NEW HOPE GROUP

# Appendix O
# Tank Water Quality Sampling Results

| Parameter | Units | ADWG Guidelines 6, 2011 | | Property | Rainwater Tank Water Quality Samples | | | | | | | | | | | Tap Water Quality Samples | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Health | Aesthetics | Location | ID#2 Primary Tank | ID#2 Primary Tank | ID#2 Primary Tank | ID#2 New Tank | ID#3 Tank | ID#3 Tank | ID#4 Tank | ID#5 Tank | ID#5 Tank | ID#6 Pri Tank | ID#6 Supp Tank | ID#2 Bathroom | ID#2 Bathroom | ID#2 Bathroom | ID#3 Garden | ID#3 Garden | ID#5 External | ID#5 External | ID#6 Bathroom | ID#6 Bathroom |
| | | | | Date | Nov-10 | Jul-11 | Feb-12 | Feb-12 | Jul-11 | Feb-12 | Feb-12 | Jul-11 | Feb-12 | Jul-11 | Feb-12 | Nov-10 | Jul-11 | Feb-12 | Jul-11 | Feb-12 | Jul-11 | Feb-12 | Jul-11 | Feb-12 |
| **Microbiology** | | | | | | | | | | | | | | | | | | | | | | | | |
| Faecal Coliform | cfu/100 ml | | | | <1 | **30** | **20** | <1 | **~8** | <1 | <1 | **30** | **10** | **60** | **1** | **27** | **30** | **24** | **~6** | **<1** | <2 | **<1** | **20** | **10** |
| E. Coli | cfu/100 ml | 0 | | | <1 | **8** | **20** | <1 | **~2** | <1 | <1 | <2 | **7** | **30** | **1** | **27** | **8** | **24** | **~4** | <1 | <2 | <1 | **20** | 10 |
| Total Coliform | cfu/100 ml | | | | **43** | **80** | **140** | **12** | **170** | **26** | <1 | **640** | **120** | **90** | **190** | **52** | **70** | **80** | **20** | **36** | <2 | **17** | **260** | **6500** |
| | | | | | | | | | | | | | | | | | | | | | | | | |
| **Ionic Parameters** | | | | | | | | | | | | | | | | | | | | | | | | |
| Alkalinity (Bicarbonate as CaCO3) | mg/L | | | | **2** | **2** | **5** | **4** | <1 | **4** | **49** | <1 | **2** | **1** | **34** | **2** | **1** | **4** | **2** | **4** | <1 | **5** | **2** | **12** |
| Alkalinity (Carbonate as CaCO3) | mg/L | | | | **0.0002** | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | **0.00015** | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <1 |
| Alkalinity (Hydroxide) as CaCO3 | µg/L | | | | **0.5** | <1000 | <1000 | <1000 | <1000 | <1000 | <1000 | <1000 | <1000 | <1000 | <1000 | **0.38** | <1000 | <1000 | <1000 | <1000 | <1000 | <1000 | <1000 | <1000 |
| Alkalinity (total) as CaCO3 | mg/L | | | | **-** | **2** | **5** | **4** | <1 | **4** | **49** | <1 | **2** | **1** | **34** | **2** | **1** | **4** | **2** | **4** | <1 | **5** | **2** | **12** |
| Chloride | mg/L | | 250 | | **3** | **1** | **1** | **1** | **1** | <1 | **1** | <1 | <1 | **2** | **2** | **2** | **1** | **1** | **1** | <1 | <1 | **1** | **3** | **9** |
| Sulphate | mg/L | 500 | 250 | | <1 | <1 | **1** | <1 | <1 | **1** | **2** | <1 | **1** | **2** | <1 | <1 | <1 | **1** | <1 | **1** | <1 | **1** | <1 | **1** |
| Anions Total | meq/L | | | | **0.15** | **0.06** | **0.15** | **0.11** | **0.03** | **0.1** | **1.05** | <0.01 | **0.06** | **0.12** | **0.74** | **0.12** | **0.05** | **0.13** | **0.07** | **0.1** | <0.01 | **0.15** | **0.12** | **0.51** |
