

Appendix C-4

R. J. Burnside Goulais Wells and Steelton Well Shutdown Test (2002)

Appendix C-4: Burnside Shutdown Test, 2002 Recovery Data in Goulais Wells

| Elapsed Time since Shutdown | | Goulais Well 2 | | | | Goulais Monitoring Well | | | |
|--------------------------------|------|----------------|------------------|-----------------|-----------------------------|-------------------------|------------------|-----------------|-----------------------------|
| | | Water Level | | Recovery (m) | Residual Drawdown (m) | Water Level | | Recovery (m) | Residual Drawdown (m) |
| | | Depth (m) | Elevation (m) | | | Depth (m) | Elevation (m) | | |
| (min) | (s) | | | | | | | | |
| 0 | 0 | -5.77 | 94.23 | 0.00 | 8.37 | -2.11 | 98.09 | 0.00 | 4.41 |
| 1 | 60 | 0.00 | 100.00 | 5.77 | 2.60 | | | | |
| 6 | 360 | 0.46 | 100.46 | 6.23 | 2.14 | | | | |
| 11 | 660 | 0.72 | 100.72 | 6.49 | 1.88 | | | | |
| 13 | 780 | 0.87 | 100.87 | 6.64 | 1.73 | 0.87 | 101.07 | 2.98 | 1.43 |
| 16 | 960 | 1.03 | 101.03 | 6.80 | 1.57 | | | | |
| 18 | 1080 | 1.12 | 101.12 | 6.89 | 1.48 | 1.02 | 101.22 | 3.13 | 1.28 |
| 22 | 1320 | 1.21 | 101.21 | 6.98 | 1.39 | | | | |
| 24 | 1440 | | | | | 1.08 | 101.28 | 3.19 | 1.22 |
| 26 | 1560 | 1.33 | 101.33 | 7.10 | 1.27 | | | | |
| 27 | 1620 | 1.40 | 101.40 | 7.17 | 1.20 | 1.25 | 101.45 | 3.36 | 1.05 |
| 29 | 1740 | 1.47 | 101.47 | 7.24 | 1.13 | 1.31 | 101.51 | 3.42 | 0.99 |
| 31 | 1860 | | | | | 1.39 | 101.59 | 3.50 | 0.91 |
| 37 | 2220 | | | | | 1.47 | 101.67 | 3.58 | 0.83 |
| 44 | 2640 | | | | | 1.65 | 101.85 | 3.76 | 0.65 |
| 47 | 2820 | 1.74 | 101.74 | 7.51 | 0.86 | | | | |
| 49 | 2940 | 1.80 | 101.80 | 7.57 | 0.80 | | | | |
| 52 | 3120 | | | | | 1.71 | 101.91 | 3.82 | 0.59 |
| 67 | 4020 | | | | | 1.91 | 102.11 | 4.02 | 0.39 |
| 69 | 4140 | 2.03 | 102.03 | 7.80 | 0.57 | | | | |
| 84 | 5040 | | | | | 2.06 | 102.26 | 4.17 | 0.24 |

Notes:

Original shutdown test data in Burnside and Associates (2003).

Assumed datum of Goulais Well 2 = 100.00 m; stickup = 0.70 m above ground surface.

Assumed datum of Goulais monitoring well = 100.20 m; stickup = 0.90 m above ground surface.

Water level depths and elevations are relative to assumed datum for each well.

Static water level in Goulais Well 2 (102.6 m) estimated from "Water Level Recovery in Goulais Well 2" hydrograph.

Static water level in Goulais monitoring well (102.5 m) estimated from "Water Level Recovery in Goulais Monitoring Well" hydrograph.

Goulais monitoring well is ~14.4 m from Goulais Well 2

Mean pumping rate of Goulais Well 2 during September 2002 prior to shutdown = 5095 m³/d or 5.9x10⁻² m³/s (Genivar and Kresin, 2008)

