

## Methane Adsorption Isotherm Summary

**Project:** New Crown 1  
**Reservoir:** Unknown  
 Sample Number: AB-70894-NC1\_A  
 Sample Type: Coal  
 Drill Depth, metres: Unknown  
 Temperature, °C: 60.0  
 Experimental Moisture Content, fraction: 0.1770  
 Experimental Ash Content, fraction: 0.1154

| Pressure | Methane Storage Capacity, scc/gram |            |               |            |
|----------|------------------------------------|------------|---------------|------------|
| MPa      | As-Received                        |            | Dry, Ash-Free |            |
|          | Measured                           | Calculated | Measured      | Calculated |
| 0.00     | 0.00                               | 0.00       | 0.00          | 0.00       |
| 0.74     | 0.37                               | 0.37       | 0.53          | 0.52       |
| 1.83     | 0.87                               | 0.87       | 1.23          | 1.22       |
| 3.10     | 1.36                               | 1.39       | 1.93          | 1.97       |
| 4.46     | 1.91                               | 1.90       | 2.70          | 2.69       |
| 5.87     | 2.35                               | 2.37       | 3.32          | 3.36       |
| 7.28     | 2.83                               | 2.80       | 4.01          | 3.96       |

| Parameters                           | Methane Langmuir Parameters (S.I. Units) |                   |
|--------------------------------------|--|-------------------|
|                                      | As-Received                              | Dry, Ash-Free     |
| Slope:                               | 0.0887                                   | 0.0628            |
| Intercept:                           | 1.9524                                   | 1.3815            |
| Regression Coefficient (squared):    | 0.9790                                   | 0.9790            |
| Intercept Variation, Mpa*gram/scc:   | 0.1019                                   | 0.0721            |
| Slope Variation, gram/scc:           | 0.0227                                   | 0.0161            |
| G <sub>SL</sub> Variation, scc/gram: | 2.3345                                   | 3.2992            |
| P <sub>L</sub> Variation, MPa:       | 4.1402                                   | 4.1402            |
| Langmuir Volume, scc/gram:           | 11.28                                    | 15.93             |
| Langmuir Pressure, MPa:              | 22.01                                    | 22.01             |
| Langmuir Equation:                   | V=11.3*P/(P+22.0)                        | V=15.9*P/(P+22.0) |
| Pressure (Midpoint), MPa:            | 6.03                                     | 6.03              |
| Storage Capacity, scc/gram:          | 2.43                                     | 3.43              |

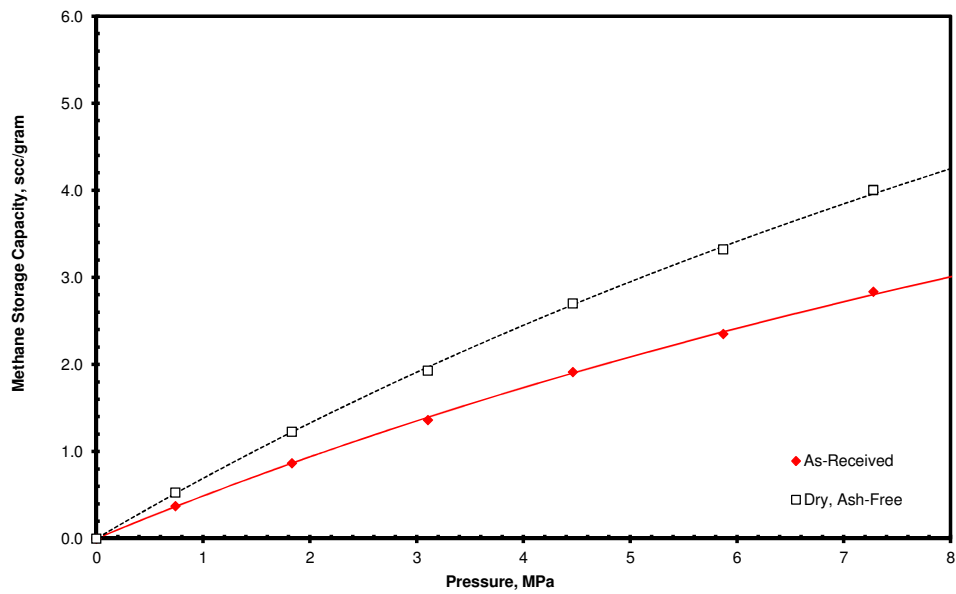
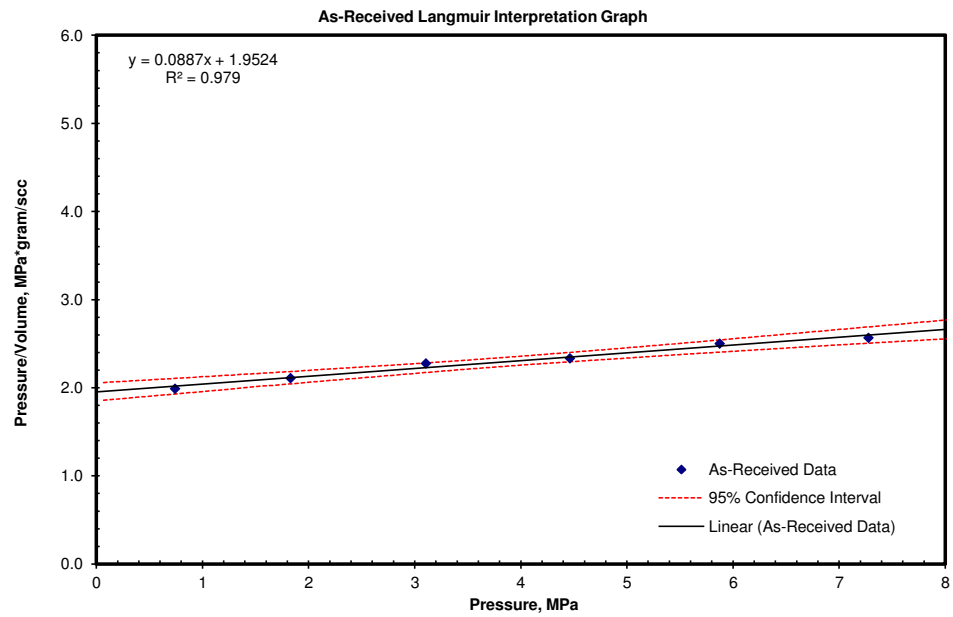
*G<sub>s</sub>* Gas Storage Capacity

