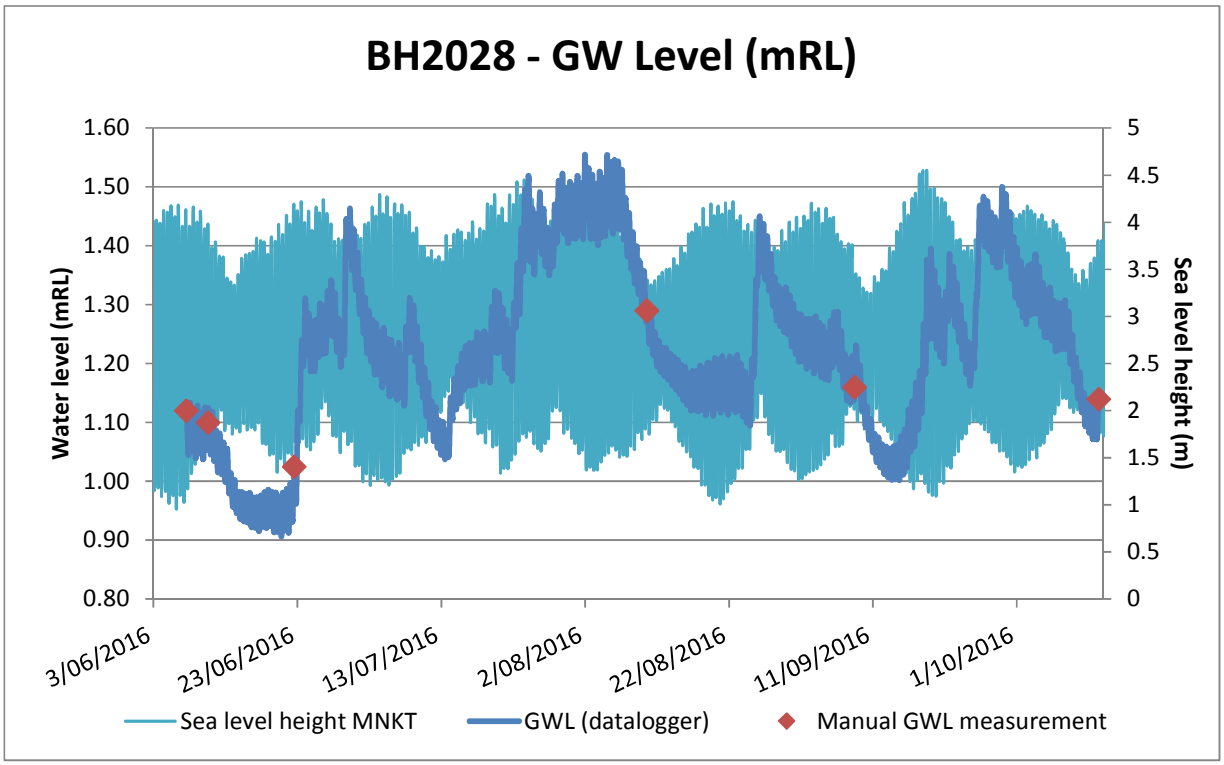
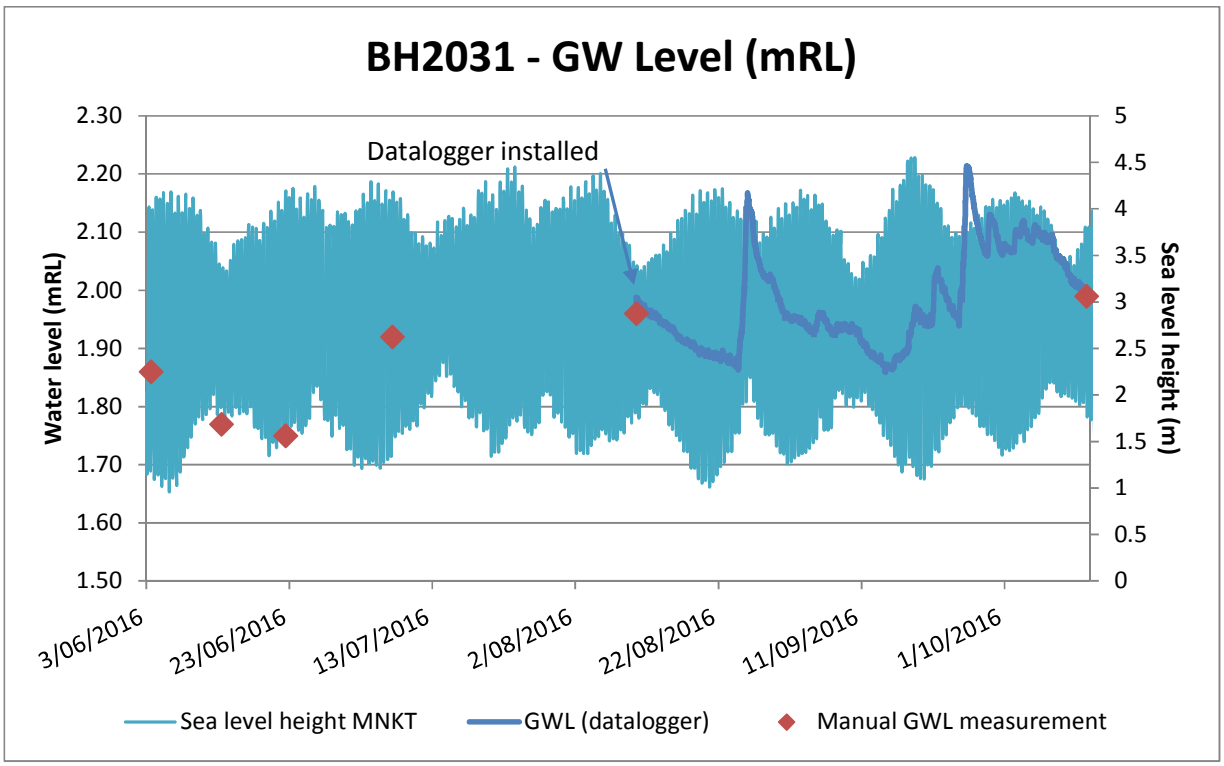
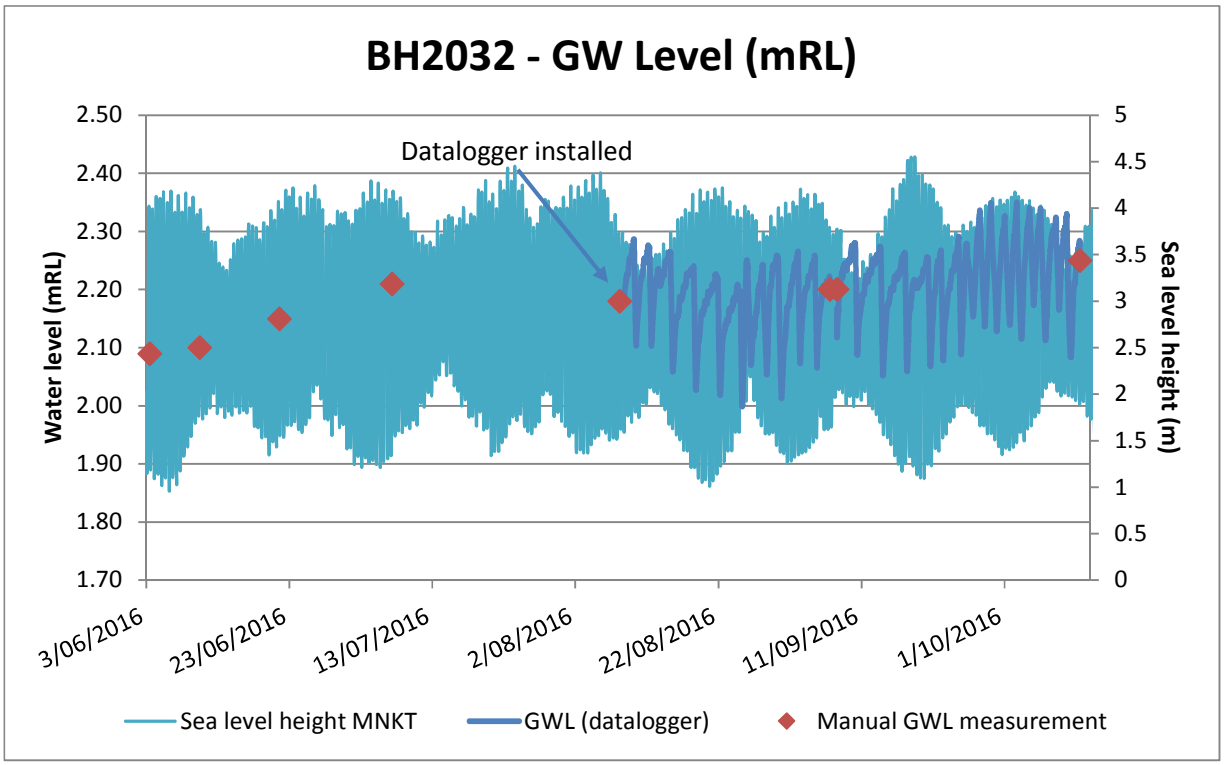
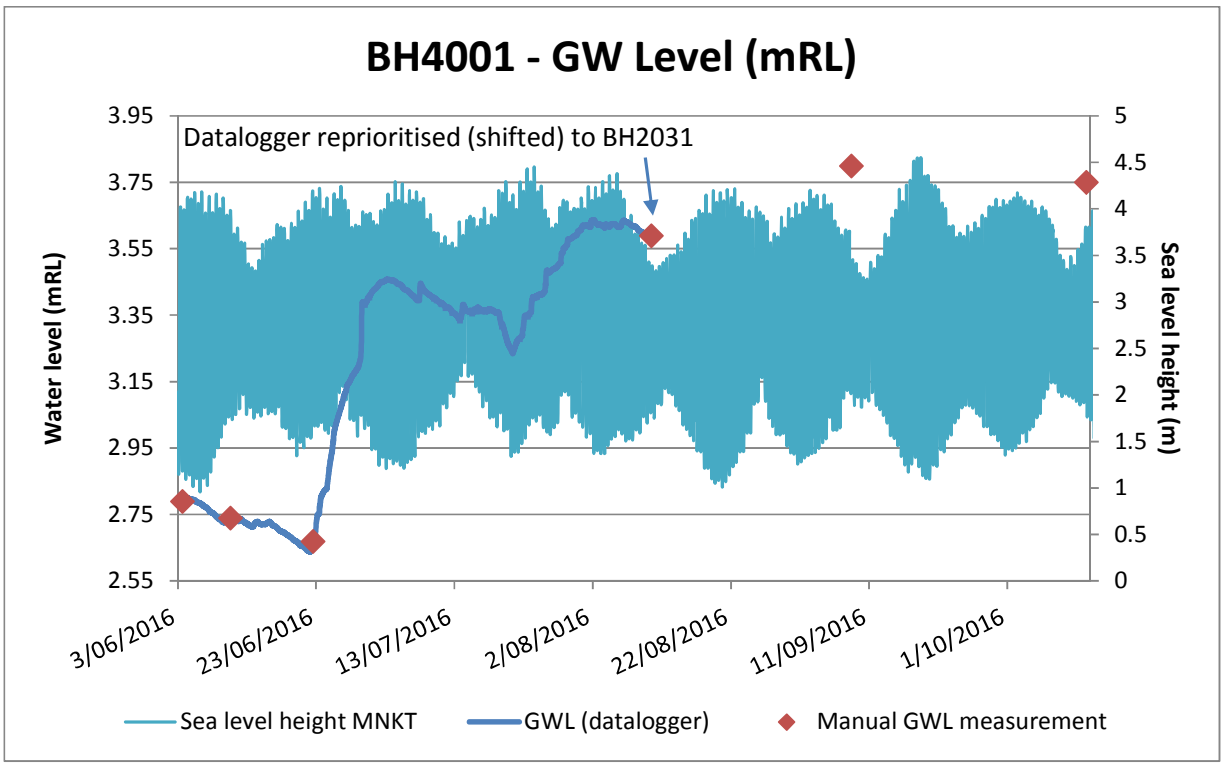
Appendix A2