| Calcium (Filtered) | mg/L | | | | <1 | <1 | <1 | <1 | <1 | <1 | **17** | <1 | <1 | **2** | **9** | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | 2 |
| Magnesium (Filtered) | mg/L | | | | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <1 |
| Potassium (Filtered) | mg/L | | | | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | **2** | <1 | <1 | <1 | <1 | <1 | 1 | **3** | <1 | **1** |
| Sodium (Filtered) | mg/L | | 180 | | <1 | <1 | <1 | 2 | <1 | <1 | **1** | <1 | <1 | <1 | **1** | <1 | <1 | <1 | <1 | <1 | <1 | <1 | **1** | 5 |
| Cations Total | meq/L | | | | **0.21** | <0.01 | <0.01 | **0.09** | <0.01 | <0.01 | **0.89** | <0.01 | <0.01 | **0.1** | **0.54** | **0.21** | <0.01 | <0.01 | <0.01 | <0.01 | **0.03** | **0.08** | **0.05** | **0.34** |
| TDS | mg/L | | 600 | | **-** | **10** | **23** | <10 | <5 | **15** | **82** | <5 | **14** | <5 | **65** | **-** | <5 | **21** | <5 | **23** | **8** | **24** | **12** | **53** |
| TSS | mg/L | | | | **-** | **10** | <5 | **5** | **12** | **7** | <5 | <5 | <5 | **2110** | **5** | - | <5 | <5 | <5 | <5 | **7** | <5 | **6** | <5 |
| | | | | | | | | | | | | | | | | | | | | | | | | |
| **Metals** | | | | | | | | | | | | | | | | | | | | | | | | |
| Arsenic | mg/L | 0.007 | | | - | <0.001 | <0.001 | <0.005 | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 | - | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 |
| Barium | mg/L | 2 | | | - | **0.005** | **0.011** | **0.016** | **0.002** | **0.004** | **0.02** | **0.001** | **0.002** | **0.009** | **0.007** | - | **0.005** | **0.007** | **0.002** | **0.003** | <0.001 | <0.001 | **0.002** | 0.005 |
| Beryllium | mg/L | 0.06 | | | - | <0.001 | <0.001 | <0.005 | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 | - | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 |
| Cadmium | mg/L | 0.002 | | | - | **0.0008** | **0.0012** | <0.0005 | **0.0013** | **0.002** | <0.0001 | <0.0001 | <0.0001 | <0.0001 | <0.0001 | - | **0.0008** | **0.0011** | **0.0015** | **0.002** | <0.0001 | <0.0001 | <0.0001 | <0.0001 |
| Chromium (III+VI) | mg/L | 0.05 | | | - | <0.001 | <0.001 | <0.005 | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 | - | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 |
| Cobalt | mg/L | | | | - | <0.001 | **0.002** | <0.005 | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 | **0.001** | - | **0.001** | **0.001** | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 | **0.002** |
| Copper | mg/L | 2 | 1 | | - | **0.015** | **0.179** | <0.005 | **0.017** | **0.026** | <0.001 | **0.012** | **0.018** | **0.003** | <0.001 | - | **0.25** | **0.059** | **0.11** | **0.071** | <0.001 | <0.001 | **0.058** | **0.018** |
| Lead | mg/L | 0.01 | | | - | **0.002** | **0.045** | <0.005 | <0.001 | **0.002** | **0.004** | **0.002** | **0.002** | **0.015** | **0.01** | - | **0.01** | **0.002** | **0.009** | **0.016** | <0.001 | <0.001 | **0.001** | **0.003** |
