## Table 1: Average water quality data for December 2009, January to December 2010

Analyte exceeds ANZECC Water Quality Guideline 2000 99% Protection Level

Analyte exceeds ANZECC Water Quality Guideline 2000 95% Protection Level

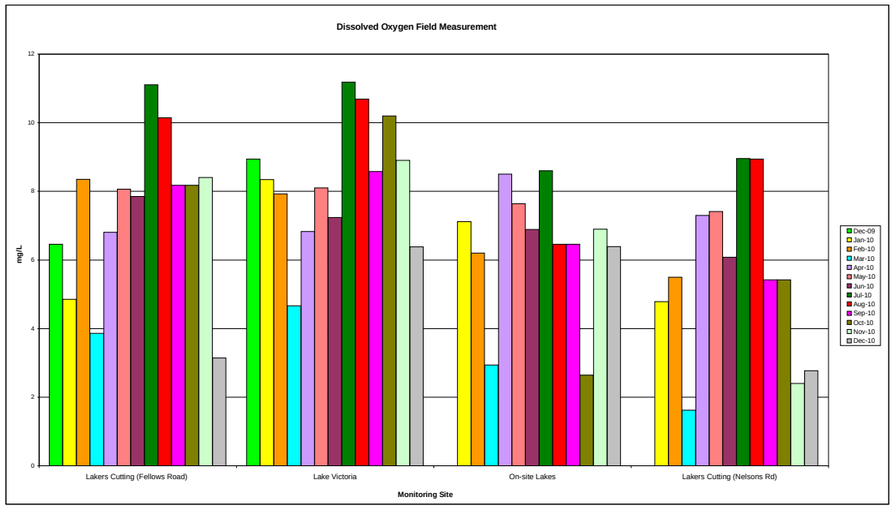
| Analyte | Units | Australian Water Quality Guideline 2000 99% Protection Level | Australian Water Quality Guideline 2000 95% Protection Level | Laboratory Limit of Reporting (LOR) | Average Results for Lakers Cutting (Fellows Rd) | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Dec-09 | Jan-10 | Feb-10 | Mar-10 | Apr-10 | May-10 | Jun-10 | Jul-10 | Aug-10 | Sep-10 | Oct-10 | Nov-10 | Dec-10 |
| ***In-Situ* Results** | | | | | | | | | | | | | | | | | |
| Conductivity | mS | NE | NE | | 60 | 74.5 | 80.6 | 81.7 | 71.3 | 67.4 | 59.5 | 58.8 | 56.1 | 71.1 | 71.8 | 75.2 | 70.5 |
| Temperature | °C | NE | NE | | 19.3 | 19.7 | 24.0 | 22.1 | 18.3 | 13.6 | 10.2 | 7.6 | 8.8 | 13.5 | 13.5 | 18.5 | 21.8 |
| Dissolved Oxygen | mg/L | NE | NE | | 5.0 | 4.9 | 8.4 | 3.9 | 6.8 | 7.4 | 7.9 | 11.1 | 10.1 | 6.0 | 8.2 | 8.4 | 3.14 |
| Salinity | mg/L | NE | NE | | 44,200 | 48,550 | 52,243 | 55,500 | 47,300 | 42,300 | 36,600 | 36,500 | 34,300 | 45,200 | 46,100 | 46,800 | 43,200 |
| Turbidity | NTU | NE | NE | | 1.8 | 1.3 | 1.4 | 1.7 | 1.2 | 0.3 | 0.6 | 2.7 | 1 | 4.1 | 2.1 | 4.2 | 1.6 |
| pH | pH_Units | NE | NE | | 8.3 | 8.2 | 8.1 | 8.2 | 8.3 | 8.3 | 8.3 | 8.2 | 8.1 | 8.5 | 8.5 | 8.6 | 8.74 |
| **Laboratory Results** | | | | | | | | | | | | | | | | | |
| pH (Lab) | pH_Units | NE | NE | - | 8.3 | 8.3 | 8.4 | - | - | - | - | - | 8.2 | 8.5 | 8.5 | 8.6 | 8.6 |
| TDS | mg/L | NE | NE | 5 | 43,000 | 47,000 | 47,700 | - | - | - | - | - | 32,750 | 46,000 | 44,500 | 42,800 | 44,000 |
| TSS | | NE | NE | 2 | 17.4 | 32.5 | 24.1 | <2 | <2 | <2 | <2 | <2 | 2.8 | <2 | <2 | <2 | <2 |
| Turbidity | NTU | NE | NE | 0.1 | 1.9 | 2.7 | 2.8 | 1.3 | 1.5 | 0.90 | 0.50 | 0.8 | 1.8 | 1.15 | 1.10 | 2.97 | 0.8 |
| **Biological** | | | | | | | | | | | | | | | | | |
| Coliform | orgs/100ml | NE | NE | - | 342.6 | 905 | 1,709 | 2,200 | 640 | 45 | <10 | 10 | 51 | 15 | 26 | 78 | 180 |
