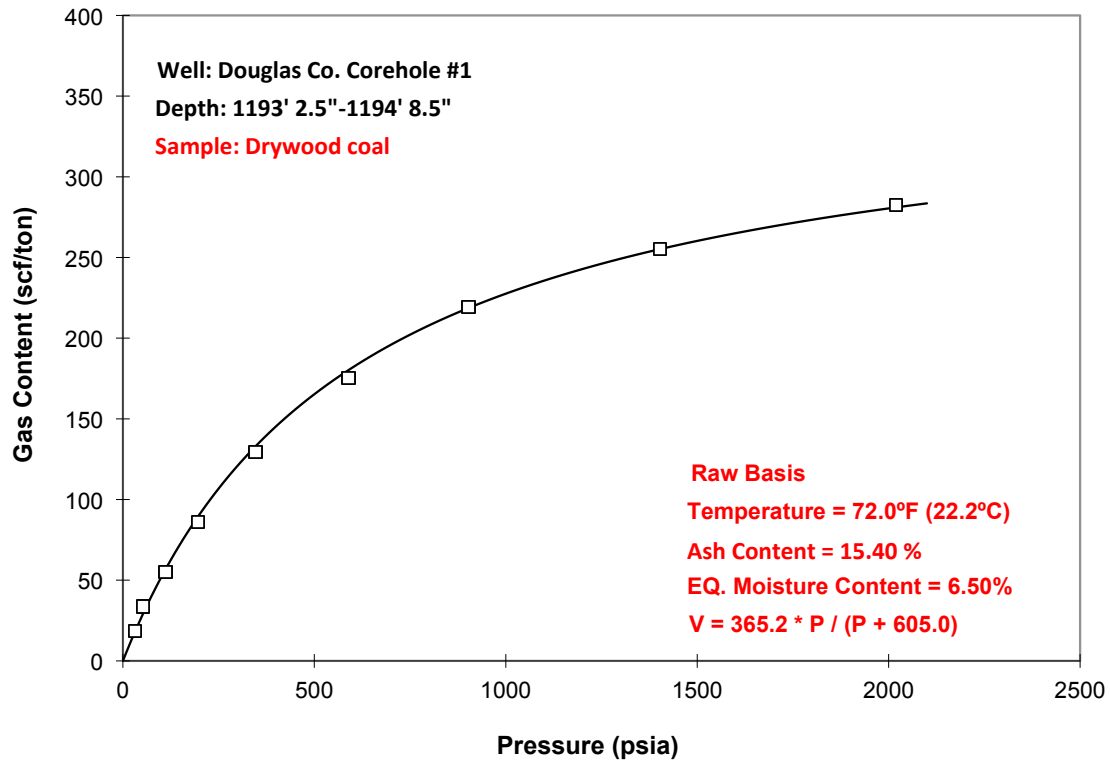
## Methane Adsorption

<u>Pressure</u>		<u>Gas Content (Raw Basis)</u>	
(psia)	(MPa)	(scf/ton)	(scc/gm)
32	0.22	18.3	0.57
53	0.37	33.8	1.06
111	0.77	55.3	1.73
197	1.36	86.1	2.69
346	2.39	129.7	4.05
589	4.06	175.5	5.48
902	6.22	219.3	6.85
1,403	9.67	255.3	7.97
2,020	13.93	282.4	8.81

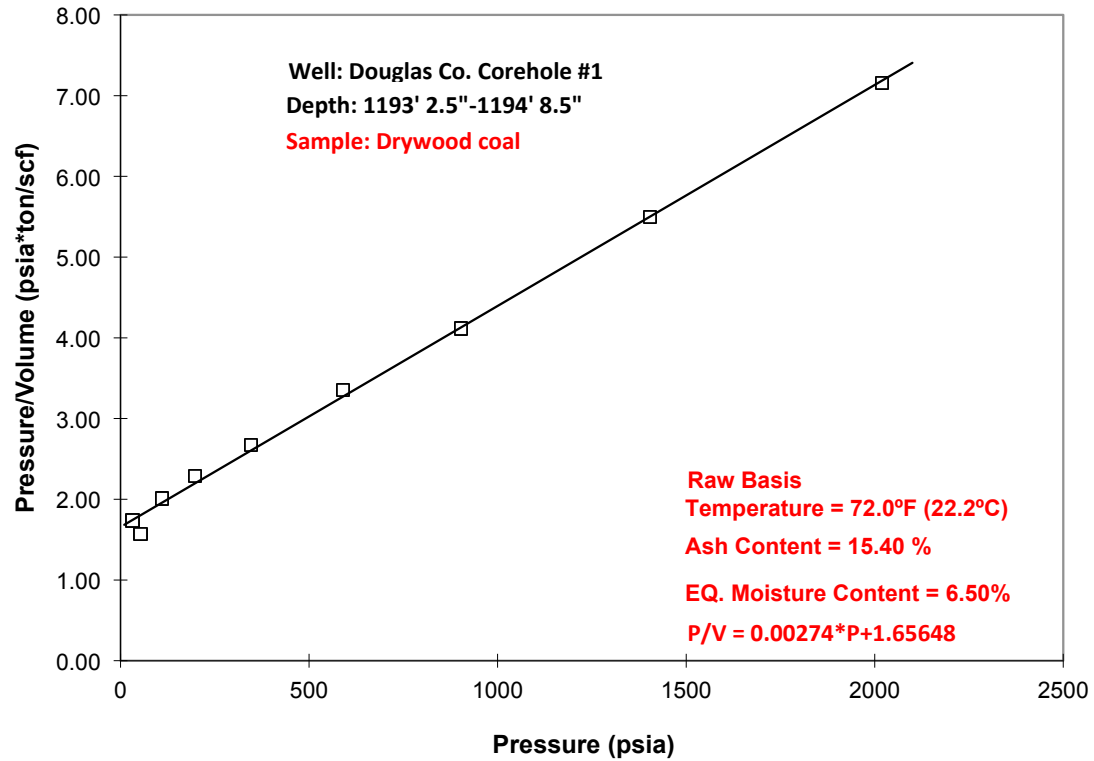
## Langmuir Coefficients $V = 365.2 * P / (P + 605.0)$

