

## 12.8 Appendix A: Site information

Table 9: State of the Environment monitoring sites

| Site name              | Site number | Easting | Northing | Depth to top/bottom of open area |       | Bore depth (m) | Aquifer lithology | Aquifer confinement | Land use      | Land cover                          |
|------------------------|-------------|---------|----------|----------------------------------|-------|----------------|-------------------|---------------------|---------------|-------------------------------------|
| Aupouri - Waipapakauri | 101820      | 2526566 | 6684980  | 67                               | 108   | 108            | Sand              | Semi-confined       | Forestry      | Afforestation (imaged, post LCDB 1) |
| Aupouri - Paparore     | 102039      | 2529703 | 6690598  | 70                               | 79    | 79             | Shellbeds         | Confined            | Horticultural | Herbaceous Freshwater Vegetation    |
| Aupouri - Ahipara      | 105914      | 2525555 | 6671052  | 27.5                             | 31.7  | 31.7           | Sand              | Semi-confined       | Horticultural | High Producing Exotic Grassland     |
| Aupouri - Houhora East | 106736      | 2522409 | 6709063  | 76.25                            | 79.25 | 79.25          | Shellbeds         | Confined            | Urban         | Orchard and Other Perennial Crops   |
| Aupouri - Houhora West | 104890      | 2521803 | 6705899  | 48                               | 55    | 55             | Sand              | Semi-confined       | Horticultural | Orchard and Other Perennial Crops   |
| Aupouri - Awanui       | 106737      | 2534086 | 6685817  | 29.95                            | 32.95 | 32.95          | Sand              | Semi-confined       | Horticultural | High Producing Exotic Grassland     |
| Bland Bay              | 105226      | 2633825 | 6649538  | 6                                | 7     | 7              | Sand              | Semi-confined       | Urban         | Estuarine Open Water                |
| Cable Bay              | 106694      | 2554597 | 6689934  | 4.6                              | 27.4  | 27.4           | Basalt            | Semi-confined       | Urban         | High Producing Exotic Grassland     |
| Coopers Beach          | 107034      | 2557608 | 6689693  | 25                               | 45    | 45             | Basalt            | Confined            | Urban         | Afforestation (imaged, post LCDB 1) |
| Glenbervie             | 105916      | 2632962 | 6613473  | 16.5                             | 67    | 67             | Basalt            | Semi-confined       | Horticultural | Indigenous Forest                   |
| Kaikohe                | 101920      | 2582750 | 6643339  | 61.8                             | 88    | 88             | Basalt            | Semi-confined       | Urban         | Built-up Area                       |
| Kerikeri               | 106728      | 2598388 | 6665309  |                                  |       | 33             | Basalt            | Semi-confined       | Horticultural | Indigenous Forest                   |
| Mangawhai - South      | 103138      | 2653128 | 6562217  | 22                               | 40    | 40             | Sandstone         | Semi-confined       | Urban         | High Producing Exotic Grassland     |
| Mangawhai Heads        | 103192      | 2653202 | 6563899  | 28                               | 38    | 38             | Sandstone         | Semi-confined       | Urban         | Estuarine Open Water                |
| Matapouri              | 106697      | 2647362 | 6624929  | 7.7                              | 8.7   | 8.7            | Sand              | Semi-confined       | Urban         | Indigenous Forest                   |
| Maunu                  | 106742      | 2625345 | 6605448  | 18                               | 60    | 60             | Basalt            | Semi-confined       | Urban         | High Producing Exotic Grassland     |
| Ngunguru               | 106698      | 2646643 | 6617455  | 6                                | 16.9  | 16.9           | Greywacke         | Semi-confined       | Urban         | Estuarine Open Water                |
| Oakura                 | 108361      | 2632864 | 6644664  | 8.2                              | 9.2   | 9.2            | Sand              | Semi-confined       | Urban         | High Producing Exotic Grassland     |
| Oakura Foreshore       | 106696      | 2632829 | 6644758  | 9.4                              | 10.4  | 10.4           | Sand              | Semi-confined       | Urban         | High Producing Exotic Grassland     |
| Pataua North           | 108263      | 2648426 | 6608630  | 5.4                              | 6.4   | 6.4            | Sand              | Semi-confined       | Horticultural | Built-up Area                       |
| Ruatangata             | 106741      | 2616352 | 6615369  | 11                               | 39.3  | 39.3           | Basalt            | Semi-confined       | Urban         | High Producing Exotic Grassland     |
| Sandy Bay              | 108262      | 2644253 | 6625999  | 11                               | 18    | 18             | Greywacke         | Semi-confined       | Urban         | High Producing Exotic Grassland     |
| Taiharuru              | 108261      | 2651154 | 6606564  | 8                                | 12    | 12             | Greywacke         | Semi-confined       | Horticultural | Herbaceous Saline Vegetation        |
| Tara                   | 104886      | 2647103 | 6565000  | 32                               | 49    | 49             | Basalt            | Semi-confined       | Horticultural | High Producing Exotic Grassland     |
| Maungakamea            | 108590      | 2619276 | 6593751  | 12                               | 76    | 76             | Basalt            | Semi-confined       | Horticultural | High Producing Exotic Grassland     |
| Taupo Bay              | 108333      | 2575875 | 6689221  | 5                                | 6     | 6              | Sand              | Unconfined          | Horticultural | Manuka and or Kanuka                |
| Tauranga Bay           | 108326      | 2582761 | 6687859  | 3                                | 8     | 8              | Sand              | Unconfined          | Horticultural | High Producing Exotic Grassland     |
| Te Ngairi Bay          | 108341      | 2590096 | 6686160  | 8.2                              | 11.2  | 11.2           | Greywacke         | Semi-confined       | Forestry      | Manuka and or Kanuka                |
| Three Mile Bush        | 106739      | 2624214 | 6611317  | 9                                | 18    | 18             | Basalt            | Semi-confined       | Urban         | High Producing Exotic Grassland     |
| Tutukaka               | 106545      | 2648793 | 6620001  | 12.8                             | 55    | 55             | Greywacke         | Unknown             | Urban         | Manuka and or Kanuka                |
| Whananaki North        | 108260      | 2643542 | 6631370  | 18                               | 23    | 23             | Greywacke         | Semi-confined       | Horticultural | Estuarine Open Water                |
| Whangaumu              | 106695      | 2649412 | 6617169  | 4.5                              | 12.5  | 12.5           | Greywacke         | Semi-confined       | Urban         | Estuarine Open Water                |
| Whatitiri              | 106740      | 2613444 | 6603530  | 27                               | 61.53 | 61.53          | Basalt            | Confined            | Horticultural | Orchard and Other Perennial Crops   |

