

Mercury Injection Capillary Pressure Analysis
Core I.D. 159, C-34-A/94-P-15, 1139.38m

In situ Klinkenberg Permeability = 0.163 md
In situ Porosity = 7.0 %

| Mercury Injection Capillary Pressure (psia) | Approx. Pore Entry Diameter (um) | Cumulative Wetting Phase Saturation (% pore vol) | Pore Size Distribution Frequency | Cumulative Surface Area (m2/g) | Approx. Gas-Water Height Above Free Water Level (ft) | Approx. Oil-Water Height Above Free Water Level (ft) | Honarpour <i>et al.</i> Imbibition Carbonate | | Corey Calculated | | |
|---|----------------------------------|--|----------------------------------|--------------------------------|--|--|--|---------------------------------|--------------------------------------|---------------------------------|-----------------------------|
| | | | | | | | Oil Relative Permeability (%) | Water Relative Permeability (%) | Oil or Gas Relative Permeability (%) | Water Relative Permeability (%) | Log Oil/Brine Kro/Krw Ratio |
| 2.0 | 107 | 100.0 | 0.0 | 0.000 | 0.1 | 0.1 | 0.0 | 100.0 | 0.0 | 100.0 | -5.0 |
| 2.5 | 86 | 100.0 | 0.0 | 0.000 | 0.8 | 1.1 | 0.0 | 100.0 | 0.0 | 100.0 | -5.0 |
| 3.3 | 65 | 100.0 | 0.0 | 0.000 | 1.0 | 1.4 | 0.0 | 100.0 | 0.0 | 100.0 | -5.0 |
| 4.3 | 50 | 100.0 | 0.0 | 0.000 | 1.3 | 1.8 | 0.0 | 100.0 | 0.0 | 100.0 | -5.0 |
| 5.5 | 39 | 99.7 | 0.3 | 0.000 | 1.7 | 2.4 | 0.0 | 100.0 | 0.0 | 100.0 | -5.0 |
| 7.2 | 30 | 99.6 | 0.1 | 0.000 | 2.2 | 3.1 | 0.0 | 28.5 | 0.0 | 98.7 | -5.0 |
| 9.3 | 23 | 99.6 | 0.0 | 0.000 | 2.9 | 4.0 | 0.0 | 28.5 | 0.0 | 98.4 | -5.0 |
| 12.0 | 18 | 99.6 | 0.0 | 0.000 | 3.7 | 5.2 | 0.0 | 28.5 | 0.0 | 98.4 | -5.0 |
| 15.5 | 14 | 99.6 | 0.0 | 0.000 | 4.8 | 6.7 | 0.0 | 28.5 | 0.0 | 98.4 | -5.0 |
| 20 | 11 | 99.6 | 0.0 | 0.000 | 6.2 | 8.7 | 0.0 | 28.5 | 0.0 | 98.4 | -5.0 |
| 25 | 8.6 | 99.5 | 0.1 | 0.000 | 8.0 | 11.2 | 0.0 | 28.5 | 0.0 | 98.4 | -5.0 |
| 35 | 6.1 | 98.7 | 0.8 | 0.000 | 9.9 | 14.0 | 0.0 | 28.4 | 0.0 | 97.8 | -5.0 |
| 45 | 4.8 | 98.0 | 0.7 | 0.000 | 14 | 20 | 0.0 | 27.9 | 0.0 | 94.6 | -5.0 |
| 55 | 3.9 | 97.1 | 0.9 | 0.001 | 18 | 25 | 0.1 | 27.5 | 0.0 | 91.8 | -6.7 |