| E. Coli | | NE | NE | - | 15.3 | <10 | 577 | 10 | <10 | <10 | <10 | <10 | 10.00 | <10 | <10 | <10 | 10 |
| Enterococci | | NE | NE | - | <10 | 10 | 221 | <10 | 10 | <10 | 15 | 10 | 14 | <10 | <10 | 11 | 10 |
| **Nutrients** | | | | | | | | | | | | | | | | | |
| Ammonia as N | µg/L | 500 | 910 | 4.5 | 15.1 | 14.5 | 13.7 | 13.5 | 16.4 | 10.2 | 9.8 | 7.6 | 5.7 | 12 | 38 | 36 | 14.8 |
| Chlorophyll a | | NE | NE | 0.1 | 4.4 | 2.8 | 4.2 | 2.5 | 5.3 | 2.1 | 1.1 | 1.1 | 6.7 | 3 | 2 | 2 | 1.5 |
| Nitrogen (Total Oxidised) | | NE | 15 | | 1.5 | 3.6 | 5.9 | 8.0 | 4.2 | 1.4 | 3.1 | 0.9 | 4.4 | 2 | 2 | 2 | 2.9 |
| Nitrogen (Total) | | NE | NE | 48.0 | 910 | 963 | 926 | 855 | 784 | 600 | 450 | 365 | 485 | 1,295 | 1,280 | 1,252 | 1,430 |
| Phosphorus | | NE | NE | | 37.5 | 32.6 | 32.2 | 34.6 | 38.1 | 19.5 | 11.8 | 12.0 | 15.5 | 24 | 27.0 | 25.2 | 21.2 |
| TKN (as N) | | NE | NE | | 916 | 958 | 921 | 850 | 785 | 600 | 450 | 365 | 470 | 1,290 | 1,280 | 1,250 | 1,420 |
| **Metals** | | | | | | | | | | | | | | | | | |
| Arsenic | µg/L | NE | NE | 0.5 | 7.3 | 2 | 1.5 | 2 | 2.1 | 1.9 | 1.6 | 5.5 | 1.5 | 2.8 | 2.5 | 4.4 | 8.3 |
| Cadmium | | 0.7 | 5.5 | 0.2 | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 | 0.3 |
| Chromium (III+VI) | | 0.14 | 4.4 | 0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| Cobalt | | 0.005 | 1 | 1.0 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <1 |
| Copper | | 0.3 | 1.3 | 1.0 | <1 | <1 | <1 | <1 | <1 | 1.0 | <1 | <1.5 | <1 | <1 | <1 | <1 | <1 |
| Lead | | 2.2 | 4.4 | 0.2 | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 | 0.3 | <0.2 | <0.2 | <0.2 | <0.2 | 0.3 | <0.2 | <0.2 |
| Mercury | | 0.1 | 0.4 | 0.1 | 0.1 | <0.1 | <0.1 | <0.1 | 0.4 | <0.1 | <0.1 | <0.1 | 0.14 | <0.1 | <0.1 | <0.1 | <0.1 |
| Nickel | | 7 | 70 | 0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | 1.4 | <0.5 | 0.7 | <0.5 | 0.7 | 0.6 |
| Silver | | 0.8 | 1.4 | 1.0 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <1 |
| Vanadium | | 50 | 100 | 1.0 | 2.0 | 2.0 | 2.7 | 4.0 | 3.0 | 3.0 | 2.0 | 3.0 | 1.9 | <1 | 3.0 | 3.6 | <1 |