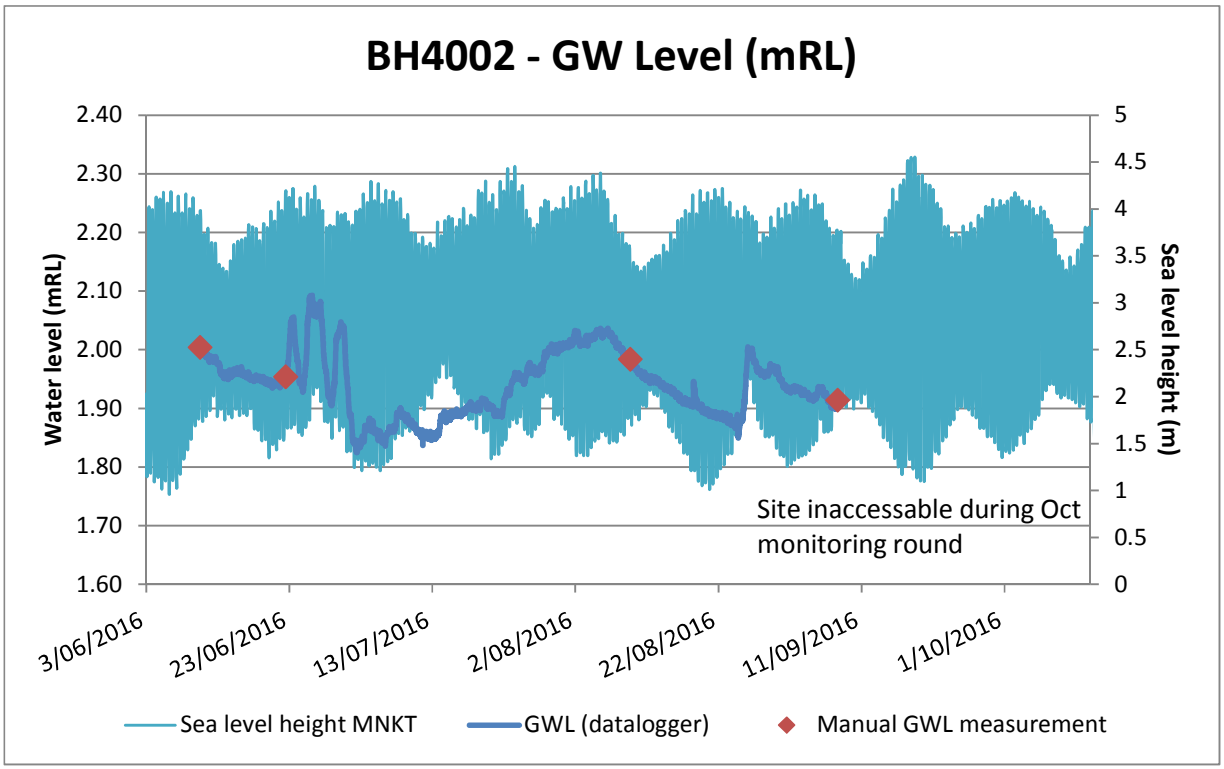
Groundwater Level Monitoring Results

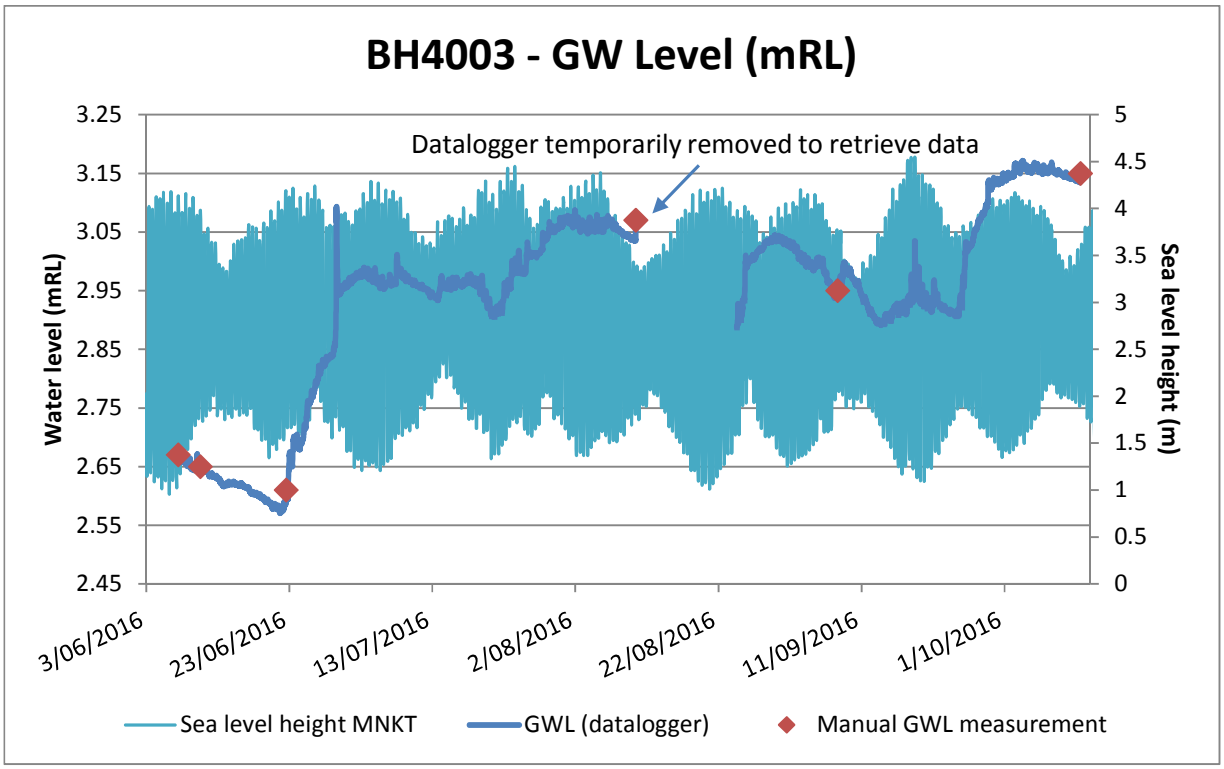

BH2028 - GW Level (mRL)
Water level (mRL)
1.60
1.50
1.40
1.30
1.20
1.10
1.00
0.90
0.80
Sea level height (m)
5
4.5
4
3.5
3
2.5
2
1.5
1
0.5
0
3/06/2016
23/06/2016
13/07/2016
2/08/2016
22/08/2016
11/09/2016
1/10/2016
Sea level height MNKT
GWL (datalogger)
Manual GWL measurement

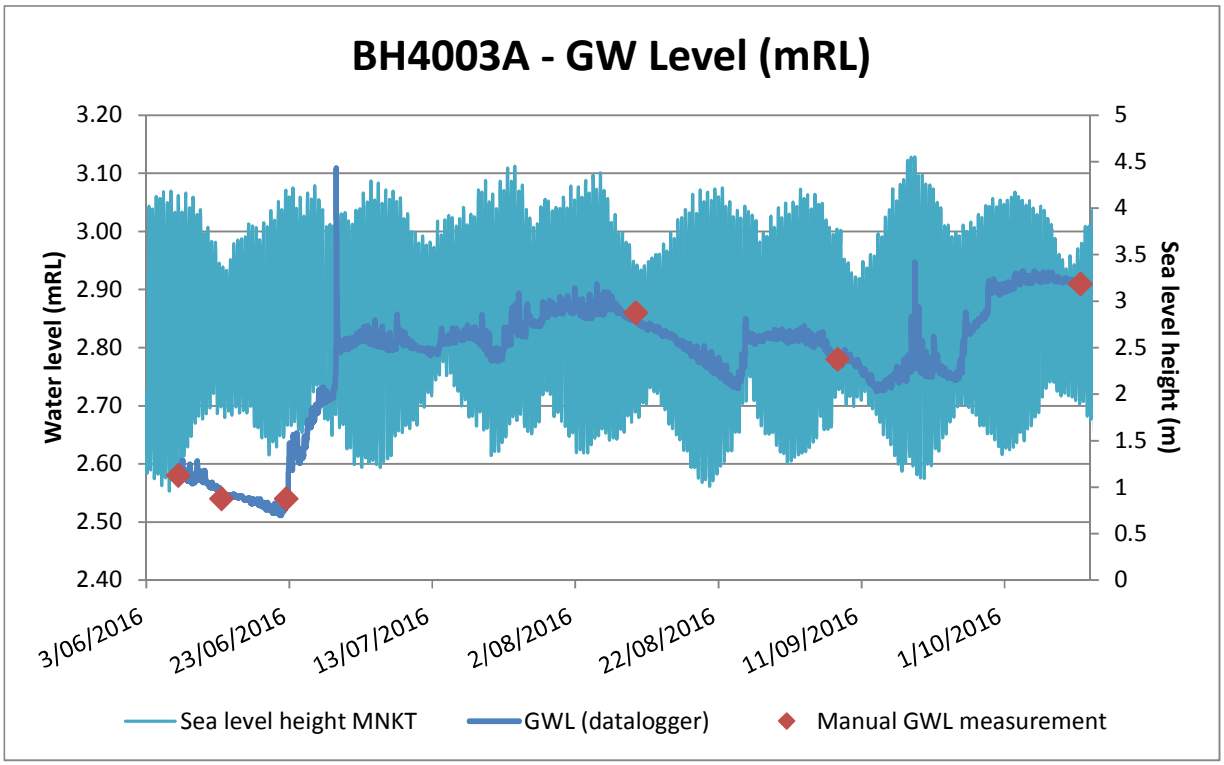

BH2031 - GW Level (mRL)
Datalogger installed
Water level (mRL)
2.30
2.20
2.10
2.00
1.90
1.80
1.70
1.60
1.50
Sea level height (m)
5
4.5
4
3.5
3
2.5
2
1.5
1
0.5
0
3/06/2016
23/06/2016
13/07/2016
2/08/2016
22/08/2016
11/09/2016
1/10/2016
Sea level height MNKT
GWL (datalogger)
Manual GWL measurement

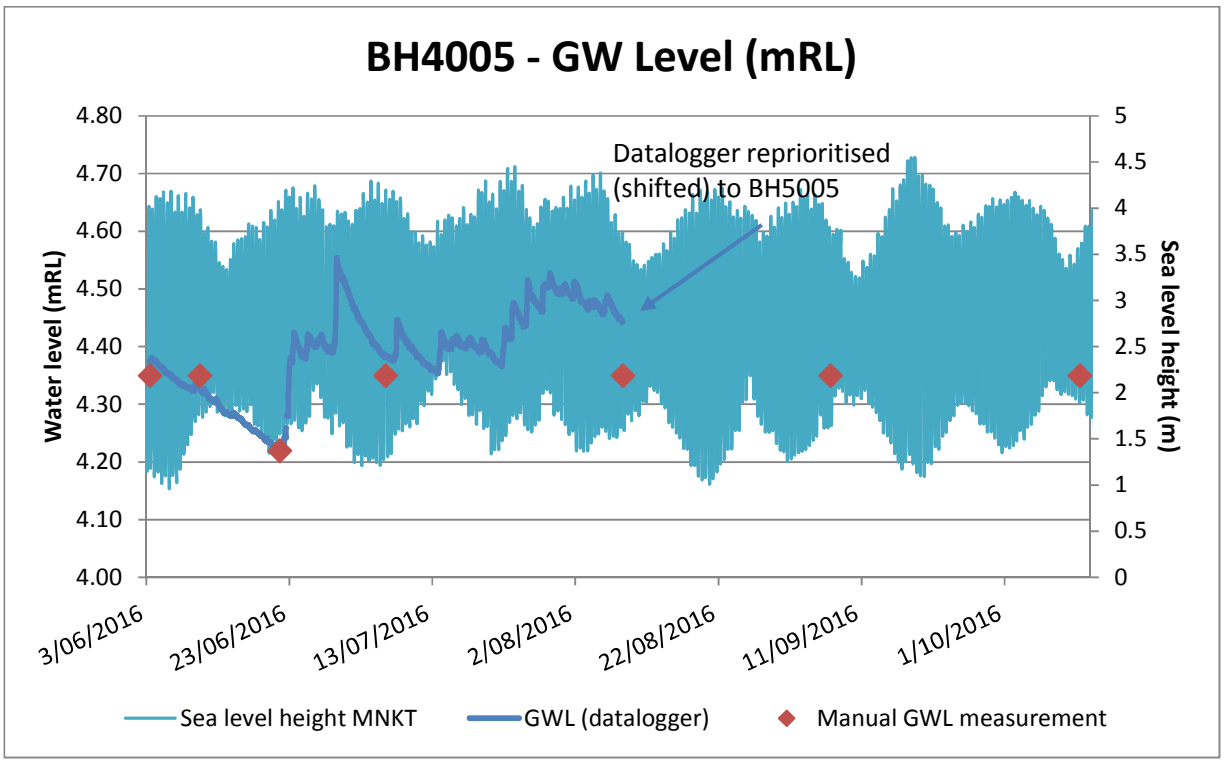

BH2032 - GW Level (mRL)
Datalogger installed
Water level (mRL)
Sea level height (m)
2.50
2.40
2.30
2.20
2.10
2.00
1.90
1.80
1.70
5
4.5
4
3.5
3
2.5
2
1.5
1
0.5
0
3/06/2016
23/06/2016
13/07/2016
2/08/2016
22/08/2016
11/09/2016
1/10/2016
Sea level height MNKT
GWL (datalogger)
Manual GWL measurement

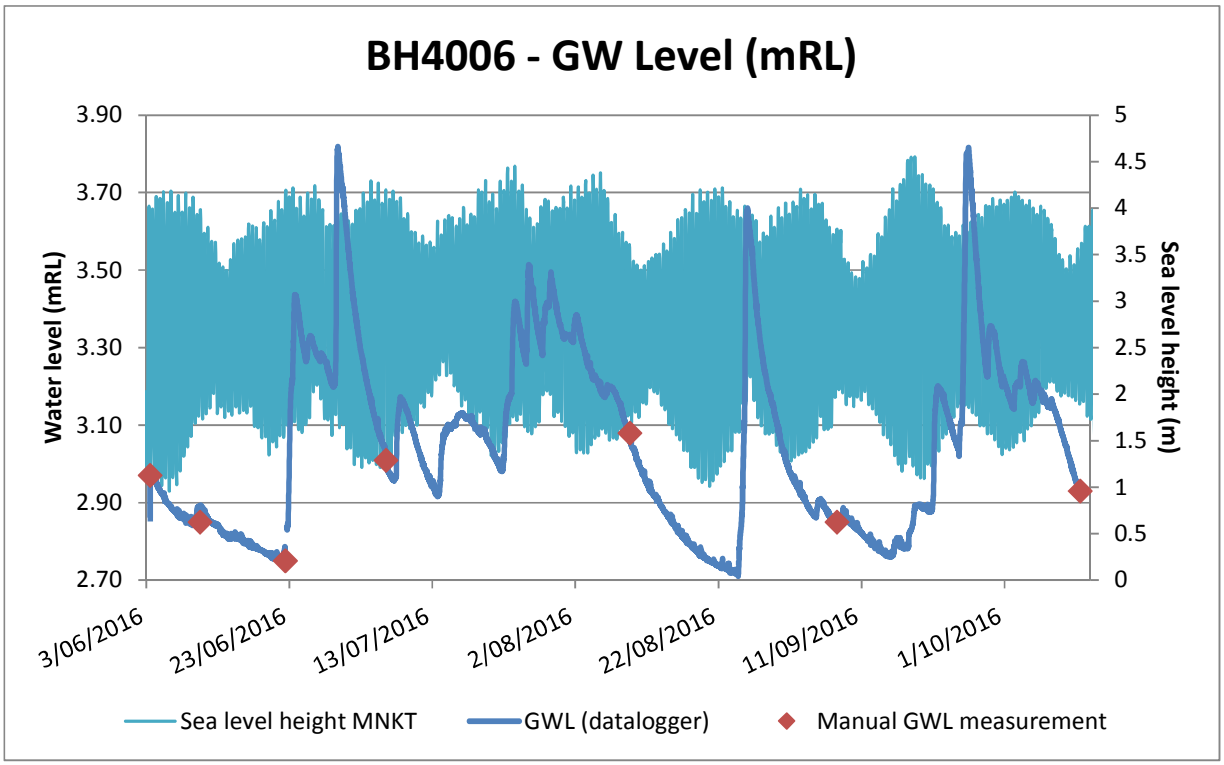

BH4001 - GW Level (mRL)
Datalogger reprioritised (shifted) to BH2031
Water level (mRL)
Sea level height (m)
3.95
3.75
3.55
3.35
3.15
2.95
2.75
2.55
5
4.5
4
3.5
3
2.5
2
1.5
1
0.5
0
3/06/2016
23/06/2016
13/07/2016
2/08/2016
22/08/2016
11/09/2016
1/10/2016
Sea level height MNKT
GWL (datalogger)
Manual GWL measurement