Appendix C-4 Recovery Data from Shutdown Test at Goulais Well 2

| Elapsed Time since Shutdown | | Goulais Well 2 | | | | Goulais Monitoring Well | | | |
|--------------------------------|------|----------------|------------------|-----------------|-----------------------------|-------------------------|------------------|-----------------|-----------------------------|
| | | Water Level | | Recovery (m) | Residual Drawdown (m) | Water Level | | Recovery (m) | Residual Drawdown (m) |
| | | Depth (m) | Elevation (m) | | | Depth (m) | Elevation (m) | | |
| (min) | (s) | | | | | | | | |
| 0 | 0 | -5.77 | 94.23 | 0.00 | 8.37 | -2.11 | 98.09 | 0.00 | 4.41 |
| 1 | 60 | 0.00 | 100.00 | 5.77 | 2.60 | | | | |
| 6 | 360 | 0.46 | 100.46 | 6.23 | 2.14 | | | | |
| 11 | 660 | 0.72 | 100.72 | 6.49 | 1.88 | | | | |
| 13 | 780 | 0.87 | 100.87 | 6.64 | 1.73 | 0.87 | 101.07 | 2.98 | 1.43 |
| 16 | 960 | 1.03 | 101.03 | 6.80 | 1.57 | | | | |
| 18 | 1080 | 1.12 | 101.12 | 6.89 | 1.48 | 1.02 | 101.22 | 3.13 | 1.28 |
| 22 | 1320 | 1.21 | 101.21 | 6.98 | 1.39 | | | | |
| 24 | 1440 | | | | | 1.08 | 101.28 | 3.19 | 1.22 |
| 26 | 1560 | 1.33 | 101.33 | 7.10 | 1.27 | | | | |
| 27 | 1620 | 1.40 | 101.40 | 7.17 | 1.20 | 1.25 | 101.45 | 3.36 | 1.05 |
| 29 | 1740 | 1.47 | 101.47 | 7.24 | 1.13 | 1.31 | 101.51 | 3.42 | 0.99 |
| 31 | 1860 | | | | | 1.39 | 101.59 | 3.50 | 0.91 |
| 37 | 2220 | | | | | 1.47 | 101.67 | 3.58 | 0.83 |
| 44 | 2640 | | | | | 1.65 | 101.85 | 3.76 | 0.65 |
| 47 | 2820 | 1.74 | 101.74 | 7.51 | 0.86 | | | | |
| 49 | 2940 | 1.80 | 101.80 | 7.57 | 0.80 | | | | |
| 52 | 3120 | | | | | 1.71 | 101.91 | 3.82 | 0.59 |
| 67 | 4020 | | | | | 1.91 | 102.11 | 4.02 | 0.39 |
| 69 | 4140 | 2.03 | 102.03 | 7.80 | 0.57 | | | | |
| 84 | 5040 | | | | | 2.06 | 102.26 | 4.17 | 0.24 |

Notes:

Original shutdown test data in Burnside and Associates (2003).

Assumed datum of Goulais Well 2 = 100.00 m; stickup = 0.70 m above ground surface.

Assumed datum of Goulais monitoring well = 100.20 m; stickup = 0.90 m above ground surface.

Water level depths and elevations are relative to assumed datum for each well.