Table 10: Monitoring sites of the Ruawai aquifer investigation

| Site name           | Site number | Easting | Northing | Depth to top/bottom of open area |      | Bore depth (m) | Aquifer lithology | Aquifer confinement | Land use      | Land cover                      |
|---------------------|-------------|---------|----------|----------------------------------|------|----------------|-------------------|---------------------|---------------|---------------------------------|
| Ruawai              | 102110      | 2602594 | 6562033  | 53                               | 59.2 | 60.7           | Sand              | Confined            | Horticultural | Estuarine Open Water            |
| Ruawai - East       | 105206      | 2606426 | 6563275  | 33.5                             | 39.5 | 39.5           | Sand              | Semi-confined       | Horticultural | High Producing Exotic Grassland |
| Ruawai - South East | 106920      | 2600256 | 6564816  | 60                               | 66   | 66             | Sand              | Semi-confined       | Horticultural | High Producing Exotic Grassland |
| Ruawai - Central    | 106693      | 2600073 | 6569968  |                                  |      | 23             | Sandstone         | Semi-confined       | Horticultural | High Producing Exotic Grassland |

Table 11: Monitoring sites of the Russell aquifer investigation

| Site name                   | Site number | Easting | Northing | Depth to top/bottom of open area |      | Bore depth (m) | Aquifer lithology | Aquifer confinement | Land use | Land cover           |
|-----------------------------|-------------|---------|----------|----------------------------------|------|----------------|-------------------|---------------------|----------|----------------------|
| Russell - North             | 108360      | 2612807 | 6659390  | 11.5                             | 33.5 | 33.5           | Greywacke         | Semi-confined       | Urban    | Estuarine Open Water |
| Russell - Foreshore Central | 104744      | 2612870 | 6659387  | 11                               | 44   | 44             | Greywacke         | Confined            | Urban    | Estuarine Open Water |
| Russell - Foreshore North   | 104745      | 2612804 | 6659442  | 1.8                              | 3.65 | 8.23           | Gravel            | Unconfined          | Urban    | Estuarine Open Water |
| Russell - Tapeka Point      | 108335      | 2612814 | 6660805  | 12                               | 35   | 35             | Greywacke         | Semi-confined       | Urban    | Manuka and or Kanuka |
| Matauwahi Bay - Foreshore   | 102368      | 2613195 | 6658642  |                                  |      |                | Greywacke         | Unknown             | Urban    | Estuarine Open Water |
| Matauwahi Bay - North       | 102367      | 2613202 | 6658707  |                                  |      |                | Greywacke         | Unknown             | Urban    | Estuarine Open Water |

Table 12: Monitoring sites of the Taipa aquifer investigation

| Site name                   | Site number | Easting | Northing | Depth to top/bottom of open interval |     | Bore depth (m) | Aquifer lithology | Aquifer confinement | Land use | Land cover                      |
|-----------------------------|-------------|---------|----------|--------------------------------------|-----|----------------|-------------------|---------------------|----------|---------------------------------|
| Taipa - North               | 104650      | 2553145 | 6689652  | 5                                    | 6   | 6              | Sand              | Unconfined          | Urban    | High Producing Exotic Grassland |
| Taipa - Northwest           | 104653      | 2552798 | 6689650  | 3.2                                  | 6.2 | 8.6            | Sand              | Unconfined          | Urban    | High Producing Exotic Grassland |
| Taipa - West                | 107790      | 2552626 | 6689497  | 3                                    | 9   | 9              | Sand              | Unconfined          | Urban    | High Producing Exotic Grassland |
| Taipa - Central             | 101759      | 2553302 | 6689498  | 6.5                                  | 8.5 | 8.5            | Sand              | Unconfined          | Urban    | Built-up Area                   |
| Taipa - Northwest Foreshore | 102332      | 2552922 | 6689665  | 5                                    | 7   | 7              | Sand              | Unconfined          | Urban    | High Producing Exotic Grassland |

## 12.9 Appendix B: Medians for all data for all sites monitored

Table 13: Medians for all data for State of the Environment monitoring sites (NA = No result available)

| Site name              | Site number | Bromine (mg/L) | Calcium (mg/L) | Chlorine (mg/L) | Cond (uS/cm) | Fluorine (mg/L) | Iron (mg/L) | Hydrogen carbonate (mg/L) | Potassium (mg/L) | E. coli (n/100mL) | Magnesium (mg/L) | Manganese (mg/L) |
|------------------------|-------------|----------------|----------------|-----------------|--------------|-----------------|-------------|---------------------------|------------------|-------------------|------------------|------------------|
| Aupouri - Waipapakauri | 101820      | 0.07           | 16.4           | 41.7            | 278          | 0.08            | 0.01        | 71                        | 2.17             | <1                | 3.71             | 0.011            |
| Aupouri - Paparore     | 102039      | 0.18           | 33             | 53              | 410          | 0.06            | 0.06        | 148                       | 2.7              | NA                | 5.6              | 0.11             |
| Aupouri - Ahipara      | 105914      | 0.09           | 4.1            | 33              | 180          | 0.02            | 1.40        | 34.5                      | 1.75             | NA                | 3.5              | 0.04             |
| Aupouri - Houhora East | 106736      | 0.20           | 31.7           | 63.3            | 448          | 0.10            | 0.09        | 124                       | 3.81             | <1                | 3.14             | 0.02             |
| Aupouri - Houhora West | 104890      | 0.33           | 6.5            | 32              | 210          | 0.08            | 1.40        | 48                        | 1.6              | NA                | 4.4              | 0.058            |
| Aupouri - Awanui       | 106737      | 0.17           | 23.9           | 69              | 488          | 0.13            | 0.52        | 160                       | 6.01             | 0.82              | 5.99             | 0.044            |
| Bland Bay              | 105226      | 0.05           | 75.6           | 33.8            | 542          | 0.12            | 0.01        | 262.5                     | 1.22             | <1                | 8.6              | 0.0003           |
| Cable Bay              | 106694      | 0.27           | 11.3           | 82.2            | 629          | 0.03            | 3.40        | 205                       | 3.74             | 1                 | 11.9             | 0.27             |
| Coopers Beach          | 107034      | 0.03           | 44.6           | 33.4            | 516          | 0.03            | 1.14        | 240                       | 1.28             | <1                | 16               | 0.3              |
| Glenbervie             | 105916      | 0.05           | 39             | 14.6            | 320          | 0.07            | 0.01        | 156.5                     | 1.01             | NA                | 6.2              | 0.003            |
| Kaikohe                | 101920      | 0.05           | 10.8           | 10.7            | 177          | 0.02            | 0.01        | 64.5                      | 1.5              | NA                | 6.25             | 0.003            |
| Kerikeri               | 106728      | 0.05           | 1.3            | 15.5            | 88           | 0.03            | 0.00        | 9.5                       | 0.11             | <1                | 1.68             | 0.022            |
| Mangawhai - South      | 103138      | 0.39           | 13.1           | 161             | 857          | 0.24            | 0.04        | 280.5                     | 1.55             | <1                | 3                | 0.016            |
| Mangawhai Heads        | 103192      | 0.18           | 14.2           | 46.7            | 406          | 0.09            | 0.98        | 158                       | 2.75             | <1                | 7.21             | 0.15             |
| Matapouri              | 106697      | 0.13           | 61.7           | 55              | 737          | 0.63            | 0.01        | 301                       | 4.26             | 2                 | 28               | 0.004            |
| Maunu                  | 106742      | 0.03           | 11.5           | 15.4            | 181          | 0.03            | 0.01        | 56                        | 0.68             | 1                 | 6.84             | 0.0009           |
| Ngunguru               | 106698      | 0.12           | 38.7           | 36.4            | 436          | 0.40            | 0.05        | 174                       | 5.47             | <1                | 9.7              | 0.075            |
| Oakura                 | 108361      | NA             | NA             | 51.2            | 715          | NA              | NA          | NA                        | NA               | <1                | NA               | NA               |
| Oakura Foreshore       | 106696      | 0.24           | 77.6           | 107.7           | 821          | 0.36            | 0.01        | 288                       | 5.97             | <1                | 10.4             | 0.0008           |
| Pataua North           | 108263      | 0.74           | 85.4           | 282.5           | 1436         | 0.09            | 0.01        | NA                        | NA               | <1                | 22.05            | 0.002            |
| Ruatangata             | 106741      | 0.07           | 1.4            | 15.7            | 109          | 0.03            | 0.26        | 8                         | 0.23             | 2.87              | 2.16             | 0.04             |
| Sandy Bay              | 108262      | 0.59           | 2.5            | 103             | 455          | 0.03            | 0.01        | NA                        | NA               | <1                | 8.29             | 0.404            |
| Taiharuru              | 108261      | 0.53           | 20             | 74.3            | 441          | 0.04            | 0.01        | 69                        | NA               | 0.29              | 12.2             | 0.282            |
| Tara                   | 104886      | 0.08           | 4.4            | 17.8            | NA           | 0.05            | 0.23        | 27.5                      | 1.5              | NA                | 4                | 0.007            |
| Maungakaramea          | 108590      | NA             | 9.4            | 23.5            | 248          | 0.03            | 0.01        | 48                        | 0.71             | 3                 | NA               | NA               |
| Taupo Bay              | 108333      | 0.38           | 88.6           | 38.5            | 625          | 0.05            | 0.01        | NA                        | NA               | 0.78              | NA               | 0.0003           |
| Tauranga Bay           | 108326      | 0.03           | 106.5          | 22.5            | 568          | 0.04            | 0.01        | 299.5                     | NA               | 0.6               | 4.55             | 0.001            |
| Te Ngairi Bay          | 108341      | 0.38           | NA             | 79.1            | 630          | 0.31            | 0.01        | 285                       | NA               | <1                | 10.9             | NA               |
| Three Mile Bush        | 106739      | 0.03           | 7.6            | 13.3            | 159          | 0.03            | 0.01        | 41                        | 0.54             | <1                | 5.69             | 0.0007           |
| Tutukaka               | 106545      | 0.56           | 4.1            | 117             | 583          | 0.11            | 0.01        | NA                        | 2.9              | NA                | 8.2              | 0.009            |
| Whananaki North        | 108260      | 0.40           | 27.6           | 102.5           | 552          | 0.16            | 2.11        | 101                       | NA               | <1                | 11.85            | 1.12             |
| Whangaumu              | 106695      | 0.40           | 0.4            | 110             | 733          | 0.44            | 0.01        | 151                       | 7.05             | <1                | 0.62             | 0.0003           |
| Whatitiri              | 106740      | 0.09           | 9.9            | 16.9            | 201          | 0.03            | 0.03        | 52.5                      | 1.08             | <1                | 6.46             | 0.001            |