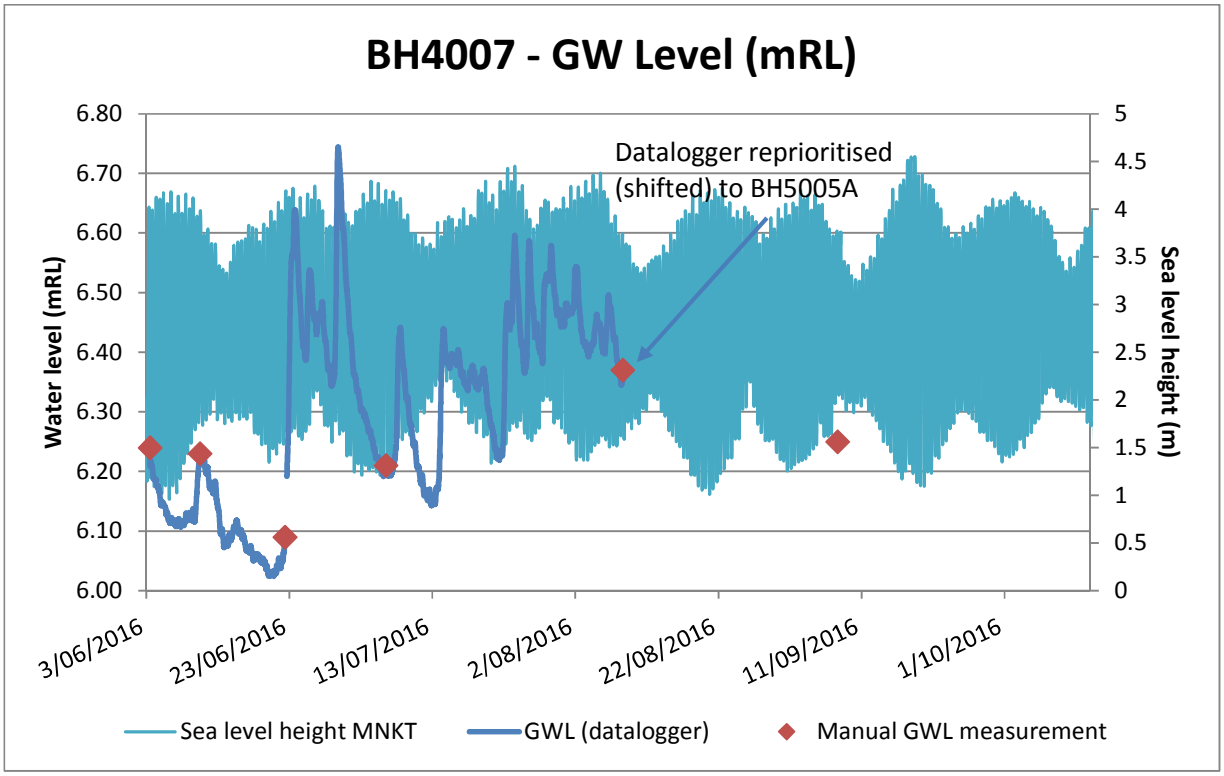

BH4002 - GW Level (mRL)
Water level (mRL)
Sea level height (m)
2.40
2.30
2.20
2.10
2.00
1.90
1.80
1.70
1.60
5
4.5
4
3.5
3
2.5
2
1.5
1
0.5
0
Site inaccessable during Oct monitoring round
3/06/2016
23/06/2016
13/07/2016
2/08/2016
22/08/2016
11/09/2016
1/10/2016
Sea level height MNKT
GWL (datalogger)
Manual GWL measurement

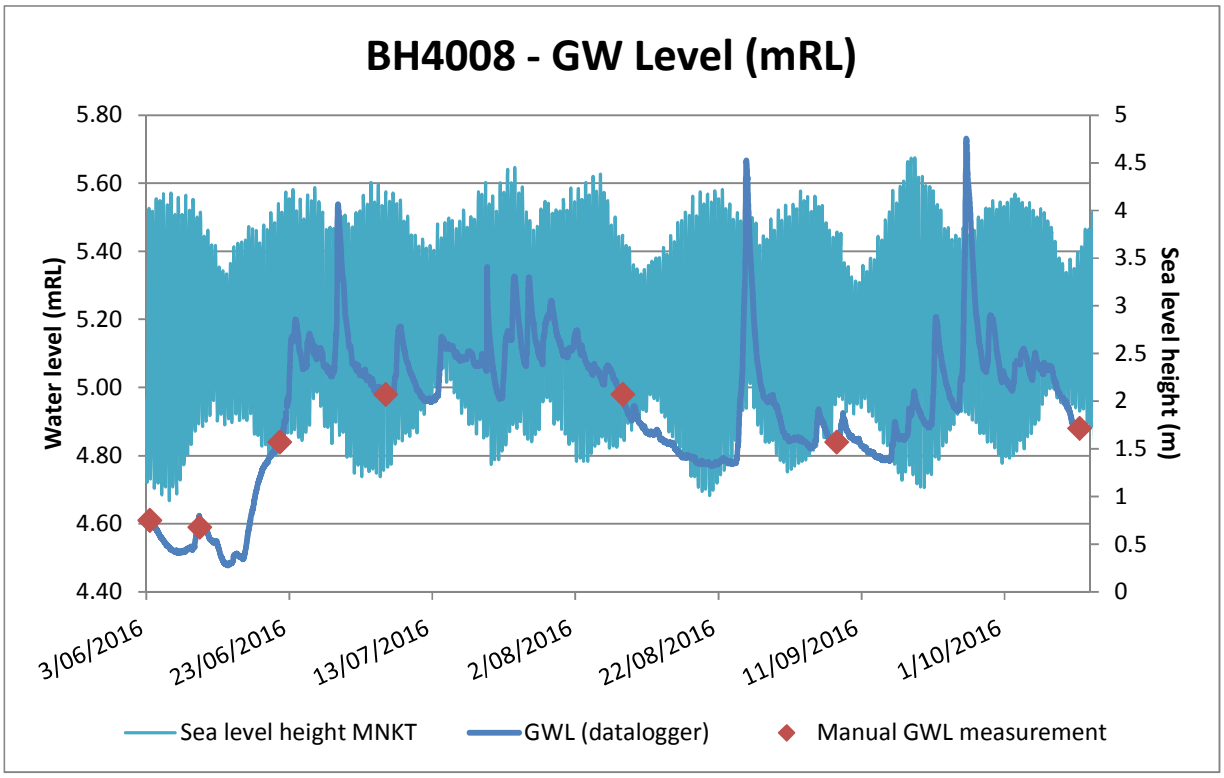

BH4003 - GW Level (mRL)
Water level (mRL)
Sea level height (m)
3.25
3.15
3.05
2.95
2.85
2.75
2.65
2.55
2.45
5
4.5
4
3.5
3
2.5
2
1.5
1
0.5
0
Datalogger temporarily removed to retrieve data
3/06/2016
23/06/2016
13/07/2016
2/08/2016
22/08/2016
11/09/2016
1/10/2016
Sea level height MNKT
GWL (datalogger)
Manual GWL measurement

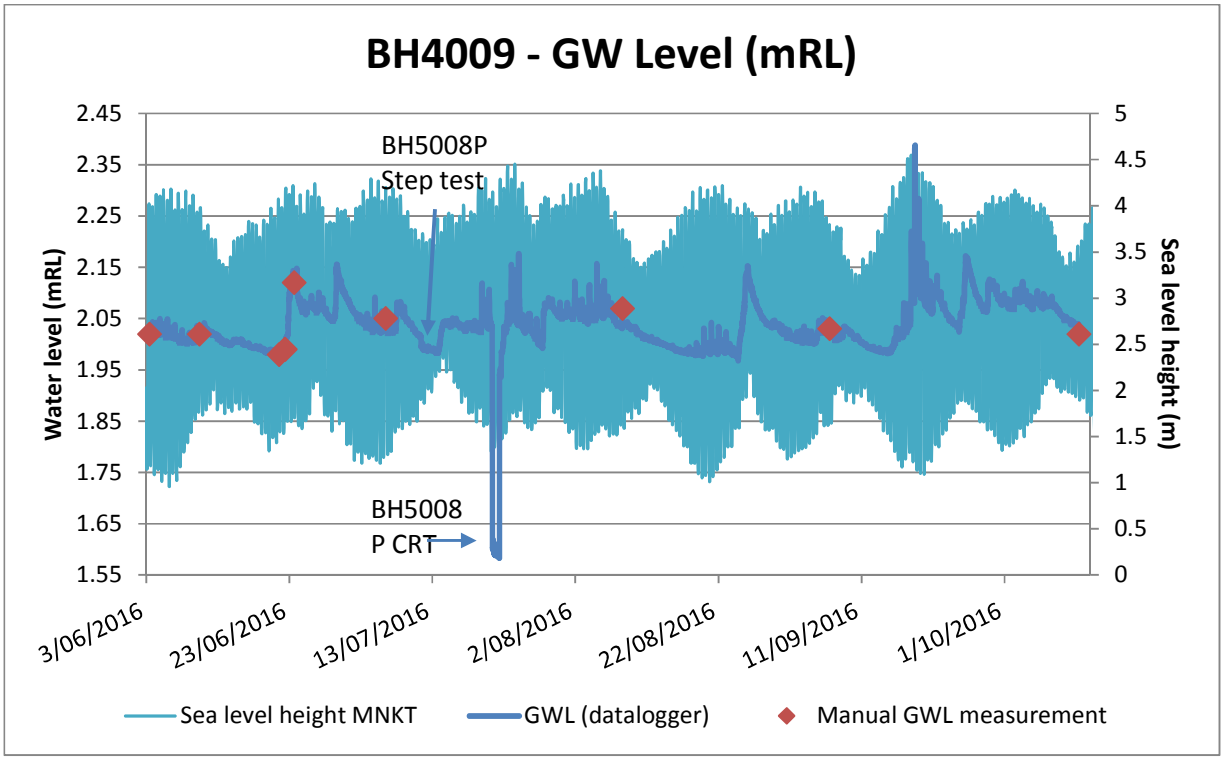

BH4003A - GW Level (mRL)
Water level (mRL)
3.20
3.10
3.00
2.90
2.80
2.70
2.60
2.50
2.40
Sea level height (m)
5
4.5
4
3.5
3
2.5
2
1.5
1
0.5
0
3/06/2016
23/06/2016
13/07/2016
2/08/2016
22/08/2016
11/09/2016
1/10/2016
Sea level height MNKT
GWL (datalogger)
Manual GWL measurement

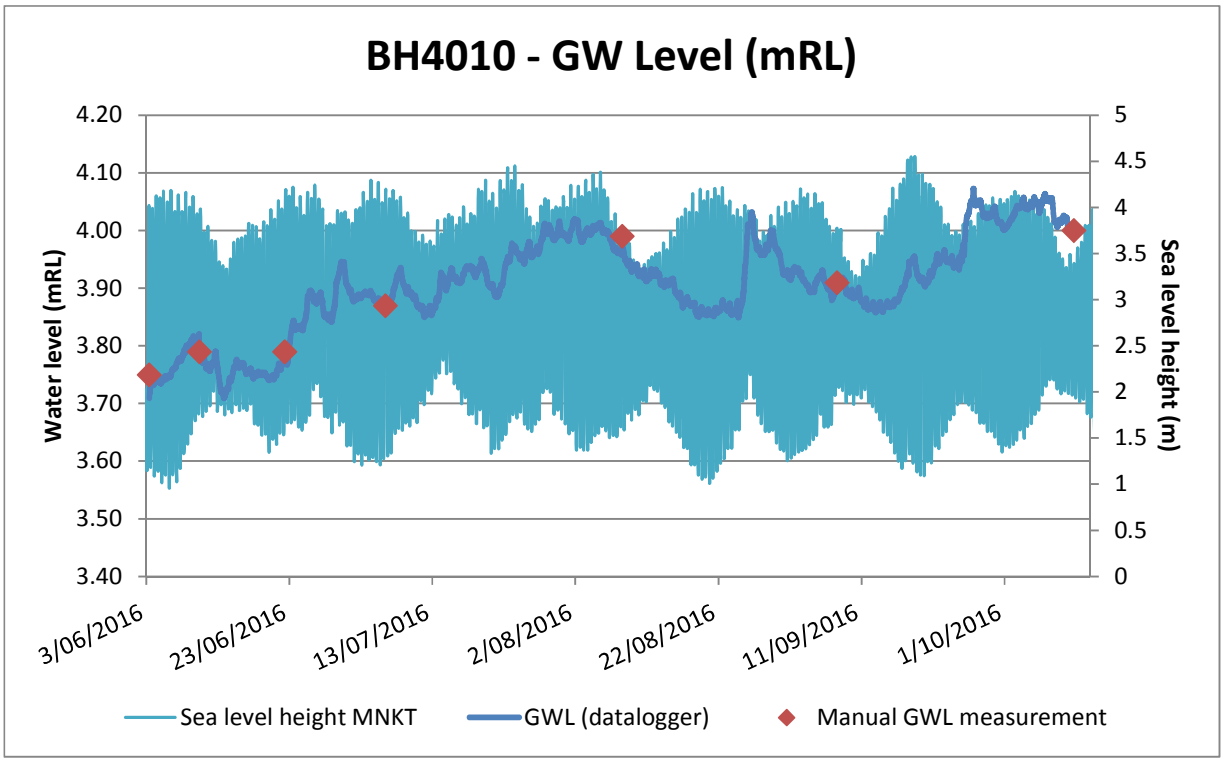

BH4005 - GW Level (mRL)
Water level (mRL)
4.80
4.70
4.60
4.50
4.40
4.30
4.20
4.10
4.00
Datalogger reprioritised
(shifted) to BH5005
Sea level height (m)
5
4.5
4
3.5
3
2.5
2
1.5
1
0.5
0
3/06/2016
23/06/2016
13/07/2016
2/08/2016
22/08/2016
11/09/2016
1/10/2016
Sea level height MNKT
GWL (datalogger)
Manual GWL measurement

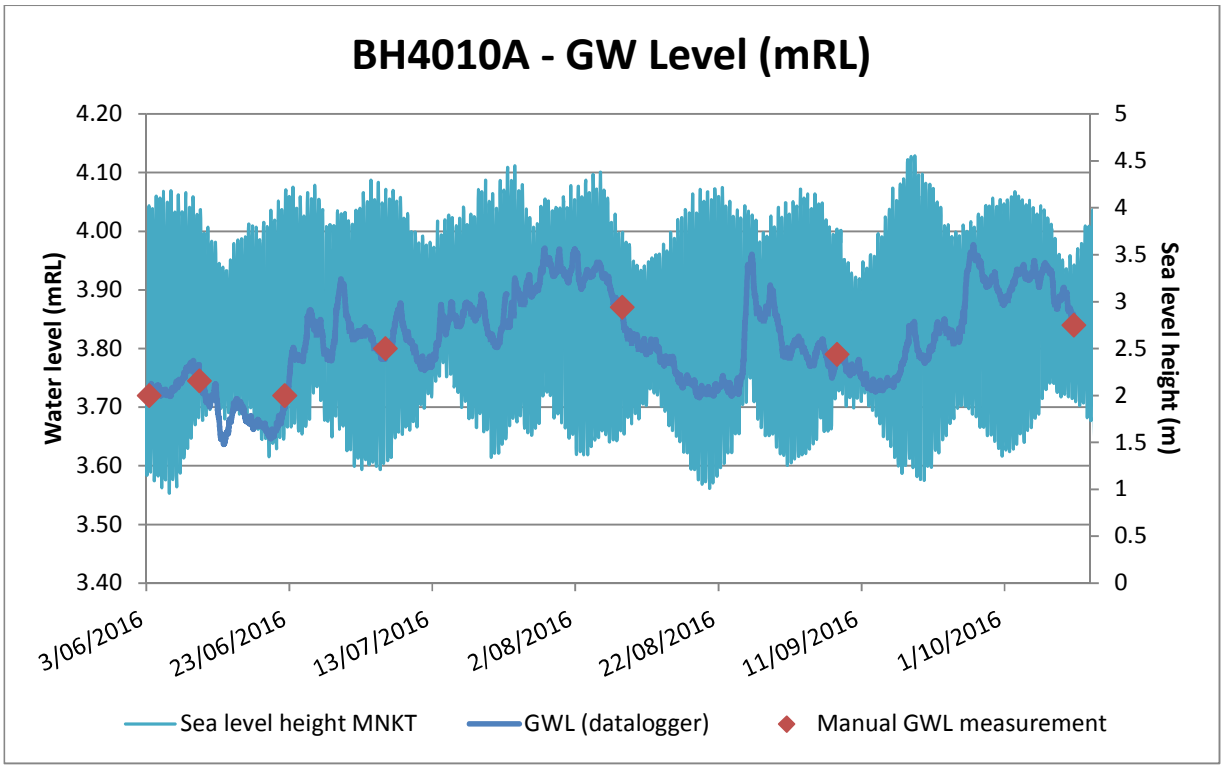

BH4006 - GW Level (mRL)
Water level (mRL)
3.90
3.70
3.50
3.30
3.10
2.90
2.70
Sea level height (m)
5
4.5
4
3.5
3
2.5
2
1.5
1
0.5
0
3/06/2016
23/06/2016
13/07/2016
2/08/2016
22/08/2016
11/09/2016
1/10/2016
Sea level height MNKT
GWL (datalogger)
Manual GWL measurement