*G<sub>SL</sub>* Langmuir Gas Storage Capacity

*P<sub>L</sub>* Langmuir Pressure

*p* Relevant Pressure (Reservoir Pressure)

## Methane Adsorption Isotherm Summary Graphs



## Methane Adsorption Isotherm Summary

**Project:** New Crown 1  
**Reservoir:** Unknown  
 Sample Number: AB-70894-NC1\_B  
 Sample Type: Coal  
 Drill Depth, metres: Unknown  
 Temperature, °C: 63.0  
 Experimental Moisture Content, fraction: 0.1741  
 Experimental Ash Content, fraction: 0.1013

| Pressure | Methane Storage Capacity, scc/gram |            |               |            |
|----------|------------------------------------|------------|---------------|------------|
| MPa      | As-Received                        |            | Dry, Ash-Free |            |
|          | Measured                           | Calculated | Measured      | Calculated |
| 0.00     | 0.00                               | 0.00       | 0.00          | 0.00       |
| 0.80     | 0.50                               | 0.49       | 0.69          | 0.67       |
| 1.99     | 1.11                               | 1.13       | 1.54          | 1.57       |
| 3.37     | 1.75                               | 1.79       | 2.42          | 2.47       |
| 4.85     | 2.42                               | 2.40       | 3.34          | 3.31       |
| 6.40     | 2.97                               | 2.95       | 4.09          | 4.07       |
| 7.97     | 3.43                               | 3.43       | 4.73          | 4.74       |

| Parameters                           | Methane Langmuir Parameters (S.I. Units) |                   |
|--------------------------------------|--|-------------------|
|                                      | As-Received                              | Dry, Ash-Free     |
| Slope:                               | 0.0953                                   | 0.0691            |
| Intercept:                           | 1.5620                                   | 1.1320            |
| Regression Coefficient (squared):    | 0.9852                                   | 0.9852            |
| Intercept Variation, Mpa*gram/scc:   | 0.1001                                   | 0.0725            |
| Slope Variation, gram/scc:           | 0.0204                                   | 0.0148            |
| G <sub>SL</sub> Variation, scc/gram: | 1.7310                                   | 2.3887            |
| P <sub>L</sub> Variation, MPa:       | 2.2875                                   | 2.2875            |
| Langmuir Volume, scc/gram:           | 10.49                                    | 14.48             |
| Langmuir Pressure, MPa:              | 16.39                                    | 16.39             |
| Langmuir Equation:                   | V=10.5*P/(P+16.4)                        | V=14.5*P/(P+16.4) |
| Pressure (Midpoint), MPa:            | 6.65                                     | 6.65              |
| Storage Capacity, scc/gram:          | 3.03                                     | 4.18              |

