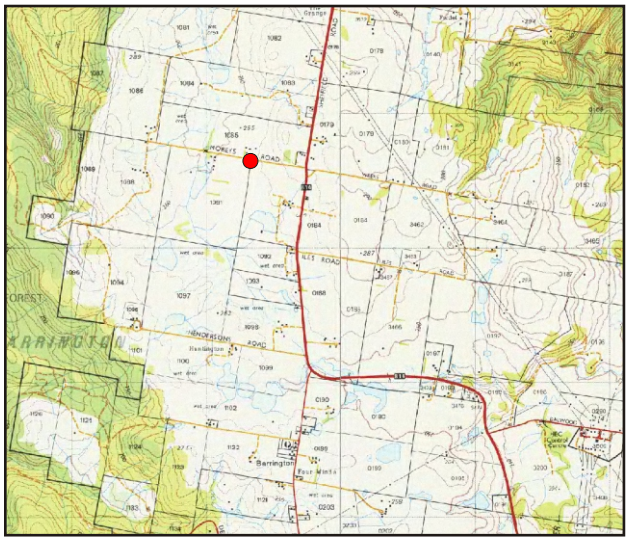
# APPENDIX 1

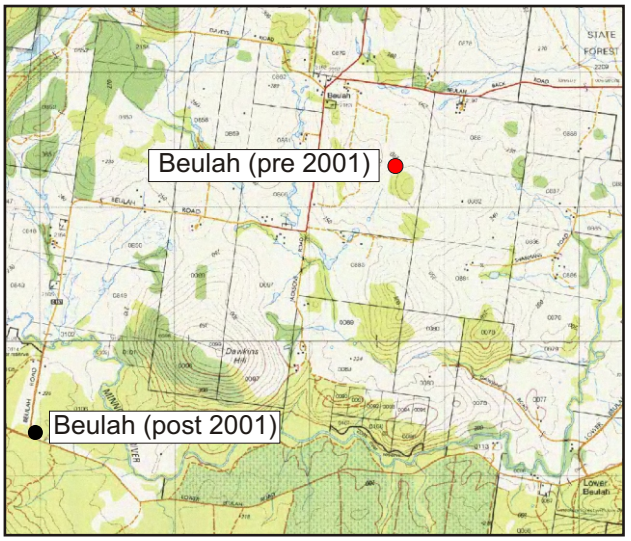
## General descriptions and location maps for each statewide groundwater network borehole

| *Site-ID* | *Bore name* | *Access details* |
|---|---|---|
| 16531 | TOGARI | Turn off the Bass Highway into Park Road. Turn into the second property on the eastern side. The bore is located just inside the first gate on the north side of the access road. |
| 16527 | SOUTH FOREST | Drive south from South Forest along Mengha Road to the first house on the western side past the turn of to the *Ponderosa* property. Enter the gate on the northern side of the house. Drive west across the paddock (past the steel cased bore) to the PVC stick of the monitoring bore. |
| 16532 | MONTAGU | Depart west from Smithton along Montagu Road. Enter the gate on the northern side of the road approximately 200 m past Boluans Road. The bore is located just inside the gate protected by a small star picket fence. |
| 16530 | TROWUTTA | Pass through the township of Trowutta heading south and drive along Reids Road to Finnigans Road. Approximately 100 m past Finnigans Road, enter the gate at the end of the pine trees on the northern side of Reids Road. Drive west back towards Finnigans Road on the northern side of the pine trees. The bore may be overgrown with blackberries and is located behind the farmer's inert waste stockpile. |
| 16533 | CALDER | Turn off the Bass Highway and head south along Deep Creek Road. Approximately 2 km along Deep Creek Road on the eastern side is a white house in the area of a pine plantation. The bore is located 5 m off Deep Creek Road towards the white house. |
| 16534 | HAMPSHIRE | Drive south from Highclere along Mount Road and turn into Pet Road. The bore is located on the northern side of the farm sheds approximately 500 m along Pet Road. |
| 16535 | MOOREVILLE ROAD | Drive south from Burnie along Mooreville Road. Locate the second western access drive way 500 m past Poimena Road. Ask permission from the householder to monitor the bore. Drive through the two northern gates next to the shed and then northeast to the corner of the paddock. The bore is located next to the fence line with Mooreville Road. |
| 16545 | JETSONVILLE | Turn into Jetsons Road off the Bridport Road north of Scottsdale. Follow Shanty Road approximately 1 km northeast to the valley floor. The bore is located just inside the north gate on the side of Shanty Road. |
| 16543 | PIPERS RIVER | Drive south from Pipers River along Pipers River Road. The bore is located under a large tree just inside the southern gate before School Road. |
| 16544 | WATERHOUSE | Drive east from Bridport along Waterhouse Road. The bore is located on the eastern side of the eastern fence, next to the access road to the house west of Manuka Park, on the northern side of Waterhouse Road. |
| 16547 | WINNALEAH | Turn off the Tasman Highway into Derby Back Road. The bore is located under half a 44 gallon drum inside the wooden fence, 50 m west of Hardmans Lane on the north side of Derby Back Road. |
| 16546 | BRANXHOLM | Turn off Red Hills Road (north of Branxholm) into Fenckers Road. The bore is located on the eastern side of the dam on the western side of Fenckers Road, 500 m north from the road junction with Red Hills Road. |
| 16526 | ST MARYS | Drive west from St Marys along the Esk Main Road and turn north into Cornwall Road. The bore is located inside the western gate on the bend 100 m along Cornwall Road. |
| 4290 | BEULAH (From 2001) | Drive south from Beulah along Beulah Road. The bore is located next to the eastern fence line on Beulah Road at the junction with Lower Beulah Road. |
| 16536 | BARRINGTON | Turn off Sheffield Road into Moreys Road. The bore has a steel collar and is located on the first fence on the southern side of Moreys Road. |
| 16542 | LILYDALE | Drive west from Lilydale along Lalla Road. The bore is located next to the fence line on the southern side of Cherry Hills B & B. |
| 16538 | CHUDLEIGH | Pass through the gate to Wesley Dale property on the southern side of Mole Creek Road. Drive past the homestead building and east on the road over Lobster Rivulet and pass through the next five gates. The bore is located on the southern fence opposite the large northern dam near the farm track. |
| 16540 | HAGLEY | Follow Selbourne Road north of Hagley and turn into Black Lane. The bore is located on the western side of the first private access to the north, 10 m from the junction with Black Lane. |
| 16539 | OSMASTON | Follow Osmaston Road east of Osmaston for approximately 2.5 km to a southern access to farm sheds. The bore is located on the eastern side of the first northern shed on the private access road. |
| 16541 | CRESSY | This bore is located in the garden of a house on the Cressy Road, on the south side of the Rivers and Water Supply depot. |

| *Site-ID* | *Bore name* | *Access details* |
|---|---|---|
| 16548 | BICHENO | Drive north along the Tasman Highway from the Bicheno Golf Club. Turn into the first access road on the eastern side with a locked gate. The PVC collar of the bore is located approximately 50 m along the private access road. |
| 16553 | ROSS | The bore is located in the paddock on the eastern side of the Council works depot. Access is from a southern gate from the bore on Badajos Street. |
| 16550 | TUNNACK | Drive south from Tunnack along Tunnack Road to the first house past Bourkes Road. Gain permission to monitor the bore from the household. Drive through the south gate next to the front yard fence line adjacent to Tunnack Road. The bore is located under large trees on the southern side of the paddock. |
| 16529 | MELTON MOWBRAY | The bore is located on the southern side of the fence on the turn off into *North Stockman* from the Midland Highway. |
| 16549 | LITTLE SWANPORT | Drive north from Little Swanport to Boomer Creek Farm. Drive behind the homestead past the dam and through the gate. Follow the northern fence line to the bore under the large trees. |
| 16551 | BUCKLAND | Drive east from Buckland along the Tasman Highway. The bore is located next to the southern fence line next to the Tasman Highway, approximately 500 m along the Prosser Plains straight. |
| 16552 | DODGES FERRY | Drive north from Dodges Ferry along Lewisham Road to the first private access on the eastern side. The bore is located approximately 100 m along the private access next to the northern fence. The collar of this bore is 0.7 m below ground level. |
| 16554 | PAWLEENA ROAD | Drive north from Sorell along Pawleena Road to the first gate past the cherry picking farm. The bore is located next to the eastern fence inside the gate. |
| 16528 | PORT ARTHUR | Drive west from Port Arthur along Nubeena Road for approximately 3.5 km, to a wood gate on the southern side of Nubeena Road. The bore is located 20m west inside the gate, on the northern edge of the paddock. |
| 17772 | BOTHWELL | Drive north from Bothwell along the Lake Highway to Cluny. Park the car on the cement bridge on the west side of the Lake Highway north of Cluny. Pass through the gate next to the bridge and follow the fence 120 m north to the capped artesian bore. Take care with the plumbing fittings. |
| 807 | FREE'S BORE | This is a private bore that is located in a wooden shed on the opposite side of Mooreville Road from the Burnie Tip. |
| 17776 | BURNIE TIP 1 | Enter the gate to the Burnie Tip on Mooreville Road. Drive to the northern end of the landfill footprint. The artesian flow of the bore is piped to the northern creek line next to the large pipe outlet. |
| 17780 | BURNIE TIP 4 | The bore is located on the edge of the access road that heads northeast from the front gate. |
| 18606 | SPREYTON | Drive south from Spreyton along Sheffield Road and turn into Pilgrims Road. Drive to the apple shed and then follow the orchid track to the south to the steel casing of the artesian bore. With great care, remove the steel bolt in the top of the casing to sample the bore. |
| 16923 | HUONVILLE | Turn off the Huon Highway into Glen Road (north of Huonville). Drive into the front gate of the timber yard, past the saw mill shed and north past the timber stock piles, to the northern fence line. The free flowing artesian bore is located next to the fence. |
| 17773 | SNUG | Drive approximately 2 km south from Snug along the Channel Highway. Follow the private access to the greenhouse on the eastern side of the Channel Highway. After gaining permission to monitor the bore, return to the northern gate on the private access gravel road. The bore is located in the northern corner of the paddock protected by an old tyre. |



Barrington

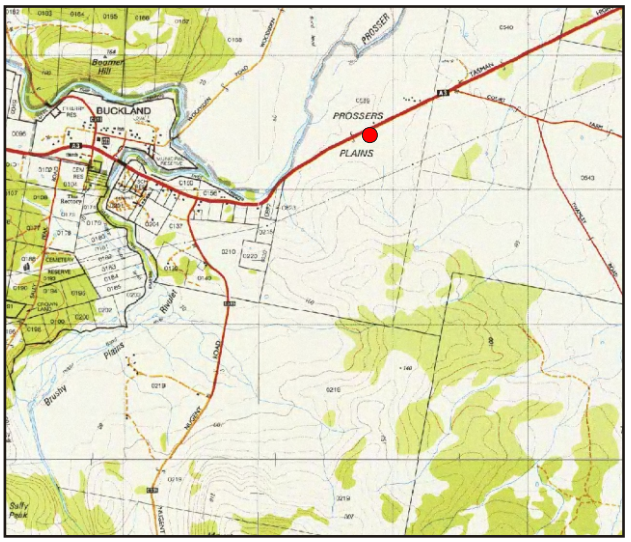



Beulah

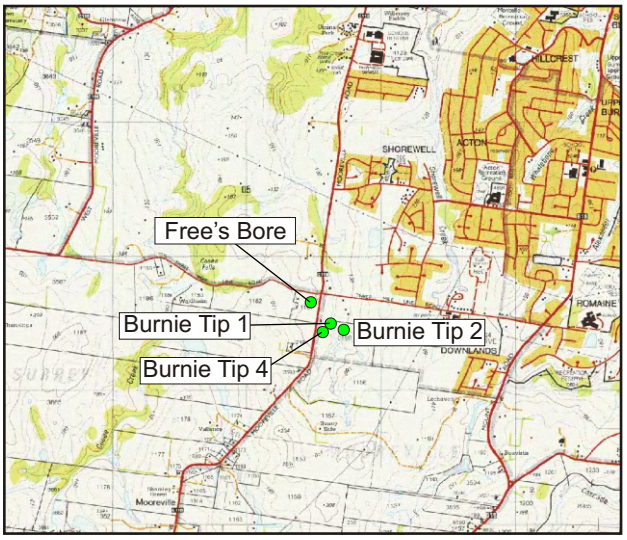

Bicheno


Bothwell


Branxholm

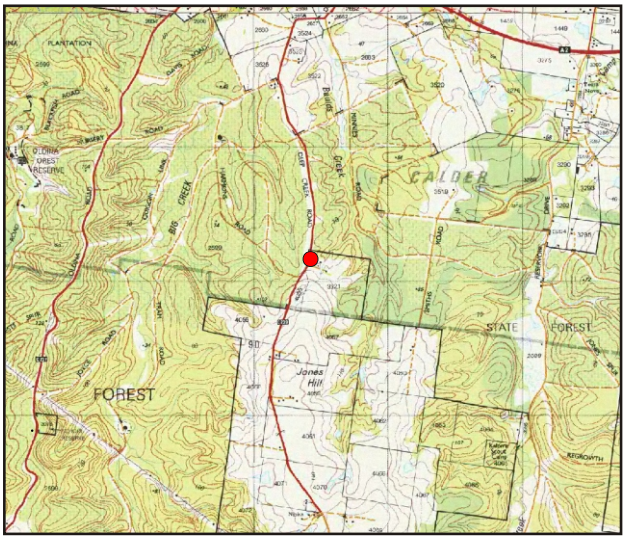



Buckland

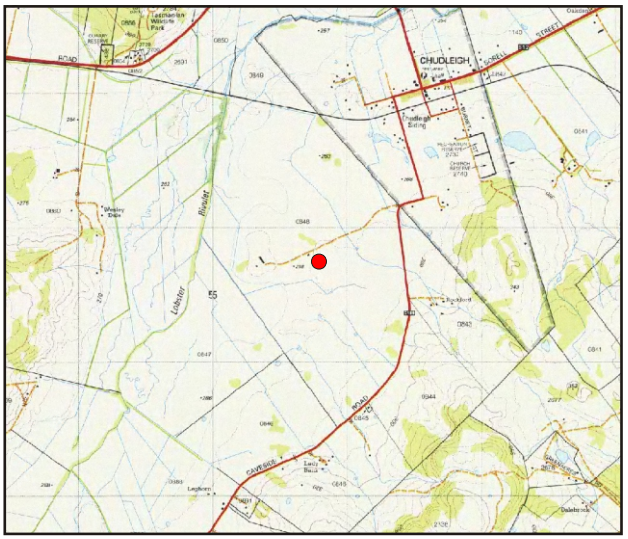



Burnie Tip

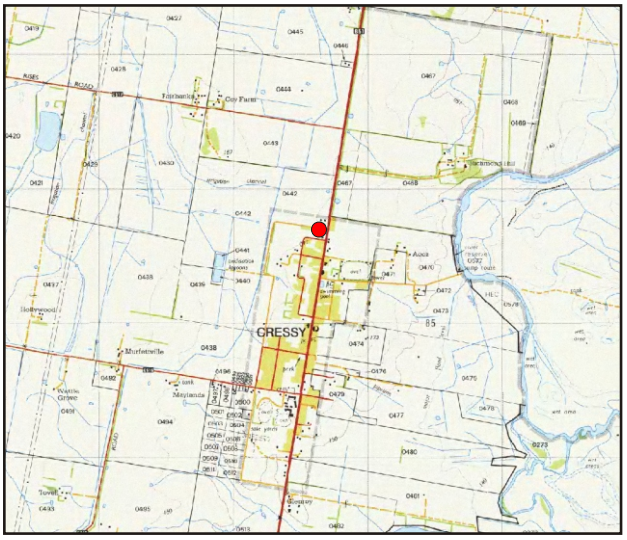

Devonport bores




Calder

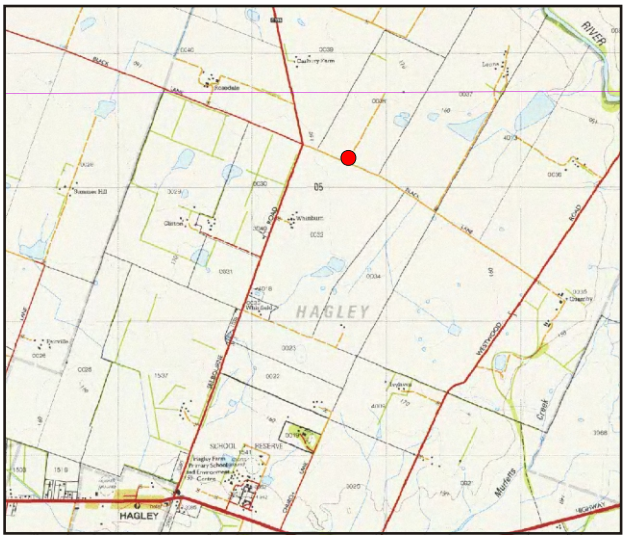



Chudleigh

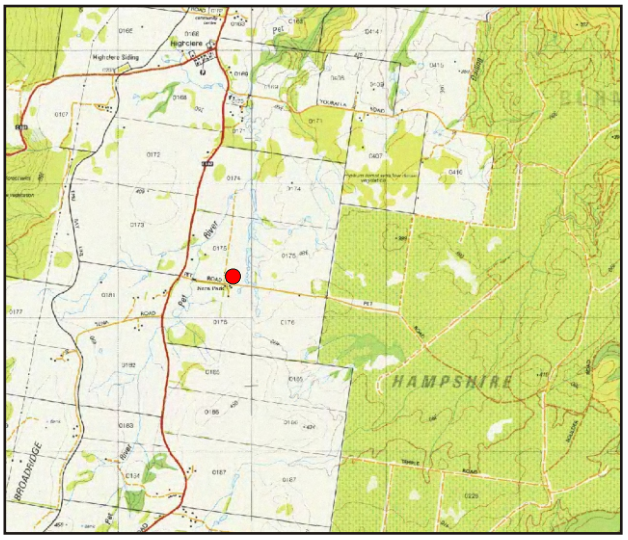



Cressy

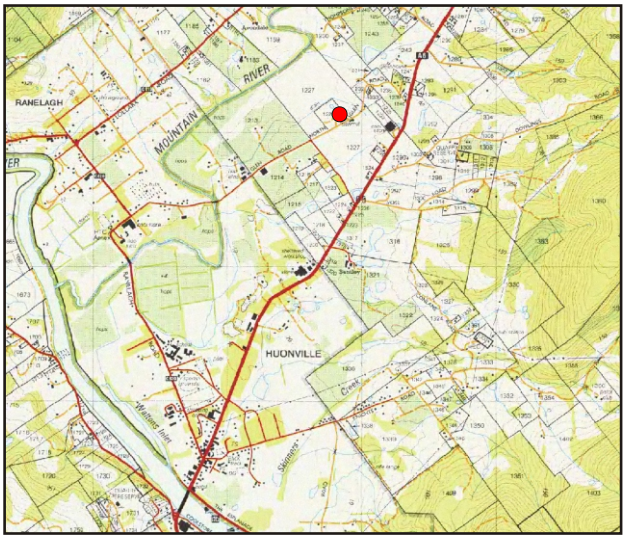

Dodges Ferry



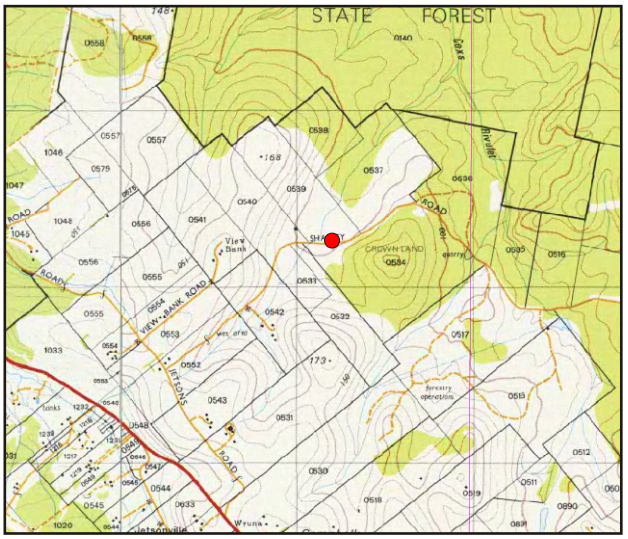

Hagley



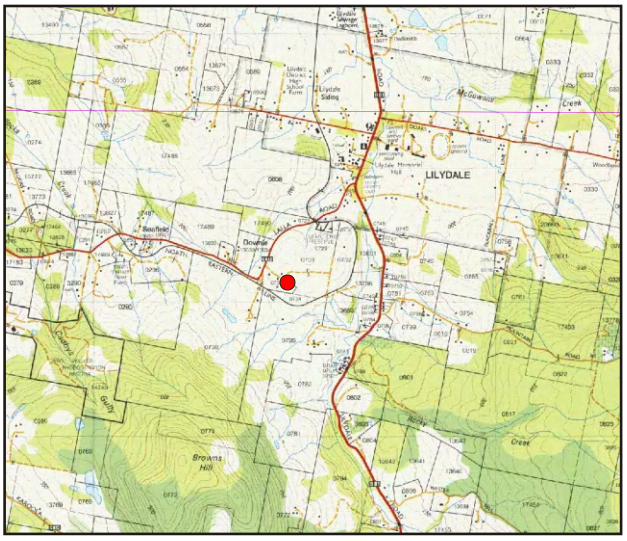

Hampshire



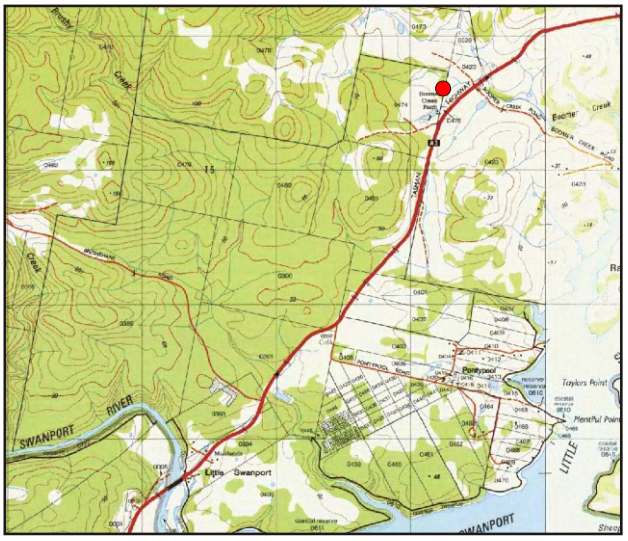

Huonville




Jetsonville

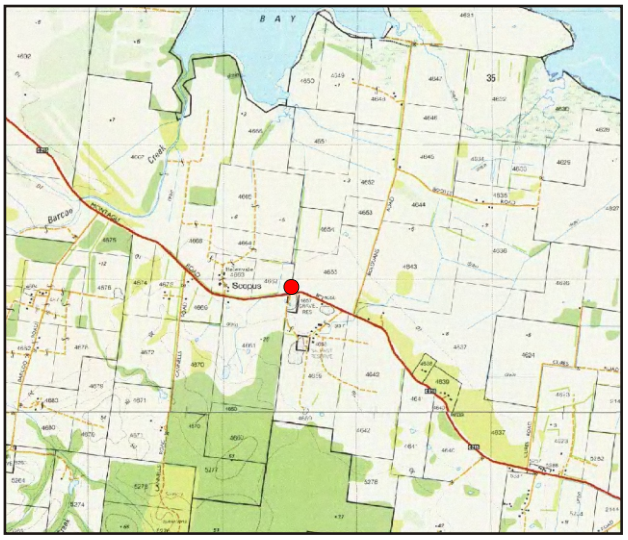



Lilydale



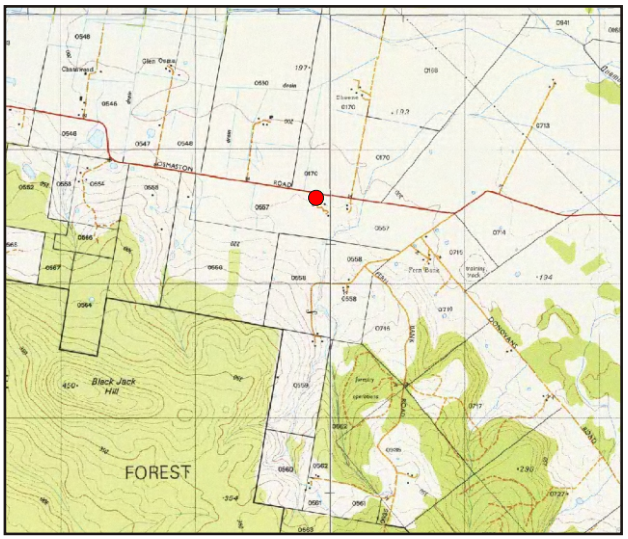

Little Swanport


Melton Mowbray

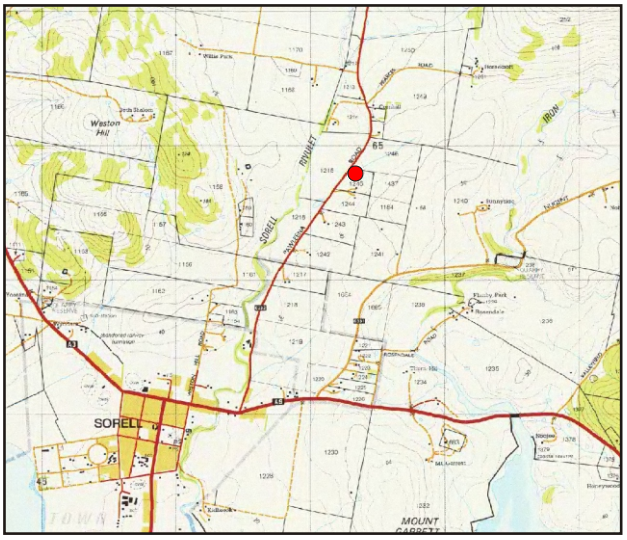



Montagu


Moorville Road



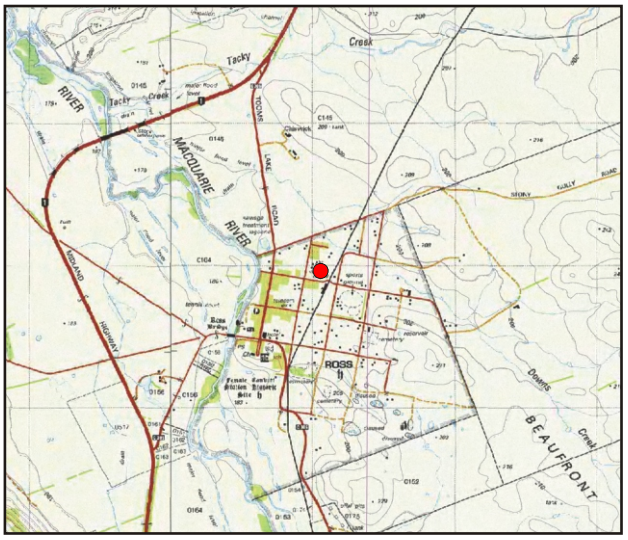

Osmaston



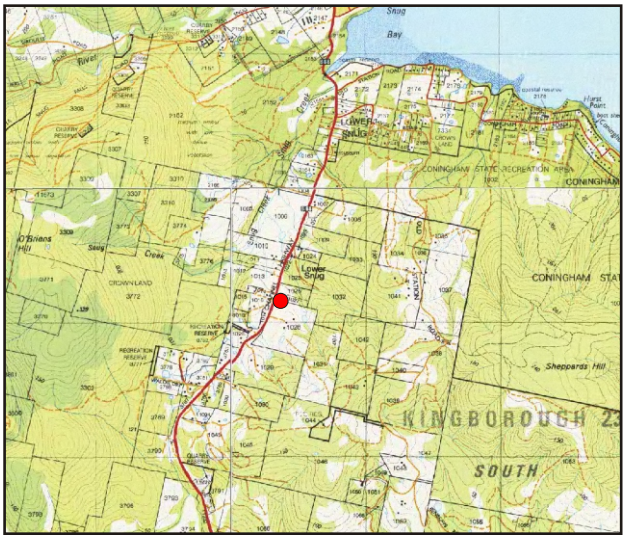

Pawleena Road


Pipers River

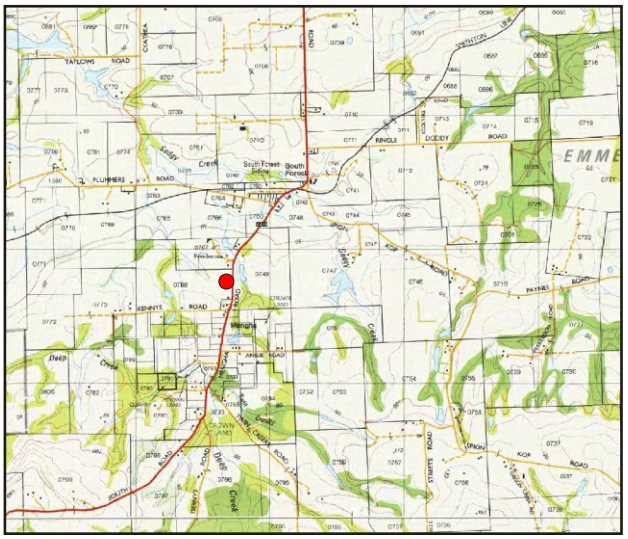

Port Arthur



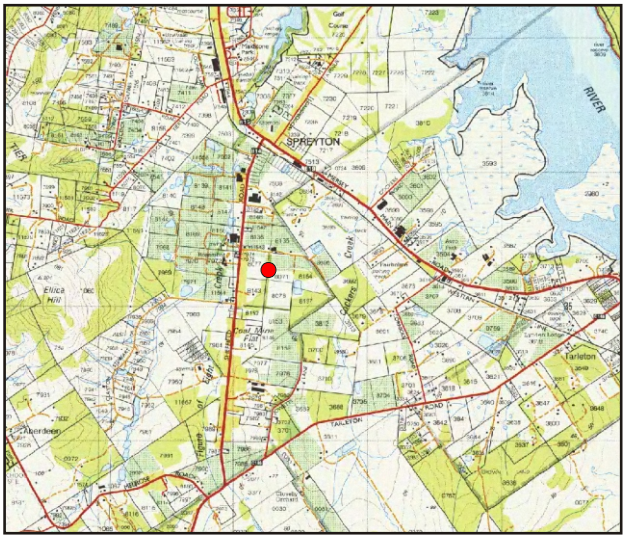

Ross




Snug



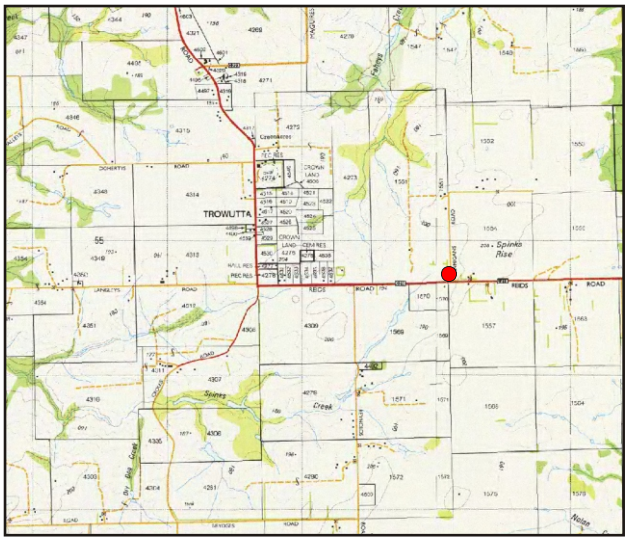

South Forest



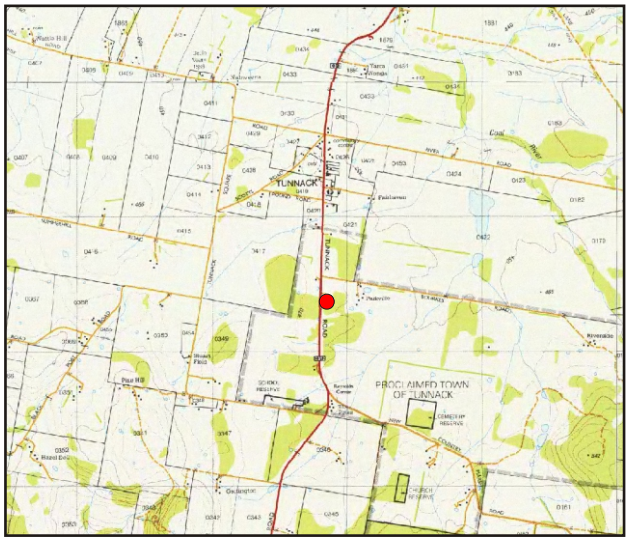

Spreyton


St Marys


Togari

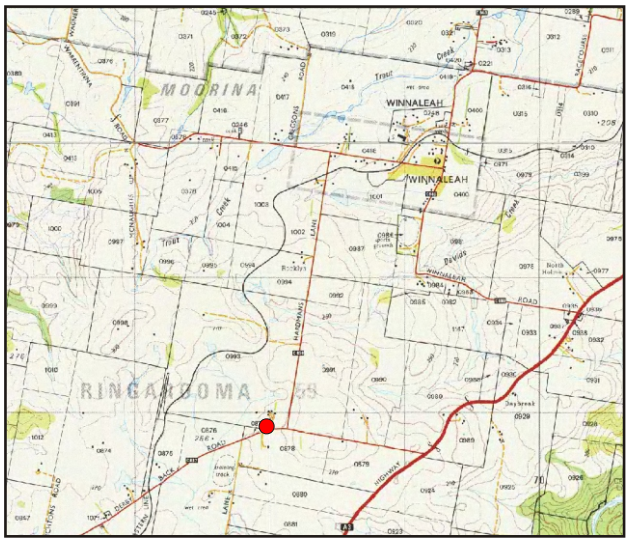



Trowutta




Tunnack


Waterhouse




Winnaleah

# APPENDIX 2

## Drilling records from the MRT groundwater database for the Devonport and statewide groundwater network boreholes, and engineering logs for the drilling and installation of the twelve NHT salinity network boreholes

| Site ID | Quad. | Card | Owner | Location & address | AMG East | AMG North | RL (m) | Accuracy (m) | Date | Driller | Depth (m) | Casing length (m) | DWS (m) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| *Statewide network* | | | | | | | | | | | | | |
| 16536 | 37 | 0 | Brown, D | Barrington | 439332 | 5425641 | | 50 | unknown | MD | | | |
| 16537 | 37 | 0 | Unknown | Beulah_old | 448637 | 5411296 | | 20 | unknown | MD | | | |
| 4290 | 37 | 468 | Garden, T | Beulah_new | 445936 | 5409335 | | 200 | 10/12/1986 | MD | 87.00 | | |
| 16548 | 56 | 13 | Glamorgan Council | Bicheno | 604165 | 5366511 | | 1 | 16/04/1991 | MD | 80.00 | 18.00 | 11; 15 |
| 17772 | 67 | 48 | Bowden, R | Bothwell | 496512 | 5315429 | | 1 | 25/03/1991 | MD | 54.00 | | 4; 22; 28; 32; 38 |
| 16546 | 32 | 114 | Selley | Branxholm, Red Hills Road | 559832 | 5443030 | | 1 | 06/06/1991 | MD | 60.00 | 4.00 | 19; 28; 57 |
| 16551 | 76 | 135 | Gatehouse, C R M | Buckland | 560819 | 5282433 | | 1 | 03/04/1991 | MD | 60.00 | 24.00 | 30; 36 |
| 17776 | 28 | 656 | Burnie Council | Burnie_1 | 405632 | 5451502 | | 10 | 07/02/1990 | MD | 60.00 | 27.00 | 6; 14; 28 |
| 17778 | 28 | 658 | Burnie Council | Burnie_2 | 405721 | 5451476 | | 10 | 14/02/1990 | MD | 36.00 | 28.00 | 18; 24 |
| 17780 | 28 | 660 | Burnie Council | Burnie_4 | 405550 | 5451412 | | 10 | 20/02/1990 | MD | 30.00 | 29.00 | 15; 24 |
| 16533 | 28 | 662 | Smith, R (Clarke) | Calder, Deep Creek Road | 390426 | 5458167 | | 1 | 22/05/1990 | MD | 90.00 | 60.00 | 12; 47 |
| 16538 | 45 | 130 | Cameron, R A C | Chudleigh | 455790 | 5397742 | | 1 | 07/08/1990 | MD | 54.00 | 36.00 | |
| 16541 | 47 | 45 | RWSC | Cressy | 506641 | 5385692 | | 1 | 11/09/1990 | MD | 102.00 | 102.00 | |
| 16552 | 83 | 255 | Reardon, B | Dodges Ferry | 551020 | 5255428 | | 50 | 20/02/1991 | MD | 80.00 | | 23; 34; 46; 63 |
| 16540 | 46 | 312 | French, R | Hagley | 492720 | 5405209 | | 1 | 21/08/1990 | MD | 39.00 | 9.00 | 9 |
| 16534 | 28 | 663 | Boland, B | Hampshire (Highclere), Pet Road? | 399836 | 5437283 | | 10 | 06/03/1990 | MD | 66.00 | 66.00 | 26; 40 |
| 16923 | 88 | 342 | Porter, J W | Huonville | 504840 | 5238130 | | 2000 | 11/03/1991 | MD | 80.00 | 4.00 | 10; 36 |
| 16545 | 31 | 285 | Beattie, D | Jetsonville | 541186 | 5448261 | | 25 | 20/06/1991 | MD | 42.00 | 42.00 | |
| 16542 | 39 | 95 | Shebri, G | Lilydale | 517445 | 5432143 | | 1 | 19/09/1991 | MD | 60.00 | | 15 |
| 16549 | 69 | 113 | Outram, Brian | Little Swanport, Boomer Creek | 579245 | 5315602 | | 1 | 09/04/1991 | MD | 60.00 | 22.00 | 7; 17 |
| 16529 | 68 | 419 | McShane, G | Melton Mowbray | 515187 | 5295458 | | 1 | 27/11/1990 | MD | 80.00 | | 32; 35; 45 |
| 16532 | 21 | 533 | Lardner, R N | Montagu, Scopus | 333511 | 5480913 | | 1 | 21/06/1990 | MD | 33.00 | 32.00 | 4; 22; 31 |
| 16535 | 28 | 661 | Dodd, J | Mooreville ,Mooreville Road | 404211 | 5448526 | | 10 | unknown | MD | 90.00 | | 27; 40; 48 |
| 16539 | 46 | 311 | Atkinson, B C | Osmaston | 479897 | 5398650 | | 1 | 12/07/1990 | MD | 80.00 | 6.00 | 52 |
| 16554 | 83 | 254 | Bayley, A | Sorell, Pawleena Road | 547332 | 5264794 | 28.00 | 50 | 26/02/1991 | MD | 36.00 | 36.00 | 14; 25 |
| 16543 | 31 | 284 | Micheletto, T | Pipers River | 506906 | 5449493 | | 1 | 12/09/1991 | MD | 72.00 | 42.00 | 24; 39; 47 |
| 16528 | 89 | 62 | Thompson, D E | Port Arthur | 565959 | 5223503 | | 1 | 11/02/1991 | MD | 24.00 | | |
| 16553 | 61 | 161 | Ross Council | Ross | 541060 | 5346958 | | 1 | 10/10/1990 | MD | 80.00 | 18.00 | 16 |
| 17773 | 88 | 343 | Park, M | Lower Snug | 520353 | 5229156 | | 10 | 13/03/1991 | MD | 72.00 | | 23 |
| 16527 | 21 | 532 | Bergman, A and Sons | South Forest | 351676 | 5471754 | | 1 | 26/06/1990 | MD | 80.00 | 30.00 | 11 |
| 18606 | 29 | 472 | Ayres, G | Spreyton | 445266 | 5435262 | | 10 | 24/01/1990 | MD | 135.00 | | 80 |
| 16526 | 49 | 9 | Napier, J | St Marys | 594459 | 5396640 | | 5 | 18/04/1991 | MD | 80.00 | | 12; 22 |
| 16531 | 20 | 201 | Johnson, M E | Togari | 322715 | 5465006 | | 1 | 13/06/1990 | MD | 80.00 | 6.00 | 16 |
| 16530 | 27 | 38 | Dodd, A | Trowutta | 340102 | 5454728 | | 10 | 30/05/1990 | MD | 80.00 | | 14; 16; 26; 45; 56; 67 |
| 16550 | 68 | 418 | Coulson, A J | Tunnack | 537846 | 5298367 | | 1 | 22/11/1990 | MD | 80.00 | | 4; 62 |
| 16544 | 31 | 286 | Hall, K | Waterhouse, Manuka Park | 541833 | 5460639 | | 25 | 05/09/1991 | MD | 54.00 | 54.00 | |
| 16547 | 32 | 112 | Cairns, P | Winnaleah | 567980 | 5447872 | | 1 | 21/05/1991 | MD | 72.00 | 12.00 | 6; 54 |
| *Devonport network* | | | | | | | | | | | | | |
| 1493 | 29 | 412 | Bramich, J | Moriarty | 457840 | 5434662 | | 50 | 08/11/1984 | MD | 90.00 | 90.00 | 12; 15; 54; 88 |
| 1497 | 29 | 416 | Mitchell, V R | Moriarty | 455988 | 5435250 | | 50 | 06/12/1984 | MD | 87.50 | 87.50 | |
| 1640 | 30 | 127 | Beveridge, J | Harford | 460340 | 5434675 | | 50 | 29/10/1985 | MD | 90.00 | 90.00 | 18; 22; 26; 70 |
| 1645 | 30 | 132 | Stewart, B T | Thirlstane | 461105 | 5437155 | | 200 | 24/10/1984 | MD | 72.00 | 72.00 | 6; 15; 24 |
| 1659 | 30 | 146 | Shearwater Golf Club | Port Sorell | 461383 | 5438982 | | 50 | 10/04/1985 | MD | 74.00 | 74.00 | 28.5; 31 |
| 2068 | 37 | 386 | Rockliff | Sassafras | 456984 | 5429930 | | 50 | 11/03/1985 | MD | 49.00 | 49.00 | 12.5 |
| 2257 | 38 | 118 | Richardson, L | East Sassafras | 460446 | 5432878 | | 50 | 31/10/1984 | MD | 64.00 | | 12; 21; 24 |
| 2260 | 38 | 121 | Swan, P | East Sassafras | 460555 | 5430950 | | 50 | 08/11/1984 | MD | 78.00 | 78.00 | 25; 63 |
| 2279 | 38 | 140 | Nicholas, R | Sassafras | 458193 | 5429315 | | 50 | 13/02/1985 | MD | 59.00 | 59.00 | 13.5; 25; 30; 37; 43; 59 |
| 4592 | 29 | 436 | Atkins, T | Wesley Vale | 453656 | 5439603 | | 50 | 01/04/1985 | MD | 90.00 | 90.00 | 12.8; 16.5; 19.5; 24.1 |
| 4594 | 29 | 438 | Foster, Mr | Wesley Vale | 453570 | 5437815 | | 50 | 05/02/1985 | MD | 55.00 | 55.00 | 14; 18; 30; 36 |
| 4596 | 29 | 440 | Marshall, M | East Devonport | 448965 | 5440270 | | 50 | 18/03/1985 | MD | 100.00 | 100.00 | 16.5 |

| Site ID | SWL (m) | Yield (l/sec) | Conductivity (µS/cm) | TDS (mg/l) | Final TDS (mg/l) | pH | Geology | Status | Water use | Pump type | Comments | Sited by |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| *Statewide network* | | | | | | | | | | | | |
| 16536 | | | | 110.48 | 110.48 | | | Unknown | Observation | Unknown | (WLM) bore monitored for water-level fluctuation | Unknown |
| 16537 | | | | 78.48 | 78.48 | | | Unknown | Observation | Unknown | (WLM) collar destroyed by forestry operations | Unknown |
| 4290 | 10 | 1.52 | | 58.00 | 58.00 | | Cambrian | Capped | Unknown | Unknown | (Driller) second monitoring bore for Beulah 1st monitoring bore was destroyed | B Weldon |
| 16548 | | 0.89 | | 4397.40 | 4397.40 | | | Unknown | Observation | Unknown | | L Matthews (WLM) |
| 17772 | | | | 795.90 | 795.90 | | Permian | Unknown | Unknown | Unknown | | WLM |
| 16546 | | 1.57 | | 57.61 | 57.61 | | Mathinna sediments | Capped | Observation | Unknown | | WLM |
| 16551 | | 1.01 | | 659.25 | 659.25 | | Triassic | Capped | Observation | Unknown | | WLM |
| 17776 | | 3.16 | | 190.95 | 190.95 | | Tertiary basalt | Capped | Unknown | Unknown | (WLM) pump set at 23m; bore on north side of the tip | WLM |
| 17778 | | 0.63 | | 122.16 | 122.16 | | Tertiary basalt | Capped | Unknown | Unknown | (WLM) NE side of tip; bore believed to be destroyed by expansion of tip | WLM |
| 17780 | | 1.01 | | 82.65 | 82.65 | | Tertiary basalt | Unknown | Unknown | Unknown | (WLM) located on the NW side of the tip | WLM |
| 16533 | | 0.13 | | 118.21 | 118.21 | | Permian | Unknown | Observation | Unknown | | WLM |
| 16538 | | 0.25 | | 64.74 | 64.74 | | Gordon Limestone | Capped | Observation | Unknown | | WLM |
| 16541 | | | | 1614.00 | 1614.00 | | Tertiary Sediments | Capped | Observation | Unknown | (WLM) bore monitored for water-level fluctuation. | WLM |
| 16552 | | 0.63 | | 3219.00 | 3219.00 | | Triassic | Capped | Observation | Unknown | | WLM |
| 16540 | .95 | 3.03 | | 310.26 | 310.26 | | Tertiary Basalt | Capped | Observation | Mono | (WLM) clear water with no odour or taste | WLM |
| 16534 | | 0.38 | | 99.68 | 99.68 | | Tertiary Basalt | Capped | Observation | Unknown | | WLM |
| 16923 | | 0.38 | | 712.21 | 712.21 | | Permian | Capped | Observation | Unknown | | WLM |
| 16545 | 7.1 | | | 80.88 | 80.88 | | Tertiary Sediments | Capped | Observation | Unknown | | WLM |
| 16542 | | 0.25 | | 209.38 | 209.38 | | Permian | Capped | Observation | Unknown | | WLM |
| 16549 | | 0.38 | | 3068.05 | 3068.05 | | Jurassic Dolerite | Capped | Observation | Unknown | (WLM) bore yield dropped from 0.76 l/sec to 0.38 l/sec when drilled | WLM |
| 16529 | | 0.50 | | 1202.50 | 1202.50 | | Triassic | Capped | Observation | Unknown | | WLM |
| 16532 | 3.38 | 3.78 | | 283.53 | 283.53 | | | Capped | Observation | Unknown | (WLM) bore monitored for water-level fluctuation; clear, odourless water with no taste | WLM |
| 16535 | | 0.19 | | 43.21 | 43.21 | | Precambrian | Unknown | Observation | Unknown | (WLM) may be card #661, Burnie Quad 28 | Unknown |
| 16539 | 14.68 | 3.03 | | 577.83 | 577.83 | | Permian | Capped | Observation | Unknown | | WLM |
| 16554 | | 1.26 | | 1644.42 | 1644.42 | | Tertiary Basalt | Capped | Observation | Unknown | | WLM |
| 16543 | | 0.63 | | 250.22 | 250.22 | | Mathinna Sediments | Capped | Observation | Unknown | | WLM |
| 16528 | | 0.25 | | 257.67 | 257.67 | | Jurassic Dolerite | Capped | Observation | Unknown | | WLM |
| 16553 | | 0.38 | 3470 | 2437.05 | 2437.05 | 7.7 | Triassic | Capped | Observation | Unknown | (WLM) bore monitored for water-level fluctuation. | Unknown |
| 17773 | | 0.41 | | 1014.94 | 1014.94 | | Triassic | Unknown | Unknown | Unknown | | WLM |
| 16527 | | 0.56 | | 95.00 | 95.00 | | | Capped | Observation | Unknown | | WLM |
| 18606 | | | | 240.38 | 240.38 | | Permian | Capped | Unknown | Mono | (Driller) clear, odourless water with no taste | WLM |
| 16526 | | 0.64 | | 968.58 | 968.58 | | Triassic | Capped | Observation | Unknown | (WLM) bore monitored for water-level fluctuation. | WLM |
| 16531 | | 0.10 | | 694.47 | 694.47 | | Precambrian Dolomite | Capped | Observation | Unknown | | WLM |
| 16530 | 10.26 | 3.78 | | 142.37 | 142.37 | | | Capped | Observation | Unknown | (WLM) bore monitored for water-level fluctuation. | WLM |
| 16550 | | 0.13 | | 882.17 | 882.17 | | | Unknown | Observation | Unknown | | WLM |
| 16544 | 3.5 | | | 339.44 | 339.44 | | Tertiary Sediments | Capped | Observation | Unknown | | WLM |
| 16547 | | 1.01 | | 249.47 | 249.47 | | Tertiary Basalt | Unknown | Observation | Unknown | | WLM |
| *Devonport network* | | | | | | | | | | | | |
| 1493 | | 5.05 | | | | | Tertiary Basalt | Capped | Unknown | Unknown | (Driller) steel cased, monitoring hole | WLM |
| 1497 | | 3.03 | | | | | Tertiary Basalt | Capped | Unknown | Unknown | (Driller) good quality, clear water | WLM |
| 1640 | | 1.01 | 520.00 | 340.00 | 340.00 | | Tertiary Basalt | Capped | Unknown | Air Lift | | Unknown |
| 1645 | 3 | 5.05 | | 330.00 | 330.00 | | Tertiary Basalt | Capped | Unknown | Unknown | | WLM |
| 1659 | | 6.10 | 690.00 | 470.00 | 470.00 | | Tertiary Basalt | Capped | Unknown | Unknown | (Driller) grey coloured water, otherwise good quality | Unknown |
| 2068 | 5.2 | 0.61 | | 180.00 | 180.00 | | Tertiary Basalt | Capped | Unknown | Unknown | (Driller) good quality, clear, odourless, fair tasting water | Unknown |
| 2257 | | 12.63 | | 470.00 | 470.00 | | Tertiary Basalt | Capped | Unknown | Unknown | (Driller) casing depth not known | WLM |
| 2260 | | 0.13 | | | | | Tertiary Basalt | Capped | Unknown | Unknown | | WLM |
| 2279 | | 10.10 | | 140.00 | 140.00 | | Tertiary Basalt | Capped | Unknown | Unknown | (Driller) whitish, odourless water with good taste | Unknown |
| 4592 | | 5.05 | | 280.00 | 280.00 | | Tertiary Basalt | Capped | Unknown | Unknown | | Unknown |
| 4594 | | 25.25 | | 290.00 | 290.00 | | Tertiary Basalt | Capped | Unknown | Unknown | (Driller) clear, good tasting, odourless water | Unknown |
| 4596 | | 1.26 | | | | | Tertiary Basalt | Capped | Unknown | Unknown | | Unknown |

**Coffey Geosciences Pty Ltd** ACN 056 335 516

# Engineering Log - Piezometer

Borehole No. **CRMB3**
Sheet 1 of 1
Office Job No.: **HO79/1**
Date started: **11.9.2001**
Date completed: **11.9.2001**
Logged by: **CS**
Checked by:

Client: ***MRT***
Principal:
Project: ***Hydrogeological Studies for the Examination of Soil Salinity, Tas***
Borehole Location:

drill model & mounting:
hole diameter:
Easting: 535863
Northing: 5276164
slope: -90°
bearing:
R.L. Surface:
datum:

**drilling information** | **material substance**

| method | penetration 1 2 3 | support | water | notes samples, tests, etc | well details | RL | depth metres | graphic log | classification symbol | material: soil type: plasticity or particle characteristics, colour, secondary and minor components. | moisture condition | consistency/ density index | structure and additional observations |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | 1 | | CL | CLAY: moderate plasticity, dark brown, high density, highly organic, minor plant roots | | | |
| | | | | | | | 2 | | | SANDY GRAVELLY CLAY: very fine grained quartz sand, very low plasticity, brown to khaki, moderate density clay, moderate to very coarse well rounded moderately weathered dolerite gravel | | | |
| | | | | | | | 3 | | | GRAVELLY CLAY: low plasticity, moderate density, clay, very coarse subangular to subrounded moderately to very weathered dolerite gravel, poor penetration | | | |
| | | | ▶ | | | | 4 | | | GRAVELLY CLAY: low plasticity, brown, low density, very coarse subangular moderately weathered dolerite gravel, saturated | | | |
| | | | | | | | 5 | | | | | | |
| | | | | | | | 6 | | | Borehole terminated at 6m | | | |
| | | | | | | | 7 | | | | | | |
| | | | | | | | 8 | | | | | | |

PIEZOMETER HO79.GPJ COFFEY.GDT 12.12.02

Form GEO 5.10 Issue 3 Rev 0

**method**

| | |
|---|---|
| AS | auger screwing* |
| AD | auger drilling* |
| RR | roller/tricone |
| W | washbore |
| CT | cable tool |
| HA | hand auger |
| DT | diatube |
| B | blank bit |
| V | V bit |
| T | TC bit |
| *bit shown by suffix | |
| e.g. | ADT |

**support**
C casing N nil

**penetration**
1 2 3 4 — no resistance ranging to refusal

**water**
10/1/98 water level on date shown
water inflow
water outflow

**notes, samples, tests**

| | |
|---|---|
| $U_{50}$ | undisturbed sample 50mm diameter |
| D | disturbed sample |
| N | standard penetration test (SPT) |
| N* | SPT - sample recovered |
| Nc | SPT with solid cone |
| V | vane shear (kPa) |
| P | pressure meter |
| Bs | bulk sample |
| R | refusal |
| E | environmental sample |
| PID | PID measurement |
| WS | water sample |
| PZ | piezometer |

**classification symbols and soil description**
based on unified classification system

**moisture**

| | |
|---|---|
| D | dry |
| M | moist |
| W | wet |
| Wp | plastic limit |
| $W_L$ | liquid limit |

**consistency/density index**

| | |
|---|---|
| VS | very soft |
| S | soft |
| F | firm |
| St | stiff |
| VSt | very stiff |
| H | hard |
| Fb | friable |
| VL | very loose |
| L | loose |
| MD | medium dense |
| D | dense |
| VD | very dense |

**Coffey Geosciences Pty Ltd** ACN 056 335 516

Borehole No. ***CRMB5***

Sheet 1 of 1

# Engineering Log - Piezometer

Office Job No.: ***HO79/1***

Client: ***MRT***

Date started: ***10.9.2001***

Principal:

Date completed: ***10.9.2001***

Project: ***Hydrogeological Studies for the Examination of Soil Salinity, Tas***

Logged by: ***CS***

Borehole Location:

Checked by:

drill model & mounting:

Easting: 535723 slope: -90° R.L. Surface:

hole diameter:

Northing: 5274515 bearing: datum:

**drilling information** | **material substance**

| method | penetration 1 2 3 | support | water | notes samples, tests, etc | well details | RL | depth metres | graphic log | classification symbol | material: soil type: plasticity or particle characteristics, colour, secondary and minor components. | moisture condition | consistency/ density index | structure and additional observations |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | 1 | | | CLAY: high plasticity, dark brown, moderate density, highly organic, minor plant roots | | | |
| | | | | | | | | | | CLAY: low to moderate plasticity, brown, low to moderate density, minor to coarse granite gravel | | | |
| | | | | | | | | | | CLAY: white, indurated, very hard, concoidal fractures on indurated clay chips | | | |
| | | | | | | | | | | CLAY: white to grey, primary texture preserved, strongly foliated, limonite banding, minor indurated clay chips, slow penetration | | | |
| | | | | | | | 2 | | | CLAY: grey, semi-consolidated, minor puggy clay | | | |
| | | | | | | | 3 | | | CLAY: very low plasticity, white to grey, low density | | | |
| | | | | | | | 4 | | | | | | |
| | | | | | | | 5 | | | SANDY CLAY: very fine grained quartz sand, gritty, low to miderate plasticity, off white moderate density, saturated sample | | | |
| | | | | | | | 6 | | | | | | |
| | | | | | | | 7 | | | Borehole terminated at 6.5m | | | |
| | | | | | | | 8 | | | | | | |

PIEZOMETER HO79.GPJ COFFEY.GDT 12.12.02

Form GEO 5.10 Issue 3 Rev 0

**method**

| | |
|---|---|
| AS | auger screwing* |
| AD | auger drilling* |
| RR | roller/tricone |
| W | washbore |
| CT | cable tool |
| HA | hand auger |
| DT | diatube |
| B | blank bit |
| V | V bit |
| T | TC bit |

*bit shown by suffix e.g. ADT

**support**

C casing N nil

**penetration**

1 2 3 4 no resistance ranging to refusal

**water**

10/1/98 water level on date shown

water inflow

water outflow

**notes, samples, tests**

| | |
|---|---|
| $U_{50}$ | undisturbed sample 50mm diameter |
| D | disturbed sample |
| N | standard penetration test (SPT) |
| N* | SPT - sample recovered |
| Nc | SPT with solid cone |
| V | vane shear (kPa) |
| P | pressure meter |
| Bs | bulk sample |
| R | refusal |
| E | environmental sample |
| PID | PID measurement |
| WS | water sample |
| PZ | piezometer |

**classification symbols and soil description**

based on unified classification system

**moisture**

| | |
|---|---|
| D | dry |
| M | moist |
| W | wet |
| Wp | plastic limit |
| $W_L$ | liquid limit |

**consistency/density index**

| | |
|---|---|
| VS | very soft |
| S | soft |
| F | firm |
| St | stiff |
| VSt | very stiff |
| H | hard |
| Fb | friable |
| VL | very loose |
| L | loose |
| MD | medium dense |
| D | dense |
| VD | very dense |

**Coffey Geosciences Pty Ltd** ACN 056 335 516

Borehole No. **CRMB16**

Sheet 1 of 2

# Engineering Log - Piezometer

Office Job No.: **HO79/1**

Client: ***MRT***

Date started: ***12.9.2001***

Principal:

Date completed: ***12.9.2001***

Project: ***Hydrogeological Studies for the Examination of Soil Salinity, Tas***

Logged by: ***CS***

Borehole Location:

Checked by:

drill model & mounting:

Easting: 536444

slope: -90°

R.L. Surface:

hole diameter:

Northing: 5270233

bearing:

datum:

**drilling information** | **material substance**

| method | penetration 1 2 3 | support | water | notes samples, tests, etc | well details | RL | depth metres | graphic log | classification symbol | material: soil type: plasticity or particle characteristics, colour, secondary and minor components. | moisture condition | consistency/ density index | structure and additional observations |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | ► | | | | 1 | | | CLAY: moderate plasticity, moderate to high density, dark brown, highly organic, minor plant roots | | | |
| | | | | | | | 2 | | | CLAY: moderate plasticity,, high density, brown, minor iron oxide nodules | | | |
| | | | | | | | 3 | | | GRAVELLY CLAY: low plasticity, low density, very coarse, well rounded, brown, moderately weathered dolerite, poor penetration | | | |
| | | | | | | | 4 | | | | | | |
| | | | | | | | 5 | | | SANDY GRAVELLY CLAY: low to moderate plasticity, moderate density clay, brown, very fine grained quartz sand, coarse well rounded moderately weathered dolerite gravel, minor iron oxide nodules, semi-saturated | | | |
| | | | | | | | 6 | | | | | | |
| | | | | | | | 7 | | | | | | |
| | | | | | | | 8 | | | | | | |

**method**

| | |
|---|---|
| AS | auger screwing* |
| AD | auger drilling* |
| RR | roller/tricone |
| W | washbore |
| CT | cable tool |
| HA | hand auger |
| DT | diatube |
| B | blank bit |
| V | V bit |
| T | TC bit |

*bit shown by suffix e.g. ADT

**support**

C casing N nil

**penetration**

1 2 3 4 no resistance ranging to refusal

**water**

10/1/98 water level on date shown

water inflow

water outflow

**notes, samples, tests**

| | |
|---|---|
| $U_{50}$ | undisturbed sample 50mm diameter |
| D | disturbed sample |
| N | standard penetration test (SPT) |
| N* | SPT - sample recovered |
| Nc | SPT with solid cone |
| V | vane shear (kPa) |
| P | pressure meter |
| Bs | bulk sample |
| R | refusal |
| E | environmental sample |
| PID | PID measurement |
| WS | water sample |
| PZ | piezometer |

**classification symbols and soil description**

based on unified classification system

**moisture**

| | |
|---|---|
| D | dry |
| M | moist |
| W | wet |
| Wp | plastic limit |
| $W_L$ | liquid limit |

**consistency/density index**

| | |
|---|---|
| VS | very soft |
| S | soft |
| F | firm |
| St | stiff |
| VSt | very stiff |
| H | hard |
| Fb | friable |
| VL | very loose |
| L | loose |
| MD | medium dense |
| D | dense |
| VD | very dense |

PIEZOMETER HO79.GPJ COFFEY.GDT 12.12.02

Form GEO 5.10 Issue 3 Rev 0

**Coffey Geosciences Pty Ltd** ACN 056 335 516

# Engineering Log - Piezometer

Borehole No. ***CRMB16***

Sheet 2 of 2

Office Job No.: ***HO79/1***

Client: ***MRT***

Date started: ***12.9.2001***

Principal:

Date completed: ***12.9.2001***

Project: ***Hydrogeological Studies for the Examination of Soil Salinity, Tas***

Logged by: ***CS***

Borehole Location:

Checked by:

drill model & mounting:

Easting: 536444 slope: -90° R.L. Surface:

hole diameter:

Northing: 5270233 bearing: datum:

**drilling information** | **material substance**

| method | penetration 1 2 3 | support | water | notes samples, tests, etc | well details | RL | depth metres | graphic log | classification symbol | material: soil type: plasticity or particle characteristics, colour, secondary and minor components. | moisture condition | consistency/ density index | structure and additional observations |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | 9 | | | VOLCANIC ROCK: brown to grey, weakly weathered fine grained crystalline | | | |
| | | | | | | | | | | Borehole terminated at 9m | | | |
| | | | | | | | 10 | | | | | | |
| | | | | | | | 11 | | | | | | |
| | | | | | | | 12 | | | | | | |
| | | | | | | | 13 | | | | | | |
| | | | | | | | 14 | | | | | | |
| | | | | | | | 15 | | | | | | |
| | | | | | | | 16 | | | | | | |

**method**

| | |
|---|---|
| AS | auger screwing* |
| AD | auger drilling* |
| RR | roller/tricone |
| W | washbore |
| CT | cable tool |
| HA | hand auger |
| DT | diatube |
| B | blank bit |
| V | V bit |
| T | TC bit |

*bit shown by suffix e.g. ADT

**support**

C casing N nil

**penetration**

1 2 3 4 no resistance ranging to refusal

**water**

10/1/98 water level on date shown

water inflow

water outflow

**notes, samples, tests**

| | |
|---|---|
| $U_{50}$ | undisturbed sample 50mm diameter |
| D | disturbed sample |
| N | standard penetration test (SPT) |
| N* | SPT - sample recovered |
| Nc | SPT with solid cone |
| V | vane shear (kPa) |
| P | pressure meter |
| Bs | bulk sample |
| R | refusal |
| E | environmental sample |
| PID | PID measurement |
| WS | water sample |
| PZ | piezometer |

**classification symbols and soil description**

based on unified classification system

**moisture**

| | |
|---|---|
| D | dry |
| M | moist |
| W | wet |
| Wp | plastic limit |
| $W_L$ | liquid limit |

**consistency/density index**

| | |
|---|---|
| VS | very soft |
| S | soft |
| F | firm |
| St | stiff |
| VSt | very stiff |
| H | hard |
| Fb | friable |
| VL | very loose |
| L | loose |
| MD | medium dense |
| D | dense |
| VD | very dense |

PIEZOMETER HO79.GPJ COFFEY.GDT 12.12.02

Form GEO 5.10 Issue 3 Rev 0

**Coffey Geosciences Pty Ltd** ACN 056 335 516

# Engineering Log - Piezometer

Borehole No. **CRMB20**

Sheet 1 of 2

Office Job No.: **HO79/1**

Client: ***MRT***

Date started: ***12.9.2001***

Principal:

Date completed: ***12.9.2001***

Project: ***Hydrogeological Studies for the Examination of Soil Salinity, Tas***

Logged by: ***CS***

Borehole Location:

Checked by:

drill model & mounting:

Easting: 534965 slope: -90° R.L. Surface:

hole diameter:

Northing: 5268015 bearing: datum:

**drilling information** | **material substance**

| method | penetration 1 2 3 | support | water | notes samples, tests, etc | well details | RL | depth metres | graphic log | classification symbol | material: soil type: plasticity or particle characteristics, colour, secondary and minor components. | moisture condition | consistency/ density index | structure and additional observations |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | TOPSOIL: brown, clayey | | | |
| | | | | | | | | | | CLAY: brown | | | |
| | | | | | | | 1 | | | SANDY CLAY: grey brown, dry | | | |
| | | | | | | | | | | SANDY CLAY: grey brown orange | | | |
| | | | | | | | 2 | | | CLAY: khaki orange, friable | | | |
| | | | | | | | 3 | | | SANDY CLAY: brown, slightly sandy clay, damper | | | |
| | | | | | | | 4 | | | CLAY: brown grey | | | |
| | | | | | | | 5 | | | CLAY: brown, small pebbles | | | |
| | | | | | | | 6 | | | CLAY: brown grey, softer | | | |
| | | | | | | | | | | CLAY: light brown grey, softer | | | |
| | | | ▶ | | | | 7 | | | CLAY: light brown grey, softer, slightly sandy | | | |
| | | | | | | | | | | SANDY CLAY: light brown, soft | | | |
| | | | | | | | 8 | | | | | | |

**method**

| | |
|---|---|
| AS | auger screwing* |
| AD | auger drilling* |
| RR | roller/tricone |
| W | washbore |
| CT | cable tool |
| HA | hand auger |
| DT | diatube |
| B | blank bit |
| V | V bit |
| T | TC bit |

*bit shown by suffix e.g. ADT

**support**

C casing N nil

**penetration**

1 2 3 4 no resistance ranging to refusal

**water**

10/1/98 water level on date shown

water inflow

water outflow

**notes, samples, tests**

| | |
|---|---|
| $U_{50}$ | undisturbed sample 50mm diameter |
| D | disturbed sample |
| N | standard penetration test (SPT) |
| N* | SPT - sample recovered |
| Nc | SPT with solid cone |
| V | vane shear (kPa) |
| P | pressure meter |
| Bs | bulk sample |
| R | refusal |
| E | environmental sample |
| PID | PID measurement |
| WS | water sample |
| PZ | piezometer |

**classification symbols and soil description**

based on unified classification system

**moisture**

| | |
|---|---|
| D | dry |
| M | moist |
| W | wet |
| Wp | plastic limit |
| $W_L$ | liquid limit |

**consistency/density index**

| | |
|---|---|
| VS | very soft |
| S | soft |
| F | firm |
| St | stiff |
| VSt | very stiff |
| H | hard |
| Fb | friable |
| VL | very loose |
| L | loose |
| MD | medium dense |
| D | dense |
| VD | very dense |

PIEZOMETER HO79.GPJ COFFEY.GDT 12.12.02

Form GEO 5.10 Issue 3 Rev 0

**Coffey Geosciences Pty Ltd** ACN 056 335 516

Borehole No. ***CRMB20***

Sheet 2 of 2

Office Job No.: ***HO79/1***

# Engineering Log - Piezometer

Client: ***MRT***

Date started: ***12.9.2001***

Principal:

Date completed: ***12.9.2001***

Project: ***Hydrogeological Studies for the Examination of Soil Salinity, Tas***

Logged by: ***CS***

Borehole Location:

Checked by:

drill model & mounting:

Easting: 534965 slope: -90° R.L. Surface:

hole diameter:

Northing: 5268015 bearing: datum:

**drilling information** | **material substance**

| method | penetration 1 2 3 | support | water | notes samples, tests, etc | well details | RL | depth metres | graphic log | classification symbol | material: soil type: plasticity or particle characteristics, colour, secondary and minor components. | moisture condition | consistency/ density index | structure and additional observations |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | 9 | | | SANDY CLAY: light brown grey | | | |
| | | | | | | | | | | SANDY CLAY: gravel, larger | | | |
| | | | | | | | | | | SANDY CLAY: light brown grey | | | |
| | | | | | | | 10 | | | Borehole terminated at 10m | | | |
| | | | | | | | 11 | | | | | | |
| | | | | | | | 12 | | | | | | |
| | | | | | | | 13 | | | | | | |
| | | | | | | | 14 | | | | | | |
| | | | | | | | 15 | | | | | | |
| | | | | | | | 16 | | | | | | |

**method**

| | |
|---|---|
| AS | auger screwing* |
| AD | auger drilling* |
| RR | roller/tricone |
| W | washbore |
| CT | cable tool |
| HA | hand auger |
| DT | diatube |
| B | blank bit |
| V | V bit |
| T | TC bit |

*bit shown by suffix e.g. ADT

**support**

C casing N nil

**penetration**

1 2 3 4 no resistance ranging to refusal

**water**

10/1/98 water level on date shown

water inflow

water outflow

**notes, samples, tests**

| | |
|---|---|
| $U_{50}$ | undisturbed sample 50mm diameter |
| D | disturbed sample |
| N | standard penetration test (SPT) |
| N* | SPT - sample recovered |
| Nc | SPT with solid cone |
| V | vane shear (kPa) |
| P | pressure meter |
| Bs | bulk sample |
| R | refusal |
| E | environmental sample |
| PID | PID measurement |
| WS | water sample |
| PZ | piezometer |

**classification symbols and soil description**

based on unified classification system

**moisture**

| | |
|---|---|
| D | dry |
| M | moist |
| W | wet |
| Wp | plastic limit |
| $W_L$ | liquid limit |

**consistency/density index**

| | |
|---|---|
| VS | very soft |
| S | soft |
| F | firm |
| St | stiff |
| VSt | very stiff |
| H | hard |
| Fb | friable |
| VL | very loose |
| L | loose |
| MD | medium dense |
| D | dense |
| VD | very dense |

PIEZOMETER HO79.GPJ COFFEY.GDT 12.12.02

Form GEO 5.10 Issue 3 Rev 0

**Coffey Geosciences Pty Ltd** ACN 056 335 516

# Engineering Log - Piezometer

Borehole No. ***TMB6***

Sheet 1 of 1

Office Job No.: ***HO79/1***

Client: ***MRT***

Date started: ***7.8.2001***

Principal:

Date completed: ***7.8.2001***

Project: ***Hydrogeological Studies for the Examination of Soil Salinity, Tas***

Logged by: ***CPS***

Borehole Location:

Checked by:

drill model & mounting:

Easting: 538202 slope: -90° R.L. Surface:

hole diameter:

Northing: 5329977 bearing: datum:

**drilling information** | **material substance**

| method | penetration 1 2 3 | support | water | notes samples, tests, etc | well details | RL | depth metres | graphic log | classification symbol | material: soil type: plasticity or particle characteristics, colour, secondary and minor components. | moisture condition | consistency/ density index | structure and additional observations |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 7/8/01 | | | | 1 | | CH | CLAY: high plasticity, very dense, dark brown, highly organic, minor plant roots | | | Soil |
| | | | | | | | 2 | | CL | CLAY: moderate plasticity clay, moderate density, brown to pale brown, very fine to fine grained sand, approx. 30% sand, 70% clay, semi organic | | | Alluvium |
| | | | | | | | | | CL | SANDY CLAY: moderate plasticity, moderate density, dark brown to pale brown, very fine to fine grained sand, approx. 30% sand, 70% clay, semi-organic, minor iron oxide nodules (pisoliths?) | | | |
| | | | | | | | 3 | | CL | CLAY: low plasticity, moderate density, khaki, less saturated than overlying strata, iron rich zone, (pisoliths?) loose sample, sample balling on auger flight, puggy clay when wet | | | |
| | | | | | | | | | CL | CLAY: low plasticity, moderate density, brown/green, less saturated than overlying strata, iron rich zone, (pisoliths?) loose sample, sample balling on auger flight, puggy clay when wet, increase in saturation, minor sands | | | |
| | | | | | | | 4 | | OH | PEATY CLAY: moderate plasticity, high density, black,highly organic, stratification observed in sample chips, peaty odour | | | Peat |
| | | | | | | | | | CL | CLAY: low to moderate plasticity, moderate density, brown, semi-organic, nil structure, minor iron oxide nodules | | | Alluvium, water struck at 5.55m |
| | | | | | | | 5 | | | | | | |
| | | | | | | | | | CL | CLAY: low plasticity, low density, very dark brown, semi-organic, low saturation | | | Peat with minor coal fragments, decrease in penetration rate |
| | | | | | | | 6 | | OL | PEATY CLAY: black, peaty clay/silt, stratification observed in sample chips, minor coal fragments (sub-bituminous?) | | | |
| | | | | | | | 7 | | | MUDSTONE: light grey, poor structure, weak strength, minor plant roots | | | |
| | | | | | | | | | | Borehole terminated at 7.2m | | | |
| | | | | | | | 8 | | | | | | |