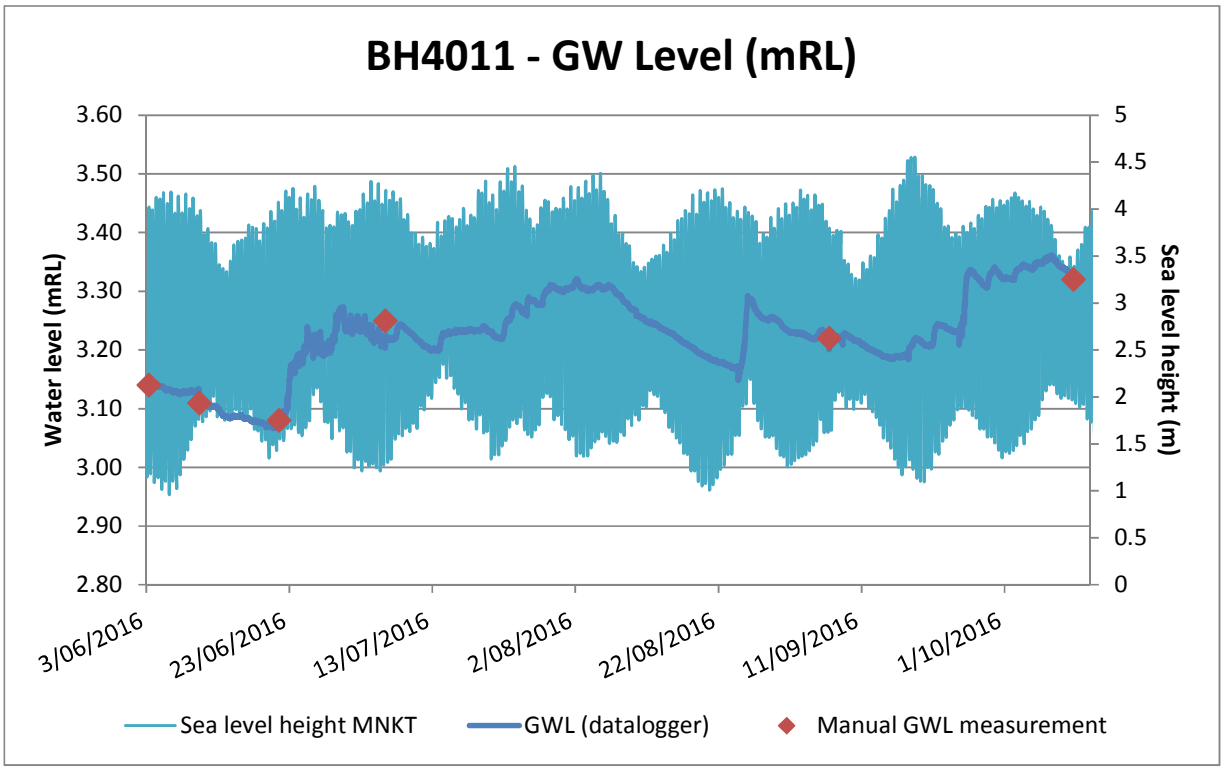

BH4007 - GW Level (mRL)
Water level (mRL)
6.80
6.70
6.60
6.50
6.40
6.30
6.20
6.10
6.00
Datalogger reprioritised
(shifted) to BH5005A
Sea level height (m)
5
4.5
4
3.5
3
2.5
2
1.5
1
0.5
0
3/06/2016
23/06/2016
13/07/2016
2/08/2016
22/08/2016
11/09/2016
1/10/2016
Sea level height MNKT
GWL (datalogger)
Manual GWL measurement

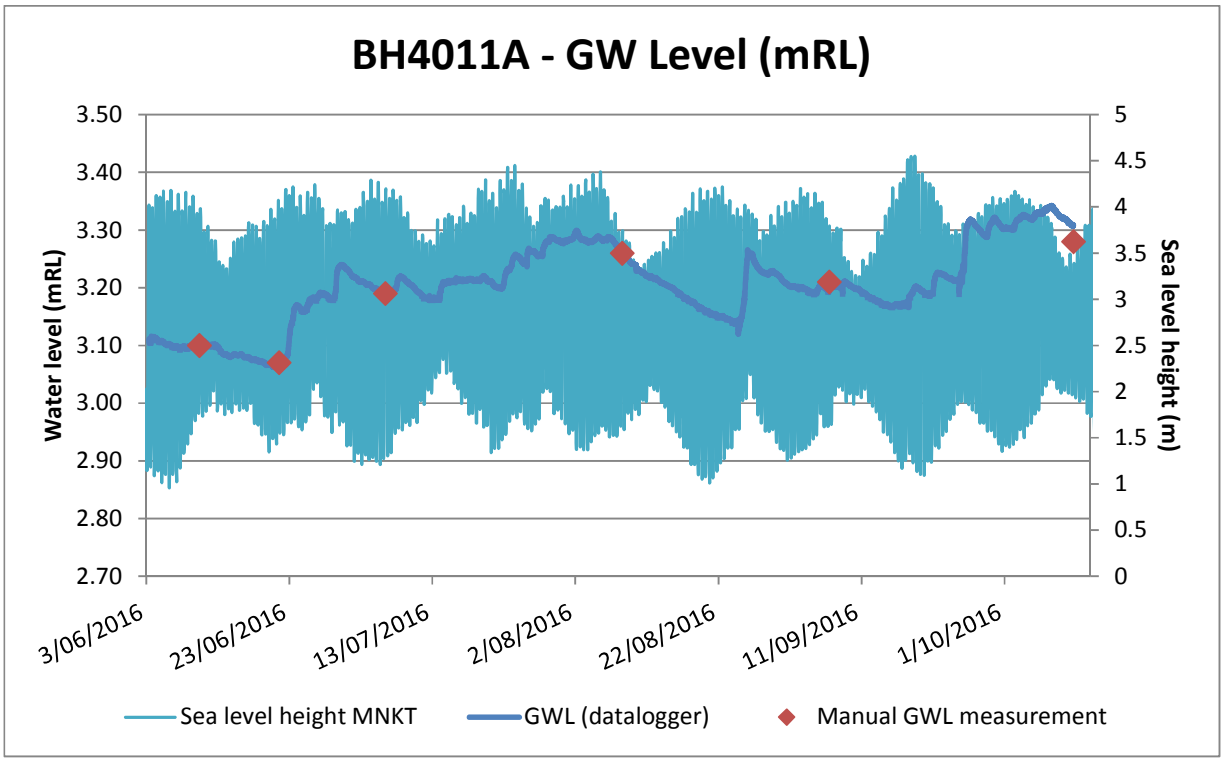

BH4008 - GW Level (mRL)
Water level (mRL)
Sea level height (m)
5.80
5.60
5.40
5.20
5.00
4.80
4.60
4.40
5
4.5
4
3.5
3
2.5
2
1.5
1
0.5
0
3/06/2016
23/06/2016
13/07/2016
2/08/2016
22/08/2016
11/09/2016
1/10/2016
Sea level height MNKT
GWL (datalogger)
Manual GWL measurement

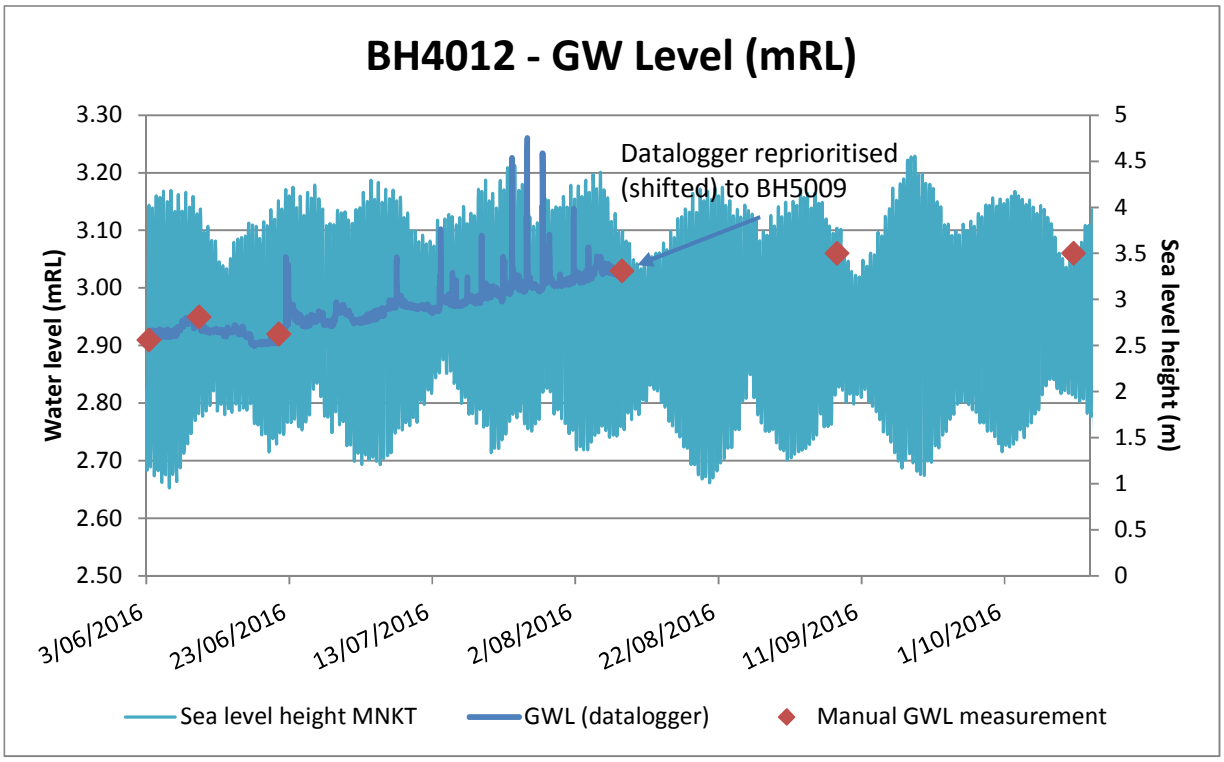

BH4009 - GW Level (mRL)
Water level (mRL)
Sea level height (m)
BH5008P
Step test
BH5008
P CRT
2.45
2.35
2.25
2.15
2.05
1.95
1.85
1.75
1.65
1.55
5
4.5
4
3.5
3
2.5
2
1.5
1
0.5
0
3/06/2016
23/06/2016
13/07/2016
2/08/2016
22/08/2016
11/09/2016
1/10/2016
Sea level height MNKT
GWL (datalogger)
Manual GWL measurement

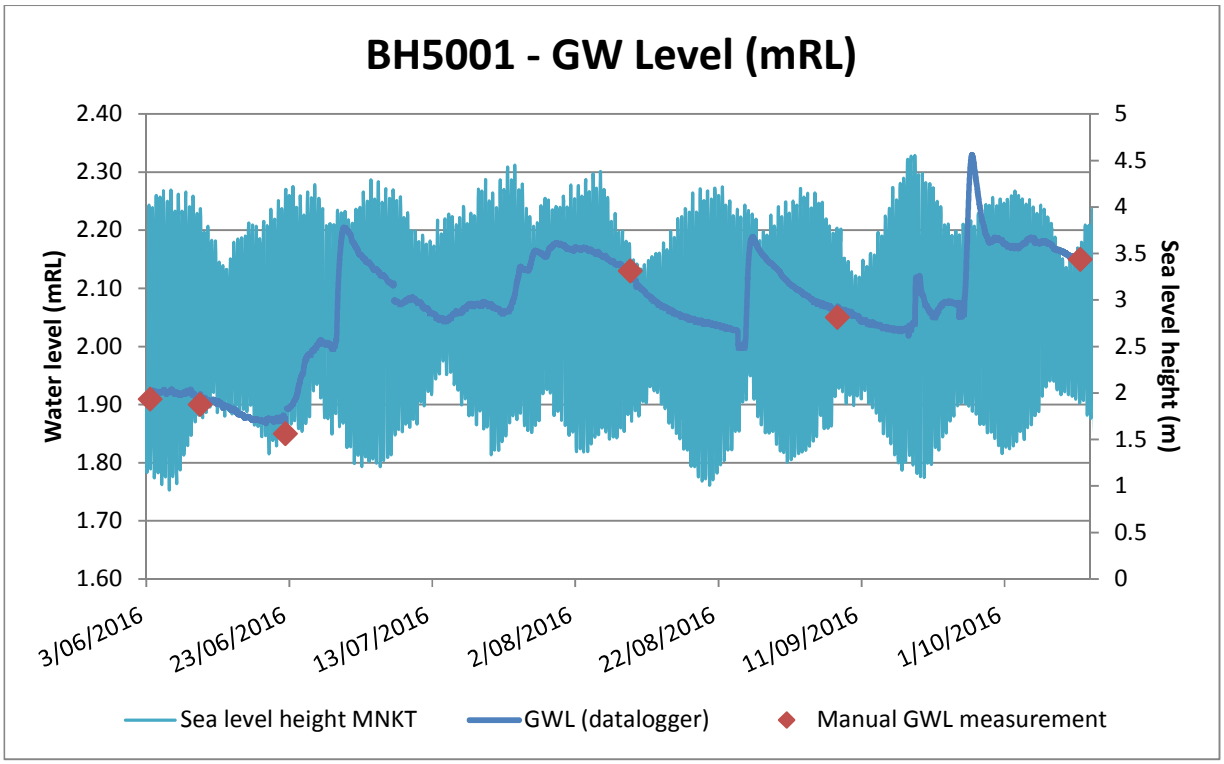

BH4010 - GW Level (mRL)
Water level (mRL)
4.20
4.10
4.00
3.90
3.80
3.70
3.60
3.50
3.40
Sea level height (m)
5
4.5
4
3.5
3
2.5
2
1.5
1
0.5
0
3/06/2016
23/06/2016
13/07/2016
2/08/2016
22/08/2016
11/09/2016
1/10/2016
Sea level height MNKT
GWL (datalogger)
Manual GWL measurement