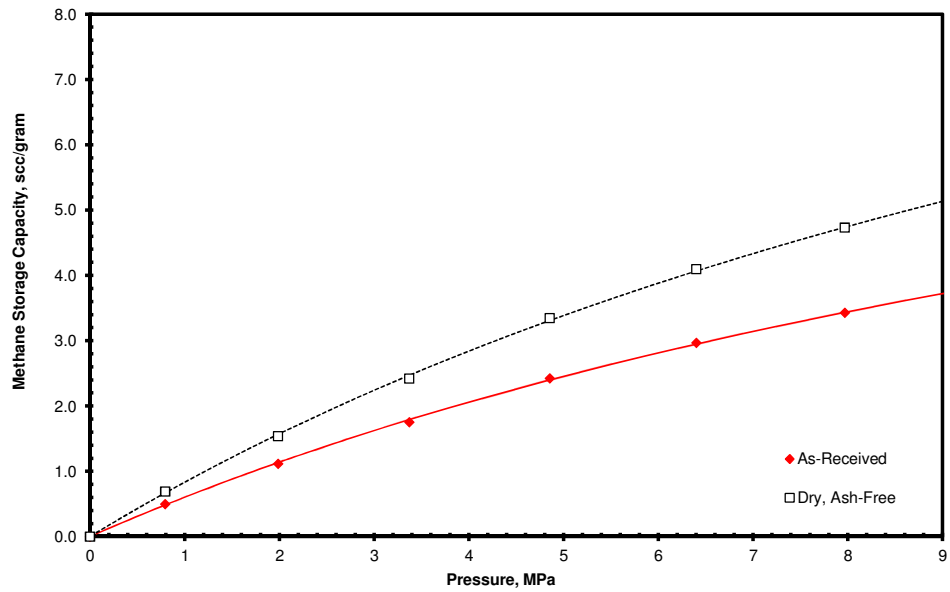
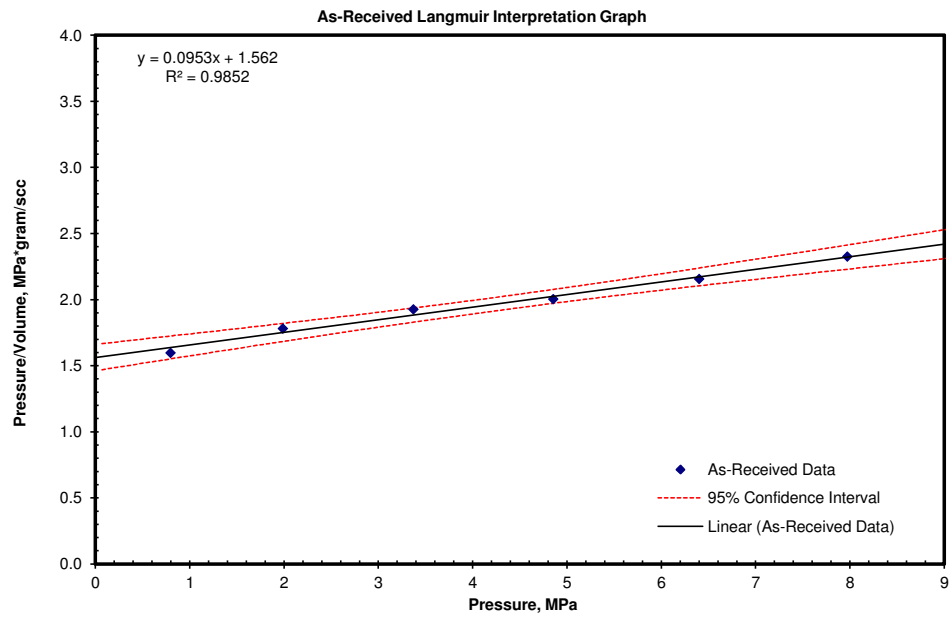
G<sub>s</sub> Gas Storage Capacity

G<sub>SL</sub> Langmuir Gas Storage Capacity

P<sub>L</sub> Langmuir Pressure

p Relevant Pressure (Reservoir Pressure)