| Zinc | | 7 | 15 | 5.0 | <21 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 |
| **TPH** | | | | | | | | | | | | | | | | | |
| TPH C 6 - C 9 Fraction | µg/L | NE | NE | 40.0 | <40 | <40 | <40 | <40 | <40 | <40 | <40 | <40 | <40 | <40 | <40 | <40 | <40 |
| TPH C10 - C14 Fraction | | NE | NE | 40 | <40 | <40 | <40 | <40 | <40 | <40 | <40 | <40 | <40 | <40 | <40 | <40 | <40 |
| TPH C15 - C28 Fraction | | NE | NE | 100 | <100 | <100 | <100 | <100 | <100 | <100 | <100 | <100 | <100 | <100 | <100 | <100 | <100 |
| TPH C29-C36 Fraction | | NE | NE | 100 | <100 | <100 | <100 | <100 | <100 | <100 | <100 | <100 | <100 | <100 | <100 | <100 | <100 |
| TPH C10 - C36 (Sum of total) | | NE | NE | - | <240 | <240 | <240 | <240 | <240 | <240 | <240 | <240 | <240 | <240 | <240 | <240 | <240 |

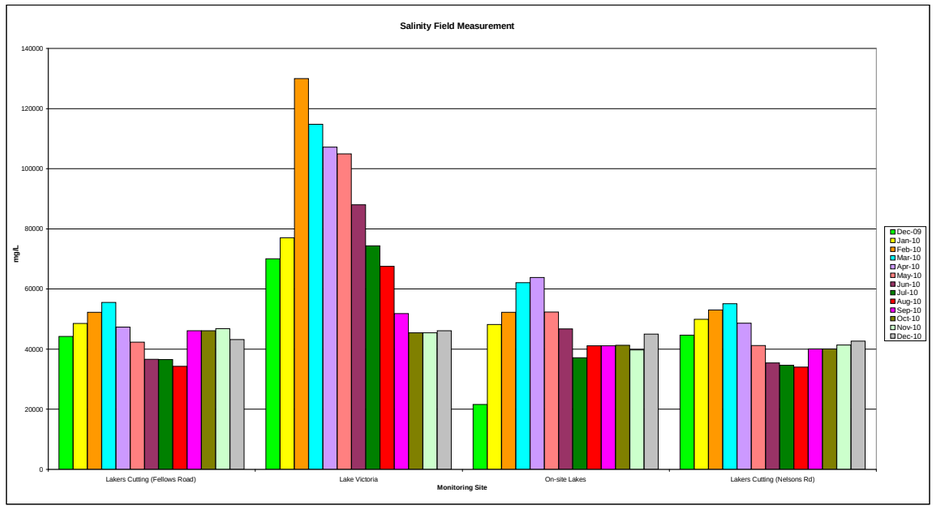
| Analyte | Average Results for Lake Victoria | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Dec-09 | Jan-10 | Feb-10 | Mar-10 | Apr-10 | May-10 | Jun-10 | Jul-10 | Aug-10 | Sep-10 | Oct-10 | Nov-10 | Dec-10 |
| ***In-Situ* Results** | | | | | | | | | | | | | |
| Conductivity | 91.7 | 108.9 | 139.6 | 147.1 | 145.8 | 139.1 | 124.6 | 108.0 | 95.7 | 81.8 | 72.9 | 71.3 | 69.8 |
| Temperature | 19.5 | 18.5 | 24.3 | 20.4 | 20.3 | 12.5 | 8.7 | 9.0 | 8.5 | 12.7 | 13.8 | 16.3 | 21.6 |
| Dissolved Oxygen | 6.9 | 8.3 | 7.9 | 4.7 | 6.8 | 7.6 | 7.2 | 11.2 | 10.7 | 8.6 | 10.2 | 8.9 | 6.38 |
| Salinity | 70,000 | 77,050 | 130,000 | 114,800 | 107,200 | 104,900 | 88,000 | 74,400 | 67,525 | 51,800 | 45,400 | 45,400 | 46,100 |
| Turbidity | 11.8 | 18 | 4.2 | 13.8 | 10.3 | 3.0 | 1.3 | 15.0 | 15.2 | 17.6 | 2.8 | 17.8 | 0.4 |
| pH | 8.5 | 8.3 | 8.2 | 8.0 | 7.7 | 7.9 | 8.1 | 8.1 | 8.1 | 8.4 | 8.5 | 8.5 | 8.8 |
| **Laboratory Results** | | | | | | | | | | | | | |
| pH (Lab) | 8.5 | 8.5 | 8.4 | - | 7.9 | - | - | - | 7.9 | 8.4 | 8.4 | 8.6 | 8.7 |
| TDS | 71,500 | 80,000 | 95,000 | - | 110,000 | - | - | - | 110,000 | 53,000 | 43,000 | 43,000 | 40,000 |
| TSS | 31 | 111.8 | 82 | 16.0 | 12.5 | 10 | 11 | 8.5 | 9.3 | 12.5 | <2 | 5 | <2 |