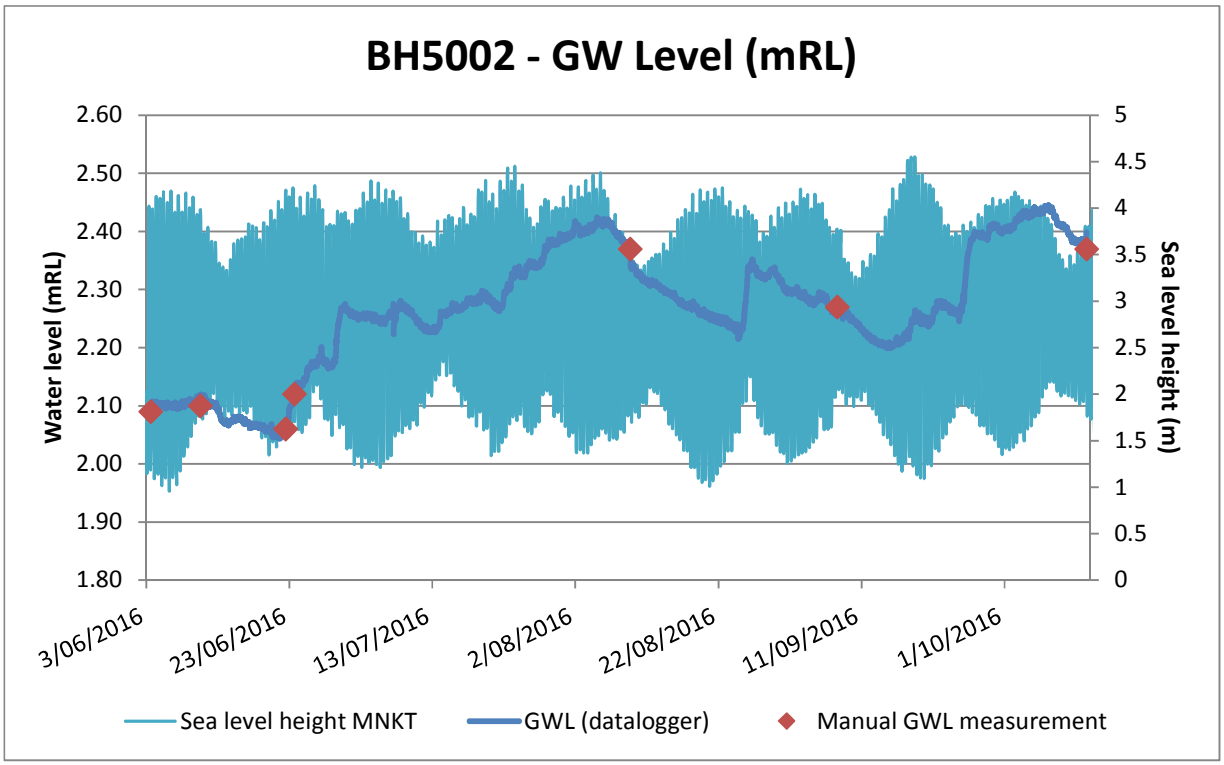

BH4010A - GW Level (mRL)
Water level (mRL)
4.20
4.10
4.00
3.90
3.80
3.70
3.60
3.50
3.40
Sea level height (m)
5
4.5
4
3.5
3
2.5
2
1.5
1
0.5
0
3/06/2016
23/06/2016
13/07/2016
2/08/2016
22/08/2016
11/09/2016
1/10/2016
Sea level height MNKT
GWL (datalogger)
Manual GWL measurement

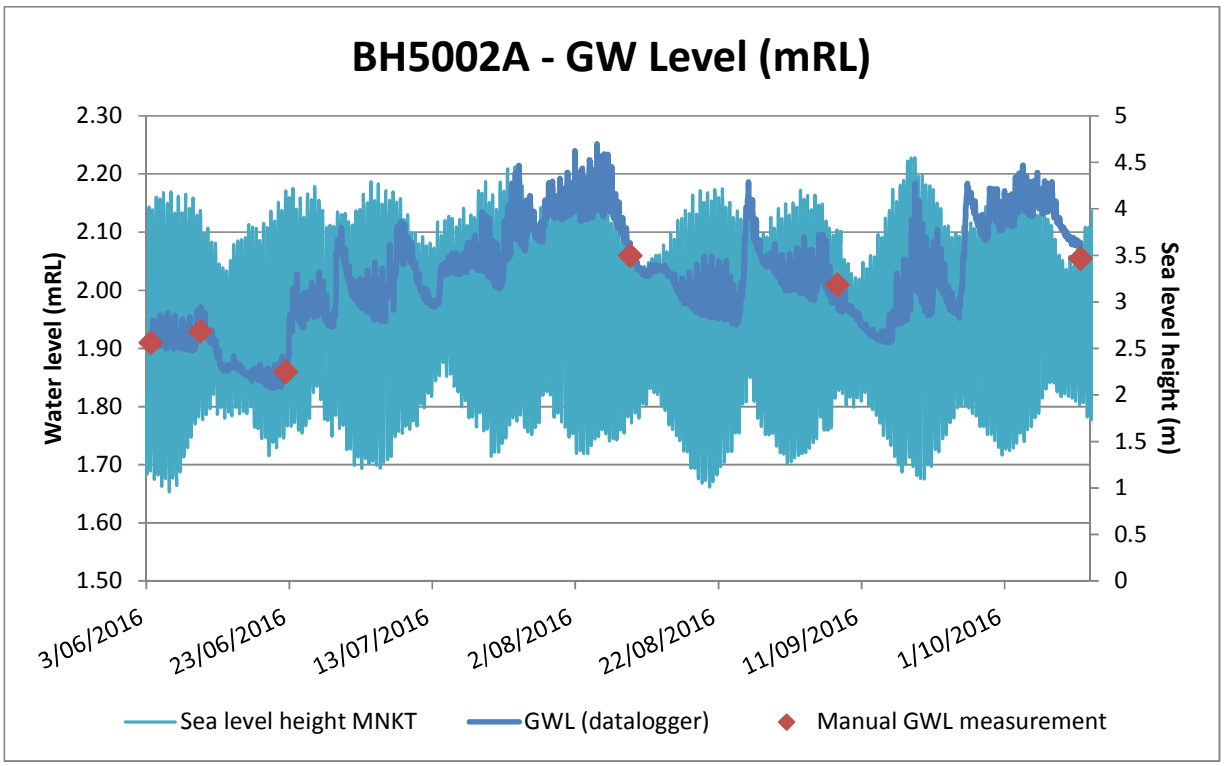

BH4011 - GW Level (mRL)
Water level (mRL)
3.60
3.50
3.40
3.30
3.20
3.10
3.00
2.90
2.80
Sea level height (m)
5
4.5
4
3.5
3
2.5
2
1.5
1
0.5
0
3/06/2016
23/06/2016
13/07/2016
2/08/2016
22/08/2016
11/09/2016
1/10/2016
Sea level height MNKT
GWL (datalogger)
Manual GWL measurement

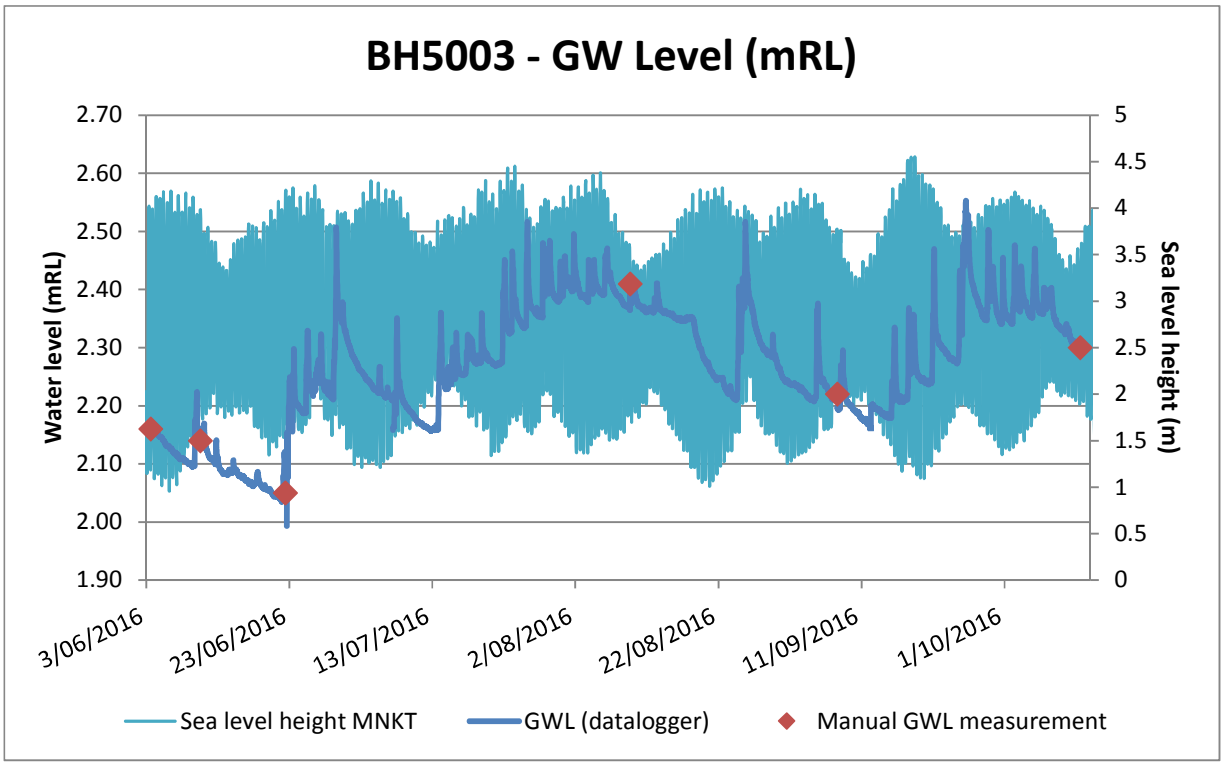

BH4011A - GW Level (mRL)
Water level (mRL)
3.50
3.40
3.30
3.20
3.10
3.00
2.90
2.80
2.70
Sea level height (m)
5
4.5
4
3.5
3
2.5
2
1.5
1
0.5
0
3/06/2016
23/06/2016
13/07/2016
2/08/2016
22/08/2016
11/09/2016
1/10/2016
Sea level height MNKT
GWL (datalogger)
Manual GWL measurement

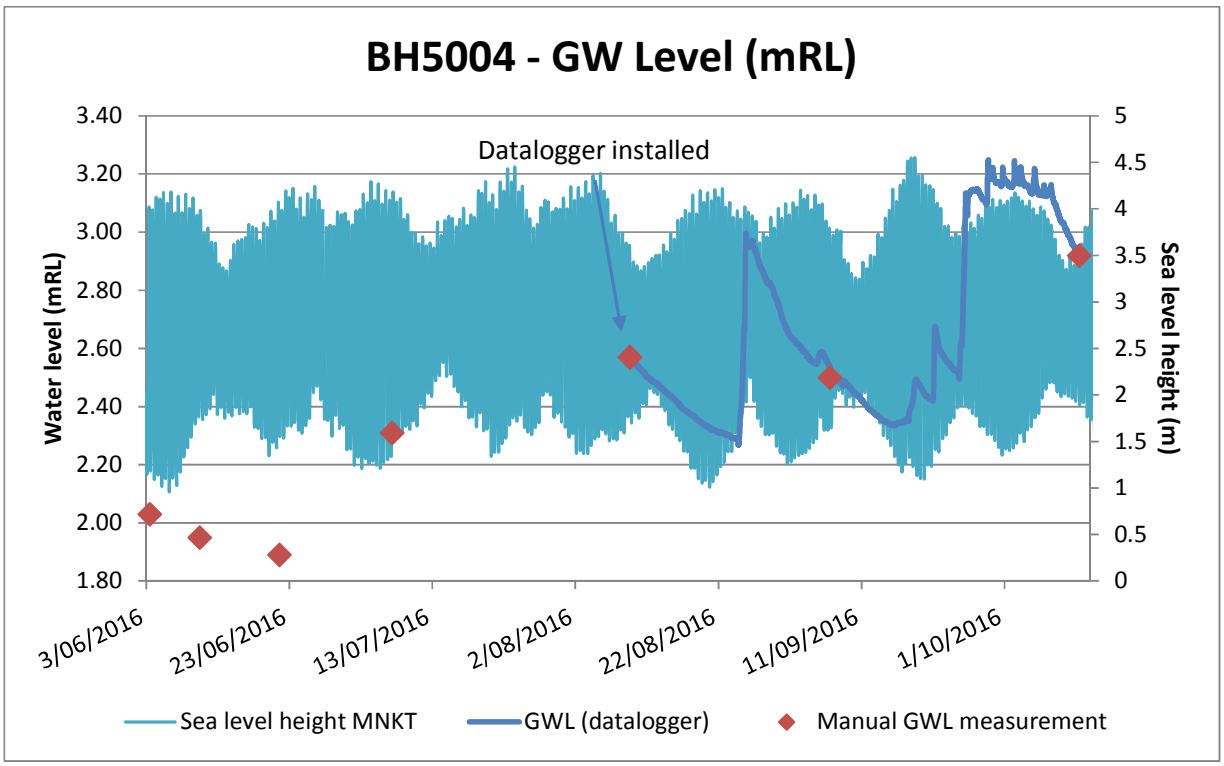

BH4012 - GW Level (mRL)
Datalogger reprioritised (shifted) to BH5009
Water level (mRL)
Sea level height (m)
3.30
3.20
3.10
3.00
2.90
2.80
2.70
2.60
2.50
5
4.5
4
3.5
3
2.5
2
1.5
1
0.5
0
3/06/2016
23/06/2016
13/07/2016
2/08/2016
22/08/2016
11/09/2016
1/10/2016
Sea level height MNKT
GWL (datalogger)
Manual GWL measurement