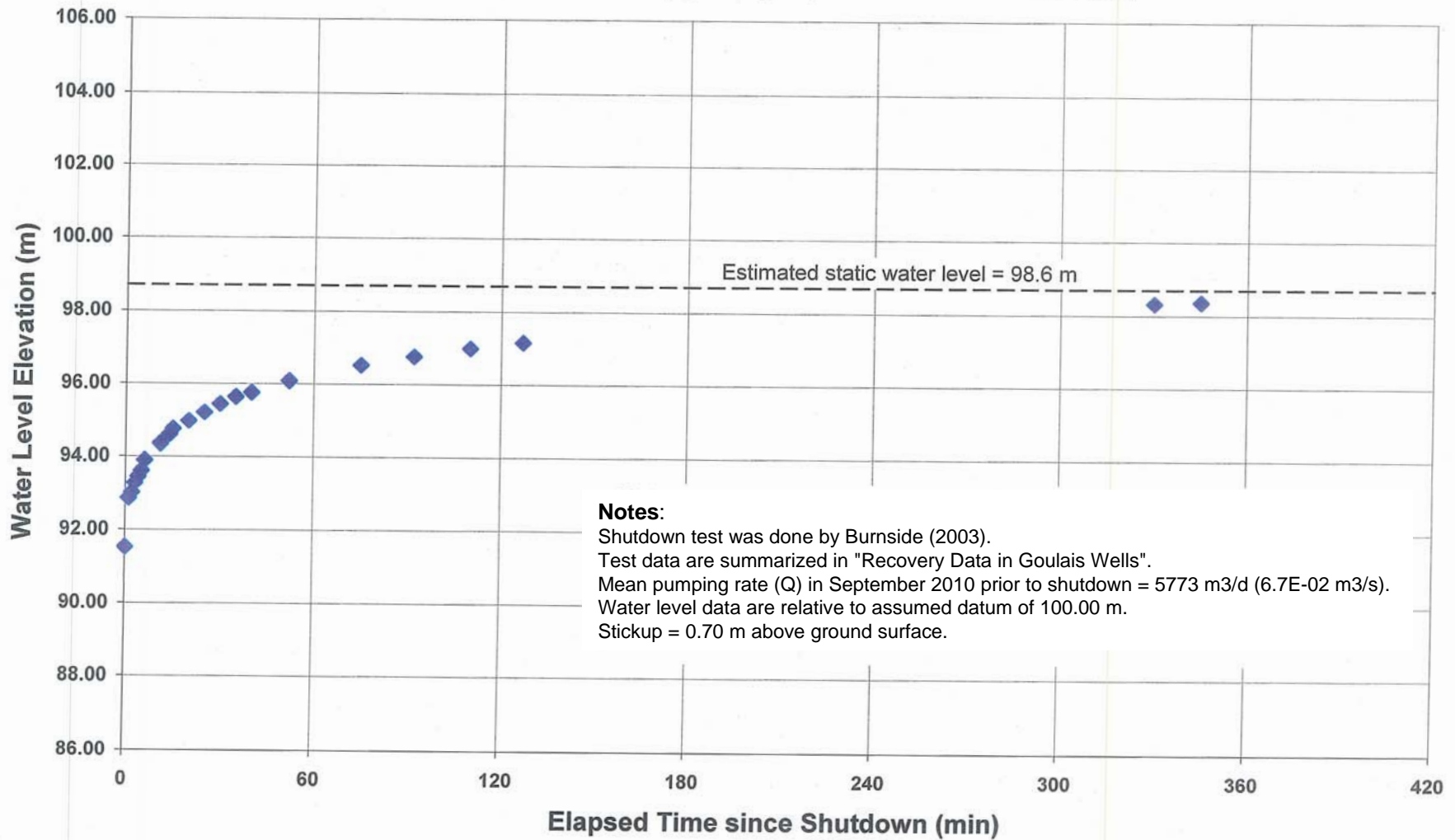
Static water level in Goulais Well 2 (102.6 m) estimated from "Water Level Recovery in Goulais Well 2" hydrograph.

Static water level in Goulais monitoring