| Manganese | mg/L | 0.5 | 0.1 | | - | **0.005** | **0.014** | **0.012** | **0.007** | **0.009** | **0.002** | **0.004** | **0.006** | <0.0001 | **0.064** | - | **0.005** | **0.008** | **0.007** | **0.01** | <0.001 | <0.001 | **0.041** | **0.111** |
| Mercury | mg/L | 0.001 | | | - | <0.0001 | <0.0001 | <0.0001 | <0.0001 | <0.0001 | <0.0001 | <0.0001 | <0.0001 | **0.001** | <0.0001 | - | <0.0001 | <0.0001 | <0.0001 | <0.0001 | <0.0001 | <0.0001 | <0.0001 | <0.0001 |
| Nickel | mg/L | 0.02 | | | - | **0.002** | **0.004** | <0.005 | <0.001 | <0.001 | <0.001 | <0.001 | <0.001 | **0.022** | <0.001 | - | **0.051** | <0.001 | **0.003** | 0.009 | <0.001 | <0.001 | <0.001 | <0.001 |
| Vanadium | mg/L | | | | - | <0.01 | <0.01 | <0.05 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | - | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 |
| Zinc | mg/L | | 3 | | - | **1.39** | **1.96** | **1.6** | **0.42** | **0.628** | **0.221** | **0.267** | **0.429** | **3.83** | **2.54** | - | **3.28** | **1.65** | **0.879** | **0.891** | **0.031** | **0.012** | **0.898** | **1.11** |
| | | | | | | | | | | | | | | | | | | | | | | | | |
| Fluoride | mg/L | 1.5 | | | <0.1 | <0.1 | - | <0.1 | <0.1 | - | - | <0.1 | - | <0.1 | - | <0.1 | **0.1** | - | <0.1 | - | <0.1 | - | <0.1 | - |
| Nitrite as N | mg/L | 3 | | | <0.002 | <0.01 | - | <0.01 | <0.01 | - | - | <0.01 | - | <0.01 | - | <0.002 | <0.01 | - | <0.01 | - | <0.01 | - | <0.01 | - |
| Nitrate as N | mg/L | 50 | | | **4.5** | **0.58** | - | **0.64** | **0.49** | - | - | **0.4** | - | **0.87** | - | **0.62** | **0.59** | - | **0.41** | **-** | **0.28** | - | **0.2** | - |
| Nitrite + Nitrate as N | mg/L | | | | **4.5** | **0.58** | - | **0.64** | **0.49** | - | - | **0.4** | - | **0.87** | - | **0.62** | **0.59** | - | **0.41** | **-** | **0.28** | - | **0.2** | - |
| Reactive Phosphorus as P | mg/L | | | | **-** | **0.01** | - | **0.02** | **0.03** | - | - | **0.03** | - | **0.08** | - | - | **0.01** | - | **0.02** | **-** | **0.03** | - | <0.01 | - |
| | | | | | | | | | | | | | | | | | | | | | | | | |
| **Field Quality Parameters** | | | | | | | | | | | | | | | | | | | | | | | | |
| Dissolved Oxygen | mg/L | | | | - | 7.87 | 3.48 | - | 8.89 | 6.24 | 4 | 8.07 | - | 8.81 | 4.3 | - | 7.49 | - | 6.74 | 3.47 | 8.27 | 3.57 | 5.42 | 0.7 |
| Electrical Conductivity | µS/cm | | | | - | 7.1 | 17.1 | - | 3 | 35.2 | 106 | 3.3 | - | 6.8 | 37.9 | - | 3.5 | - | 3.4 | 19 | 4.1 | 12.5 | 6.6 | 61.9 |
| pH | | | 6.5-8.5 | | - | 5.45 | 5.77 | - | 6.5 | 5.65 | 6.39 | 4.71 | - | 7.15 | 7.01 | - | 5.76 | - | 6.49 | 5.46 | 4.64 | 6.2 | 6.81 | 7.01 |
| Temperature | °C | | | | - | 13 | 26.5 | - | 14 | 28.8 | 25.2 | 16.2 | - | 16.3 | 24.8 | - | 13.8 | - | 19.4 | 29.4 | 13.7 | 24.8 | 15 | 23.3 |
| Redox Potential | mV | | | | - | 254 | 18.4 | - | 345 | 202 | 129.5 | 401 | - | 331 | 174 | - | 755 | - | 756 | 2.4 | 414 | 149 | 199 | 179 |
| | | | | | | | | | | | | | | | | | | | | | | | | |