Table 13 continued: Medians for all data for State of the Environment monitoring sites (NA = No result available)

| Site name              | Site number | Sodium (mg/L) | Ammoniacal nitrogen (mg/L) | Nitrite (mg/L) | Nitrate (mg/L) | pH  | Phosphate (mg/L) | Silica (mg/L) | Sulphate (mg/L) | Total dissolved solids (mg/L) | Temp (DegC) |
|------------------------|-------------|---------------|----------------------------|----------------|----------------|-----|------------------|---------------|-----------------|-------------------------------|-------------|
| Aupouri - Waipapakauri | 101820      | 31.7          | 0.005                      | 0.001          | 0.024          | 8.2 | 0.087            | 31.6          | 9.7             | NA                            | 18.5        |
| Aupouri - Paparore     | 102039      | 40.5          | 0.05                       | NA             | 0.002          | 7.9 | 0.08             | 41            | 8.7             | NA                            | 19.2        |
| Aupouri - Ahipara      | 105914      | 24            | 0.07                       | NA             | 0.25           | 6.4 | 0.025            | 35            | 6.7             | NA                            | 17.4        |
| Aupouri - Houhora East | 106736      | 52.4          | 0.16                       | 0.001          | 0.001          | 7.8 | 0.092            | 42.9          | 15.4            | NA                            | 18.7        |
| Aupouri - Houhora West | 104890      | 30.5          | 0.005                      | NA             | 0.003          | 6.6 | 0.078            | 39            | 8.7             | NA                            | 17.7        |
| Aupouri - Awanui       | 106737      | 68.4          | 0.54                       | 0.001          | 0.001          | 7.7 | 0.296            | 34            | 0.7             | NA                            | 18.2        |
| Bland Bay              | 105226      | 21.7          | 0.005                      | 0.001          | 0.927          | 7.6 | 0.009            | 11.7          | 7.9             | NA                            | 18.1        |
| Cable Bay              | 106694      | 120.5         | 0.04                       | 0.004          | 0.006          | 7.0 | 0.028            | 66.6          | 29.6            | NA                            | 18.5        |
| Coopers Beach          | 107034      | 40.4          | 0.04                       | 0.001          | 0.001          | 7.4 | 0.063            | 93            | 18.8            | NA                            | 20.1        |
| Glenbervie             | 105916      | 12.4          | 0.005                      | NA             | NA             | 7.3 | 0.011            | 25            | 10.6            | NA                            | 18.2        |
| Kaikohe                | 101920      | 11.7          | 0.005                      | NA             | 3              | 6.6 | 0.075            | 40.5          | 2.9             | NA                            | 17.9        |
| Kerikeri               | 106728      | 10.5          | 0.009                      | 0.004          | 0.963          | 5.7 | 0.004            | 10.6          | 2.5             | NA                            | 17.9        |
| Mangawhai - South      | 103138      | 345           | 0.3                        | 0.001          | 0.002          | 8.0 | 0.167            | 21.7          | 8.3             | NA                            | 17.7        |
| Mangawhai Heads        | 103192      | 62.1          | 0.08                       | 0.001          | 0.002          | 7.3 | 0.062            | 75.4          | 6.4             | NA                            | 17.4        |
| Matapouri              | 106697      | 48.4          | 0.01                       | 0.026          | 1.372          | 7.6 | 0.038            | 12.4          | 45.4            | NA                            | 17.5        |
| Maunu                  | 106742      | 15            | 0.005                      | 0.001          | 4.16           | 6.7 | 0.029            | 39.3          | 3               | 118                           | 17.4        |
| Ngunguru               | 106698      | 35.3          | 0.016                      | 0.001          | 0.013          | 7.4 | 0.051            | 26.2          | 18.6            | NA                            | 17.7        |
| Oakura                 | 108361      | 38.7          | NA                         | NA             | NA             | 7.6 | NA               | NA            | NA              | NA                            | 17.5        |
| Oakura Foreshore       | 106696      | 64.3          | 0.005                      | 0.001          | 3.18           | 7.6 | 0.143            | 19.6          | 44.2            | NA                            | 17.7        |
| Pataua North           | 108263      | 201           | 0.005                      | NA             | 9.49           | 7.4 | 0.018            | 10            | 36.5            | NA                            | 18.5        |
| Ruatangata             | 106741      | 14.5          | 0.005                      | 0.001          | 5.08           | 5.5 | 0.004            | 10            | 1.6             | 71                            | 17.2        |
| Sandy Bay              | 108262      | 79.4          | 0.04                       | NA             | 1.23           | 5.1 | 0.017            | 38            | 54.1            | NA                            | 17.4        |
| Taiharuru              | 108261      | 59.8          | 0.005                      | NA             | 1.32           | 6.3 | 0.014            | 15.4          | 54.1            | NA                            | 17.1        |
| Tara                   | 104886      | 12.6          | 0.005                      | NA             | 2.4            | 6.4 | 0.06             | 22            | 2.8             | NA                            | 16.8        |
| Maungakaramea          | 108590      | 23.8          | 0.005                      | 0.001          | 9.81           | 6.7 | 0.008            | NA            | 5.8             | NA                            | 18.2        |
| Taupo Bay              | 108333      | 22.9          | 0.005                      | NA             | 4.96           | 7.7 | 0.046            | 15.5          | 9.8             | NA                            | 18.4        |
| Tauranga Bay           | 108326      | 20.4          | 0.005                      | NA             | 5.78           | 7.3 | 0.088            | 8.15          | 18.8            | NA                            | 17.9        |
| Te Ngaire Bay          | 108341      | 55.7          | 0.005                      | NA             | 4.64           | 7.4 | NA               | NA            | 18.3            | NA                            | 17.3        |
| Three Mile Bush        | 106739      | 11.7          | 0.005                      | 0.001          | 2.77           | 6.4 | 0.018            | 29.6          | 6.2             | 111                           | 17.6        |
| Tutukaka               | 106545      | 90            | 0.005                      | NA             | 2              | 6.8 | NA               | 33            | 26              | NA                            | 17.3        |
| Whananaki North        | 108260      | 58.1          | 0.05                       | 0.003          | 0.002          | 6.6 | 0.064            | 60.6          | 20.5            | NA                            | 19.3        |
| Whangaumu              | 106695      | 156           | 0.005                      | 0.001          | 0.172          | 7.1 | 0.395            | 33.8          | 55.3            | NA                            | 17.7        |
| Whatitiri              | 106740      | 19.2          | 0.005                      | 0.001          | 7.28           | 6.9 | 0.059            | 45.1          | 2.2             | 147                           | 16.6        |