PIEZOMETER HO79.GPJ COFFEY.GDT 12.12.02

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**method**

| | |
|---|---|
| AS | auger screwing* |
| AD | auger drilling* |
| RR | roller/tricone |
| W | washbore |
| CT | cable tool |
| HA | hand auger |
| DT | diatube |
| B | blank bit |
| V | V bit |
| T | TC bit |

*bit shown by suffix e.g. ADT

**support**

C casing N nil

**penetration**

1 2 3 4 — no resistance ranging to refusal

**water**

10/1/98 water level on date shown

water inflow

water outflow

**notes, samples, tests**

| | |
|---|---|
| $U_{50}$ | undisturbed sample 50mm diameter |
| D | disturbed sample |
| N | standard penetration test (SPT) |
| N* | SPT - sample recovered |
| Nc | SPT with solid cone |
| V | vane shear (kPa) |
| P | pressure meter |
| Bs | bulk sample |
| R | refusal |
| E | environmental sample |
| PID | PID measurement |
| WS | water sample |
| PZ | piezometer |

**classification symbols and soil description**

based on unified classification system

**moisture**

| | |
|---|---|
| D | dry |
| M | moist |
| W | wet |
| Wp | plastic limit |
| $W_L$ | liquid limit |

**consistency/density index**

| | |
|---|---|
| VS | very soft |
| S | soft |
| F | firm |
| St | stiff |
| VSt | very stiff |
| H | hard |
| Fb | friable |
| VL | very loose |
| L | loose |
| MD | medium dense |
| D | dense |
| VD | very dense |

**Coffey Geosciences Pty Ltd** ACN 056 335 516

# Engineering Log - Piezometer

Borehole No. ***TMB9***

Sheet 1 of 1

Office Job No.: ***HO79/1***

Client: ***MRT***

Date started: ***8.8.2001***

Principal:

Date completed: ***8.8.2001***

Project: ***Hydrogeological Studies for the Examination of Soil Salinity, Tas***

Logged by: ***CPS***

Borehole Location:

Checked by:

drill model & mounting:

Easting: 538435 slope: -90° R.L. Surface:

hole diameter:

Northing: 5331383 bearing: datum:

**drilling information** | **material substance**

| method | penetration 1 2 3 | support | water | notes samples, tests, etc | well details | RL | depth metres | graphic log | classification symbol | material: soil type: plasticity or particle characteristics, colour, secondary and minor components. | moisture condition | consistency/ density index | structure and additional observations |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | ▼ 7/8/01 | | | | 1 | | CL | CLAY: moderate plasticity, moderate to high density, dark brown, organic clayey soil, minor plant fragments | | | Soil |
| | | | | | | | | | CH | CLAY: moderate plasticity, high density, pale brown to khaki | | | |
| | | | | | | | | | CH | CLAY: high plasticity, high density, khaki, puggy | | | |
| | | | | | | | 2 | | SC | SANDY CLAY: cream tokhaki, approx. 40% sand, 60% clay | | | |
| | | | | | | | | | SC | SANDY CLAY: khaki to brown, increase in clay content, approx. 80% clay, 20% sand, minor weathered sandstone fragments, very fine to fine grained subangular, quartz sandstone | | | WWater struck |
| | | | | | | | 3 | | SC | SANDY CLAY: low plasticity, low density, cream to khaki, fine to medium grained subangular, minor weathered sandstone fragments | | | Weathered Sandstone decreased penetration |
| | | | | | | | | | | Borehole terminated at 3m | | | |
| | | | | | | | 4 | | | | | | |
| | | | | | | | 5 | | | | | | |
| | | | | | | | 6 | | | | | | |
| | | | | | | | 7 | | | | | | |
| | | | | | | | 8 | | | | | | |

**method**

| | |
|---|---|
| AS | auger screwing* |
| AD | auger drilling* |
| RR | roller/tricone |
| W | washbore |
| CT | cable tool |
| HA | hand auger |
| DT | diatube |
| B | blank bit |
| V | V bit |
| T | TC bit |

*bit shown by suffix e.g. ADT

**support**

C casing N nil

**penetration**

1 2 3 4 no resistance ranging to refusal

**water**

10/1/98 water level on date shown

water inflow

water outflow

**notes, samples, tests**

| | |
|---|---|
| $U_{50}$ | undisturbed sample 50mm diameter |
| D | disturbed sample |
| N | standard penetration test (SPT) |
| N* | SPT - sample recovered |
| Nc | SPT with solid cone |
| V | vane shear (kPa) |
| P | pressure meter |
| Bs | bulk sample |
| R | refusal |
| E | environmental sample |
| PID | PID measurement |
| WS | water sample |
| PZ | piezometer |

**classification symbols and soil description**

based on unified classification system

**moisture**

| | |
|---|---|
| D | dry |
| M | moist |
| W | wet |
| Wp | plastic limit |
| $W_L$ | liquid limit |

**consistency/density index**

| | |
|---|---|
| VS | very soft |
| S | soft |
| F | firm |
| St | stiff |
| VSt | very stiff |
| H | hard |
| Fb | friable |
| VL | very loose |
| L | loose |
| MD | medium dense |
| D | dense |
| VD | very dense |

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# Engineering Log - Piezometer

Borehole No. ***TMB16***

Sheet 1 of 1

Office Job No.: ***HO79/1***

Client: ***MRT***

Date started: ***10.8.2001***

Principal:

Date completed: ***10.8.2001***

Project: ***Hydrogeological Studies for the Examination of Soil Salinity, Tas***

Logged by: ***CPS***

Borehole Location:

Checked by:

drill model & mounting:

Easting: 535800 slope: -90° R.L. Surface:

hole diameter:

Northing: 5331552 bearing: datum:

**drilling information** | **material substance**

| method | penetration 1 2 3 | support | water | notes samples, tests, etc | well details | RL | depth metres | graphic log | classification symbol | material: soil type: plasticity or particle characteristics, colour, secondary and minor components. | moisture condition | consistency/ density index | structure and additional observations |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | 1 | | CL | CLAY: low plasticity, moderate density, dark brown, highly organic, minor plant roots | | | |
| | | | | | | | | | CL | CLAY: moderate plasticity, high density, brown to khaki, semi-organic, minor iron oxide nodules | | | |
| | | | | | | | | | CL | SANDY CLAY: low to moderate plasticity, moderate density, cream to khaki, minor very fine grained quartz sand | | | |
| | | | ▼ | | | | 2 | | CL | SANDY CLAY: low plasticity, low density, brown to khaki, fine to medium grained subangular quartz sand, saturated sample, poor penetration | | | |
| | | | | | | | | | | SANDSTONE: brown to khaki, highly weathered medium to coarse grained, subangular | | | |
| | | | | | | | 3 | | | Borehole terminated at 2.5m | | | |
| | | | | | | | 4 | | | | | | |
| | | | | | | | 5 | | | | | | |
| | | | | | | | 6 | | | | | | |
| | | | | | | | 7 | | | | | | |
| | | | | | | | 8 | | | | | | |

**method**

| | |
|---|---|
| AS | auger screwing* |
| AD | auger drilling* |
| RR | roller/tricone |
| W | washbore |
| CT | cable tool |
| HA | hand auger |
| DT | diatube |
| B | blank bit |
| V | V bit |
| T | TC bit |
| *bit shown by suffix | |
| e.g. | ADT |

**support**

C casing N nil

**penetration**

1 2 3 4 no resistance ranging to refusal

**water**

10/1/98 water level on date shown

water inflow

water outflow

**notes, samples, tests**

| | |
|---|---|
| $U_{50}$ | undisturbed sample 50mm diameter |
| D | disturbed sample |
| N | standard penetration test (SPT) |
| N* | SPT - sample recovered |
| Nc | SPT with solid cone |
| V | vane shear (kPa) |
| P | pressure meter |
| Bs | bulk sample |
| R | refusal |
| E | environmental sample |
| PID | PID measurement |
| WS | water sample |
| PZ | piezometer |

**classification symbols and soil description**

based on unified classification system

**moisture**

| | |
|---|---|
| D | dry |
| M | moist |
| W | wet |
| Wp | plastic limit |
| $W_L$ | liquid limit |

**consistency/density index**

| | |
|---|---|
| VS | very soft |
| S | soft |
| F | firm |
| St | stiff |
| VSt | very stiff |
| H | hard |
| Fb | friable |
| VL | very loose |
| L | loose |
| MD | medium dense |
| D | dense |
| VD | very dense |

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# Engineering Log - Piezometer

Borehole No. ***TMB18***

Sheet 1 of 1

Office Job No.: ***HO79/1***

Client: ***MRT***

Date started: ***10.8.2001***

Principal:

Date completed: ***10.8.2001***

Project: ***Hydrogeological Studies for the Examination of Soil Salinity, Tas***

Logged by: ***CPS***

Borehole Location:

Checked by:

drill model & mounting:

Easting: 537779 slope: -90° R.L. Surface:

hole diameter:

Northing: 5331927 bearing: datum:

**drilling information** | **material substance**

| method | penetration 1 2 3 | support | water | notes samples, tests, etc | well details | RL | depth metres | graphic log | classification symbol | material: soil type: plasticity or particle characteristics, colour, secondary and minor components. | moisture condition | consistency/ density index | structure and additional observations |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | 1 | | CL | CLAY: moderate plasticity, low to moderate density, brown black, organic, minor plant roots | | | |
| | | | | | | | | | CL | SANDY CLAY: low to miderate plasticity, low to moderate density, brown to khaki, very fine grained quartz sand, approx. 5% sand & 95% clay, semi-organic, minor iron oxide nodules, minor iron rich dolerite gravel | | | |
| | | | | | | | 2 | | CL | SANDY CLAY:low to moderate plasticity, low density, orange to brown, minor iron oxide nodules | | | |
| | | | ► | | | | 3 | | CL | SANDY CLAY: low plasticity, low density, brown to khaki, very fine grained quartz sand, saturated sample | | | |
| | | | | | | | 4 | | | | | | |
| | | | | | | | 5 | | CL | CLAY: low to moderate plasticity, low density, dark khaki, saturated sample | | | |
| | | | | | | | 6 | | | Borehole terminated at 6m | | | |
| | | | | | | | 7 | | | | | | |
| | | | | | | | 8 | | | | | | |

**method**

| | |
|---|---|
| AS | auger screwing* |
| AD | auger drilling* |
| RR | roller/tricone |
| W | washbore |
| CT | cable tool |
| HA | hand auger |
| DT | diatube |
| B | blank bit |
| V | V bit |
| T | TC bit |

*bit shown by suffix e.g. ADT

**support**

C casing N nil

**penetration**

1 2 3 4 no resistance ranging to refusal

**water**

10/1/98 water level on date shown

water inflow

water outflow

**notes, samples, tests**

| | |
|---|---|
| $U_{50}$ | undisturbed sample 50mm diameter |
| D | disturbed sample |
| N | standard penetration test (SPT) |
| N* | SPT - sample recovered |
| Nc | SPT with solid cone |
| V | vane shear (kPa) |
| P | pressure meter |
| Bs | bulk sample |
| R | refusal |
| E | environmental sample |
| PID | PID measurement |
| WS | water sample |
| PZ | piezometer |

**classification symbols and soil description**

based on unified classification system

**moisture**

| | |
|---|---|
| D | dry |
| M | moist |
| W | wet |
| Wp | plastic limit |
| $W_L$ | liquid limit |

**consistency/density index**

| | |
|---|---|
| VS | very soft |
| S | soft |
| F | firm |
| St | stiff |
| VSt | very stiff |
| H | hard |
| Fb | friable |
| VL | very loose |
| L | loose |
| MD | medium dense |
| D | dense |
| VD | very dense |

PIEZOMETER HO79.GPJ COFFEY.GDT 12.12.02

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**Coffey Geosciences Pty Ltd** ACN 056 335 516

# Engineering Log - Piezometer

Borehole No. ***WHMB2***

Sheet 1 of 1

Office Job No.: ***HO79/1***

Client: ***MRT***

Date started: ***4.9.2001***

Principal:

Date completed: ***4.9.2001***

Project: ***Hydrogeological Studies for the Examination of Soil Salinity, Tas***

Logged by: ***CS***

Borehole Location:

Checked by:

drill model & mounting:

Easting: 562464

slope: -90°

R.L. Surface:

hole diameter:

Northing: 5475991

bearing:

datum:

| drilling information | | | | | | | material substance | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| method | penetration 1 2 3 | support | water | notes samples, tests, etc | well details | RL / depth metres | graphic log | classification symbol | material: soil type: plasticity or particle characteristics, colour, secondary and minor components. | moisture condition | consistency/ density index | structure and additional observations |
| | | | ▼ | | | 0 | | SW | SAND: dark brown, very fine, semi-organic, minor plant roots | | | |
| | | | | | | | | SW | SAND: dark red to dark brown, very fine to fine subangular, nil indurated | | | |
| | | | | | | | | SW | SAND: orange to brown, very fine to fine subangular quartz sand, minor well rounded course smokey quartz grains | | | |
| | | | | | | 1 | | SW | SAND: orange to brown, medium subangular, saturated sample, minor coarse grained subrounded quartz | | | |
| | | | | | | 2 | | | | | | |
| | | | | | | 3 | | SW | SAND: dark brown, medium subangular, saturated sample, minor coarse grained subrounded quartz | | | |
| | | | | | | 4 | | | Borehole terminated at 4m | | | |
| | | | | | | 5 | | | | | | |
| | | | | | | 6 | | | | | | |
| | | | | | | 7 | | | | | | |
| | | | | | | 8 | | | | | | |

**method**

| | |
|---|---|
| AS | auger screwing* |
| AD | auger drilling* |
| RR | roller/tricone |
| W | washbore |
| CT | cable tool |
| HA | hand auger |
| DT | diatube |
| B | blank bit |
| V | V bit |
| T | TC bit |

*bit shown by suffix e.g. ADT

**support**

C casing N nil

**penetration** 1 2 3 4 — no resistance ranging to refusal

**water**

▼ 10/1/98 water level on date shown

► water inflow

◄ water outflow

**notes, samples, tests**

| | |
|---|---|
| $U_{50}$ | undisturbed sample 50mm diameter |
| D | disturbed sample |
| N | standard penetration test (SPT) |
| N* | SPT - sample recovered |
| Nc | SPT with solid cone |
| V | vane shear (kPa) |
| P | pressure meter |
| Bs | bulk sample |
| R | refusal |
| E | environmental sample |
| PID | PID measurement |
| WS | water sample |
| PZ | piezometer |

**classification symbols and soil description**

based on unified classification system

**moisture**

| | |
|---|---|
| D | dry |
| M | moist |
| W | wet |
| Wp | plastic limit |
| $W_L$ | liquid limit |

**consistency/density index**

| | |
|---|---|
| VS | very soft |
| S | soft |
| F | firm |
| St | stiff |
| VSt | very stiff |
| H | hard |
| Fb | friable |
| VL | very loose |
| L | loose |
| MD | medium dense |
| D | dense |
| VD | very dense |

PIEZOMETER HO79.GPJ COFFEY.GDT 12.12.02

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**Coffey Geosciences Pty Ltd** ACN 056 335 516

Borehole No. ***WHMB5***

Sheet 1 of 1

# Engineering Log - Piezometer

Office Job No.: ***HO79/1***

Client: ***MRT***

Date started: ***4.9.2001***

Principal:

Date completed: ***4.9.2001***

Project: ***Hydrogeological Studies for the Examination of Soil Salinity, Tas***

Logged by: ***CS***

Borehole Location:

Checked by:

drill model & mounting:

Easting: 562674

slope: -90°

R.L. Surface:

hole diameter:

Northing: 5473576

bearing:

datum:

**drilling information** | **material substance**

| method | penetration 1 2 3 | support | water | notes samples, tests, etc | well details | RL | depth metres | graphic log | classification symbol | material: soil type: plasticity or particle characteristics, colour, secondary and minor components. | moisture condition | consistency/ density index | structure and additional observations |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | ▼ | | | | 1 | | SW | SAND: dark brown, very fine grained quartz sand, semi-organic, minor plant roots | | | |
| | | | | | | | | | SW | SAND: cream, very fine to fine grained subangular quartz sand | | | |
| | | | | | | | 2 | | SW | SAND: orange, very fine to fine grained quartz, semi-saturated sample | | | |
| | | | | | | | 3 | | SW | SAND: cream, fine to medium grained, subangular quartz, minor coarse to very coarse well rounded smokey quartz grains, poor sample recovery below 3.5m | | | |
| | | | | | | | 4 | | | | | | |
| | | | | | | | 5 | | | Borehole terminated at 4.5m | | | |
| | | | | | | | 6 | | | | | | |
| | | | | | | | 7 | | | | | | |
| | | | | | | | 8 | | | | | | |

PIEZOMETER HO79.GPJ COFFEY.GDT 12.12.02

Form GEO 5.10 Issue 3 Rev 0

**method**

| | |
|---|---|
| AS | auger screwing* |
| AD | auger drilling* |
| RR | roller/tricone |
| W | washbore |
| CT | cable tool |
| HA | hand auger |
| DT | diatube |
| B | blank bit |
| V | V bit |
| T | TC bit |

*bit shown by suffix e.g. ADT

**support**

C casing N nil

**penetration**

1 2 3 4 — no resistance ranging to refusal

**water**

10/1/98 water level on date shown

water inflow

water outflow

**notes, samples, tests**

| | |
|---|---|
| $U_{50}$ | undisturbed sample 50mm diameter |
| D | disturbed sample |
| N | standard penetration test (SPT) |
| N* | SPT - sample recovered |
| Nc | SPT with solid cone |
| V | vane shear (kPa) |
| P | pressure meter |
| Bs | bulk sample |
| R | refusal |
| E | environmental sample |
| PID | PID measurement |
| WS | water sample |
| PZ | piezometer |

**classification symbols and soil description**

based on unified classification system

**moisture**

| | |
|---|---|
| D | dry |
| M | moist |
| W | wet |
| Wp | plastic limit |
| $W_L$ | liquid limit |

**consistency/density index**

| | |
|---|---|
| VS | very soft |
| S | soft |
| F | firm |
| St | stiff |
| VSt | very stiff |
| H | hard |
| Fb | friable |
| VL | very loose |
| L | loose |
| MD | medium dense |
| D | dense |
| VD | very dense |

**Coffey Geosciences Pty Ltd** ACN 056 335 516

Borehole No. ***WHMB17***

Sheet 1 of 1

Office Job No.: ***HO79/1***

# Engineering Log - Piezometer

Client: ***MRT***

Date started: ***6.9.2001***

Principal:

Date completed: ***6.9.2001***

Project: ***Hydrogeological Studies for the Examination of Soil Salinity, Tas***

Logged by: ***CS***

Borehole Location:

Checked by:

drill model & mounting:

Easting: 564505 slope: -90° R.L. Surface:

hole diameter:

Northing: 5466903 bearing: datum:

**drilling information** | **material substance**

| method | penetration 1 2 3 | support | water | notes samples, tests, etc | well details | RL | depth metres | graphic log | classification symbol | material: soil type: plasticity or particle characteristics, colour, secondary and minor components. | moisture condition | consistency/ density index | structure and additional observations |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | 1 | | SW | SAND: dark brown to cream, very fine quartz, semi-organic, minor plant roots | | | |
| | | | | | | | | | SW | SAND: brown, very fine grained, weakly organic | | | |
| | | | | | | | | | SW | SAND: orange-brown, very fine grained quartz, slightly indurated, minor semi-indurated chips | | | |
| | | | ▼ | | | | 2 | | SC | CLAYEY SAND: low plasticity, low density, orange-brown, very fine grained quartz sand, approx. 80% Sand, 20% Clay, semi saturated | | | |
| | | | | | | | | | CL | CLAY: medium to very coarse grained quartz, very low plasticity clay, brown to orange, minor coarse to very coarse well rounded chert gravel, saturated sample | | | |
| | | | | | | | 3 | | SW | SAND: cream to orange, very coarse quartz, subrounded, moderate kaolin clay, minor very coarse well rounded chert gravel, nil recovery below 3.5m | | | |
| | | | | | | | 4 | | | Borehole terminated at 3.5m | | | |
| | | | | | | | 5 | | | | | | |
| | | | | | | | 6 | | | | | | |
| | | | | | | | 7 | | | | | | |
| | | | | | | | 8 | | | | | | |

**method**

| | |
|---|---|
| AS | auger screwing* |
| AD | auger drilling* |
| RR | roller/tricone |
| W | washbore |
| CT | cable tool |
| HA | hand auger |
| DT | diatube |
| B | blank bit |
| V | V bit |
| T | TC bit |

*bit shown by suffix e.g. ADT

**support**

C casing N nil

**penetration** 1 2 3 4 — no resistance ranging to refusal

**water**

▼ 10/1/98 water level on date shown

► water inflow

◄ water outflow

**notes, samples, tests**

| | |
|---|---|
| $U_{50}$ | undisturbed sample 50mm diameter |
| D | disturbed sample |
| N | standard penetration test (SPT) |
| N* | SPT - sample recovered |
| Nc | SPT with solid cone |
| V | vane shear (kPa) |
| P | pressure meter |
| Bs | bulk sample |
| R | refusal |
| E | environmental sample |
| PID | PID measurement |
| WS | water sample |
| PZ | piezometer |

**classification symbols and soil description**

based on unified classification system

**moisture**

| | |
|---|---|
| D | dry |
| M | moist |
| W | wet |
| Wp | plastic limit |
| $W_L$ | liquid limit |

**consistency/density index**

| | |
|---|---|
| VS | very soft |
| S | soft |
| F | firm |
| St | stiff |
| VSt | very stiff |
| H | hard |
| Fb | friable |
| VL | very loose |
| L | loose |
| MD | medium dense |
| D | dense |
| VD | very dense |

PIEZOMETER HO79.GPJ COFFEY.GDT 12.12.02

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**Coffey Geosciences Pty Ltd** ACN 056 335 516

Borehole No. ***WHMB22***

Sheet 1 of 1

# Engineering Log - Piezometer

Office Job No.: ***HO79/1***

Client: ***MRT***

Date started: ***7.9.2001***

Principal:

Date completed: ***7.9.2001***

Project: ***Hydrogeological Studies for the Examination of Soil Salinity, Tas***

Logged by: ***CS***

Borehole Location:

Checked by:

drill model & mounting:

Easting: 566757 slope: -90° R.L. Surface:

hole diameter:

Northing: 5472014 bearing: datum:

**drilling information** | **material substance**

| method | penetration 1 2 3 | support | water | notes samples, tests, etc | well details | RL | depth metres | graphic log | classification symbol | material: soil type: plasticity or particle characteristics, colour, secondary and minor components. | moisture condition | consistency/ density index | structure and additional observations |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | 1 | | SW | SAND: dark brown, very fine to fine grained quartz, semi-organic, minor plant roots | | | |
| | | | | | | | | | SW | SAND: dark brown, fine grained quartz, subangular, weakly organic | | | |
| | | | | | | | | | SW | SAND: red to dark brown, fine grained quartz, subangular, "peaty odour", minor coarse well rounded clear/smokey quartz sand | | | |
| | | | | | | | 2 | | SW | SAND: brown, fine to medium grained subangular, minor coarse well rounded clear/smokey quartz sand, poor recovery | | | |
| | | | | | | | 3 | | SW | SAND: brown to grey, fine grained quartz, subangular, minor coarse well rounded clear/smokey quartz sand, nil recovery below 3m | | | |
| | | | | | | | | | | Borehole terminated at 3m | | | |
| | | | | | | | 4 | | | | | | |
| | | | | | | | 5 | | | | | | |
| | | | | | | | 6 | | | | | | |
| | | | | | | | 7 | | | | | | |
| | | | | | | | 8 | | | | | | |

**method**

| | |
|---|---|
| AS | auger screwing* |
| AD | auger drilling* |
| RR | roller/tricone |
| W | washbore |
| CT | cable tool |
| HA | hand auger |
| DT | diatube |
| B | blank bit |
| V | V bit |
| T | TC bit |

*bit shown by suffix e.g. ADT

**support**

C casing N nil

**penetration**

1 2 3 4 no resistance ranging to refusal

**water**

10/1/98 water level on date shown

water inflow

water outflow

**notes, samples, tests**

| | |
|---|---|
| $U_{50}$ | undisturbed sample 50mm diameter |
| D | disturbed sample |
| N | standard penetration test (SPT) |
| N* | SPT - sample recovered |
| Nc | SPT with solid cone |
| V | vane shear (kPa) |
| P | pressure meter |
| Bs | bulk sample |
| R | refusal |
| E | environmental sample |
| PID | PID measurement |
| WS | water sample |
| PZ | piezometer |

**classification symbols and soil description**

based on unified classification system

**moisture**

| | |
|---|---|
| D | dry |
| M | moist |
| W | wet |
| Wp | plastic limit |
| $W_L$ | liquid limit |

**consistency/density index**

| | |
|---|---|
| VS | very soft |
| S | soft |
| F | firm |
| St | stiff |
| VSt | very stiff |
| H | hard |
| Fb | friable |
| VL | very loose |
| L | loose |
| MD | medium dense |
| D | dense |
| VD | very dense |

PIEZOMETER HO79.GPJ COFFEY.GDT 12.12.02

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# APPENDIX 3

## Example field procedure sheet for the Chudleigh statewide groundwater network monitoring borehole

### Procedure sheet for the MRT Statewide groundwater network
**General monitoring bore**

***General information***

Feature ID: 16538 Bore name: *Chudleigh*
Date of inspection: Stick up (m): *0.12*
Standing water level from ground level (m):
Collar protection / integrity:
Total depth of bore (m): 54 Casing depth (m): 36
Measured total depth of bore (m):
Bore wall integrity:

***Dataflow logger system***

Type of sensor: *Dataflow logger and sensor*
Serial number of existing sensor: 10334 Calibration file in laptop: Yes
Serial number of existing data logger: *41885* O ring replaced:
Existing depth to base of sensor / 3.2m probe below ground level (m): 12.65
Data downloaded from logger: Name of downloaded file:
Data file downloaded from logger complete: Comments on data file:
Finish date and time of data file (J days / 24 hour):
Existing battery voltage: Battery replaced: New battery voltage:
Serial number of replacement pressure / temperature data recorder:
Field calibration complete: Serial number of calibrated sensor:
Field calibration file name:
Depths and results of field calibration (m):
Installed depth of sensor / base of 3.2m probe below ground level (m):
Start date and time for logger / data recorder (J days / 24 hour):
Programmed recording intervals (hours):
Comments on data logger / recorder set up:

***Odessy recorder system***

Serial number of existing data recorder: *16172* Calibration file in laptop: Yes
Site header number: 119 Site header file name: 16172.119
Existing depth to senor below ground level (m): 12.00
Existing battery voltage: Battery replaced: New battery voltage:
Number of data block downloaded: Data block download complete:
Comments on field check of hydrograph:
Serial number of replacement data recorder:
New site header number: New site header file name:
Installed depth of sensor below ground level (m):
Start date and time for data recorder (dd/mm/yy // hh/mm/ss):
Programmed recording intervals (hours):
Comments on data recorder set up:

***Water sampling*** Recommended purging volume (l): *320*

Method for 1st sample: Flow rate (l/m):

Volume removed for 1st sample: Temperature of 1st sample (C):

Conductivity of 1st sample (**u**S/cm): pH of 1st sample:

Name of 1st sample:

Method for 2nd sample: Flow rate (l/m):

Volume removed for 2nd sample: Temperature of 2nd sample (C):

Conductivity of 2nd sample (**u**S/cm): pH of 2nd sample:

Name of 2nd sample:

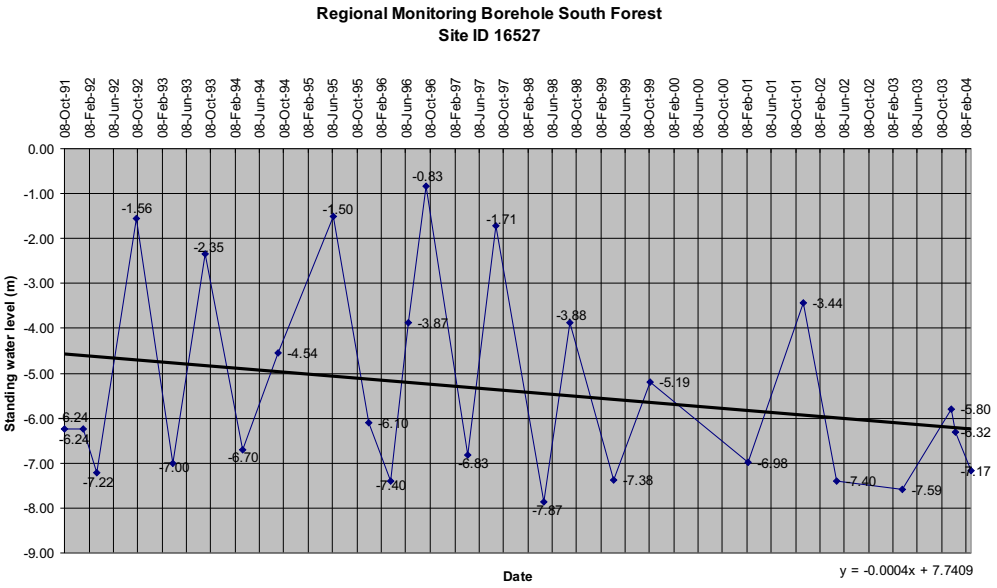
***Comments / recommendations for the short / longterm management of bore***

# APPENDIX 4

# Field readings and related graphs for manual water levels

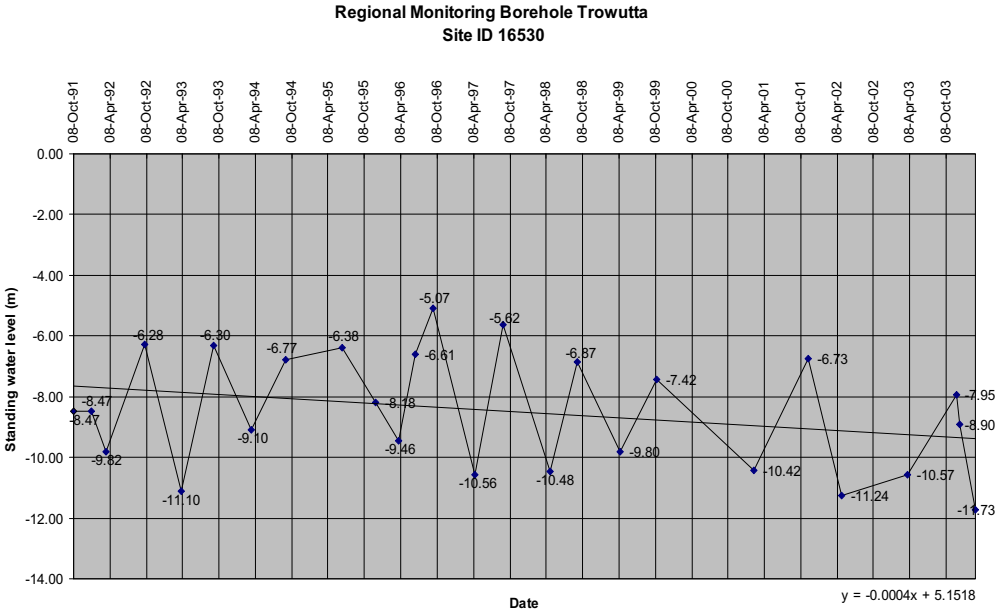
## South Forest (ID 16527)

| *Date* | *Depth* |
|---|---|
| 08/10/1991 | -6.24 |
| 07/01/1992 | -6.24 |
| 16/03/1992 | -7.22 |
| 29/09/1992 | -1.56 |
| 31/03/1993 | -7.00 |
| 09/09/1993 | -2.35 |
| 16/03/1994 | -6.70 |
| 07/09/1994 | -4.54 |
| 14/06/1995 | -1.50 |
| 04/12/1995 | -6.10 |
| 25/03/1996 | -7.40 |
| 19/06/1996 | -3.87 |
| 17/09/1996 | -0.83 |
| 14/04/1997 | -6.83 |
| 02/09/1997 | -1.71 |
| 28/04/1998 | -7.87 |
| 08/09/1998 | -3.88 |
| 12/04/1999 | -7.38 |
| 11/10/1999 | -5.19 |
| 14/02/2001 | -6.98 |
| 14/11/2001 | -3.44 |
| 29/04/2002 | -7.40 |
| 25/03/2003 | -7.59 |
| 27/11/2003 | -5.80 |
| 17/12/2003 | -6.32 |
| 02/03/2004 | -7.17 |



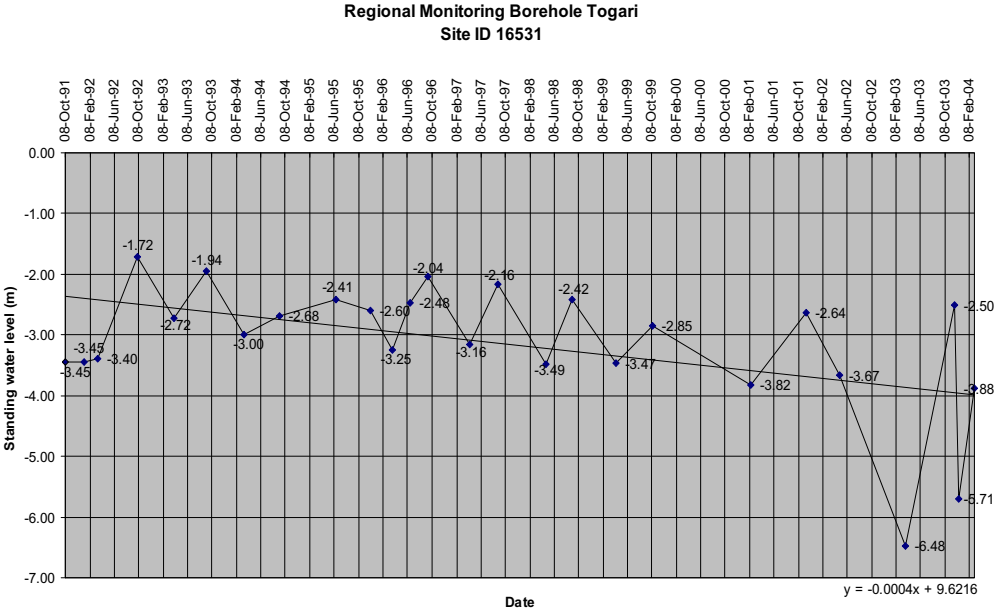

## Trowutta (ID 16530)

| *Date* | *Depth* |
|---|---|
| 08/10/1991 | -8.47 |
| 07/01/1992 | -8.47 |
| 17/03/1992 | -9.82 |
| 29/09/1992 | -6.28 |
| 31/03/1993 | -11.10 |
| 09/09/1993 | -6.30 |
| 16/03/1994 | -9.10 |
| 07/09/1994 | -6.77 |
| 15/06/1995 | -6.38 |
| 04/12/1995 | -8.18 |
| 25/03/1996 | -9.46 |
| 19/06/1996 | -6.61 |
| 17/09/1996 | -5.07 |
| 14/04/1997 | -10.56 |
| 02/09/1997 | -5.62 |
| 28/04/1998 | -10.48 |
| 08/09/1998 | -6.87 |
| 12/04/1999 | -9.80 |
| 12/10/1999 | -7.42 |
| 14/02/2001 | -10.42 |
| 14/11/2001 | -6.73 |
| 29/04/2002 | -11.24 |
| 25/03/2003 | -10.57 |
| 27/11/2003 | -7.95 |
| 17/12/2003 | -8.90 |
| 02/03/2004 | -11.73 |



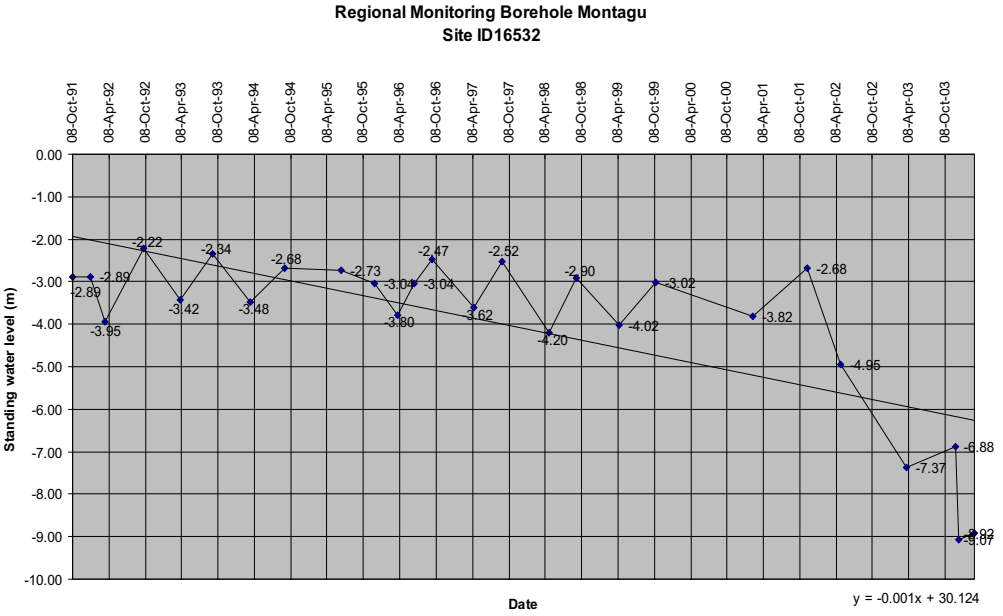
## Togari (ID 16531)

| *Date* | *Depth* |
|---|---|
| 08/10/1991 | -3.45 |
| 07/01/1992 | -3.45 |
| 17/03/1992 | -3.40 |
| 29/09/1992 | -1.72 |
| 31/03/1993 | -2.72 |
| 09/09/1993 | -1.94 |
| 16/03/1994 | -3.00 |
| 07/09/1994 | -2.68 |
| 15/06/1995 | -2.41 |
| 04/12/1995 | -2.60 |
| 25/03/1996 | -3.25 |
| 19/06/1996 | -2.48 |
| 17/09/1996 | -2.04 |
| 15/04/1997 | -3.16 |
| 02/09/1997 | -2.16 |
| 28/04/1998 | -3.49 |
| 08/09/1998 | -2.42 |
| 13/04/1999 | -3.47 |
| 12/10/1999 | -2.85 |
| 14/02/2001 | -3.82 |
| 14/11/2001 | -2.64 |
| 30/04/2002 | -3.67 |
| 25/03/2003 | -6.48 |
| 27/11/2003 | -2.50 |
| 17/12/2003 | -5.71 |
| 02/03/2004 | -3.88 |



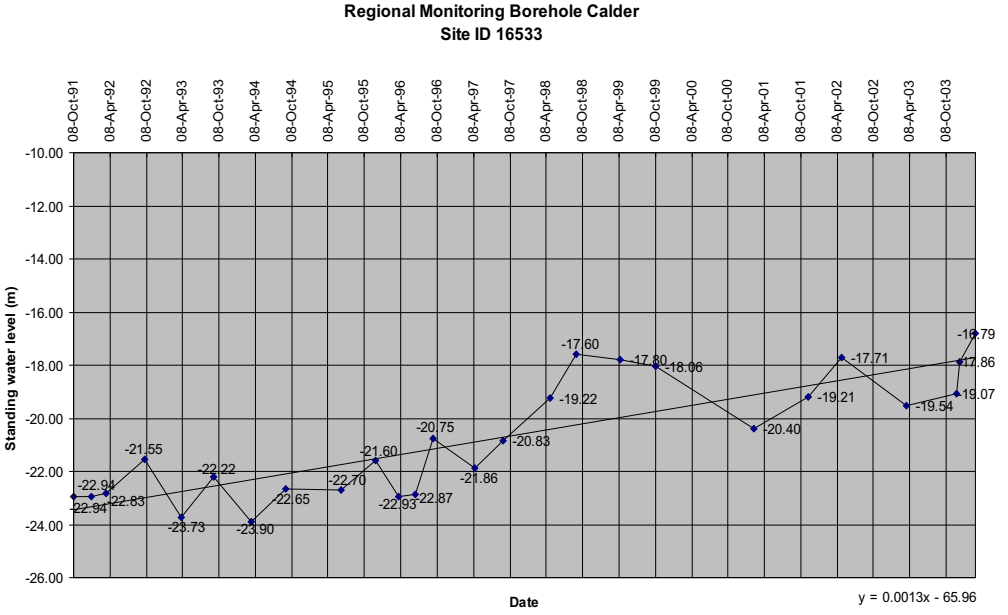

## Montagu (ID 16532)

| *Date* | *Depth* |
|---|---|
| 08/10/1991 | -2.89 |
| 07/01/1992 | -2.89 |
| 17/03/1992 | -3.95 |
| 29/09/1992 | -2.22 |
| 31/03/1993 | -3.42 |
| 09/09/1993 | -2.34 |
| 16/03/1994 | -3.48 |
| 07/09/1994 | -2.68 |
| 15/06/1995 | -2.73 |
| 04/12/1995 | -3.04 |
| 25/03/1996 | -3.80 |
| 19/06/1996 | -3.04 |
| 17/09/1996 | -2.47 |
| 15/04/1997 | -3.62 |
| 02/09/1997 | -2.52 |
| 28/04/1998 | -4.20 |
| 08/09/1998 | -2.90 |
| 13/04/1999 | -4.02 |
| 12/10/1999 | -3.02 |
| 14/02/2001 | -3.82 |
| 14/11/2001 | -2.68 |
| 30/04/2002 | -4.95 |
| 25/03/2003 | -7.37 |
| 27/11/2003 | -6.88 |
| 17/12/2003 | -9.07 |
| 02/03/2004 | -8.92 |



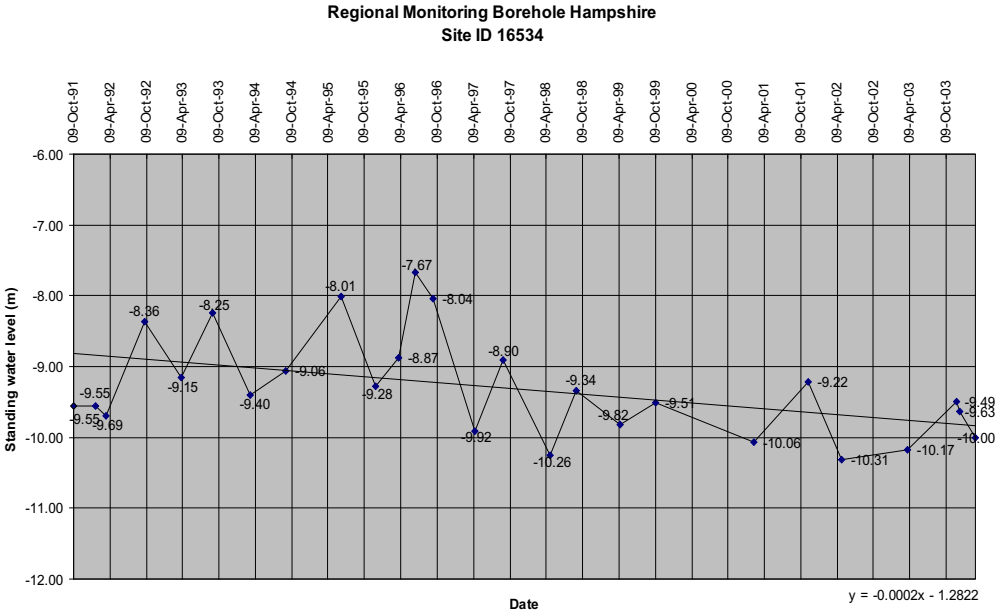
## Calder (ID 16533)

| *Date* | *Depth* |
|---|---|
| 08/10/1991 | -22.94 |
| 07/01/1992 | -22.94 |
| 17/03/1992 | -22.83 |
| 29/09/1992 | -21.55 |
| 31/03/1993 | -23.73 |
| 09/09/1993 | -22.22 |
| 16/03/1994 | -23.90 |
| 07/09/1994 | -22.65 |
| 14/06/1995 | -22.70 |
| 05/12/1995 | -21.60 |
| 26/03/1996 | -22.93 |
| 20/06/1996 | -22.87 |
| 17/09/1996 | -20.75 |
| 15/04/1997 | -21.86 |
| 02/09/1997 | -20.83 |
| 27/04/1998 | -19.22 |
| 07/09/1998 | -17.60 |
| 12/04/1999 | -17.80 |
| 11/10/1999 | -18.06 |
| 14/02/2001 | -20.40 |
| 14/11/2001 | -19.21 |
| 30/04/2002 | -17.71 |
| 24/03/2003 | -19.54 |
| 27/11/2003 | -19.07 |
| 17/12/2003 | -17.86 |
| 02/03/2004 | -16.79 |



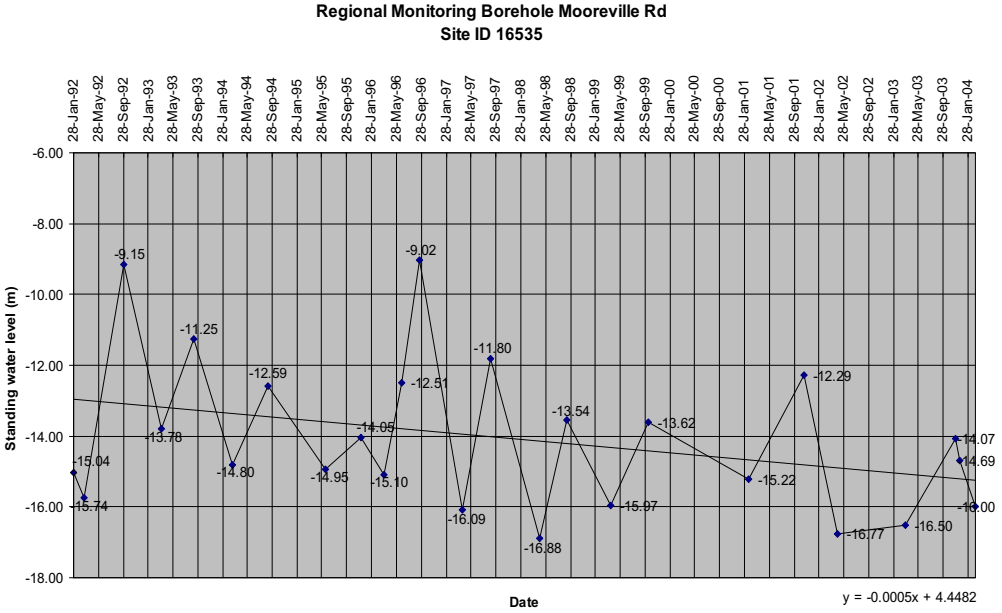

## Hampshire (ID 16534)

| *Date* | *Depth* |
|---|---|
| 09/10/1991 | -9.55 |
| 28/01/1992 | -9.55 |
| 17/03/1992 | -9.69 |
| 30/09/1992 | -8.36 |
| 01/04/1993 | -9.15 |
| 08/09/1993 | -8.25 |
| 16/03/1994 | -9.40 |
| 06/09/1994 | -9.06 |
| 14/06/1995 | -8.01 |
| 05/12/1995 | -9.28 |
| 26/03/1996 | -8.87 |
| 20/06/1996 | -7.67 |
| 18/09/1996 | -8.04 |
| 15/04/1997 | -9.92 |
| 03/09/1997 | -8.90 |
| 28/04/1998 | -10.26 |
| 08/09/1998 | -9.34 |
| 13/04/1999 | -9.82 |
| 12/10/1999 | -9.51 |
| 14/02/2001 | -10.06 |
| 14/11/2001 | -9.22 |
| 30/04/2002 | -10.31 |
| 26/03/2003 | -10.17 |
| 28/11/2003 | -9.49 |
| 17/12/2003 | -9.63 |
| 03/03/2004 | -10.00 |



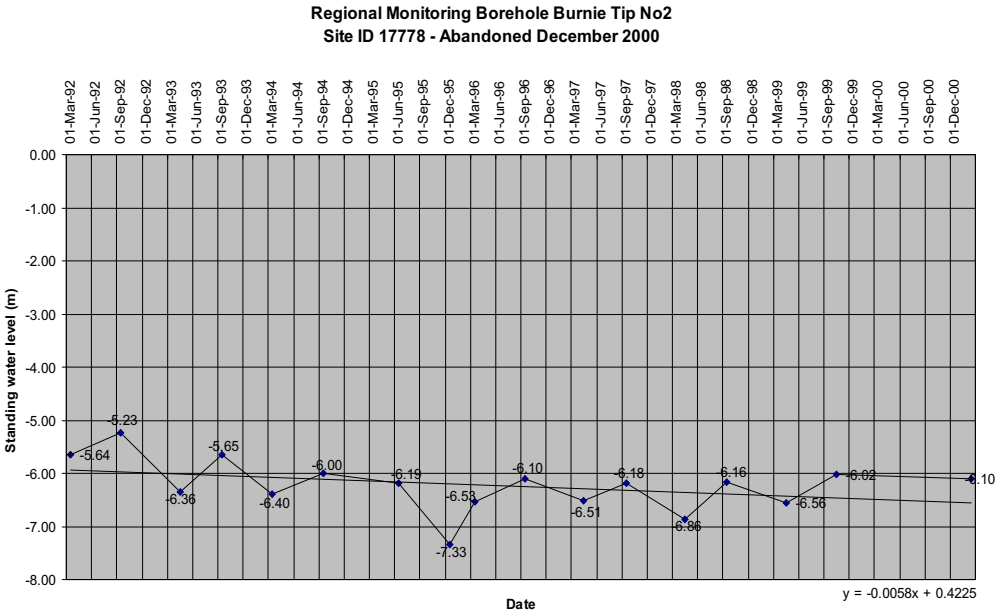
## Mooreville Road (ID 16535)

| *Date* | *Depth* |
|---|---|
| 28/01/1992 | -15.04 |
| 18/03/1992 | -15.74 |
| 29/09/1992 | -9.15 |
| 01/04/1993 | -13.78 |
| 09/09/1993 | -11.25 |
| 16/03/1994 | -14.80 |
| 06/09/1994 | -12.59 |
| 13/06/1995 | -14.95 |
| 05/12/1995 | -14.05 |
| 26/03/1996 | -15.10 |
| 20/06/1996 | -12.51 |
| 18/09/1996 | -9.02 |
| 15/04/1997 | -16.09 |
| 03/09/1997 | -11.80 |
| 28/04/1998 | -16.88 |
| 08/09/1998 | -13.54 |
| 13/04/1999 | -15.97 |
| 12/10/1999 | -13.62 |
| 14/02/2001 | -15.22 |
| 14/11/2001 | -12.29 |
| 30/04/2002 | -16.77 |
| 26/03/2003 | -16.50 |
| 28/11/2003 | -14.07 |
| 17/12/2003 | -14.69 |
| 03/03/2004 | -16.00 |



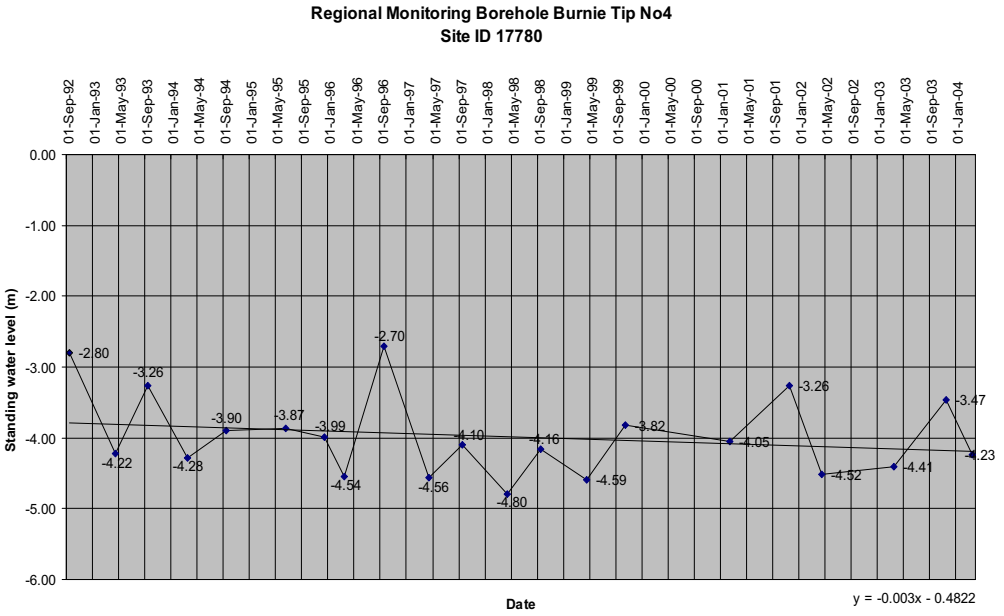

## Burnie Tip No. 2 (ID 17778)

| *Date* | *Depth* |
|---|---|
| 18/03/1992 | -5.64 |
| 30/09/1992 | -5.23 |
| 01/04/1993 | -6.36 |
| 09/09/1993 | -5.65 |
| 19/03/1994 | -6.40 |
| 07/09/1994 | -6.00 |
| 14/06/1995 | -6.19 |
| 05/12/1995 | -7.33 |
| 26/03/1996 | -6.53 |
| 18/09/1996 | -6.10 |
| 15/04/1997 | -6.51 |
| 02/09/1997 | -6.18 |
| 28/04/1998 | -6.86 |
| 08/09/1998 | -6.16 |
| 13/04/1999 | -6.56 |
| 12/10/1999 | -6.02 |
| 14/02/2001 | -6.10 |
| Abandoned hole | |



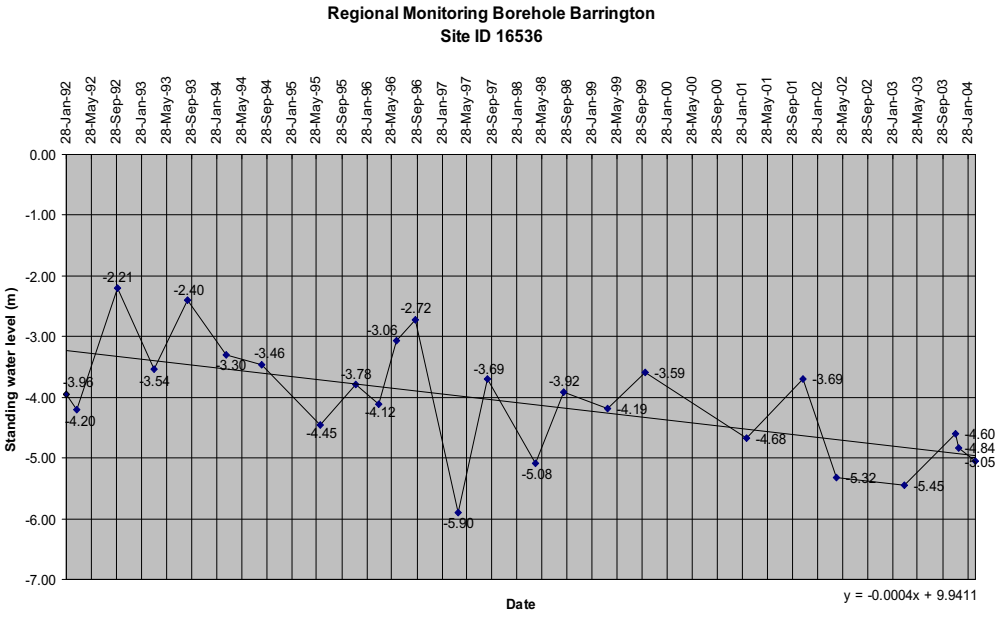
## Burnie Tip No. 4 (ID 17780)

| *Date* | *Depth* |
|---|---|
| 30/09/1992 | -2.80 |
| 01/04/1993 | -4.22 |
| 09/09/1993 | -3.26 |
| 17/03/1994 | -4.28 |
| 07/09/1994 | -3.90 |
| 14/06/1995 | -3.87 |
| 05/12/1995 | -3.99 |
| 26/03/1996 | -4.54 |
| 18/09/1996 | -2.70 |
| 15/04/1997 | -4.56 |
| 02/09/1997 | -4.10 |
| 28/04/1998 | -4.80 |
| 08/09/1998 | -4.16 |
| 13/04/1999 | -4.59 |
| 12/10/1999 | -3.82 |
| 14/02/2001 | -4.05 |
| 14/11/2001 | -3.26 |
| 30/04/2002 | -4.52 |
| 26/03/2003 | -4.41 |
| 28/11/2003 | -3.47 |
| 03/03/2004 | -4.23 |



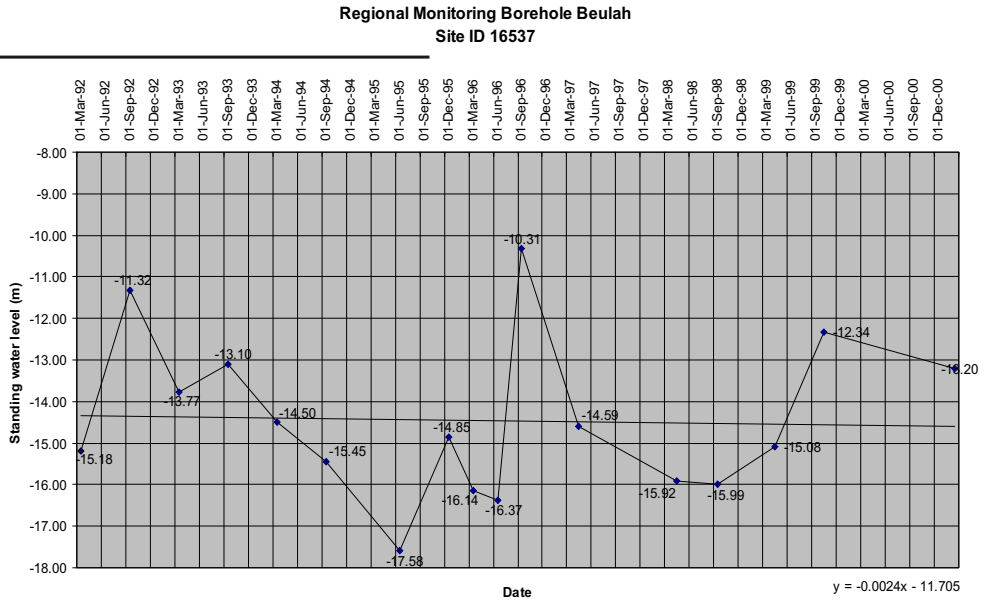

## Barrington (ID 16536)

| *Date* | *Depth* |
|---|---|
| 28/01/1992 | -3.96 |
| 8/03/1992 | -4.20 |
| 0/09/1992 | -2.21 |
| 0/03/1993 | -3.54 |
| 8/09/1993 | -2.40 |
| 5/03/1994 | -3.30 |
| 6/09/1994 | -3.46 |
| 5/06/1995 | -4.45 |
| 6/12/1995 | -3.78 |
| 6/03/1996 | -4.12 |
| 0/06/1996 | -3.06 |
| 8/09/1996 | -2.72 |
| 6/04/1997 | -5.90 |
| 3/09/1997 | -3.69 |
| 9/04/1998 | -5.08 |
| 9/09/1998 | -3.92 |
| 3/04/1999 | -4.19 |
| 2/10/1999 | -3.59 |
| 5/02/2001 | -4.68 |
| 5/11/2001 | -3.69 |
| 1/05/2002 | -5.32 |
| 6/03/2003 | -5.45 |
| 1/12/2003 | -4.60 |
| 6/12/2003 | -4.84 |
| 4/03/2004 | -5.05 |



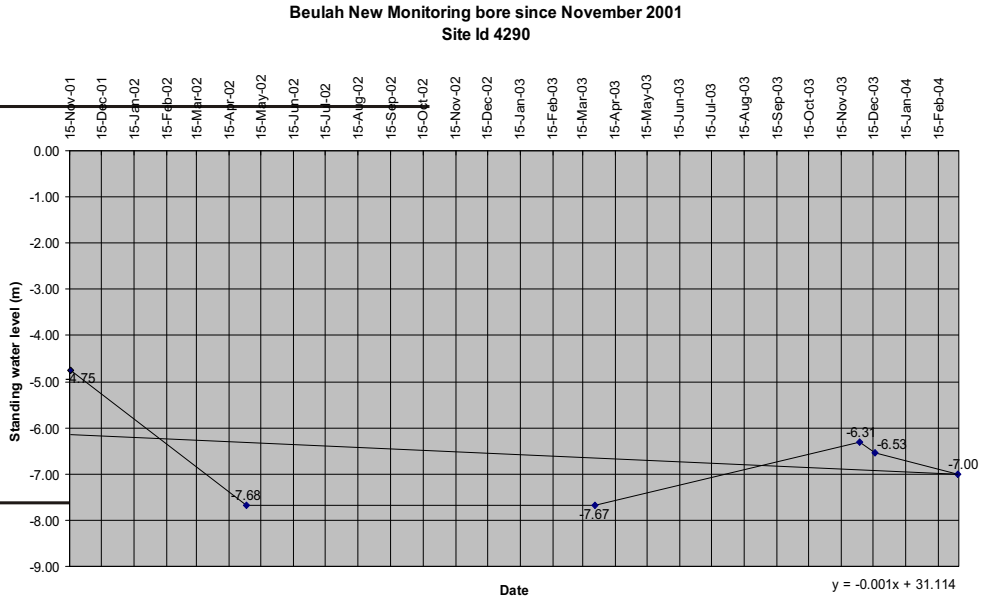
## Beulah (ID 16537)

| *Date* | *Depth* |
|---|---|
| 18/03/1992 | -15.18 |
| 0/09/1992 | -11.32 |
| 0/03/1993 | -13.77 |
| 8/09/1993 | -13.10 |
| 5/03/1994 | -14.50 |
| 6/09/1994 | -15.45 |
| 3/06/1995 | -17.58 |
| 5/12/1995 | -14.85 |
| 6/03/1996 | -16.14 |
| 1/06/1996 | -16.37 |
| 8/09/1996 | -10.31 |
| 6/04/1997 | -14.59 |
| 9/04/1998 | -15.92 |
| 9/09/1998 | -15.99 |
| 3/04/1999 | -15.08 |
| 2/10/1999 | -12.34 |
| 5/02/2001 | -13.20 |
| Abandoned hole | |



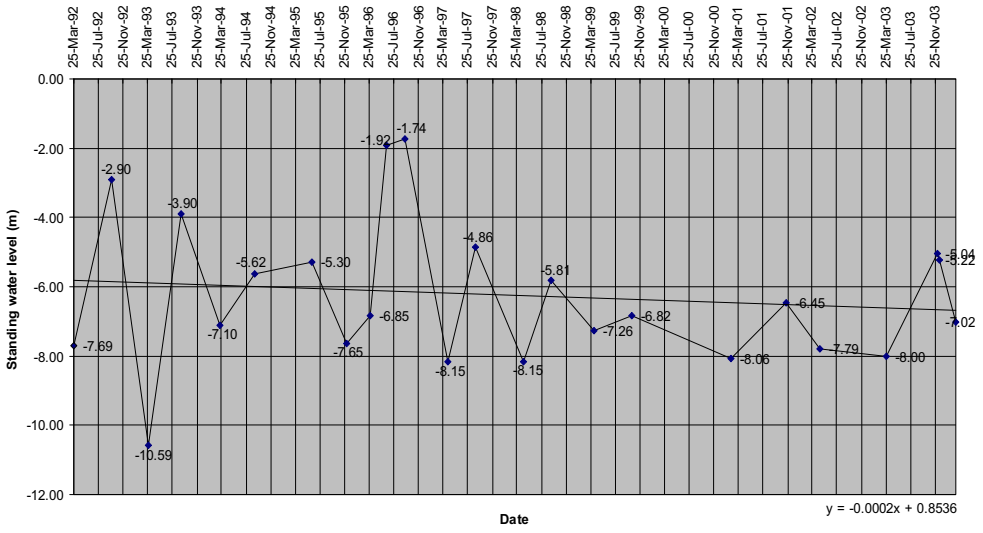

## Beulah new (ID 4290)

| *Date* | *Depth* |
|---|---|
| 15/11/2001 | -4.75 |
| 1/05/2002 | -7.68 |
| 6/03/2003 | -7.67 |
| 2/12/2003 | -6.31 |
| 6/12/2003 | -6.53 |
| 4/03/2004 | -7.00 |



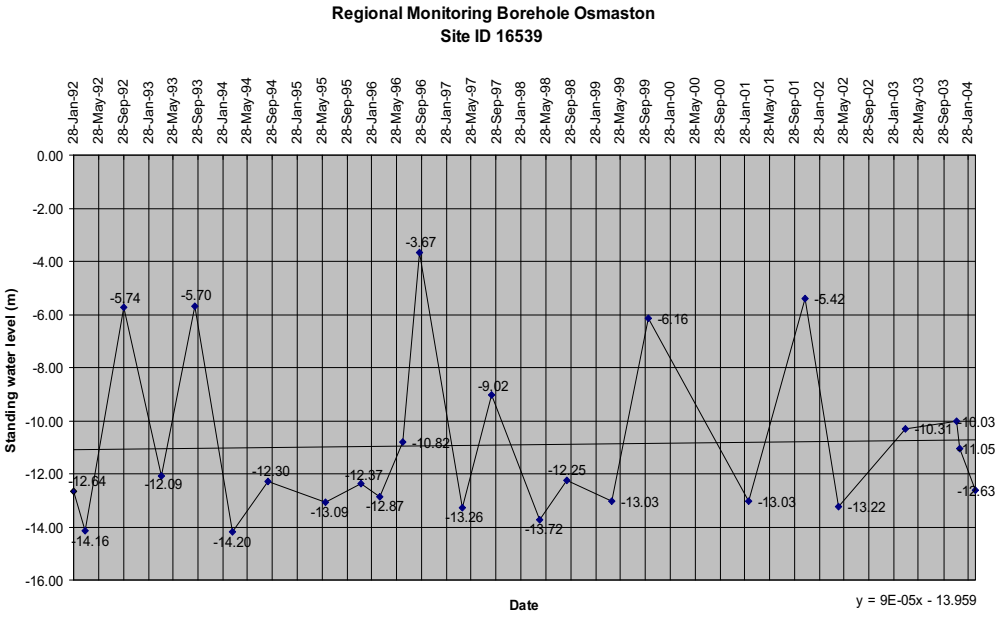

## Chudleigh (16538)

| *Date* | *Depth* |
|---|---|
| 25/03/1992 | -7.69 |
| 0/09/1992 | -2.90 |
| 0/03/1993 | -10.59 |
| 8/09/1993 | -3.90 |
| 5/03/1994 | -7.10 |
| 6/09/1994 | -5.62 |
| 3/06/1995 | -5.30 |
| 5/12/1995 | -7.65 |
| 8/03/1996 | -6.85 |
| 1/06/1996 | -1.92 |
| 9/09/1996 | -1.74 |
| 6/04/1997 | -8.15 |
| 3/09/1997 | -4.86 |
| 9/04/1998 | -8.15 |
| 9/09/1998 | -5.81 |
| 3/04/1999 | -7.26 |
| 3/10/1999 | -6.82 |
| 5/02/2001 | -8.06 |
| 6/11/2001 | -6.45 |
| 1/05/2002 | -7.79 |
| 7/03/2003 | -8.00 |
| 2/12/2003 | -5.04 |
| 6/12/2003 | -5.22 |
| 4/03/2004 | -7.02 |



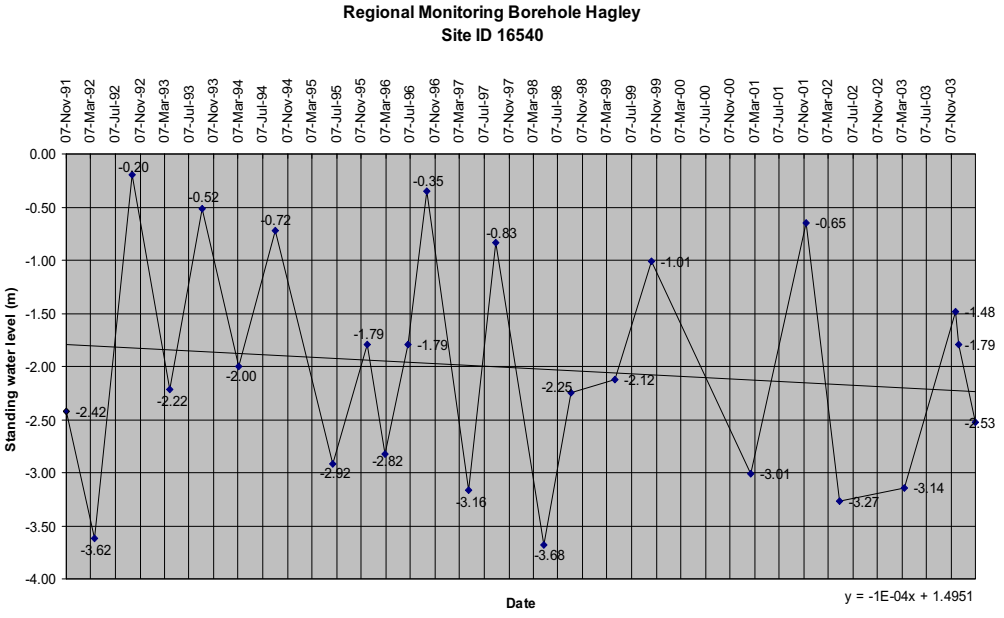
## Osmaston (ID 16539)

| *Date* | *Depth* |
|---|---|
| 28/01/1992 | -12.64 |
| 3/03/1992 | -14.16 |
| 0/09/1992 | -5.74 |
| 1/04/1993 | -12.09 |
| 0/09/1993 | -5.70 |
| 7/03/1994 | -14.20 |
| 6/09/1994 | -12.30 |
| 3/06/1995 | -13.09 |
| 5/12/1995 | -12.37 |
| 5/03/1996 | -12.87 |
| 6/06/1996 | -10.82 |
| 9/09/1996 | -3.67 |
| 16/04/1997 | -13.26 |
| 3/09/1997 | -9.02 |
| 9/04/1998 | -13.72 |
| 9/09/1998 | -12.25 |
| 4/04/1999 | -13.03 |
| 3/10/1999 | -6.16 |
| 5/02/2001 | -13.03 |
| 6/11/2001 | -5.42 |
| 1/05/2002 | -13.22 |
| 7/03/2003 | -10.31 |
| 2/12/2003 | -10.03 |
| 6/12/2003 | -11.05 |
| 1/03/2004 | -12.63 |