## Methane Adsorption Isotherm Summary Graphs



## Methane Adsorption Isotherm Summary

**Project:** New Crown 1  
**Reservoir:** Unknown  
 Sample Number: AB-70894-NC1\_C  
 Sample Type: Coal  
 Drill Depth, metres: Unknown  
 Temperature, °C: 67.0  
 Experimental Moisture Content, fraction: 0.1269  
 Experimental Ash Content, fraction: 0.1382

| Pressure<br>MPa | Methane Storage Capacity, scc/gram |            |               |            |
|-----------------|------------------------------------|------------|---------------|------------|
|                 | As-Received                        |            | Dry, Ash-Free |            |
|                 | Measured                           | Calculated | Measured      | Calculated |
| 0.00            | 0.00                               | 0.00       | 0.00          | 0.00       |
| 0.78            | 0.64                               | 0.61       | 0.87          | 0.83       |
| 1.98            | 1.44                               | 1.45       | 1.96          | 1.98       |
| 3.42            | 2.28                               | 2.33       | 3.11          | 3.17       |
| 4.99            | 3.07                               | 3.15       | 4.18          | 4.29       |
| 6.63            | 3.83                               | 3.89       | 5.21          | 5.29       |
| 8.33            | 4.69                               | 4.55       | 6.39          | 6.19       |

| Parameters                           | Methane Langmuir Parameters (S.I. Units) |                   |
|--------------------------------------|--|-------------------|
|                                      | As-Received                              | Dry, Ash-Free     |
| Slope:                               | 0.0741                                   | 0.0545            |
| Intercept:                           | 1.2126                                   | 0.8912            |
| Regression Coefficient (squared):    | 0.9597                                   | 0.9597            |
| Intercept Variation, Mpa*gram/scc:   | 0.1347                                   | 0.0990            |
| Slope Variation, gram/scc:           | 0.0265                                   | 0.0195            |
| G <sub>SL</sub> Variation, scc/gram: | 3.8436                                   | 5.2297            |
| P <sub>L</sub> Variation, MPa:       | 3.8718                                   | 3.8718            |
| Langmuir Volume, scc/gram:           | 13.49                                    | 18.36             |
| Langmuir Pressure, MPa:              | 16.36                                    | 16.36             |
| Langmuir Equation:                   | V=13.5*P/(P+16.4)                        | V=18.4*P/(P+16.4) |
| Pressure (Midpoint), MPa:            | 7.51                                     | 7.51              |
| Storage Capacity, scc/gram:          | 4.25                                     | 5.78              |

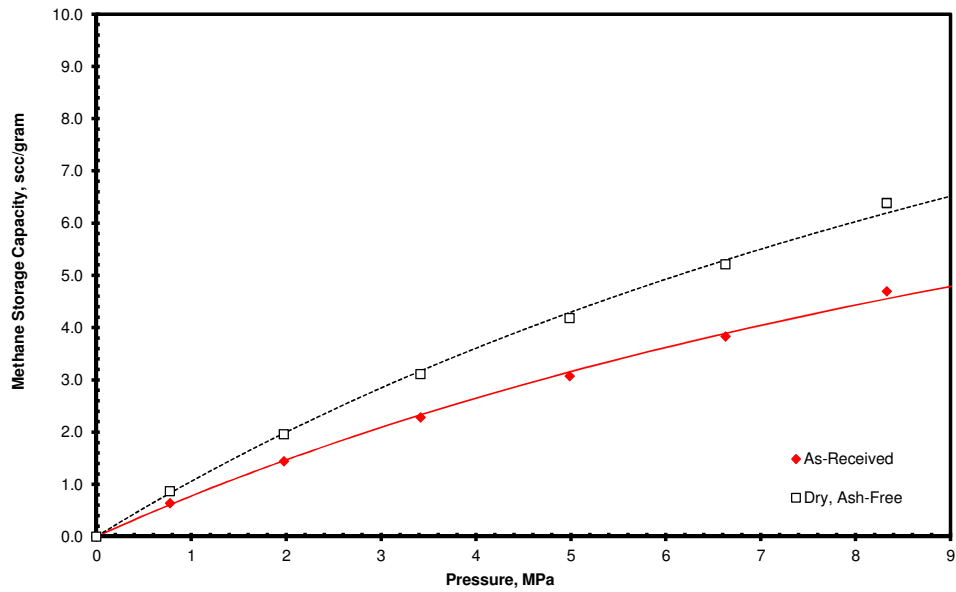
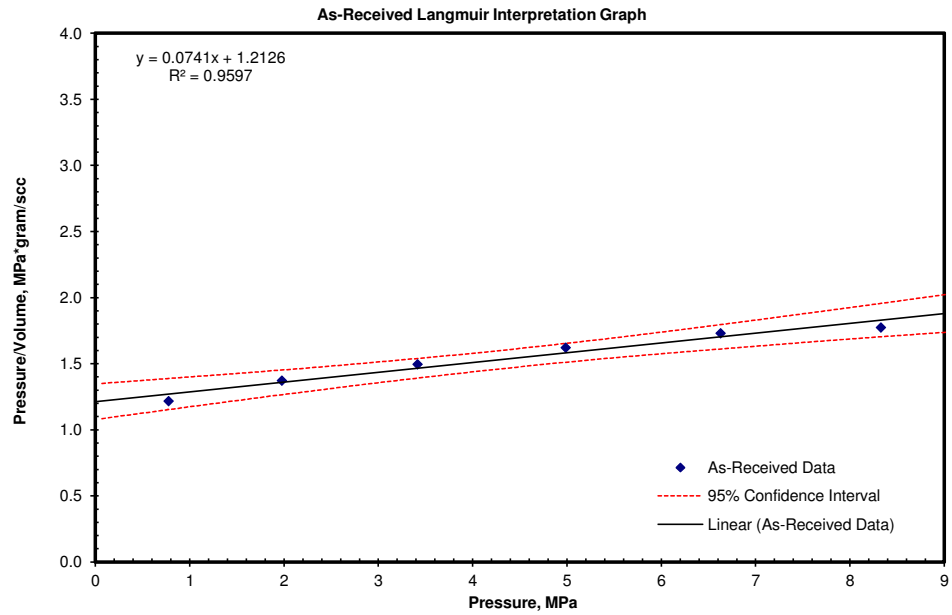
*G<sub>s</sub>* Gas Storage Capacity