Table 14: Medians for all data for sites of the Ruawai aquifer investigation (NA = No result available)

| Site name           | Site number | Bromine (mg/L) | Calcium (mg/L) | Chlorine (mg/L) | Cond (uS/cm) | Fluorine (mg/L) | Iron (mg/L) | Hydrogen carbonate (mg/L) | Potassium (mg/L) | E. coli (n/100mL) | Magnesium (mg/L) | Manganese (mg/L) |
|---------------------|-------------|----------------|----------------|-----------------|--------------|-----------------|-------------|---------------------------|------------------|-------------------|------------------|------------------|
| Ruawai              | 102110      | 0.29           | 33.7           | 91              | 562          | 0.08            | 0.21        | 142                       | 3.49             | <1                | 6.77             | 0.121            |
| Ruawai - East       | 105206      | 4.51           | 225.5          | 1215            | 4399         | 0.03            | 69.60       | 115                       | 19.9             | <10               | 81.7             | 2.2              |
| Ruawai - South East | 106920      | 0.27           | 35             | 94.3            | 573          | 0.15            | 3.22        | 151                       | 2.82             | <1                | 7.44             | 0.131            |
| Ruawai - Central    | 106693      | 0.40           | 48             | 145             | 1207         | 0.07            | 3.54        | 427                       | 5.07             | <1                | 17.5             | 0.037            |

Table 14 continued: Medians for all data for sites of the Ruawai aquifer investigation (NA = No result available)

| Site name           | Site number | Sodium (mg/L) | Ammoniacal nitrogen (mg/L) | Nitrite (mg/L) | Nitrate (mg/L) | pH  | Phosphate (mg/L) | Silica (mg/L) | Sulphate (mg/L) | Total dissolved solids (mg/L) | Temp (DegC) |
|---------------------|-------------|---------------|----------------------------|----------------|----------------|-----|------------------|---------------|-----------------|-------------------------------|-------------|
| Ruawai              | 102110      | 61.6          | 0.1                        | 0.001          | 0.002          | 7.7 | 0.054            | 44.9          | 7               | 284                           | 18.1        |
| Ruawai - East       | 105206      | 357           | 5.18                       | 0.033          | 0.003          | 6.7 | 0.015            | 32.9          | 0.3             | 2645                          | 17.1        |
| Ruawai - South East | 106920      | 70.1          | 0.155                      | 0.001          | 0.001          | 7.3 | 0.014            | 49.4          | 2.5             | 322                           | 18.3        |
| Ruawai - Central    | 106693      | 184           | 0.7                        | 0.001          | 0.001          | 7.2 | 0.021            | 71.2          | 6.2             | 651                           | 17.6        |

Table 15: Medians for all data for sites of the Russell aquifer investigation (NA = No result available)

| Site name                   | Site number | Bromine (mg/L) | Calcium (mg/L) | Chlorine (mg/L) | Cond (uS/cm) | Fluorine (mg/L) | Iron (mg/L) | Hydrogen carbonate (mg/L) | Potassium (mg/L) | E. coli (n/100mL) | Magnesium (mg/L) | Manganese (mg/L) |
|-----------------------------|-------------|----------------|----------------|-----------------|--------------|-----------------|-------------|---------------------------|------------------|-------------------|------------------|------------------|
| Russell - North             | 108360      | NA             | 14.6           | 63.8            | 342          | NA              | 4.65        | 88                        | NA               | <1                | 4.97             | 0.513            |
| Russell - Foreshore Central | 104744      | NA             | NA             | 77              | 399          | NA              | 5.31        | NA                        | NA               | 1                 | NA               | 0.966            |
| Russell - Foreshore North   | 104745      | NA             | NA             | 46              | 357          | NA              | 42.60       | NA                        | NA               | 0.15              | NA               | 1.62             |
| Russell - Tapeka Point      | 108335      | 0.67           | 7.3            | 103             | 514          | 0.11            | NA          | 39.5                      | NA               | 1                 | 7.93             | NA               |
| Matauwahi Bay - Foreshore   | 102368      | NA             | 1.8            | 98.3            | 554          | 0.18            | 0.03        | NA                        | NA               | 1                 | NA               | 0.023            |
| Matauwahi Bay - North       | 102367      | 0.21           | 4              | 60              | 461          | 0.25            | 0.01        | NA                        | NA               | 0.36              | 1.42             | 0.008            |