| Turbidity | 11.8 | 6.1 | 27.5 | 5.6 | 6.6 | 5.7 | 6.4 | 5.9 | 6.1 | 4.2 | 2.4 | 7.30 | 1.9 |
| **Biological** | | | | | | | | | | | | | |
| Coliform | 354 | 1,048 | 0.0 | 280 | 58 | 10 | 130 | 26 | 78 | 25 | 25 | 335 | 97 |
| E. Coli | <10 | 51 | 0.0 | <10 | 15 | <10 | 10 | <10 | 13 | <10 | <10 | <10 | <10 |
| Enterococci | <10 | 73 | 225 | 46 | 69 | 10 | 63 | 10 | 46 | <10 | <10 | 15 | <10 |
| **Nutrients** | | | | | | | | | | | | | |
| Ammonia as N | 18 | 13.7 | 16.8 | 34.7 | 20 | 41.5 | 20 | 14 | 13 | 10.5 | 11 | 10 | 7.3 |
| Chlorophyll a | 7 | 7.3 | 12.8 | 11.3 | 28.3 | 28 | 25 | 21 | 12 | 11 | 11 | 14 | 6.1 |
| Nitrogen (Total Oxidised) | 3 | 8.4 | 4 | 12.1 | 10.7 | 3.2 | 1 | 0.7 | 9.6 | 2.1 | 2 | 2 | 3 |
| Nitrogen (Total) | 2,446 | 2,708 | 3,020 | 2,980 | 3,865 | 3,900 | 3,200 | 2,510 | 1,955 | 1,890 | 1,740 | 1,605 | 1,690 |
| Phosphorus | 61 | 63 | 60.7 | 63.4 | 103.1 | 120 | 99 | 68 | 58.5 | 35.5 | 47 | 34.3 | 40.8 |
| TKN (as N) | 2,449 | 2,700 | 3,015 | 2,965 | 3,850 | 3,900 | 3,200 | 2,510 | 1,945 | 1,890 | 1,730 | 1,610 | 1,690 |
| **Metals** | | | | | | | | | | | | | |
| Arsenic | 5.0 | 6.6 | 6.0 | 6.9 | 6 | 5.3 | 4.1 | 0.2 | 5.1 | 2.7 | 2.7 | 3.2 | 4.7 |
| Cadmium | 0.3 | 0.3 | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 | 0.3 |
| Chromium (III+VI) | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| Cobalt | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <1 |
| Copper | <1 | <1 | <1 | <1 | <1 | 1.0 | <1 | <1 | <1 | <1 | <1 | <1 | <1 |
| Lead | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 |
| Mercury | 0.2 | 0.15 | <0.1 | <0.1 | 0.3 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Nickel | 0.9 | <0.5 | 0.8 | 1.0 | 1.1 | 1.1 | 1.0 | <0.5 | 1.0 | 0.8 | 0.7 | 0.8 | 0.8 |
| Silver | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <1 |
| Vanadium | 2.3 | 3.0 | 3.0 | 3.0 | 2.0 | 2.0 | 1.0 | 2.0 | 1.7 | <1 | 1.0 | <1 | <1 |
| Zinc | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 |
| **TPH** | | | | | | | | | | | | | |
| TPH C 6 - C 9 Fraction | <40 | <40 | <40 | <40 | <40 | <40 | <40 | <40 | <40 | <40 | <40 | <40 | <40 |