well (102.5 m) estimated from "Water Level Recovery in Goulais Monitoring Well" hydrograph.

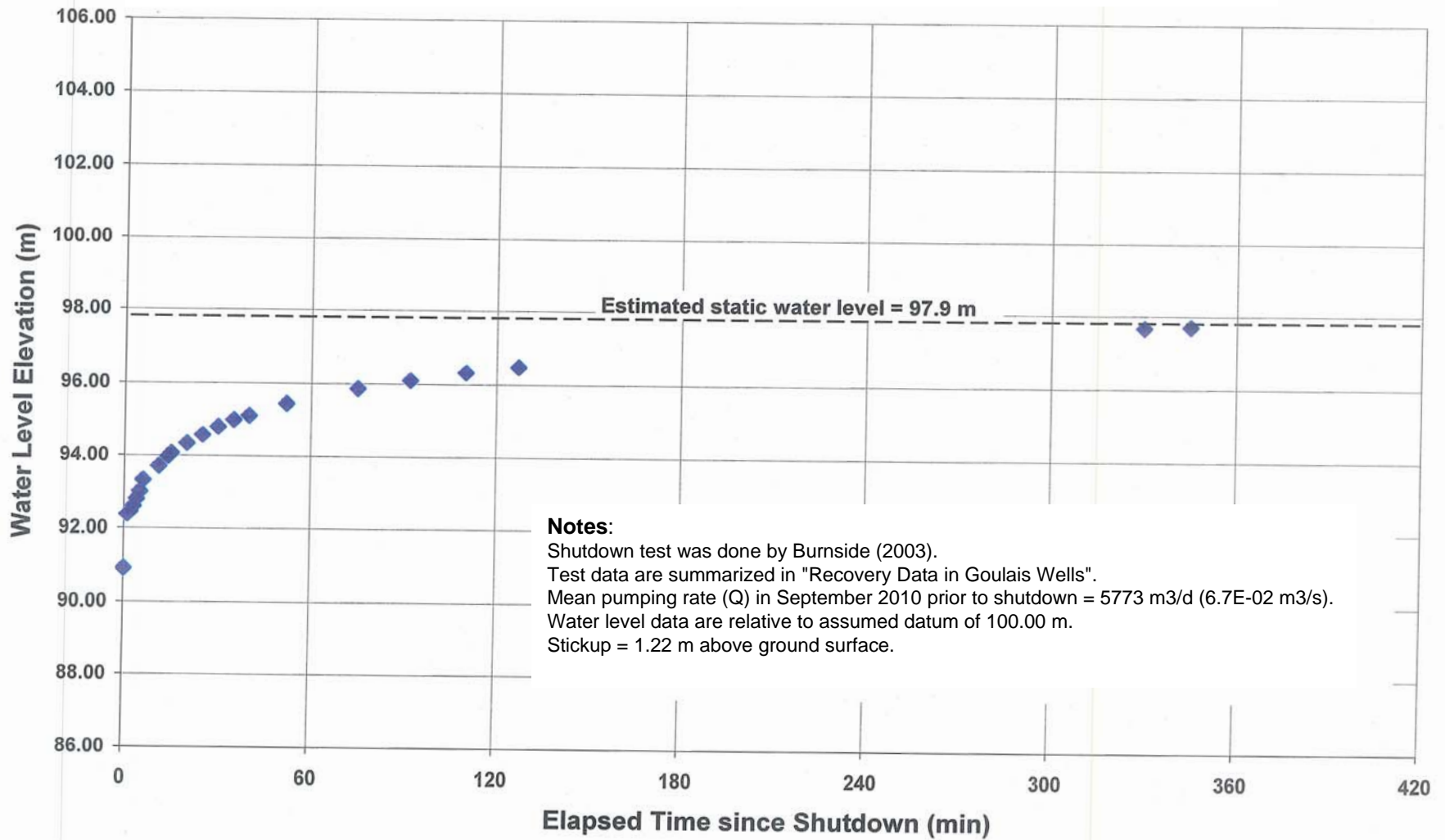
Goulais monitoring well is ~14.4 m from Goulais Well 2