Table 15 continued: Medians for all data for sites of the Russell aquifer investigation (NA = No result available)

| Site name                   | Site number | Sodium (mg/L) | Ammoniacal nitrogen (mg/L) | Nitrite (mg/L) | Nitrate (mg/L) | pH  | Phosphate (mg/L) | Silica (mg/L) | Sulphate (mg/L) | Total dissolved solids (mg/L) | Temp (DegC) |
|-----------------------------|-------------|---------------|----------------------------|----------------|----------------|-----|------------------|---------------|-----------------|-------------------------------|-------------|
| Russell - North             | 108360      | 41.9          | 0.005                      | NA             | 0.007          | 6.5 | NA               | 68.8          | 2.8             | NA                            | 18.2        |
| Russell - Foreshore Central | 104744      | NA            | 0.004                      | NA             | NA             | 6.4 | NA               | NA            | NA              | NA                            | 19.8        |
| Russell - Foreshore North   | 104745      | NA            | 1.41                       | NA             | NA             | 6.2 | NA               | NA            | NA              | NA                            | 17.8        |
| Russell - Tapeka Point      | 108335      | 87.1          | NA                         | NA             | 0.075          | 5.9 | 0.006            | 54.6          | 20.7            | NA                            | 18.5        |
| Matauwahi Bay - Foreshore   | 102368      | 108.5         | 0.065                      | NA             | NA             | 6.7 | NA               | NA            | NA              | NA                            | 18.4        |
| Matauwahi Bay - North       | 102367      | NA            | <0.0001                    | NA             | 0.589          | 6.5 | 0.121            | 49.7          | 34.2            | NA                            | 18.5        |

Table 16: Medians for all data for sites of the Taipa aquifer investigation (NA = No result available)

| Site name            | Site number | Bromine (mg/L) | Calcium (mg/L) | Chlorine (mg/L) | Cond (uS/cm) | Fluorine (mg/L) | Iron (mg/L) | Hydrogen carbonate (mg/L) | Potassium (mg/L) | E. coli (n/100mL) | Magnesium (mg/L) | Manganese (mg/L) |
|----------------------|-------------|----------------|----------------|-----------------|--------------|-----------------|-------------|---------------------------|------------------|-------------------|------------------|------------------|
| Taipa - North        | 104650      | NA             | NA             | 27.1            | 526          | NA              | 0.1         | NA                        | NA               | 1                 | NA               | 0.003            |
| Taipa - Northwest    | 104653      | NA             | NA             | 32.7            | 410          | NA              | NA          | 258.3                     | NA               | <1                | 5.8              | 0.036            |
| Taipa - West         | 107790      | NA             | NA             | 34.2            | 523          | NA              | NA          | NA                        | NA               | 7                 | NA               | NA               |
| Taipa - Central      | 101759      | 0.05           | 78.3           | 29              | 565          | 0.24            | 0.01        | 284                       | 2.23             | <1                | 19.8             | 0.002            |
| Taipa - NW Foreshore | 102332      | NA             | 79.1           | 46              | 534          | NA              | 0.63        | 332.1                     | NA               | <1                | 7.83             | 0.056            |

Table 16 continued: Medians for all data for sites of the Taipa aquifer investigation (NA = No result available)

| Site name            | Site number | Sodium (mg/L) | Ammoniacal nitrogen (mg/L) | Nitrite (mg/L) | Nitrate (mg/L) | pH  | Phosphate (mg/L) | Silica (mg/L) | Sulphate (mg/L) | Total dissolved solids (mg/L) | Temp (DegC) |
|----------------------|-------------|---------------|----------------------------|----------------|----------------|-----|------------------|---------------|-----------------|-------------------------------|-------------|
| Taipa - North        | 104650      | NA            | 0.005                      | 0.005          | 4.87           | 7.7 | NA               | NA            | NA              | NA                            | 18.0        |
| Taipa - Northwest    | 104653      | 22            | 0.06                       | 0.006          | 1.6            | 7.5 | NA               | NA            | 10              | NA                            | 17.9        |
| Taipa - West         | 107790      | NA            | 0.12                       | NA             | 0.015          | 7.7 | NA               | NA            | NA              | NA                            | 17.0        |
| Taipa - Central      | 101759      | 20.9          | 0.005                      | 0.005          | 6.28           | 7.7 | 0.014            | 10.3          | 16.7            | NA                            | 18.8        |
| Taipa - NW Foreshore | 102332      | 26            | 0.125                      | 0.008          | 0.132          | 7.5 | NA               | NA            | NA              | NA                            | 17.9        |

## 12.10 Appendix C: Significant trends detected using seasonal Mann Kendall test

Table 17: Significant trends at a 95% confidence interval for State of the Environment monitoring sites (NA = No result available, N = No significant trend)