| TPH C10 - C14 Fraction | <40 | <40 | <40 | <40 | <40 | <40 | <40 | <40 | <40 | <40 | <40 | <40 | <40 |
| TPH C15 - C28 Fraction | <100 | <100 | <100 | <100 | <100 | <100 | <100 | <100 | <100 | <100 | <100 | <100 | <100 |
| TPH C29-C36 Fraction | <100 | <100 | <100 | <100 | <100 | <100 | <100 | <100 | <100 | <100 | <100 | <100 | <100 |
| TPH C10 - C36 (Sum of total) | <240 | <240 | <240 | <240 | <240 | <240 | <240 | <240 | <240 | <240 | <240 | <240 | <240 |

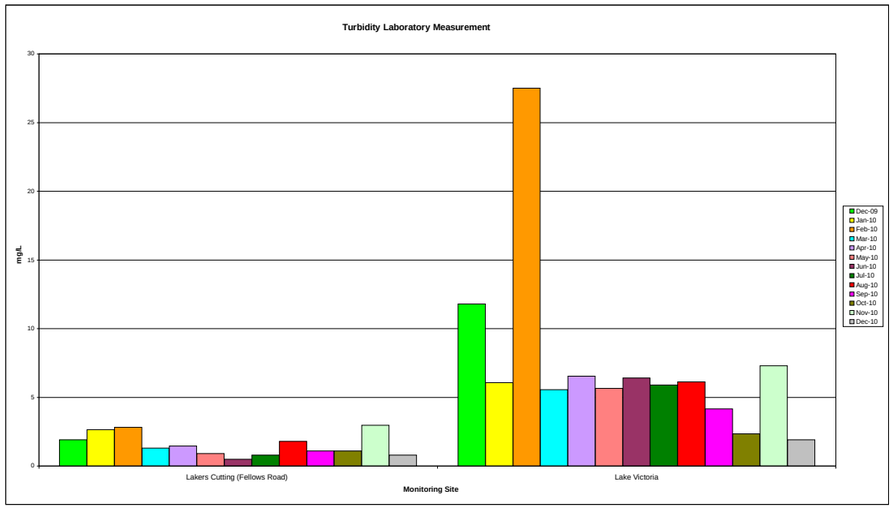
| Analyte | Average Results for Site Waterbody | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Dec-09 | Jan-10 | Feb-10 | Mar-10 | Apr-10 | May-10 | Jun-10 | Jul-10 | Aug-10 | Sep-10 | Oct-10 | Nov-10 | Dec-10 |
| ***In-Situ* Results** | | | | | | | | | | | | | |
| Conductivity | 60 | 74.3 | 56.9 | 88.6 | 91.5 | 80.1 | 74.2 | 62.9 | 61.1 | 62.9 | 67.2 | 64.8 | 71.7 |
| Temperature | 22.4 | 21.8 | 26.5 | 20.1 | 22.5 | 13.6 | 8.9 | 7.0 | 9.3 | 15.0 | 14.4 | 15.0 | 22.0 |
| Dissolved Oxygen | 5.7 | 7.1 | 6.2 | 2.9 | 8.5 | 8.1 | 6.9 | 9.7 | 8.6 | 6.5 | 2.6 | 6.9 | 6.4 |
| Salinity | 42,600 | 48,150 | 52,243 | 62,100 | 63,800 | 52,300 | 46,700 | 39,300 | 37,150 | 41,100 | 41,300 | 39,700 | 45,000 |
| Turbidity | 1.2 | 4.7 | 2 | 2 | 1 | 1.1 | 2.6 | 6 | 1.5 | 4.2 | 1.9 | 0.6 | 0.7 |
| pH | 9.2 | 9.1 | 8.7 | 8.3 | 8.5 | 8.3 | 8.4 | 8.3 | 8.4 | 8.6 | 8.7 | 9.0 | 8.9 |
| **Laboratory Results** | | | | | | | | | | | | | |
| pH (Lab) | | | | | | | | | | | | | |
| TDS | | | | | | | | | | | | | |
| TSS | | | | | | | | | | | | | |
| Turbidity | | | | | | | | | | | | | |
| **Biological** | | | | | | | | | | | | | |
| Coliform | | | | | | | | | | | | | |
| E. Coli | | | | | | | | | | | | | |
| Enterococci | | | | | | | | | | | | | |
| **Nutrients** | | | | | | | | | | | | | |
| Ammonia as N | | | | | | | | | | | | | |
| Chlorophyll a | | | | | | | | | | | | | |
| Nitrogen (Total Oxidised) | | | | | | | | | | | | | |
| Nitrogen (Total) | | | | | | | | | | | | | |
| Phosphorus | | | | | | | | | | | | | |