*G<sub>SL</sub>* Langmuir Gas Storage Capacity

*P<sub>L</sub>* Langmuir Pressure

*p* Relevant Pressure (Reservoir Pressure)

## Methane Adsorption Isotherm Summary Graphs



## Methane Adsorption Isotherm Summary

**Project:** New Crown 1  
**Reservoir:** Unknown  
 Sample Number: AB-70894-NC1\_D  
 Sample Type: Coal  
 Drill Depth, metres: Unknown  
 Temperature, °C: 68.0  
 Experimental Moisture Content, fraction: 0.1686  
 Experimental Ash Content, fraction: 0.0629

| Pressure<br>MPa | Methane Storage Capacity, scc/gram |            |               |            |
|-----------------|------------------------------------|------------|---------------|------------|
|                 | As-Received                        |            | Dry, Ash-Free |            |
|                 | Measured                           | Calculated | Measured      | Calculated |
| 0.00            | 0.00                               | 0.00       | 0.00          | 0.00       |
| 0.95            | 0.68                               | 0.67       | 0.89          | 0.87       |
| 2.37            | 1.57                               | 1.56       | 2.04          | 2.03       |
| 4.06            | 2.45                               | 2.50       | 3.18          | 3.26       |
| 5.85            | 3.36                               | 3.38       | 4.37          | 4.39       |
| 7.70            | 4.09                               | 4.17       | 5.32          | 5.42       |
| 9.60            | 4.99                               | 4.88       | 6.50          | 6.35       |

| Parameters                           | Methane Langmuir Parameters (S.I. Units) |                   |
|--------------------------------------|--|-------------------|
|                                      | As-Received                              | Dry, Ash-Free     |
| Slope:                               | 0.0627                                   | 0.0482            |
| Intercept:                           | 1.3664                                   | 1.0502            |
| Regression Coefficient (squared):    | 0.9722                                   | 0.9722            |
| Intercept Variation, Mpa*gram/scc:   | 0.1092                                   | 0.0839            |
| Slope Variation, gram/scc:           | 0.0185                                   | 0.0142            |
| G <sub>sl</sub> Variation, scc/gram: | 3.3636                                   | 4.3766            |
| P <sub>L</sub> Variation, MPa:       | 3.7587                                   | 3.7587            |
| Langmuir Volume, scc/gram:           | 15.96                                    | 20.77             |
| Langmuir Pressure, MPa:              | 21.81                                    | 21.81             |
| Langmuir Equation:                   | V=16.0*P/(P+21.8)                        | V=20.8*P/(P+21.8) |
| Pressure (Midpoint), MPa:            | 8.00                                     | 8.00              |
| Storage Capacity, scc/gram:          | 4.28                                     | 5.57              |

G<sub>s</sub> Gas Storage Capacity

G<sub>sl</sub> Langmuir Gas Storage Capacity

P<sub>L</sub> Langmuir Pressure

p Relevant Pressure (Reservoir Pressure)

## Methane Adsorption Isotherm Summary Graphs