Mean pumping rate of Goulais Well 2 during September 2002 prior to shutdown = 5095 m³/d or 5.9x10⁻² m³/s (Genivar and Kresin, 2008)

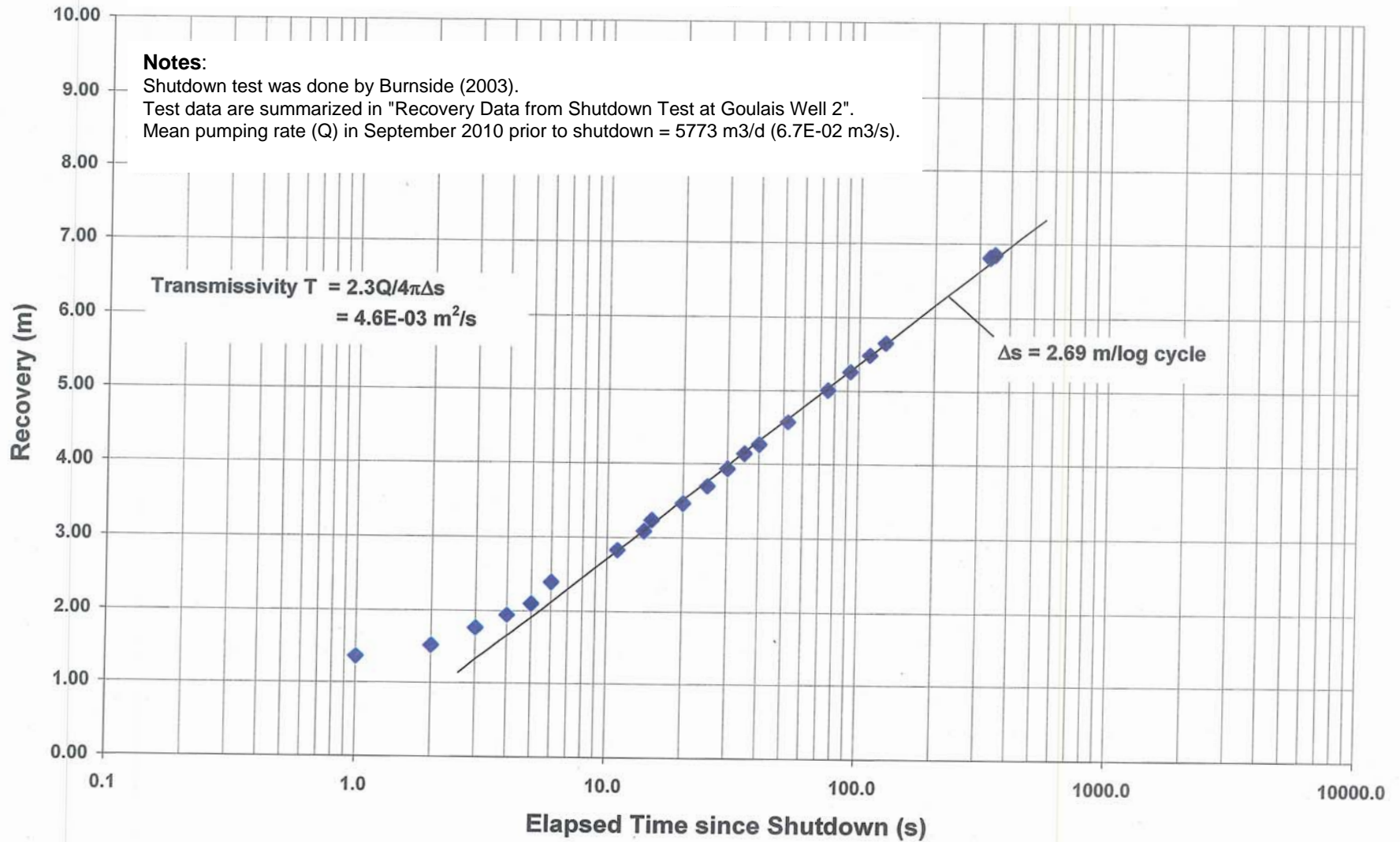
Appendix C-4: Burnside Shutdown Test, 2002 Semi-Log Time-Recovery Analysis, Steelton Production Well