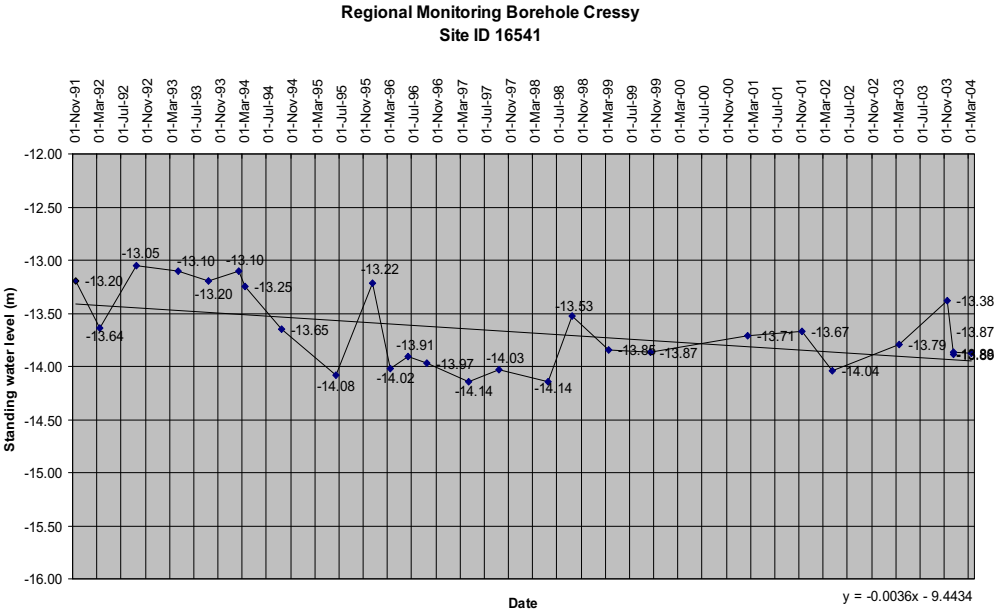

## Hagley (ID 16540)

| *Date* | *Depth* |
|---|---|
| 07/11/1991 | -2.42 |
| 3/03/1992 | -3.62 |
| 0/09/1992 | -0.20 |
| 1/04/1993 | -2.22 |
| 0/09/1993 | -0.52 |
| 9/03/1994 | -2.00 |
| 5/09/1994 | -0.72 |
| 9/06/1995 | -2.92 |
| 7/12/1995 | -1.79 |
| 5/03/1996 | -2.82 |
| 6/06/1996 | -1.79 |
| 4/09/1996 | -0.35 |
| 1/04/1997 | -3.16 |
| 3/09/1997 | -0.83 |
| 9/04/1998 | -3.68 |
| 9/09/1998 | -2.25 |
| 4/04/1999 | -2.12 |
| 3/10/1999 | -1.01 |
| 5/02/2001 | -3.01 |
| 6/11/2001 | -0.65 |
| 1/05/2002 | -3.27 |
| 8/03/2003 | -3.14 |
| 6/11/2003 | -1.48 |
| 1/12/2003 | -1.79 |
| 4/03/2004 | -2.53 |



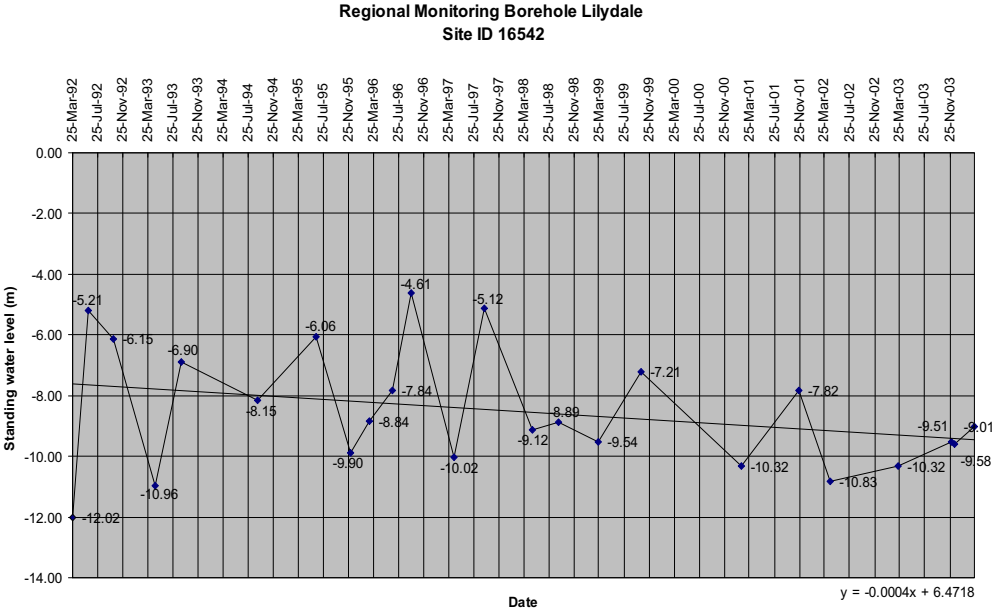
## Cressy (ID 16541)

| *Date* | *Depth* |
|---|---|
| 07/11/1991 | -13.20 |
| 24/03/1992 | -13.64 |
| 30/09/1992 | -13.05 |
| 29/04/1993 | -13.10 |
| 03/09/1993 | -13.20 |
| 3/02/1994 | -13.10 |
| 9/03/1994 | -13.25 |
| 5/09/1994 | -13.65 |
| 9/06/1995 | -14.08 |
| 7/12/1995 | -13.22 |
| 7/03/1996 | -14.02 |
| 6/06/1996 | -13.91 |
| 4/09/1996 | -13.97 |
| 1/04/1997 | -14.14 |
| 6/09/1997 | -14.03 |
| 4/05/1998 | -14.14 |
| 0/09/1998 | -13.53 |
| 3/03/1999 | -13.85 |
| 3/10/1999 | -13.87 |
| 5/02/2001 | -13.71 |
| 6/11/2001 | -13.67 |
| 2/04/2002 | -14.04 |
| 8/03/2003 | -13.79 |
| 6/11/2003 | -13.38 |
| 0/12/2003 | -13.89 |
| 1/12/2003 | -13.87 |
| 2/03/2004 | -13.88 |



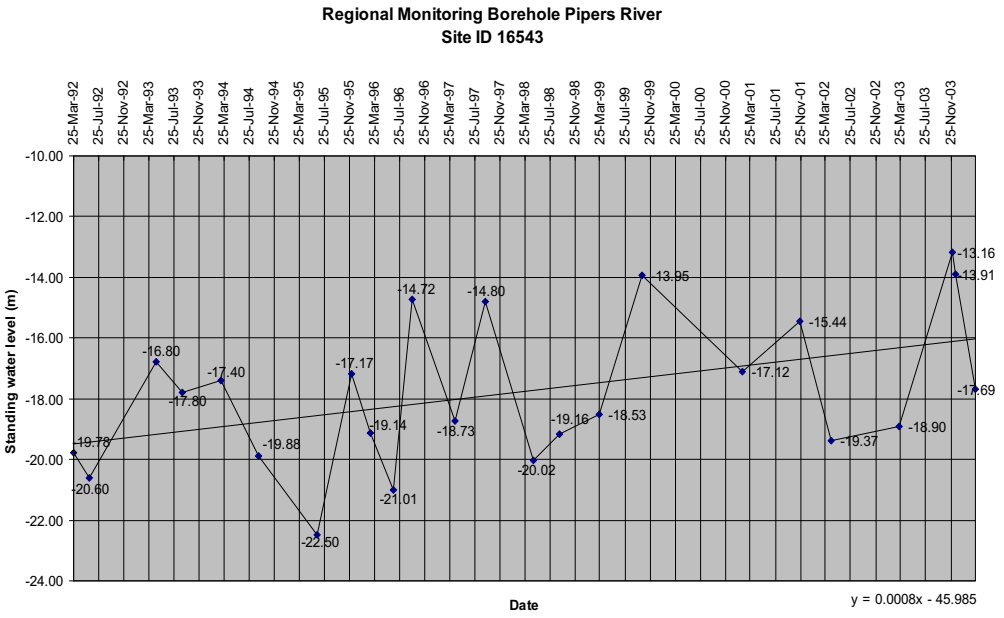

## Lilydale (ID 16542)

| *Date* | *Depth* |
|---|---|
| 25/03/1992 | -12.02 |
| 0/06/1992 | -5.21 |
| 7/10/1992 | -6.15 |
| 9/04/1993 | -10.96 |
| 2/09/1993 | -6.90 |
| 7/09/1994 | -8.15 |
| 0/06/1995 | -6.06 |
| 7/12/1995 | -9.90 |
| 6/03/1996 | -8.84 |
| 7/06/1996 | -7.84 |
| 4/09/1996 | -4.61 |
| 1/04/1997 | -10.02 |
| 6/09/1997 | -5.12 |
| 4/05/1998 | -9.12 |
| 9/09/1998 | -8.89 |
| 3/03/1999 | -9.54 |
| 8/10/1999 | -7.21 |
| 5/02/2001 | -10.32 |
| 0/11/2001 | -7.82 |
| 2/04/2002 | -10.83 |
| 8/03/2003 | -10.32 |
| 2/12/2003 | -9.51 |
| 6/12/2003 | -9.58 |
| 2/03/2004 | -9.01 |



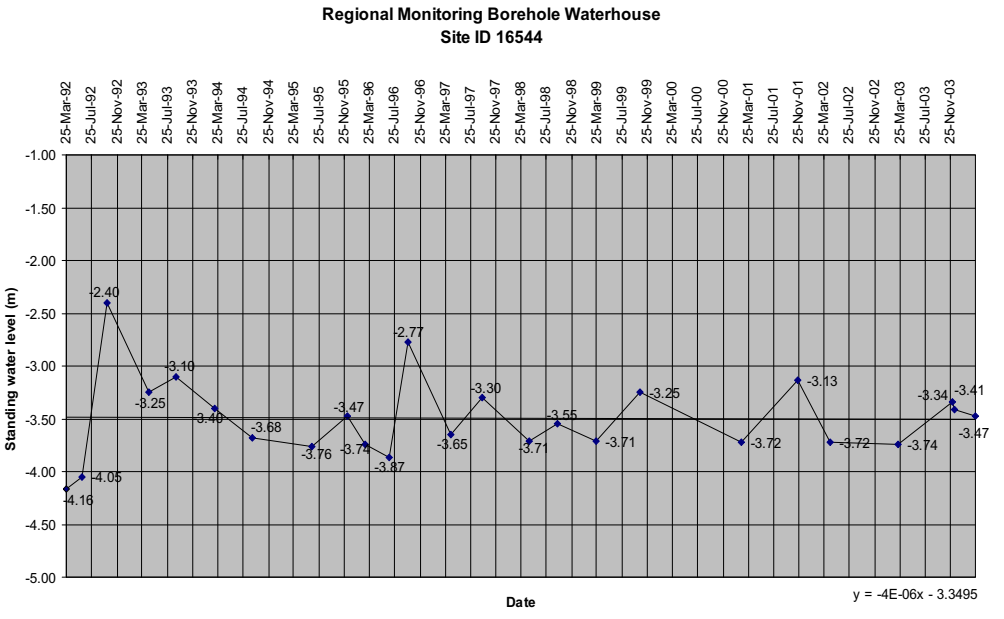
## Pipers River (ID 16543)

| *Date* | *Depth* |
|---|---|
| 25/03/1992 | -19.78 |
| 0/06/1992 | -20.60 |
| 8/04/1993 | -16.80 |
| 2/09/1993 | -17.80 |
| 0/03/1994 | -17.40 |
| 8/09/1994 | -19.88 |
| 0/06/1995 | -22.50 |
| 7/12/1995 | -17.17 |
| 6/03/1996 | -19.14 |
| 7/06/1996 | -21.01 |
| 5/09/1996 | -14.72 |
| 1/04/1997 | -18.73 |
| 6/09/1997 | -14.80 |
| 4/05/1998 | -20.02 |
| 9/09/1998 | -19.16 |
| 3/03/1999 | -18.53 |
| 8/10/1999 | -13.95 |
| 5/02/2001 | -17.12 |
| 0/11/2001 | -15.44 |
| 2/04/2002 | -19.37 |
| 9/03/2003 | -18.90 |
| 2/12/2003 | -13.16 |
| 6/12/2003 | -13.91 |
| 2/03/2004 | -17.69 |



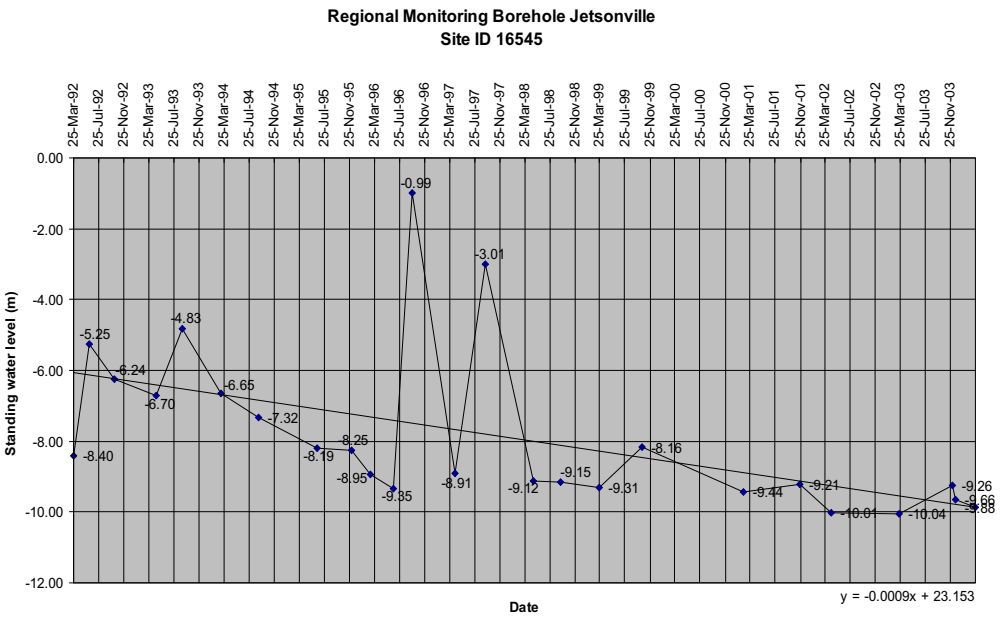

## Waterhouse (ID 16544)

| *Date* | *Depth* |
|---|---|
| 25/03/1992 | -4.16 |
| 0/06/1992 | -4.05 |
| 7/10/1992 | -2.40 |
| 8/04/1993 | -3.25 |
| 2/09/1993 | -3.10 |
| 0/03/1994 | -3.40 |
| 8/09/1994 | -3.68 |
| 0/06/1995 | -3.76 |
| 7/12/1995 | -3.47 |
| 6/03/1996 | -3.74 |
| 7/06/1996 | -3.87 |
| 5/09/1996 | -2.77 |
| 2/04/1997 | -3.65 |
| 7/09/1997 | -3.30 |
| 5/05/1998 | -3.71 |
| 5/09/1998 | -3.55 |
| 4/03/1999 | -3.71 |
| 8/10/1999 | -3.25 |
| 1/02/2001 | -3.72 |
| 0/11/2001 | -3.13 |
| 2/04/2002 | -3.72 |
| 9/03/2003 | -3.74 |
| 3/12/2003 | -3.34 |
| 6/12/2003 | -3.41 |
| 3/03/2004 | -3.47 |



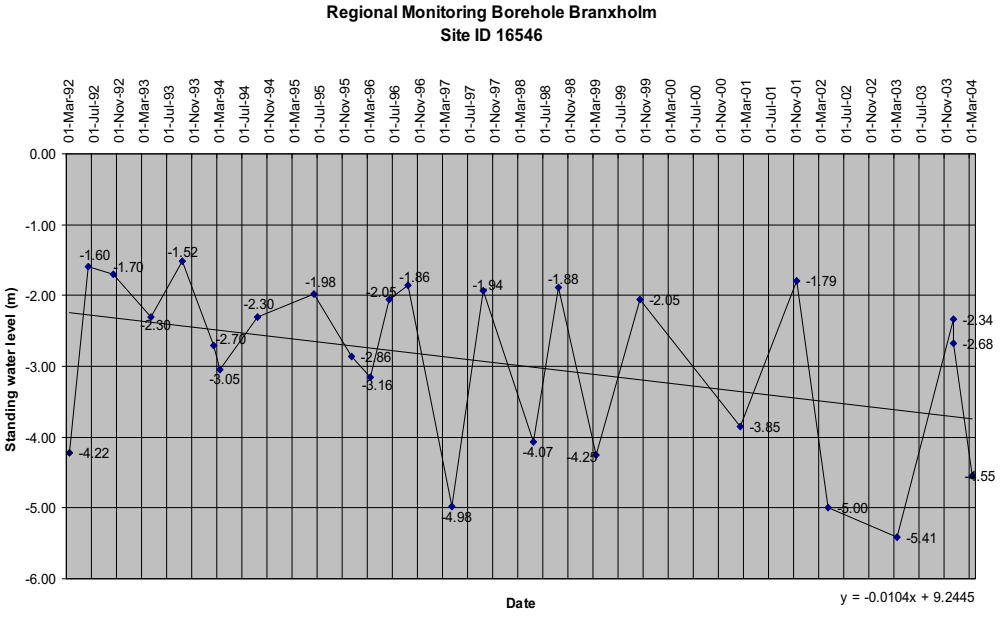
## Jetsonville (ID 16545)

| *Date* | *Depth* |
|---|---|
| 25/03/1992 | -8.40 |
| 0/06/1992 | -5.25 |
| 7/10/1992 | -6.24 |
| 8/04/1993 | -6.70 |
| 2/09/1993 | -4.83 |
| 0/03/1994 | -6.65 |
| 8/09/1994 | -7.32 |
| 0/06/1995 | -8.19 |
| 7/12/1995 | -8.25 |
| 6/03/1996 | -8.95 |
| 7/06/1996 | -9.35 |
| 5/09/1996 | -0.99 |
| 2/04/1997 | -8.91 |
| 7/09/1997 | -3.01 |
| 5/05/1998 | -9.12 |
| 5/09/1998 | -9.15 |
| 4/03/1999 | -9.31 |
| 8/10/1999 | -8.16 |
| 1/02/2001 | -9.44 |
| 0/11/2001 | -9.21 |
| 3/04/2002 | -10.01 |
| 9/03/2003 | -10.04 |
| 3/12/2003 | -9.26 |
| 6/12/2003 | -9.66 |
| 3/03/2004 | -9.88 |



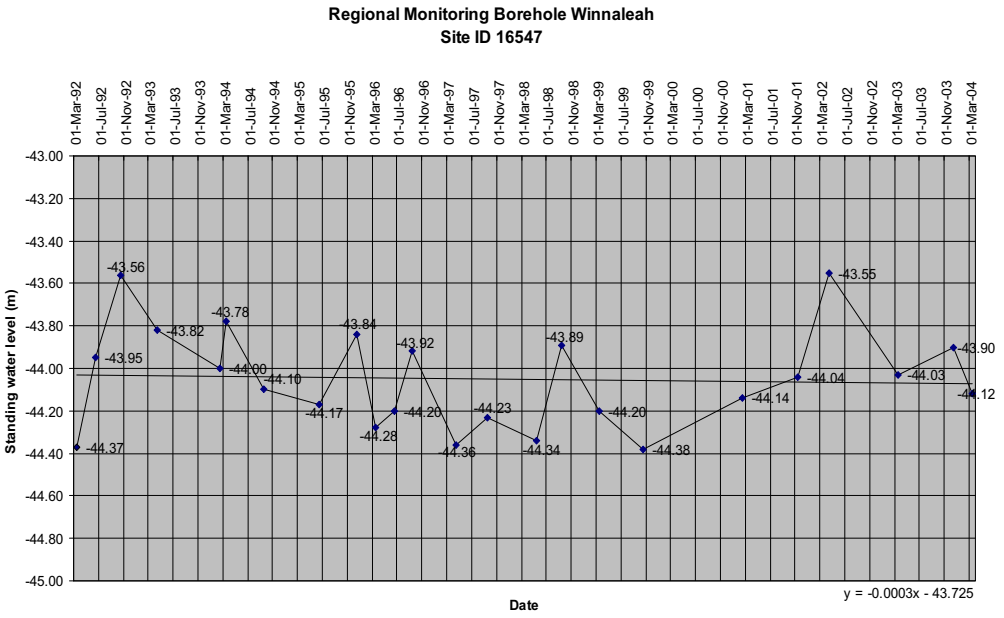

## Branxholm (ID 16546)

| *Date* | *Depth* |
|---|---|
| 25/03/1992 | -4.22 |
| 0/06/1992 | -1.60 |
| 7/10/1992 | -1.70 |
| 8/04/1993 | -2.30 |
| 2/09/1993 | -1.52 |
| 2/02/1994 | -2.70 |
| 0/03/1994 | -3.05 |
| 8/09/1994 | -2.30 |
| 0/06/1995 | -1.98 |
| 7/12/1995 | -2.86 |
| 6/03/1996 | -3.16 |
| 7/06/1996 | -2.05 |
| 5/09/1996 | -1.86 |
| 2/04/1997 | -4.98 |
| 7/09/1997 | -1.94 |
| 5/05/1998 | -4.07 |
| 5/09/1998 | -1.88 |
| 4/03/1999 | -4.25 |
| 8/10/1999 | -2.05 |
| 1/02/2001 | -3.85 |
| 9/11/2001 | -1.79 |
| 3/04/2002 | -5.00 |
| 9/03/2003 | -5.41 |
| 3/12/2003 | -2.34 |
| 5/12/2003 | -2.68 |
| 3/03/2004 | -4.55 |



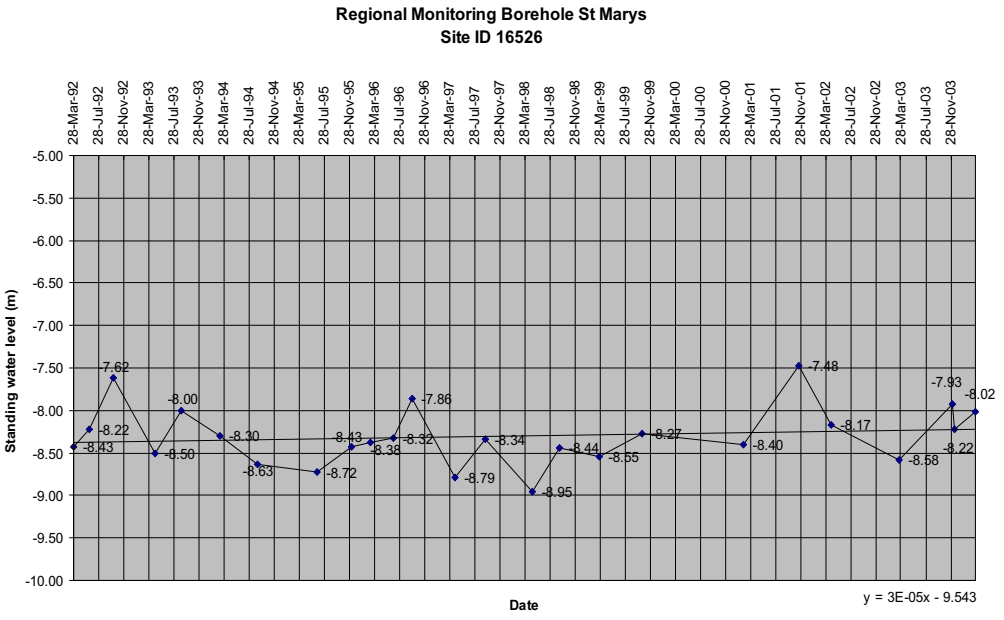
## Winnaleah (ID 16547)

| *Date* | *Depth* |
|---|---|
| 25/03/1992 | -44.37 |
| 0/06/1992 | -43.95 |
| 7/10/1992 | -43.56 |
| 8/04/1993 | -43.82 |
| 2/02/1994 | -44.00 |
| 0/03/1994 | -43.78 |
| 8/09/1994 | -44.10 |
| 0/06/1995 | -44.17 |
| 7/12/1995 | -43.84 |
| 6/03/1996 | -44.28 |
| 7/06/1996 | -44.20 |
| 5/09/1996 | -43.92 |
| 2/04/1997 | -44.36 |
| 7/09/1997 | -44.23 |
| 5/05/1998 | -44.34 |
| 5/09/1998 | -43.89 |
| 4/03/1999 | -44.20 |
| 8/10/1999 | -44.38 |
| 1/02/2001 | -44.14 |
| 9/11/2001 | -44.04 |
| 3/04/2002 | -43.55 |
| 0/03/2003 | -44.03 |
| 3/12/2003 | -43.90 |
| 3/03/2004 | -44.12 |



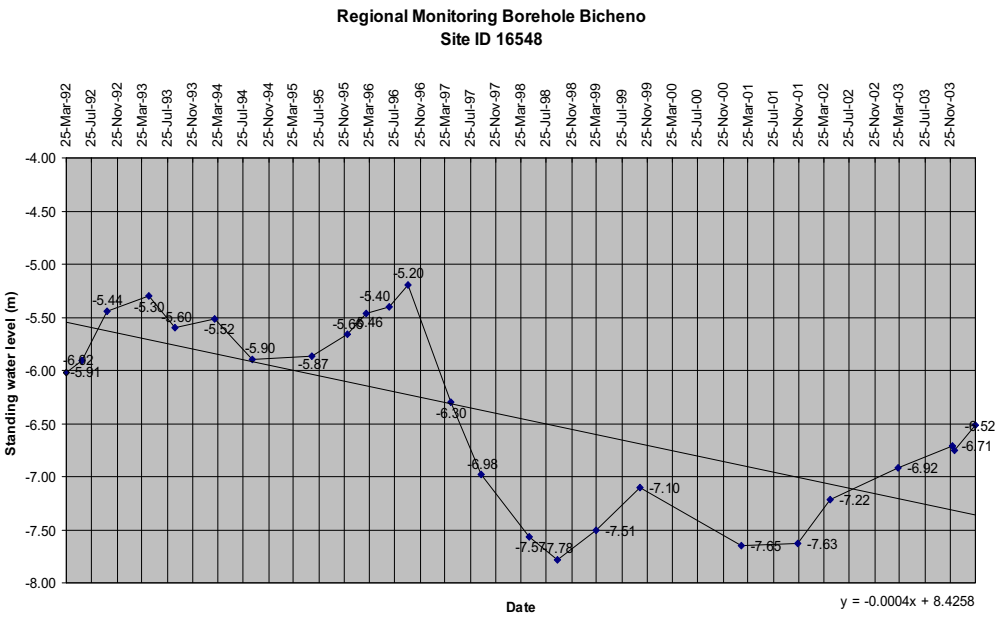

## St Marys (ID 16526)

| *Date* | *Depth* |
|---|---|
| 28/03/1992 | -8.43 |
| 0/06/1992 | -8.22 |
| 6/10/1992 | -7.62 |
| 7/04/1993 | -8.50 |
| 1/09/1993 | -8.00 |
| 0/03/1994 | -8.30 |
| 9/09/1994 | -8.63 |
| 1/06/1995 | -8.72 |
| 7/12/1995 | -8.43 |
| 6/03/1996 | -8.38 |
| 7/06/1996 | -8.32 |
| 5/09/1996 | -7.86 |
| 2/04/1997 | -8.79 |
| 7/09/1997 | -8.34 |
| 5/05/1998 | -8.95 |
| 5/09/1998 | -8.44 |
| 4/03/1999 | -8.55 |
| 8/10/1999 | -8.27 |
| 0/02/2001 | -8.40 |
| 9/11/2001 | -7.48 |
| 3/04/2002 | -8.17 |
| 0/03/2003 | -8.58 |
| 4/12/2003 | -7.93 |
| 5/12/2003 | -8.22 |
| 4/03/2004 | -8.02 |



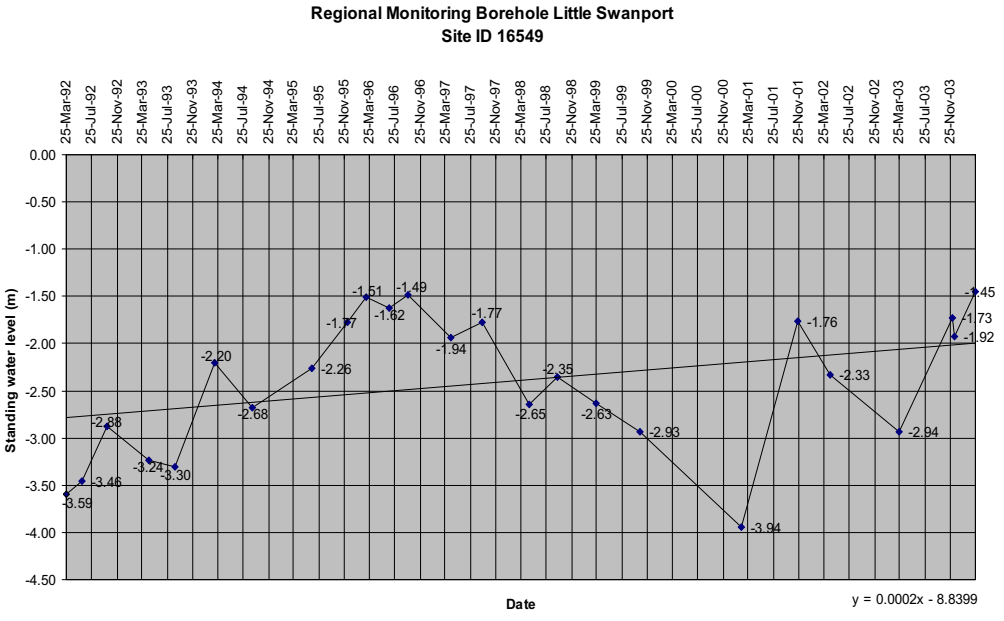
## Bicheno (ID 16548)

| *Date* | *Depth* |
|---|---|
| 25/03/1992 | -6.02 |
| 0/06/1992 | -5.91 |
| 6/10/1992 | -5.44 |
| 7/04/1993 | -5.30 |
| 1/09/1993 | -5.60 |
| 1/03/1994 | -5.52 |
| 9/09/1994 | -5.90 |
| 1/06/1995 | -5.87 |
| 8/12/1995 | -5.66 |
| 7/03/1996 | -5.46 |
| 8/06/1996 | -5.40 |
| 6/09/1996 | -5.20 |
| 3/04/1997 | -6.30 |
| 7/09/1997 | -6.98 |
| 6/05/1998 | -7.57 |
| 6/09/1998 | -7.78 |
| 4/03/1999 | -7.51 |
| 9/10/1999 | -7.10 |
| 0/02/2001 | -7.65 |
| 9/11/2001 | -7.63 |
| 3/04/2002 | -7.22 |
| 0/03/2003 | -6.92 |
| 4/12/2003 | -6.71 |
| 5/12/2003 | -6.75 |
| 4/03/2004 | -6.52 |



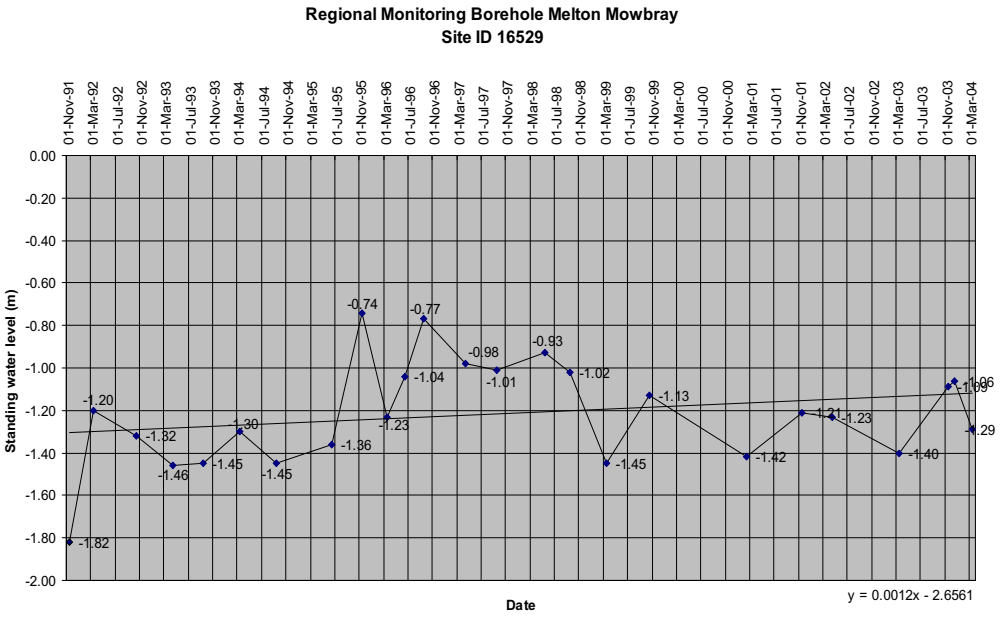

## Little Swanport (ID 16549)

| *Date* | *Depth* |
|---|---|
| 25/03/1992 | -3.59 |
| 0/06/1992 | -3.46 |
| 6/10/1992 | -2.88 |
| 7/04/1993 | -3.24 |
| 1/09/1993 | -3.30 |
| 1/03/1994 | -2.20 |
| 9/09/1994 | -2.68 |
| 1/06/1995 | -2.26 |
| 8/12/1995 | -1.77 |
| 7/03/1996 | -1.51 |
| 8/06/1996 | -1.62 |
| 6/09/1996 | -1.49 |
| 3/04/1997 | -1.94 |
| 8/09/1997 | -1.77 |
| 6/05/1998 | -2.65 |
| 6/09/1998 | -2.35 |
| 5/03/1999 | -2.63 |
| 9/10/1999 | -2.93 |
| 0/02/2001 | -3.94 |
| 9/11/2001 | -1.76 |
| 3/04/2002 | -2.33 |
| 1/03/2003 | -2.94 |
| 4/12/2003 | -1.73 |
| 5/12/2003 | -1.92 |
| 4/03/2004 | -1.45 |



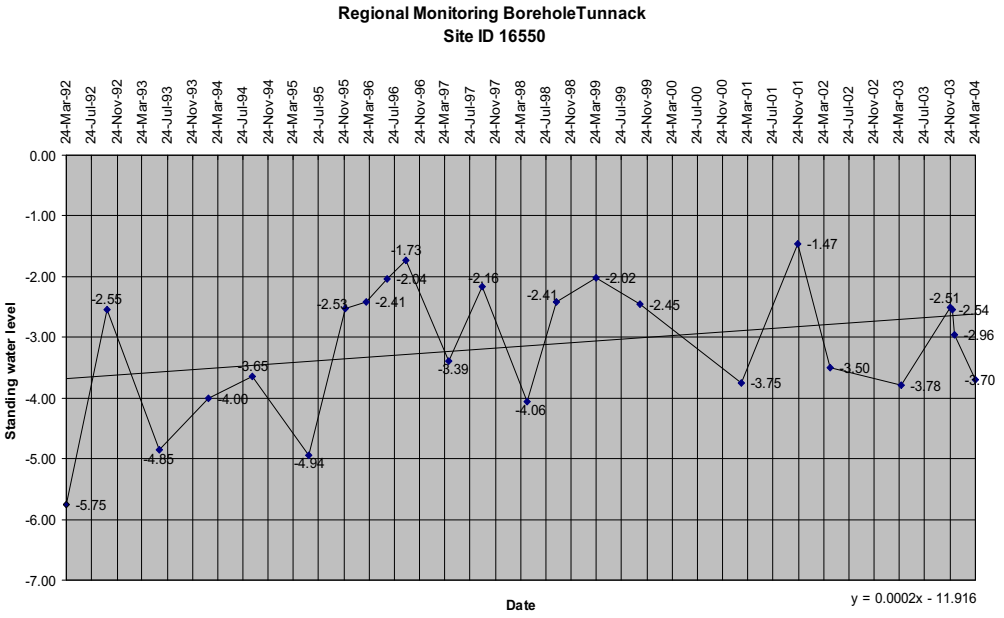
## Melton Mowbray (ID 16529)

| *Date* | *Depth* |
|---|---|
| 26/11/1991 | -1.82 |
| 3/03/1992 | -1.20 |
| 1/10/1992 | -1.32 |
| 2/04/1993 | -1.46 |
| 8/09/1993 | -1.45 |
| 5/03/1994 | -1.30 |
| 5/09/1994 | -1.45 |
| 8/06/1995 | -1.36 |
| 0/11/1995 | -0.74 |
| 5/03/1996 | -1.23 |
| 7/06/1996 | -1.04 |
| 4/09/1996 | -0.77 |
| 9/04/1997 | -0.98 |
| 6/09/1997 | -1.01 |
| 7/05/1998 | -0.93 |
| 7/09/1998 | -1.02 |
| 6/03/1999 | -1.45 |
| 3/10/1999 | -1.13 |
| 0/02/2001 | -1.42 |
| 0/11/2001 | -1.21 |
| 2/04/2002 | -1.23 |
| 1/03/2003 | -1.40 |
| 6/11/2003 | -1.09 |
| 1/12/2003 | -1.06 |
| 5/03/2004 | -1.29 |



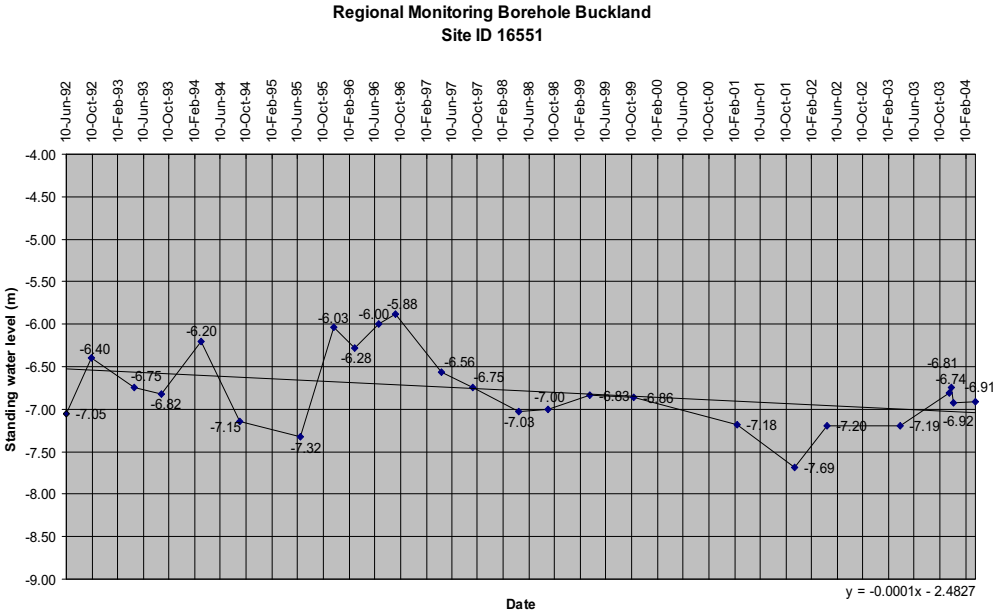

## Tunnack (ID 16550)

| *Date* | *Depth* |
|---|---|
| 24/03/1992 | -5.75 |
| 8/10/1992 | -2.55 |
| 6/06/1993 | -4.85 |
| 9/02/1994 | -4.00 |
| 9/09/1994 | -3.65 |
| 8/06/1995 | -4.94 |
| 0/11/1995 | -2.53 |
| 7/03/1996 | -2.41 |
| 7/06/1996 | -2.04 |
| 6/09/1996 | -1.73 |
| 0/04/1997 | -3.39 |
| 9/09/1997 | -2.16 |
| 3/04/1998 | -4.06 |
| 0/09/1998 | -2.41 |
| 5/03/1999 | -2.02 |
| 9/10/1999 | -2.45 |
| 0/02/2001 | -3.75 |
| 9/11/2001 | -1.47 |
| 3/04/2002 | -3.50 |
| 2/04/2003 | -3.78 |
| 4/11/2003 | -2.51 |
| 7960.00 | -2.54 |
| 5/12/2003 | -2.96 |
| 5/03/2004 | -3.70 |



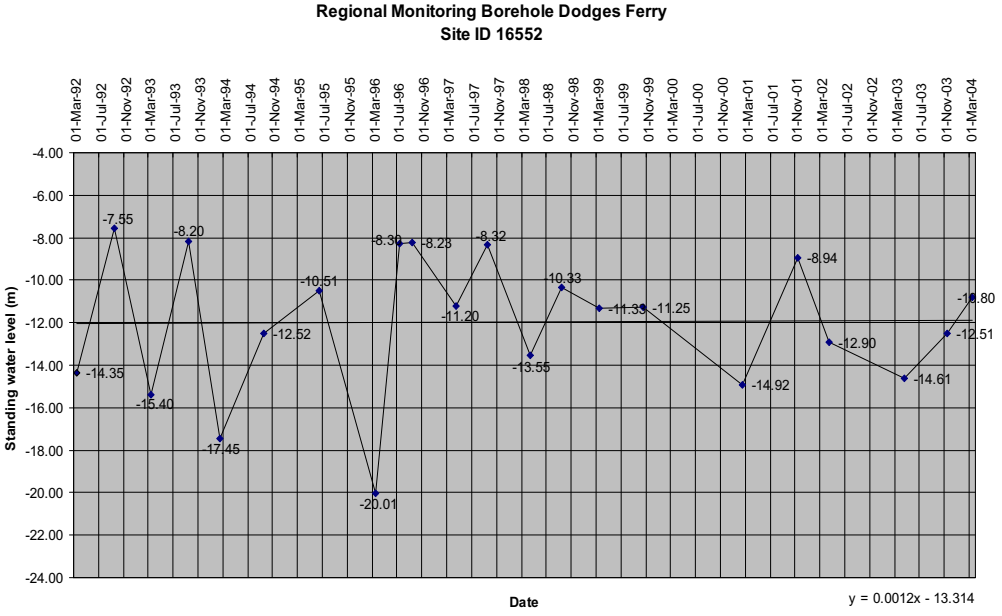
## Buckland (ID 16551)

| *Date* | *Depth* |
|---|---|
| 10/06/1992 | -7.05 |
| 6/10/1992 | -6.40 |
| 7/04/1993 | -6.75 |
| 1/09/1993 | -6.82 |
| 1/03/1994 | -6.20 |
| 9/09/1994 | -7.15 |
| 1/06/1995 | -7.32 |
| 9/11/1995 | -6.03 |
| 7/03/1996 | -6.28 |
| 8/06/1996 | -6.00 |
| 6/09/1996 | -5.88 |
| 3/04/1997 | -6.56 |
| 8/09/1997 | -6.75 |
| 3/04/1998 | -7.03 |
| 0/09/1998 | -7.00 |
| 5/03/1999 | -6.83 |
| 9/10/1999 | -6.86 |
| 0/02/2001 | -7.18 |
| 9/11/2001 | -7.69 |
| 3/04/2002 | -7.20 |
| 2/04/2003 | -7.19 |
| 5/11/2003 | -6.81 |
| 5/12/2003 | -6.74 |
| 5/12/2003 | -6.92 |
| 5/03/2004 | -6.91 |



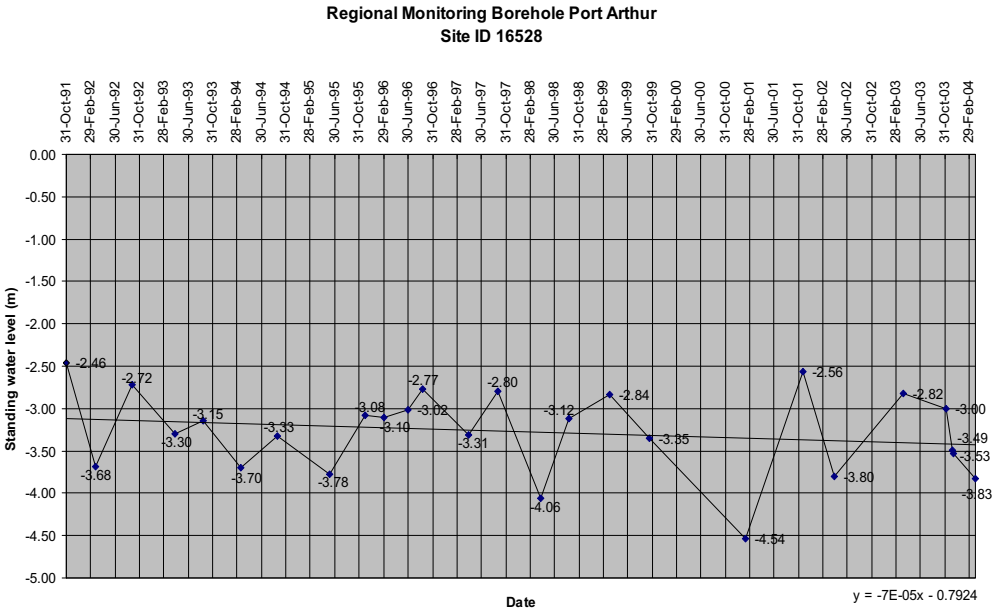

## Dodges Ferry (ID 16522)

| *Date* | *Depth* |
|---|---|
| 23/03/1992 | -14.35 |
| 2/09/1992 | -7.55 |
| 1/03/1993 | -15.40 |
| 4/09/1993 | -8.20 |
| 7/02/1994 | -17.45 |
| 5/09/1994 | -12.52 |
| 7/06/1995 | -10.51 |
| 9/03/1996 | -20.01 |
| 1/07/1996 | -8.30 |
| 3/09/1996 | -8.23 |
| 8/04/1997 | -11.20 |
| 3/09/1997 | -8.32 |
| 1/04/1998 | -13.55 |
| 1/09/1998 | -10.33 |
| 1/03/1999 | -11.33 |
| 4/10/1999 | -11.25 |
| 7/02/2001 | -14.92 |
| 1/11/2001 | -8.94 |
| 4/04/2002 | -12.90 |
| 3/04/2003 | -14.61 |
| 4/11/2003 | -12.51 |
| 9/03/2004 | -10.80 |



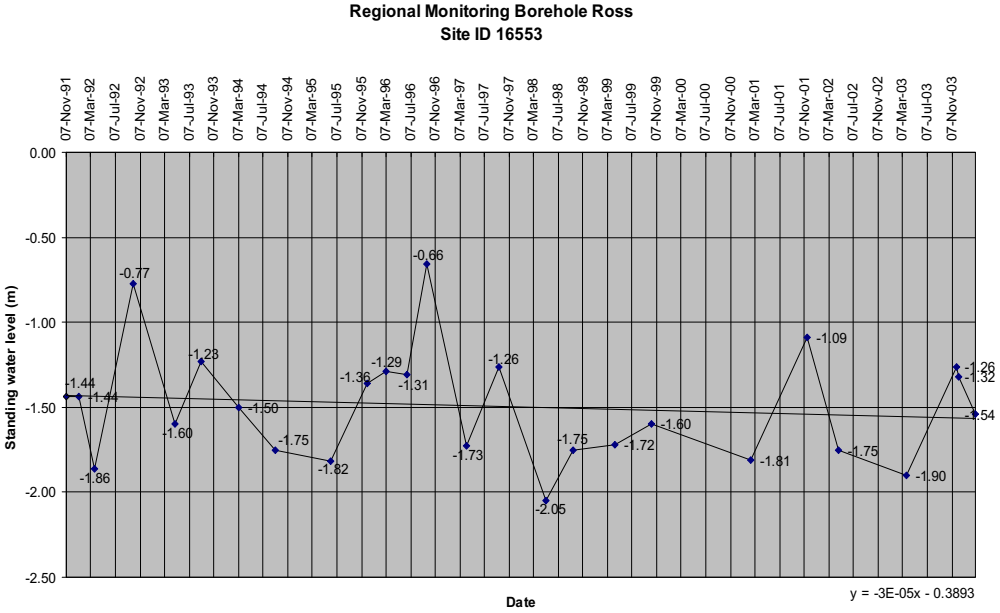
## Port Arthur (ID 16528)

| *Date* | *Depth* |
|---|---|
| 31/10/1991 | -2.46 |
| 3/03/1992 | -3.68 |
| 2/09/1992 | -2.72 |
| 6/04/1993 | -3.30 |
| 4/09/1993 | -3.15 |
| 1/03/1994 | -3.70 |
| 5/09/1994 | -3.33 |
| 7/06/1995 | -3.78 |
| 9/11/1995 | -3.08 |
| 1/03/1996 | -3.10 |
| 1/07/1996 | -3.02 |
| 3/09/1996 | -2.77 |
| 8/04/1997 | -3.31 |
| 3/09/1997 | -2.80 |
| 1/04/1998 | -4.06 |
| 1/09/1998 | -3.12 |
| 1/03/1999 | -2.84 |
| 4/10/1999 | -3.35 |
| 7/02/2001 | -4.54 |
| 1/11/2001 | -2.56 |
| 4/04/2002 | -3.80 |
| 3/04/2003 | -2.82 |
| 4/11/2003 | -3.00 |
| 8/12/2003 | -3.49 |
| 2/12/2003 | -3.53 |
| 9/03/2004 | -3.83 |



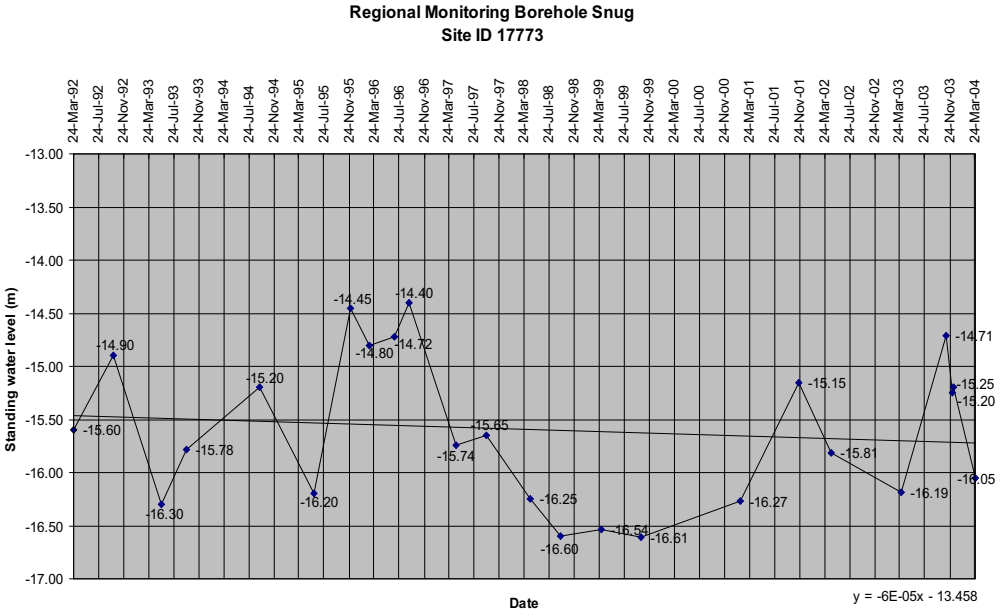

## Ross (ID 16553)

| *Date* | *Depth* |
|---|---|
| 07/11/1991 | -1.44 |
| 7/01/1992 | -1.44 |
| 4/03/1992 | -1.86 |
| 1/10/1992 | -0.77 |
| 9/04/1993 | -1.60 |
| 3/09/1993 | -1.23 |
| 9/03/1994 | -1.50 |
| 5/09/1994 | -1.75 |
| 8/06/1995 | -1.82 |
| 4/12/1995 | -1.36 |
| 5/03/1996 | -1.29 |
| 7/06/1996 | -1.31 |
| 4/09/1996 | -0.66 |
| 0/04/1997 | -1.73 |
| 6/09/1997 | -1.26 |
| 7/05/1998 | -2.05 |
| 7/09/1998 | -1.75 |
| 2/04/1999 | -1.72 |
| 3/10/1999 | -1.60 |
| 6/02/2001 | -1.81 |
| 0/11/2001 | -1.09 |
| 2/04/2002 | -1.75 |
| 7/03/2003 | -1.90 |
| 1/12/2003 | -1.26 |
| 1/12/2003 | -1.32 |
| 1/03/2004 | -1.54 |



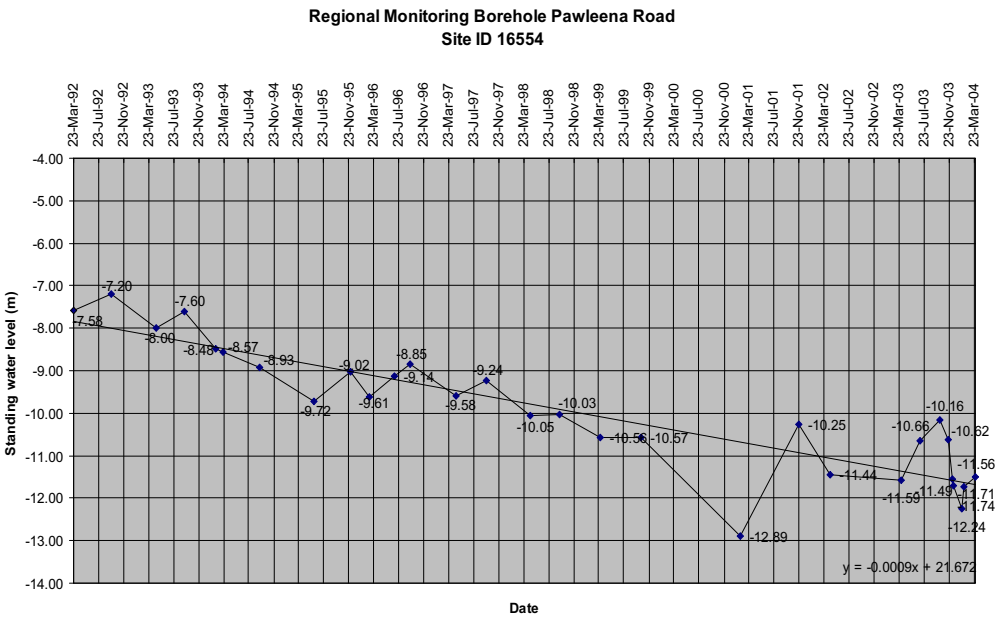
## Snug (ID 17773)

| *Date* | *Depth* |
|---|---|
| 24/03/1992 | -15.60 |
| 1/10/1992 | -14.90 |
| 6/05/1993 | -16.30 |
| 2/09/1993 | -15.78 |
| 4/09/1994 | -15.20 |
| 6/06/1995 | -16.20 |
| 0/11/1995 | -14.45 |
| 9/02/1996 | -14.80 |
| 2/07/1996 | -14.72 |
| 2/09/1996 | -14.40 |
| 9/04/1997 | -15.74 |
| 2/09/1997 | -15.65 |
| 2/04/1998 | -16.25 |
| 8/09/1998 | -16.60 |
| 1/04/1999 | -16.54 |
| 5/10/1999 | -16.61 |
| 8/02/2001 | -16.27 |
| 1/11/2001 | -15.15 |
| 4/04/2002 | -15.81 |
| 1/04/2003 | -16.19 |
| 3/11/2003 | -14.71 |
| 8/12/2003 | -15.25 |
| 2/12/2003 | -15.20 |
| 6/03/2004 | -16.05 |




## Pawleena Rd (16554)

| *Date* | *Depth* |
|---|---|
| 23/03/1992 | -7.58 |
| 2/09/1992 | -7.20 |
| 6/04/1993 | -8.00 |
| 4/09/1993 | -7.60 |
| 4/02/1994 | -8.48 |
| 1/03/1994 | -8.57 |
| 5/09/1994 | -8.93 |
| 7/06/1995 | -9.72 |
| 9/11/1995 | -9.02 |
| 1/03/1996 | -9.61 |
| 1/07/1996 | -9.14 |
| 3/09/1996 | -8.85 |
| 8/04/1997 | -9.58 |
| 3/09/1997 | -9.24 |
| 1/04/1998 | -10.05 |
| 1/09/1998 | -10.03 |
| 1/03/1999 | -10.56 |
| 4/10/1999 | -10.57 |
| 7/02/2001 | -12.89 |
| 1/11/2001 | -10.25 |
| 4/04/2002 | -11.44 |
| 3/04/2003 | -11.59 |
| 2/07/2003 | -10.66 |
| 0/10/2003 | -10.16 |
| 8/11/2003 | -10.62 |
| 8/12/2003 | -11.56 |
| 2/12/2003 | -11.71 |
| 3/01/2004 | -12.24 |
| 2/02/2004 | -11.74 |
| 9/03/2004 | -11.49 |



# APPENDIX 5

## Calibration values provided by Dataflow Systems Pty Ltd

| *Sensor S/No.* | *Calculated Sensor Slope* | *Linearity correction* |
|---|---|---|
| 10271 | 0.4487713 | 100 |
| 10272 | 0.4509512 | 99.99998 |
| 10273 | 0.455113 | 99.99996 |
| 10281 | 0.4911202 | 100 |
| 10334 | 0.4773195 | 100 |
| 10335 | 0.4991672 | 99.99999 |
| 10390 | 0.4956634 | 99.99999 |
| 10391 | 0.4708404 | 100 |
| 10519 | 0.4937138 | 100 |
| 10520 | 0.4942127 | 99.99998 |
| 10521 | 0.4861305 | 99.99998 |
| 10522 | 0.4807424 | 99.99998 |
| 10523 | 0.487727 | 99.99999 |
| 10524 | 0.4786342 | 100 |
| 10525 | 0.4842252 | 100 |
| 10526 | 0.4867212 | 100 |
| 10527 | 0.4907148 | 100 |
| 10528 | 0.4896758 | 99.99999 |
| 10529 | 0.4868828 | 99.99999 |
| 10530 | 0.4886783 | 99.99999 |
| 10531 | 0.4942643 | 100 |
| 50275 | 0.7120048 | 99.99987 |
| 50276 | 0.7079628 | 100 |
| 50392 | 0.7124233 | 100 |
| 50393 | 0.7137653 | 100 |
| 50394 | 0.7419478 | 100 |
| 50395 | 0.7147239 | 100 |
| 50396 | 0.7292945 | 99.99994 |
| 50397 | 0.7181749 | 100 |
| 50450 | 0.7089463 | 100 |
| 50451 | 0.679324 | 100 |
| 50452 | 0.693837 | 100 |
| 50453 | 0.7200795 | 99.99999 |
| 50454 | 0.7274354 | 100 |
| 50455 | 0.7059642 | 99.99997 |

The table below outlines the condition of the logger/sensor set up in late March and early April 2003 and calculated calibration equations.

| *Bore hole name / Feature ID* | *Operational state of Dataflow set up* | *Calculated calibration equation* |
|---|---|---|
| Barrington — 16536 | Logger no: 40926<br>Sensor: 3.2 metre probe<br>*Operational* | y = 1653.9x + 265.8<br>$R^2$ = 0.9994 |
| Beulah — 4290 (old 16537) | Logger no: 43858<br>Sensor: 50276<br>*Non operational* | N/A |
| Bicheno — 16548 | Logger no: 41886<br>Sensor: 50392<br>*Operational* | y = 647.97x - 2.6<br>$R^2$ = 1 |
| Bothwell — 17772 | No Data flow system | N/A |
| Branxholm — 16546 | Logger no: 40931<br>Sensor: 3.2 metre probe<br>*Operational* | y = 60.214x + 196.47<br>$R^2$ = 0.8822 |
| Buckland — 16551 | Logger no: 41157<br>Sensor: 50396<br>*Non operational* | N/A |
| Burnie tip 1 — 17776 | No Data flow system | N/A |
| Burnie tip 4 — 17780 | No Data flow system | N/A |
| Calder — 16533 | Logger no: 42478<br>Sensor: 50450<br>*Non operational* | N/A |
| Chudleigh — 16538 | Logger no: Not recorded<br>Sensor: 10334<br>*Operational* | y = 1007.3x + 383.58<br>$R^2$ = 0.9994 |
| Cressy — 16541 | Logger no: 40929<br>Sensor: 3.2 metre probe<br>*Operational* | y = 813.14x - 99<br>$R^2$ = 0.9867 |
| Dodges Ferry — 16552 | No Data flow system | N/A |
| Free's Bore — 807 | No Data flow system | N/A |
| Hagley — 16540 | Logger no: 42476<br>Sensor: 50451<br>*Operational* | y = 560.12x + 376.06<br>$R^2$ = 0.9997 |
| Hampshire — 16534 | Logger no: 41154<br>Sensor: 10392<br>*Operational* | y = 485.59x + 163.14<br>$R^2$ = 0.9934 |
| Huonville — 16923 | No Data flow system | N/A |
| Jetsonville — 16545 | Logger no: 41600<br>Sensor: 10281<br>*Operational* | y = 1021.2x + 711.15<br>$R^2$ = 0.9997 |
| Lilydale — 16542 | Logger no: 40927<br>Sensor: 10271<br>*Non operational* | N/A |
| Little Swanport — 16549 | Logger no: 41880<br>Sensor: 50939<br>*Operational* | y = 655.02x + 185.08<br>$R^2$ = 0.9998 |
| Melton Mowbray — 16529 | Logger no: 42480<br>Sensor: 50453<br>*Operational* | y = 1007x + 94.015<br>$R^2$ = 0.9986 |

| *Bore hole name / Feature ID* | *Operational state of Dataflow set up* | *Calculated calibration equation* |
|---|---|---|
| Montagu — 16532 | Logger no: 42475<br>Sensor: 50455<br>*Operational* | y = 1070.1x + 322.88<br>$R^2$ = 0.9983 |
| Mooreville Road — 16535 | Logger no: 42501<br>Sensor: 10273<br>*Operational* | y = 39.3x + 15830<br>$R^2$ = 0.9447 |
| Osmaston — 16539 | Logger no: 42477<br>Sensor: 10391<br>*Operational* | y = 107.56x + 401.84<br>$R^2$ = 0.929 |
| Pawleena Road — 16554 | Logger no: 40411<br>Sensor: 3.2 metre probe<br>*Operational* | y = 1343.5x + 484.4<br>$R^2$ = 0.9955 |
| Pipers River — 16543 | Logger no:41155<br>Sensor: 50275<br>*Non operational* | N/A |
| Port Arthur — 16528 | Logger no: 40412<br>Sensor: 3.2 metre probe<br>*Operational* | y = 2039.2x + 158.63<br>$R^2$ = 0.9989 |
| Ross — 16553 | Logger no: 52473<br>Sensor: 50454<br>*Operational* | y = 1018.2x - 603.21<br>$R^2$ = 0.9942 |
| Snug — 17773 | Logger no: 40922<br>Sensor: 3.2 metre probe<br>*Operational* | y = 1325.7x + 2920.2<br>$R^2$ = 0.9384 |
| South Forest — 16527 | Logger no: 41882<br>Sensor: 10335<br>*Non operational* | N/A |
| Spreyton — 18606 | No Data flow system | N/A |
| St Marys — 16526 | Logger no: 40409<br>Sensor: 3.2 metre probe<br>*Operational* | y = 1886.4x + 523.7<br>$R^2$ = 0.997 |
| Togari — 16531 | Logger no: 41887<br>Sensor: 50397<br>*Operational* | y = 621.34x + 127.05<br>$R^2$ = 0.9792 |
| Trowutta — 16530 | Logger no: 41883<br>Sensor: 50394<br>*Non operational* | N/A |
| Tunnack — 16550 | Logger no: 42474<br>Sensor: 50395<br>*Non operational* | N/A |
| Waterhouse — 16544 | Logger no: 43867<br>Sensor: 3.2 metre probe<br>*Operational* | y = 1510.8x + 208.4<br>$R^2$ = 0.9894 |
| Winnaleah — 16547 | Logger no: 40925<br>Sensor: 3.2 metre probe<br>*Operational* | y = 1525.2x + 1752.1<br>$R^2$ = 0.9221 |

***Summary***

| | |
|---|---|
| Number of bores with no Dataflow system: | 7 (19.5%) |
| Number of bores with non-operational dataflow systems: | 8 (22.2%) |
| Number of bores with operational dataflow systems: | 21 (58.3%) |
| **Total number of bores:** | **36 (100.0%)** |

# APPENDIX 6

# Dataflow logger and sensor system — Internal MRT operational procedures

*Prepared by Andrew Ezzy*
*Hydrogeologist*
*April 2004*

## 1. Introduction

The *Dataflow* temperature and pressure hardware and software were designed to measure, store, and calibrate standing water data from groundwater bores. Field application of the Dataflow system demonstrated that an operational procedures manual was required to maintain data integrity and reliability. The use of this operational procedures manual should be supplemented with the technical handbook supplied by Dataflow Pty Ltd.

The *Dataflow* system consists of two probe types. The older 3.2 metre PVC probe was designed to measure groundwater level variations of up to three metres. The second suspended cable probe was designed to measure variations up to ten metres. Groundwater variations greater than the design specifications for either probe type has resulted in loss of data integrity.

## 2. Field operational procedures for *Dataflow* temperature and pressure water level probes

### *2.1 Initial setting up of data logger*

- ☐ Install battery into data logger and check battery voltage is greater than 7 volts.

### *2.2 Entering and initialising calibration files*

- ☐ Start *Dataflow* software package.
- ☐ Select option 5 — **CALIBRATION FILE DATA ENTER**.
- ☐ Select option 1 — **ENTER NEW VALUES**.
- ☐ From the paper copy sheets provided by Dataflow Pty Ltd enter the probe sensor serial number at the **Recorder or Sensor Serial Number** prompt.
- ☐ Select the appropriate number of decimal places provided on the paper copy calibration.
- ☐ At the **Sensor name** prompt — name the sensor the same name as the serial number.
- ☐ Enter the slope provided on the paper copy calibration.
- ☐ Enter the Offset provided on the paper copy calibration.
- ☐ The relative value is normally recorded as 1.2.
- ☐ Select **ENTER** to save the new values.
- ☐ The software will default back to the main menu screen.

### *2.3 Installing a data logger and probe in a borehole*

- ☐ Start *Dataflow* software package.
- ☐ Select the **SET UP DATA RECORDER** option.
- ☐ All data loggers used by MRT are the 392 model. At the **MODEL NUMBER OF DATA RECORDER** dialogue box, select option 1 — **389/390/392 Data Recorder**.
- ☐ Enter the serial number at the **392 Logger serial number** prompt.
- ☐ At the **Key Disk and Path for Data saving** prompt, enter **C:\DATAFLOW\DATA**. Data can be moved from this directory after download.
- ☐ The probe first must be calibrated in the bore at known intervals. At the **Use this logger set up, Y/N**, type **'N'**.

- In the **START MODE** select option 2 — **START IMMEDIATE**.
- From **PROGRAM TYPE**, selection option 1 — **FIXED TIME, SENSOR SCAN**.
- If the probe is a 3.2 metre probe in the **SENSOR SELECTION PROGRAM** box, under **Single channel sensors**, select option 1 — **Period WL, Humidity**. Type the logger serial number for the probe number.
- If the probe is a suspended cable probe in the **SENSOR SELECTION PROGRAM** box, under **Dual channel sensors**, select option 2 — **Temp + Pressure Sensor**. At the **SENSOR 1 SERIAL No.** prompt type the number of the probe serial number. At the **SENSOR 2 SERIAL No.** prompt type the number of the probe serial number followed by **'P'**.
- The sensor numbers are then displayed in the **Sensor's selected, in order selected** dialogue box. If correct select **ENTER**.
- The sensor numbers are then displayed in the **Selected sensors to be used in the average mode** dialogue box. If correct select **ENTER**.
- Set the **SENSOR SCAN TIME SETTINGS** to 01 MINS.
- At the **Use this logger set up, Y/N**, if the settings are correct type **Y**.
- If all existing data have been removed from the data logger hit any key to remove the flashing warning on data loss.
- Connect the cable to the computer and data logger and key **ENTER**.
- At the **SERIAL port number and cable type**, accept the **1N** option and key **ENTER**. Get stop watch ready to start.
- Once the **DATA RECEIVED BY LOGGER** message has appeared, start the stop watch.
- Place the probe at set depths below the water table (e.g. 0.5, 1.0, 1.5, 2.0 and 2.5 metres) at the one minute set intervals.
- Remove the *Dataflow* system from the bore and download the calibration file. Reset the logger as outlined above. Set to record at 03 hour intervals.

### *2.4 Downloading data from a data logger*

- Remove *Dataflow* system from bore and dry off surface water.
- Measure and record the battery voltage. Replace the battery if the voltage is below 6.7 V.
- Start *Dataflow* software package.
- Select option 2 — **LOAD DATA FROM LOGGER TO FILE**.
- Select option 1 — **389/390/292/490/691/692/DS93 Recorder**.
- At the **FILE NAME TO SAVE DATA IN** prompt, type the name of the borehole (e.g. CRESSY or MG2000/2).
- The next **Enter your text remark, if required, on the line below** box holds the metadata on the download file. Type in the name of the bore, nature of file (e.g. data or calibration) and the date of download.
- Connect the cable to the computer and data logger and key **ENTER**.
- At the **SERIAL port number and cable type**, accept the **1N** option and key **ENTER**. Get stop watch ready to start.
- Once the data have been downloaded check if the data are complete using the print screen option. Key **'N'** to return to the main menu screen.

### *2.5 Graphing the data in Microsoft Excel*

- To allow import into Microsoft Excel select option 4 — **DATA FILE PRINT** from the *Dataflow* main screen menu.
- Key **ENTER** to select **Disk drive for data source. C**
- Select the **DATA <DIR>** folder.
- Select the name of the data file to graph.
- From the **BINARY FILE, DATA CONVERSION** list select option 4 — **TEXT FILE, .TXT EXTENSION**.
- Accept the next lists of data parameters by the **ENTER** key. If a dual channel probe, type '2' at the prompt to export both channels.
- The software will print the file to the directory and default to the main *Dataflow* menu screen.
- Open Microsoft Excel.
- Open the .TXT extension file for the data logger.
- In the **Text Import Wizard — Step 1 of 3** dialogue box, select the **Fixed with** option and click **Next >**.

- In the **Text Import Wizard — Step 2 of 3** dialogue box, set the column lines to separate the data sets as instructed in the dialogue box and click **Next >**.
- In the **Text Import Wizard — Step 3 of 3** dialogue box, set the first column to **Date** then click **Finish**.
- Two or three columns (A to C) of data should appear (depending on the probe type, plus the header metadata. The first is the date and time of the record, second the un-calibrated temperature reading, third the un-calibrated pressure.
- Select column A and right click. From the drop down menu select **Format Cells**.
- If not already selected, select the **Number** tab from the **Format Cells** dialogue box. In the **Category** white selection box, select **Custom**. In the **Type** white selection box, select **dd/mm/yyyy hh/mm**. Click **OK**.
- Columns A, B or C can now be used in the graphing function of Microsoft Excel to produce custom hydrographs.

Data files can be pasted into the same Microsoft Excel workbook after each download.

## 3. Current data storage procedure

Data are stored in sub-directories (named after the month of collection) in the directory T:\ground_water\Main_Statewide_monitoring_network\Post_02_2003_data\Dataflow_system.

## 4. Dataflow system efficiency

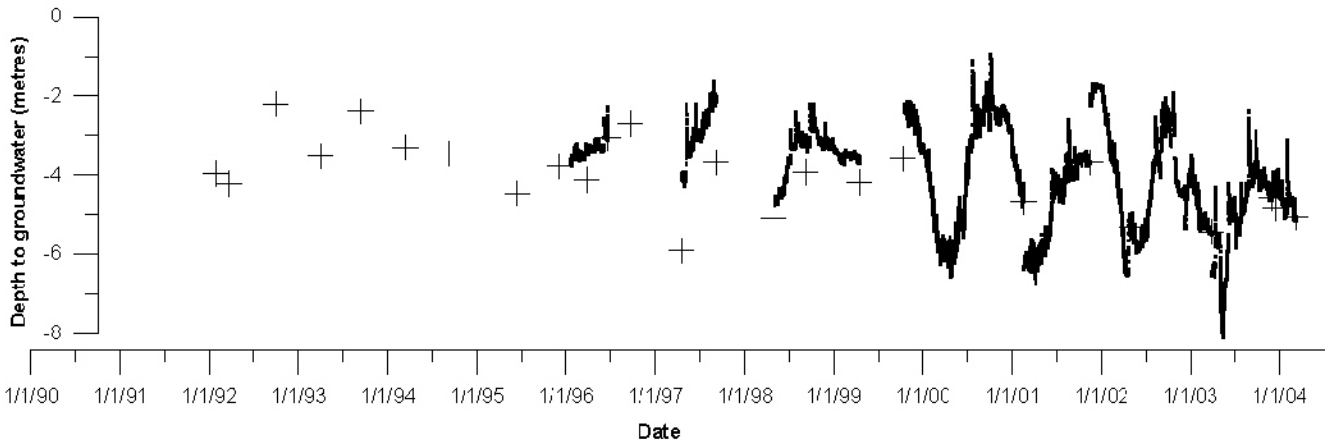
Field calibration must be undertaken of the probe at each down load event. This system is time consuming to use and calibrations tend to drift over time.