| TKN (as N) | | | | | | | | | | | | | |
| **Metals** | | | | | | | | | | | | | |
| Arsenic | | | | | | | | | | | | | |
| Cadmium | | | | | | | | | | | | | |
| Chromium (III+VI) | | | | | | | | | | | | | |
| Cobalt | | | | | | | | | | | | | |
| Copper | | | | | | | | | | | | | |
| Lead | | | | | | | | | | | | | |
| Mercury | | | | | | | | | | | | | |
| Nickel | | | | | | | | | | | | | |
| Silver | | | | | | | | | | | | | |
| Vanadium | | | | | | | | | | | | | |
| Zinc | | | | | | | | | | | | | |
| **TPH** | | | | | | | | | | | | | |
| TPH C 6 - C 9 Fraction | | | | | | | | | | | | | |
| TPH C10 - C14 Fraction | | | | | | | | | | | | | |
| TPH C15 - C28 Fraction | | | | | | | | | | | | | |
| TPH C29-C36 Fraction | | | | | | | | | | | | | |
| TPH C10 - C36 (Sum of total) | | | | | | | | | | | | | |

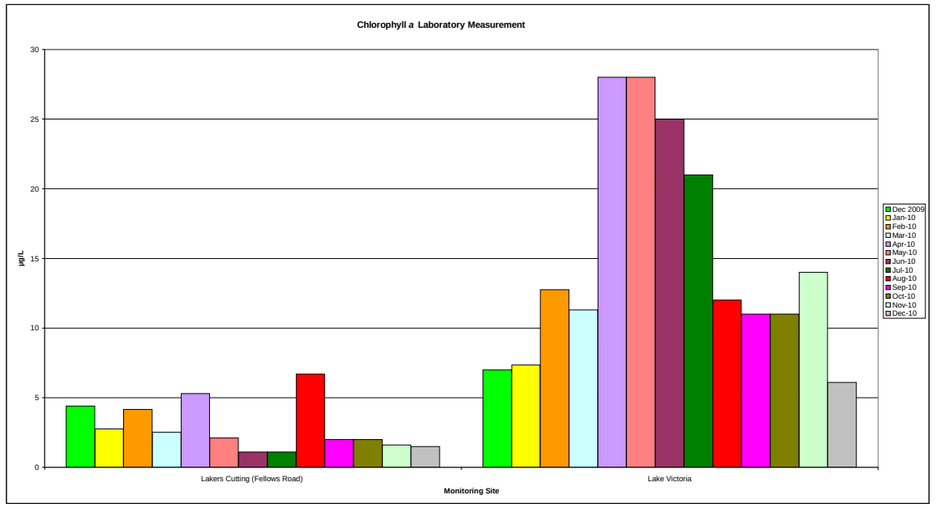
| Analyte | Average Results for Lakers Cutting (Nelsons Rd) | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Dec-09 | Jan-10 | Feb-10 | Mar-10 | Apr-10 | May-10 | Jun-10 | Jul-10 | Aug-10 | Sep-10 | Oct-10 | Nov-10 | Dec-10 |
| ***In-Situ* Results** | | | | | | | | | | | | | |
| Conductivity | 52.9 | 76.8 | 81.9 | 80.8 | 72.5 | 65.1 | 58.7 | 56.8 | 55.3 | 39.2 | 65.8 | 67.4 | 68.7 |
| Temperature | 20.7 | 20.1 | 24.8 | 20.8 | 20.4 | 15.5 | 7.5 | 7.1 | 8.9 | 13.1 | 11.3 | 14.6 | 19.7 |
| Dissolved Oxygen | 6.3 | 4.8 | 5.5 | 1.6 | 7.3 | 8.1 | 6.1 | 9.0 | 8.9 | 8.0 | 5.4 | 2.4 | 2.8 |
| Salinity | 44,650 | 49,900 | 53,000 | 55,100 | 48,600 | 41,200 | 35,400 | 34,650 | 34,000 | 22,400 | 40,100 | 41,400 | 42,700 |
| Turbidity | 1.9 | 2.9 | 0.4 | 0.5 | 1.8 | 32.2 | 0.6 | 1.9 | 0.8 | 24.9 | 0.7 | 2.3 | 0.9 |
| pH | 8.6 | 8.1 | 8 | 8 | 8.1 | 8.1 | 8.1 | 8.2 | 8.2 | 8 | 8.2 | 8.2 | 7.8 |
| **Laboratory Results** | | | | | | | | | | | | | |
| pH (Lab) | | | | | | | | | | | | | |
| TDS | | | | | | | | | | | | | |
| TSS | | | | | | | | | | | | | |
| Turbidity | | | | | | | | | | | | | |
| **Biological** | | | | | | | | | | | | | |
| Coliform | | | | | | | | | | | | | |
| E. Coli | | | | | | | | | | | | | |
| Enterococci | | | | | | | | | | | | | |