<u>PL</u>		<u>VL (Raw Basis)</u>	
(psia)	(MPa)	(scf/ton)	(scc/gm)
605.0	4.17	365.2	11.4

### Methane Adsorption Isotherm



### Adsorption Langmuir Plot



# Methane Adsorption Isotherm

Kansas Geological Survey

Well: Douglas Co. Corehole #1

Sample: Drywood Coal

Depth: 1193' 2.5"-1194' 8.5"

Dry Basis

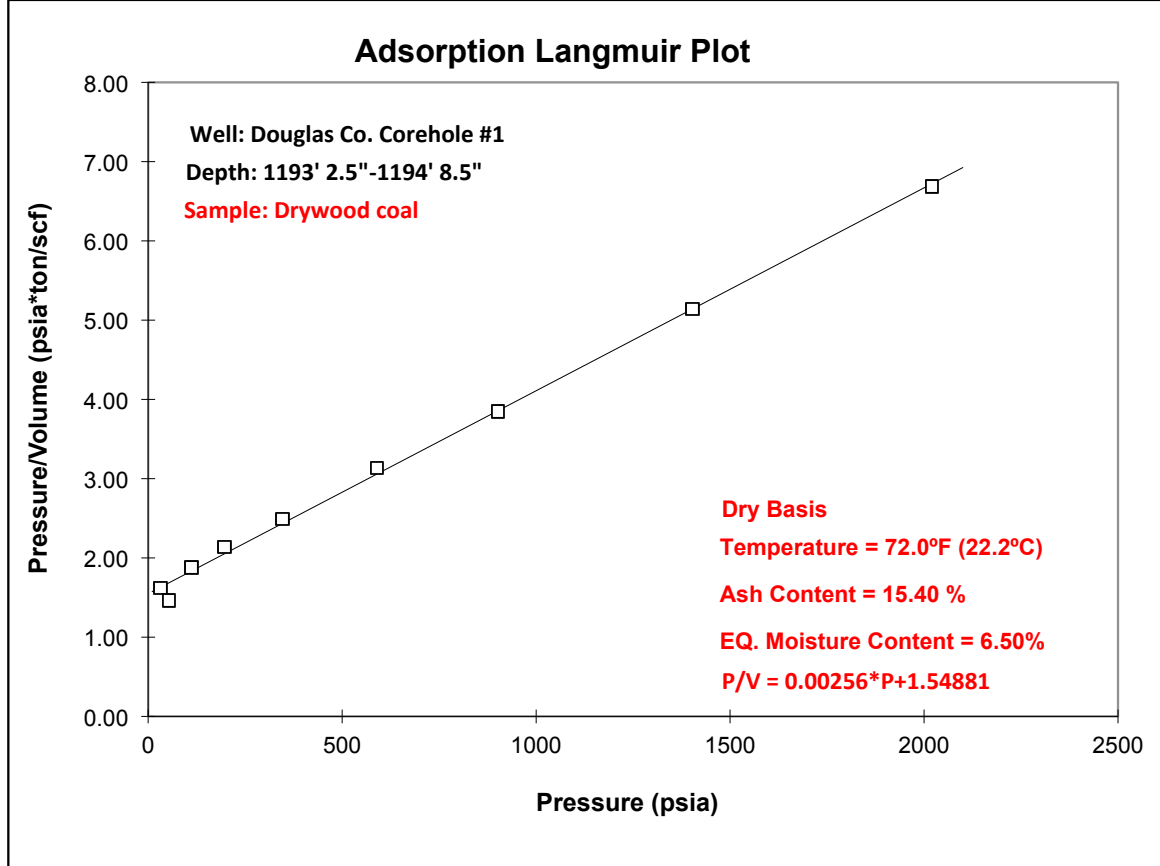
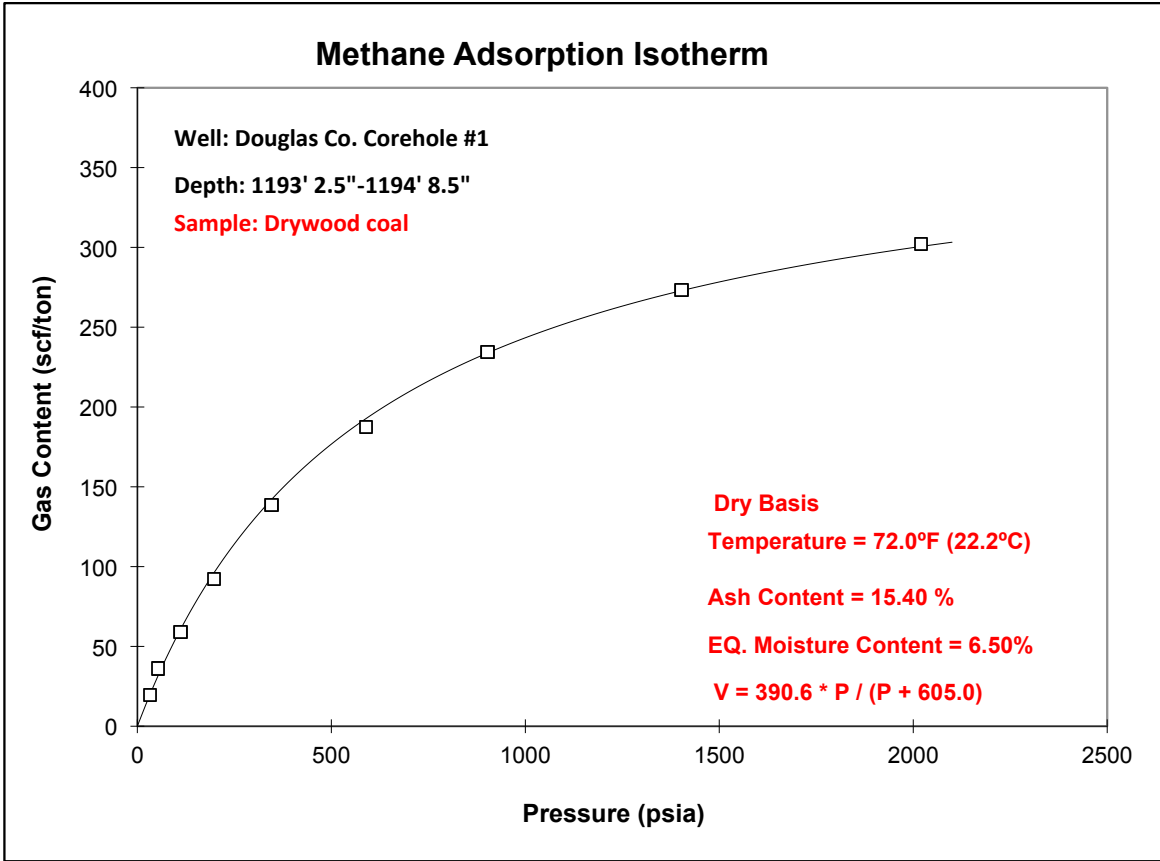
Sample Weight = 106.95 g	Ash Content = 15.40 %
Particle Size = < 20 Mesh	EQ. Moisture Content = 6.50%
Temperature = 72.0°F (22.2°C)	