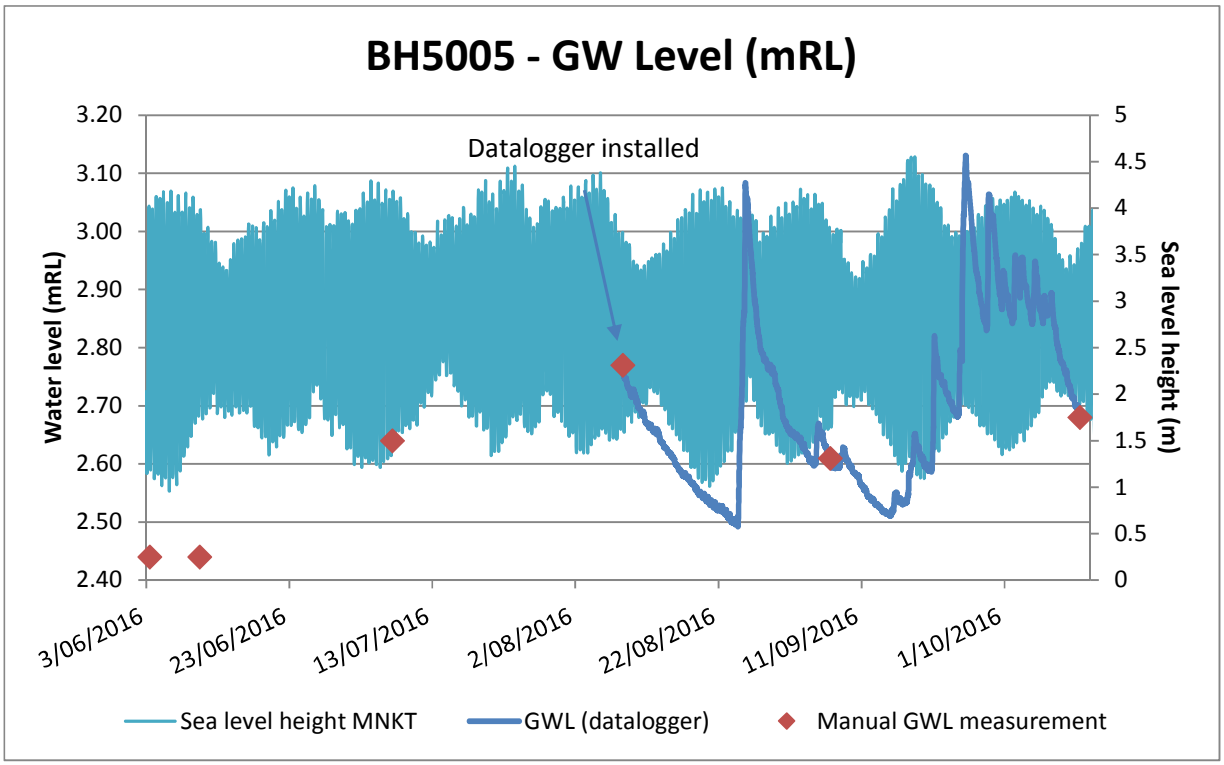

BH5001 - GW Level (mRL)
Water level (mRL)
Sea level height (m)
2.40
2.30
2.20
2.10
2.00
1.90
1.80
1.70
1.60
5
4.5
4
3.5
3
2.5
2
1.5
1
0.5
0
3/06/2016
23/06/2016
13/07/2016
2/08/2016
22/08/2016
11/09/2016
1/10/2016
Sea level height MNKT
GWL (datalogger)
Manual GWL measurement

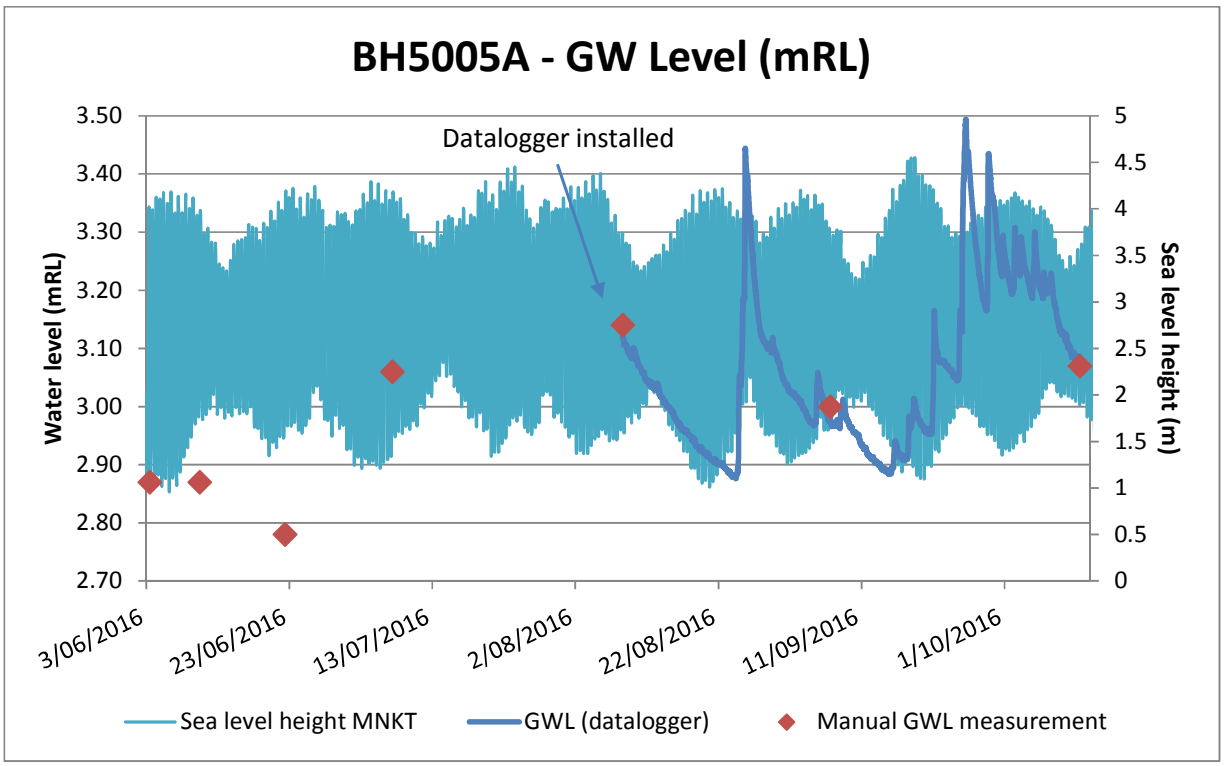

BH5002 - GW Level (mRL)
Water level (mRL)
2.60
2.50
2.40
2.30
2.20
2.10
2.00
1.90
1.80
Sea level height (m)
5
4.5
4
3.5
3
2.5
2
1.5
1
0.5
0
3/06/2016
23/06/2016
13/07/2016
2/08/2016
22/08/2016
11/09/2016
1/10/2016
Sea level height MNKT
GWL (datalogger)
Manual GWL measurement

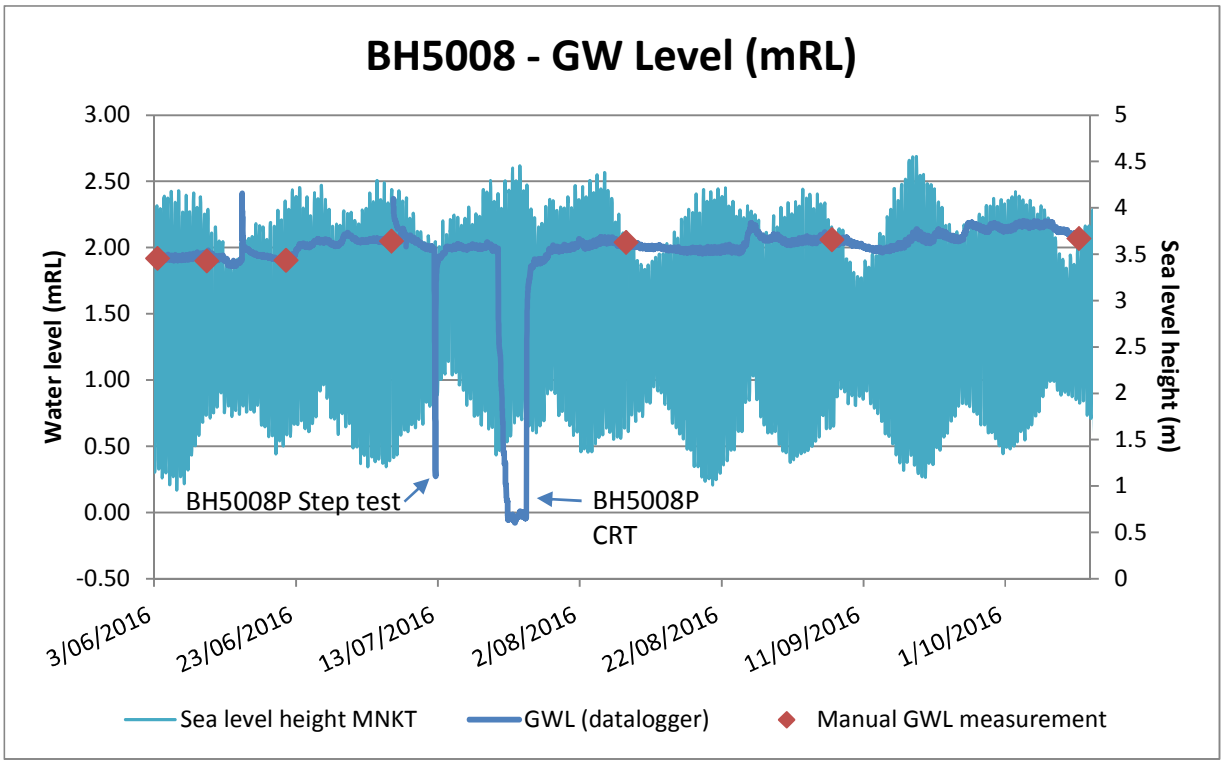

BH5002A - GW Level (mRL)
Water level (mRL)
2.30
2.20
2.10
2.00
1.90
1.80
1.70
1.60
1.50
Sea level height (m)
5
4.5
4
3.5
3
2.5
2
1.5
1
0.5
0
3/06/2016
23/06/2016
13/07/2016
2/08/2016
22/08/2016
11/09/2016
1/10/2016
Sea level height MNKT
GWL (datalogger)
Manual GWL measurement

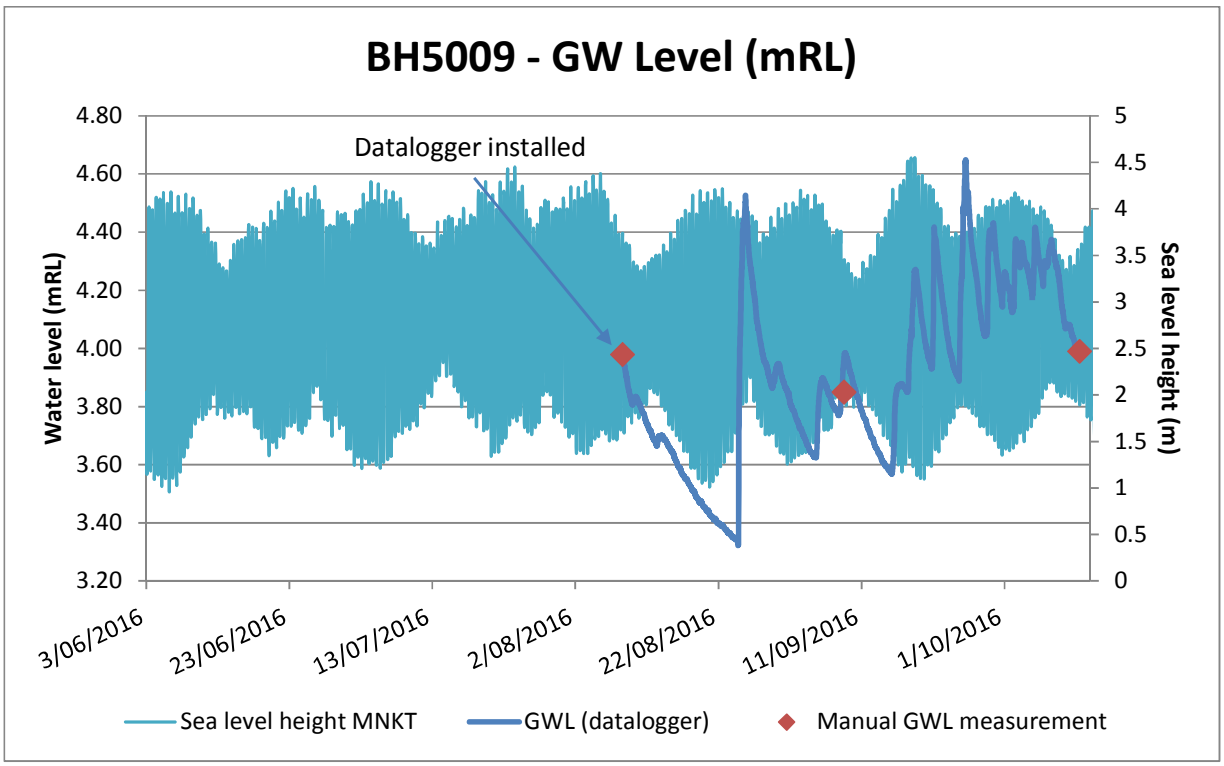

BH5003 - GW Level (mRL)
Water level (mRL)
Sea level height (m)
2.70
2.60
2.50
2.40
2.30
2.20
2.10
2.00
1.90
5
4.5
4
3.5
3
2.5
2
1.5
1
0.5
0
3/06/2016
23/06/2016
13/07/2016
2/08/2016
22/08/2016
11/09/2016
1/10/2016
Sea level height MNKT
GWL (datalogger)
Manual GWL measurement