| Site name              | Site number | Bromine (mg/L) | Calcium (mg/L) | Chlorine (mg/L) | Cond (uS/cm) | Fluorine (mg/L) | Iron (mg/L) | Hydrogen carbonate (mg/L) | Potassium (mg/L) | E. coli (n/100mL) | Magnesium (mg/L) | Manganese (mg/L) |
|------------------------|-------------|----------------|----------------|-----------------|--------------|-----------------|-------------|---------------------------|------------------|-------------------|------------------|------------------|
| Aupouri - Waipapakauri | 101820      | N              | -0.6156        | N               | N            | N               | NA          | N                         | N                | N                 | N                | -0.0061          |
| Aupouri - Paparore     | 102039      | N              | -1.0069        | -0.1427         | N            | N               | N           | N                         | N                | NA                | N                | N                |
| Aupouri - Ahipara      | 105914      | -0.0092        | -0.2219        | N               | N            | N               | N           | N                         | N                | NA                | -0.1943          | N                |
| Aupouri - Houhora East | 106736      | N              | N              | N               | N            | N               | N           | N                         | N                | N                 | N                | N                |
| Aupouri - Houhora West | 104890      | -0.0076        | N              | 1.7279          | 4.2378       | N               | N           | N                         | 0.0501           | NA                | 0.0403           | N                |
| Aupouri - Awanui       | 106737      | N              | N              | N               | N            | N               | N           | N                         | N                | N                 | N                | N                |
| Bland Bay              | 105226      | N              | N              | -1.0898         | N            | N               | NA          | N                         | N                | N                 | N                | NA               |
| Cable Bay              | 106694      | 0.2628         | N              | N               | N            | NA              | N           | 15.5078                   | N                | N                 | N                | N                |
| Coopers Beach          | 107034      | NA             | N              | N               | N            | NA              | N           | N                         | N                | N                 | N                | N                |
| Glenbervie             | 105916      | -0.0018        | N              | N               | N            | N               | NA          | N                         | N                | NA                | N                | NA               |
| Kaikohe                | 101920      | N              | N              | N               | N            | N               | NA          | N                         | N                | NA                | N                | NA               |
| Kerikeri               | 106728      | N              | N              | N               | N            | NA              | N           | N                         | N                | N                 | N                | N                |
| Mangawhai - South      | 103138      | N              | N              | N               | N            | N               | N           | N                         | N                | N                 | N                | N                |
| Mangawhai Heads        | 103192      | 0.0902         | N              | N               | N            | N               | N           | N                         | N                | N                 | N                | N                |
| Matapouri              | 106697      | N              | N              | N               | N            | N               | NA          | -6.4020                   | N                | 78.6067           | N                | N                |
| Maunu                  | 106742      | NA             | N              | -2.1743         | -17.457      | NA              | NA          | N                         | N                | N                 | N                | 0.0004           |
| Ngunguru               | 106698      | N              | N              | N               | -6.6821      | N               | N           | N                         | N                | N                 | N                | N                |
| Oakura                 | 108361      | NA             | NA             | N               | N            | NA              | NA          | N                         | NA               | NA                | NA               | NA               |
| Oakura Foreshore       | 106696      | N              | N              | -26.931         | N            | N               | NA          | N                         | N                | N                 | N                | N                |
| Pataua North           | 108263      | N              | N              | N               | N            | N               | NA          | N                         | NA               | NA                | N                | N                |
| Ruatangata             | 106741      | N              | N              | N               | N            | NA              | N           | N                         | N                | N                 | N                | N                |
| Sandy Bay              | 108262      | N              | N              | N               | N            | NA              | NA          | N                         | NA               | N                 | N                | N                |
| Taiharuru              | 108261      | N              | N              | N               | N            | N               | NA          | N                         | NA               | N                 | N                | N                |
| Tara                   | 104886      | -0.0059        | -0.2558        | -0.1307         | NA           | N               | N           | N                         | N                | N                 | N                | N                |
| Maungakaramea          | 108590      | NA             | N              | N               | N            | NA              | NA          | N                         | N                | N                 | NA               | NA               |
| Taupo Bay              | 108333      | N              | N              | N               | N            | N               | NA          | N                         | NA               | -1.2041           | NA               | NA               |
| Tauranga Bay           | 108326      | NA             | N              | N               | N            | N               | NA          | N                         | NA               | N                 | N                | N                |
| Te Ngairi Bay          | 108341      | N              | NA             | N               | N            | N               | NA          | N                         | NA               | N                 | N                | NA               |
| Three Mile Bush        | 106739      | NA             | N              | N               | N            | NA              | NA          | N                         | N                | N                 | 0.2725           | N                |
| Tutukaka               | 106545      | -0.1126        | N              | N               | N            | -0.0395         | NA          | NA                        | N                | NA                | N                | N                |
| Whananaki North        | 108260      | N              | N              | N               | N            | N               | N           | N                         | NA               | NA                | N                | N                |
| Whangaumu              | 106695      | N              | N              | -5.0172         | -10.965      | N               | NA          | N                         | N                | N                 | N                | NA               |
| Whatitiri              | 106740      | 0.0605         | 0.3930         | N               | N            | NA              | N           | N                         | N                | N                 | 0.4197           | N                |

Table 17 continued: Significant trends at a 95% confidence interval for SOE monitoring sites (NA = No result available, N = No significant trend)



| Site name              | Site number | Sodium (mg/L) | Ammoniacal nitrogen (mg/L) | Nitrite (mg/L) | Nitrate (mg/L) | pH      | Phosphate (mg/L) | Silica (mg/L) | Sulphate (mg/L) | Total dissolved solids (mg/L) | Temp (DegC) |
|------------------------|-------------|---------------|----------------------------|----------------|----------------|---------|------------------|---------------|-----------------|-------------------------------|-------------|
| Aupouri - Waipapakauri | 101820      | N             | NA                         | NA             | 0.0161         | N       | -0.0098          | N             | N               | NA                            | N           |
| Aupouri - Paparore     | 102039      | -0.4606       | N                          | NA             | N              | N       | N                | -0.9395       | -0.0596         | NA                            | N           |
| Aupouri - Ahipara      | 105914      | -0.2153       | 0.0078                     | NA             | 0.0259         | N       | NA               | N             | -0.1780         | NA                            | N           |
| Aupouri - Houhora East | 106736      | N             | N                          | NA             | NA             | N       | N                | N             | N               | NA                            | N           |
| Aupouri - Houhora West | 104890      | N             | NA                         | NA             | -0.0013        | N       | N                | N             | -0.3654         | NA                            | N           |
| Aupouri - Awanui       | 106737      | N             | N                          | NA             | NA             | N       | N                | N             | N               | NA                            | N           |
| Bland Bay              | 105226      | N             | NA                         | NA             | N              | N       | N                | -0.2369       | N               | NA                            | N           |
| Cable Bay              | 106694      | N             | N                          | N              | N              | N       | N                | N             | N               | NA                            | N           |
| Coopers Beach          | 107034      | N             | N                          | NA             | NA             | N       | 0.0136           | N             | N               | NA                            | N           |
| Glenbervie             | 105916      | -0.4001       | NA                         | NA             | NA             | -0.1006 | -0.0143          | N             | N               | NA                            | N           |
| Kaikohe                | 101920      | N             | NA                         | NA             | -0.1328        | N       | N                | N             | -0.0582         | NA                            | N           |
| Kerikeri               | 106728      | N             | 0.0101                     | N              | N              | N       | N                | N             | N               | NA                            | N           |
| Mangawhai - South      | 103138      | N             | N                          | NA             | N              | N       | N                | N             | N               | NA                            | N           |
| Mangawhai Heads        | 103192      | N             | N                          | NA             | N              | N       | 0.0240           | N             | N               | NA                            | N           |
| Matapouri              | 106697      | N             | N                          | N              | N              | N       | N                | N             | N               | NA                            | N           |
| Maunu                  | 106742      | -1.0970       | NA                         | NA             | N              | N       | N                | N             | N               | N                             | N           |
| Ngunguru               | 106698      | N             | N                          | NA             | N              | 0.1152  | N                | N             | N               | NA                            | N           |
| Oakura                 | 108361      | N             | NA                         | NA             | NA             | N       | NA               | NA            | NA              | NA                            | N           |
| Oakura Foreshore       | 106696      | N             | NA                         | NA             | N              | N       | N                | N             | N               | NA                            | N           |
| Pataua North           | 108263      | N             | NA                         | NA             | N              | N       | N                | N             | N               | NA                            | N           |
| Ruatangata             | 106741      | N             | NA                         | NA             | N              | N       | N                | N             | N               | N                             | N           |
| Sandy Bay              | 108262      | N             | N                          | NA             | N              | -0.4014 | N                | N             | N               | NA                            | N           |
| Taiharuru              | 108261      | N             | NA                         | NA             | N              | N       | N                | N             | N               | NA                            | N           |
| Tara                   | 104886      | -0.3954       | NA                         | NA             | N              | N       | N                | N             | N               | NA                            | N           |
| Maungakaramea          | 108590      | N             | NA                         | NA             | N              | N       | N                | NA            | N               | NA                            | N           |
| Taupo Bay              | 108333      | N             | NA                         | NA             | N              | N       | N                | N             | N               | NA                            | N           |
| Tauranga Bay           | 108326      | N             | NA                         | NA             | N              | N       | N                | N             | N               | NA                            | N           |
| Te Ngaire Bay          | 108341      | N             | NA                         | NA             | N              | N       | NA               | NA            | N               | NA                            | N           |
| Three Mile Bush        | 106739      | N             | NA                         | NA             | N              | N       | N                | -0.5935       | N               | N                             | N           |
| Tutukaka               | 106545      | N             | NA                         | NA             | -0.3339        | N       | NA               | N             | N               | NA                            | N           |
| Whananaki North        | 108260      | N             | N                          | N              | N              | N       | N                | N             | N               | NA                            | N           |
| Whangaumu              | 106695      | N             | NA                         | NA             | -0.0102        | N       | N                | N             | N               | NA                            | N           |
| Whatitiri              | 106740      | N             | NA                         | NA             | N              | N       | N                | N             | N               | N                             | N           |