# APPENDIX 7

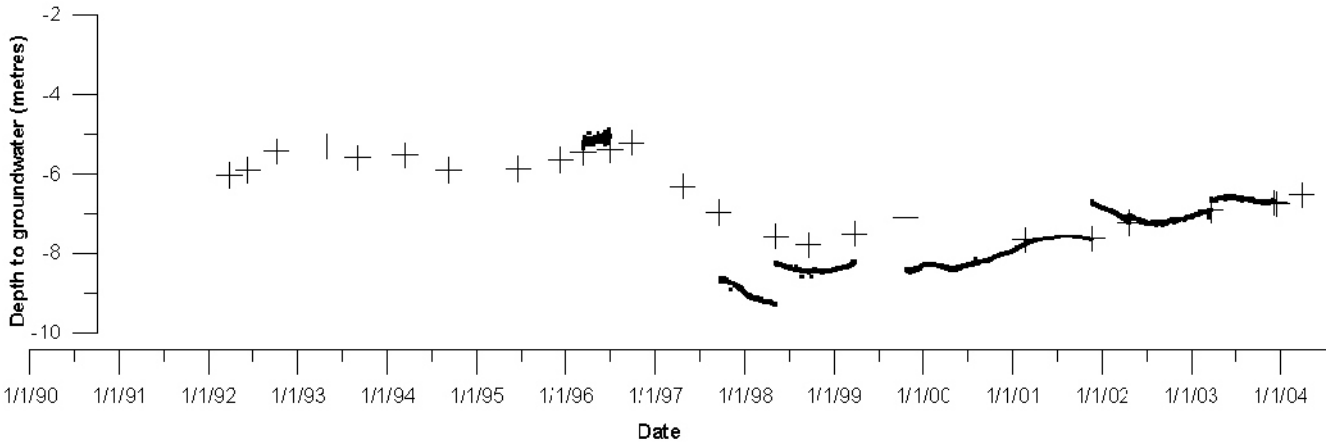
## Dataflow hydrographs and manual standing water level graphs

+ = Manual standing water level, solid line = Dataflow automatic SWL readings

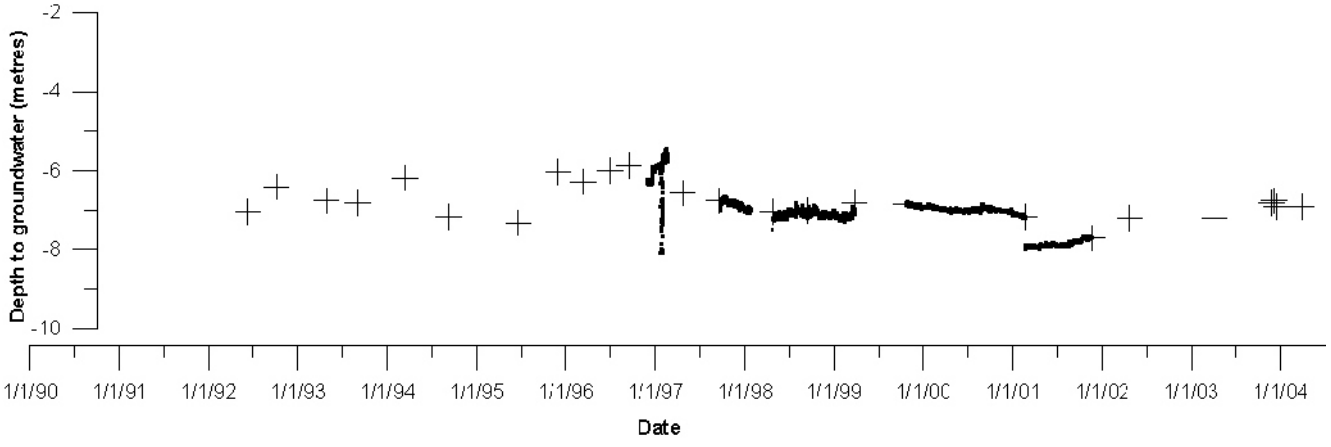
### Barrington



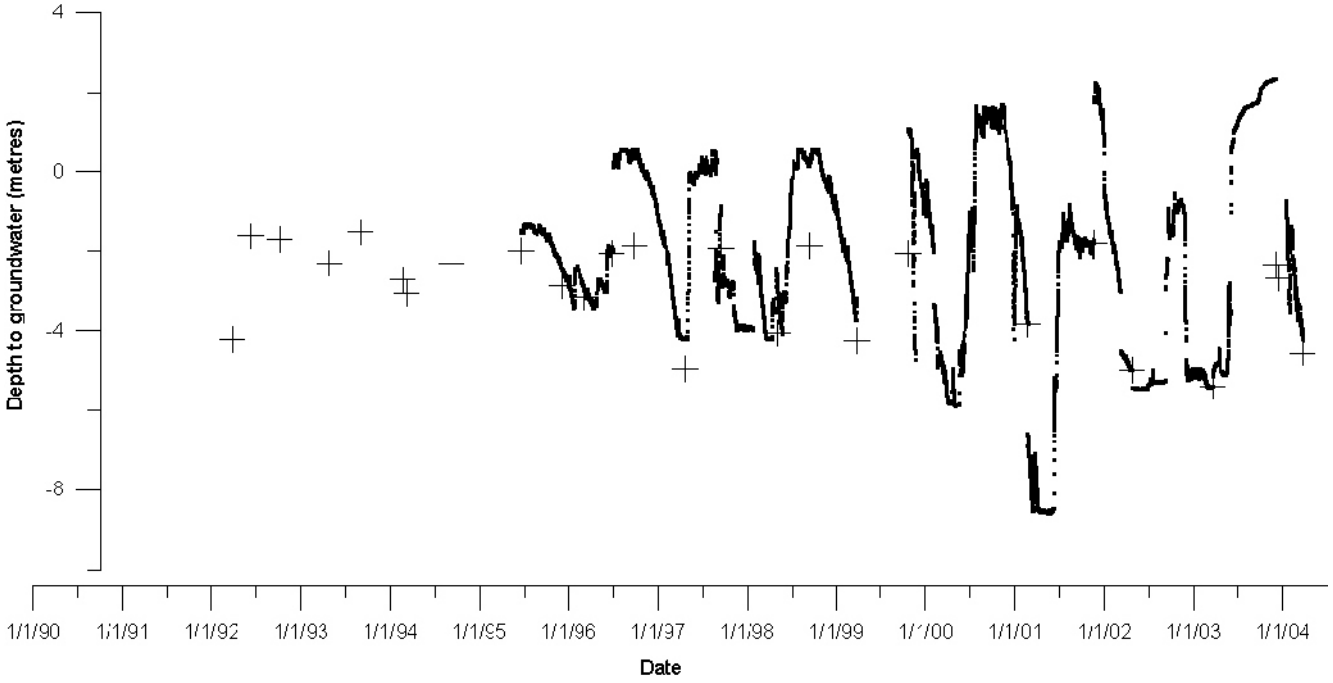

### Bicheno



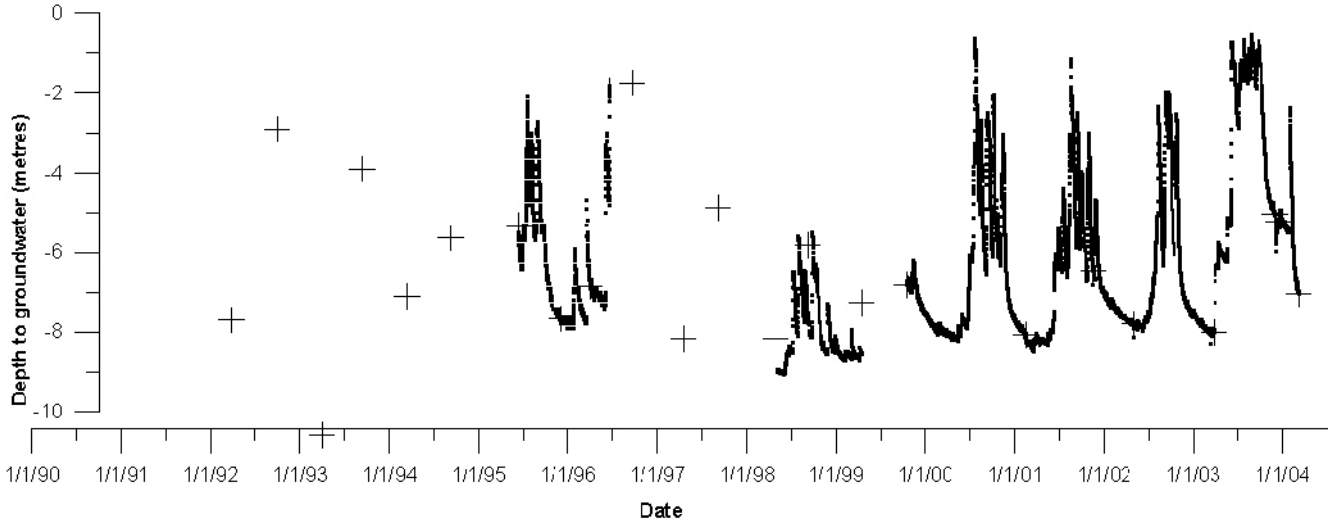

### Buckland



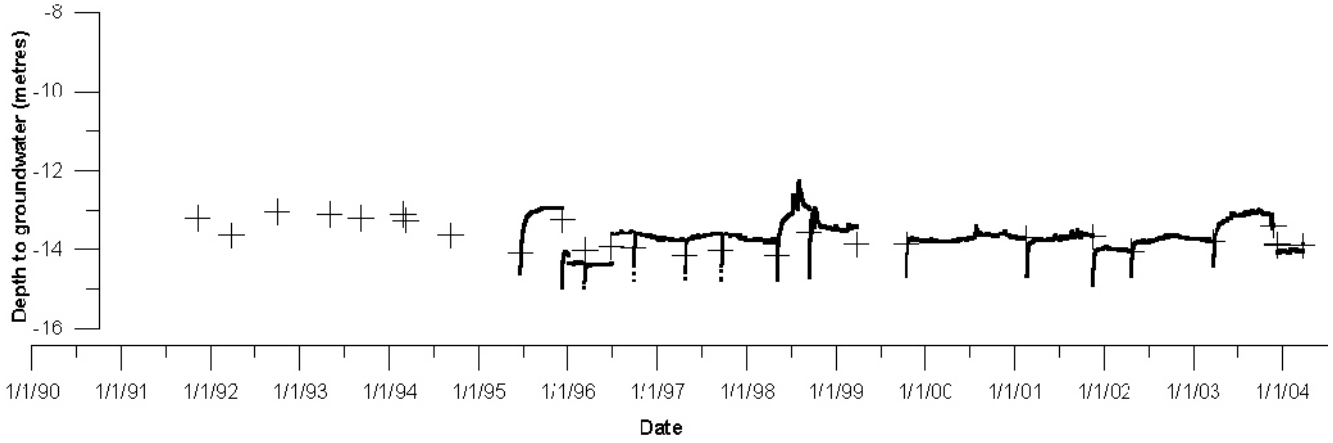
## Branxholm



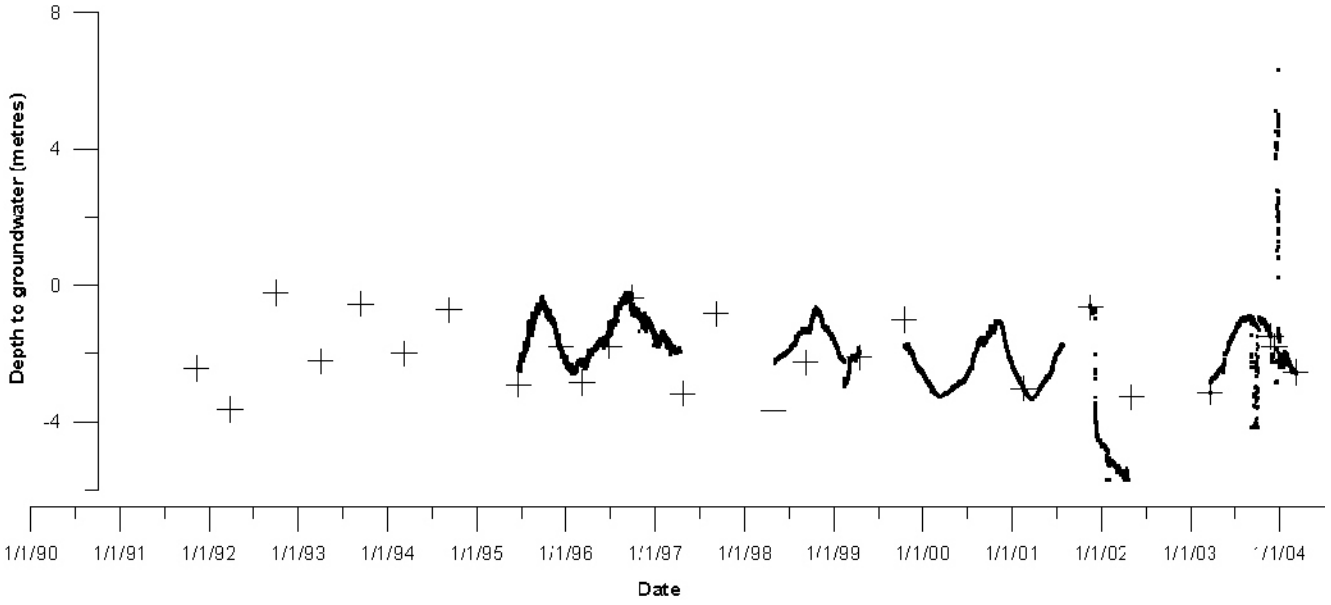

## Chudleigh



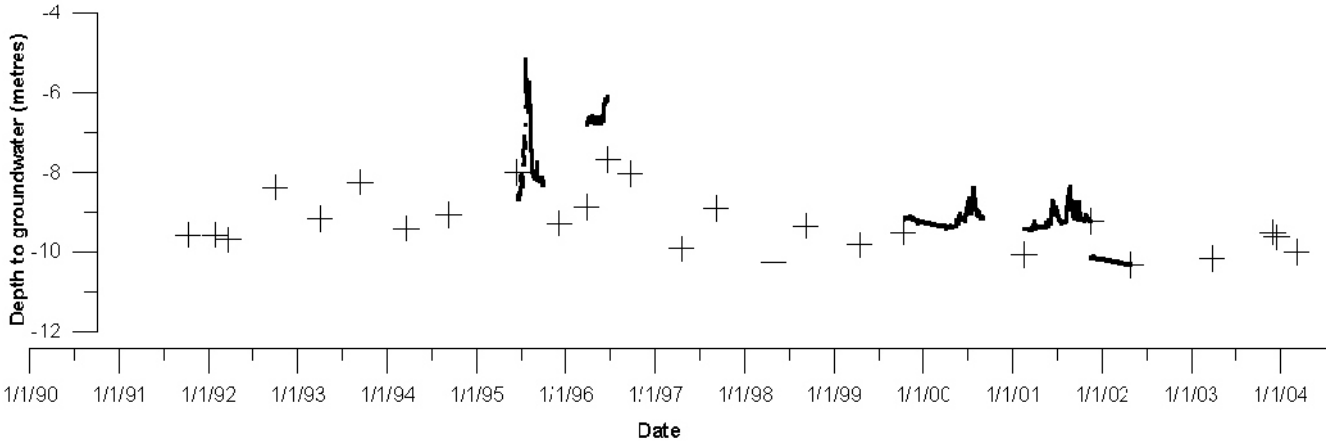

## Cressy



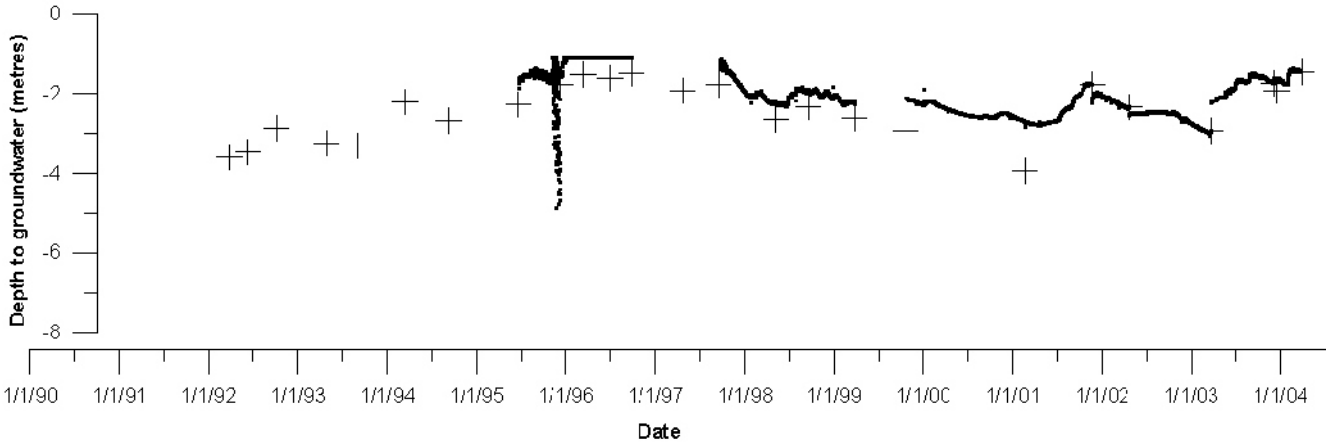
## Hagley



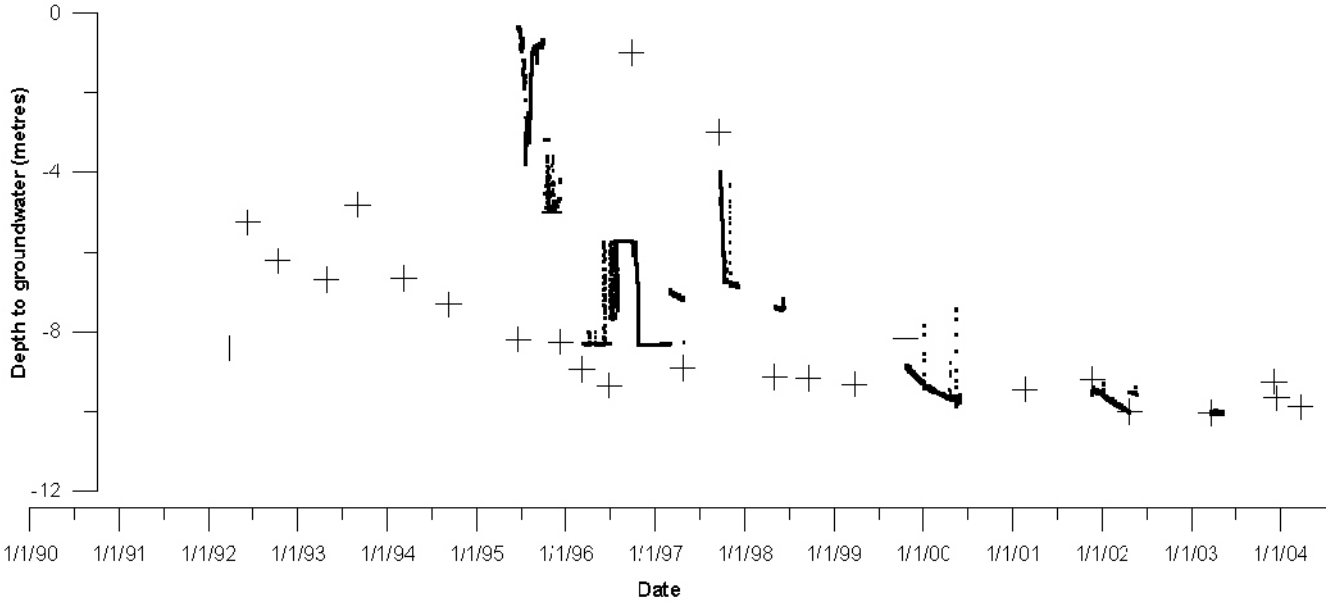

## Hampshire



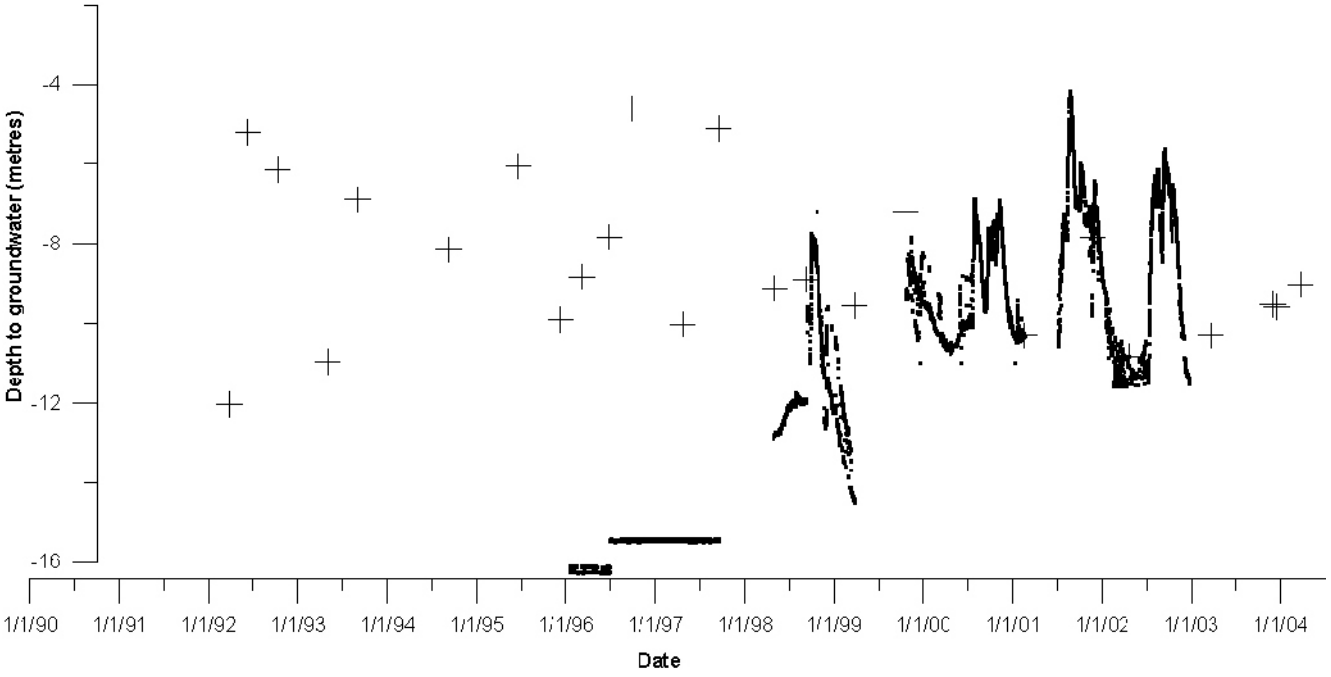

## Little Swanport



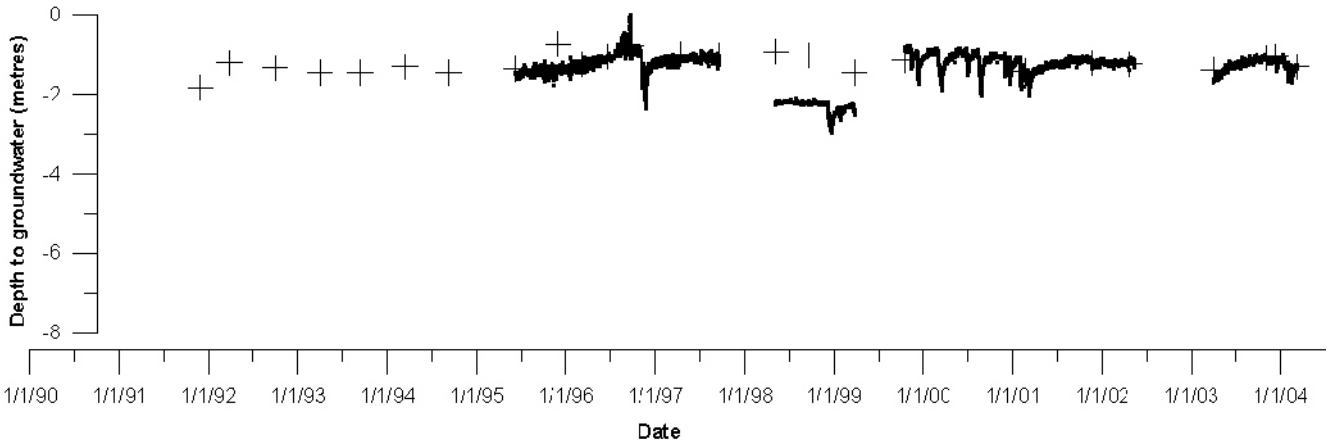
## Jetsonville



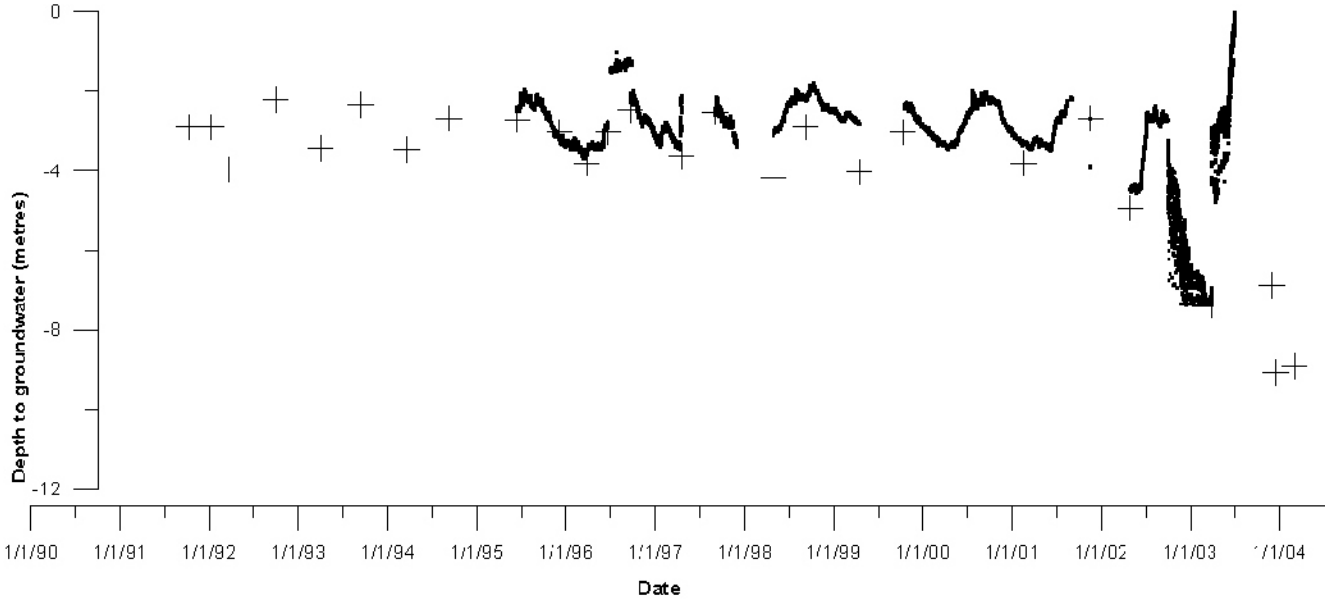

## Lilydale



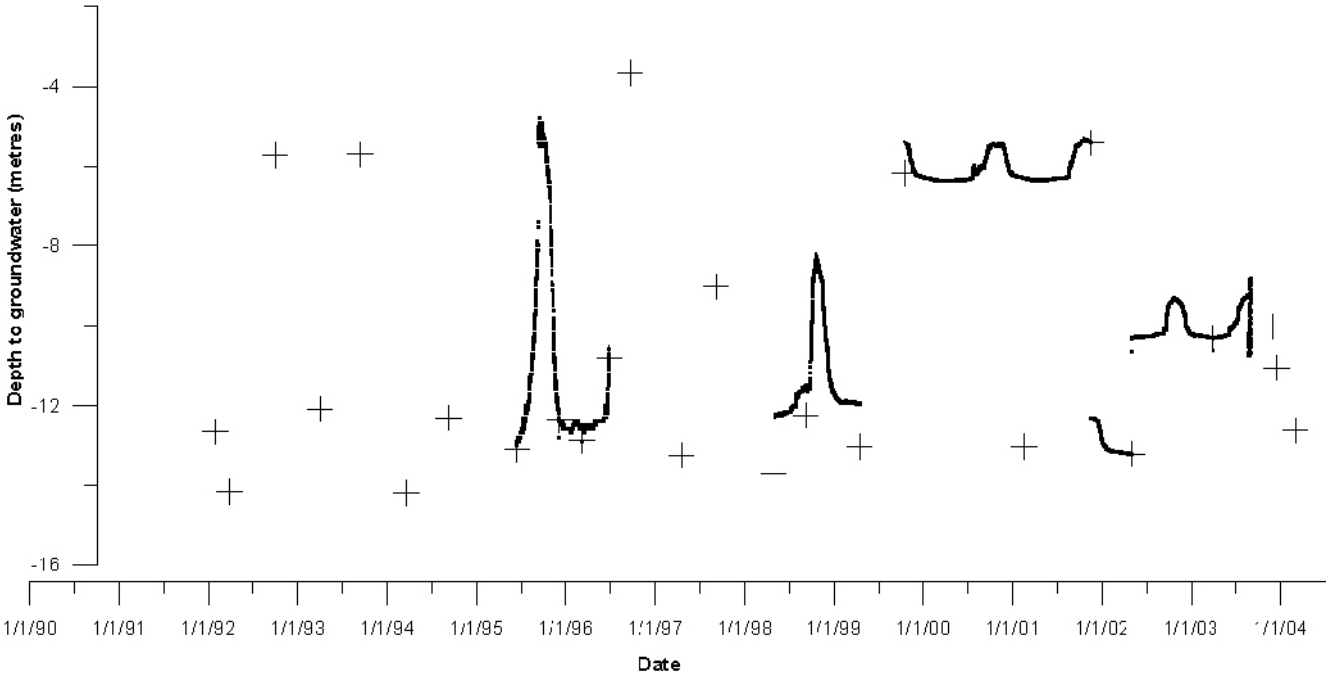
## Melton Mowbray



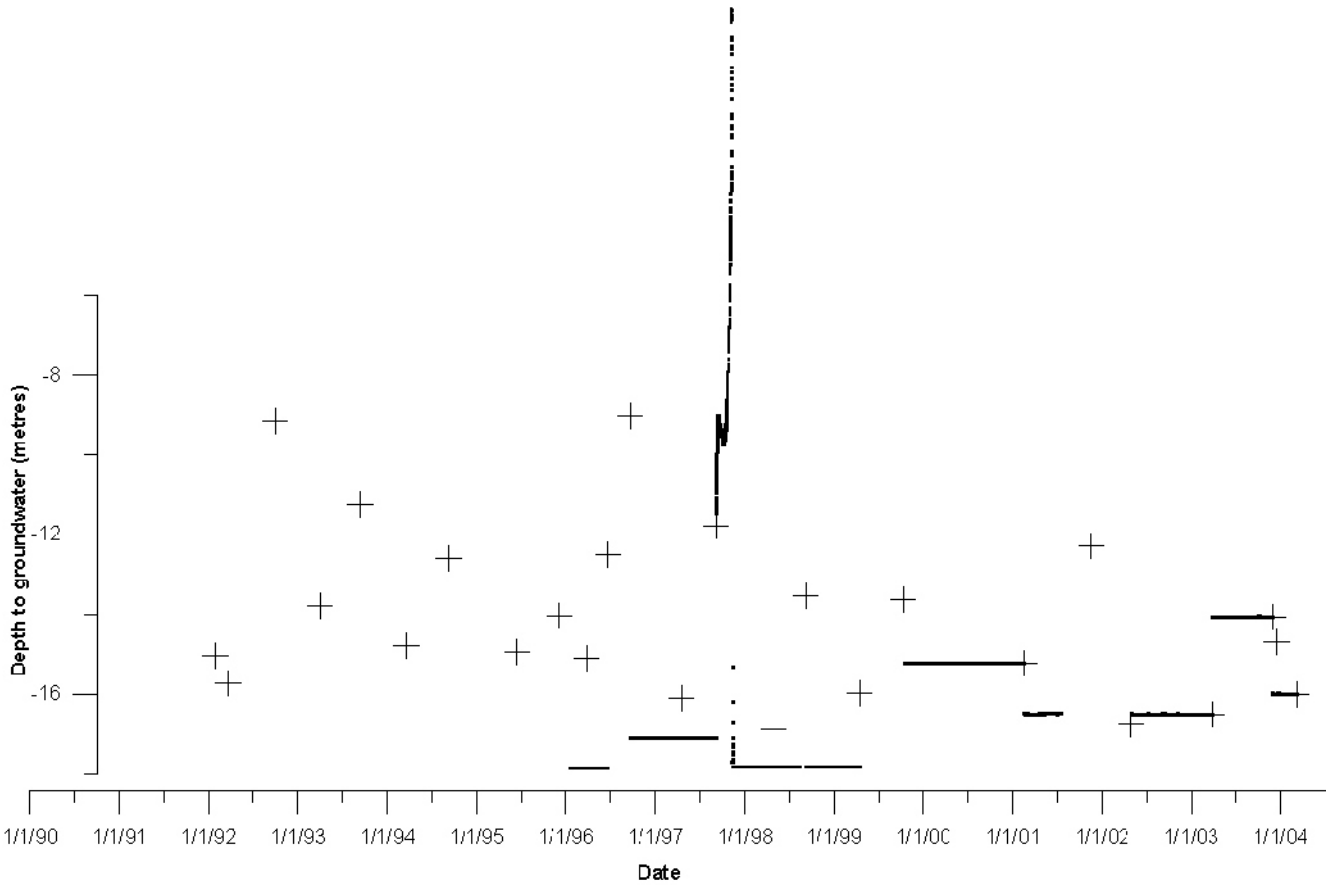

## Montagu



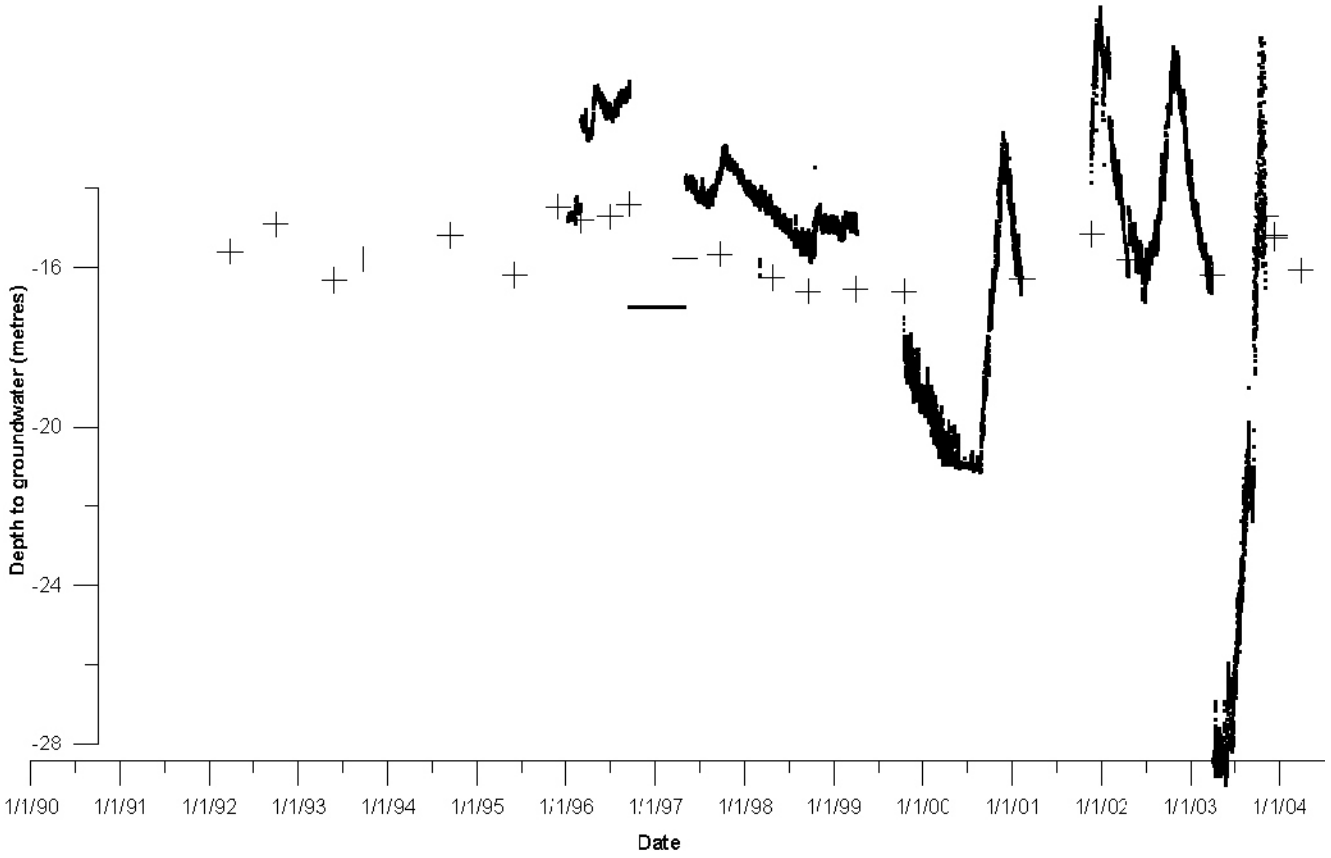

## Osmaston



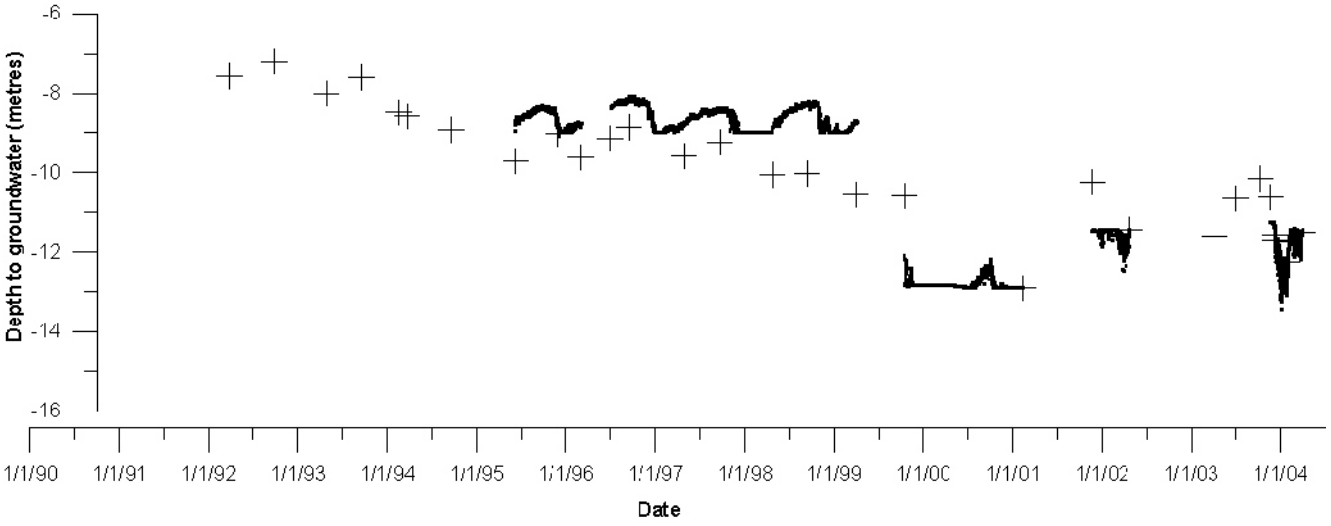
## Mooreville



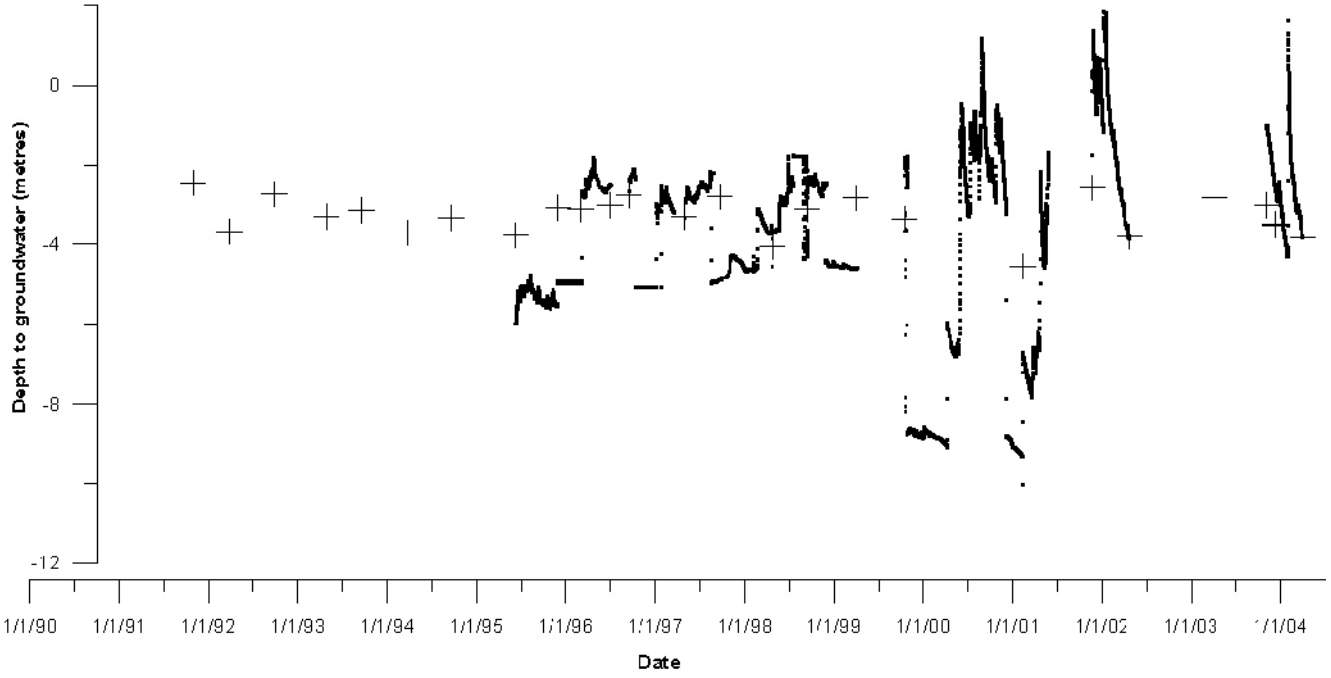

## Snug



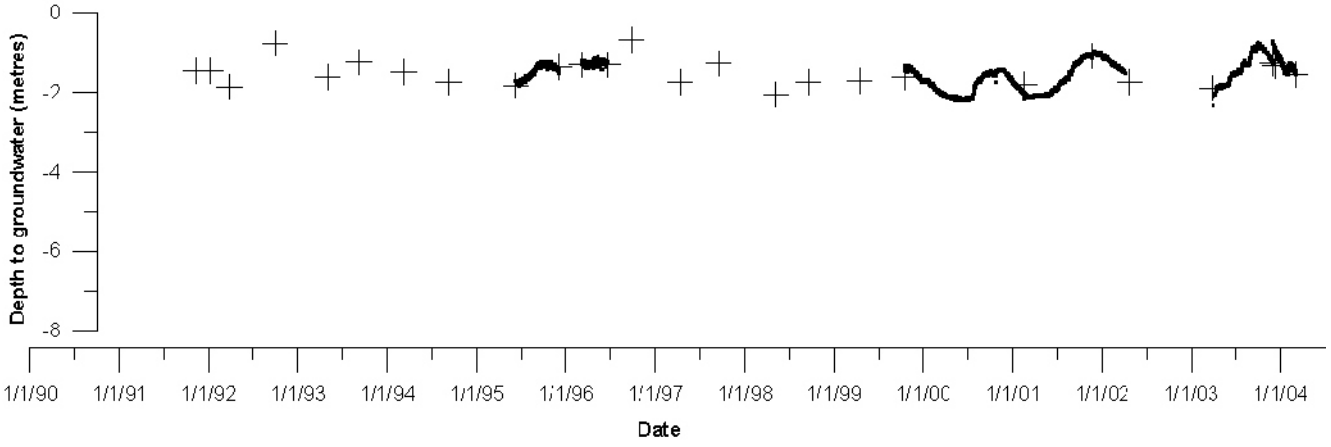
## Pawleena



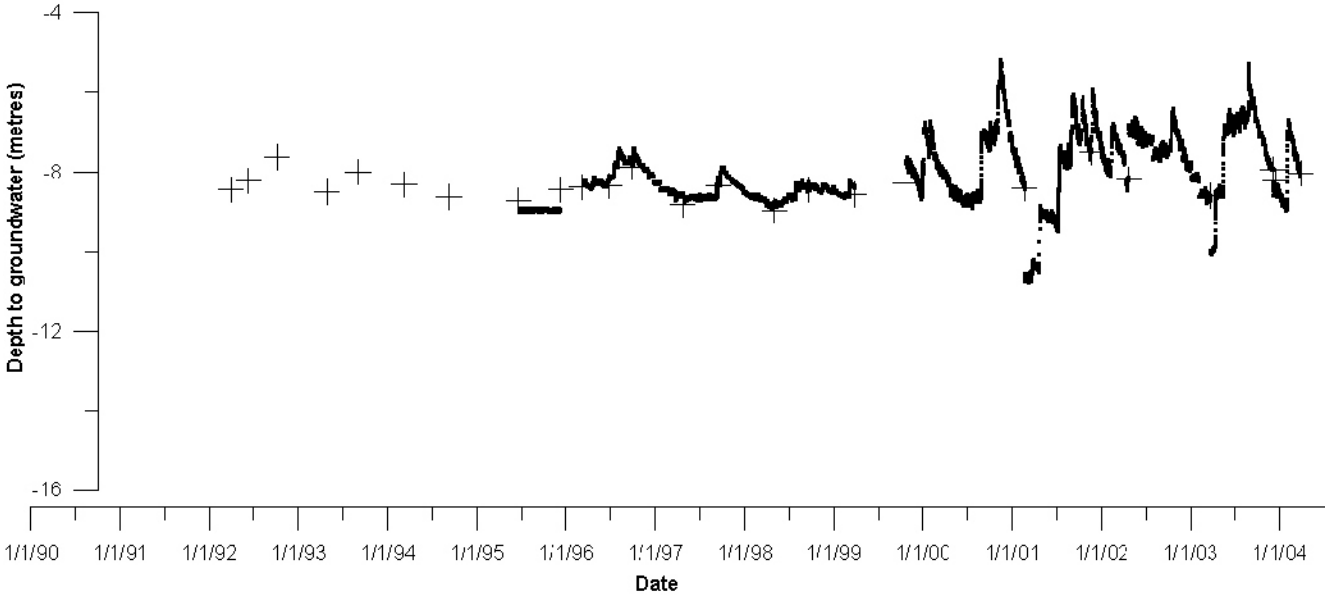

## Port Arthur



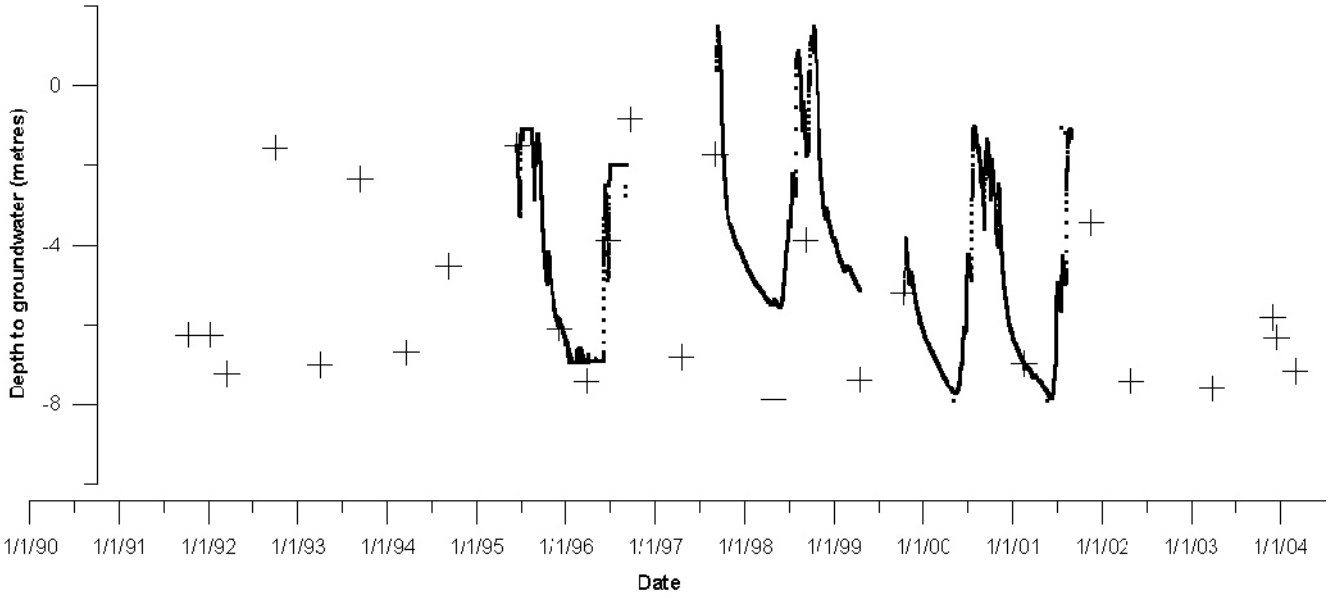

## Ross



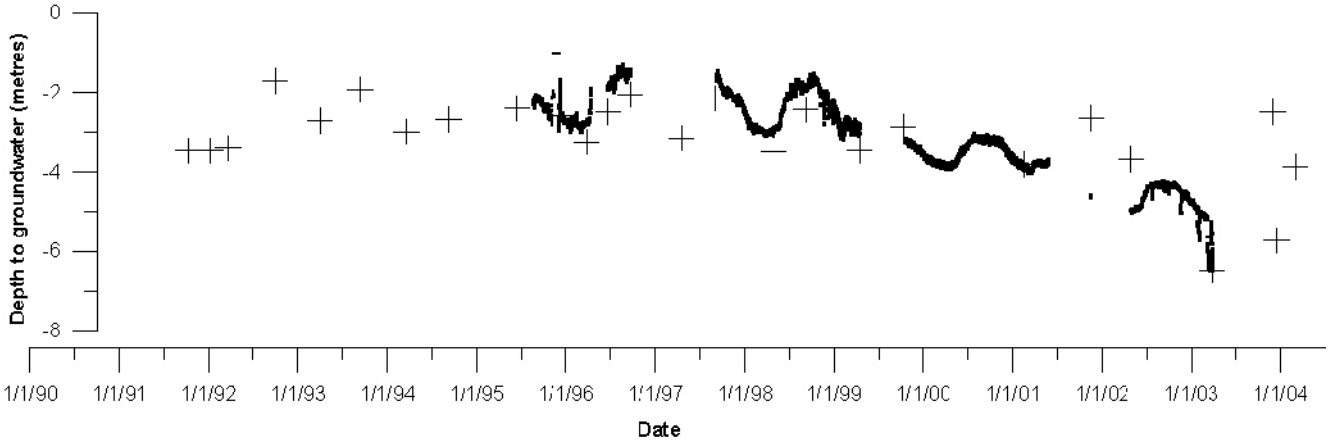
## St Marys



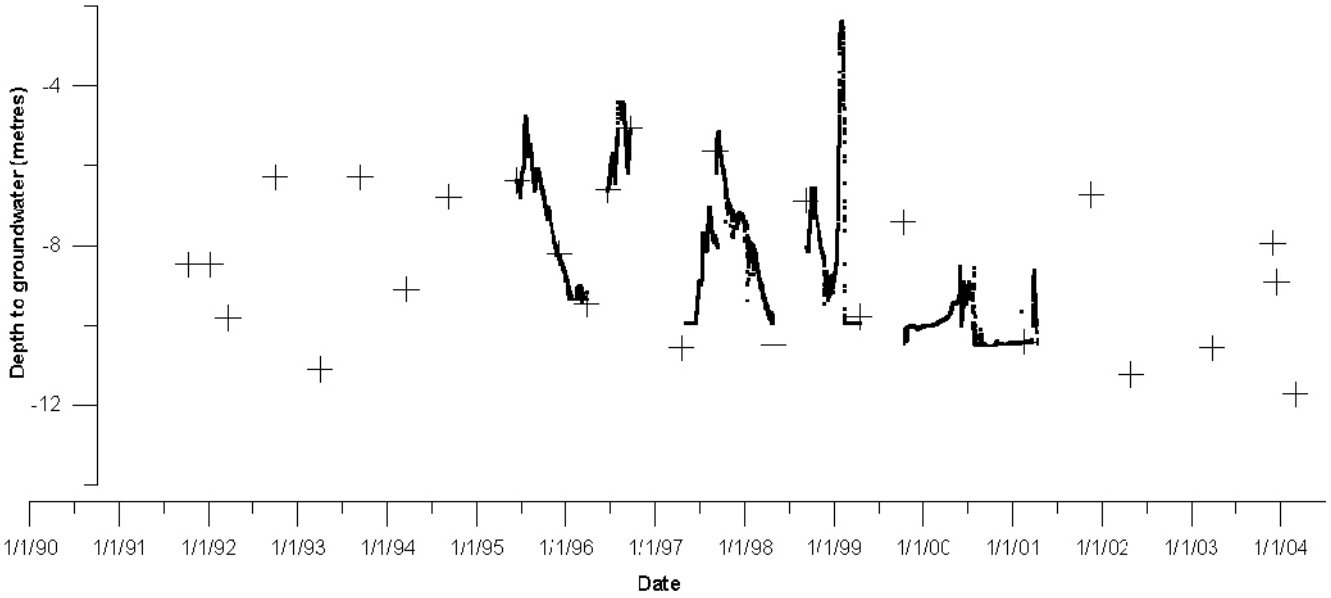

## South Forest



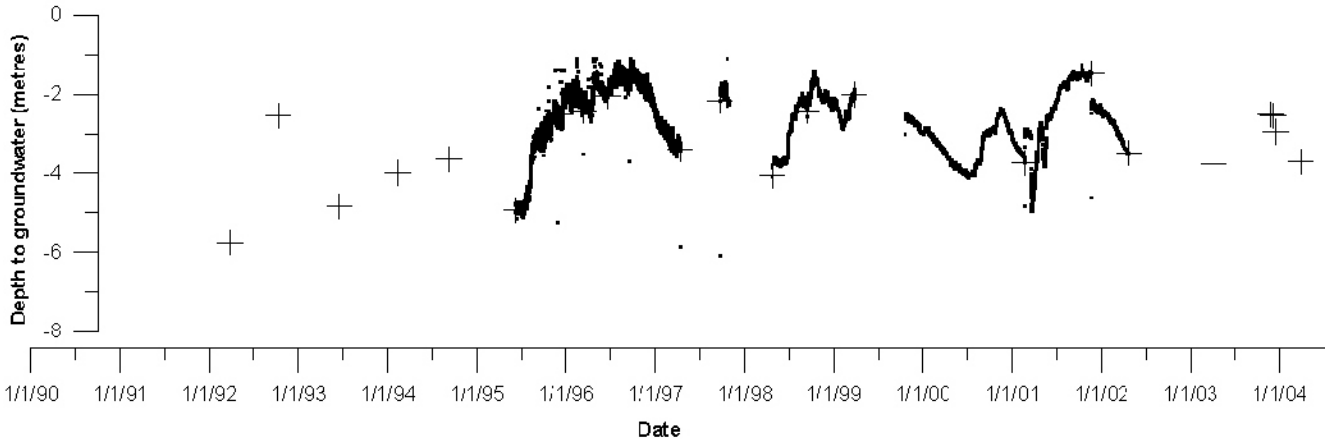

## Togari



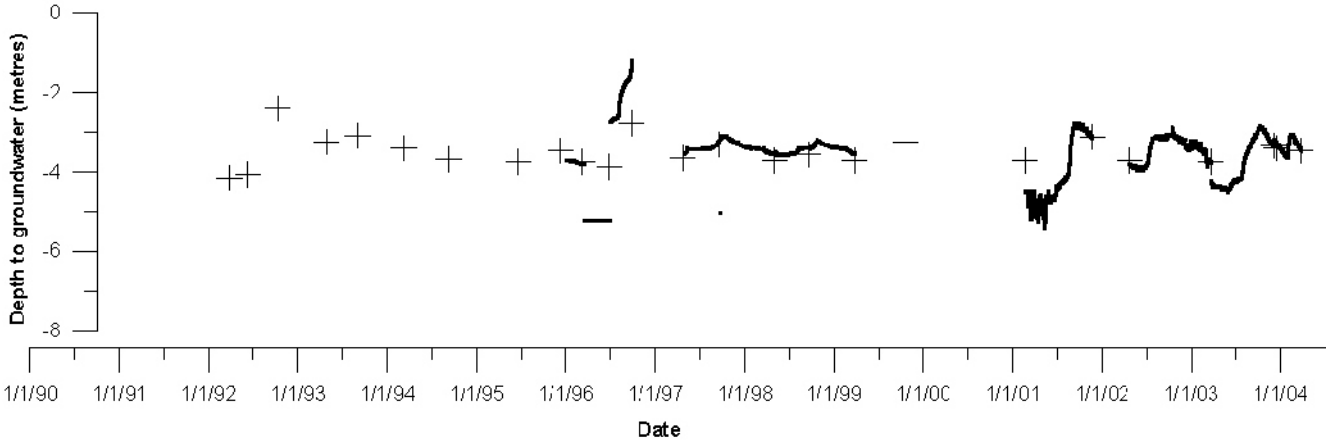
## Trowutta



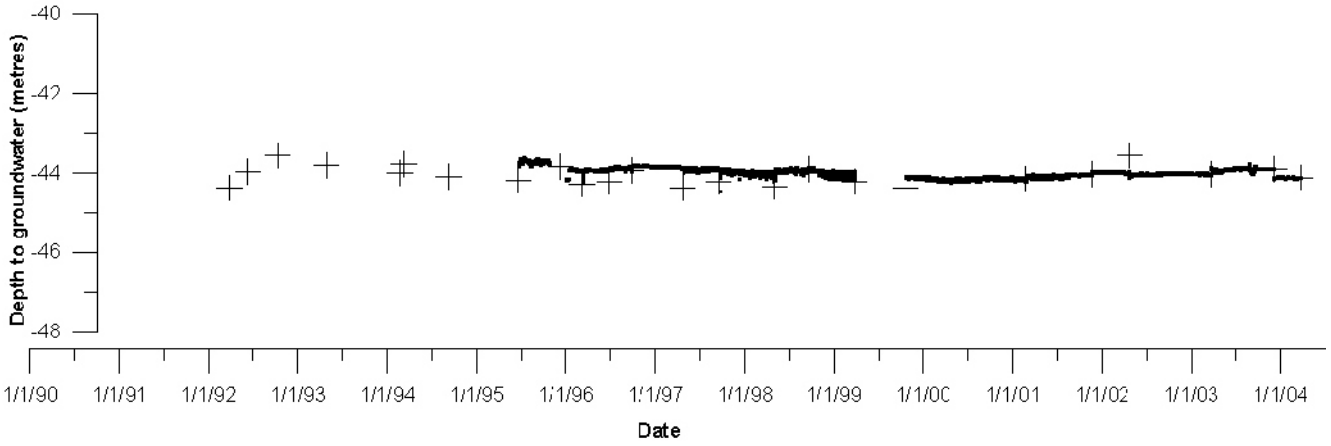

## Tunnack




## Waterhouse



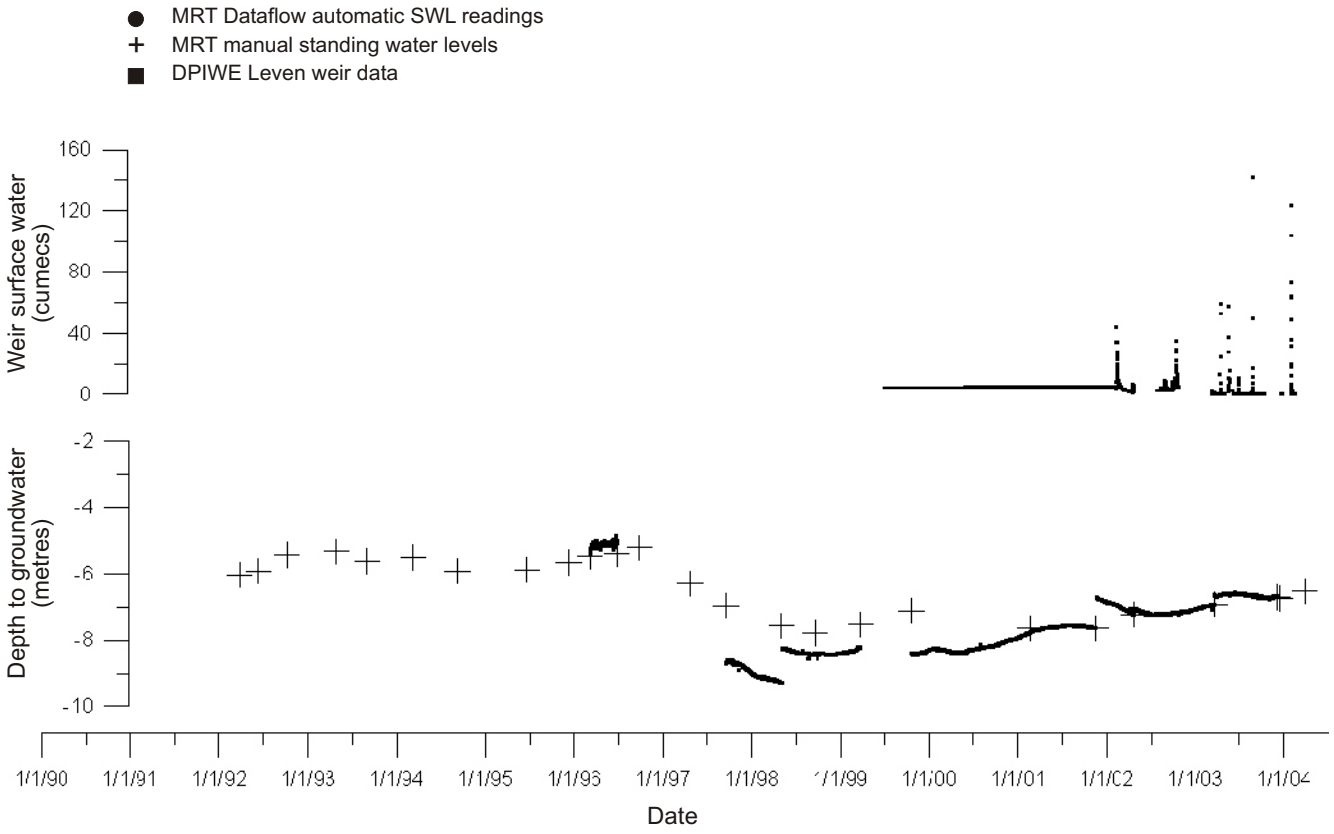
## Winnaleah


-40
-42
-44
-46
-48
Depth to groundwater (metres)
1/1/90
1/1/91
1/1/92
1/1/93
1/1/94
1/1/95
1/1/96
1/1/97
1/1/98
1/1/99
1/1/00
1/1/01
1/1/02
1/1/03
1/1/04
Date

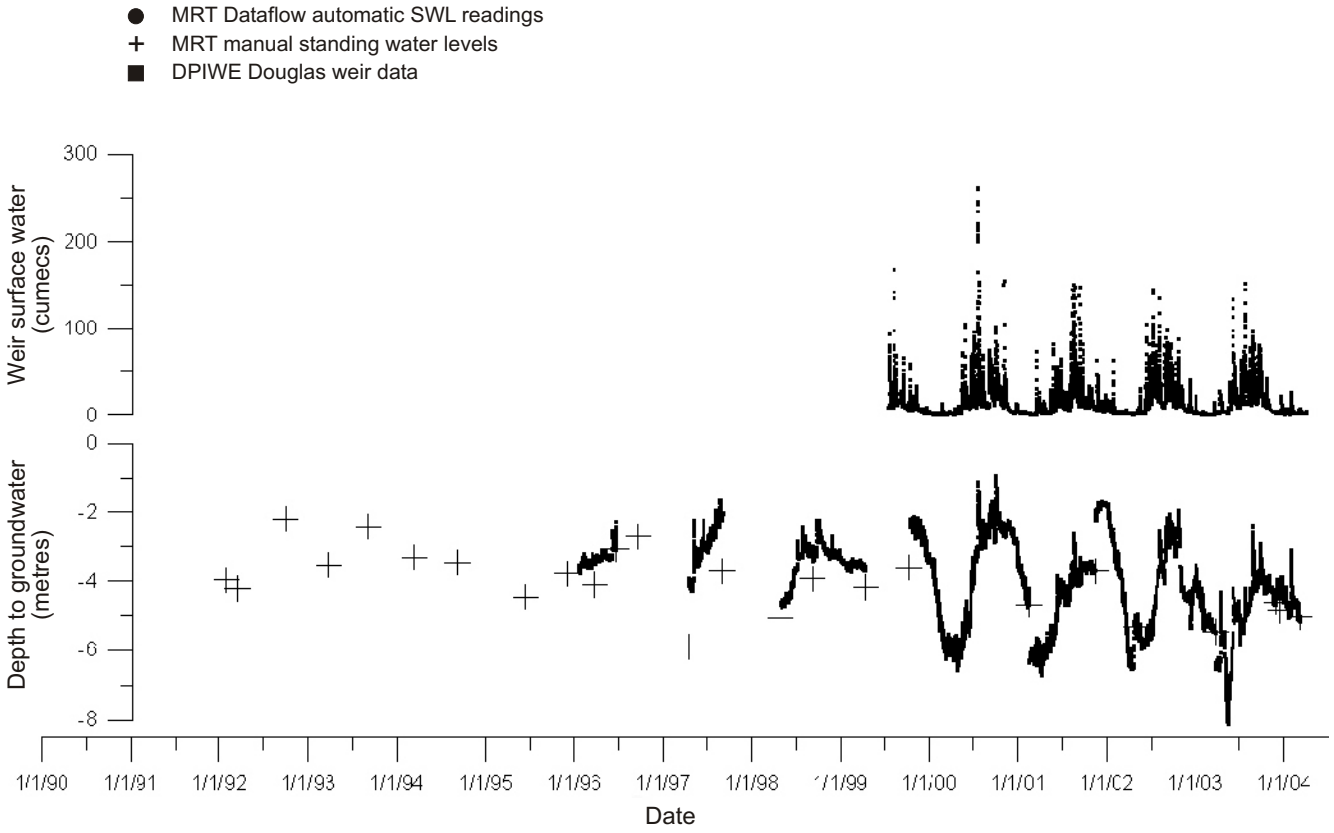
# APPENDIX 8

## Combined hydrographs of 1995 to 2004 *Dataflow* data and stream flow data (provided by DPIWE) for the closest weirs to the monitoring boreholes