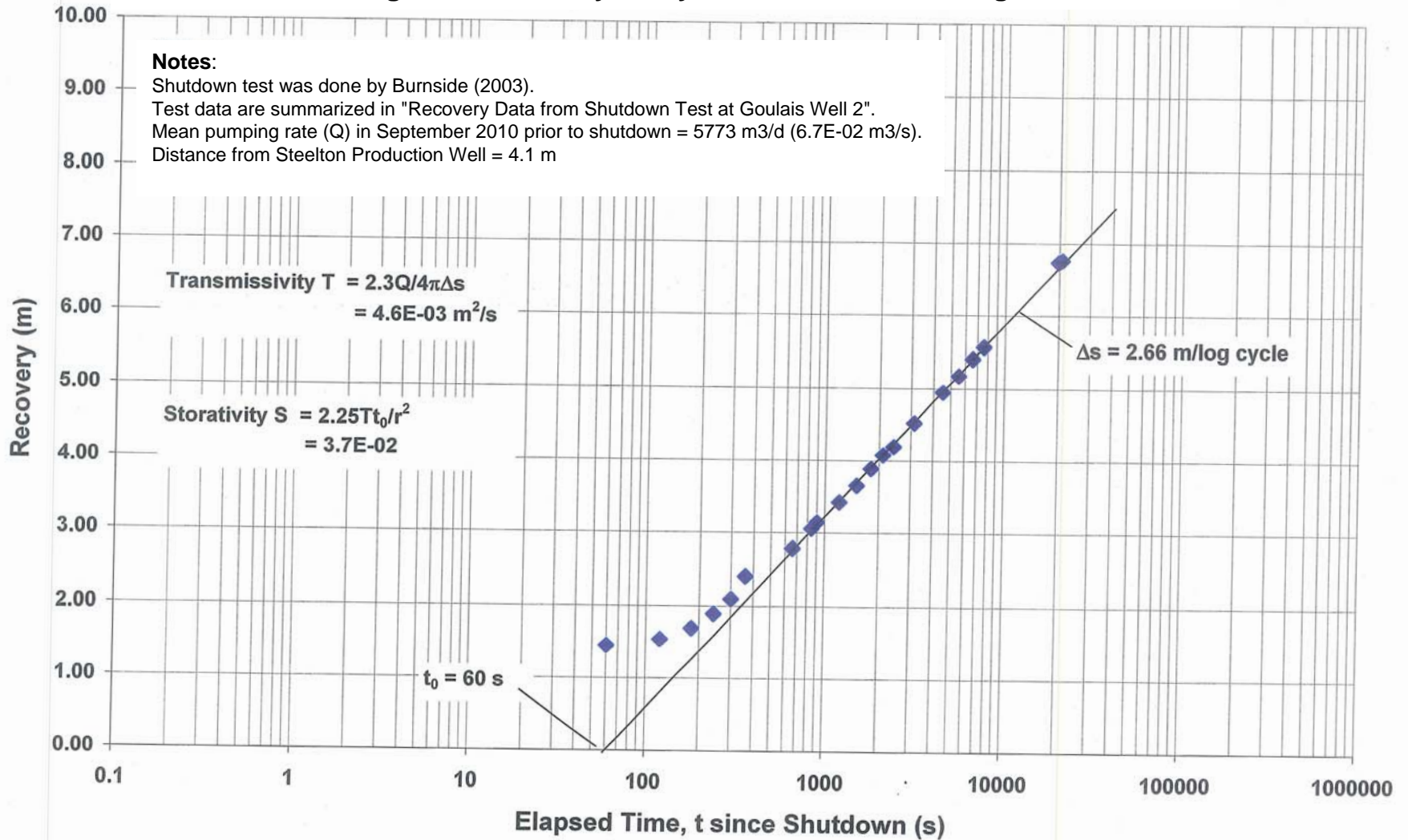
Appendix C-4: Burnside Shutdown Test, 2002 Semi-Log Time-Recovery Analysis, Steelton Production Well