Table 18: Significant trends at a 95% confidence interval for sites of the Ruawai aquifer investigation (NA = No result available, N = No significant trend)



| Site name           | Site number | Bromine (mg/L) | Calcium (mg/L) | Chlorine (mg/L) | Cond (uS/cm) | Fluorine (mg/L) | Iron (mg/L) | Hydrogen carbonate (mg/L) | Potassium (mg/L) | E. coli (n/100mL) | Magnesium (mg/L) | Manganese (mg/L) |
|---------------------|-------------|----------------|----------------|-----------------|--------------|-----------------|-------------|---------------------------|------------------|-------------------|------------------|------------------|
| Ruawai              | 102110      | N              | N              | -1.8198         | -16.895      | N               | N           | N                         | N                | NA                | N                | 0.0041           |
| Ruawai - East       | 105206      | N              | N              | N               | N            | NA              | N           | N                         | N                | N                 | N                | N                |
| Ruawai - South East | 106920      | N              | 1.0404         | N               | N            | N               | N           | N                         | N                | N                 | N                | -0.0199          |
| Ruawai - Central    | 106693      | N              | N              | N               | N            | N               | N           | N                         | N                | N                 | N                | N                |

Table 18 continued: Significant trends at a 95% confidence interval for sites of the Ruawai aquifer investigation (NA = No result available, N = No significant trend)

| Site name           | Site number | Sodium (mg/L) | Ammoniacal nitrogen (mg/L) | Nitrite (mg/L) | Nitrate (mg/L) | pH | Phosphate (mg/L) | Silica (mg/L) | Sulphate (mg/L) | Total dissolved solids (mg/L) | Temp (DegC) |
|---------------------|-------------|---------------|----------------------------|----------------|----------------|----|------------------|---------------|-----------------|-------------------------------|-------------|
| Ruawai              | 102110      | N             | N                          | NA             | N              | N  | N                | N             | N               | N                             | N           |
| Ruawai - East       | 105206      | -48.039       | N                          | N              | N              | N  | N                | N             | NA              | N                             | N           |
| Ruawai - South East | 106920      | N             | N                          | N              | NA             | N  | N                | N             | N               | N                             | N           |
| Ruawai - Central    | 106693      | N             | N                          | NA             | NA             | N  | N                | N             | -1.197          | N                             | N           |

Table 19: Significant trends at a 95% confidence interval for sites of the Russell aquifer investigation (NA = No result available, N = No significant trend)

| Site name                   | Site number | Bromine (mg/L) | Calcium (mg/L) | Chlorine (mg/L) | Cond (uS/cm) | Fluorine (mg/L) | Iron (mg/L) | Hydrogen carbonate (mg/L) | Potassium (mg/L) | E. coli (n/100mL) | Magnesium (mg/L) | Manganese (mg/L) |
|-----------------------------|-------------|----------------|----------------|-----------------|--------------|-----------------|-------------|---------------------------|------------------|-------------------|------------------|------------------|
| Russell - north             | 108360      | NA             | N              | N               | N            | NA              | N           | N                         | NA               | N                 | N                | N                |
| Russell - foreshore central | 104744      | NA             | NA             | N               | -12.795      | NA              | -0.624      | NA                        | NA               | N                 | NA               | N                |
| Russell - foreshore north   | 104745      | NA             | NA             | 0.8315          | N            | NA              | -2.170      | NA                        | NA               | N                 | NA               | -0.0979          |
| Russell - Tapeka Point      | 108335      | N              | N              | N               | N            | N               | NA          | N                         | NA               | N                 | N                | NA               |
| Matauwahi Bay - foreshore   | 102368      | NA             | N              | N               | N            | N               | N           | N                         | NA               | -3.942            | NA               | N                |
| Matauwahi Bay - north       | 102367      | N              | N              | 1.0527          | -20.551      | -0.1184         | NA          | N                         | NA               | 391.962           | N                | -0.0016          |

Table 19 continued: Significant trends at a 95% confidence interval for sites of the Russell aquifer investigation (NA = No result available, N = No significant trend)

| Site name                   | Site number | Sodium (mg/L) | Ammoniacal nitrogen (mg/L) | Nitrite (mg/L) | Nitrate (mg/L) | pH     | Phosphate (mg/L) | Silica (mg/L) | Sulphate (mg/L) | Total dissolved solids (mg/L) | Temp (DegC) |
|-----------------------------|-------------|---------------|----------------------------|----------------|----------------|--------|------------------|---------------|-----------------|-------------------------------|-------------|
| Russell - North             | 108360      | N             | NA                         | NA             | N              | N      | NA               | N             | N               | NA                            | N           |
| Russell - Foreshore Central | 104744      | NA            | -0.0035                    | NA             | NA             | N      | NA               | NA            | NA              | NA                            | N           |
| Russell - Foreshore North   | 104745      | NA            | N                          | NA             | NA             | N      | NA               | NA            | NA              | NA                            | -0.2701     |
| Russell - Tapeka Point      | 108335      | N             | NA                         | NA             | N              | N      | N                | N             | N               | NA                            | -1.0007     |
| Matauwahi Bay - Foreshore   | 102368      | N             | N                          | NA             | NA             | 0.1462 | NA               | NA            | NA              | NA                            | N           |
| Matauwahi Bay - North       | 102367      | NA            | -0.0049                    | NA             | N              | 0.0803 | N                | N             | N               | NA                            | N           |

Table 20: Significant trends at a 95% confidence interval for sites of the Taipa aquifer investigation (NA = No result available, N = No significant trend)

| Site name            | Site number | Bromine (mg/L) | Calcium (mg/L) | Chlorine (mg/L) | Cond (uS/cm) | Fluorine (mg/L) | Iron (mg/L) | Hydrogen carbonate (mg/L) | Potassium (mg/L) | E. coli (n/100mL) | Magnesium (mg/L) | Manganese (mg/L) |
|----------------------|-------------|----------------|----------------|-----------------|--------------|-----------------|-------------|---------------------------|------------------|-------------------|------------------|------------------|
| Taipa - North        | 104650      | NA             | NA             | 1.1877          | N            | NA              | N           | NA                        | NA               | N                 | NA               | N                |
| Taipa - Northwest    | 104653      | NA             | NA             | -4.7023         | 7.1914       | NA              | NA          | NA                        | NA               | N                 | N                | N                |
| Taipa - West         | 107790      | NA             | NA             | N               | N            | NA              | NA          | NA                        | NA               | N                 | NA               | NA               |
| Taipa - Central      | 101759      | N              | 2.3838         | N               | 5.4043       | N               | 0.0116      | N                         | N                | N                 | N                | N                |
| Taipa - NW Foreshore | 102332      | NA             | N              | -1.6219         | N            | NA              | N           | NA                        | NA               | N                 | N                | 0.0027           |