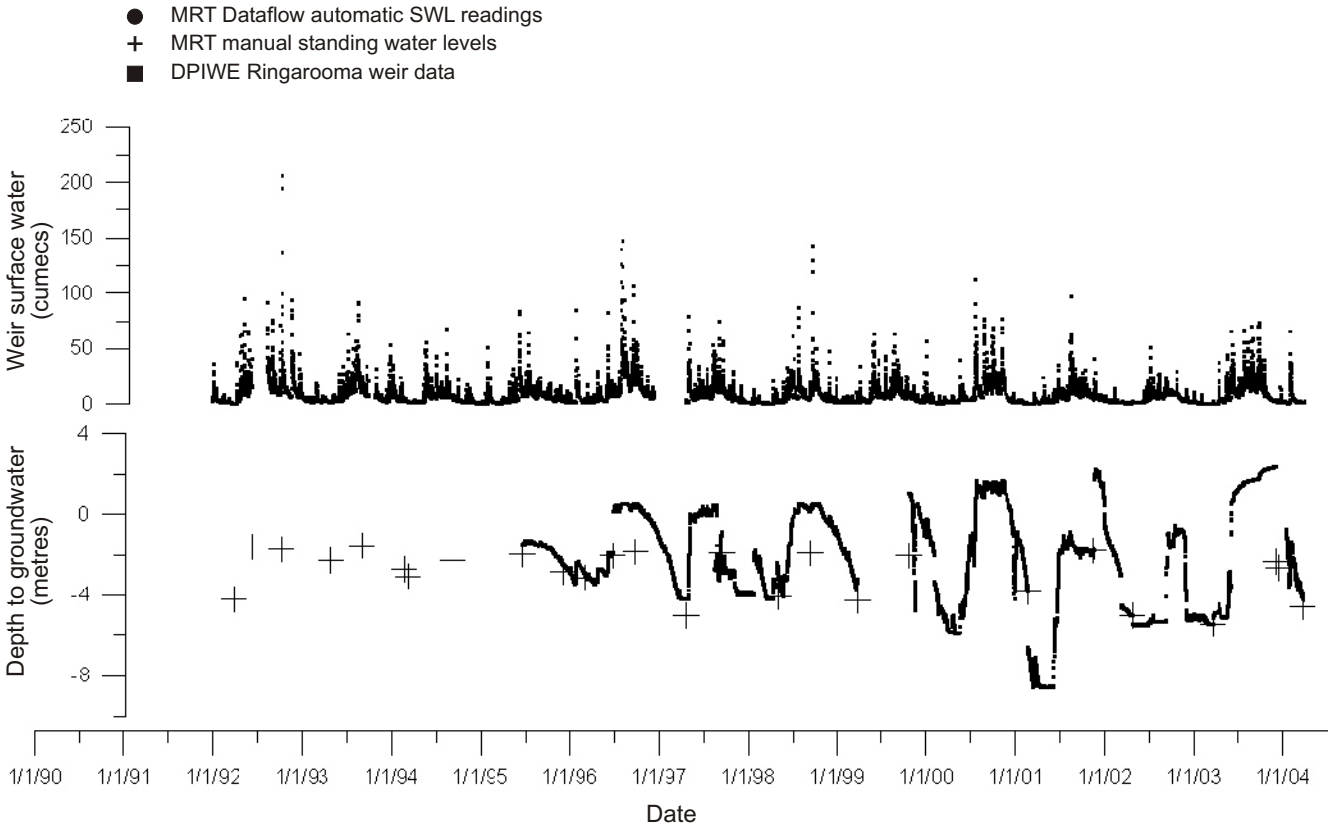
## Barrington



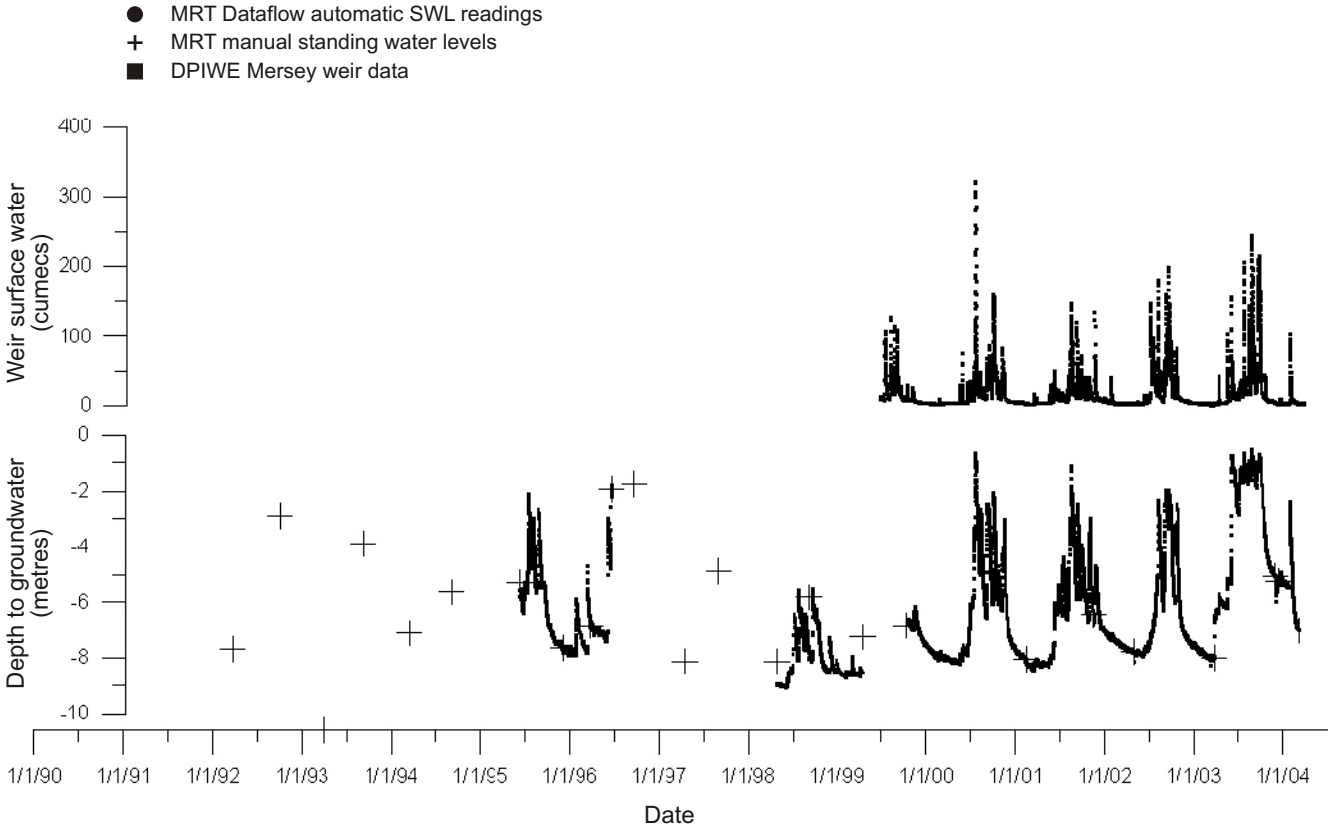

## Bicheno



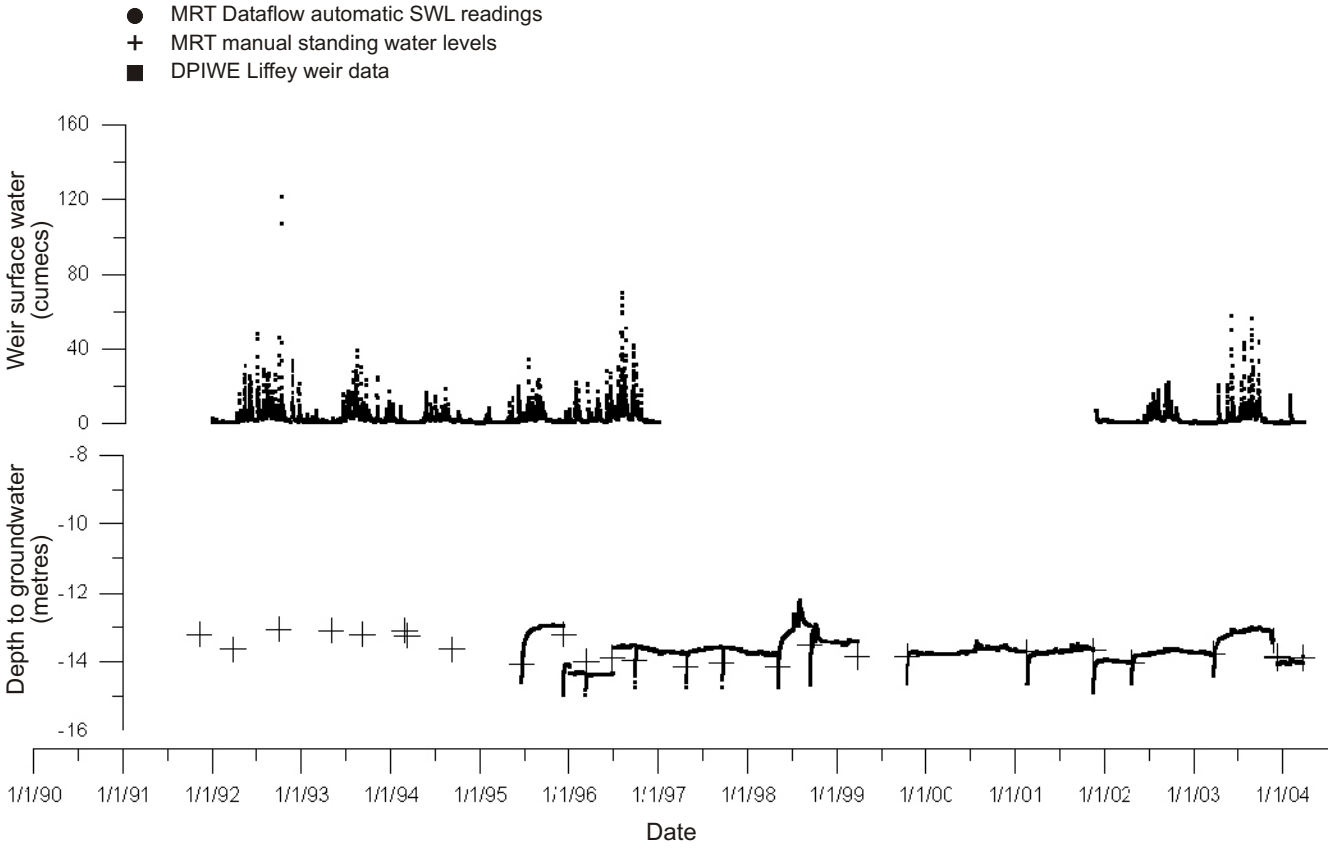
## Branxholm



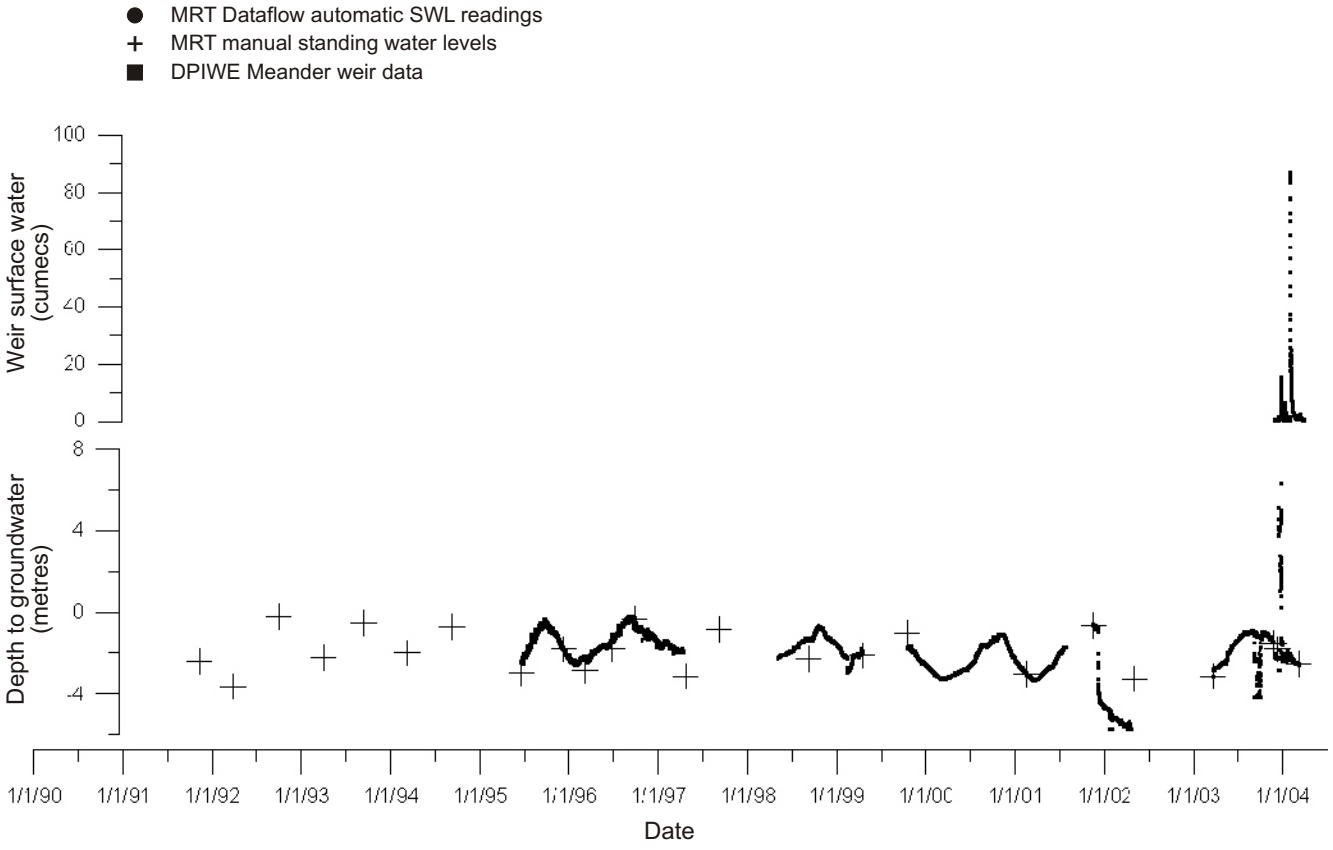

## Chudleigh



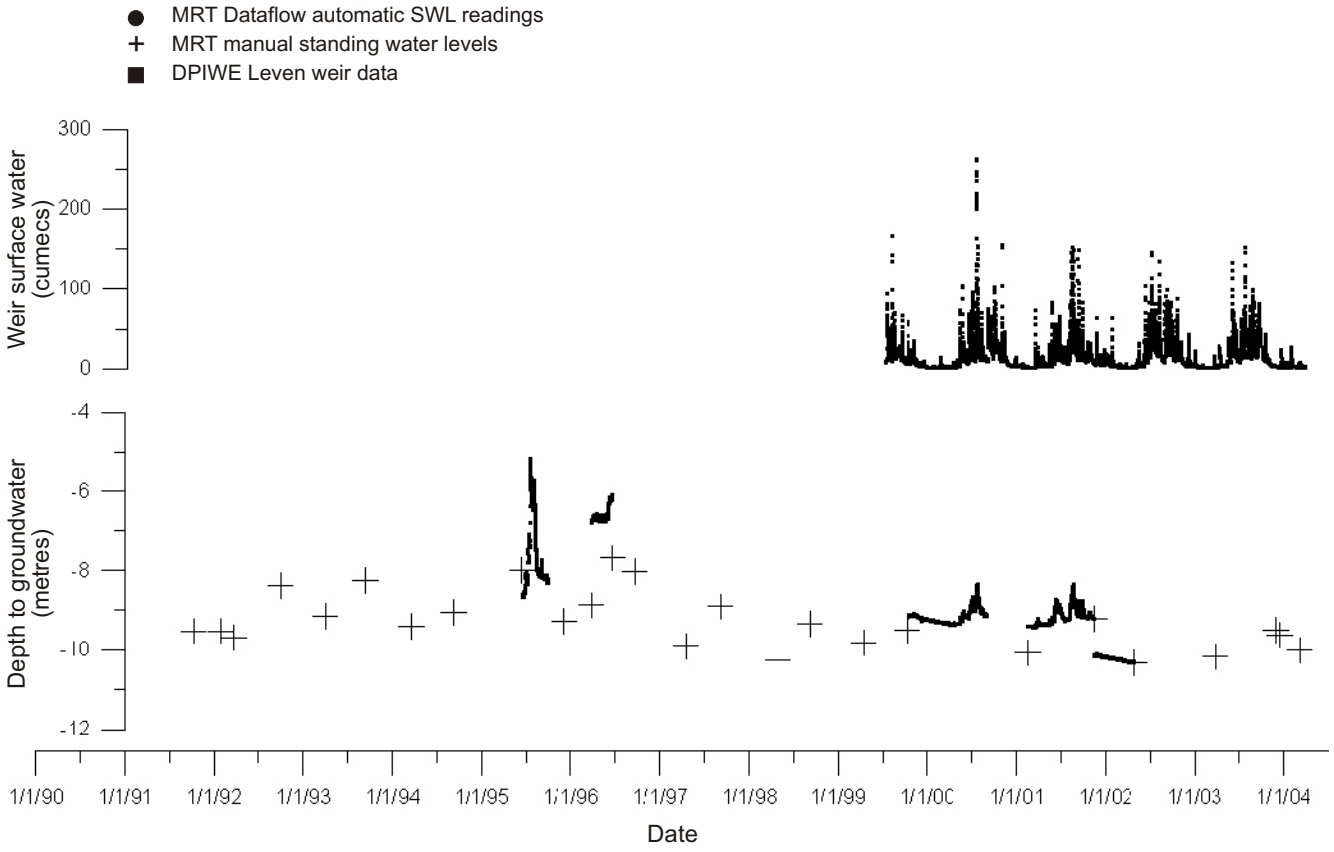
## Cressy



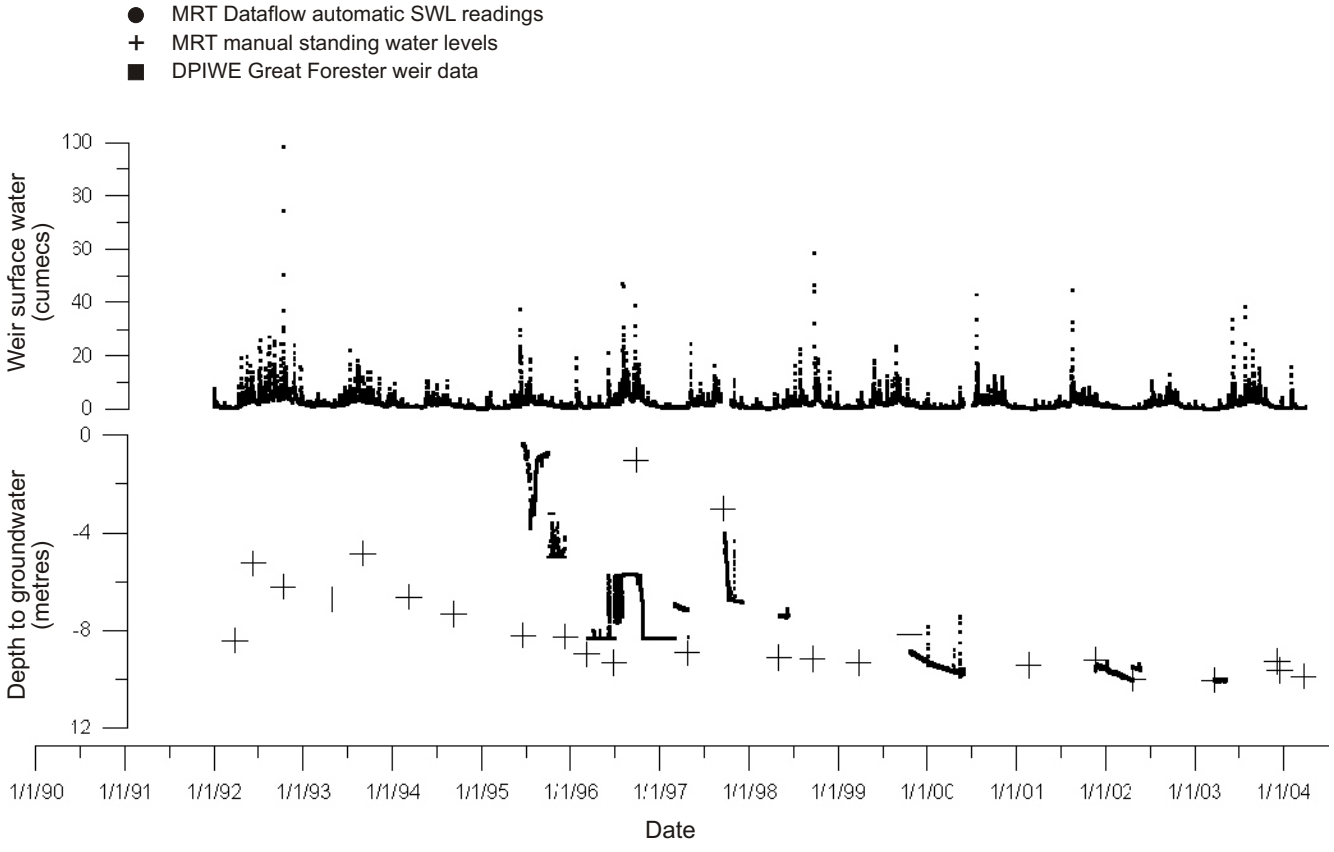

## Hagley



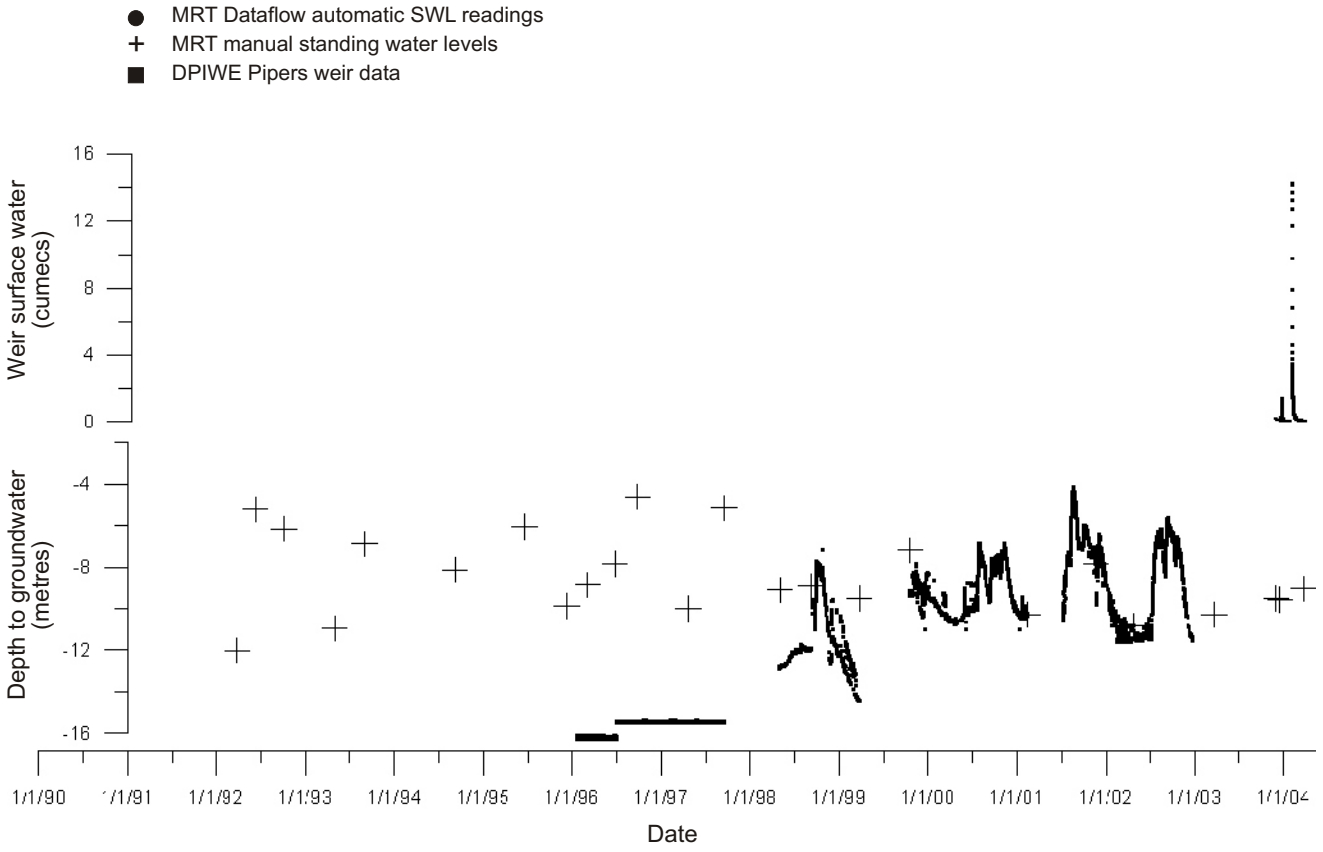
## Hampshire



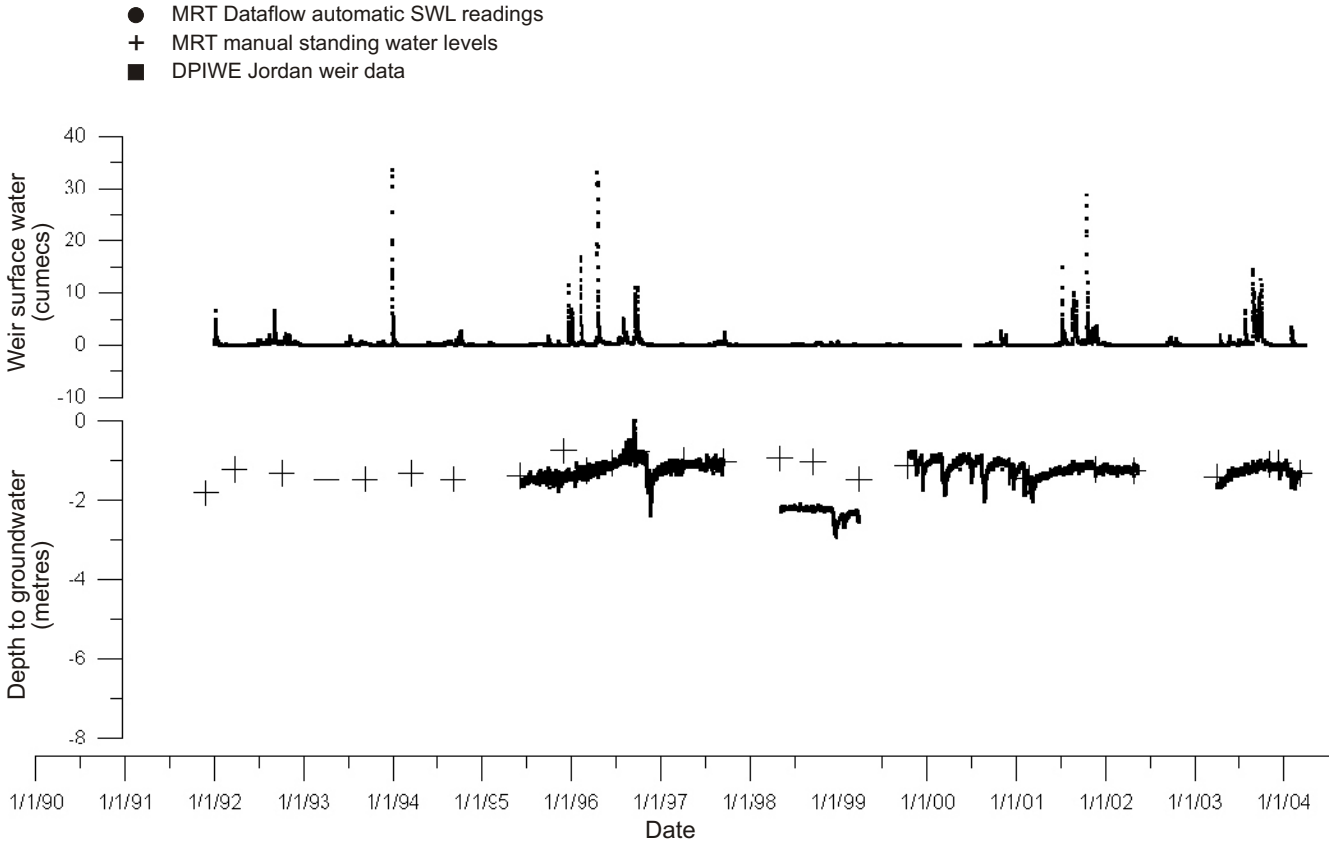

## Jetsonville



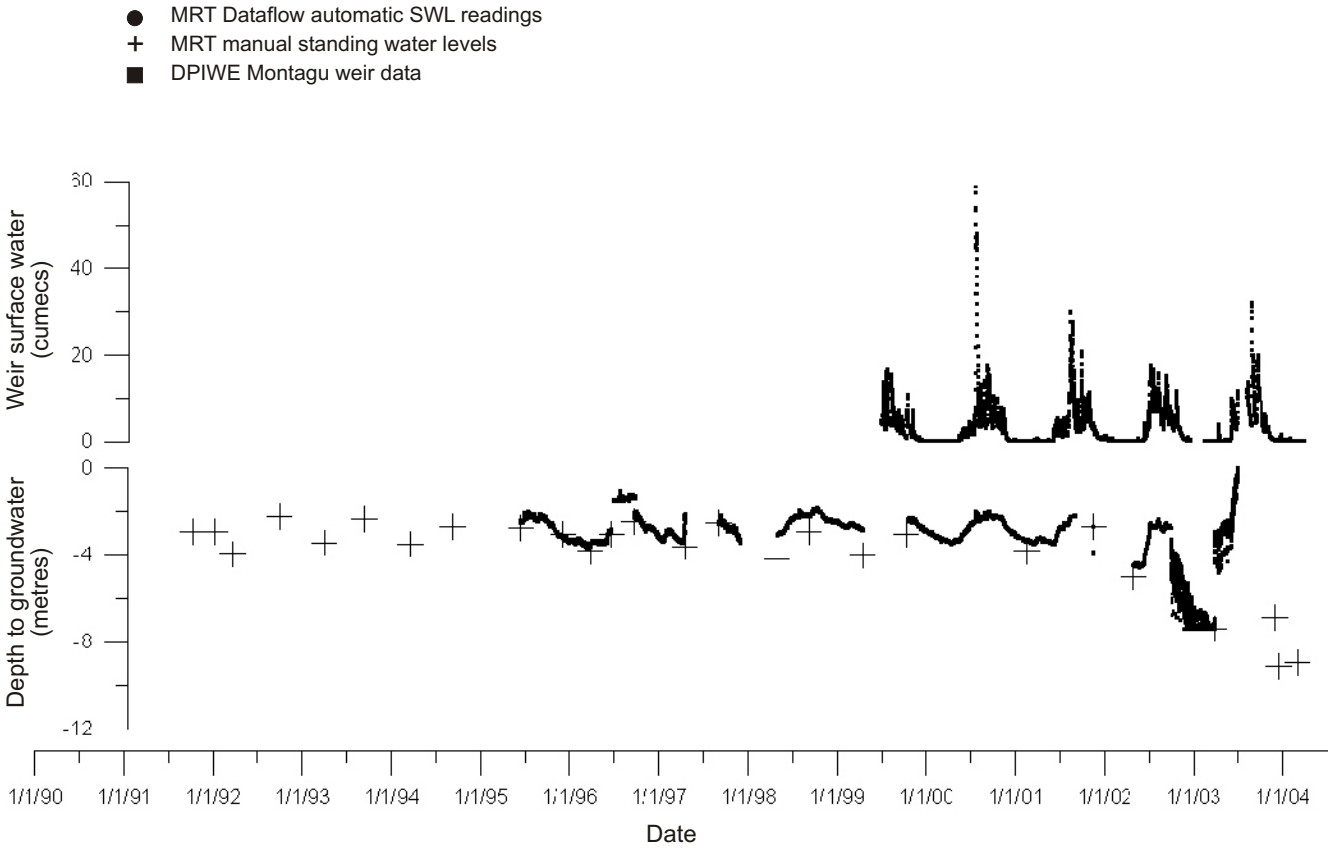
## Lilydale



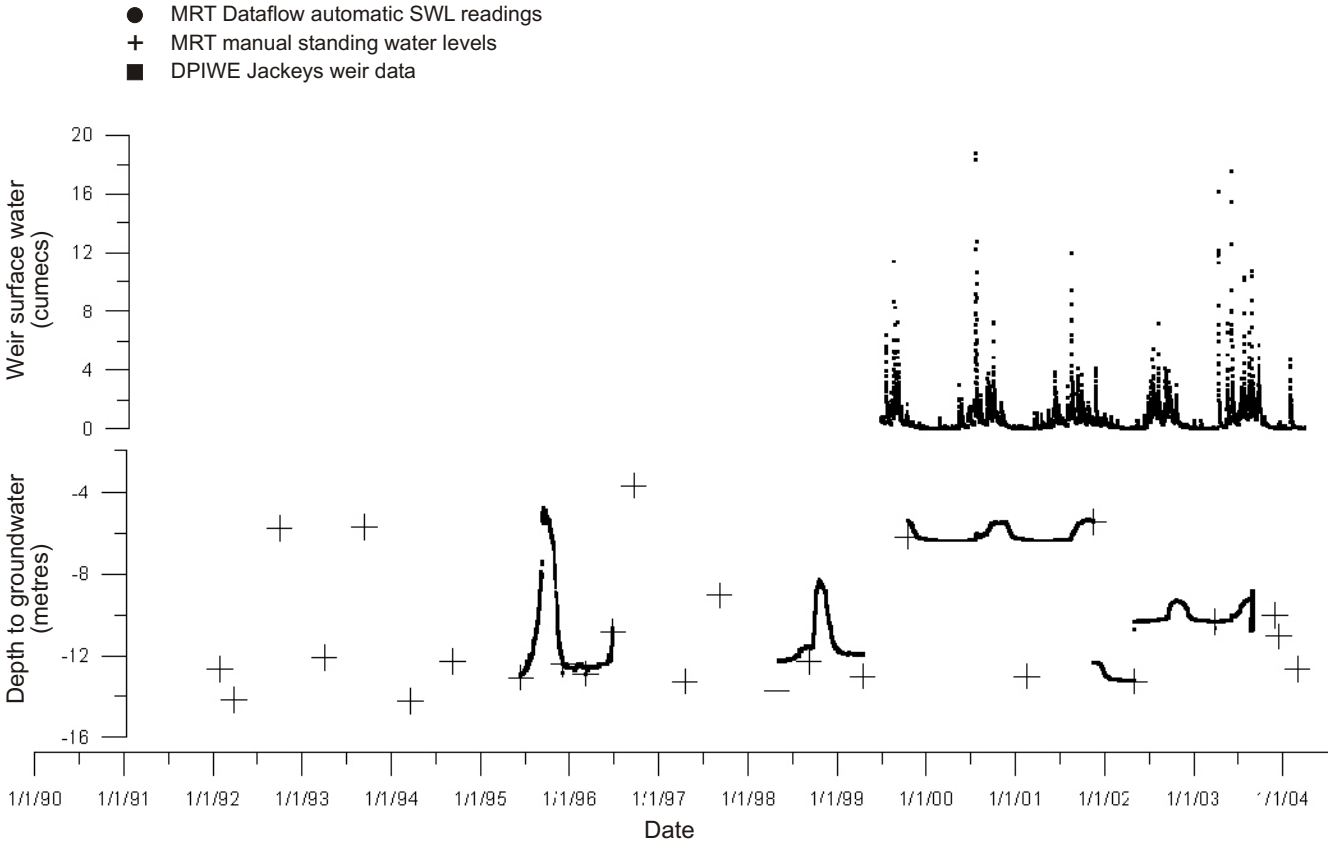

## Melton Mowbray



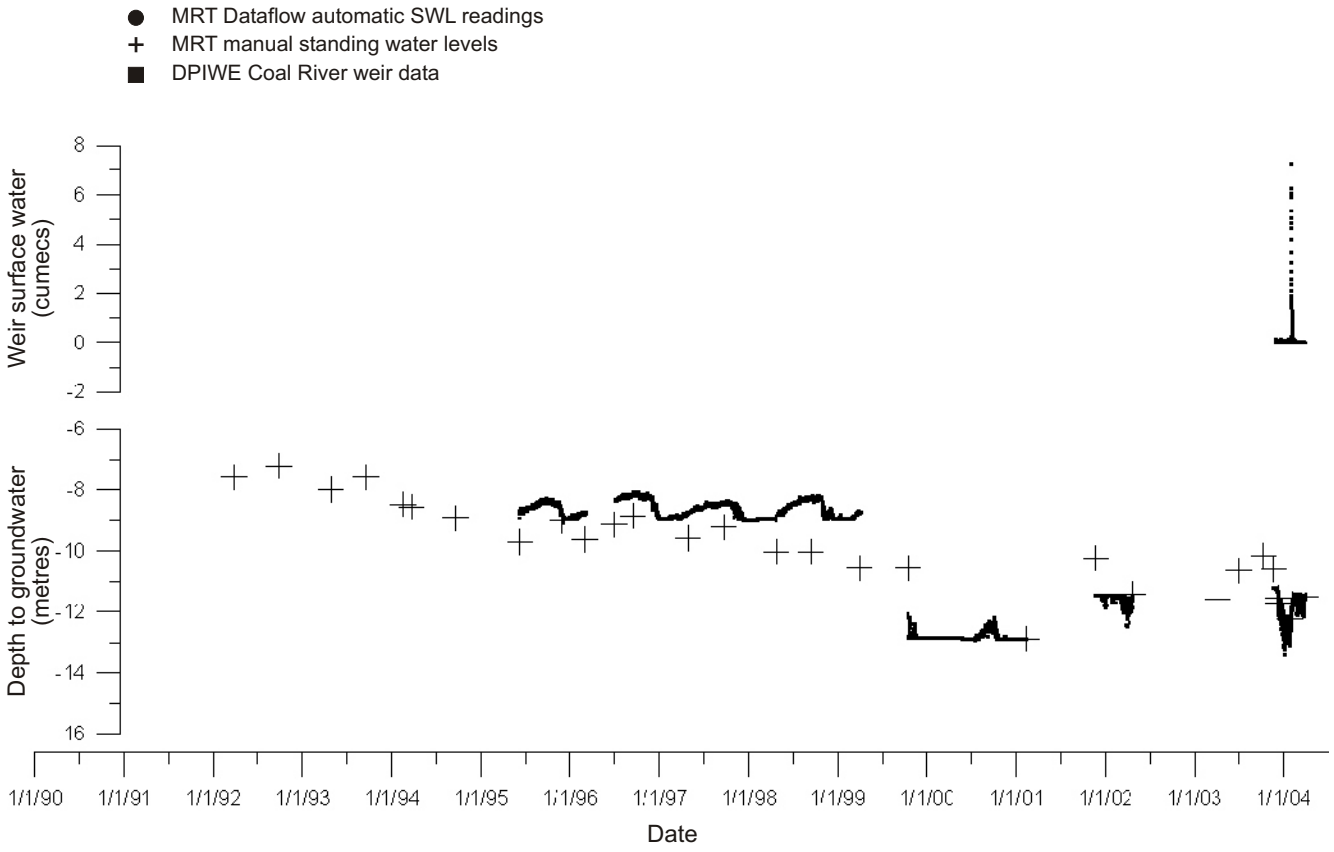
## Montagu



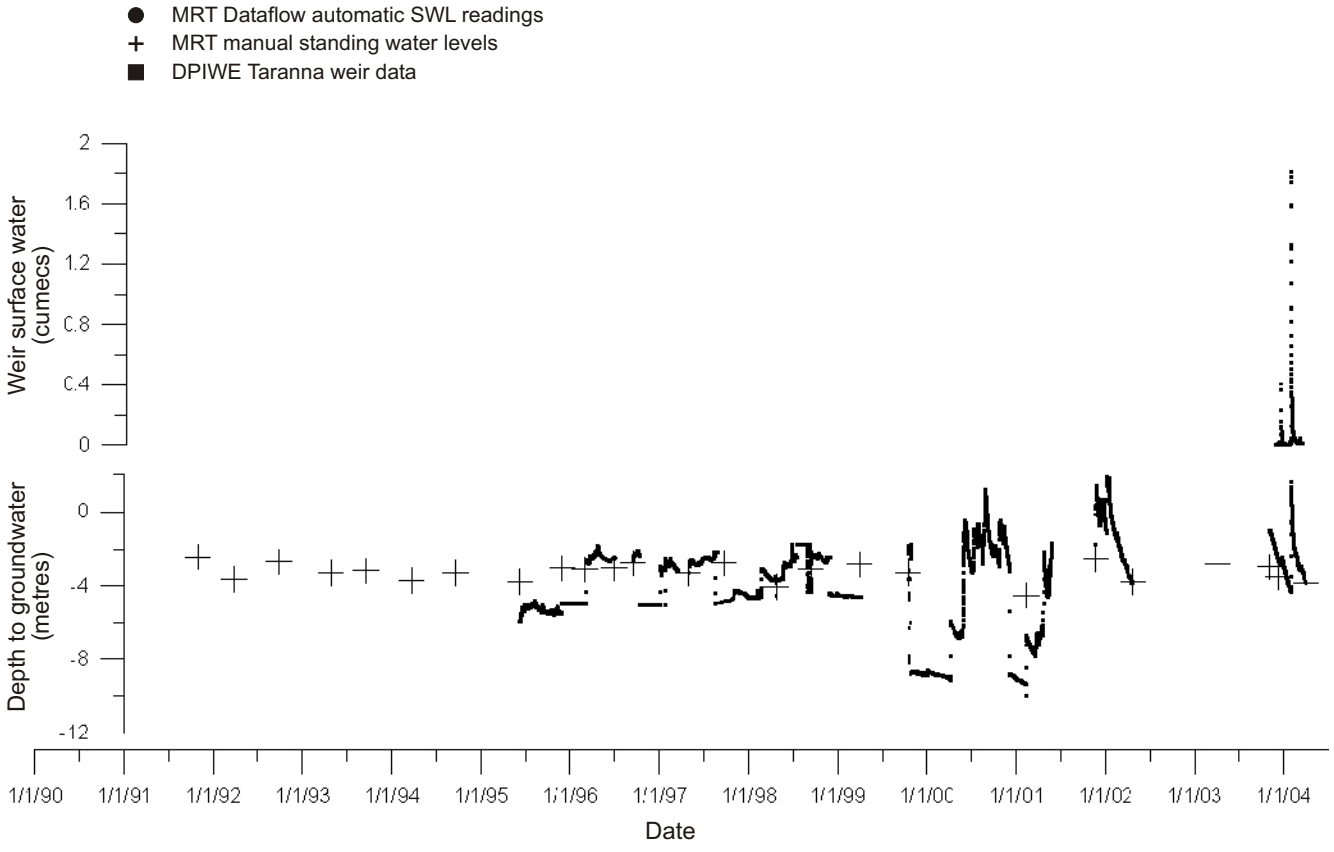

## Osmaston



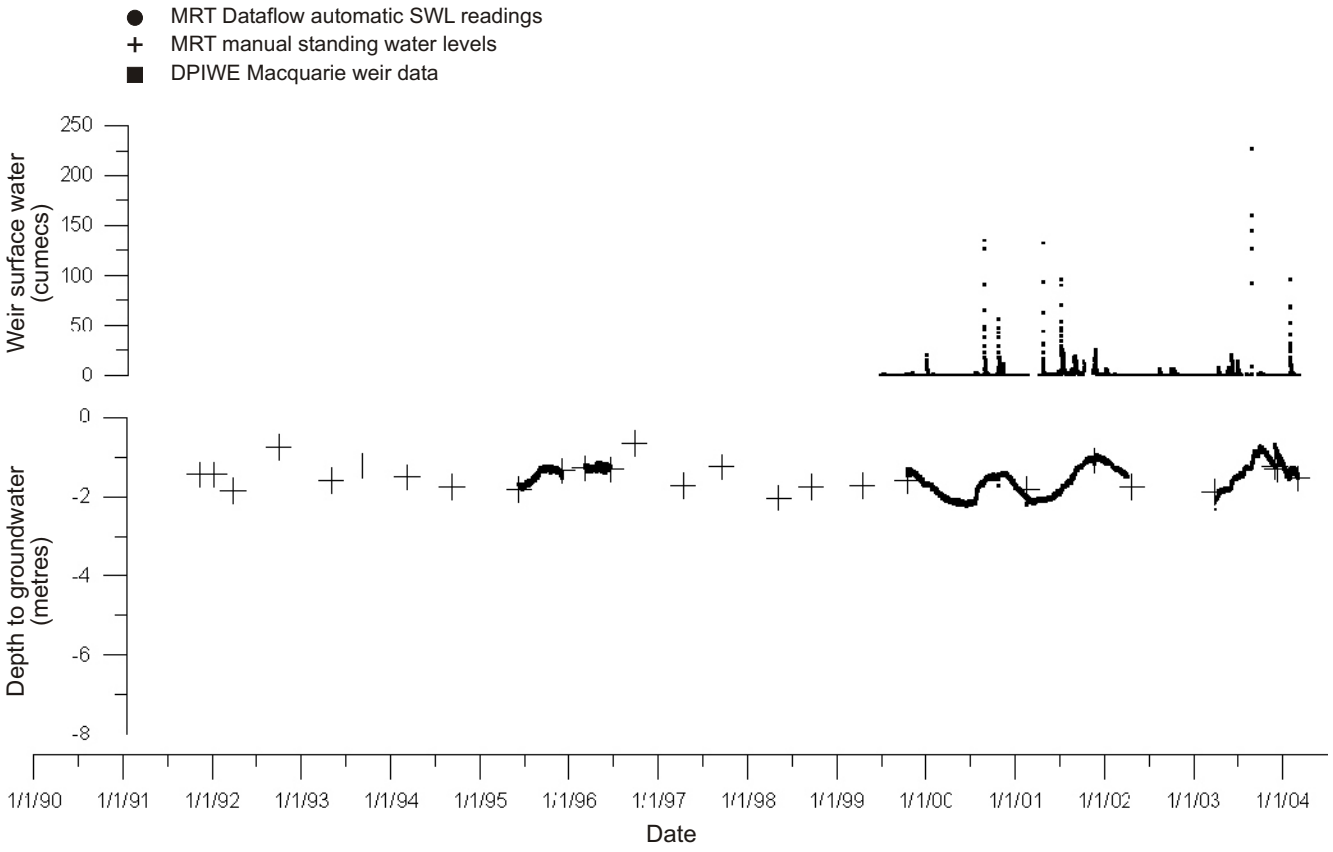
## Pawleena Road



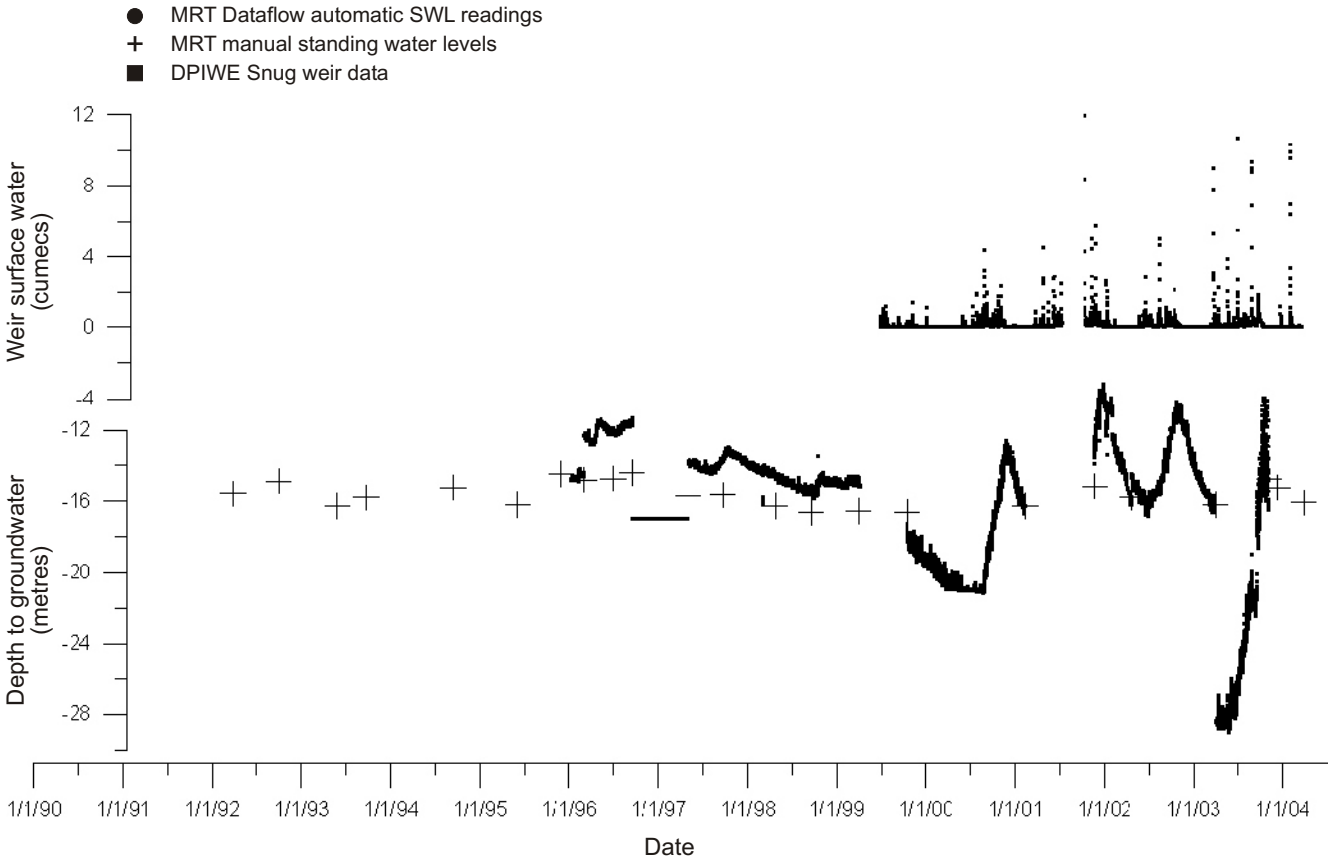

## Port Arthur



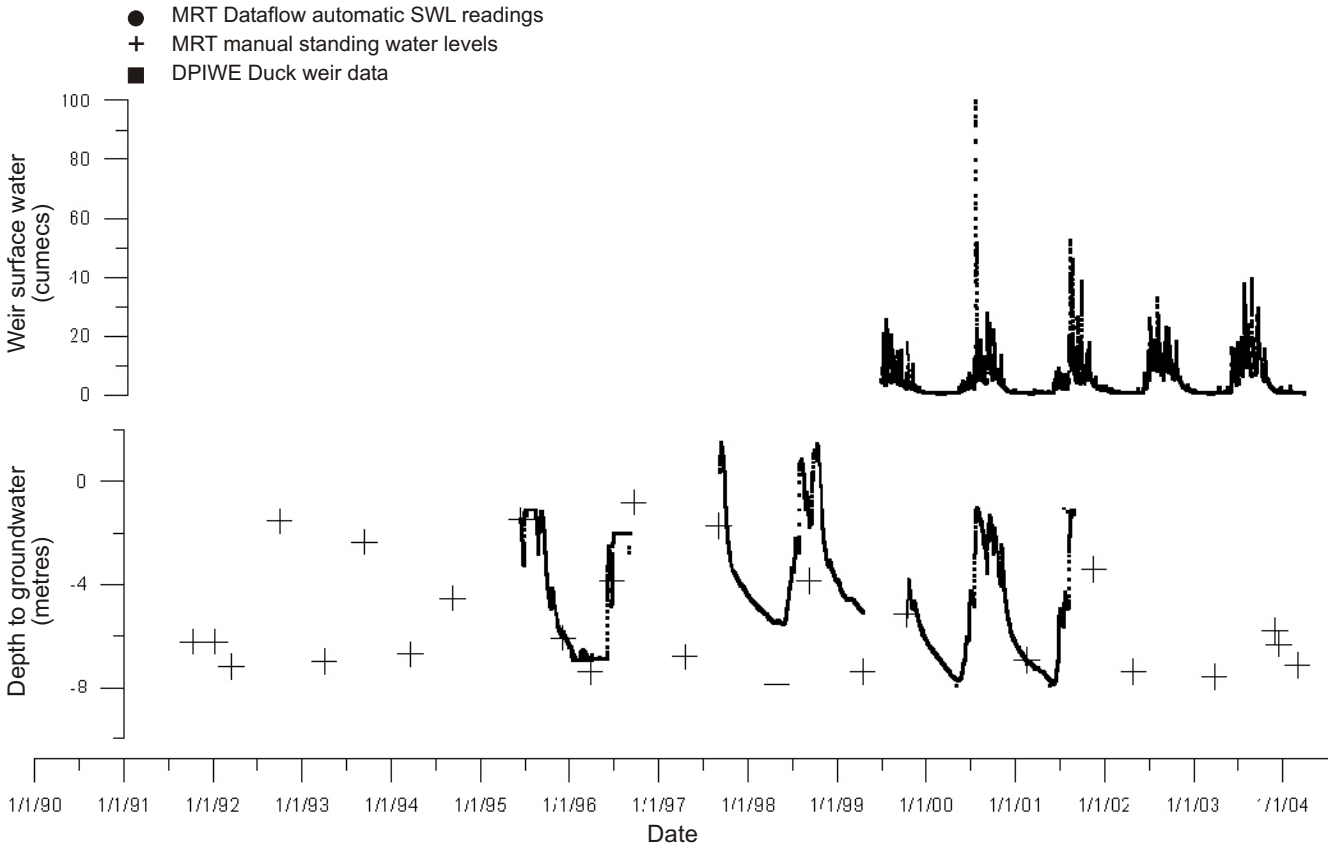
## Ross


MRT Dataflow automatic SWL readings
MRT manual standing water levels
DPIWE Macquarie weir data
Weir surface water (cumecs)
250
200
150
100
50
0
Depth to groundwater (metres)
0
-2
-4
-6
-8
1/1/90
1/1/91
1/1/92
1/1/93
1/1/94
1/1/95
1/1/96
1/1/97
1/1/98
1/1/99
1/1/00
1/1/01
1/1/02
1/1/03
1/1/04
Date

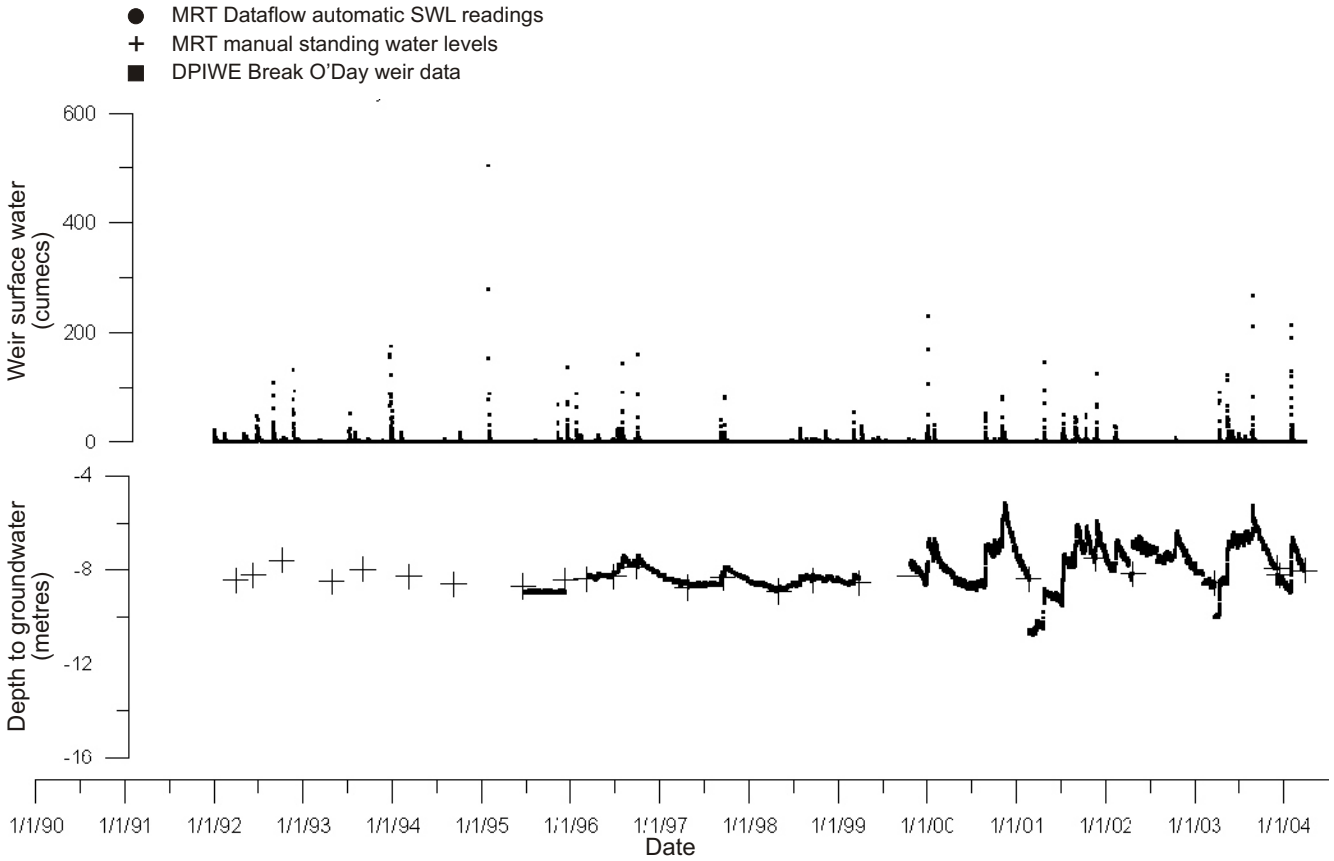
## Snug


MRT Dataflow automatic SWL readings
MRT manual standing water levels
DPIWE Snug weir data
Weir surface water (cumecs)
12
8
4
0
-4
Depth to groundwater (metres)
-12
-16
-20
-24
-28
1/1/90
1/1/91
1/1/92
1/1/93
1/1/94
1/1/95
1/1/96
1/1/97
1/1/98
1/1/99
1/1/00
1/1/01
1/1/02
1/1/03
1/1/04
Date

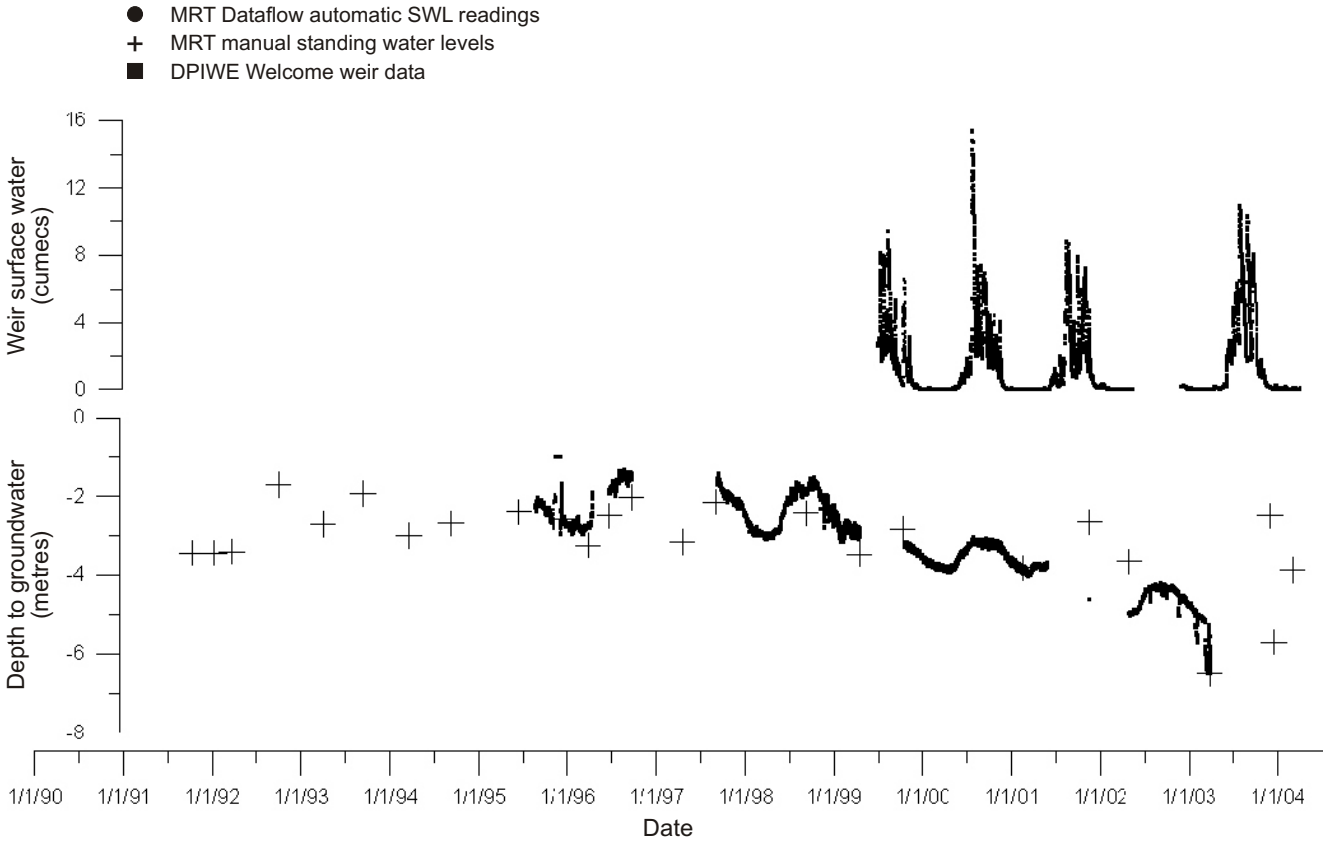
## South Forest



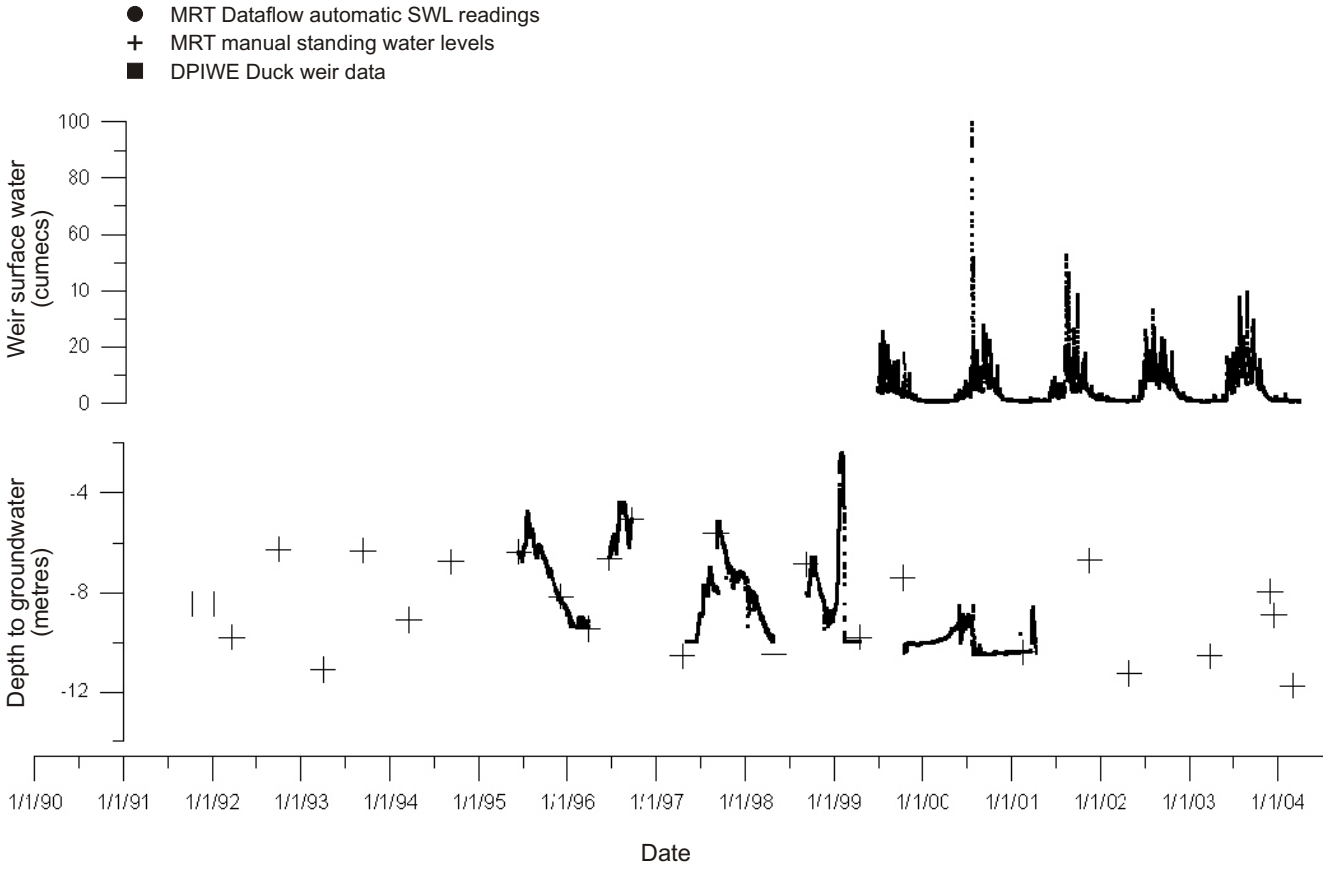

## St Marys



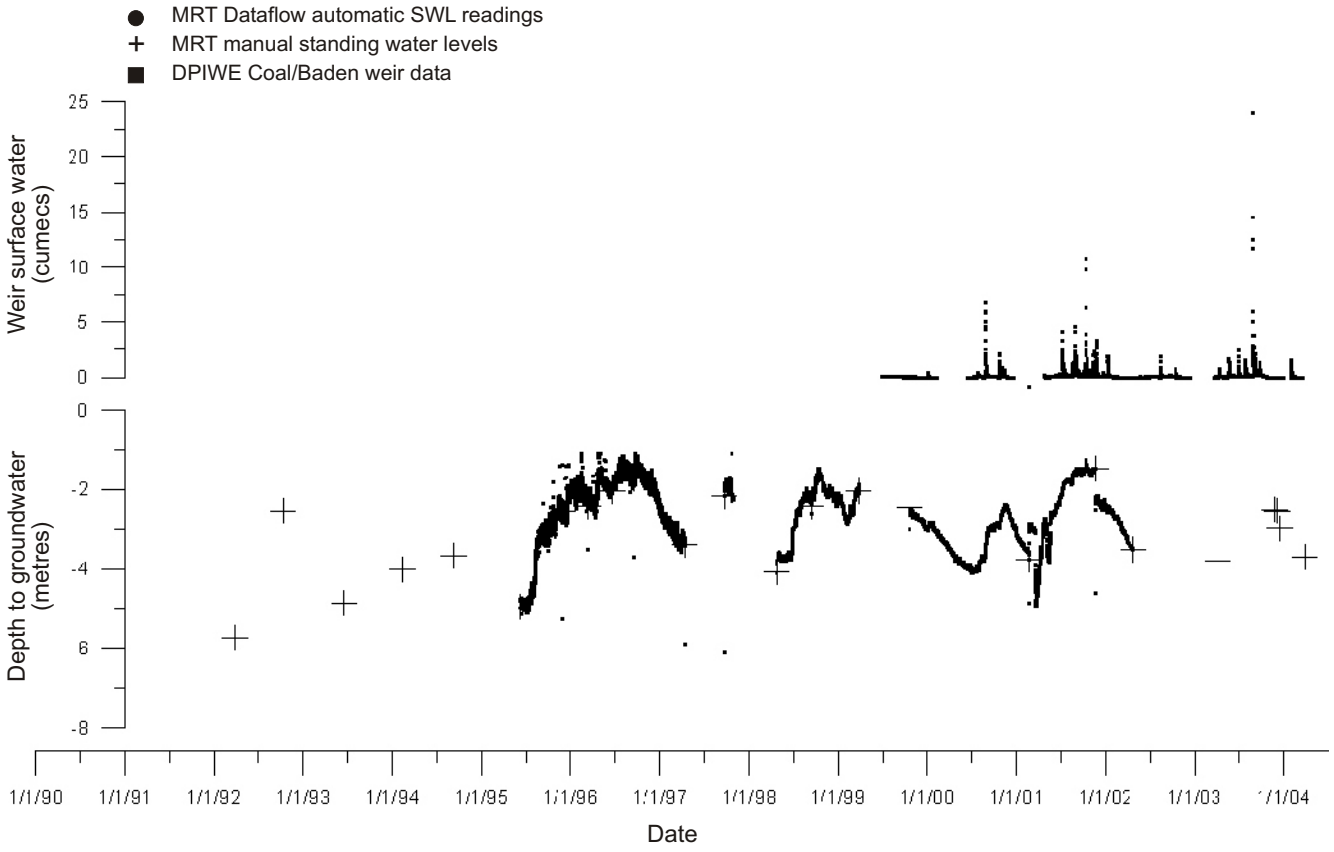
## Togari



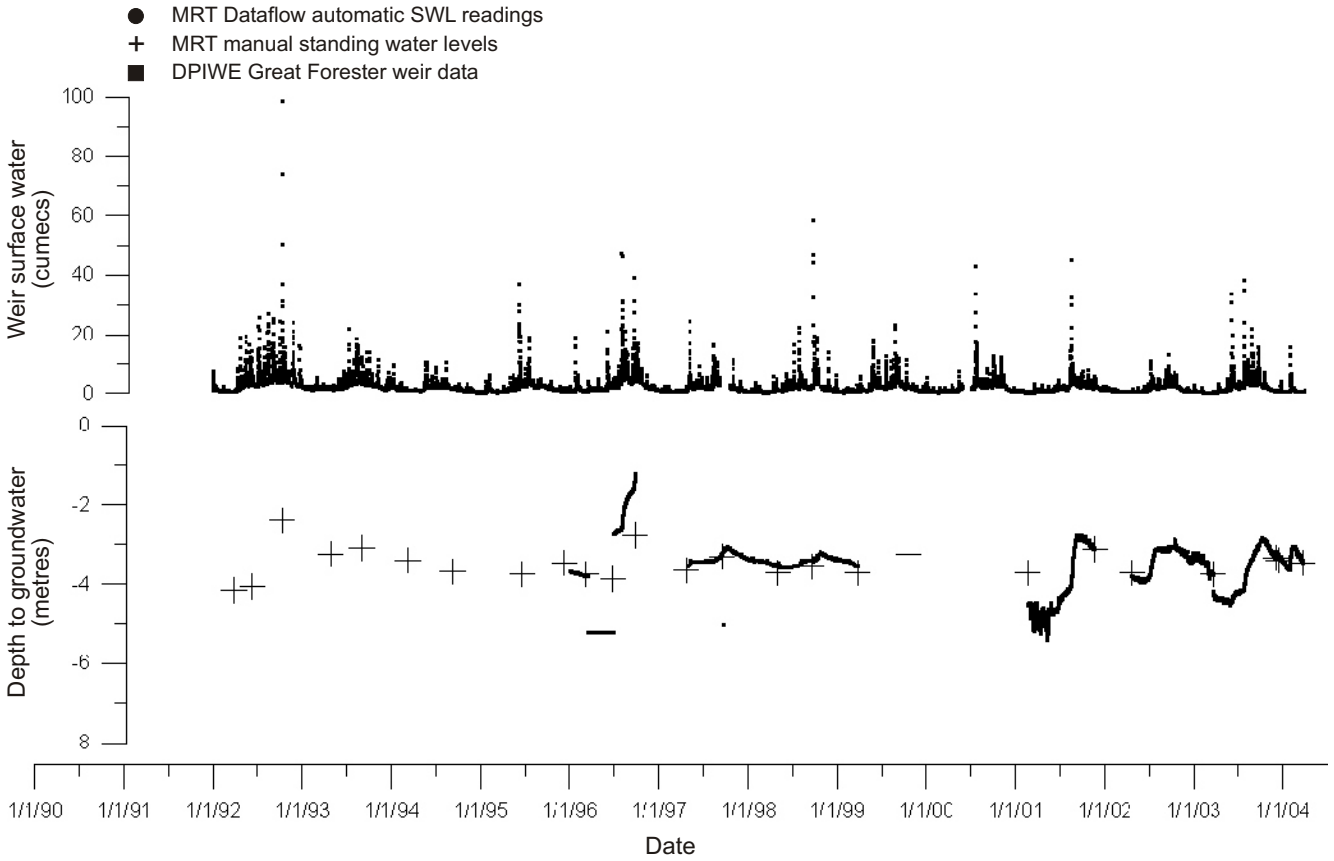

## Trowutta



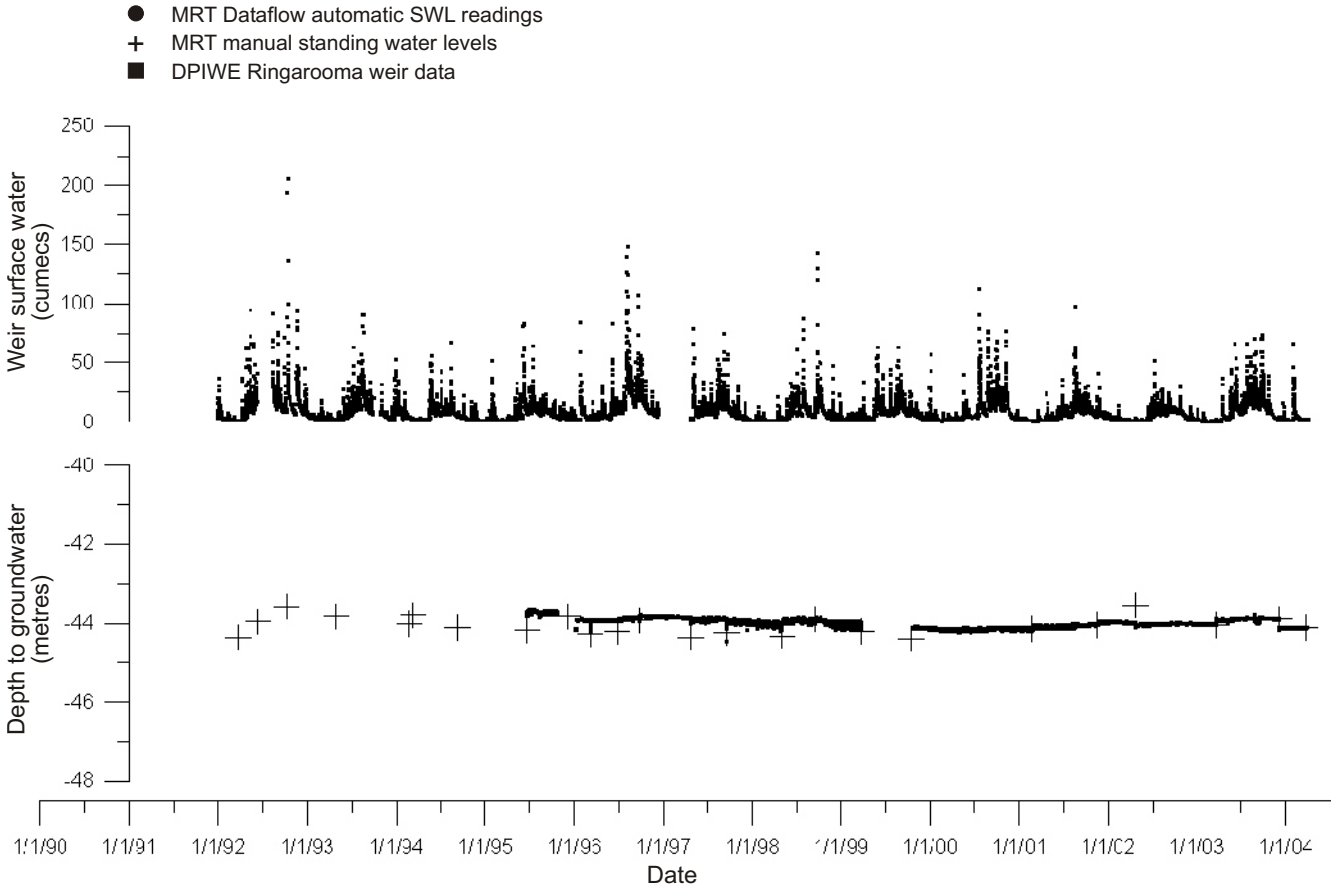
## Tunnack




## Waterhouse



## Winnaleah


MRT Dataflow automatic SWL readings
MRT manual standing water levels
DPIWE Ringarooma weir data
Weir surface water (cumecs)
250
200
150
100
50
0
Depth to groundwater (metres)
-40
-42
-44
-46
-48
1/1/90
1/1/91
1/1/92
1/1/93
1/1/94
1/1/95
1/1/96
1/1/97
1/1/98
1/1/99
1/1/00
1/1/01
1/1/02
1/1/03
1/1/04
Date

# APPENDIX 9

# Odyssey data recorders — internal MRT operational procedures

*Prepared by Andrew Ezzy*
*Hydrogeologist*
*February 2004*

## 1. Introduction

The *Odyssey* temperature and pressure water level probes and related software are designed to measure, store, calibrate and graph standing water data from groundwater bores. Field application of the Odyssey Pty Ltd data recorders demonstrated that an additional operational procedures manual was required to maintain data integrity and reliability. The use of this operational procedures manual should be supplemented with the *Technical Handbook – Odyssey Temperature and Pressure water level probe* document supplied by Odyssey Pty Ltd.