## Methane Adsorption

<u>Pressure</u>		<u>Gas Content (Dry Basis)</u>	
(psia)	(MPa)	(scf/ton)	(scc/gm)
32	0.22	19.6	0.61
53	0.37	36.1	1.13
111	0.77	59.1	1.84
197	1.36	92.1	2.87
346	2.39	138.7	4.33
589	4.06	187.7	5.86
902	6.22	234.5	7.32
1,403	9.67	273.1	8.52
2,020	13.93	302.0	9.43

## Langmuir Coefficients $V = 390.6 * P / (P + 605.0)$

<u>PL</u>		<u>VL (Dry Basis)</u>	
(psia)	(MPa)	(scf/ton)	(scc/gm)
605.0	4.17	390.6	12.2



# Methane Adsorption Isotherm

Kansas Geological Survey

Well: Douglas Co. Corehole #1

Sample: Drywood Coal

Depth: 1193' 2.5"-1194' 8.5"

Dry, Ash-Free Basis

Sample Weight = 106.95 g	Ash Content = 15.40 %
Particle Size = < 20 Mesh	EQ. Moisture Content = 6.50%
Temperature = 72.0°F (22.2°C)	

## Methane Adsorption

<u>Pressure</u>		<u>Gas Content (Dry, Ash-Free Basis)</u>	
(psia)	(MPa)	(scf/ton)	(scc/gm)
32	0.22	23.5	0.73
53	0.37	43.2	1.35
111	0.77	70.8	2.21
197	1.36	110.3	3.44
346	2.39	166.0	5.18
589	4.06	224.7	7.01
902	6.22	280.7	8.76
1,403	9.67	326.9	10.20
2,020	13.93	361.5	11.28

## Langmuir Coefficients $V = 467.6 * P / (P + 605.0)$

<u>PL</u>		<u>VL (Dry, Ash-Free Basis)</u>	
(psia)	(MPa)	(scf/ton)	(scc/gm)
605.0	4.17	467.6	14.6