Table 20 continued: Significant trends at a 95% confidence interval for sites of the Taipa aquifer investigation (NA = No result available, N = No significant trend)

| Site name                   | Site number | Sodium (mg/L) | Ammoniacal nitrogen (mg/L) | Nitrite (mg/L) | Nitrate (mg/L) | pH     | Phosphate (mg/L) | Silica (mg/L) | Sulphate (mg/L) | Total dissolved solids (mg/L) | Temp (DegC) |
|-----------------------------|-------------|---------------|----------------------------|----------------|----------------|--------|------------------|---------------|-----------------|-------------------------------|-------------|
| Taipa - North               | 104650      | NA            | NA                         | -0.0010        | -0.5317        | 0.0161 | NA               | NA            | NA              | NA                            | N           |
| Taipa - Northwest           | 104653      | N             | N                          | N              | N              | N      | NA               | NA            | N               | NA                            | N           |
| Taipa - West                | 107790      | NA            | N                          | NA             | N              | N      | NA               | NA            | NA              | NA                            | N           |
| Taipa - Central             | 101759      | N             | NA                         | N              | -1.3717        | N      | N                | N             | 3.1999          | NA                            | N           |
| Taipa - Northwest Foreshore | 102332      | -0.6661       | -0.0410                    | N              | 0.0761         | N      | NA               | NA            | NA              | NA                            | -0.1065     |

## 12.11 Appendix D: Site categorisation

Table 21: Categories for State of the Environment monitoring sites

| Site name              | Site number | Calc TDS (mg/L) | CBE % | Median Category | Trend Category |
|------------------------|-------------|-----------------|-------|-----------------|----------------|
| Aupouri – Waipapakauri | 101820      | 207.9           | -0.2  | 2A              | SiO2           |
| Aupouri – Paparore     | 102039      | 333.0           | -2.1  | 2A              | WR1            |
| Aupouri – Ahipara      | 105914      | 144.4           | -0.7  | 2A              | WR2            |
| Aupouri - Houhora East | 106736      | 337.1           | 0.9   | 2A              | SiO2           |
| Aupouri - Houhora West | 104890      | 172.6           | 5.4   | 2A              | WR2            |
| Aupouri – Awanui       | 106737      | 369.8           | 2.7   | 2B              | SiO2           |
| Bland Bay              | 105226      | 423.9           | -0.4  | 1A-1            | WR2            |
| Cable Bay              | 106694      | 536.7           | 5.7   | 2A              | SiO2           |
| Coopers Beach          | 107034      | 489.0           | 1.0   | 2A              | WR1            |
| Glenbervie             | 105916      | 265.5           | -2.9  | 1A-1            | SiO2           |
| Kaikohe                | 101920      | 153.5           | 0.7   | 1A-2            | SiO2           |
| Kerikeri               | 106728      | 52.6            | -4.1  | 1B-2            | WR2            |
| Mangawhai - South      | 103138      | 836.3           | 26.2  | 2A              | D              |
| Mangawhai Heads        | 103192      | 374.3           | 0.8   | 2A              | WR1            |
| Matapouri              | 106697      | 559.0           | 0.3   | 1A-1            | P              |
| Maunu                  | 106742      | 150.6           | 0.9   | 1A-2            | P              |
| Ngunguru               | 106698      | 345.1           | 1.3   | 2A              | D              |
| Oakura                 | 108361      | 529.3           | 0.6   | 1A-2            | WR2            |
| Oakura Foreshore       | 106696      | 621.9           | -7.6  | 1A-2            | D              |
| Pataua North           | 108263      | 917.6           | 4.5   | 1A-2            | I              |
| Ruatangata             | 106741      | 59.0            | -4.2  | 1B-2            | WR1            |
| Sandy Bay              | 108262      | 301.8           | 0.1   | 1A-2            | I              |
| Taiharuru              | 108261      | 308.0           | 2.0   | 1A-1            | D              |
| Tara                   | 104886      | 95.4            | -2.1  | 1B-2            | WR1            |
| Maungakaramea          | 108590      | 155.1           | -2.6  | 1A-2            | P              |
| Taupo Bay              | 108333      | 437.6           | 2.2   | 1A-2            | I              |
| Tauranga Bay           | 108326      | 490.7           | 2.5   | 1A-2            | P              |
| Te Ngairi Bay          | 108341      | 566.4           | 1.8   | 1A-2            | I              |
| Three Mile Bush        | 106739      | 118.4           | -0.2  | 1B-2            | WR1            |
| Tutukaka               | 106545      | 284.0           | 9.7   | 1A-2            | P              |
| Whananaki North        | 108260      | 389.9           | 1.0   | 2A              | D              |
| Whangaumu              | 106695      | 515.7           | 1.7   | 1A-2            | D              |
| Whatitiri              | 106740      | 160.8           | -0.6  | 1A-2            | WR1            |

Table 22: Categories for sites of the Ruawai aquifer investigation

| Site name           | Site number | Calc TDS (mg/L) | CBE % | Median Category | Trend Category |
|---------------------|-------------|-----------------|-------|-----------------|----------------|
| Ruawai              | 102110      | 391.2           | -0.3  | 2A              | WR1            |
| Ruawai - East       | 105206      | 2129.2          | 1.0   | 2B              | I              |
| Ruawai - South East | 106920      | 404.3           | -1.2  | 2B              | WR1            |
| Ruawai - Central    | 106693      | 903.6           | 3.0   | 2B              | P              |

Table 23: Categories for sites of the Russell aquifer investigation

| Site name                   | Site number | Calc TDS (mg/L) | CBE % | Median Category | Trend Category |
|-----------------------------|-------------|-----------------|-------|-----------------|----------------|
| Russell - North             | 108360      | 295.3           | -1.1  | 2A              | I              |
| Russell - Foreshore Central | 104744      | 277.7           | -6.0  | 2A              |                |
| Russell - Foreshore North   | 104745      |                 | 2.8   |                 |                |
| Russell - Tapeka Point      | 108335      | 327.9           | 11.2  | 2A              | D              |
| Matauhi Bay - Foreshore     | 102368      | 365.1           | 3.9   | 2A              | SiO2           |
| Matauhi Bay - North         | 102367      | 362.5           | 2.1   | 1A-2            | P              |

Table 24: Categories for sites of the Taipa aquifer investigation

| Site name                   | Site number | Calc TDS (mg/L) | CBE % | Median Category | Trend Category |
|-----------------------------|-------------|-----------------|-------|-----------------|----------------|
| Taipa - North               | 104650      | 407.1           | 3.7   | 1A-1            | SiO2           |
| Taipa - Northwest           | 104653      | 382.6           | 1.4   | 1A-1            | D              |
| Taipa - West                | 107790      |                 |       |                 |                |
| Taipa - Central             | 101759      | 467.6           | 1.6   | 1A-1            | I              |
| Taipa - Northwest Foreshore | 102332      | 496.7           | -8.0  | 2A              | WR1            |