| **Nutrients** | | | | | | | | | | | | | |
| Ammonia as N | | | | | | | | | | | | | |
| Chlorophyll a | | | | | | | | | | | | | |
| Nitrogen (Total Oxidised) | | | | | | | | | | | | | |
| Nitrogen (Total) | | | | | | | | | | | | | |
| Phosphorus | | | | | | | | | | | | | |
| TKN (as N) | | | | | | | | | | | | | |
| **Metals** | | | | | | | | | | | | | |
| Arsenic | | | | | | | | | | | | | |
| Cadmium | | | | | | | | | | | | | |
| Chromium (III+VI) | | | | | | | | | | | | | |
| Cobalt | | | | | | | | | | | | | |
| Copper | | | | | | | | | | | | | |
| Lead | | | | | | | | | | | | | |
| Mercury | | | | | | | | | | | | | |
| Nickel | | | | | | | | | | | | | |
| Silver | | | | | | | | | | | | | |
| Vanadium | | | | | | | | | | | | | |
| Zinc | | | | | | | | | | | | | |
| **TPH** | | | | | | | | | | | | | |
| TPH C 6 - C 9 Fraction | | | | | | | | | | | | | |
| TPH C10 - C14 Fraction | | | | | | | | | | | | | |
| TPH C15 - C28 Fraction | | | | | | | | | | | | | |
| TPH C29-C36 Fraction | | | | | | | | | | | | | |
| TPH C10 - C36 (Sum of total) | | | | | | | | | | | | | |

NE = Guideline not established


Dissolved Oxygen Field Measurement
mg/L
0
2
4
6
8
10
12
Lakers Cutting (Fellows Road)
Lake Victoria
On-site Lakes
Lakers Cutting (Nelsons Rd)
Monitoring Site
Dec-09
Jan-10
Feb-10
Mar-10
Apr-10
May-10
Jun-10
Jul-10
Aug-10
Sep-10
Oct-10
Nov-10
Dec-10


Salinity Field Measurement
mg/L
0
20000
40000
60000
80000
100000
120000
140000
Lakers Cutting (Fellows Road)
Lake Victoria
On-site Lakes
Lakers Cutting (Nelsons Rd)
Monitoring Site
Dec-09
Jan-10
Feb-10
Mar-10
Apr-10
May-10
Jun-10
Jul-10
Aug-10
Sep-10
Oct-10
Nov-10
Dec-10


Turbidity Laboratory Measurement
mg/L
0
5
10
15
20
25
30
Lakers Cutting (Fellows Road)
Lake Victoria
Monitoring Site
Dec-09
Jan-10
Feb-10
Mar-10
Apr-10
May-10
Jun-10
Jul-10
Aug-10
Sep-10
Oct-10
Nov-10
Dec-10


Chlorophyll *a* Laboratory Measurement
µg/L
0
5
10
15
20
25
30
Lakers Cutting (Fellows Road)
Lake Victoria
Monitoring Site
Dec 2009
Jan-10
Feb-10
Mar-10
Apr-10
May-10
Jun-10
Jul-10
Aug-10
Sep-10
Oct-10
Nov-10
Dec-10