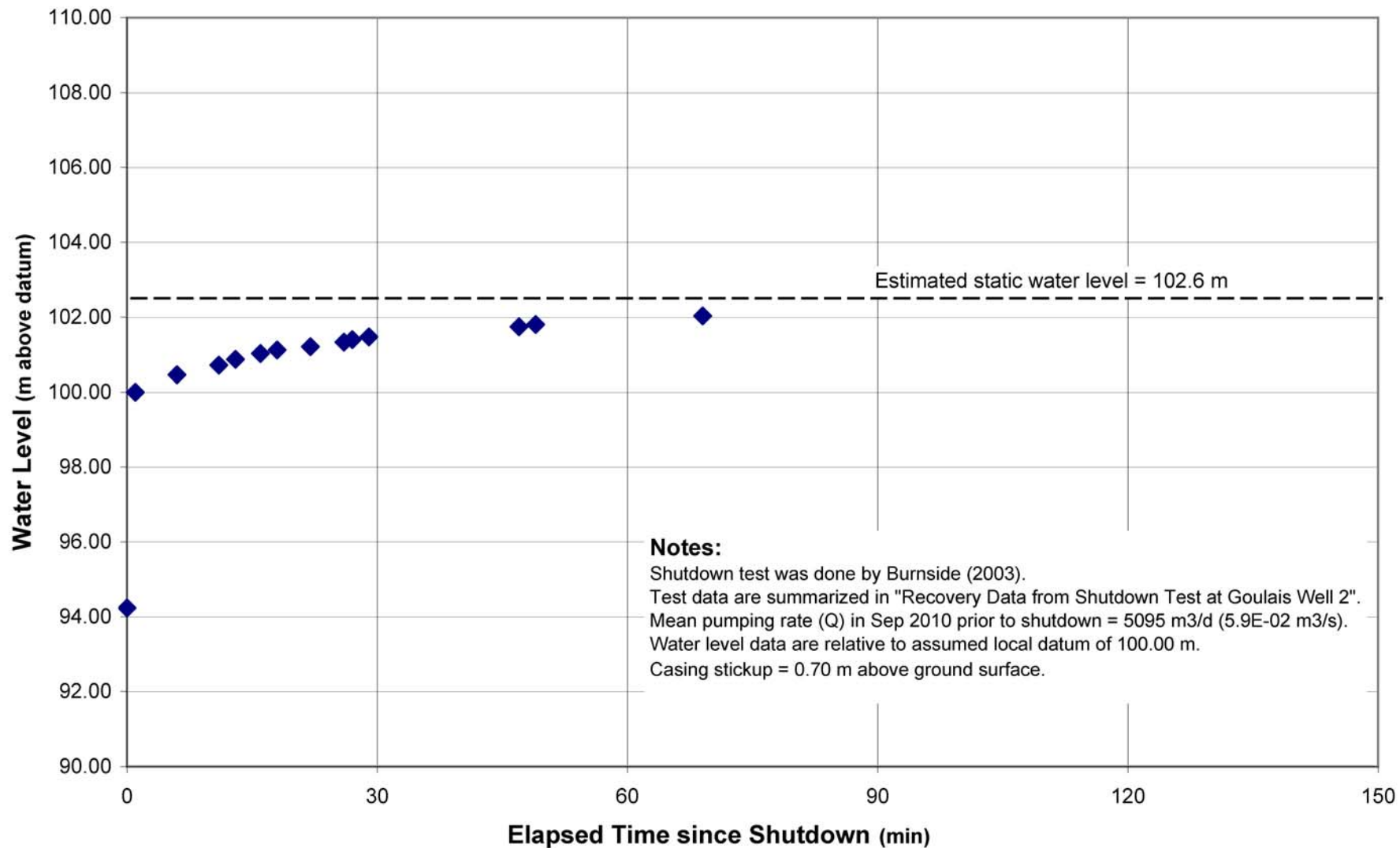
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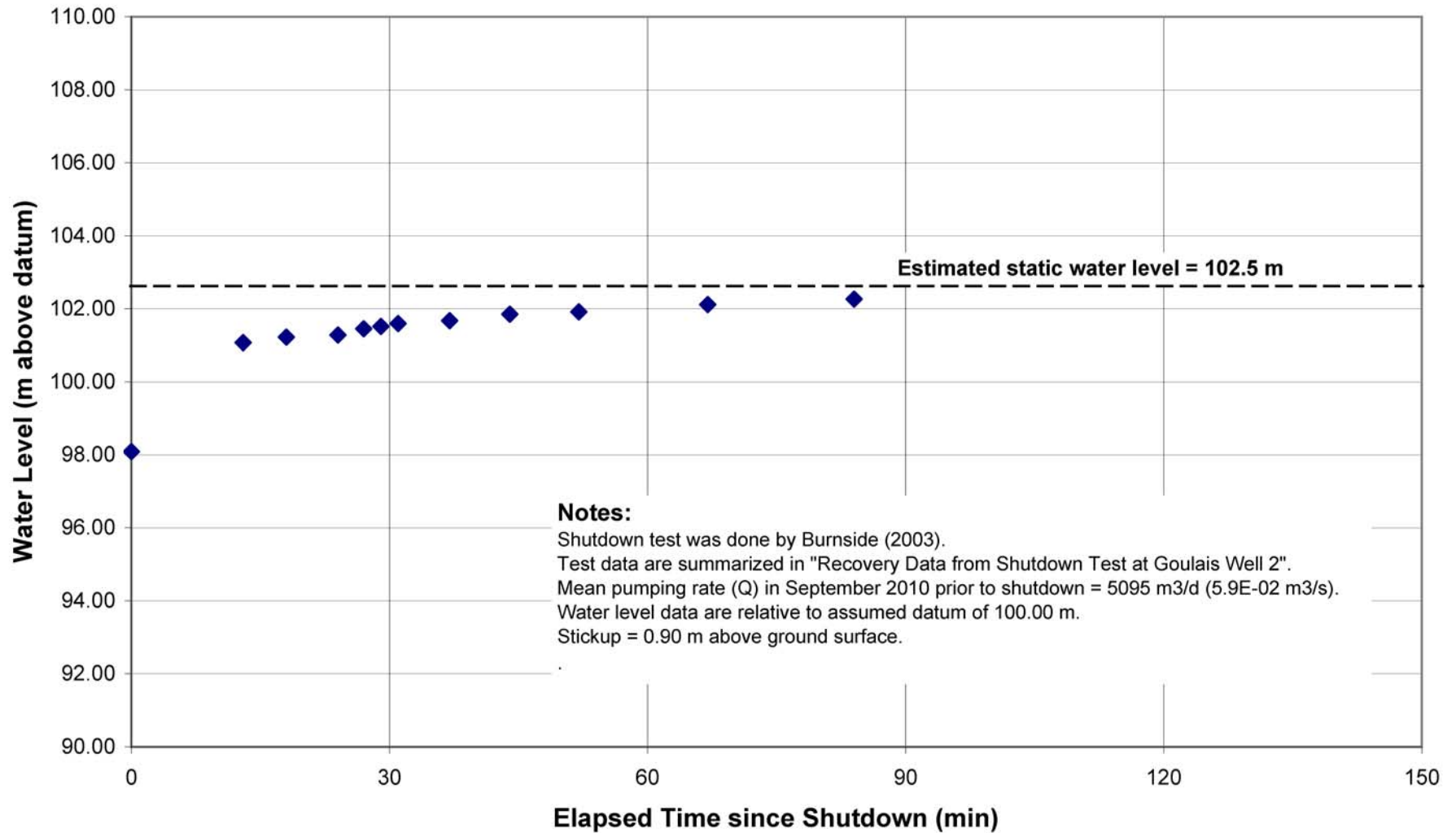
Appendix C-4: Burnside Shutdown Test, 2002 Semi-Log Time-Recovery Analysis, Steelton Monitoring Well