## 2. Field operational procedures for Odyssey temperature and pressure water level probes

### *2.1 Initial setting up of data recorder*

- ☐ Install screw in top of data recorder to connect battery.
- ☐ Measure and record the battery voltage. Replace the battery if the voltage is below 6.7V.

### *2.2 Entering and initialising calibration files*

- ☐ Start the *Odyssey* software package.
- ☐ Calibration files for individual data recorders are provided on disks from Odyssey Pty Ltd. Copy these files from the disk to the **C:\Program Files\ODYSSEY\ODYCAL** directory. This can be done in the software package using the **LOAD CALIBRATION FILES –** an aqua coloured button.
- ☐ Select the **ENTER CALIBRATION DATA** option.
- ☐ Select the first calibration file starting with a "**L**" from the list in the box located in the top left hand side of the screen e.g. **L16111_CAL.**
- ☐ From the **SENSOR TYPE** light blue table select **TEMPERATURE SENSOR.**
- ☐ The **SENSOR MEASUREMENT UNITS** dialogue box will default to **Degrees C**. This is correct and does not need to be changed. Click **OK**.
- ☐ Values displayed in the white boxes for various fields are those provided by Odyssey Pty Ltd. Click on the red **SAVE and EXIT** button.
- ☐ Reselect the **ENTER CALIBRATION DATA** option.
- ☐ From the **SENSOR TYPE** light blue table select **PRESSURE SENSOR.**
- ☐ In the **SENSOR MEASUREMENT UNITS** dialogue box enter **"mm"**. Click **OK**.
- ☐ The **PRESSURE SENSOR TEMPERATURE CORRECTION** dialogue box defaults to "1.2". This is correct and does not need to be changed. Click **OK**.
- ☐ Values displayed in the white boxes for various fields are those provided by Odyssey Pty Ltd. Click on the red **SAVE and EXIT** button.

### *2.3 Creating a new site header 'key' file*

- ☐ Select the **Edit or CREATE NEW site header** option (yellow box).
- ☐ Activate the tick box at the base of the screen to **CREATE NEW HEADER.**
- ☐ Activate the tick box at the base of the screen to **USE SERIAL NUMBER for HEADER IDENT.**

- Enter the **Site IDENT name** e.g. HAGLEY.
- The **Program directory** defaults to **C:\Program Files\ODYSSEY**. This is the correct file path and does not need to be changed.
- The **Current DATA directory** needs to be entered. This directory should be created based on date e.g. 11_03 and located in the C:\Program Files\ODYSSEY directory.
- The **RECORDER serial number** is the number provided by the supplier e.g. 16111.
- The **Recording SITE number** can range between 1 and 999. Do not use an existing **Recording SITE number.**
- From the **SENSOR TYPE** list select **Temperature + Pressure**. In the **FIRST SENSOR SERIAL NUMBER** dialogue box enter the number of the data recorder. In the **SENSOR ONE CALIBRATION METHOD** dialogue box enter "**L**". In the **SECOND SENSOR SERIAL NUMBER** dialogue box enter the number of the data recorder. In the **SENSOR TWO CALIBRATION METHOD** dialogue box enter "**P**".
- The **Logging program** field will default to **Linear Logging**. This is correct and does not need to be changed.
- The **Sensor type** field will default to **Temperature + Pressure**. This is correct and does not need to be changed.
- The **Sensor ONE Serial No.** field will display an "**L**" preceding the data recorder number, e.g. **L16111.** This is correct and does not need to be changed.
- The **Sensor TWO Serial No.** field will display a "**P**" preceding the data recorder number, e.g. **P16111**. This is correct and does not need to be changed.
- For new site headers the **Number of Data Files** should display as "**0**".
- Click on the red **EXIT** button to create the new header file. Select **OK** for the following three dialogue boxes. After approximately five seconds the new site header 'key' file will appear on the left hand side of the main screen, in the blue box containing the list of header 'key' files.

### *2.4 Installing a data recorder in a borehole*

- Start the *Odyssey* software package.
- Select the **ENTER CALIBRATION DATA** option (yellow button).
- Select the appropriate calibration file starting with a "**P**" from the list in the box located in the top left hand side of the screen, e.g. **P16111_CAL.**
- In the white box next to the **RELATIVE LEVEL** data input item, enter the depth below ground level in millimetres of the sensor at the base of the data logger, e.g. 17.94 m would be entered as **-17940** (Note the negative sign preceding the depth in millimetres).
- Click on the red **SAVE and EXIT** button to return to the main screen.
- Select the **START RECORDER** option (yellow button).
- From the list of header site key files in the dark blue box on the left hand side of the screen, select the appropriate number of the data recorder to be installed in the borehole. This will generate default values in the top group of the FUNCTION and SETTING columns.
- From the **Start mode** select **TIME START**. This is done by clicking on the light green **Start mode** box in the **FUNCTION** column. Use the arrow keys to select **TIME START** and press the **Enter** button on the keyboard.
- Set the start date by clicking on the light green **Start Date DD:MM:YYYY** box in the **FUNCTION** column. Enter the **DAYS**, **MONTH** and **YEAR** fields (A number must be placed in each field). Click on the **EXIT** aqua box at the base of the list to lock in the start date (No number is required in the white box next to this **EXIT** box).
- The **Start time HH:MM:SS** and **Scan time HH:MM:SS** setting are set in the same manner as the **Start Date DD:MM:YYYY.**
- Click on the green **START** box.
- As prompted by the **SERIAL PORT CONNECTION IS AT THE TOP OF THE RECORDER** dialogue box, connect the cable to the data recorder. Click **OK**.
- The software will return to the main *Odyssey* screen.
- Silicon gel should be place on the O ring before installation of the data recorder into the borehole.

### *2.5 Downloading data from a data recorder*

- Remove data recorder from bore and dry off surface water.
- Measure and record the battery voltage. Replace the battery if the voltage is below 6.7V.
- Start the *Odyssey* software package.

- Select the **GET RECORDER DATA** option (yellow box).
- Select the .key file for the data recorder from the file list, e.g. 16111_105 key.
- As prompted by the **SERIAL PORT CONNECTION IS AT THE TOP OF THE RECORDER** dialogue box, connect the cable to the data recorder. Click **OK**.
- If the **ODYSSEY RECORDER NOT CONNECTED, CHECK CABLE** dialogue box appears, check that the plug is fully inserted into the data recorder and the screw has been installed to connect the battery.
- Once the data is downloaded, the software will request to restart the data recorder. Select **No** and the software will return to the main screen. Always restart the data recorder as outlined in Section 2.4.
- The quality of the downloaded data should be verified. Select the key file for the downloaded data recorder from the file list, e.g. 16111_105.key. Select the **GRAPH SITE DATA** option (yellow box).
- Once the data has been checked, select the red **EXIT** button on the **Site Graph** screen.

### *2.6 Graphing the data in Microsoft Excel*

- Open Microsoft Excel.
- Open the .PRN extension file for the data recorder.
- In the **Text Import Wizard – Step 1 of 3** dialogue box, select the **Delimited** option and click **Next >.**
- In the **Text Import Wizard – Step 2 of 3** dialogue box, select the **Tab** and **Comma** tick boxes and click **Next >**.
- In the **Text Import Wizard – Step 3 of 3** dialogue box, click **Finish**.
- Five columns (A to E) of data should appear. The first is the date and time of the record; second the un-calibrated temperature reading; third calibrated temperature reading; fourth the un-calibrated pressure/depth reading; fifth calibrated pressure/depth reading.
- Select column A and right click. From the drop down menu select **Format Cells**.
- If not already selected, select the **Number** tab from the **Format Cells** dialogue box. In the Category white selection box, select **Custom**. In the **Type** white selection box, select **dd/mm/yyyy hh/mm**. Click **OK**.
- Columns A, C and E can now be used in the graphing function of Microsoft Excel to produce custom hydrographs.
- Data blocks can be pasted into the same Microsoft Excel workbook after each download.

## 3. Current data storage procedure

- Data are stored in sub directories (named after the month of collection) in the directory T:\ground_water\Main_Statewide_monitoring_network\Post_02_2003_data\Odessy_system.

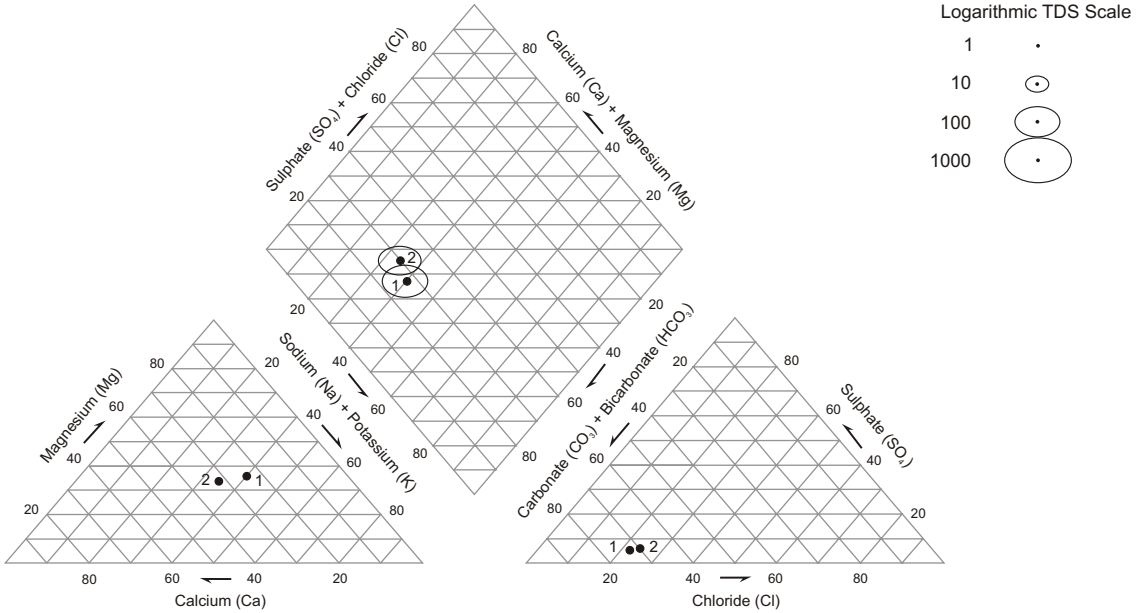
## 4. Odyssey system efficiency

At this point in time, the *Odyssey* temperature and pressure data recorder system appears to be more reliable and user friendly than the *Dataflow* system. The processing of data and production of hydrographs from the *Odyssey* system could be further streamlined by writing targetted computer code programmed into a palm computer.

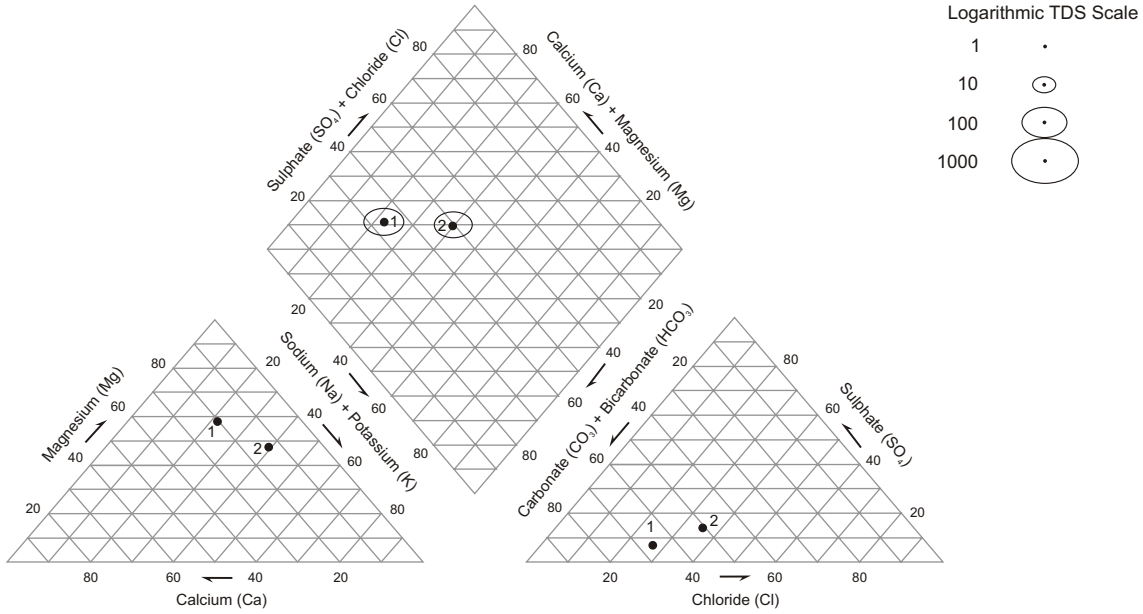
# APPENDIX 10

## Piper plots comparing the 'cleaning up' and REV groundwater quality sampling methods

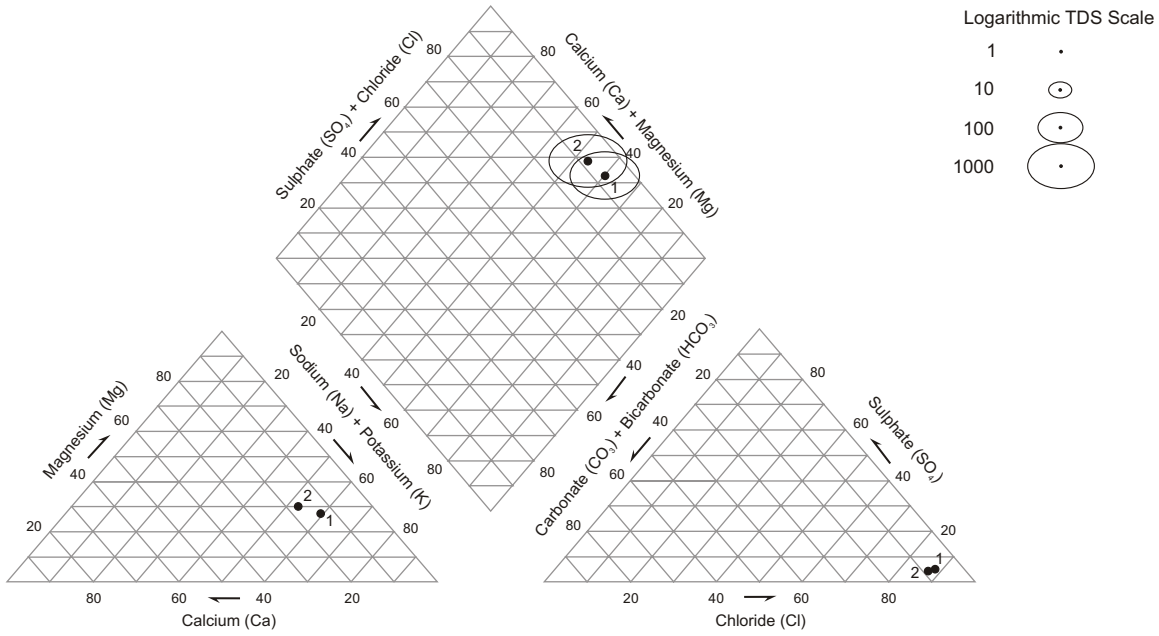
## Barrington



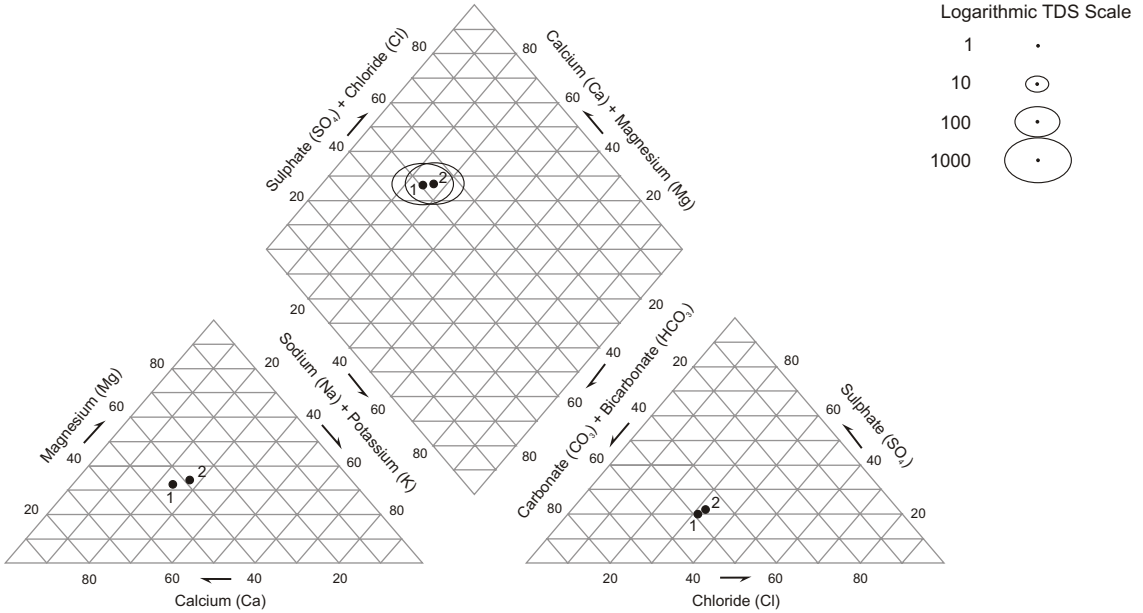

## Beulah



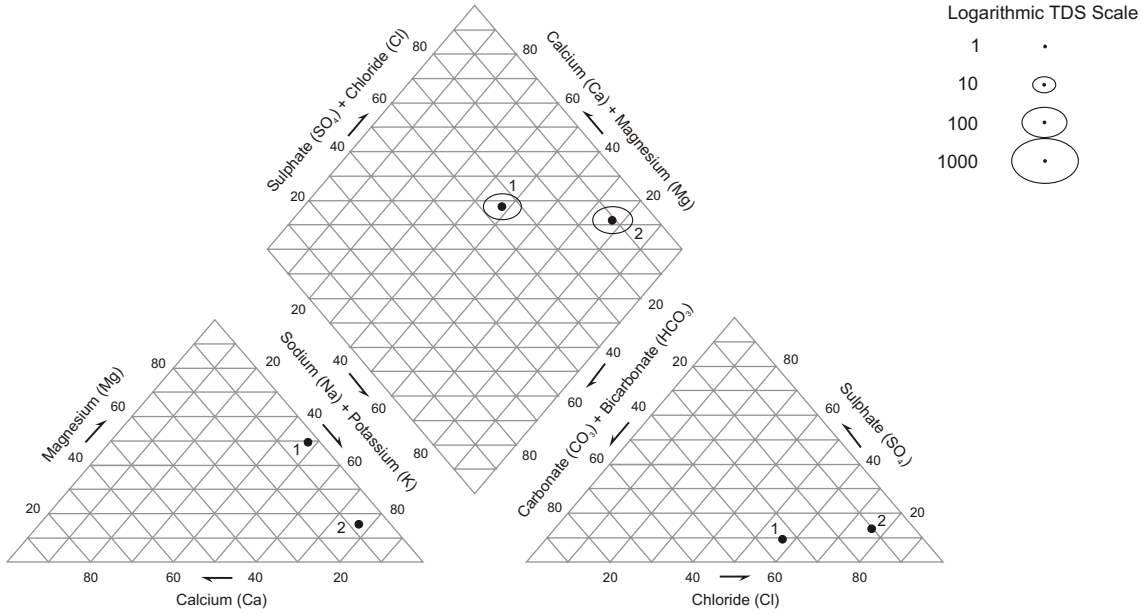

## Bicheno



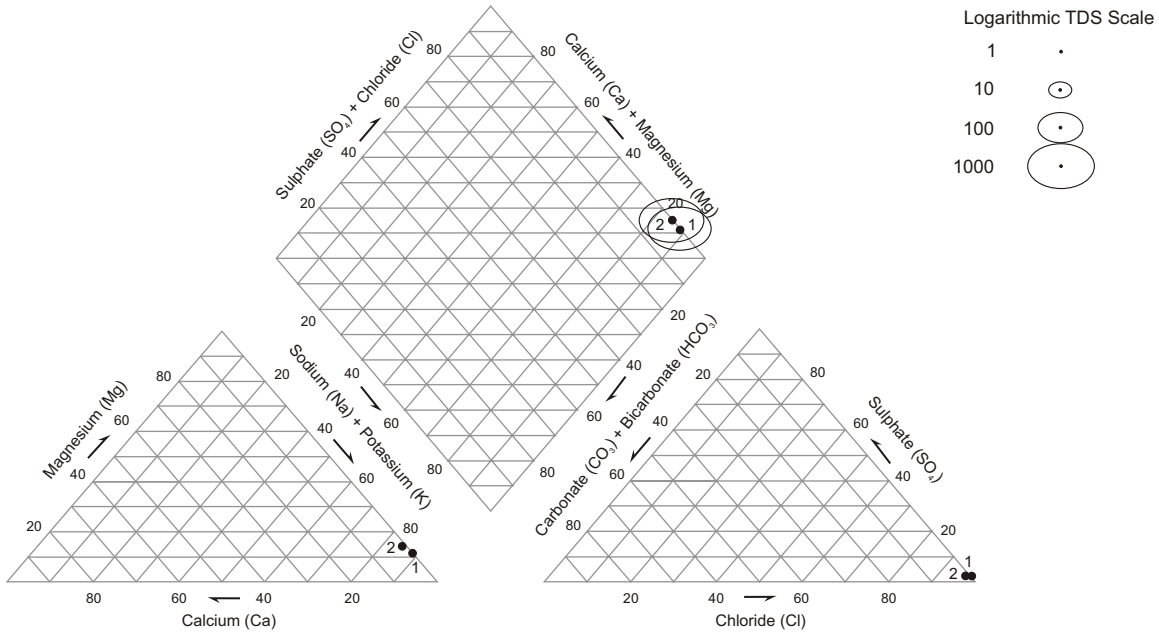
## Bothwell



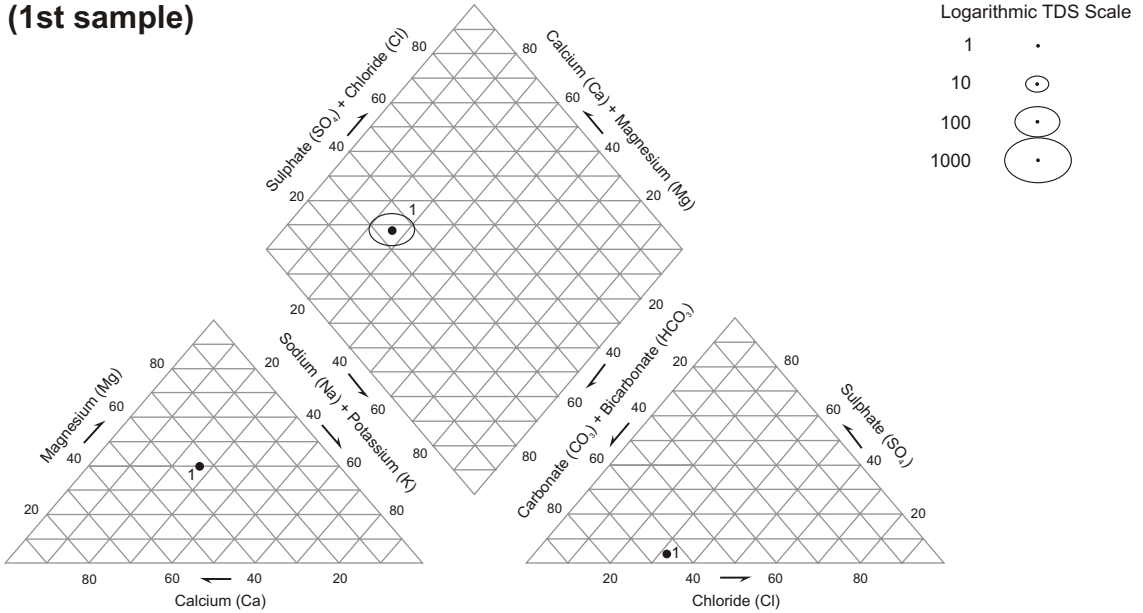

## Branxholm



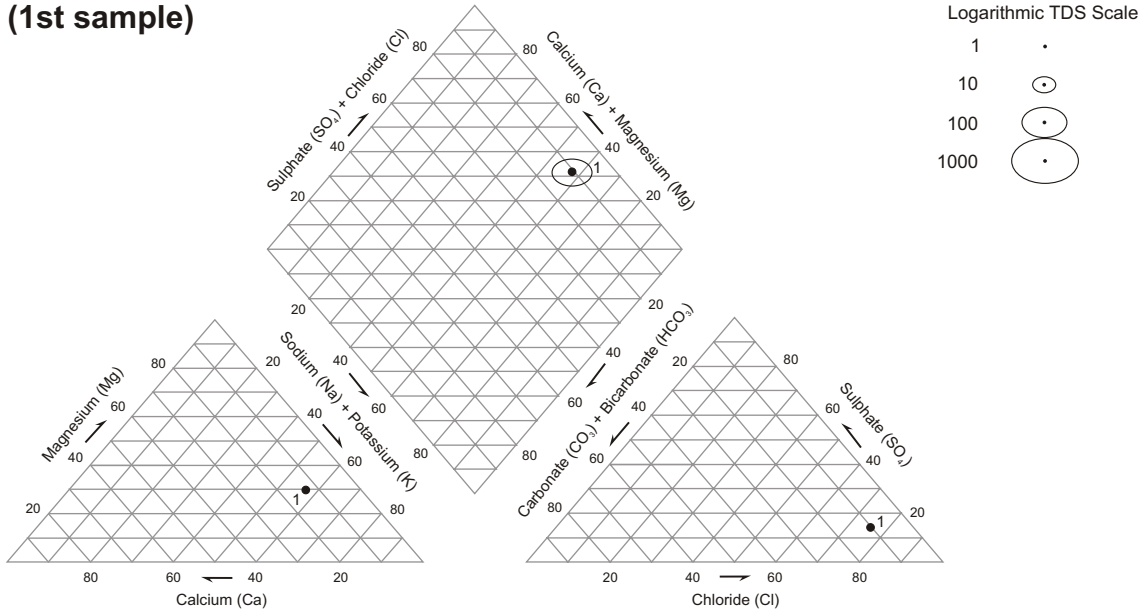

## Buckland



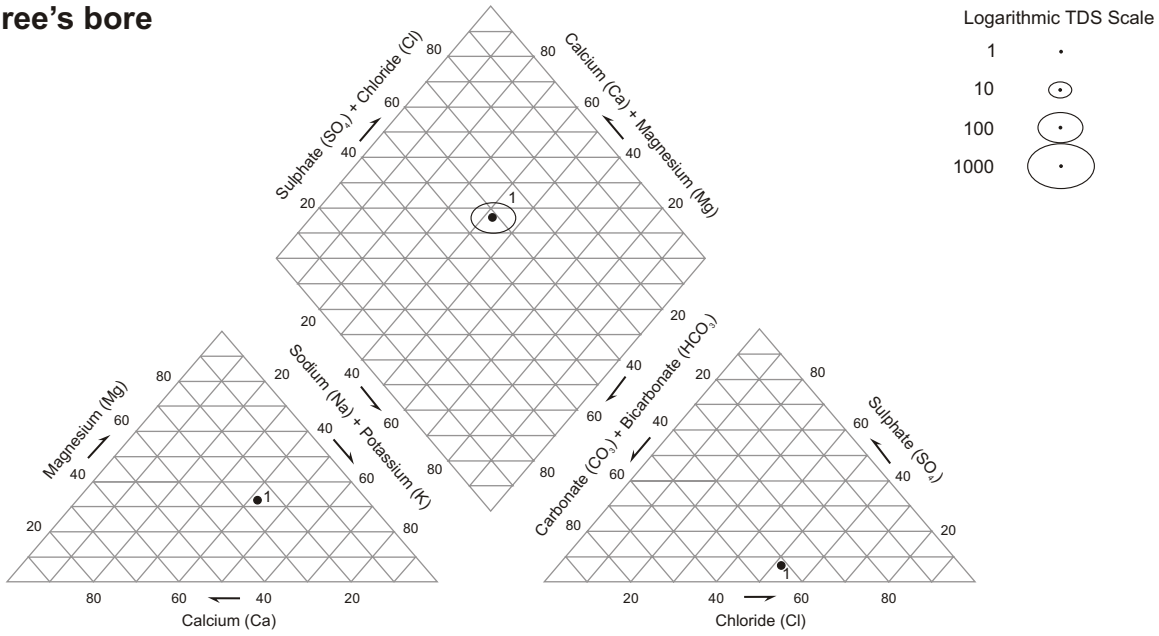
## Burnie Tip 1 (1st sample)



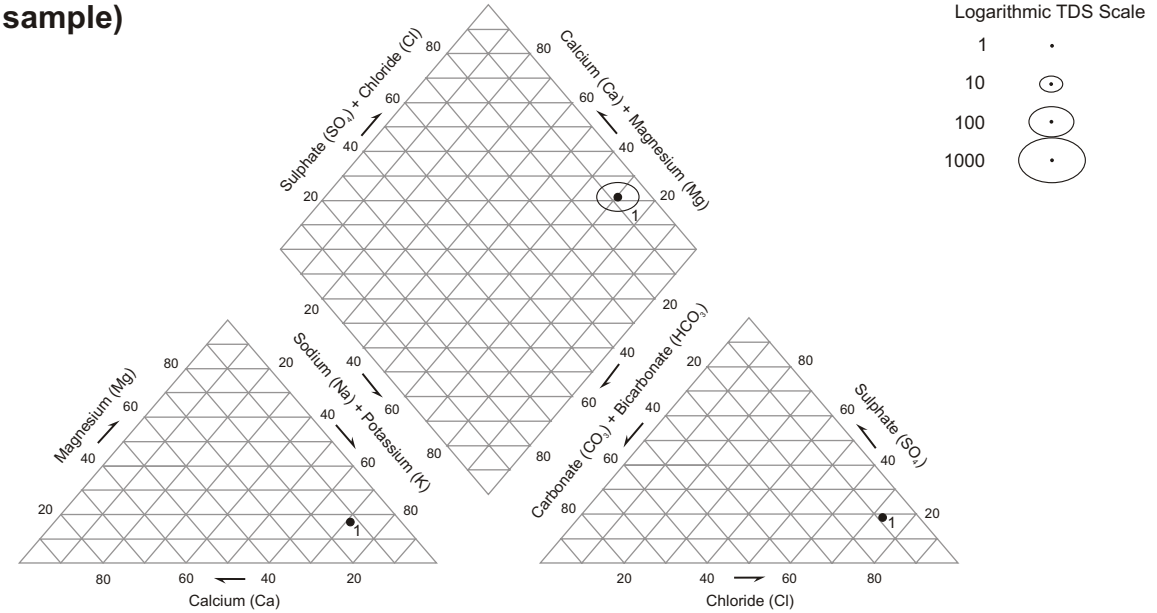

## Burnie Tip 4 (1st sample)



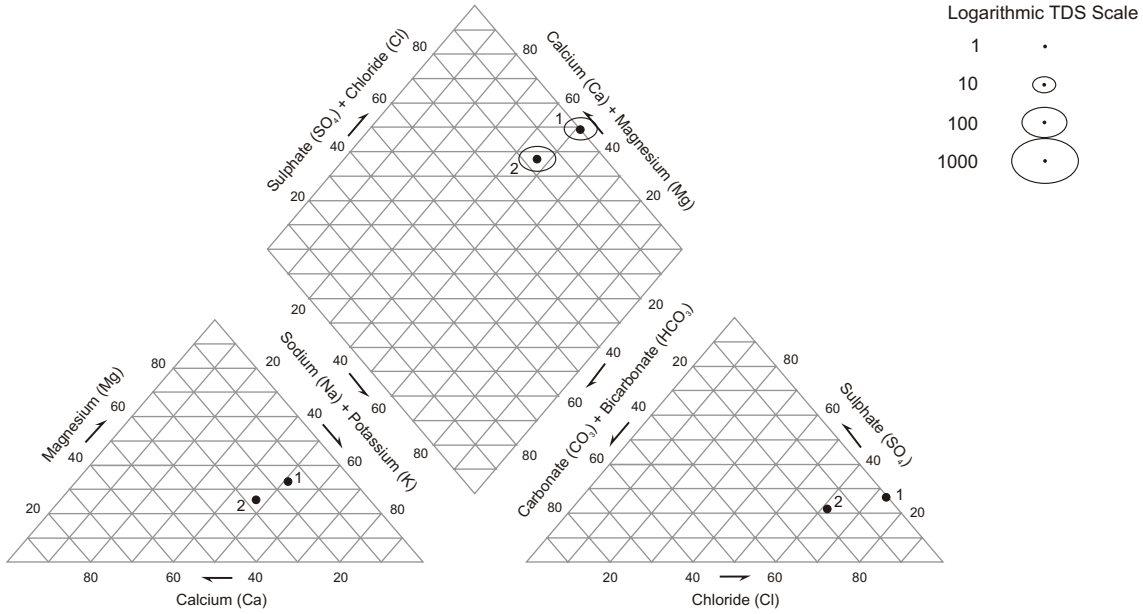

## Burnie — Free's bore



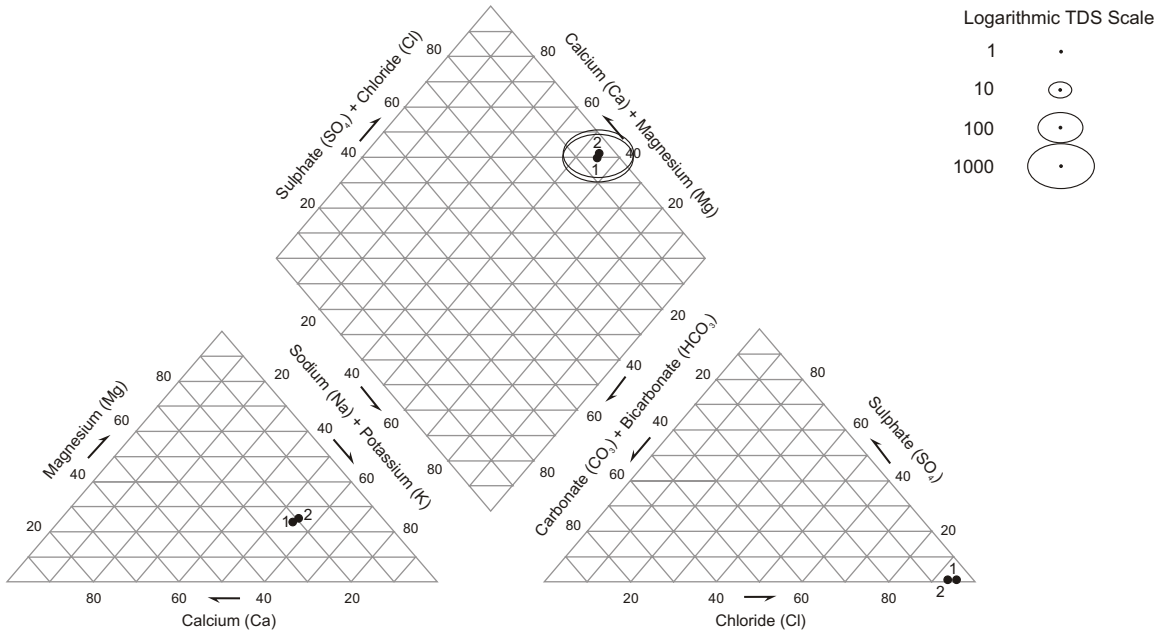
## Calder (1st sample)