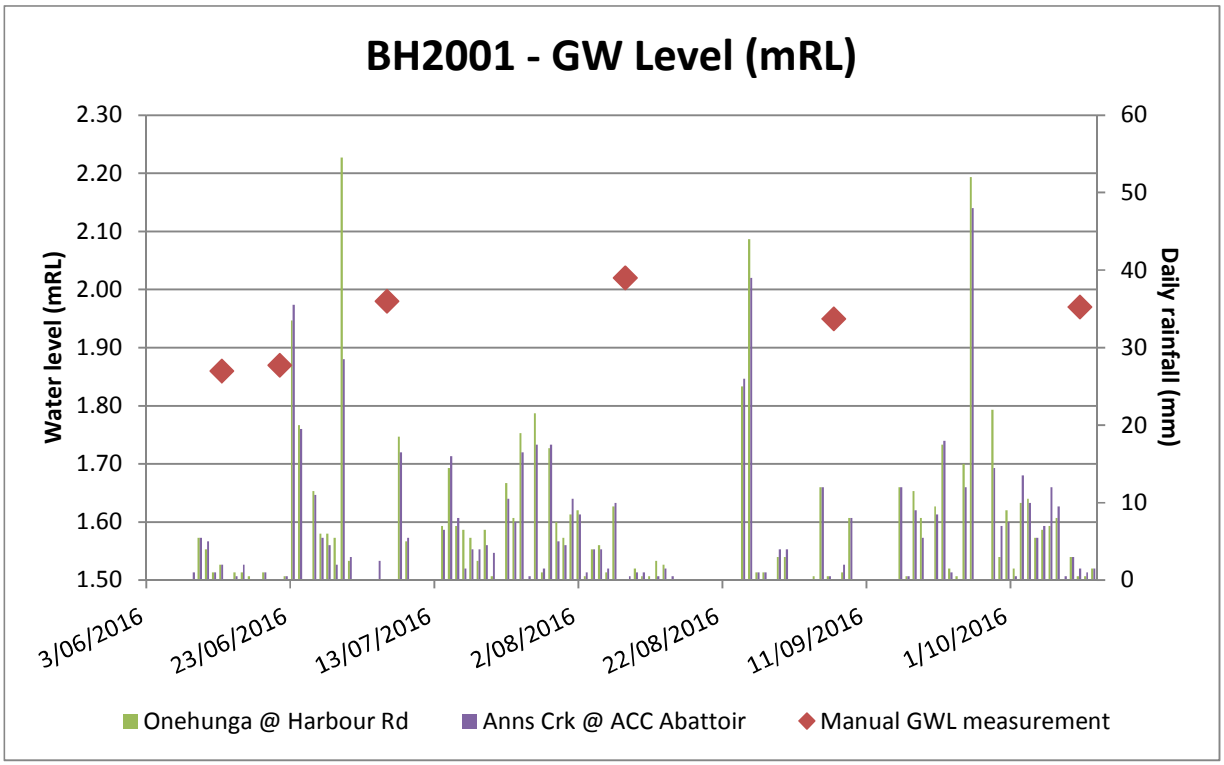

BH5004 - GW Level (mRL)
Datalogger installed
Water level (mRL)
Sea level height (m)
3.40
3.20
3.00
2.80
2.60
2.40
2.20
2.00
1.80
5
4.5
4
3.5
3
2.5
2
1.5
1
0.5
0
3/06/2016
23/06/2016
13/07/2016
2/08/2016
22/08/2016
11/09/2016
1/10/2016
Sea level height MNKT
GWL (datalogger)
Manual GWL measurement

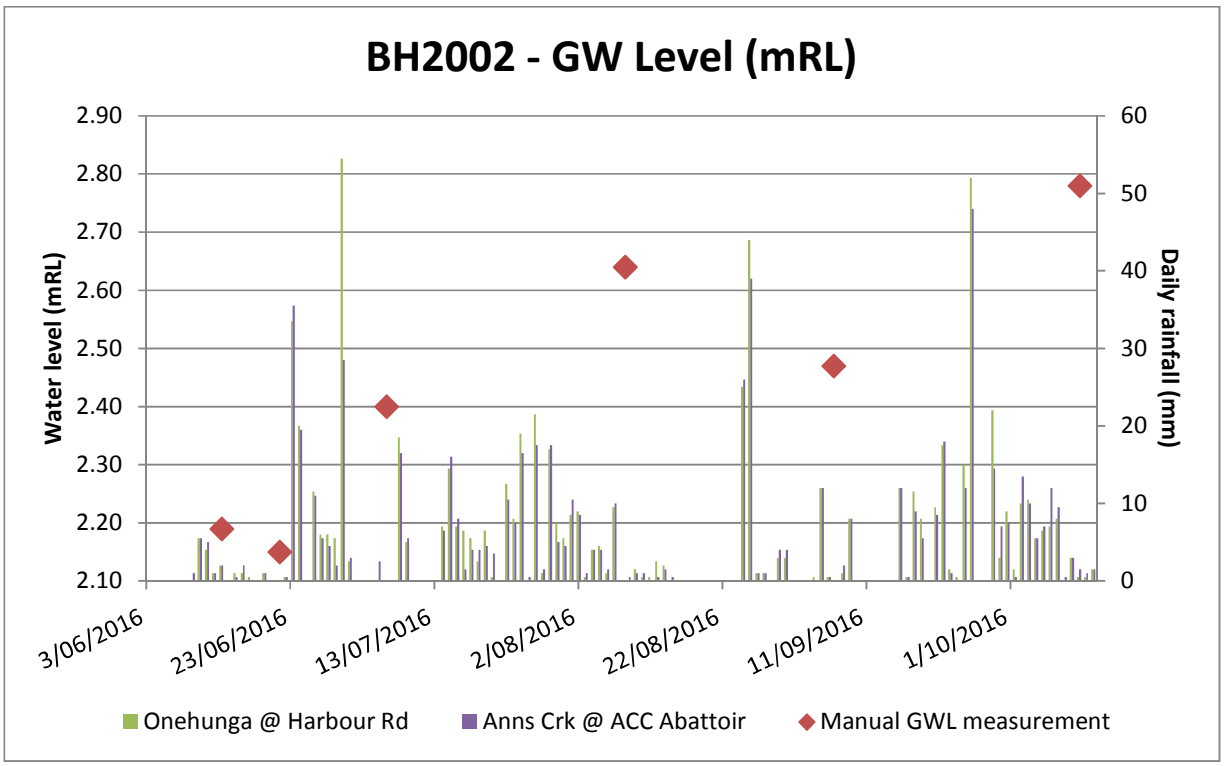

BH5005 - GW Level (mRL)
Datalogger installed
Water level (mRL)
Sea level height (m)
3.20
3.10
3.00
2.90
2.80
2.70
2.60
2.50
2.40
5
4.5
4
3.5
3
2.5
2
1.5
1
0.5
0
3/06/2016
23/06/2016
13/07/2016
2/08/2016
22/08/2016
11/09/2016
1/10/2016
Sea level height MNKT
GWL (datalogger)
Manual GWL measurement

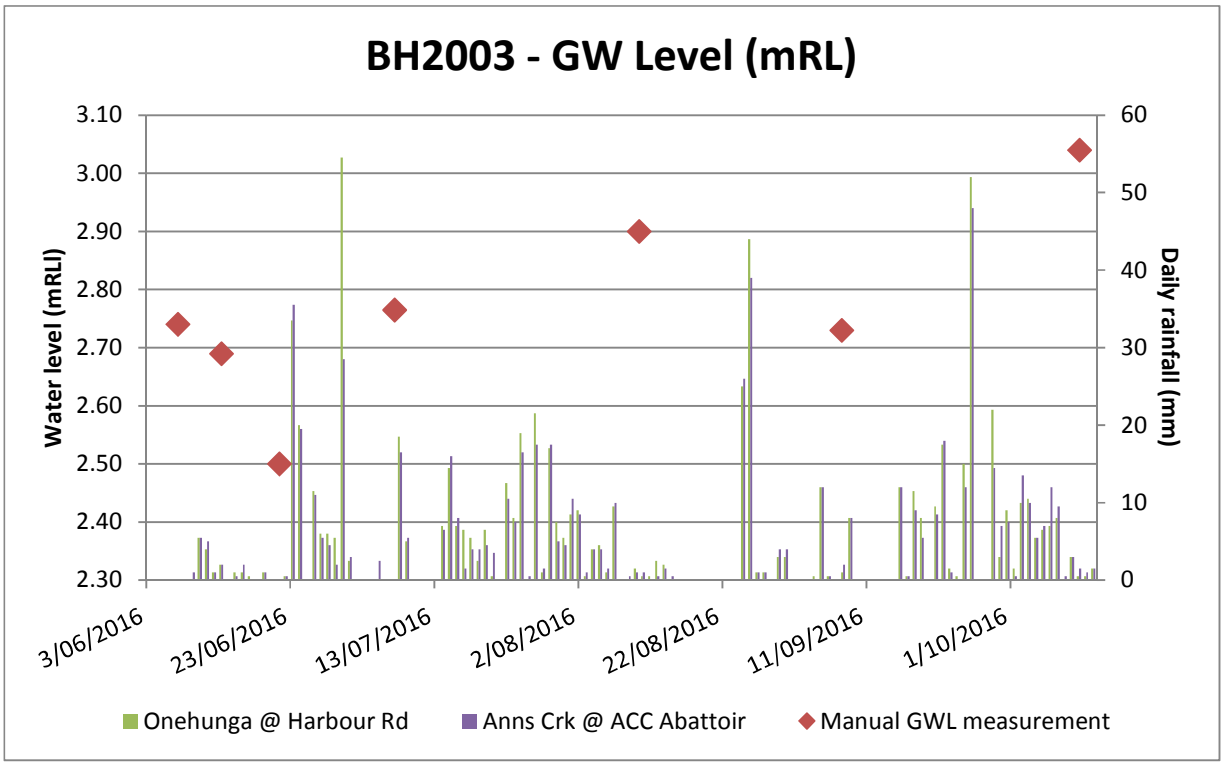

BH5005A - GW Level (mRL)
Datalogger installed
Water level (mRL)
Sea level height (m)
3.50
3.40
3.30
3.20
3.10
3.00
2.90
2.80
2.70
5
4.5
4
3.5
3
2.5
2
1.5
1
0.5
0
3/06/2016
23/06/2016
13/07/2016
2/08/2016
22/08/2016
11/09/2016
1/10/2016
Sea level height MNKT
GWL (datalogger)
Manual GWL measurement

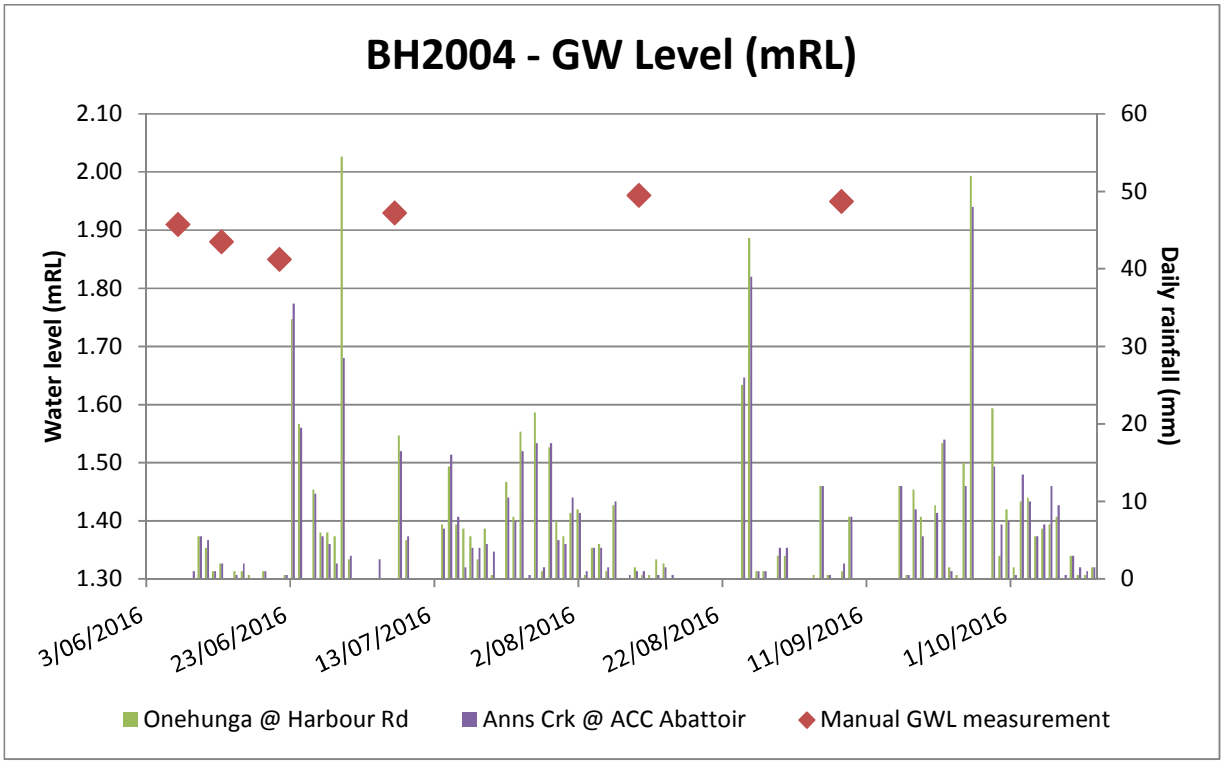

BH5008 - GW Level (mRL)
Water level (mRL)
Sea level height (m)
3.00
2.50
2.00
1.50
1.00
0.50
0.00
-0.50
5
4.5
4
3.5
3
2.5
2
1.5
1
0.5
0
BH5008P Step test
BH5008P CRT
3/06/2016
23/06/2016
13/07/2016
2/08/2016
22/08/2016
11/09/2016
1/10/2016
Sea level height MNKT
GWL (datalogger)
Manual GWL measurement

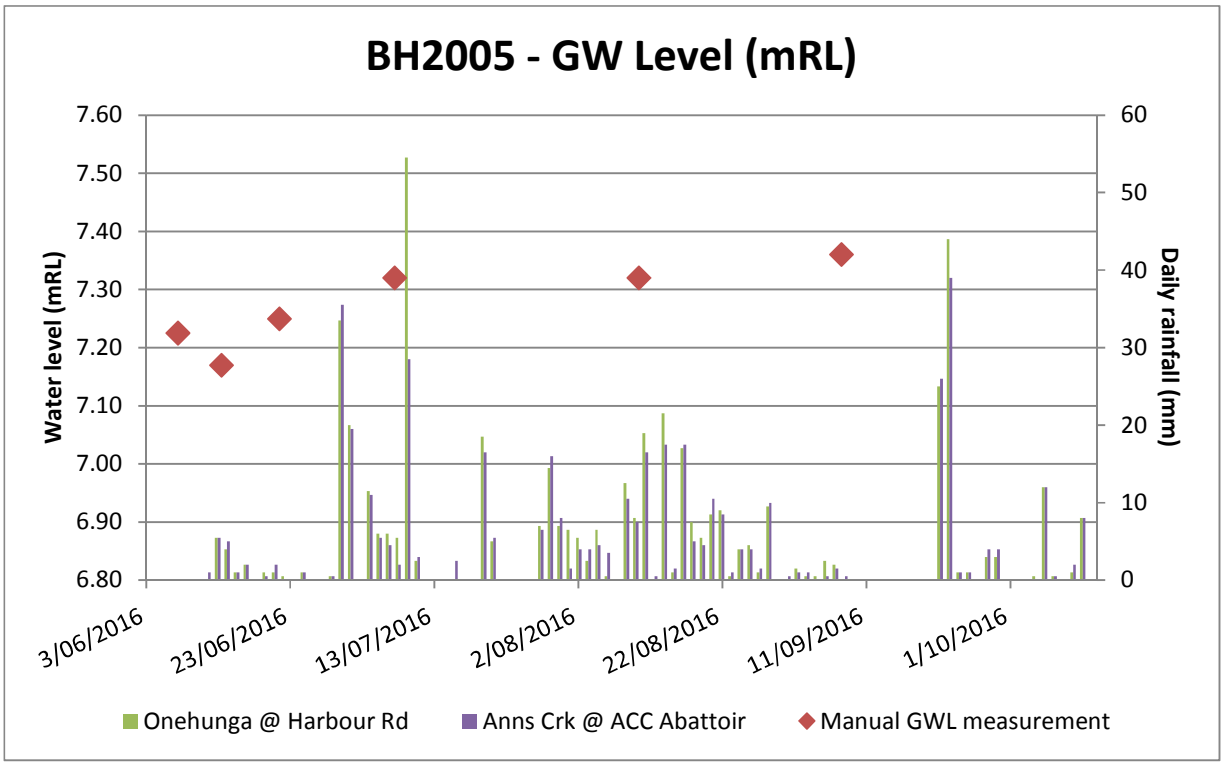

BH5009 - GW Level (mRL)
Water level (mRL)
Sea level height (m)
4.80
4.60
4.40
4.20
4.00
3.80
3.60
3.40
3.20
5
4.5
4
3.5
3
2.5
2
1.5
1
0.5
0
Datalogger installed
3/06/2016
23/06/2016
13/07/2016
2/08/2016
22/08/2016
11/09/2016
1/10/2016
Sea level height MNKT
GWL (datalogger)
Manual GWL measurement