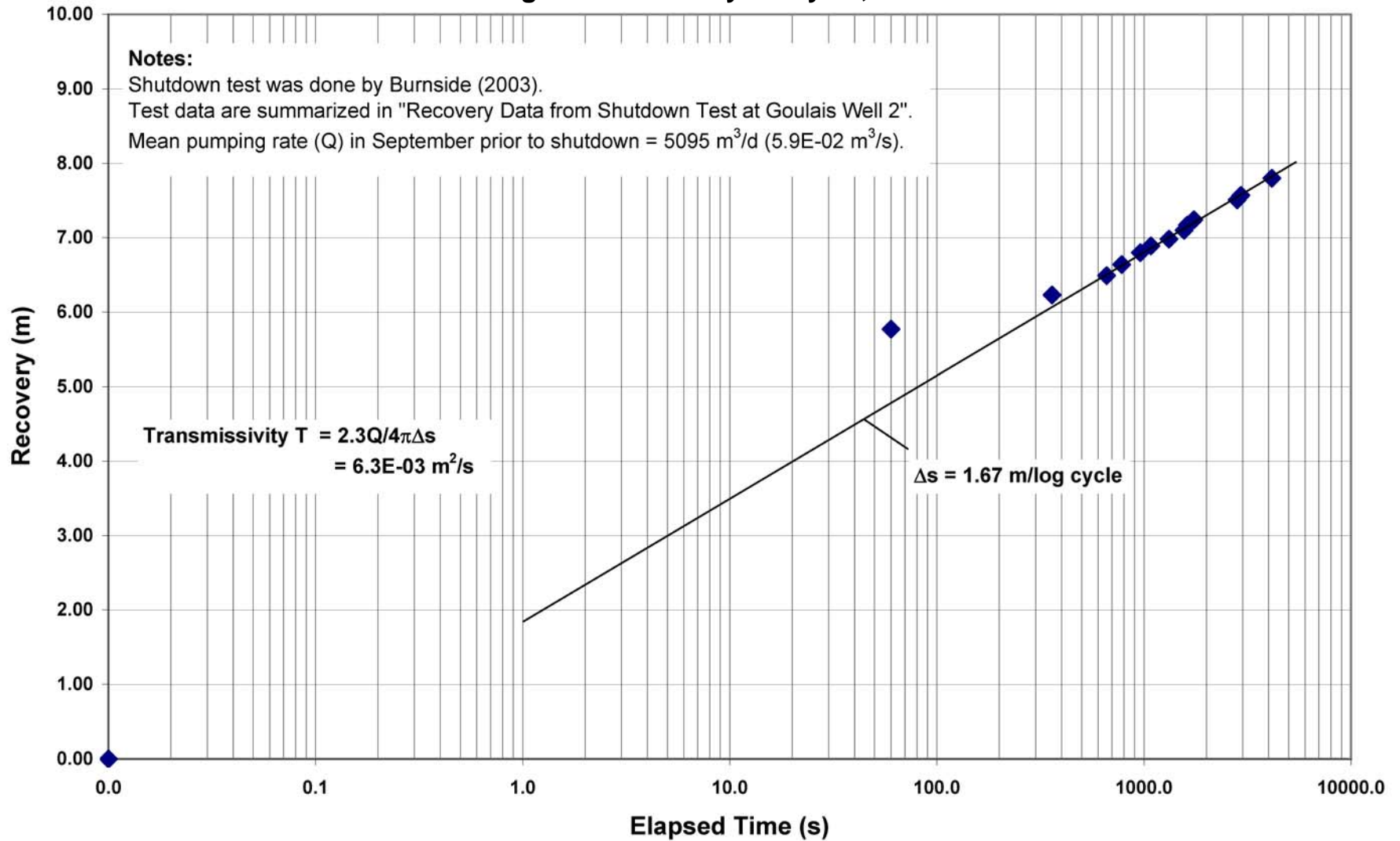
Appendix C-4: Burnside Shutdown Test, 2002 Water Level Recovery in Goulais Well 2



Appendix C-4: Burnside Shutdown Test, 2002 Water Level Recovery in Goulais Monitoring Well



Appendix C-4: Burnside Shutdown Test, 2002 Semi-Log Time-Recovery Analysis, Goulais Well 2



Appendix C-4: Semi-Log Time-Recovery Analysis, 2008 Semi-Log Time-Recovery Analysis, Goulais Monitoring Well