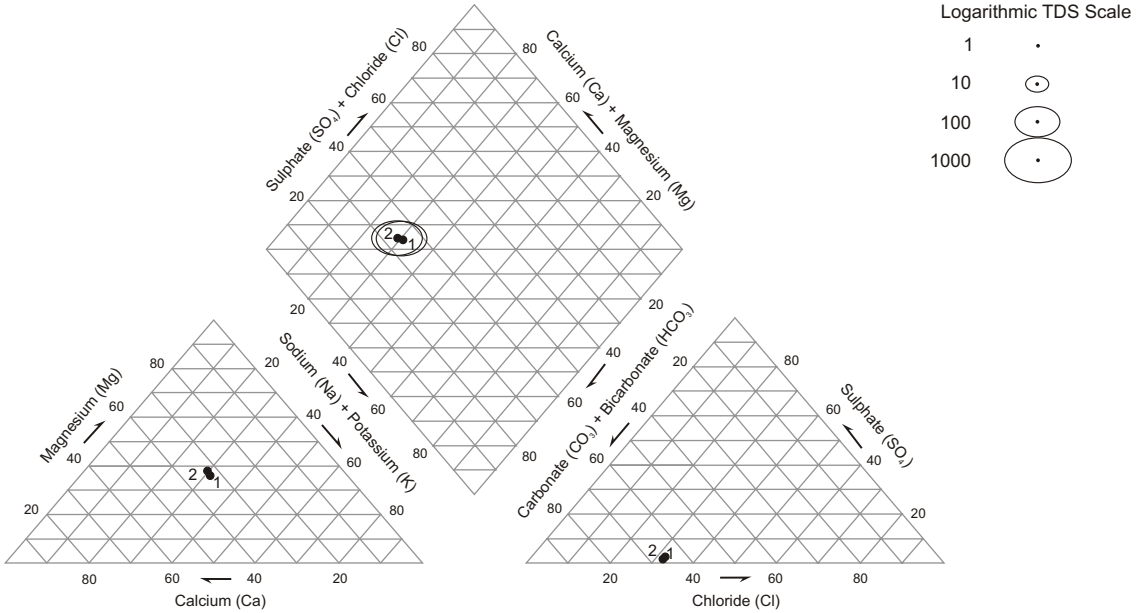

## Chudleigh



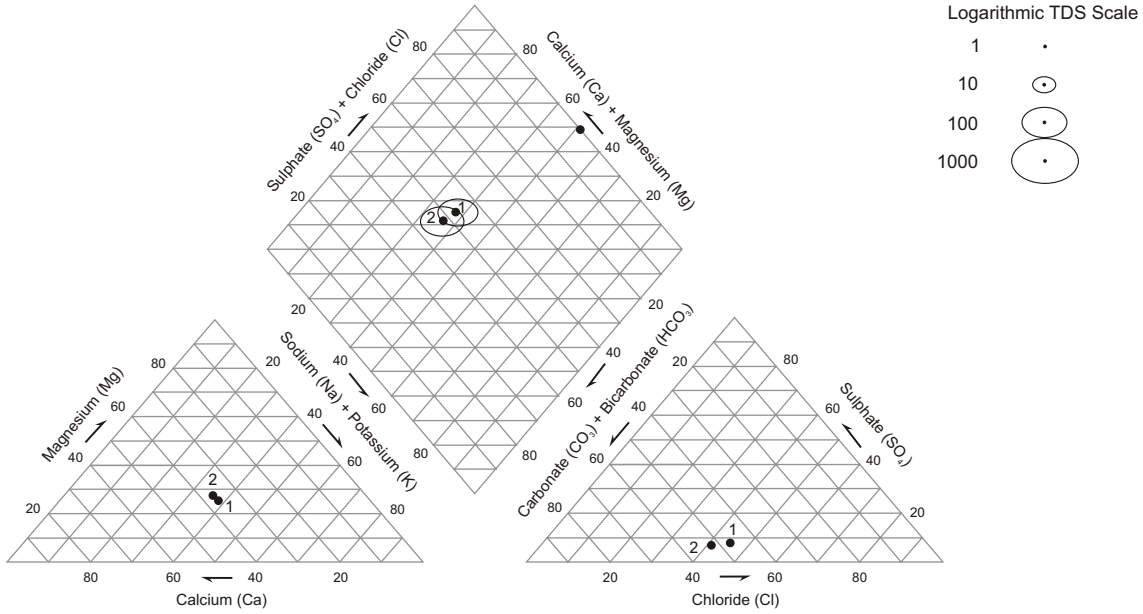

## Cressy



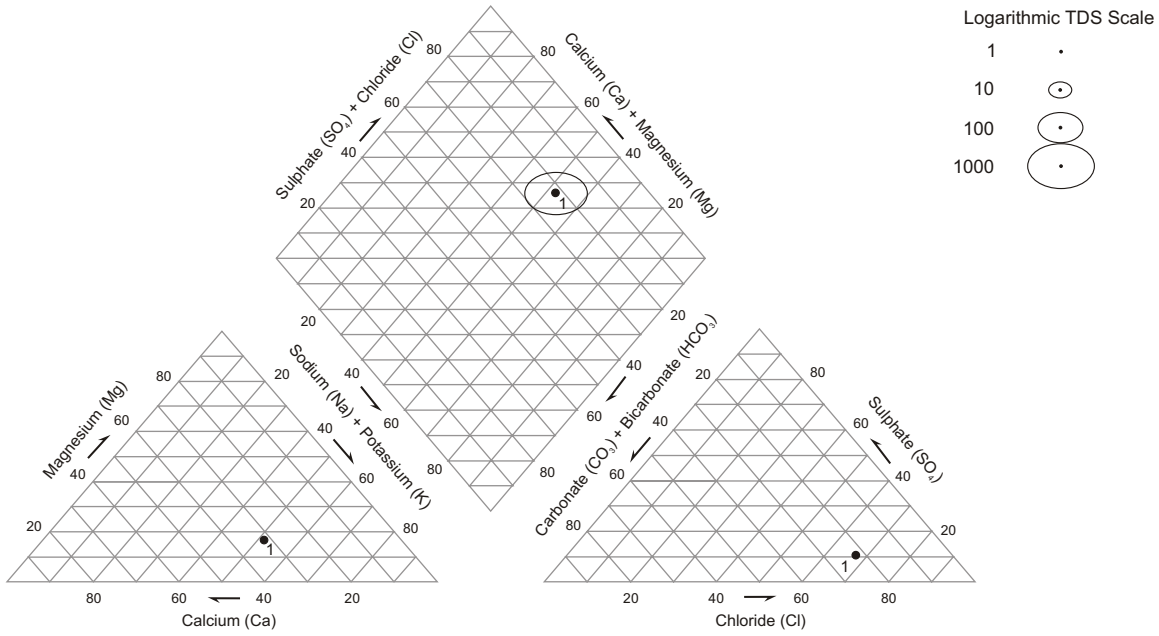
## Hagley



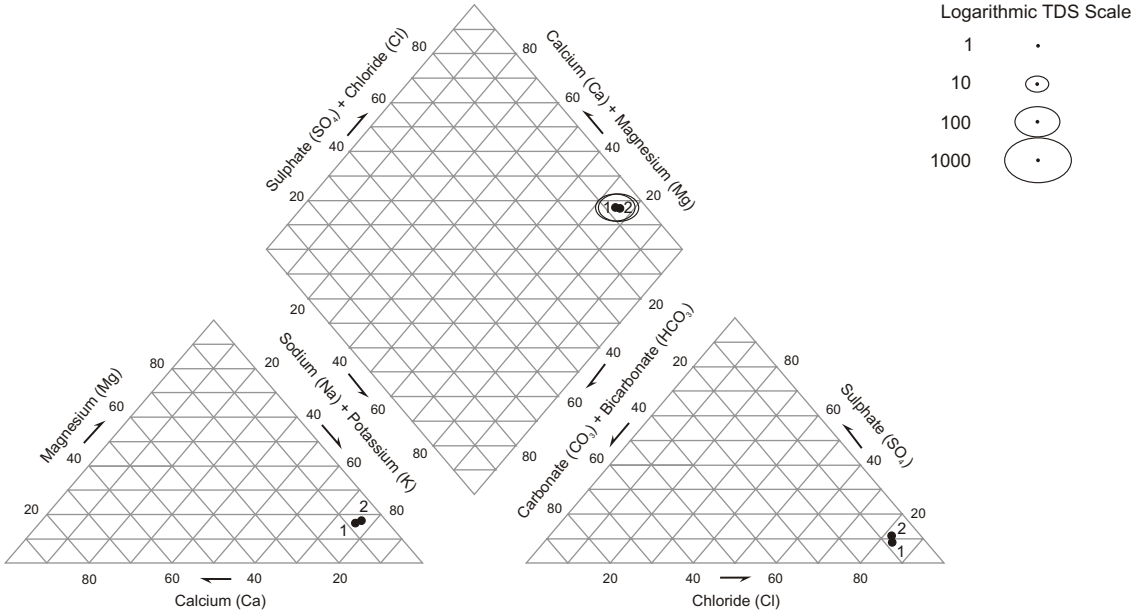

## Hampshire



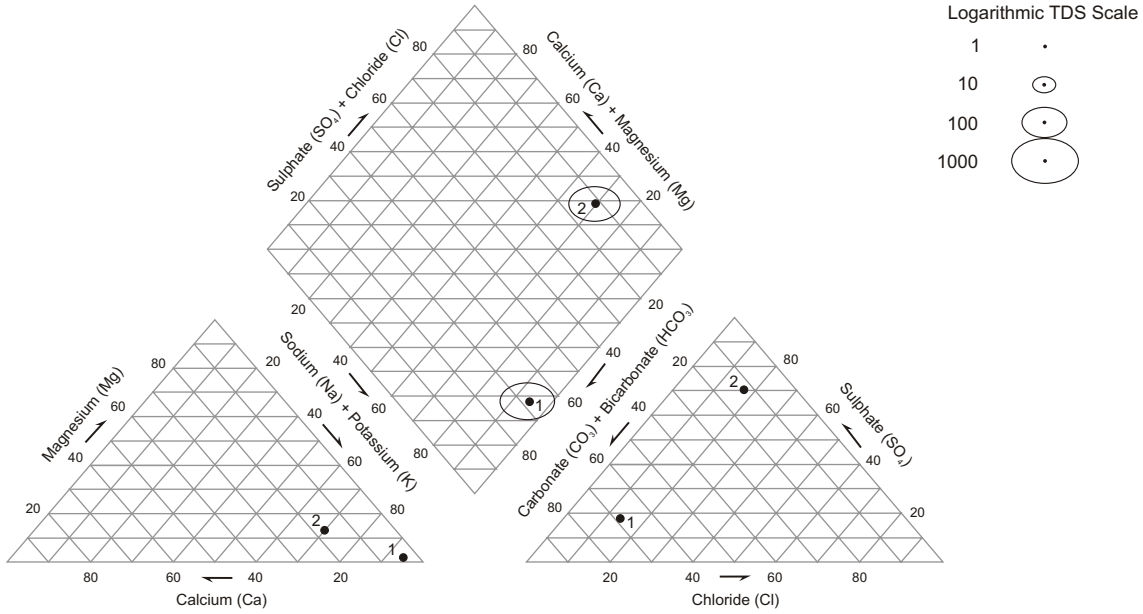

## Huonville



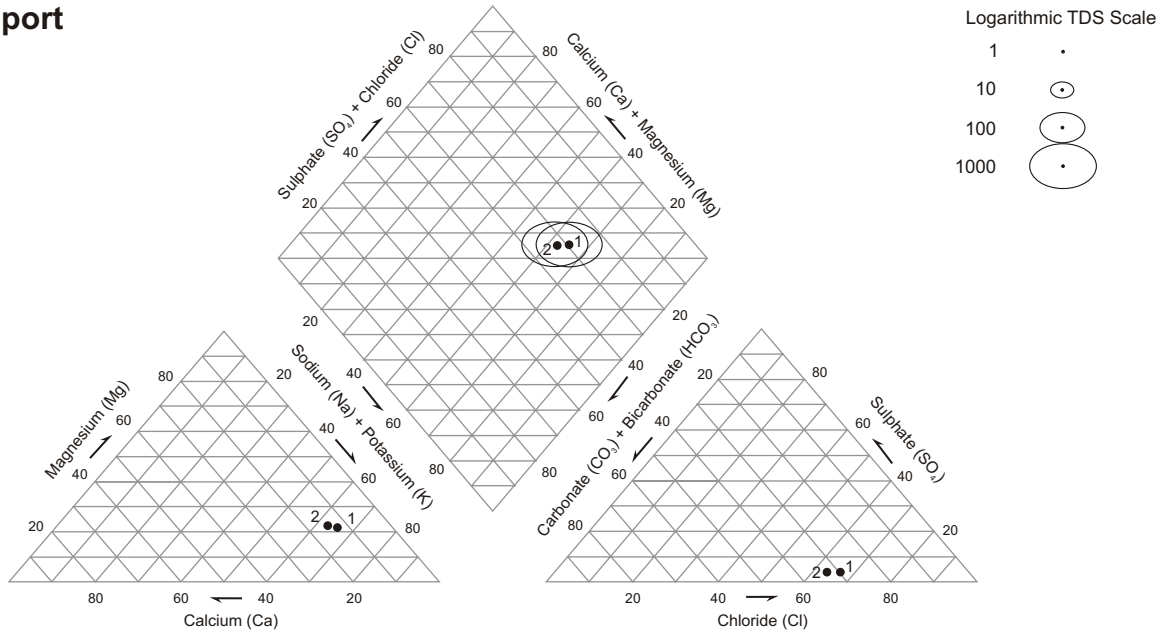
## Jetsonville



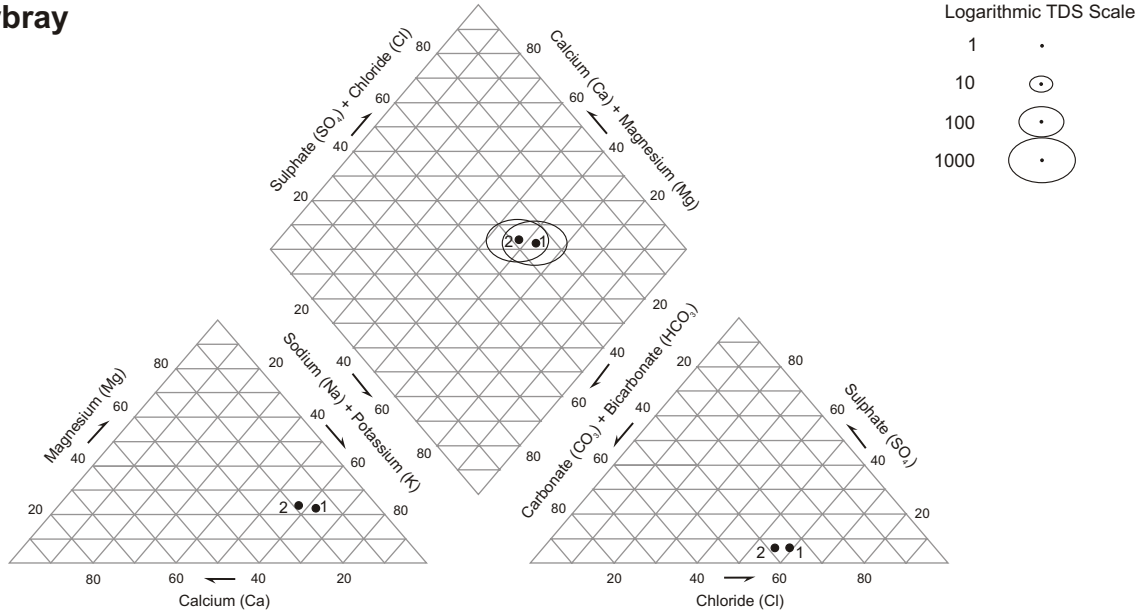

## Lilydale



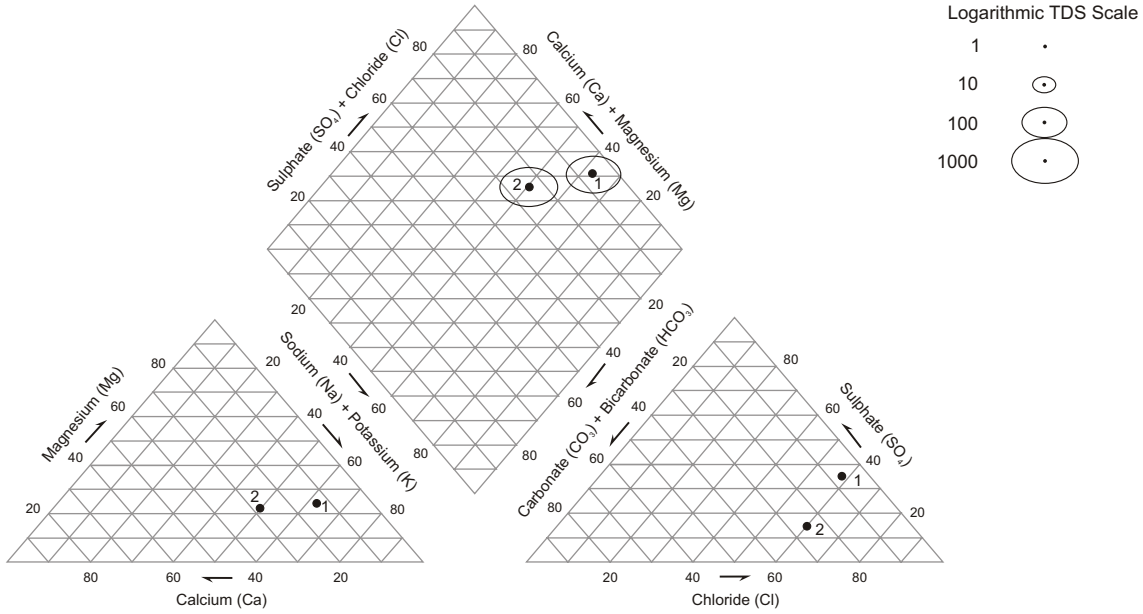

## Little Swanport



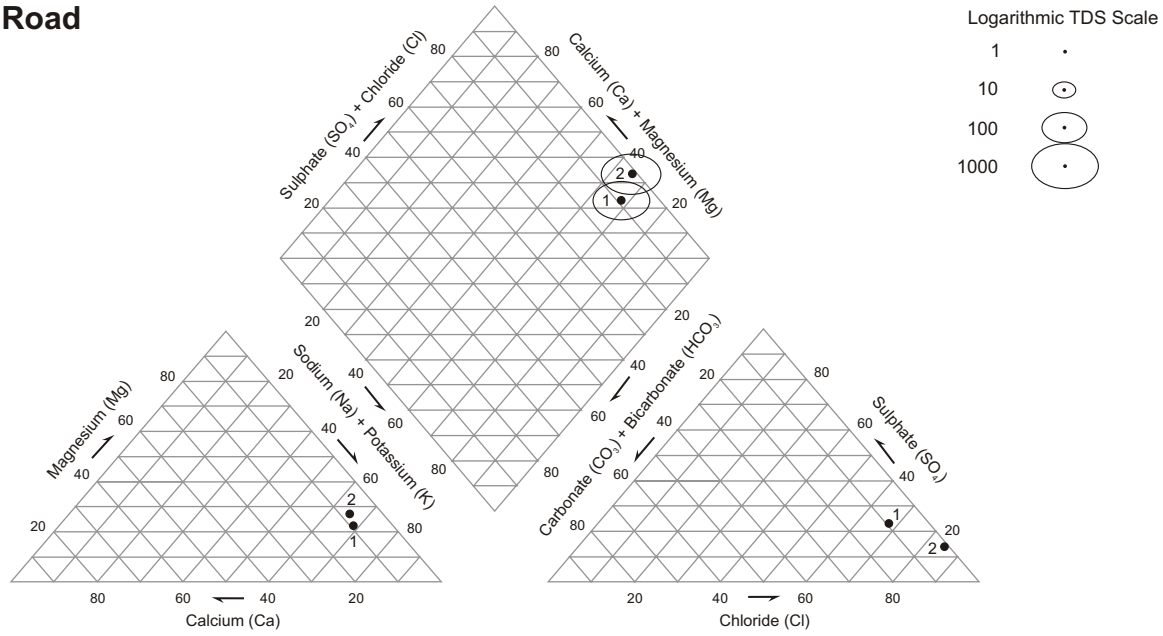
## Melton Mowbray



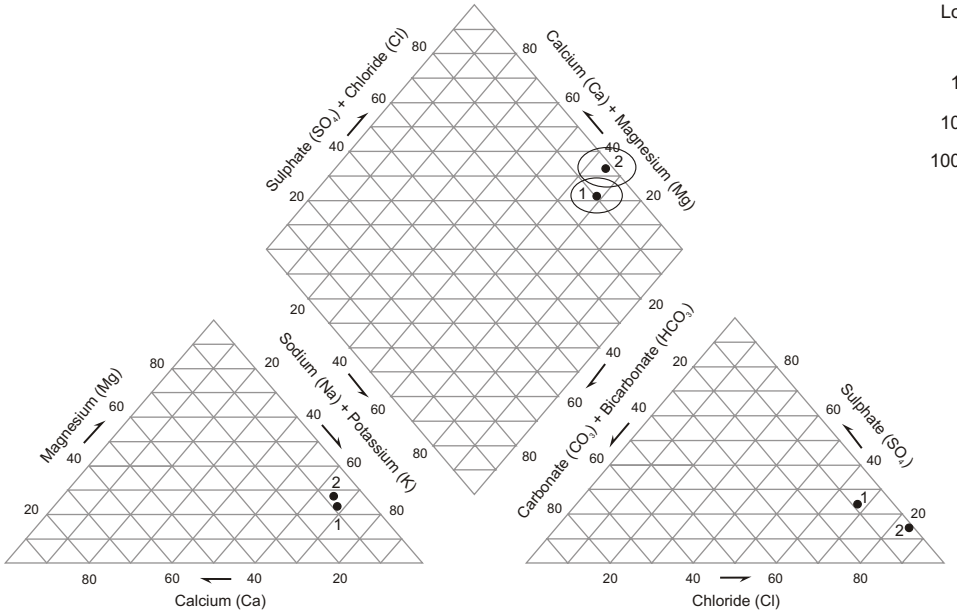

## Montagu



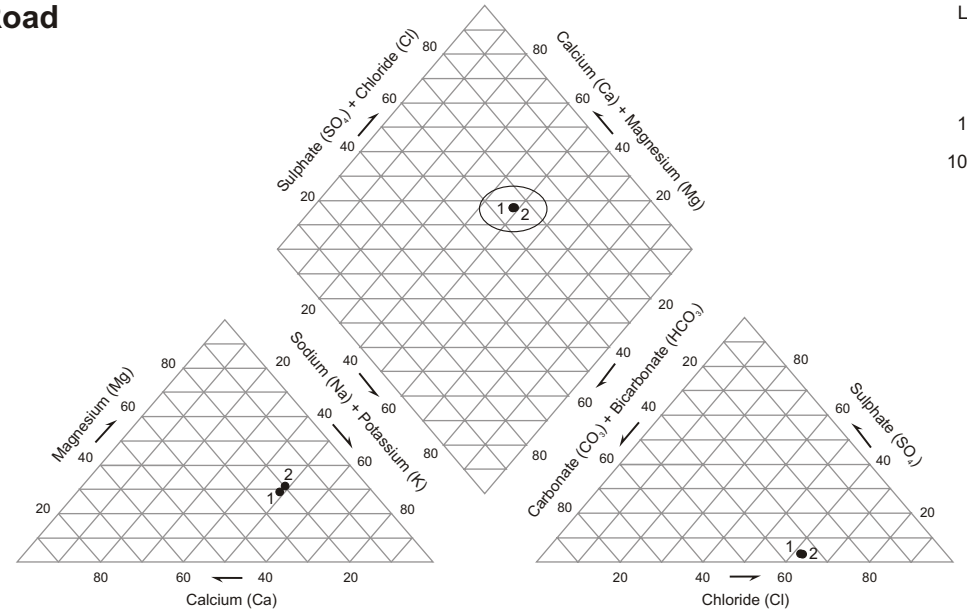

## Mooreville Road



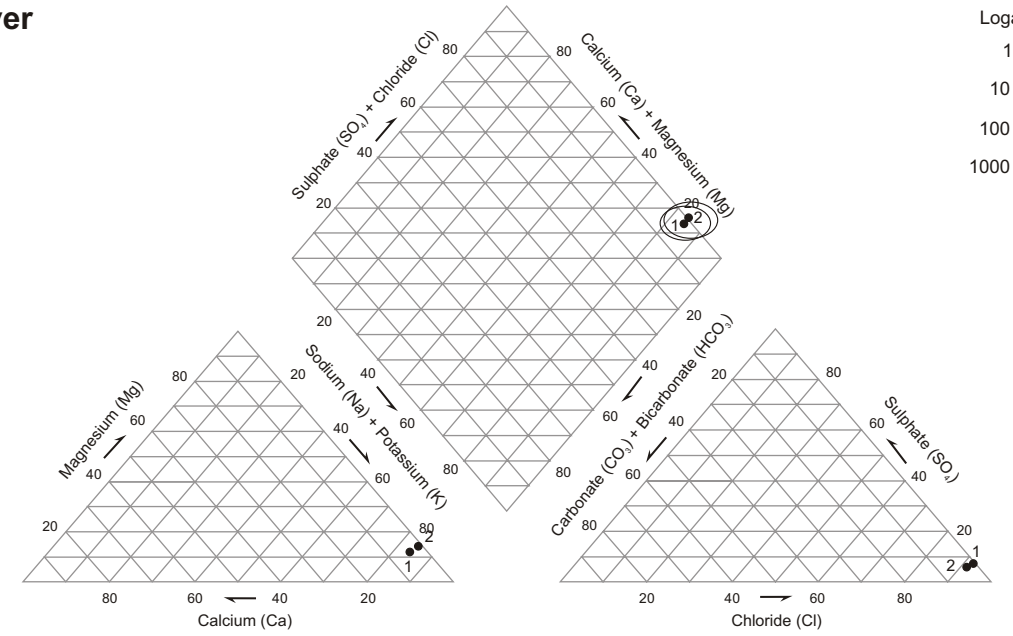
## Osmaston



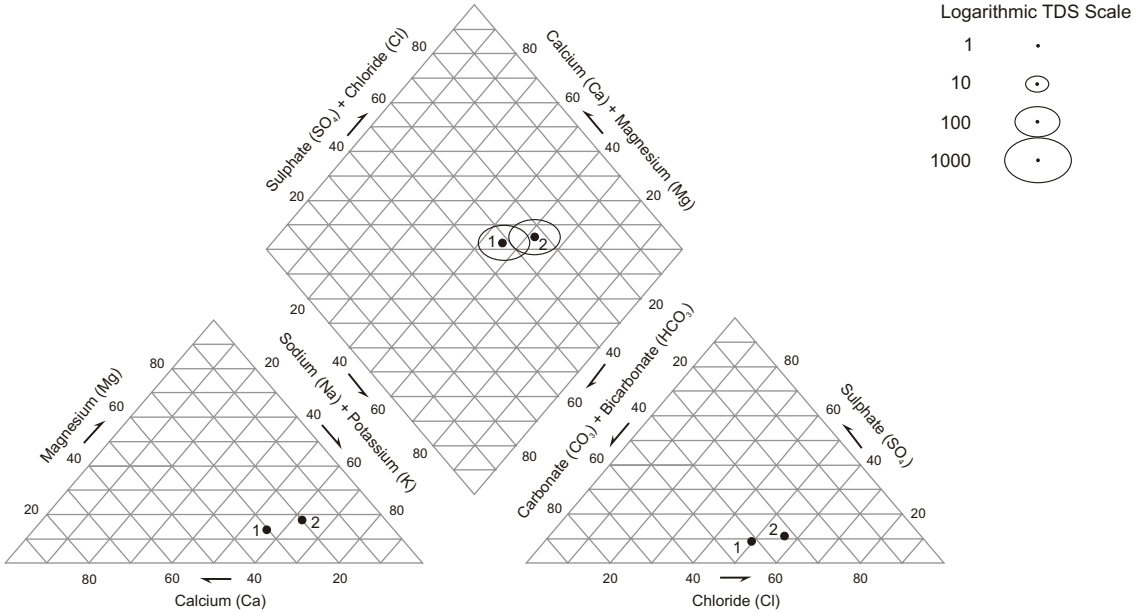

## Pawleena Road



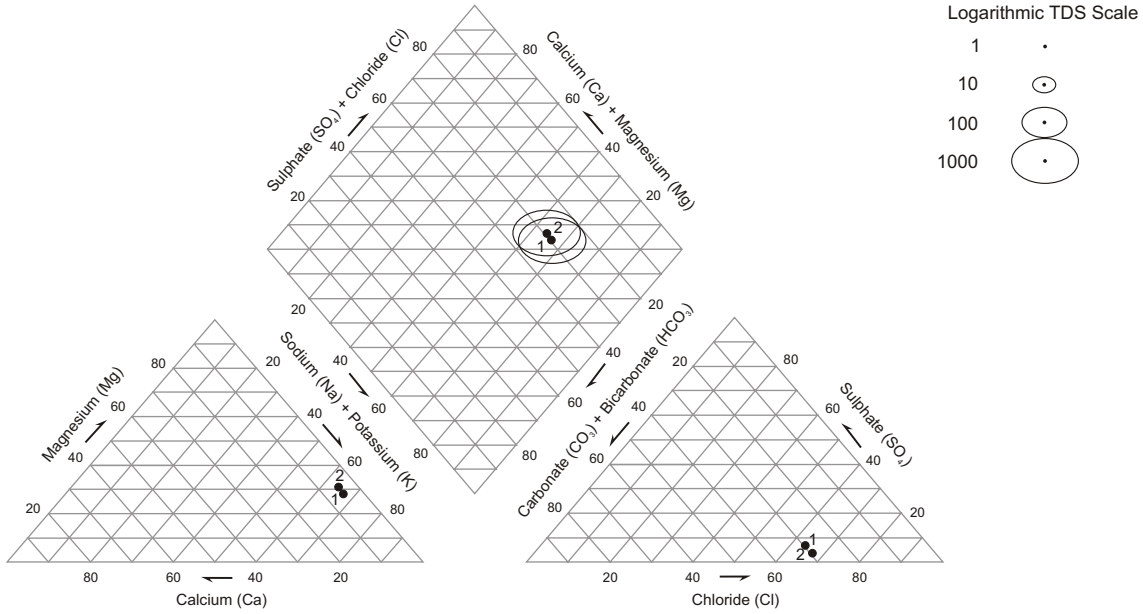

## Pipers River



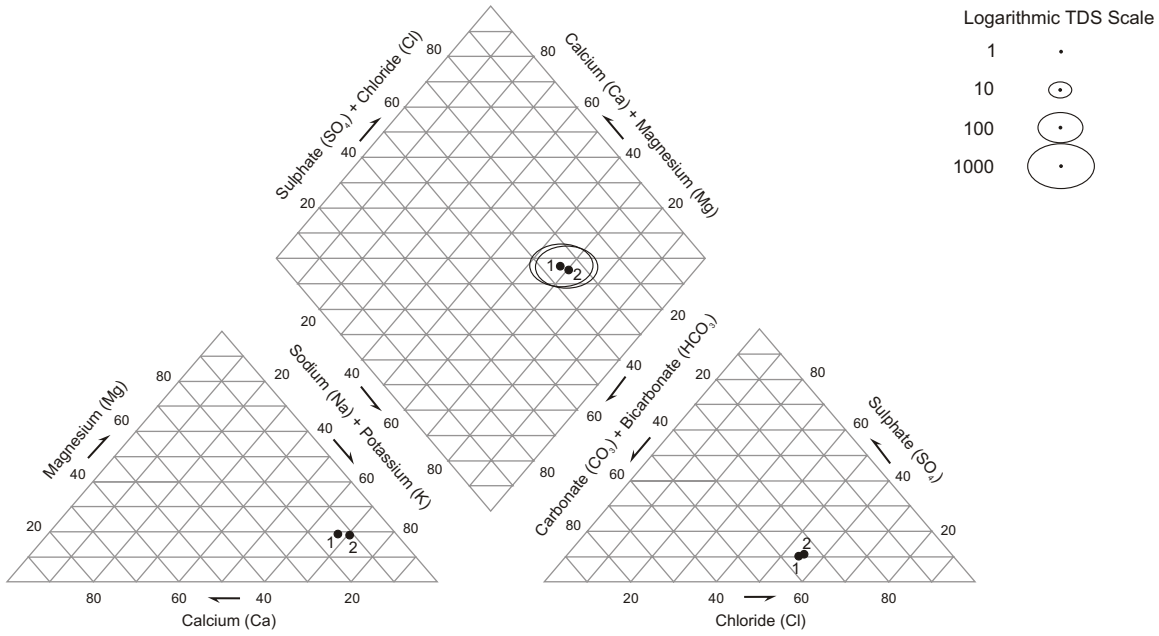
## Port Arthur



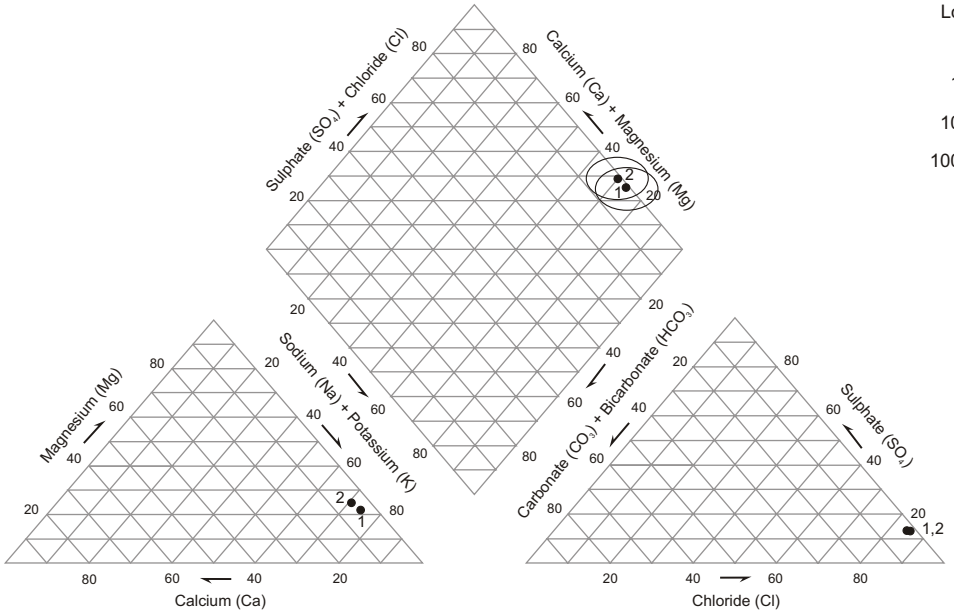

## Ross



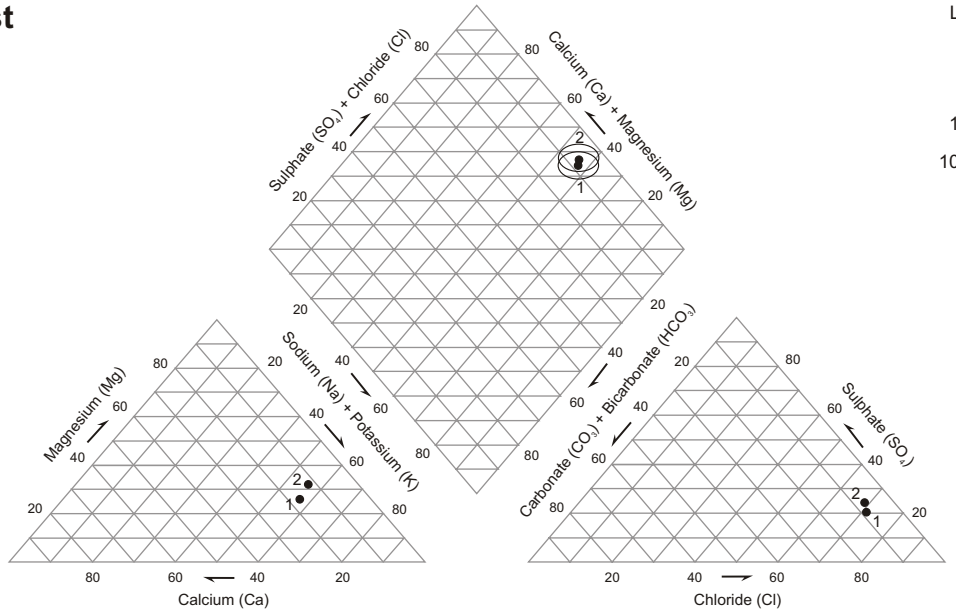

## St Marys



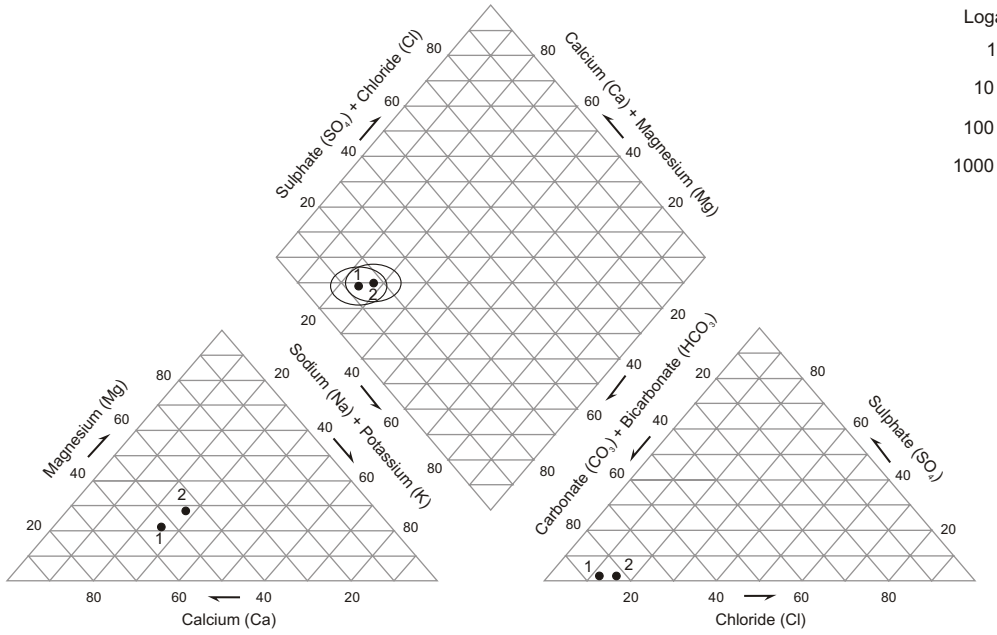
## Snug



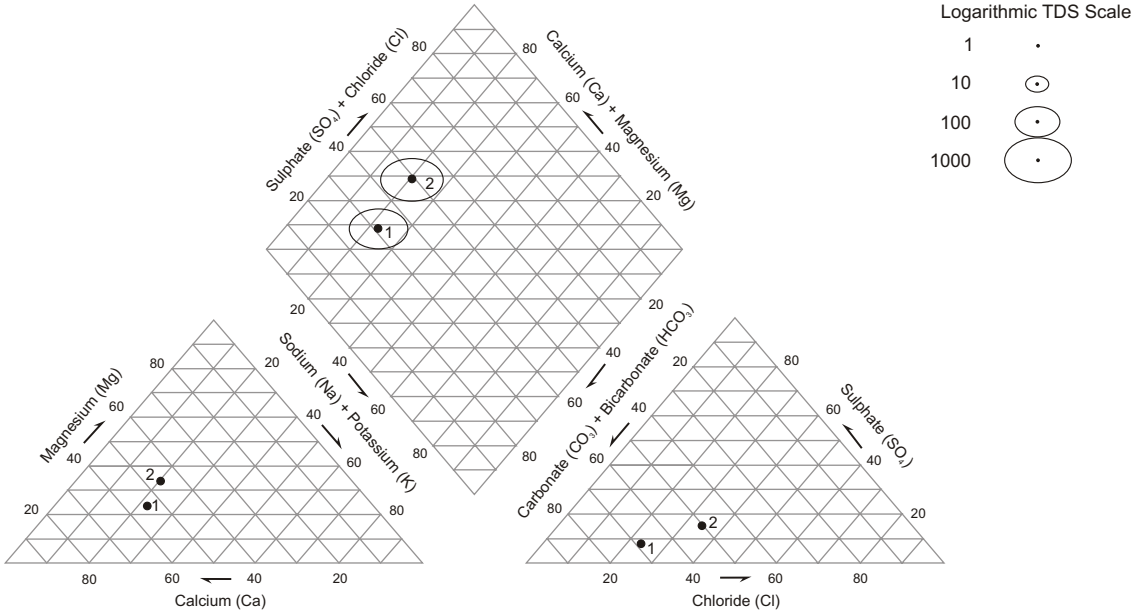

## South Forest



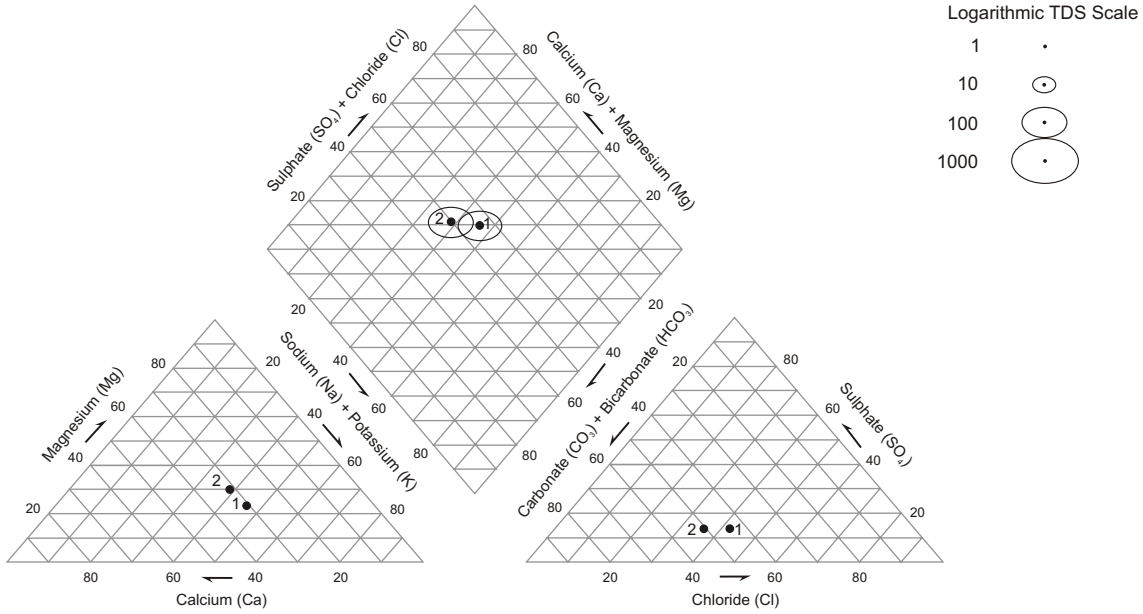

## Spreyton



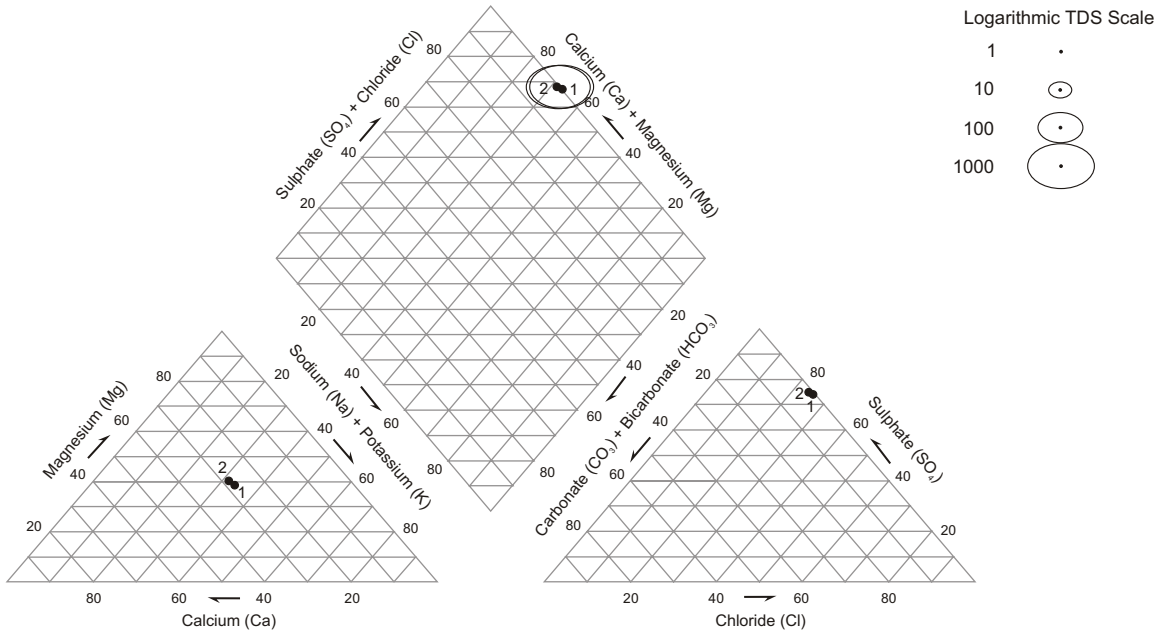
## Togari



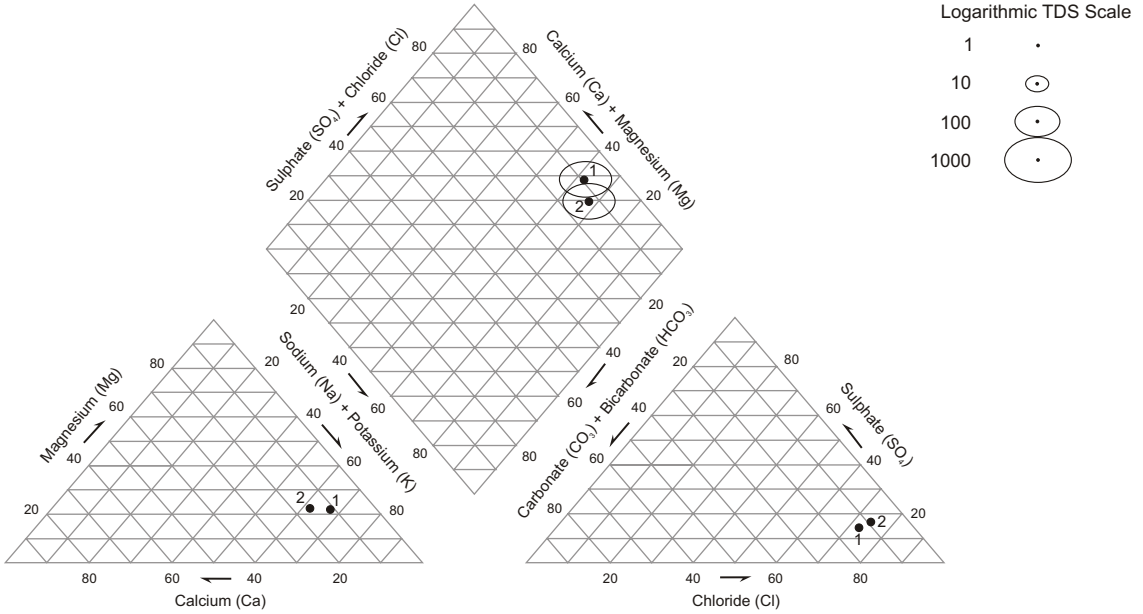

## Trowutta



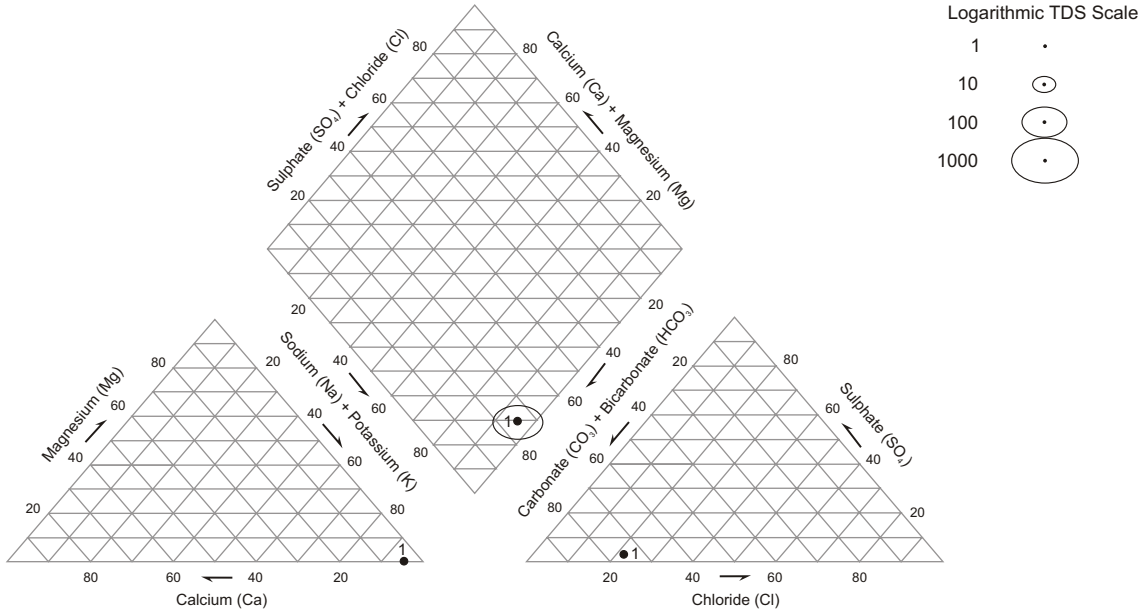

## Tunnack



## Waterhouse




## Winnaleah

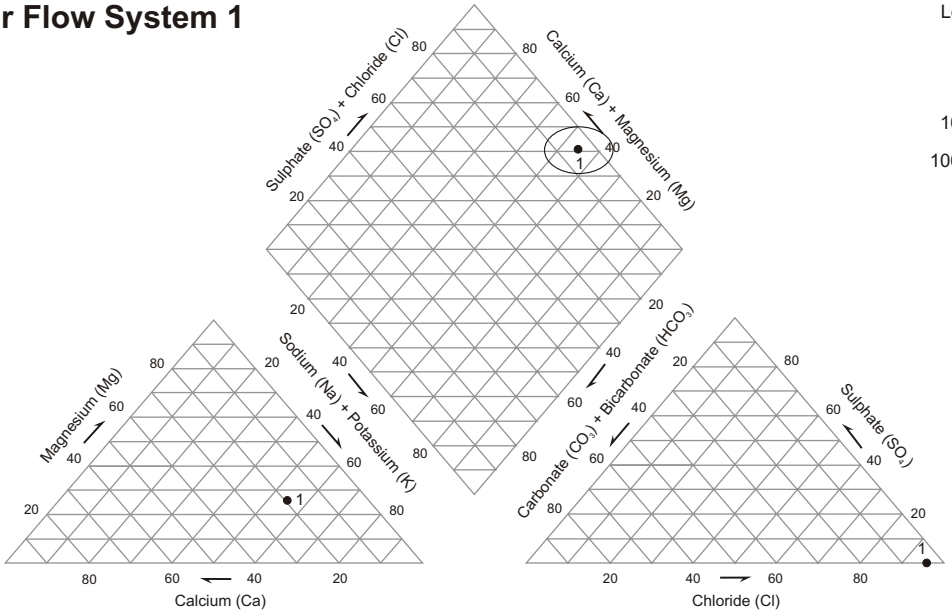


# APPENDIX 11

## Piper plots of boreholes grouped by groundwater flow system

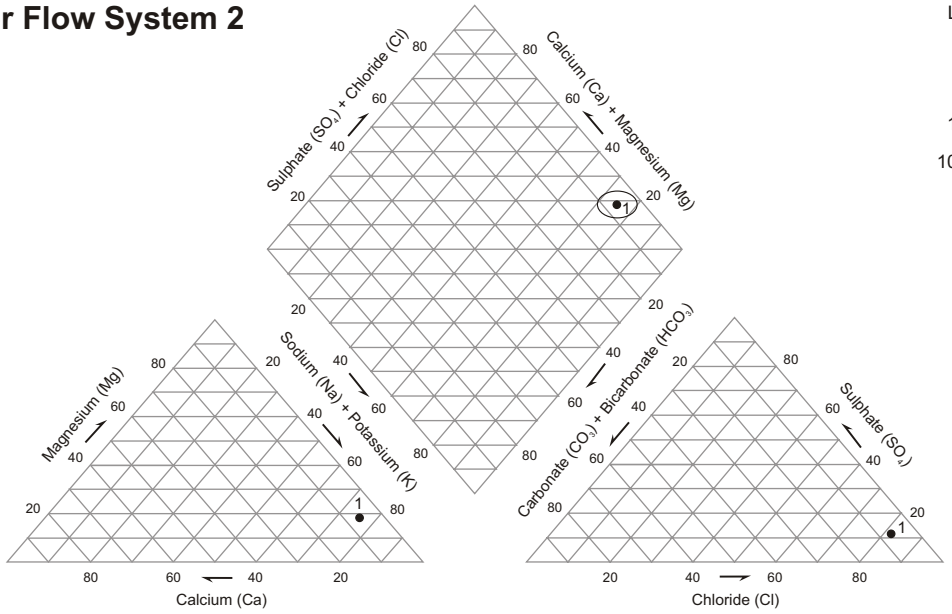
## Groundwater Flow System 1

1 — Cressy



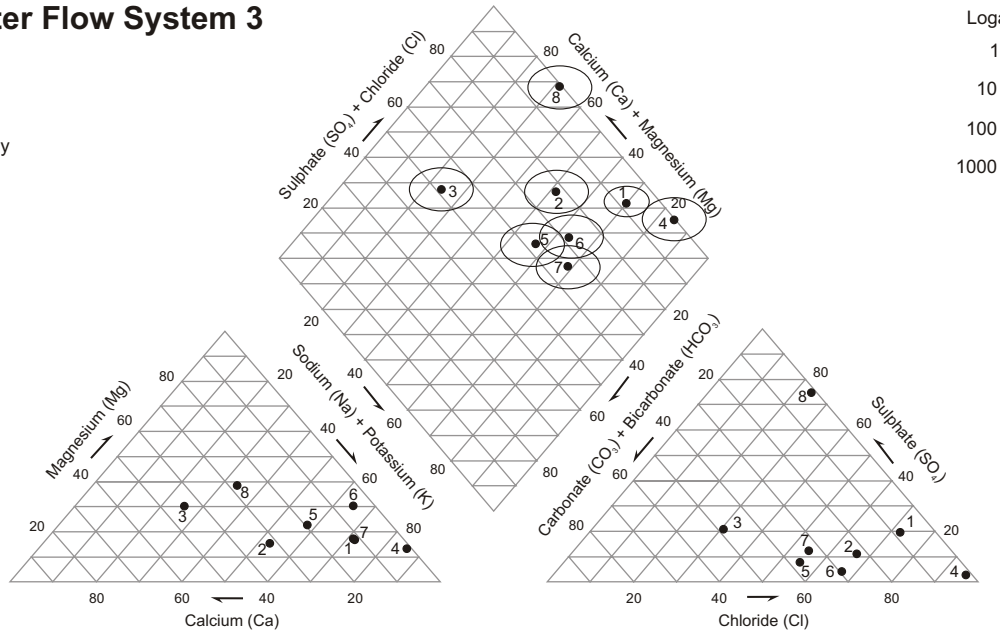

## Groundwater Flow System 2

1 — Jetsonville



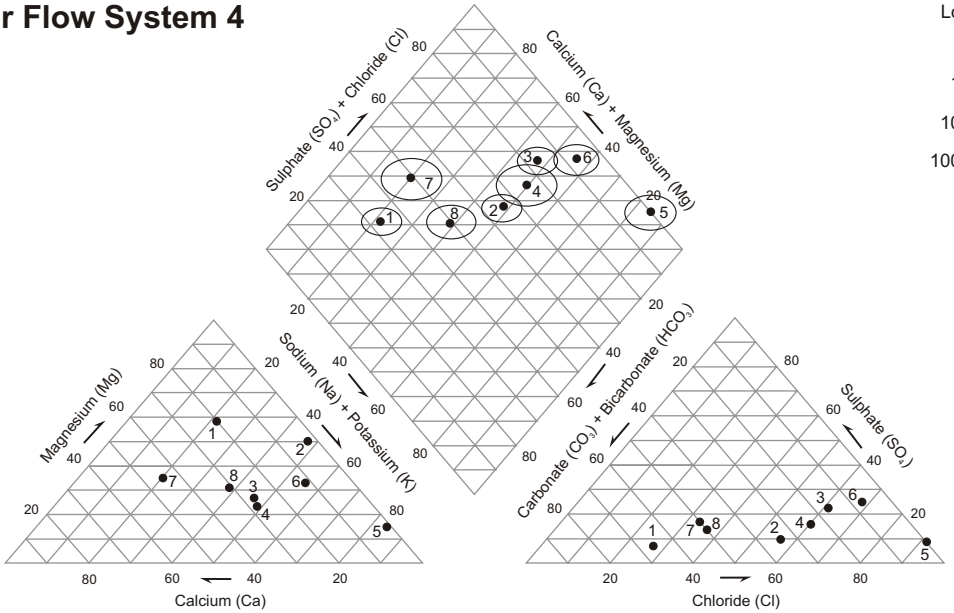

## Groundwater Flow System 3

1 — Calder
2 — Huonville
3 — Bothwell
4 — Buckland
5 — Melton Mowbray
6 — Ross
7 — St Marys
8 — Tunnack



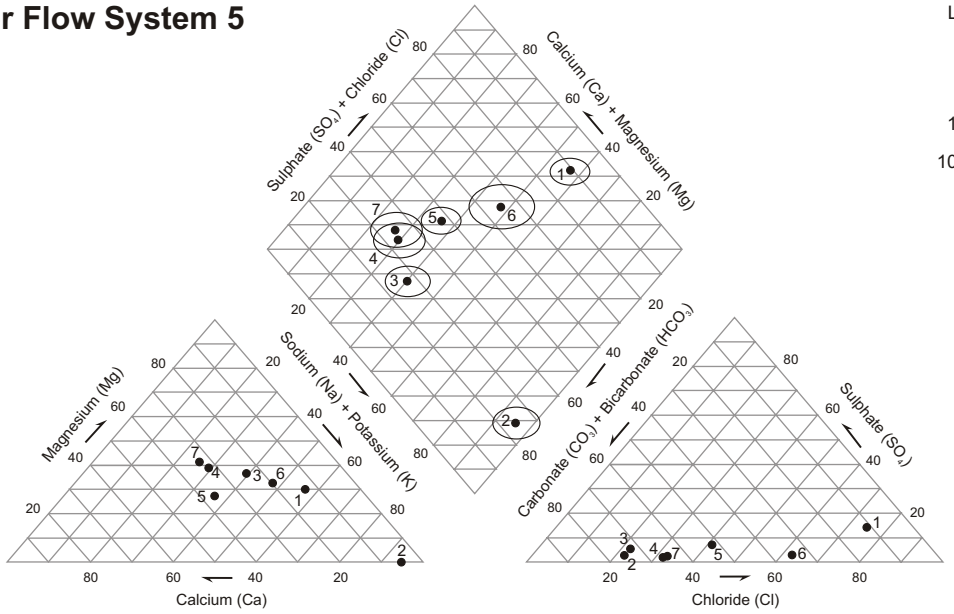
## Groundwater Flow System 4

1 — Beulah
2 — Branxholm
3 — Chudleigh
4 — Montagu
5 — Pipers River
6 — South Forest
7 — Togari
8 — Trowutta



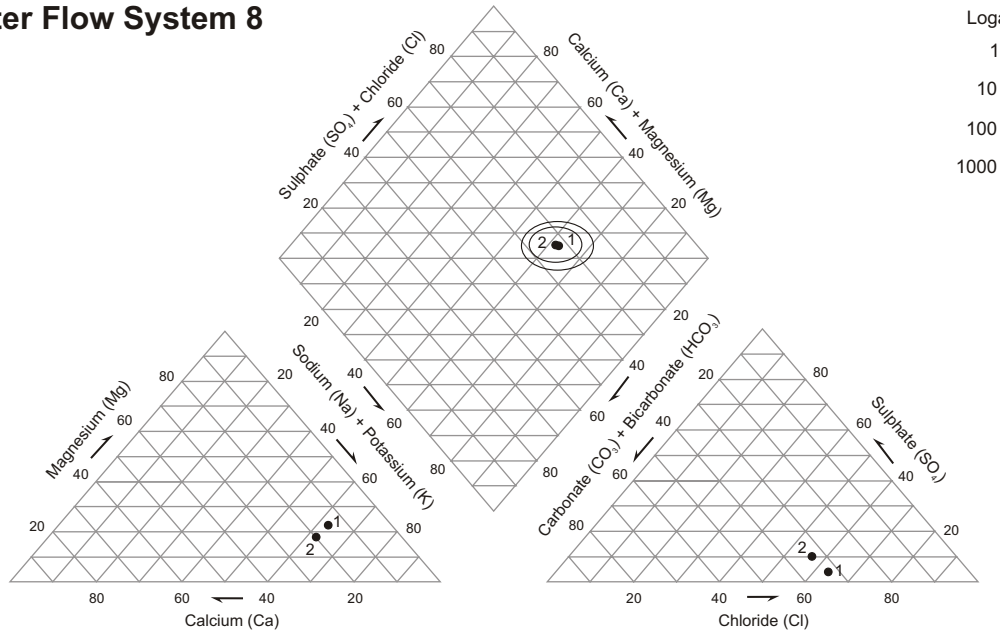

## Groundwater Flow System 5

1 — Burnie Tip 4 (1st)
2 — Winnaleah
3 — Barrington
4 — Hagley
5 — Hampshire
6 — Pawleena Road
7 — Burnie Tip 1



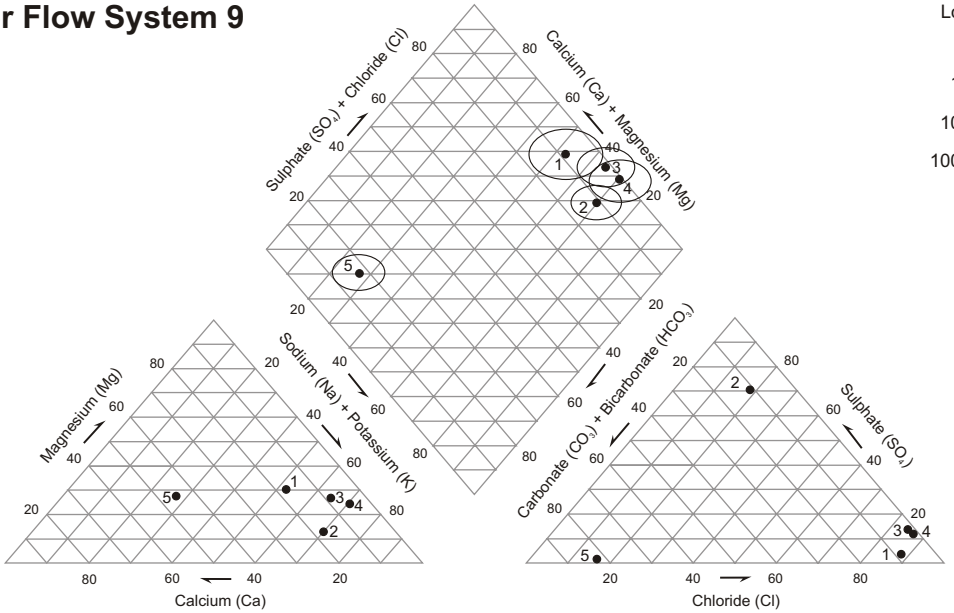

## Groundwater Flow System 8

1 — Little Swanport
2 — Port Arthur



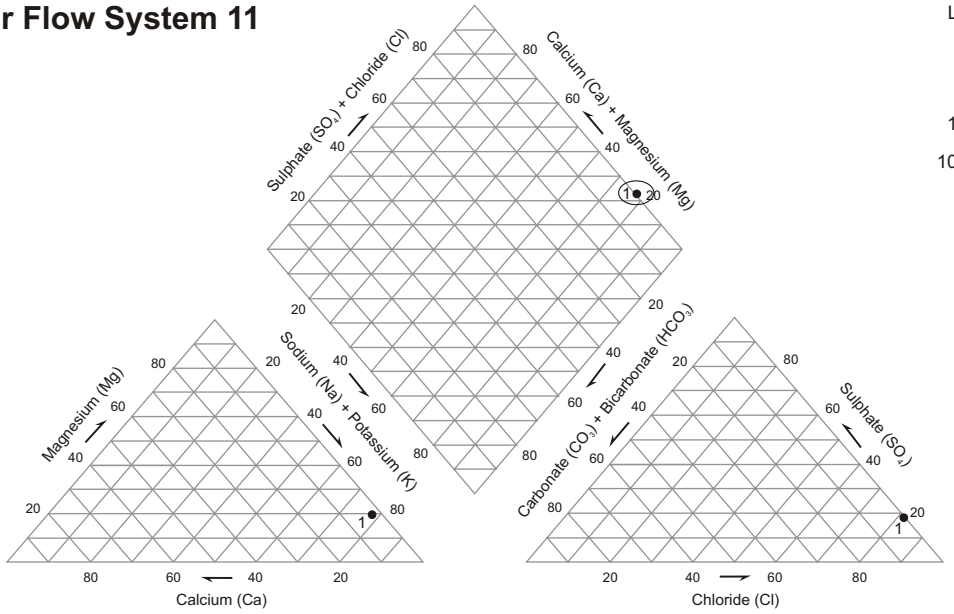
## Groundwater Flow System 9

1 — Bicheno
2 — Lilydale
3 — Osmastonh
4 — Snug
5 — Spreyton



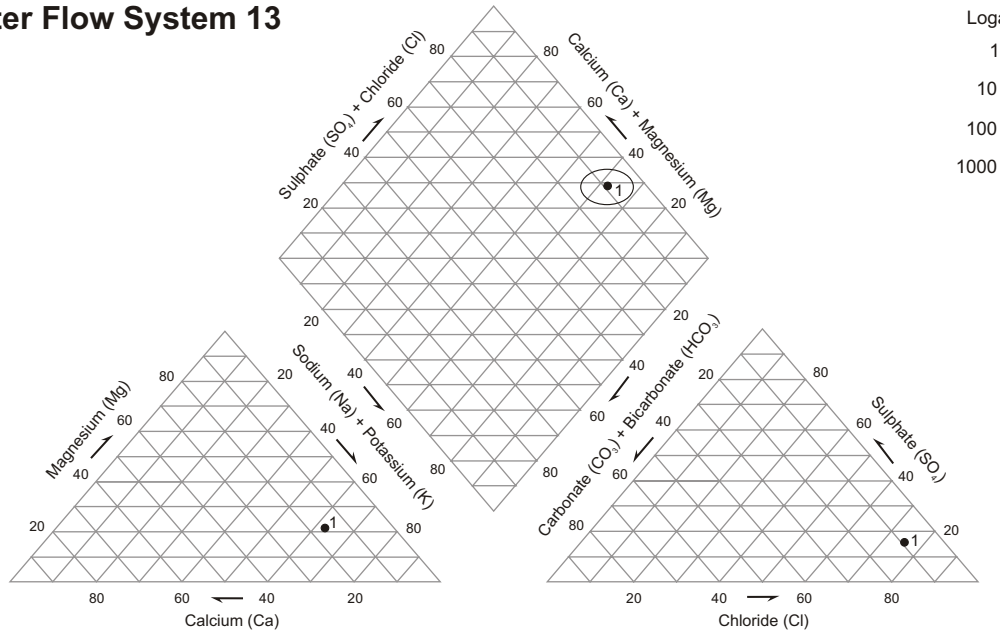

## Groundwater Flow System 11

1 — Mooreville Road




## Groundwater Flow System 13

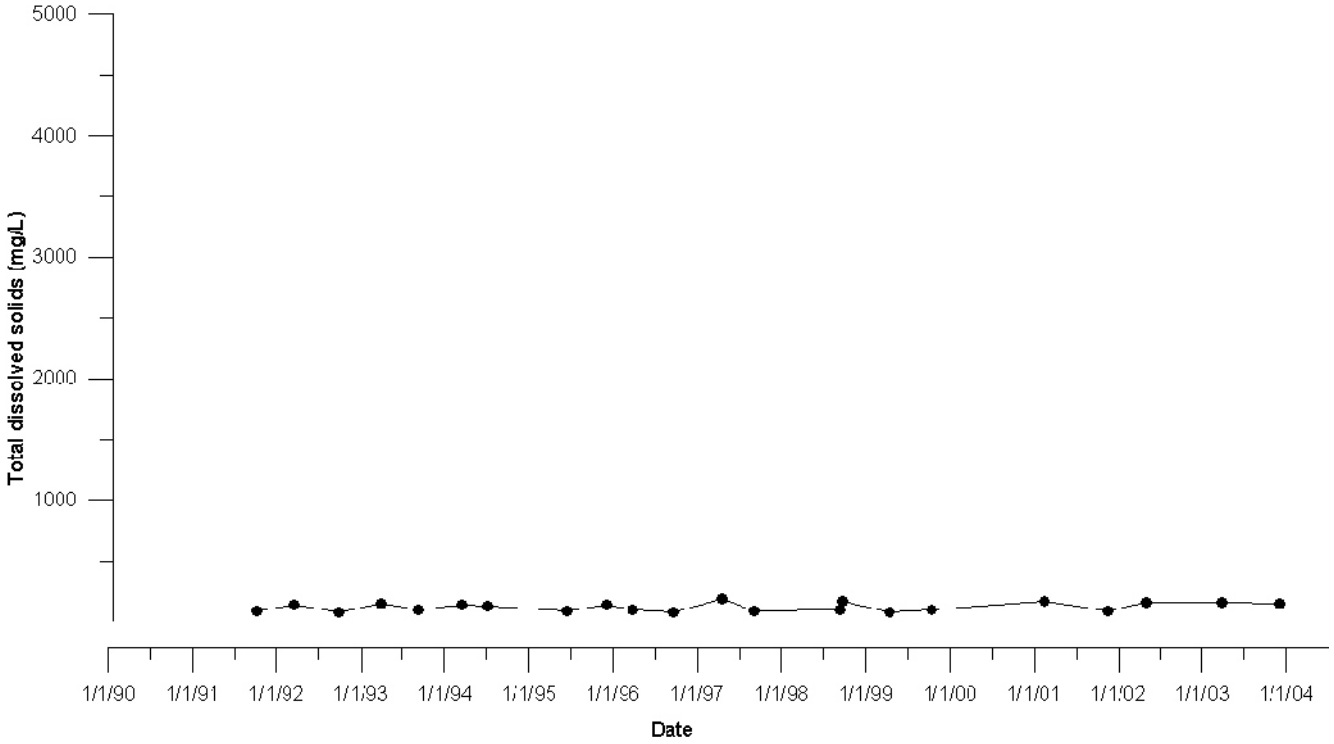
1 — Waterhouse



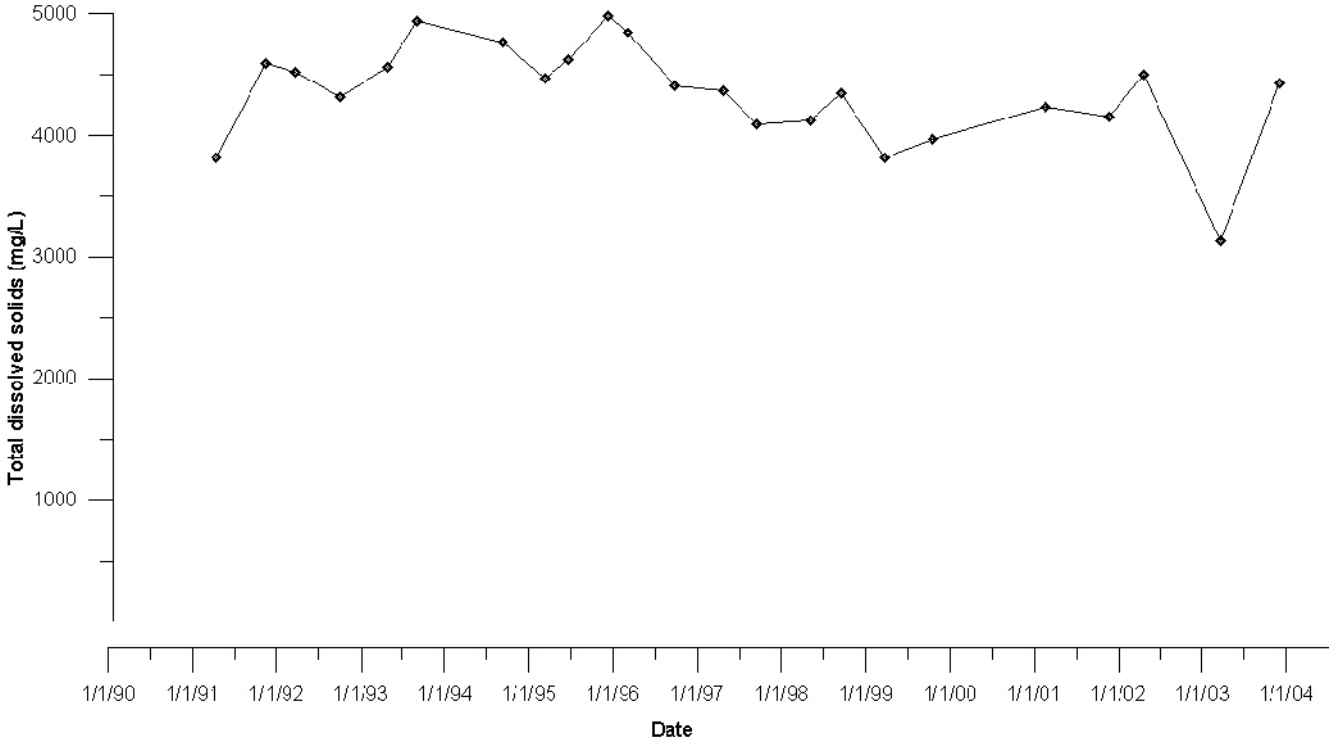
# APPENDIX 12

## Graphs of Total Dissolved Solids for each borehole of the statewide groundwater network

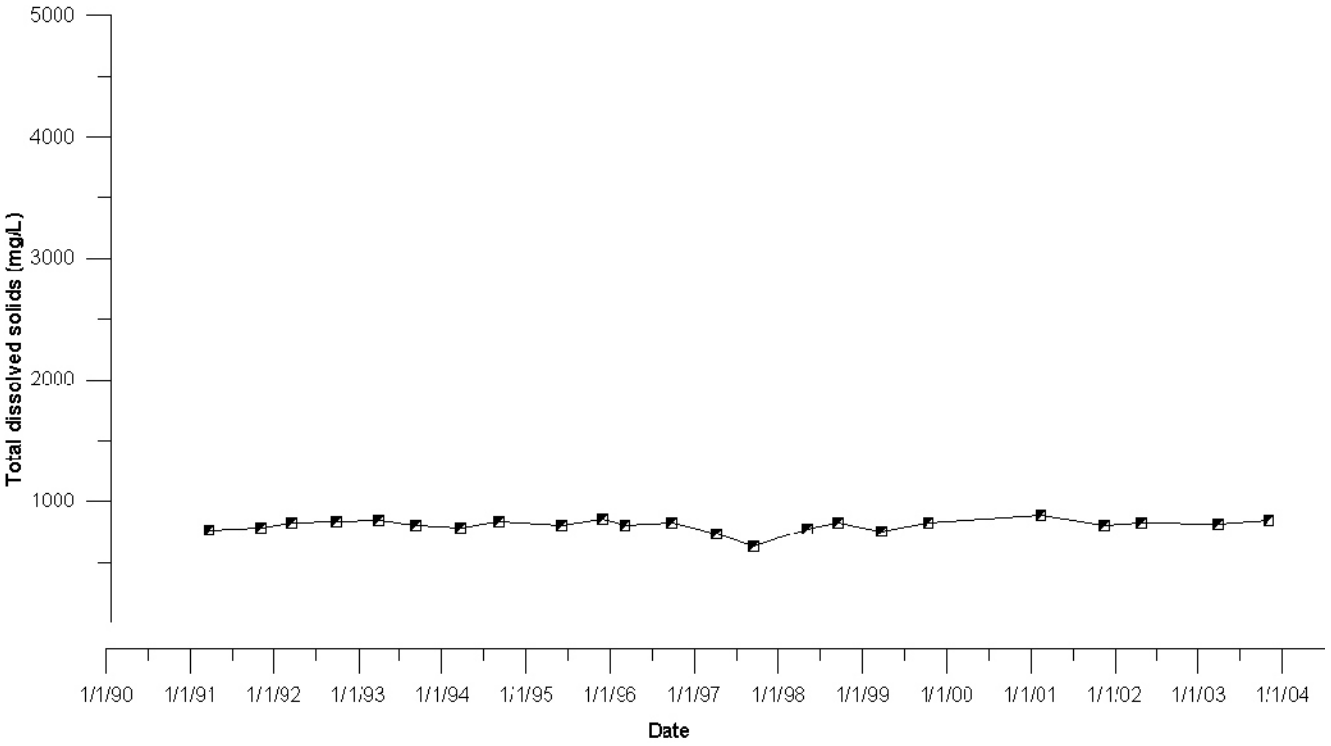
### Barrington



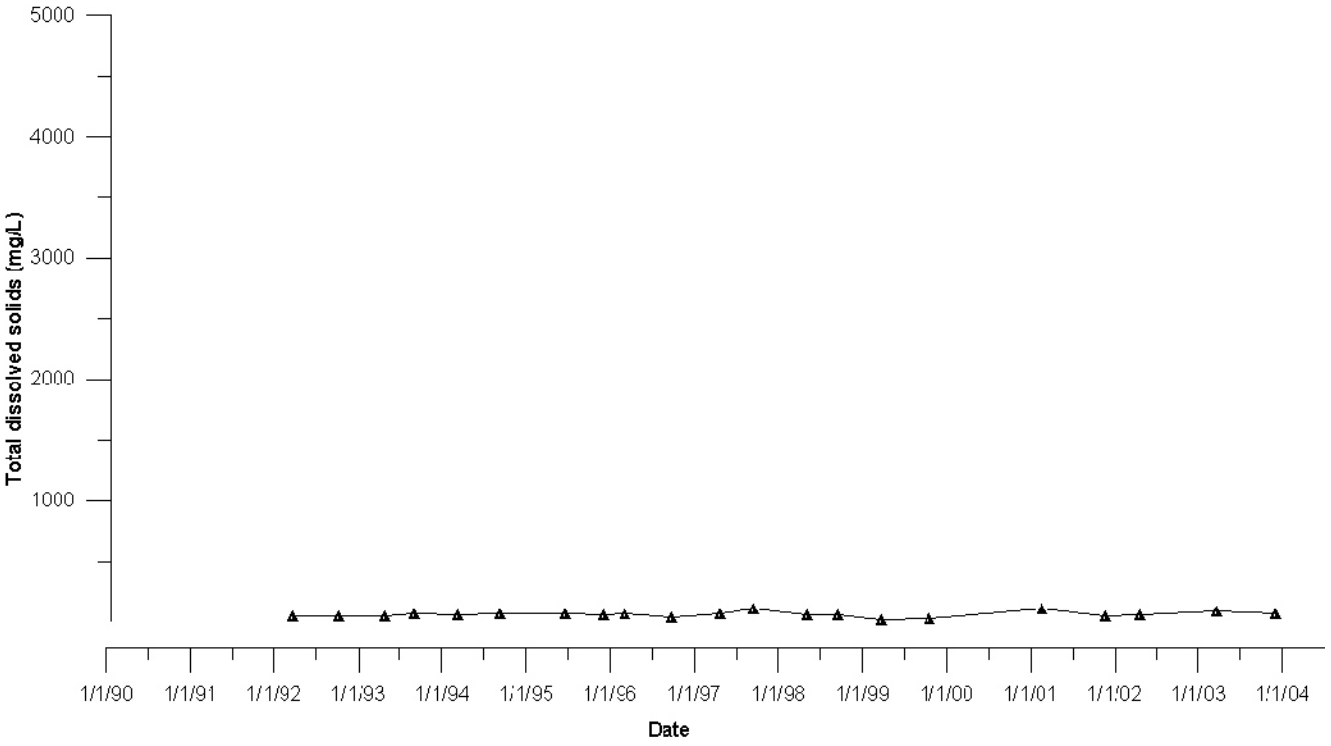

### Bicheno



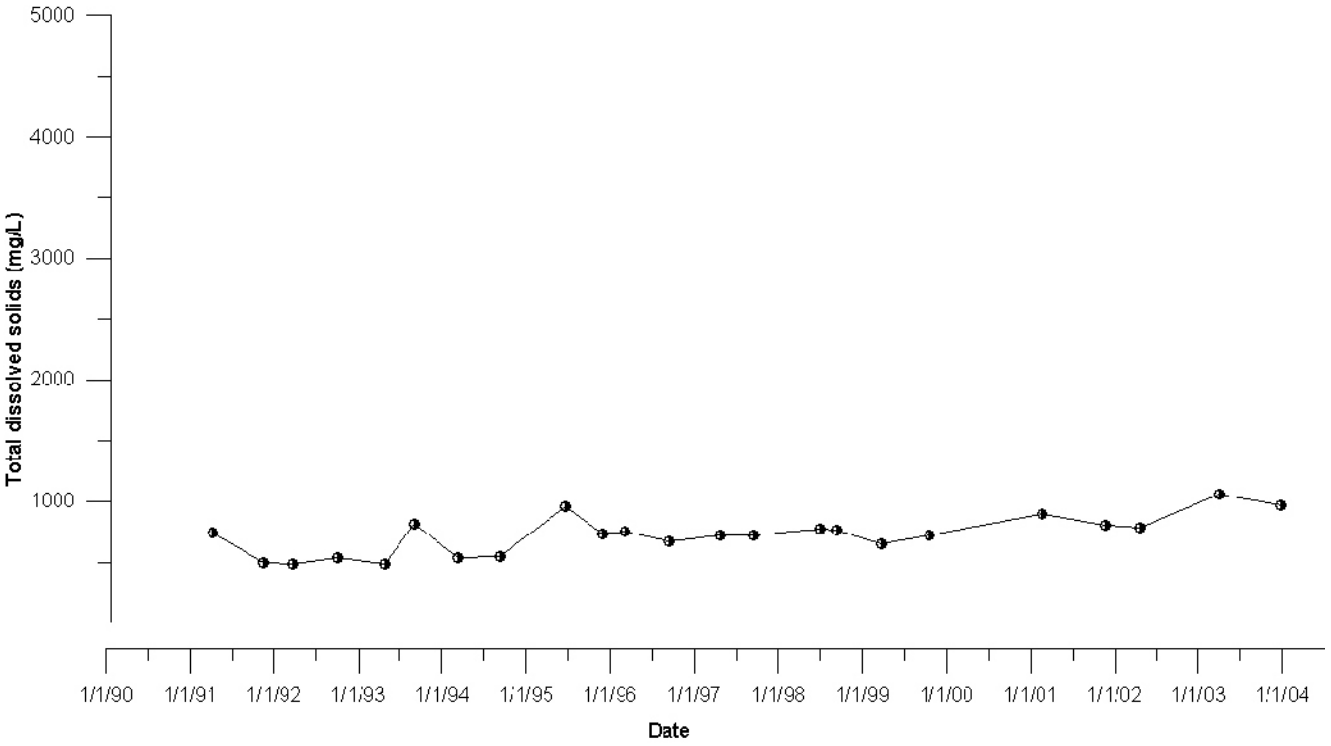
## Bothwell



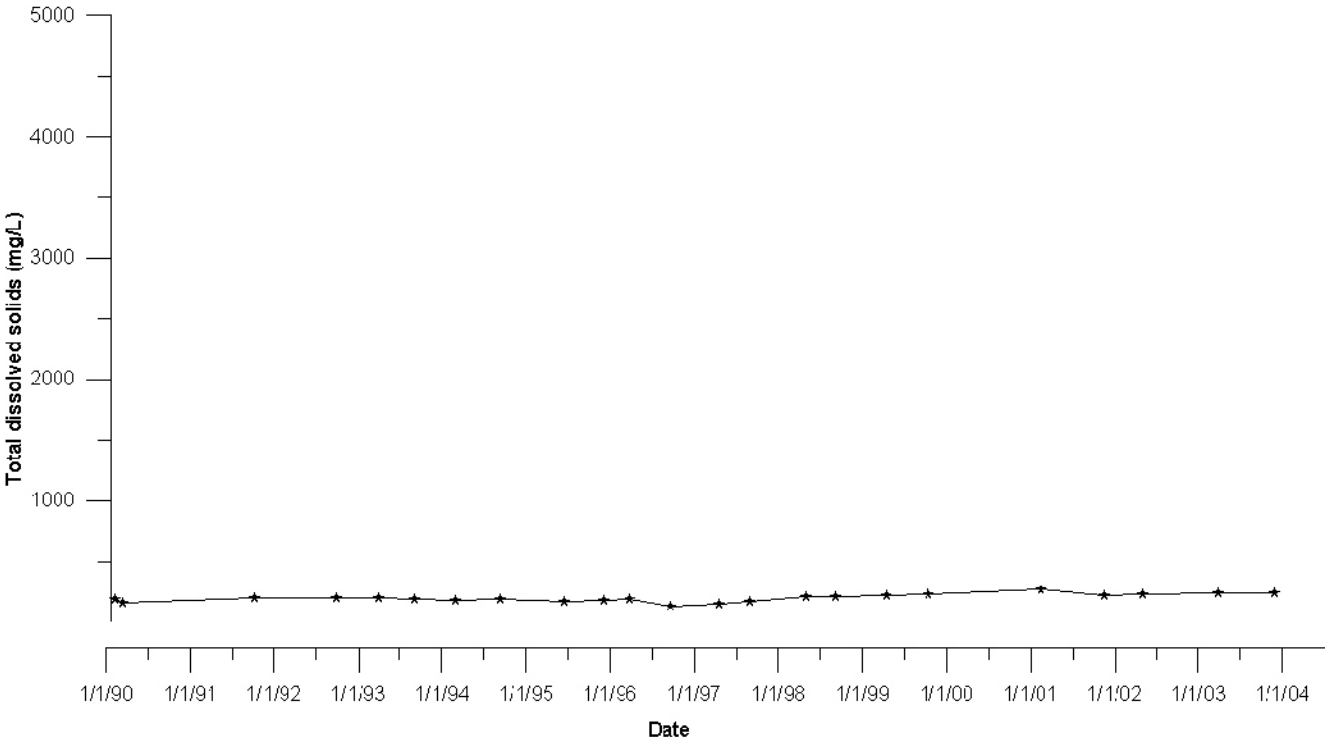

## Branxholm



## Buckland




## Burnie Tip 1



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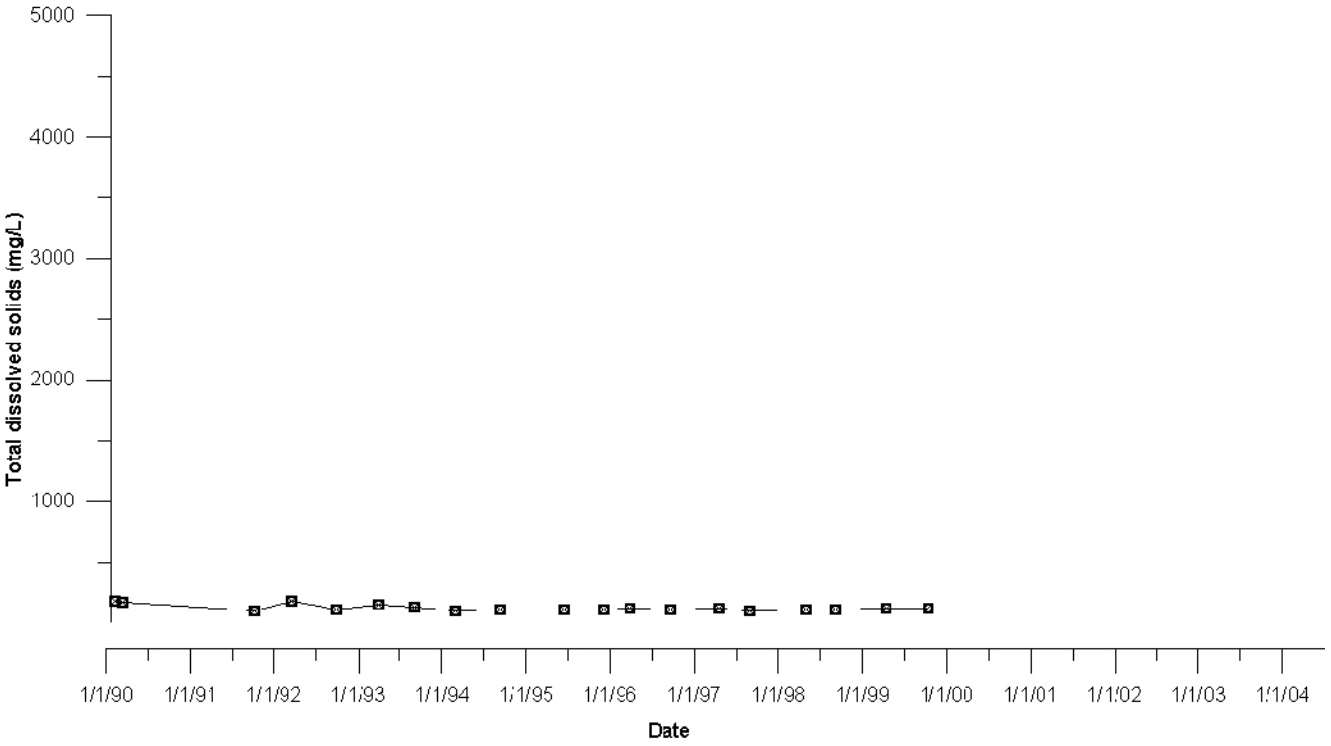
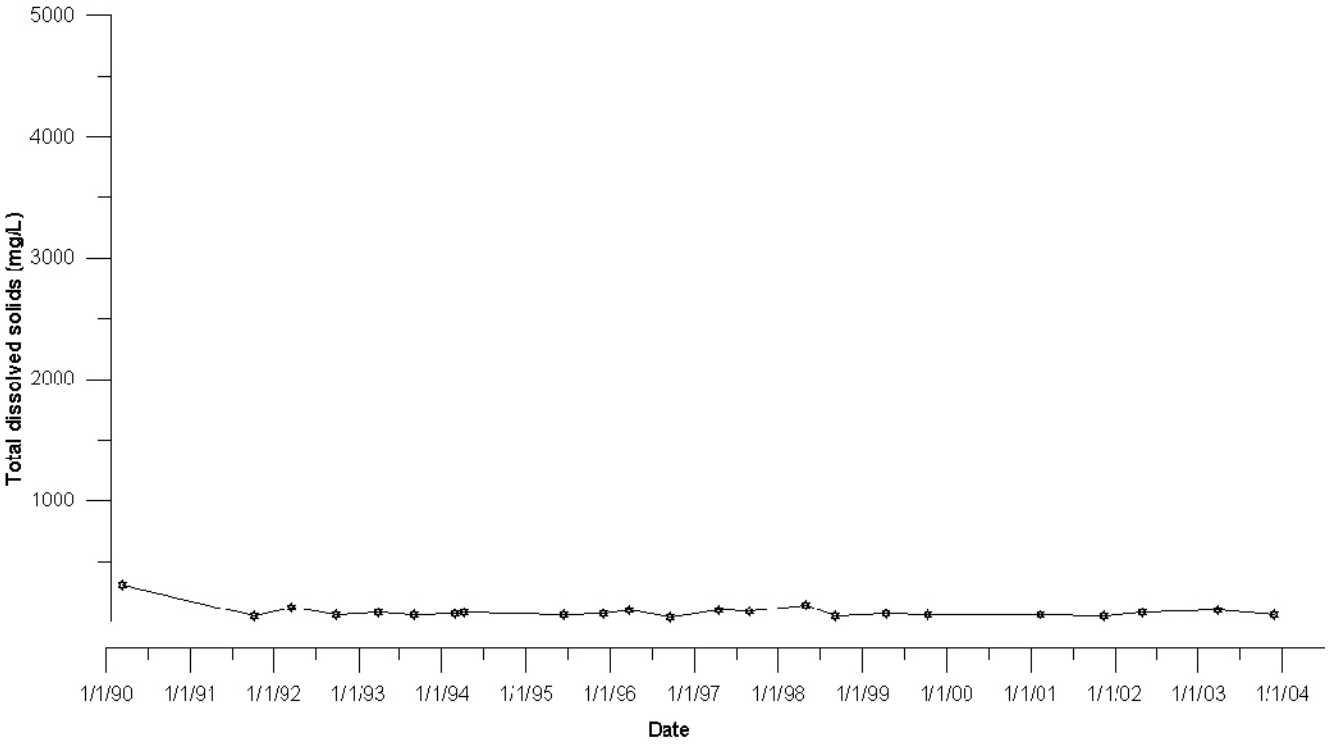



## Burnie tip 4



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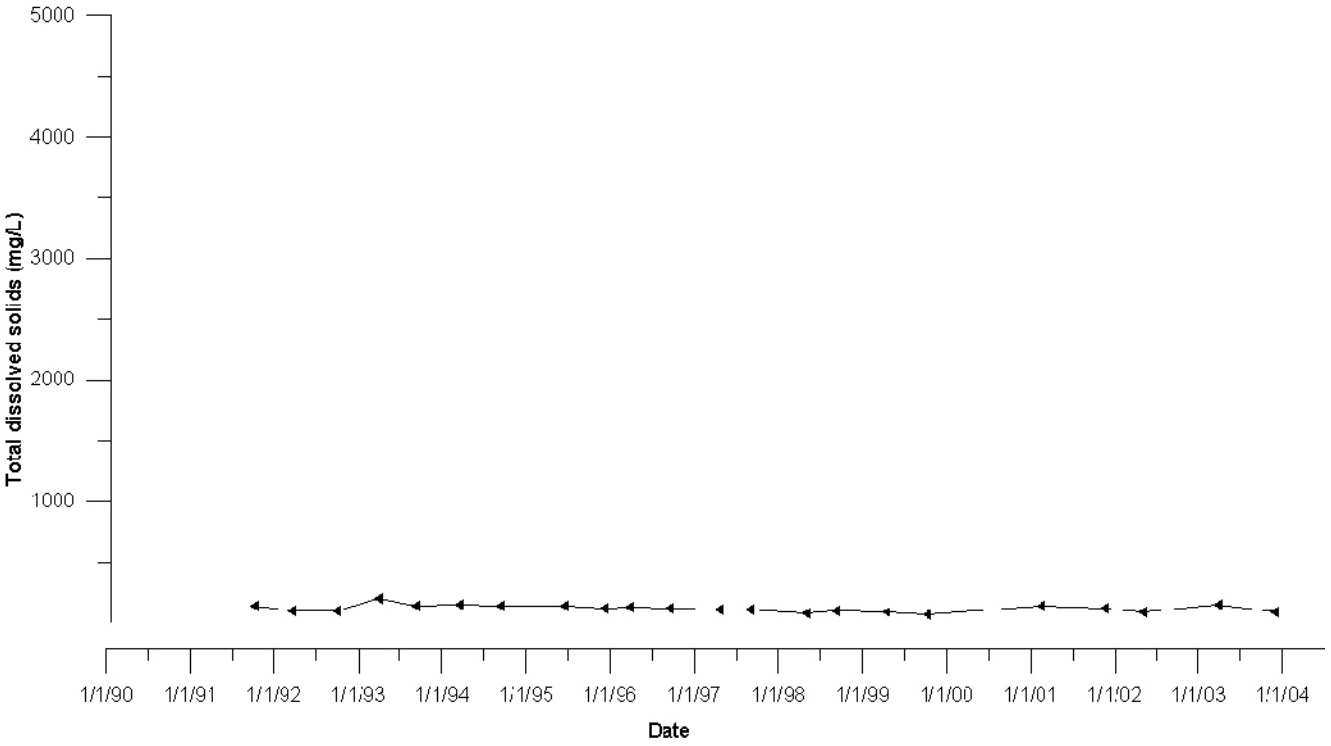
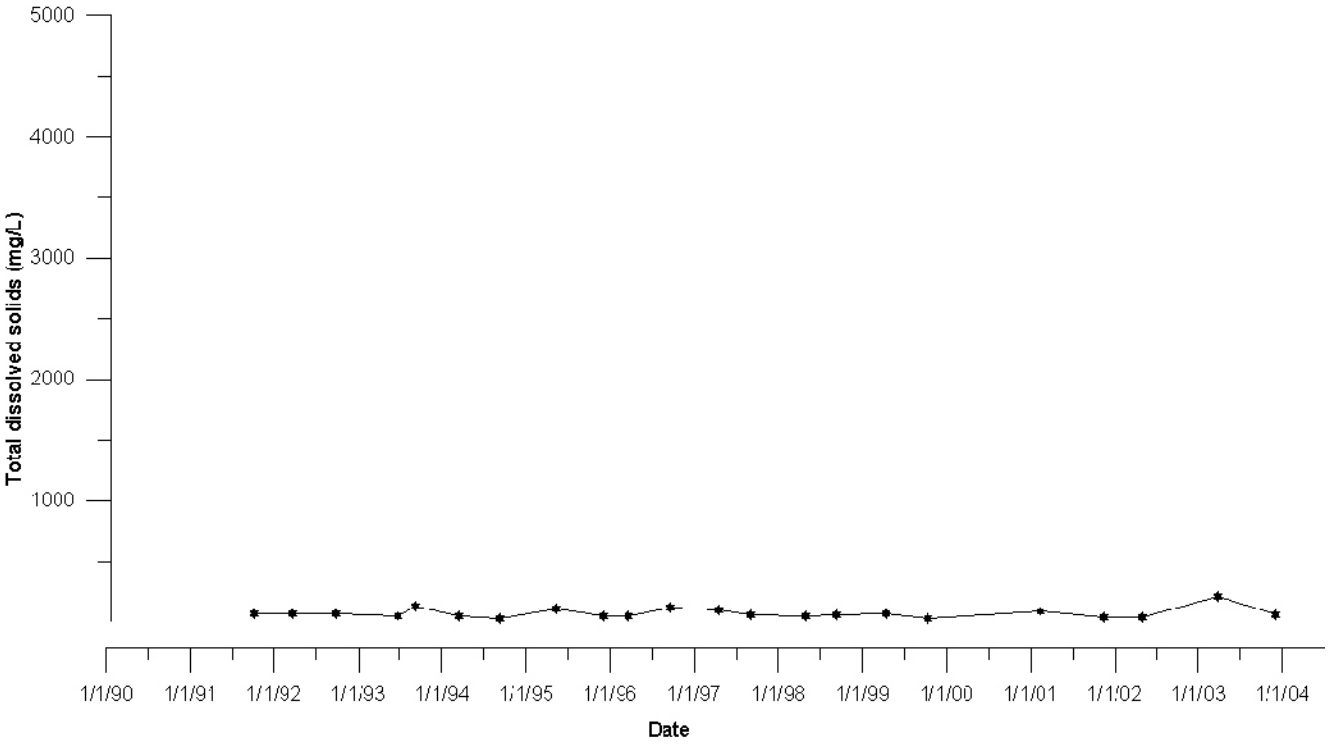



## Chudleigh



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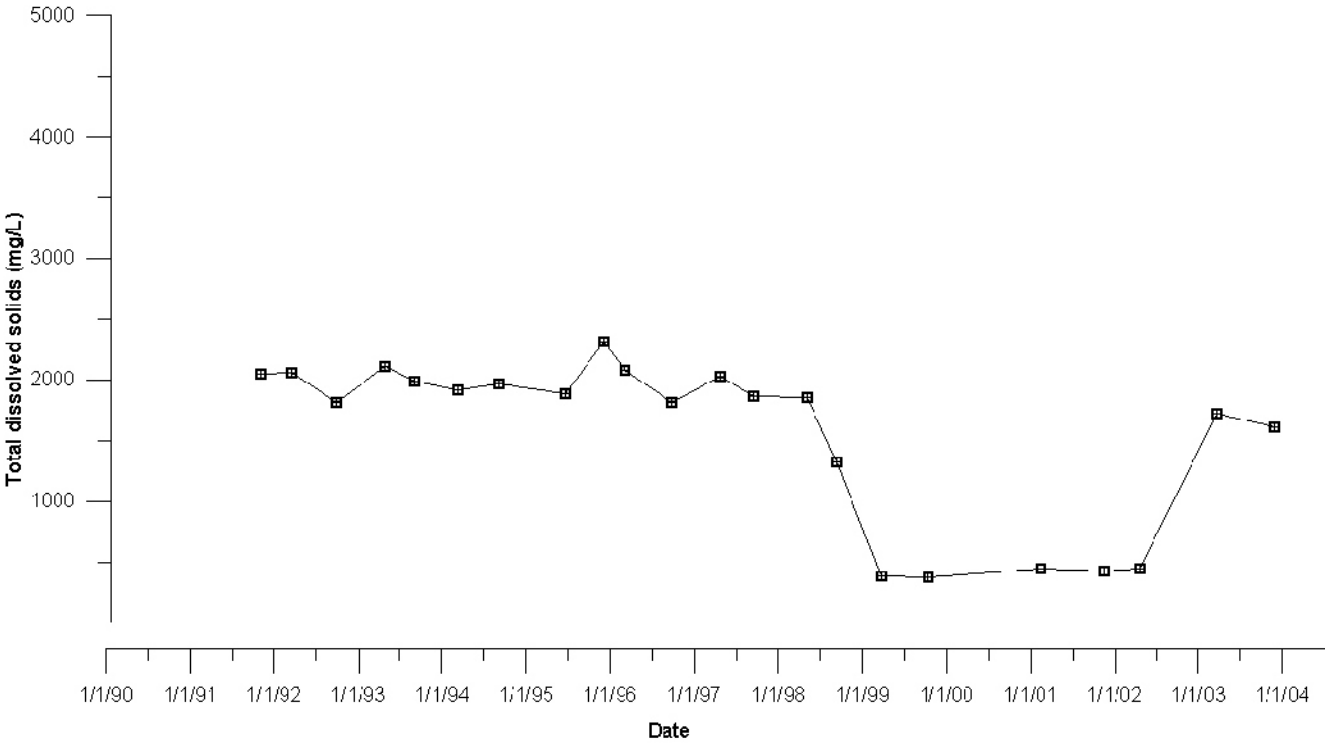


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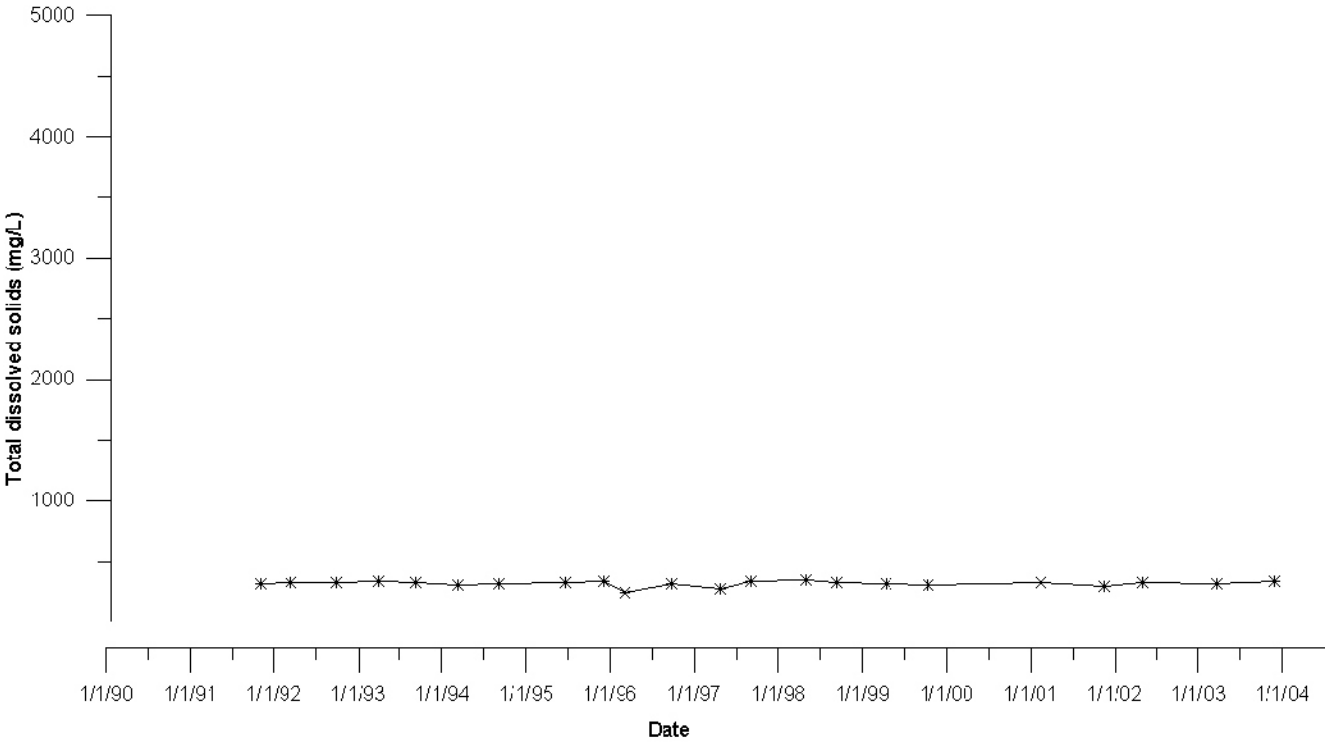