| 75 | 2.9 | 95.3 | 1.8 | 0.001 | 22 | 31 | 0.1 | 27.0 | 0.0 | 88.5 | -6.0 |
| 95 | 2.3 | 91.1 | 4.2 | 0.003 | 30 | 42 | 0.3 | 25.9 | 0.0 | 81.8 | -5.2 |
| 120 | 1.8 | 79.3 | 11.8 | 0.010 | 38 | 53 | 1.0 | 23.6 | 0.0 | 67.6 | -3.9 |
| 150 | 1.4 | 68.1 | 11.1 | 0.011 | 48 | 67 | 5.4 | 17.5 | 0.2 | 37.6 | -2.2 |
| 200 | 1.1 | 52.6 | 15.5 | 0.026 | 60 | 84 | 12.8 | 12.7 | 1.2 | 19.7 | -1.2 |
| 260 | 0.82 | 42.6 | 10.0 | 0.039 | 80 | 112 | 28.3 | 7.2 | 6.1 | 6.4 | 0.0 |
| 350 | 0.61 | 34.3 | 8.3 | 0.053 | 103 | 145 | 41.6 | 4.5 | 13.1 | 2.5 | 0.7 |
| 430 | 0.50 | 29.7 | 4.6 | 0.063 | 139 | 196 | 54.4 | 2.8 | 22.4 | 1.0 | 1.4 |
| 550 | 0.39 | 25.2 | 4.5 | 0.075 | 171 | 240 | 62.3 | 2.0 | 29.3 | 0.5 | 1.8 |
| 725 | 0.30 | 20.8 | 4.5 | 0.091 | 219 | 308 | 70.5 | 1.3 | 37.6 | 0.2 | 2.2 |
| 925 | 0.23 | 18.5 | 2.3 | 0.101 | 288 | 405 | 79.2 | 0.8 | 47.4 | 0.1 | 2.8 |
| 1200 | 0.18 | 16.7 | 1.8 | 0.112 | 368 | 517 | 83.9 | 0.6 | 53.1 | 0.0 | 3.1 |
| 1550 | 0.14 | 15.0 | 1.7 | 0.124 | 477 | 671 | 87.7 | 0.5 | 58.1 | 0.0 | 3.3 |
| 2000 | 0.11 | 12.9 | 2.1 | 0.145 | 617 | 867 | 91.2 | 0.3 | 62.8 | 0.0 | 3.6 |
| 2600 | 0.08 | 10.7 | 2.2 | 0.172 | 796 | 1119 | 95.8 | 0.2 | 69.3 | 0.0 | 4.1 |
| 3350 | 0.06 | 9.3 | 1.4 | 0.195 | 1034 | 1454 | 100.7 | 0.1 | 76.5 | 0.0 | 4.6 |
| 4300 | 0.05 | 7.6 | 1.7 | 0.230 | 1333 | 1874 | 103.8 | 0.1 | 81.4 | 0.0 | 5.1 |
| 5550 | 0.04 | 6.9 | 0.8 | 0.251 | 1711 | 2405 | 107.7 | 0.0 | 87.5 | 0.0 | 5.9 |
| 7200 | 0.03 | 5.8 | 1.1 | 0.289 | 2208 | 3104 | 109.5 | 0.0 | 90.6 | 0.0 | 6.4 |
| 9300 | 0.02 | 4.5 | 1.2 | 0.346 | 2864 | 4027 | 112.1 | 0.0 | 94.9 | 0.0 | 7.5 |
| | | | | | 3700 | 5201 | 115.1 | 0.0 | 100.0 | 0.0 | 15.0 |

All Hg calculations assume air-mercury T=484 dyne/cm, contact angle=140deg.
Oil/Gas-Brine Pc assumes insitu o/g-brine Tcos0= 64.0000 22.0000 dynes/cm
Oil/gas-Brine height assumes o/g density gradient = 0.0186 0.3464 psi/ft
Oil/gas-Brine height assumes brine density gradient = 0.4525 0.4525 psi/ft
Swi assumed for relative permeability = 4.5 %
Sorw assumed for relative permeability = 0 %
In situ Gas/Oil & Brine Density (g/cc)= 0.043/0.80 1.045 g/cc

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