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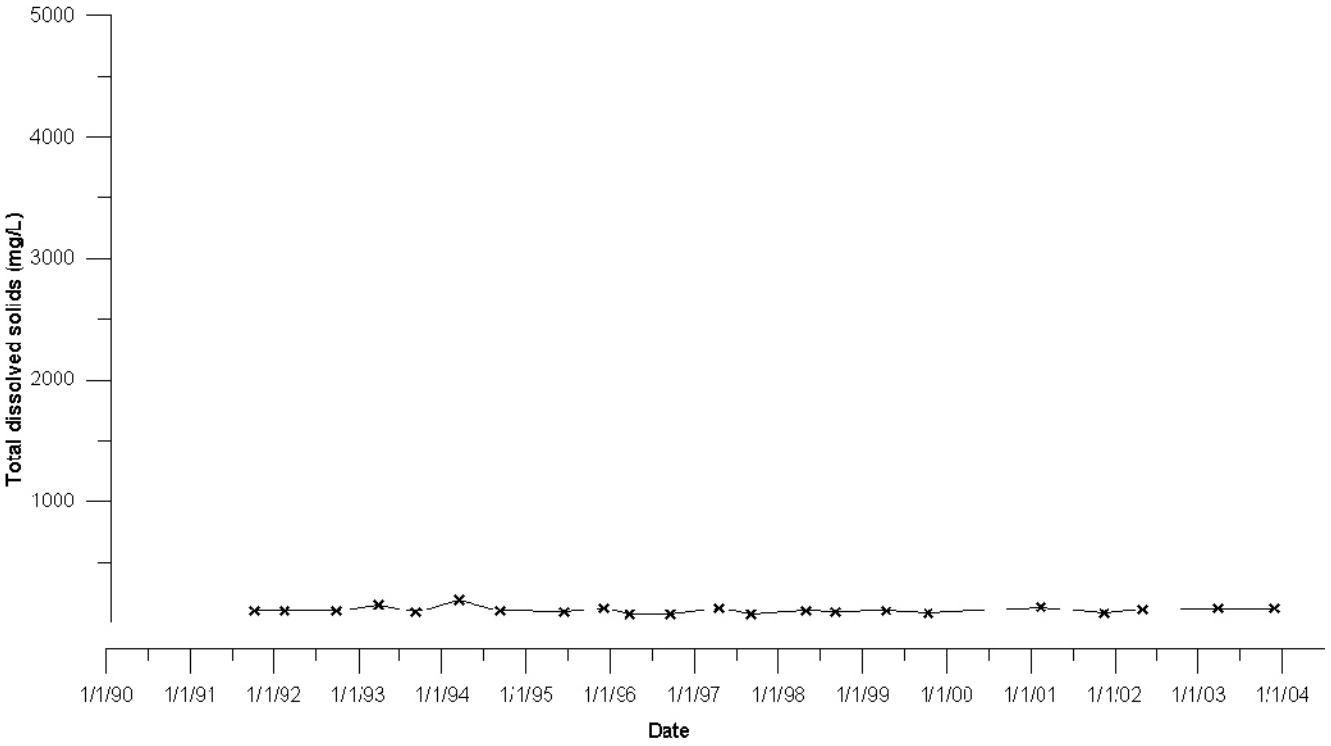
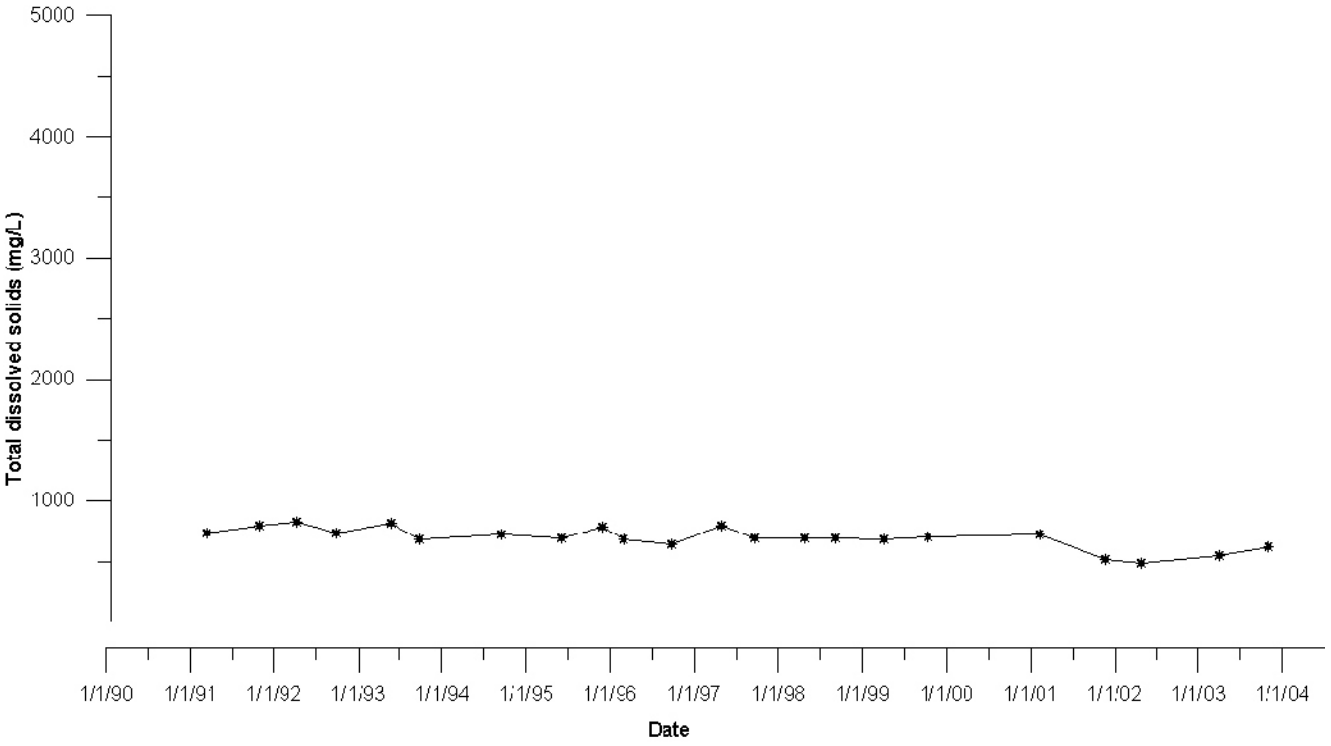
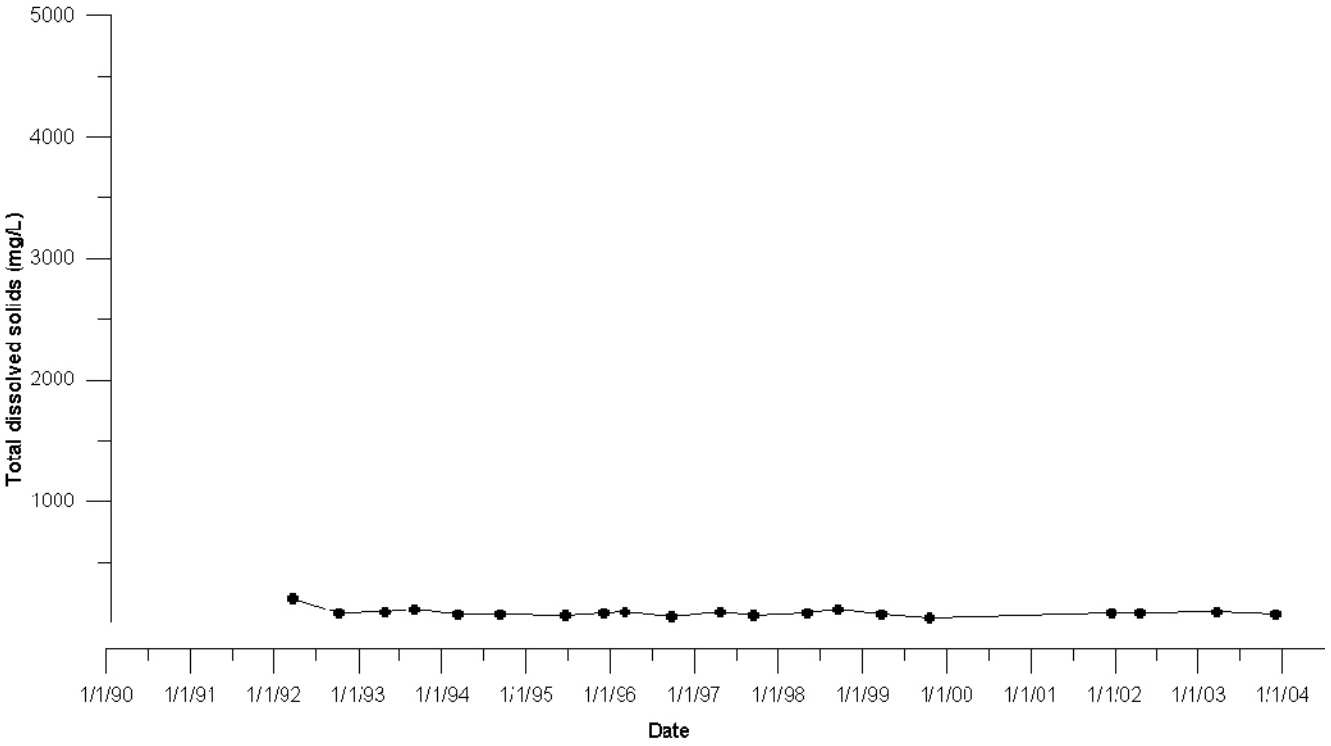


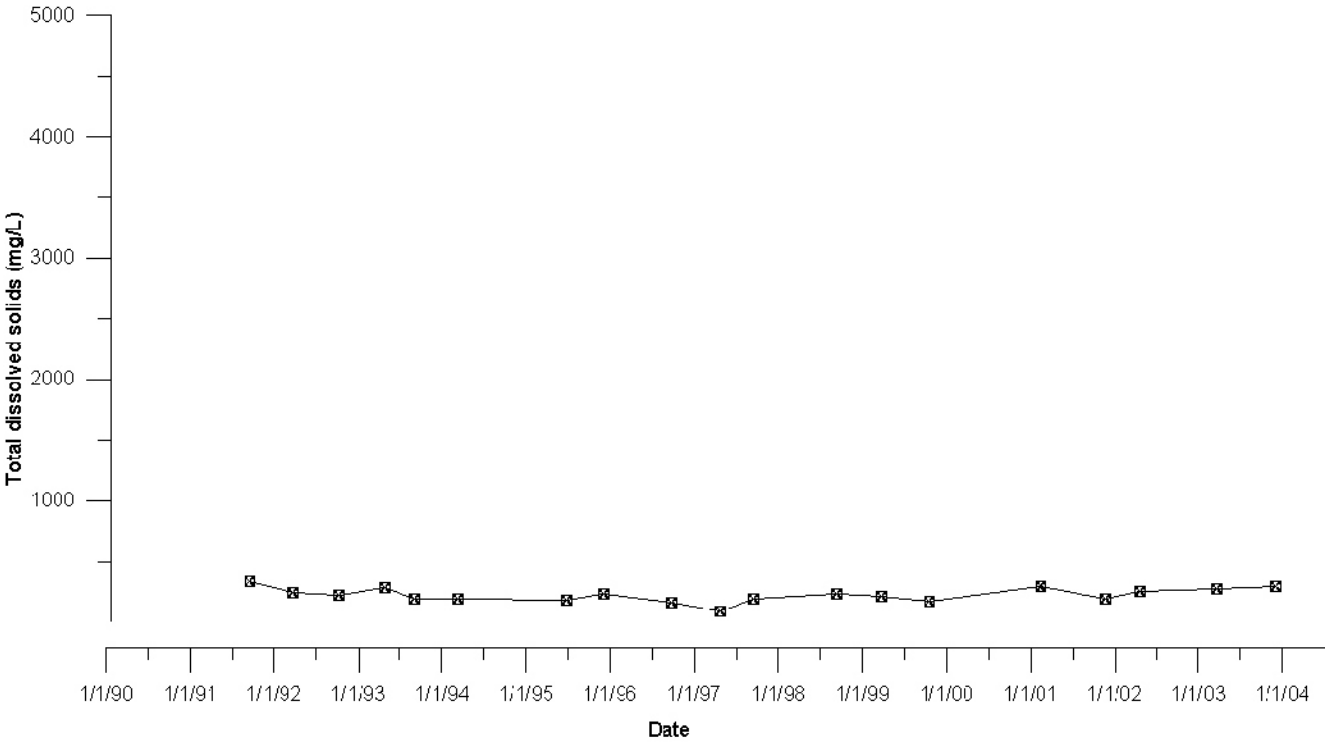

## Huonville



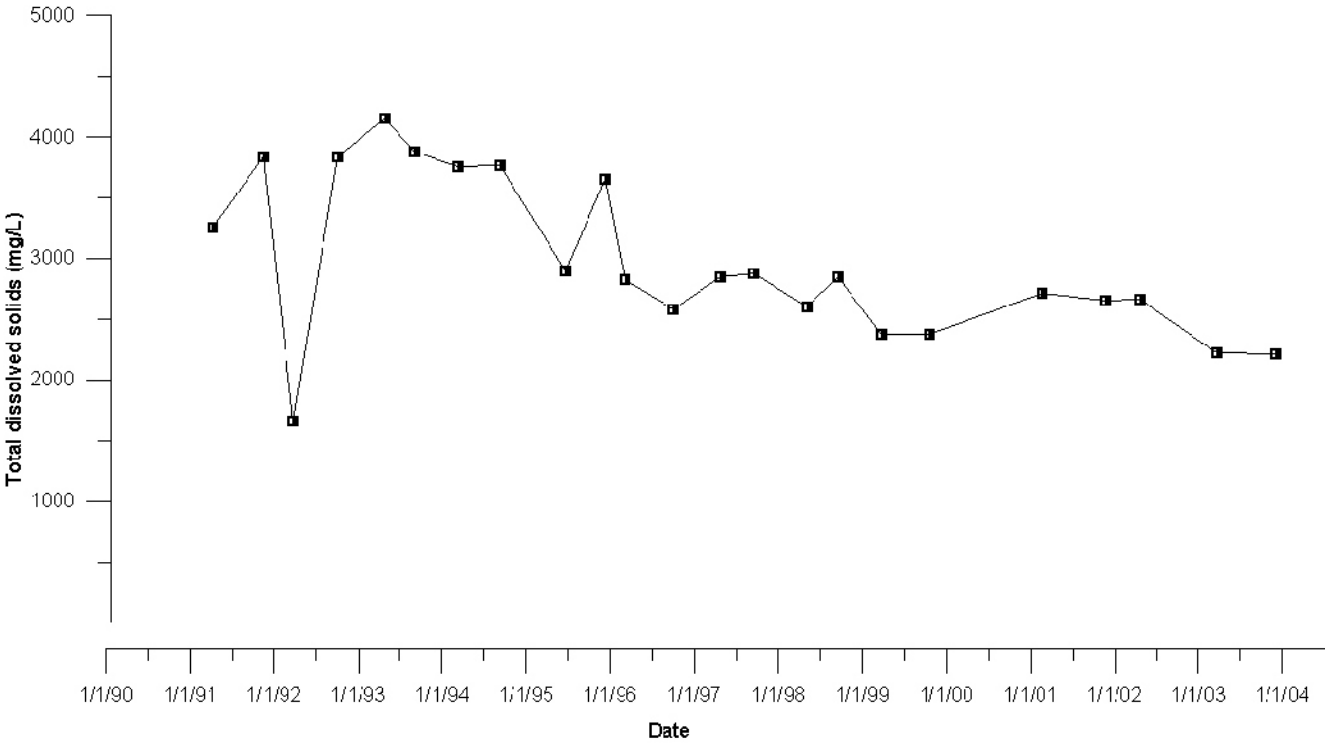
## Jetsonville



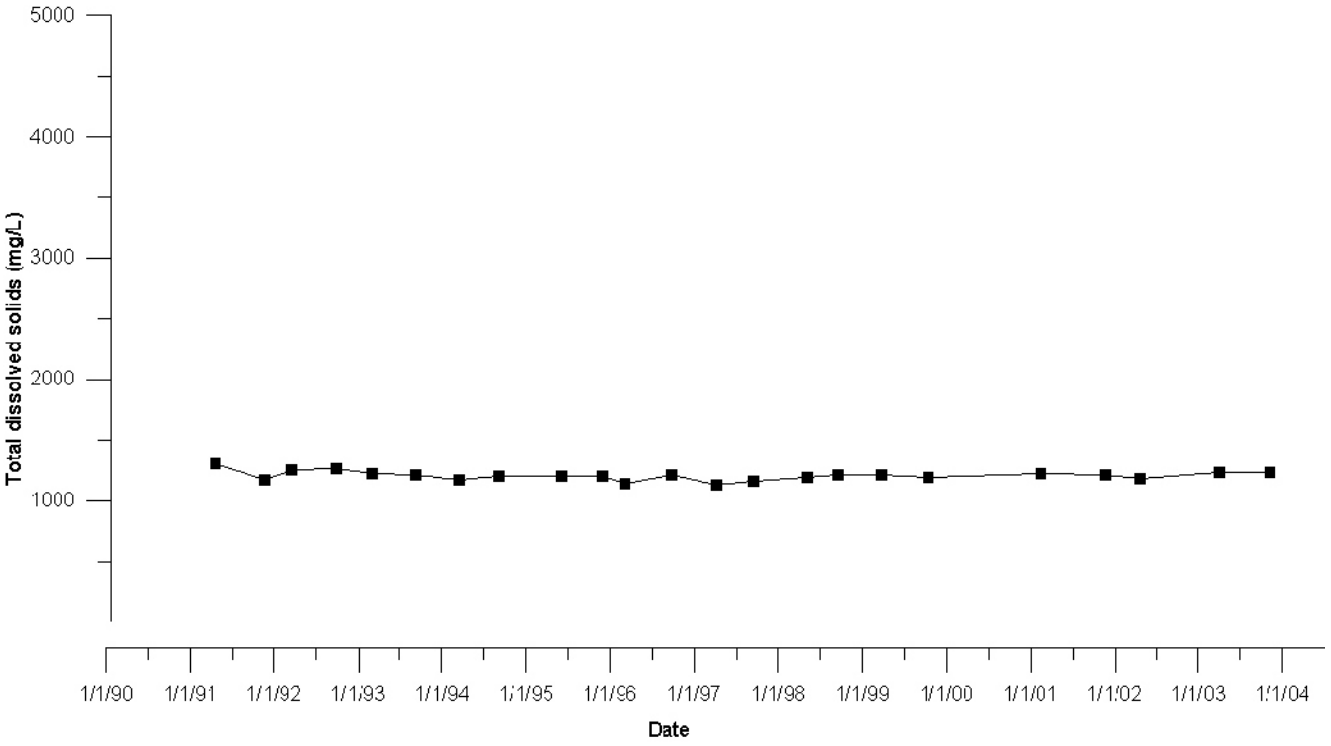

## Lilydale



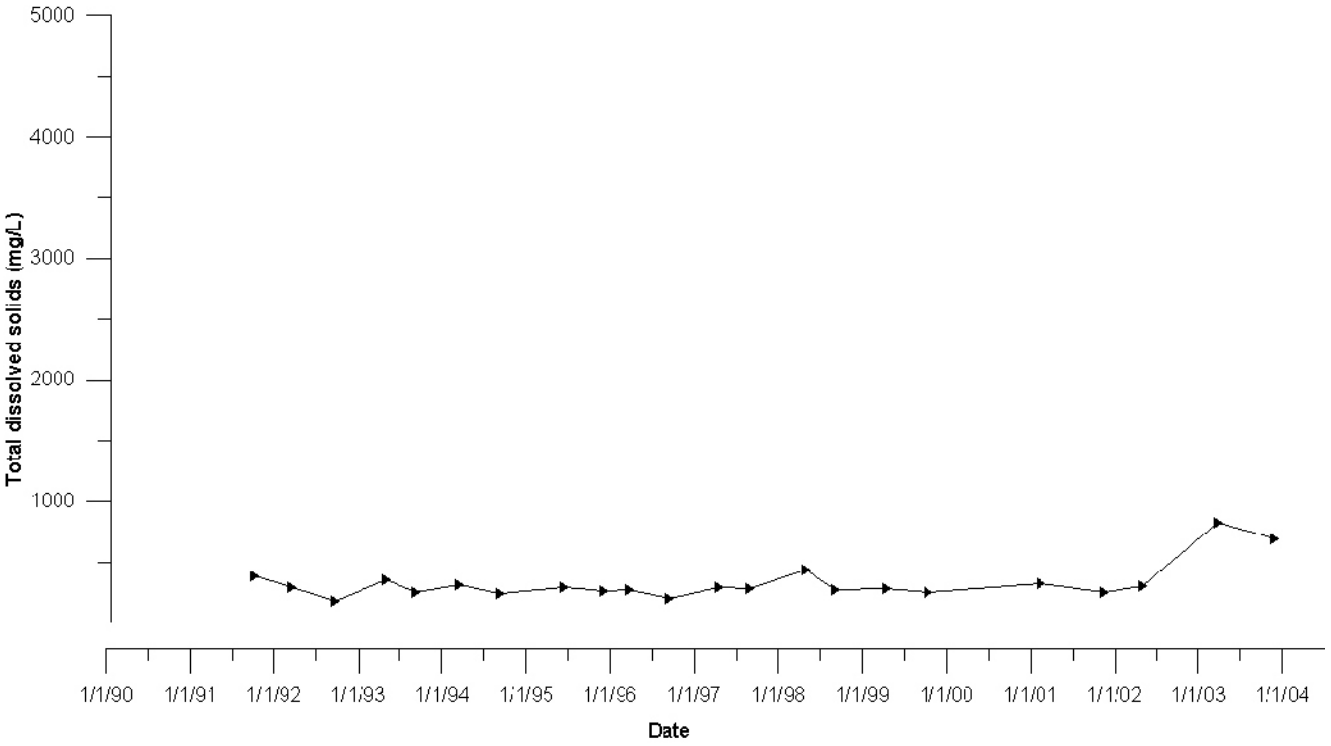
## Little Swanport



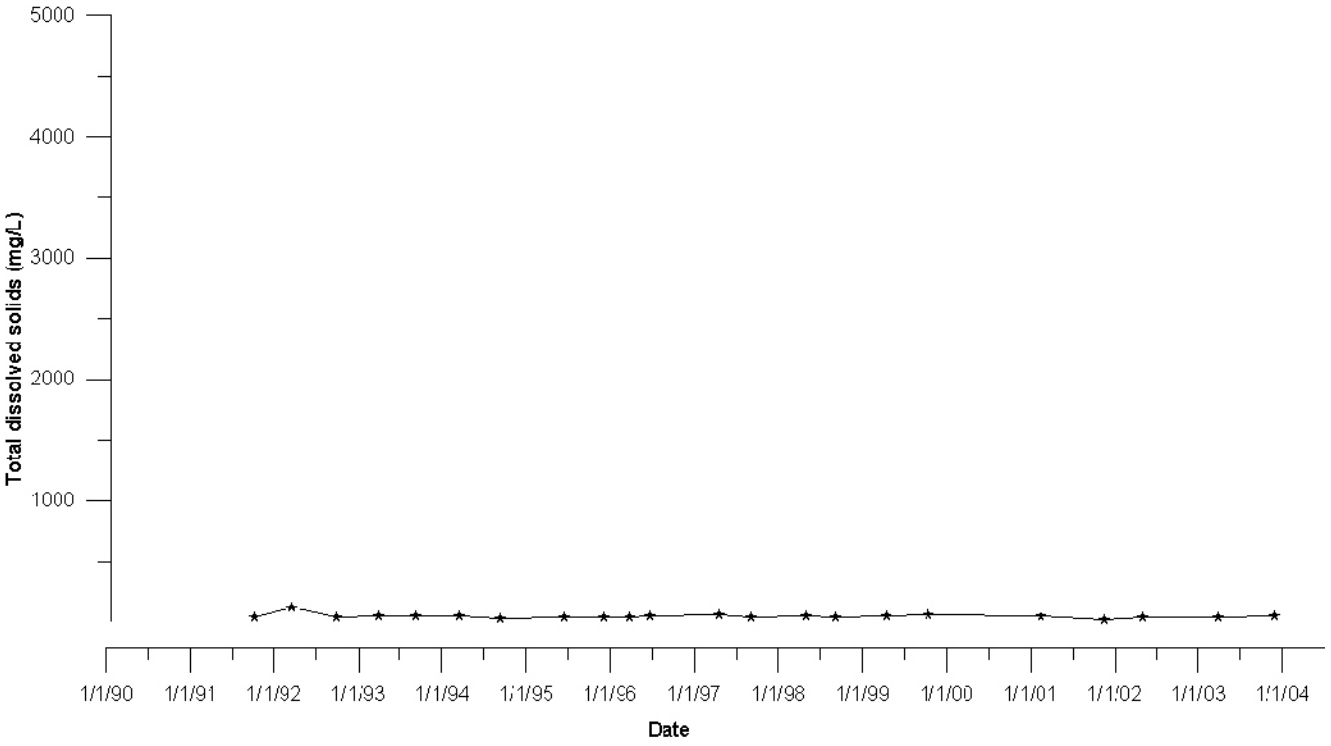

## Melton Mowbray



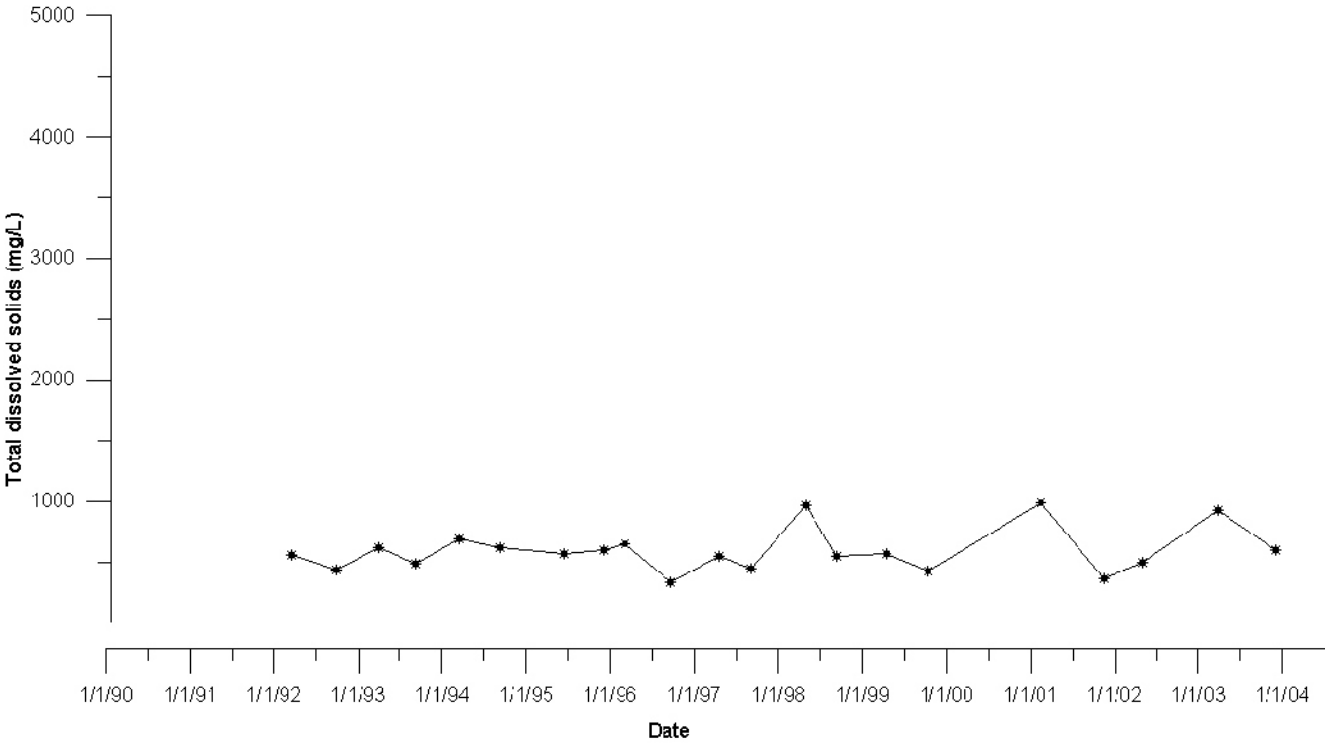
## Montagu




## Mooreville Road



## Osmaston

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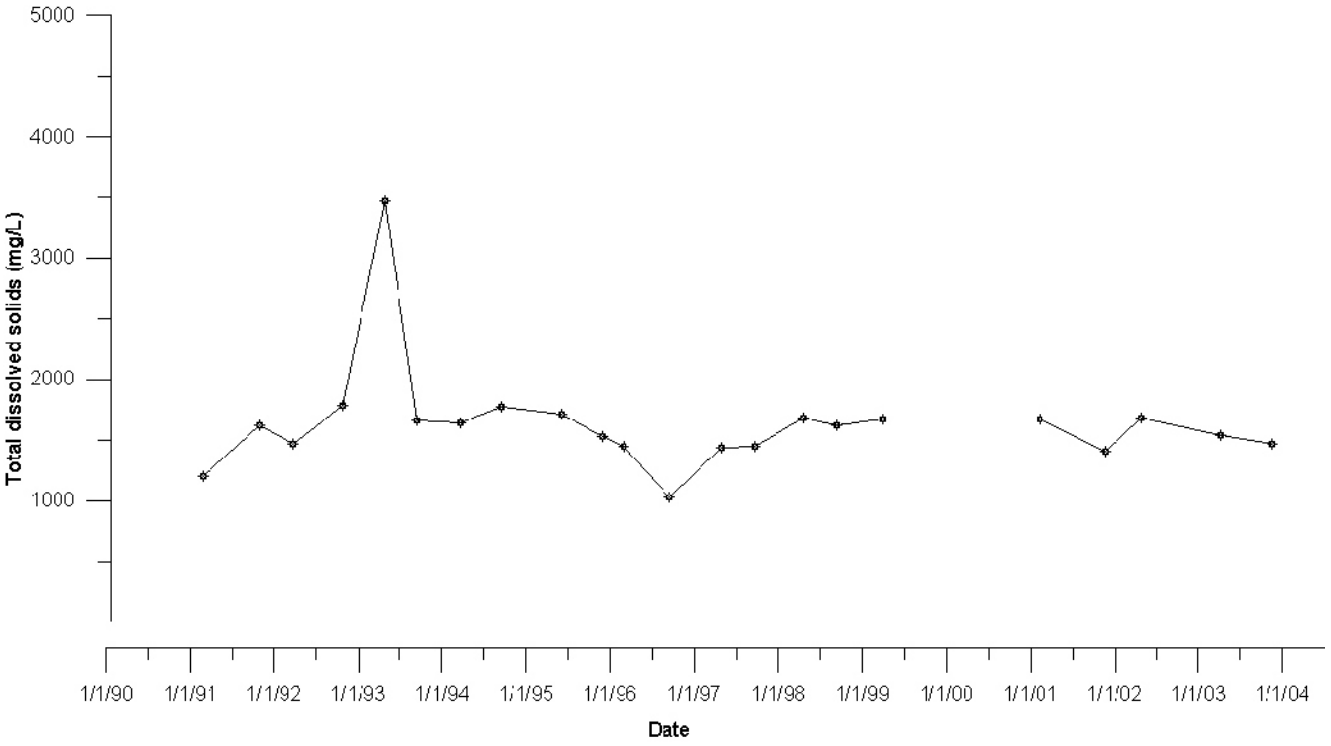
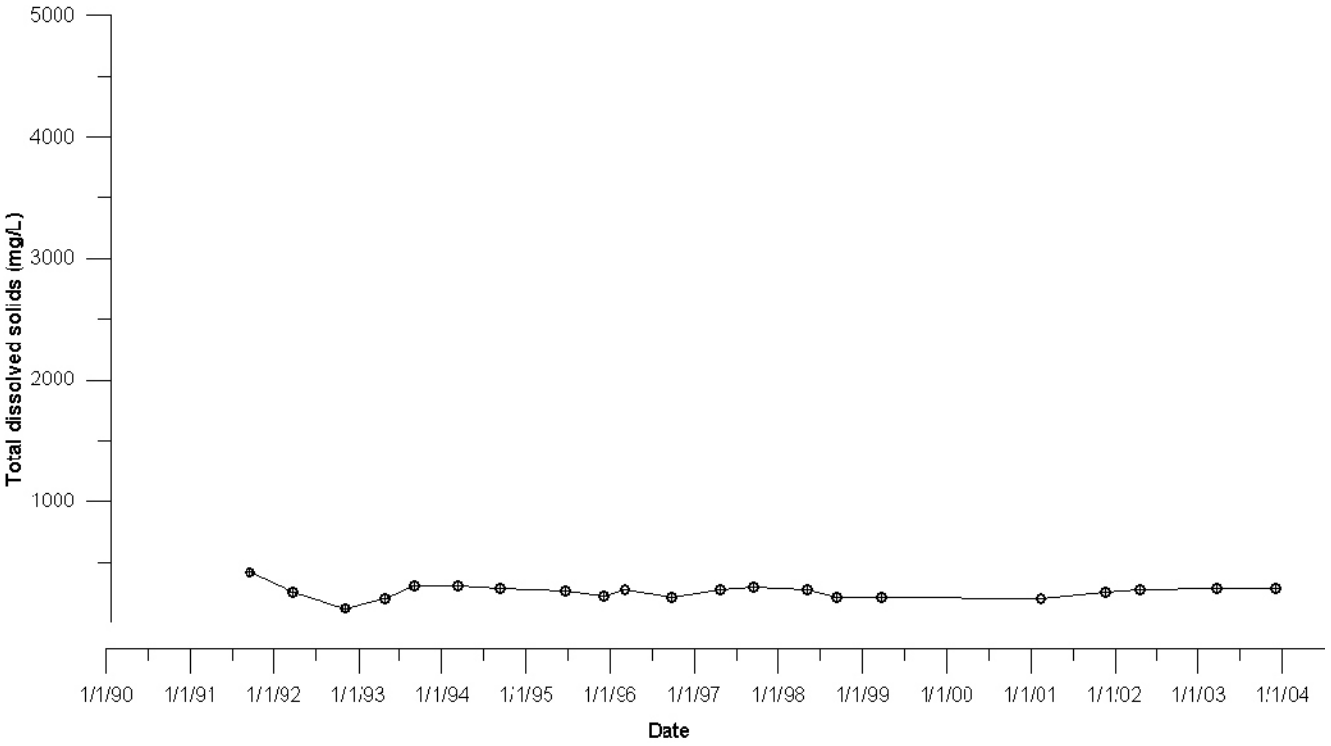
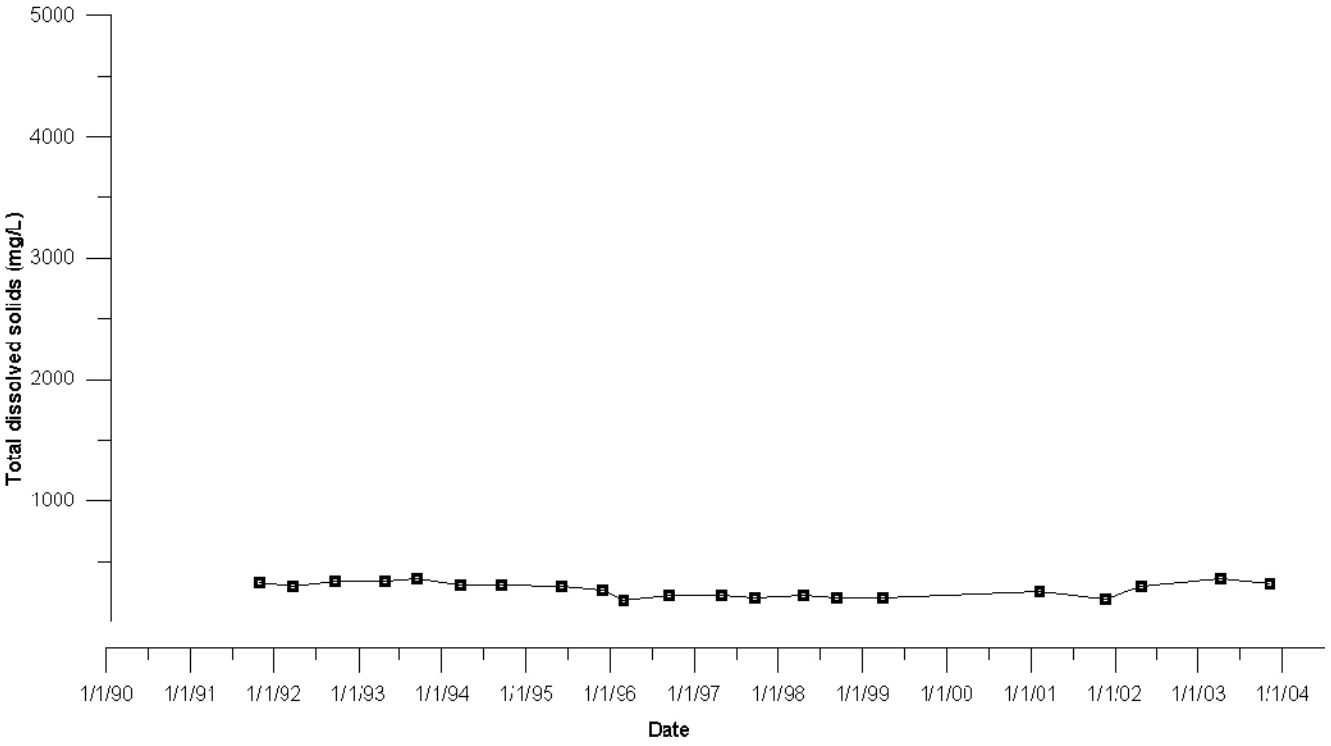


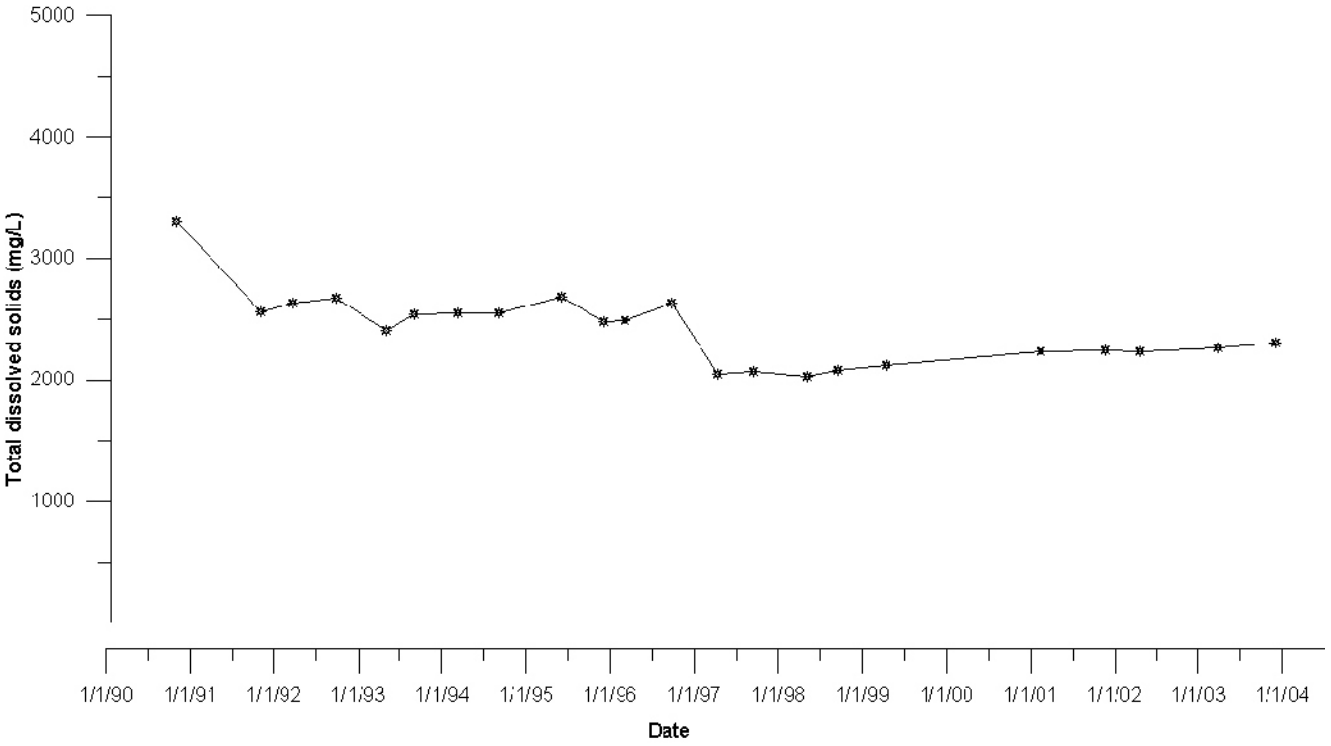
## Pipers River



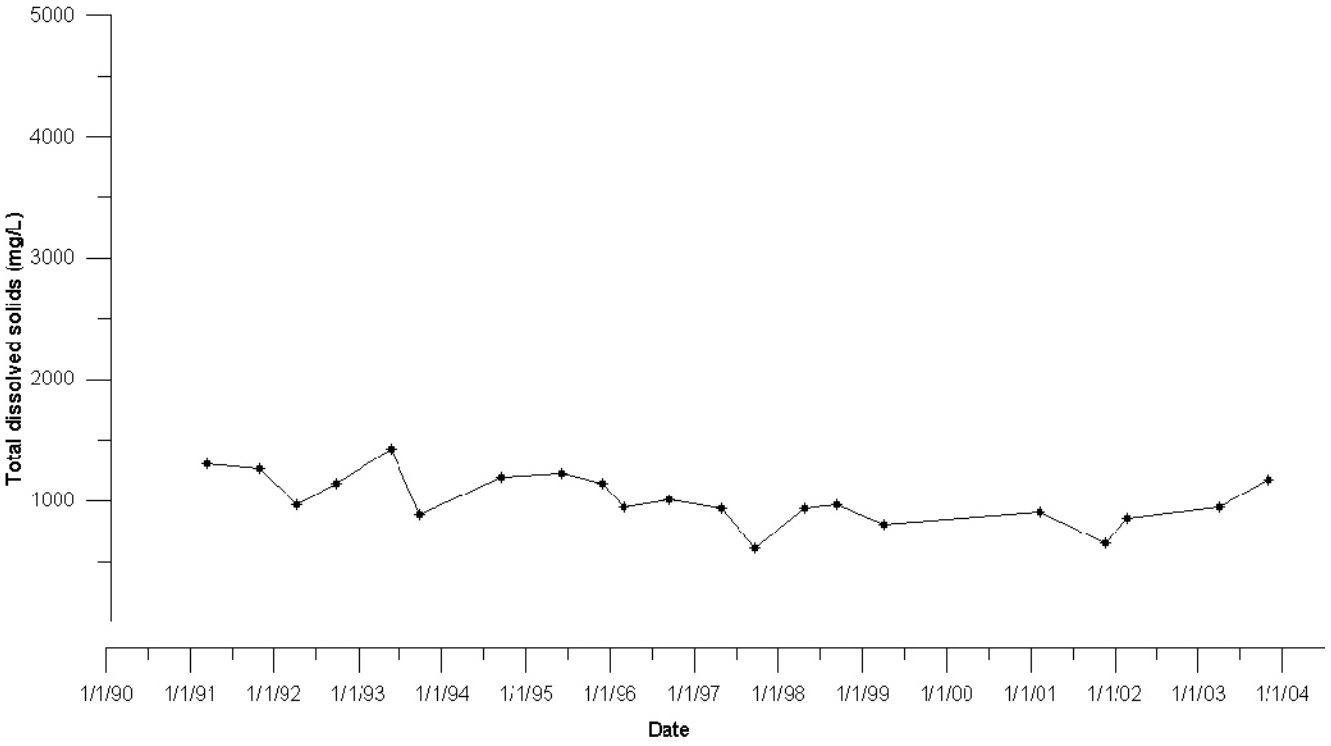

## Port Arthur



## Ross


5000
4000
3000
2000
1000
Total dissolved solids (mg/L)
1/1/90
1/1/91
1/1/92
1/1/93
1/1/94
1/1/95
1/1/96
1/1/97
1/1/98
1/1/99
1/1/00
1/1/01
1/1/02
1/1/03
1/1/04
Date

## Snug


5000
4000
3000
2000
1000
Total dissolved solids (mg/L)
1/1/90
1/1/91
1/1/92
1/1/93
1/1/94
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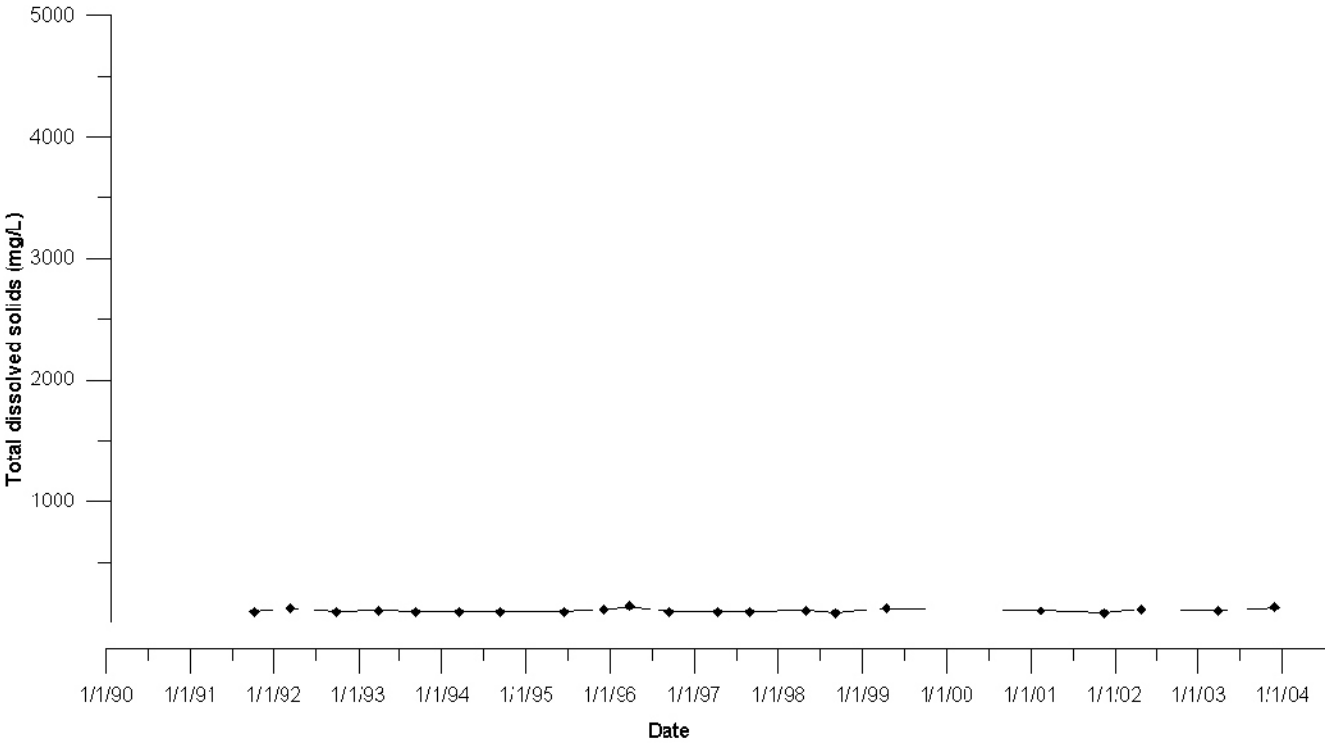
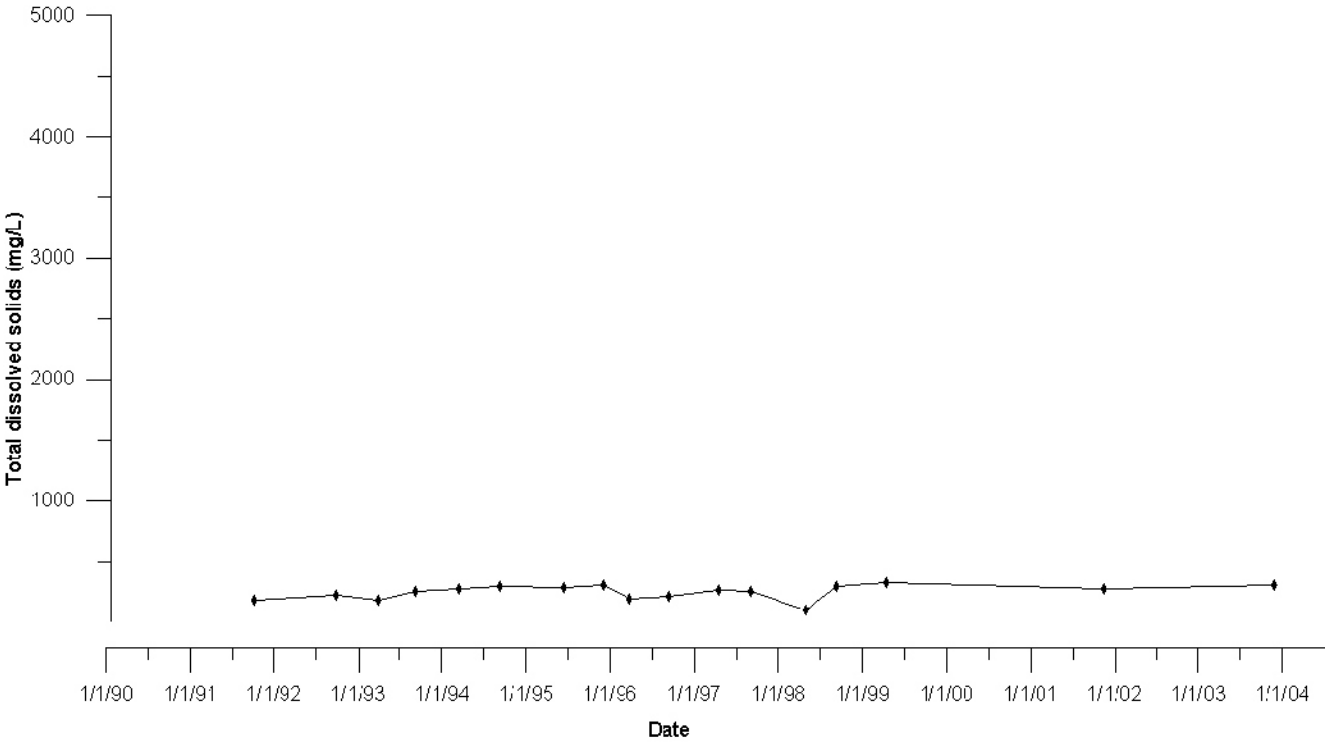
1/1/96
1/1/97
1/1/98
1/1/99
1/1/00
1/1/01
1/1/02
1/1/03
1/1/04
Date

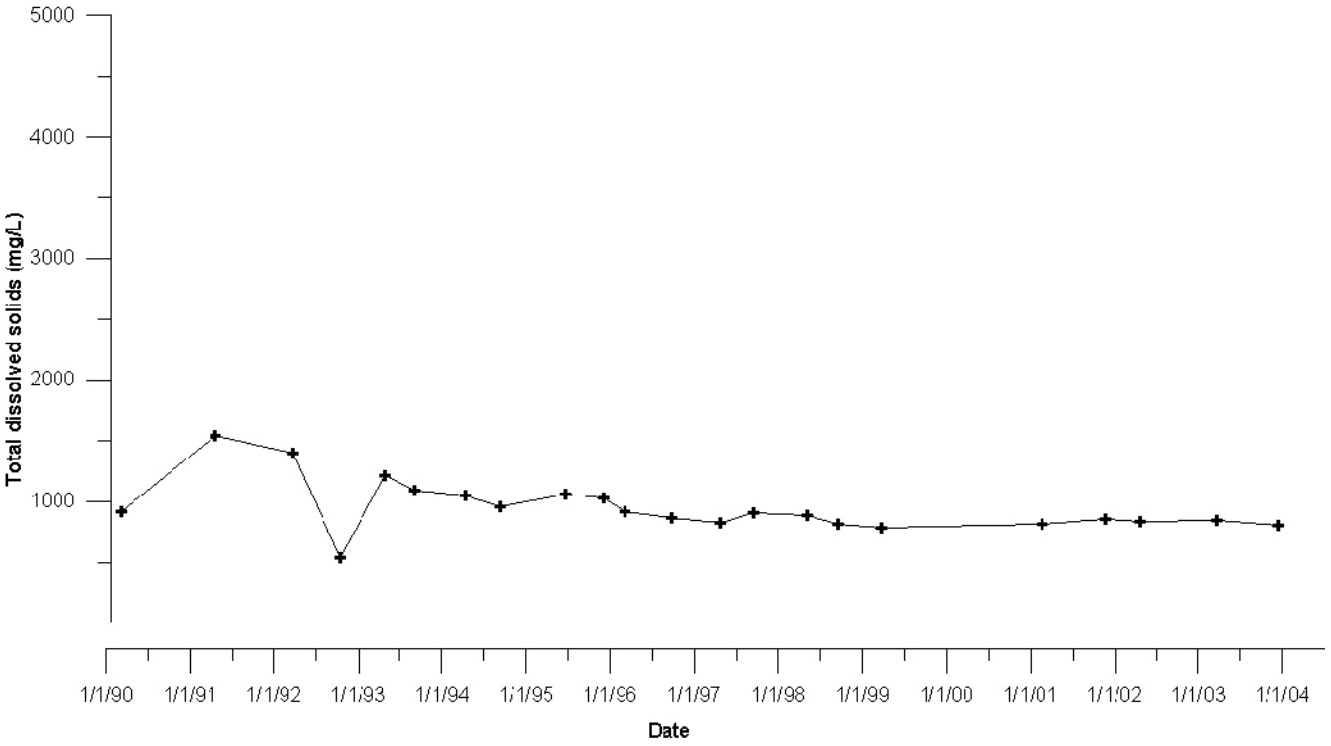
## South Forest



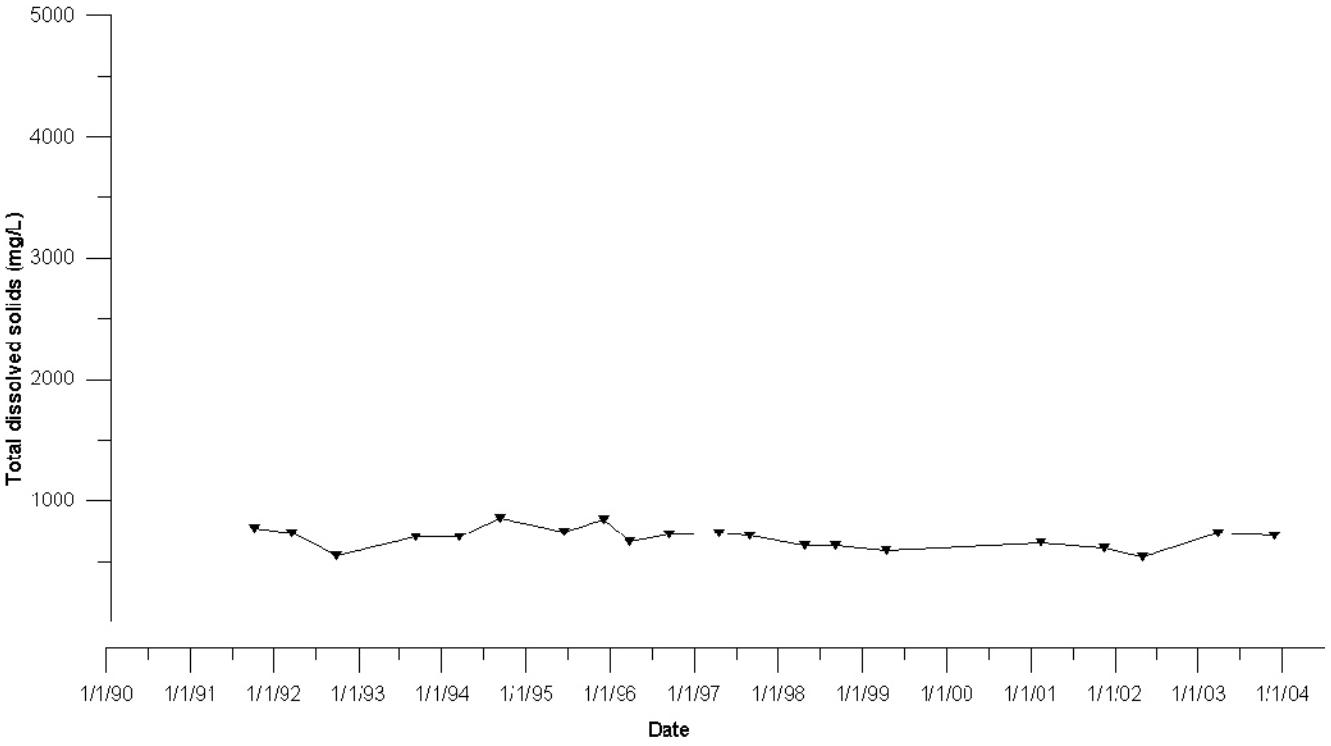

## Spreyton



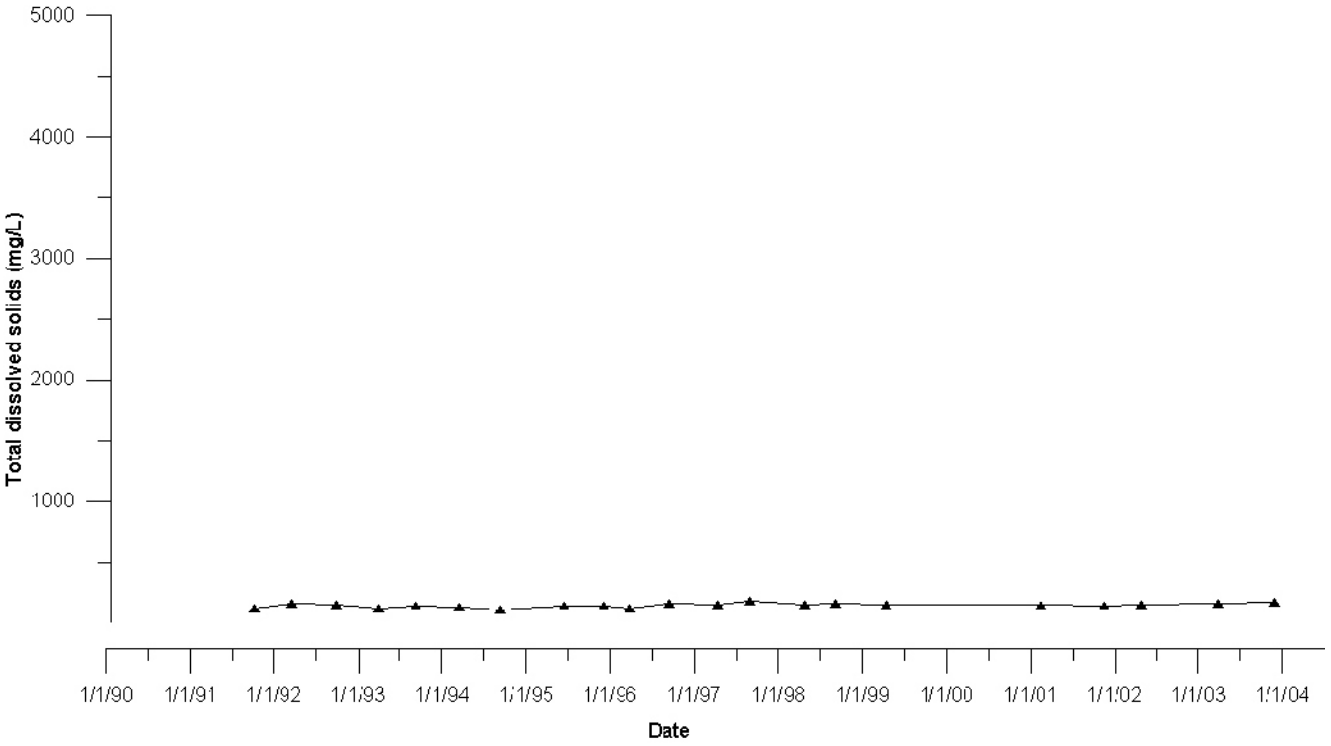
## St Marys



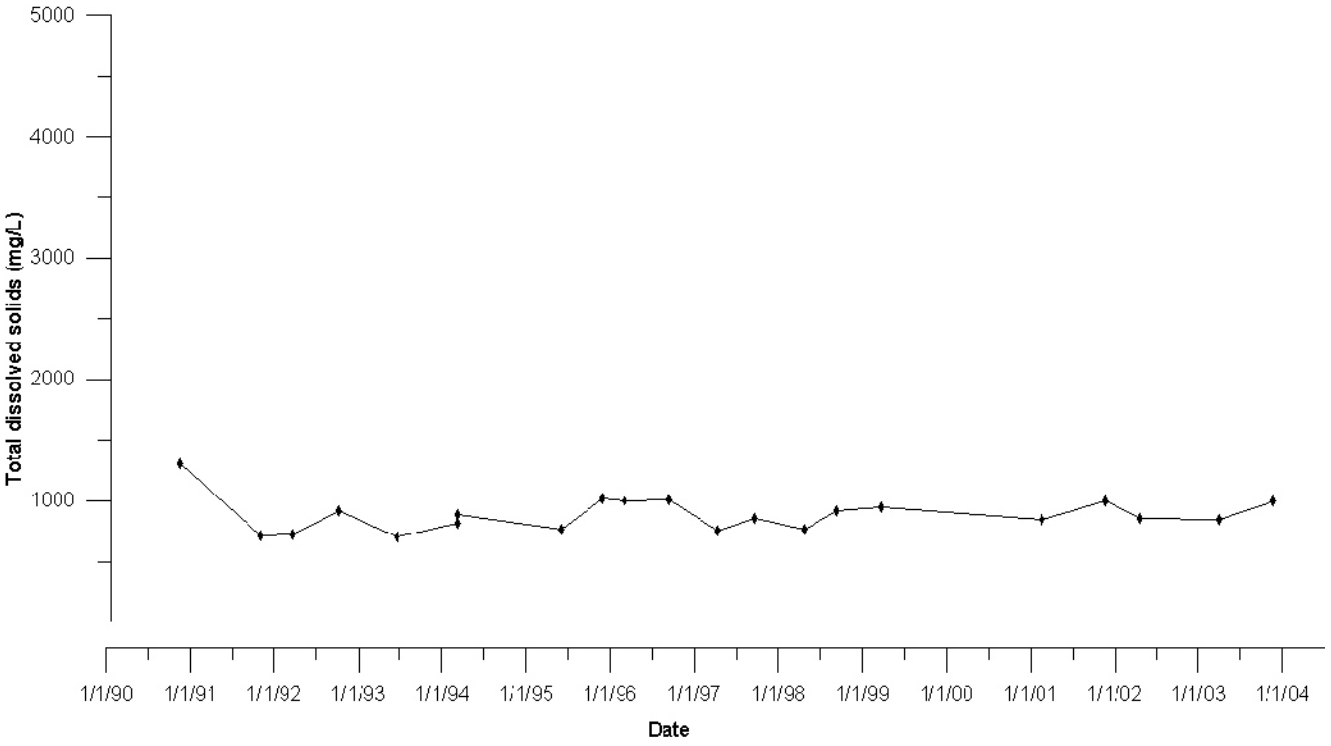

## Togari



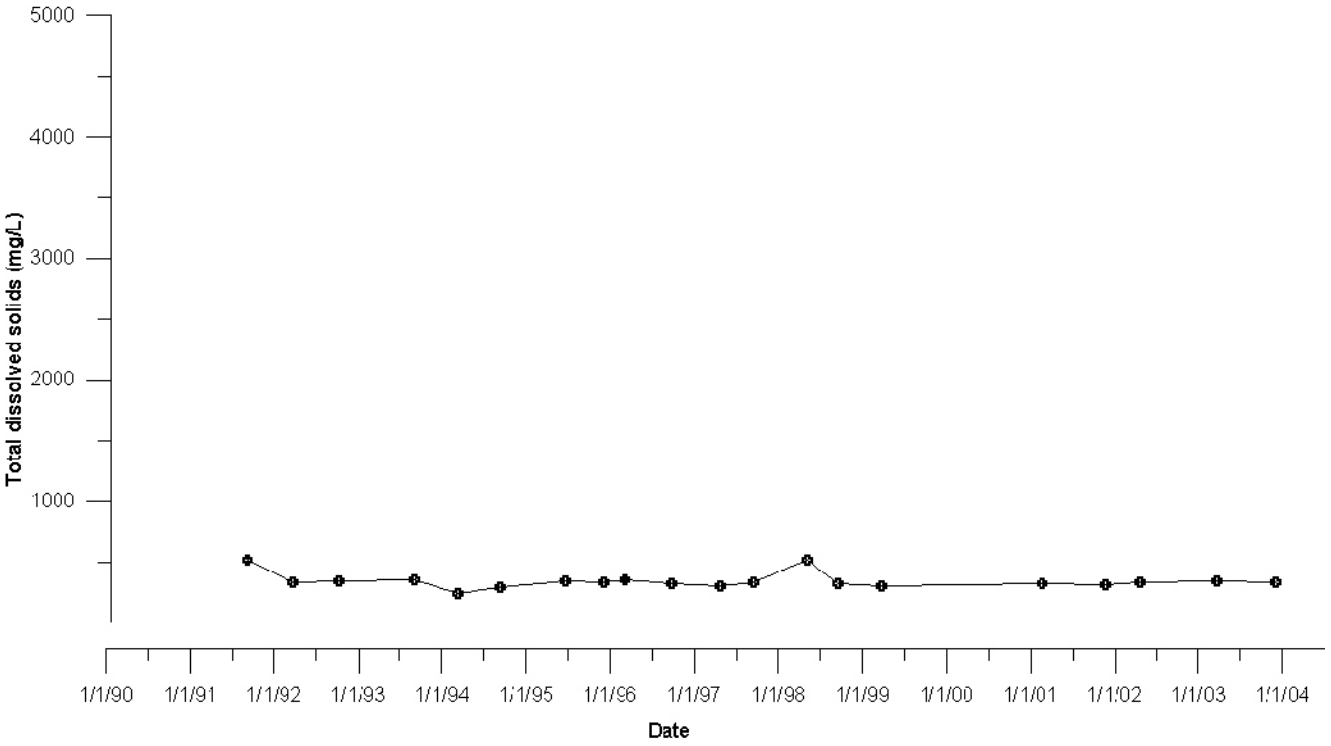
## Trowutta



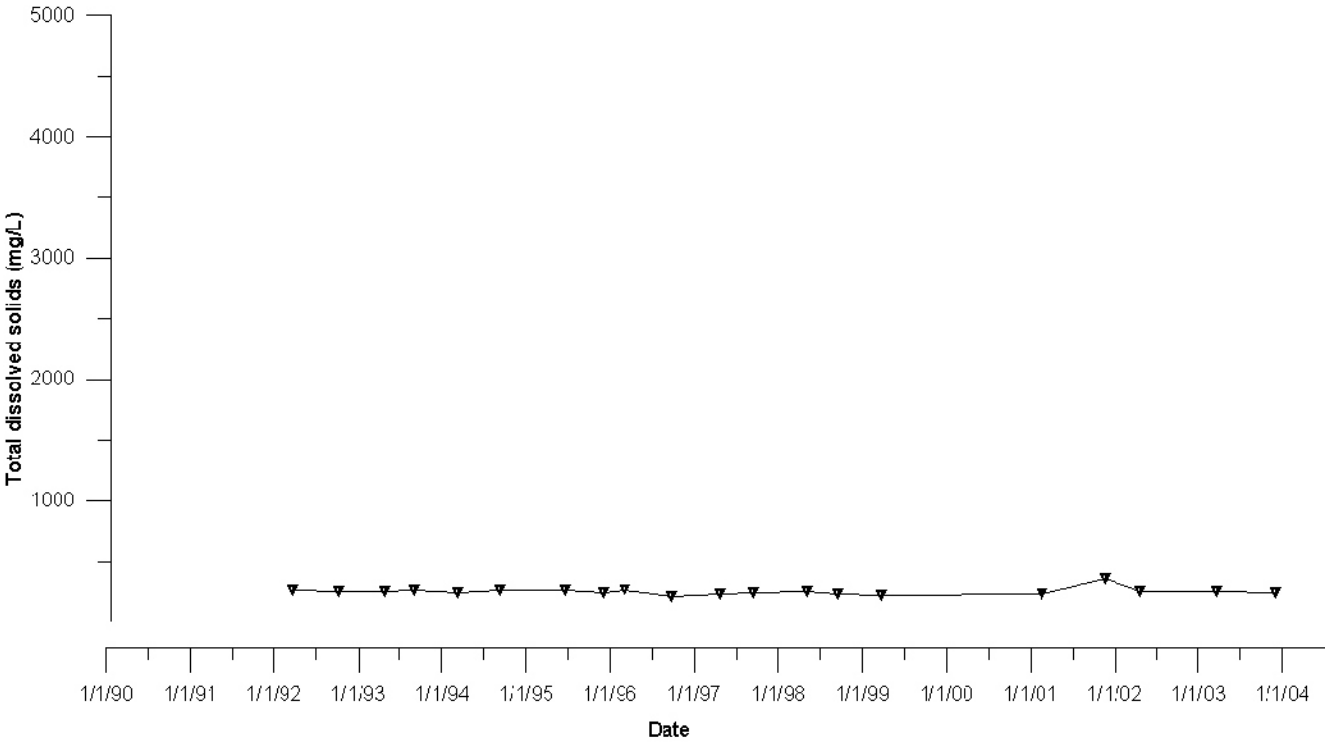

## Tunnack



## Waterhouse




## Winnaleah



# APPENDIX 13

## Summary table of short and long-term management options for each statewide groundwater network borehole

### Summary

| | |
|---|---|
| Re-drilling | 17 |
| Decommissioning | 7 |
| Repair to collar | 5 |
| Cleaning or removal of blockages | 3 |

| *Bore hole name/ Feature ID* | *Short-term management of bore* | *Long-term management of bore* |
|---|---|---|
| Barrington 16536 | (a) Decommission and re-drill next to existing bore; (b) Remove blockage, install full casing and screen (if required or possible). Make collar flush with ground level. | Retain as long-term monitoring bore. |
| Beulah 4290 | Contact owner and gain permission to monitor bore. | Retain as long-term monitoring bore. |
| Bicheno 16548 | Nil | Retain as long-term monitoring bore. |
| Bothwell 17772 | Install physical barrier to protect collar from stock. In area of Clyde River water management plan. | Retain as long-term monitoring bore. |
| Branxholm 16546 | (a) Decommission and drill hole next to existing bore; (b) Install full casing and screen, if possible. | Retain (new bore) as long-term monitoring bore. |
| Buckland 16551 | Install flush ground collar protection. Monitor changes in SWL due to tree plantation. | Retain as long-term monitoring bore. |
| Burnie tip 1 17776 | Nil | Retain as long-term monitoring bore? |
| Burnie tip 4 17780 | Nil | Retain as long-term monitoring bore? |
| Calder 16533 | Because of low yield, drill new bore on flat land several kilometres to the north. | Retain existing bore only for manual and automatic SWL data. |
| Chudleigh 16538 | Drill bore next to existing bore. Use existing bore as observation bore for pump test. | Retain new bore as long-term monitoring bore. |
| Cressy 16541 | Drill new bore in local area for water quality sampling | Retain bore only for manual and automatic SWL data. |
| Dodges Ferry 16552 | Decommission bore because of hydrocarbon contamination. | Decommission bore and drill new bore in similar local groundwater flow system. |
| Free's Bore 807 | Remove from network. | Remove from network. |
| Hagley 16540 | Pump test existing bore and other new bores drilled to the south. | Retain as long-term monitoring bore. |
| Hampshire 16534 | Requires cement repairs to collar. | Retain as long-term monitoring bore. |
| Huonville 16923 | Install removal pressure collar, so readings can be collected when not artesian. | Retain as long-term monitoring bore. |
| Jetsonville 16545 | Air lift and clean out casing. | Retain as long-term monitoring bore. |
| Lilydale 16542 | Because of low yield, hand over to property owner and redrill in valley floor. | Monitor new bore long term for physical and chemical parameters. |

| *Bore hole name/ Feature ID* | *Short-term management of bore* | *Long-term management of bore* |
|---|---|---|
| Little Swanport 16549 | Nil | Retain as long-term monitoring bore. |
| Melton Mowbray 16529 | (a) Decommission and drill hole next to existing bore; (b) Install full casing and screen, if possible. | Retain new bore as long-term monitoring bore. |
| Montagu 16532 | Retain bore as observation bore. Drill new bore in local area to monitor natural background setting. Possible drill site on southern side of road, up track on other side of gate. | Retain both existing and new bores as long-term monitoring bores. |
| Mooreville Road 16535 | Drill new bore next to existing bore. Use existing bore for observation bore for pump tests or decommission. | Retain new bore as long-term monitoring bore. |
| Osmaston 16539 | (a) Decommission and drill hole next to existing bore; (b) Install full casing and screen, if possible. | Retain new bore as long-term monitoring bore. |
| Pawleena Road 16554 | Nil | Retain as long-term monitoring bore. |
| Pipers River 16543 | Because of low yield, drill new bore in local area for water quality sampling. | Retain bore only for manual and automatic SWL data. Monitor new bore long term for physical and chemical parameters. |
| Port Arthur 16528 | Remove blockage from bore. Drill new bore next to existing bore. Use existing bore for observation bore for pump tests or decommission. | Retain bore only for manual and automatic SWL data. Monitor new bore long term for physical and chemical parameters. |
| Ross 16553 | Nil | Retain as long-term monitoring bore. |
| Snug 17773 | (a) Decommission and drill hole next to existing bore; (b) Install full casing and screen, if possible. | Retain new bore as long-term monitoring bore. |
| South Forest 16527 | Use bore 21 metres to north as observation bore for pump test. | Retain as long-term monitoring bore. |
| Spreyton 18606 | Install removal pressure collar, so readings can be collected when not artesian. | Retain as long-term monitoring bore. |
| St Marys 16526 | Remove blockage from bore. Drill new bore next to existing bore. Use existing bore for observation bore for pump tests or decommission. | Retain both bores (if possible) as long-term monitoring bores. |
| Togari 16531 | Retain bore as observation bore. Drill new bore in local area to monitor natural background setting. | Retain both existing and new bores as long-term monitoring bores. |
| Trowutta 16530 | Install new Odyssey data recorder during September 2004. | Retain as long-term monitoring bore. |
| Tunnack 16550 | Because of low yield, drill new bore in local area for water quality sampling. | Retain bore only for manual and automatic SWL data. Monitor new bore long term for physical and chemical parameters. |
| Waterhouse 16544 | Air lift and clean out casing. | Retain as long-term monitoring bore. |
| Winnaleah 16547 | Install new Odyssey data recorder during September 2004. | Retain as long-term monitoring bore. |