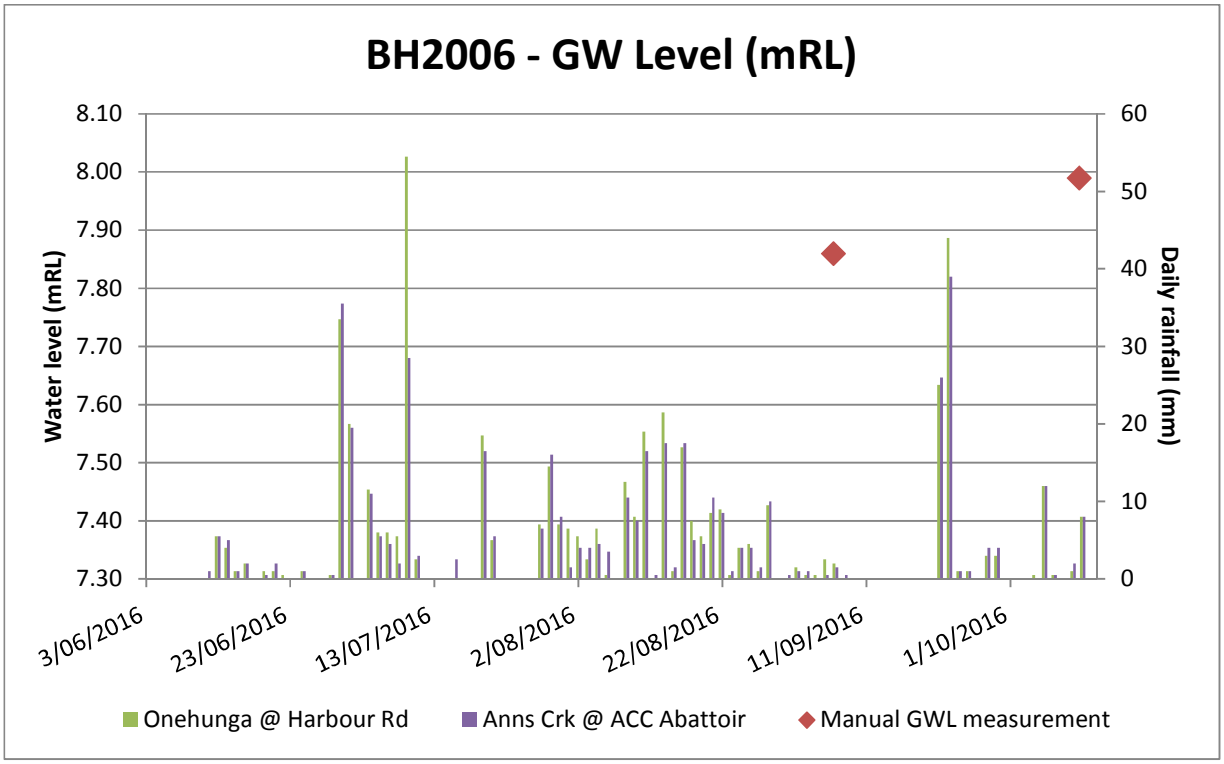

BH2001 - GW Level (mRL)
Water level (mRL)
2.30
2.20
2.10
2.00
1.90
1.80
1.70
1.60
1.50
Daily rainfall (mm)
60
50
40
30
20
10
0
3/06/2016
23/06/2016
13/07/2016
2/08/2016
22/08/2016
11/09/2016
1/10/2016
Onehunga @ Harbour Rd
Anns Crk @ ACC Abattoir
Manual GWL measurement

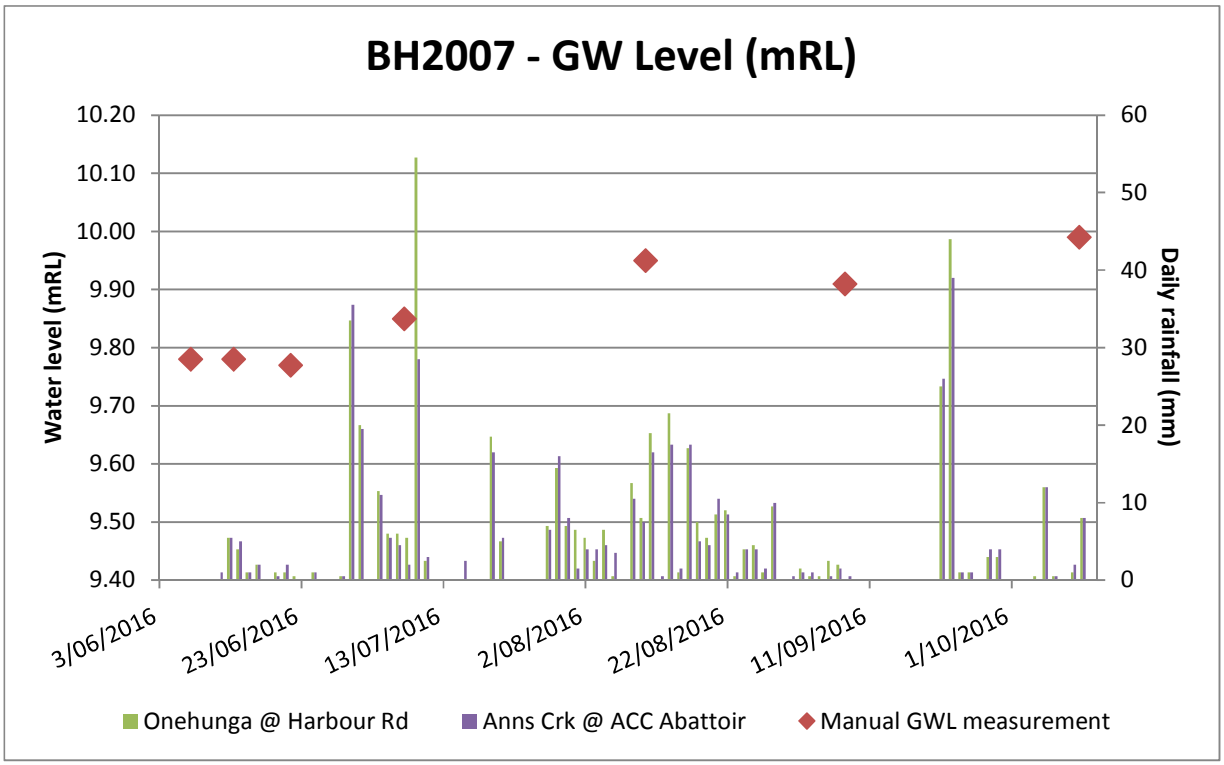

BH2002 - GW Level (mRL)
Water level (mRL)
2.90
2.80
2.70
2.60
2.50
2.40
2.30
2.20
2.10
Daily rainfall (mm)
60
50
40
30
20
10
0
3/06/2016
23/06/2016
13/07/2016
2/08/2016
22/08/2016
11/09/2016
1/10/2016
Onehunga @ Harbour Rd
Anns Crk @ ACC Abattoir
Manual GWL measurement

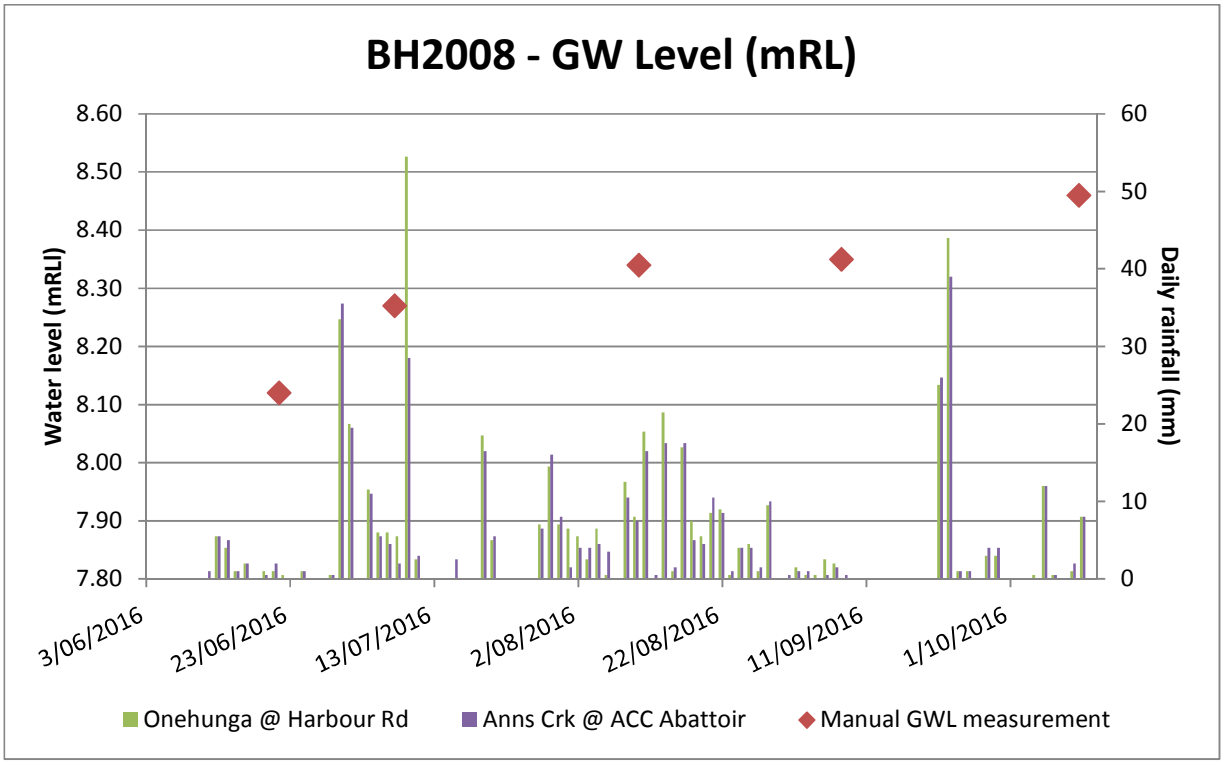

BH2003 - GW Level (mRL)
Water level (mRLl)
Daily rainfall (mm)
3.10
3.00
2.90
2.80
2.70
2.60
2.50
2.40
2.30
60
50
40
30
20
10
0
3/06/2016
23/06/2016
13/07/2016
2/08/2016
22/08/2016
11/09/2016
1/10/2016
Onehunga @ Harbour Rd
Anns Crk @ ACC Abattoir
Manual GWL measurement

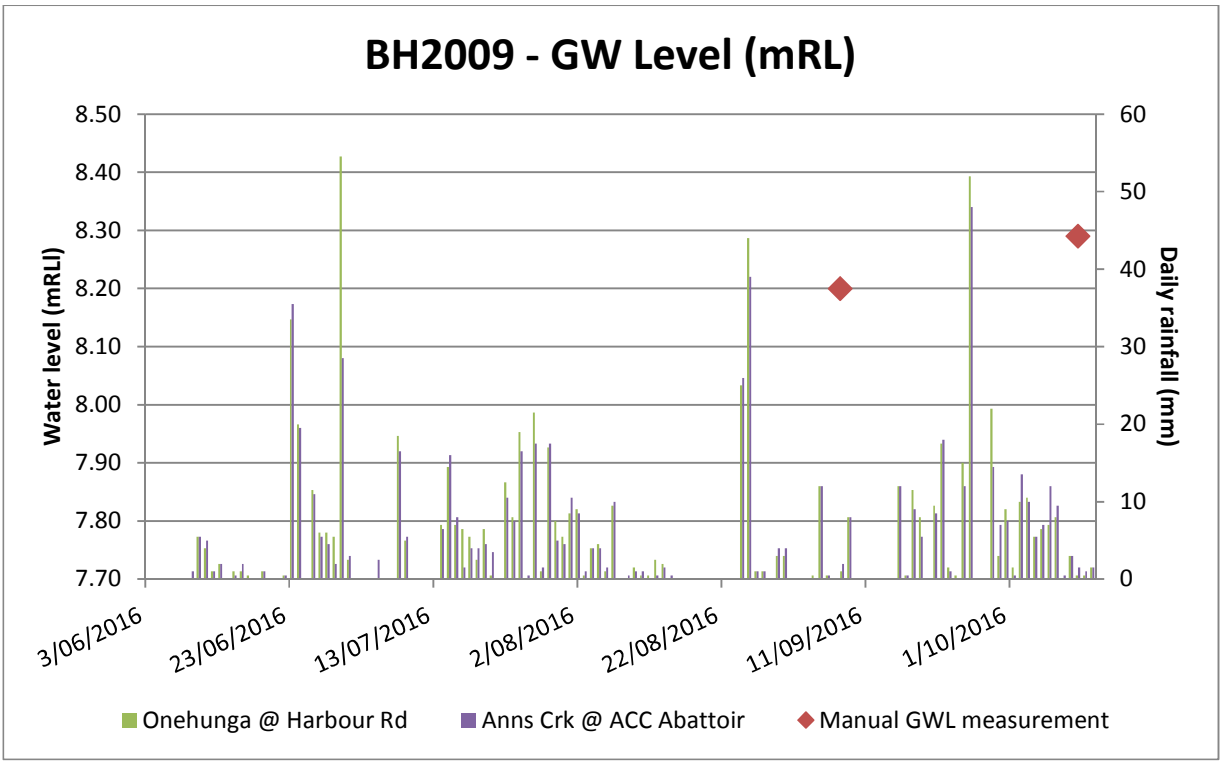

BH2004 - GW Level (mRL)
Water level (mRL)
Daily rainfall (mm)
2.10
2.00
1.90
1.80
1.70
1.60
1.50
1.40
1.30
60
50
40
30
20
10
0
3/06/2016
23/06/2016
13/07/2016
2/08/2016
22/08/2016
11/09/2016
1/10/2016
Onehunga @ Harbour Rd
Anns Crk @ ACC Abattoir
Manual GWL measurement

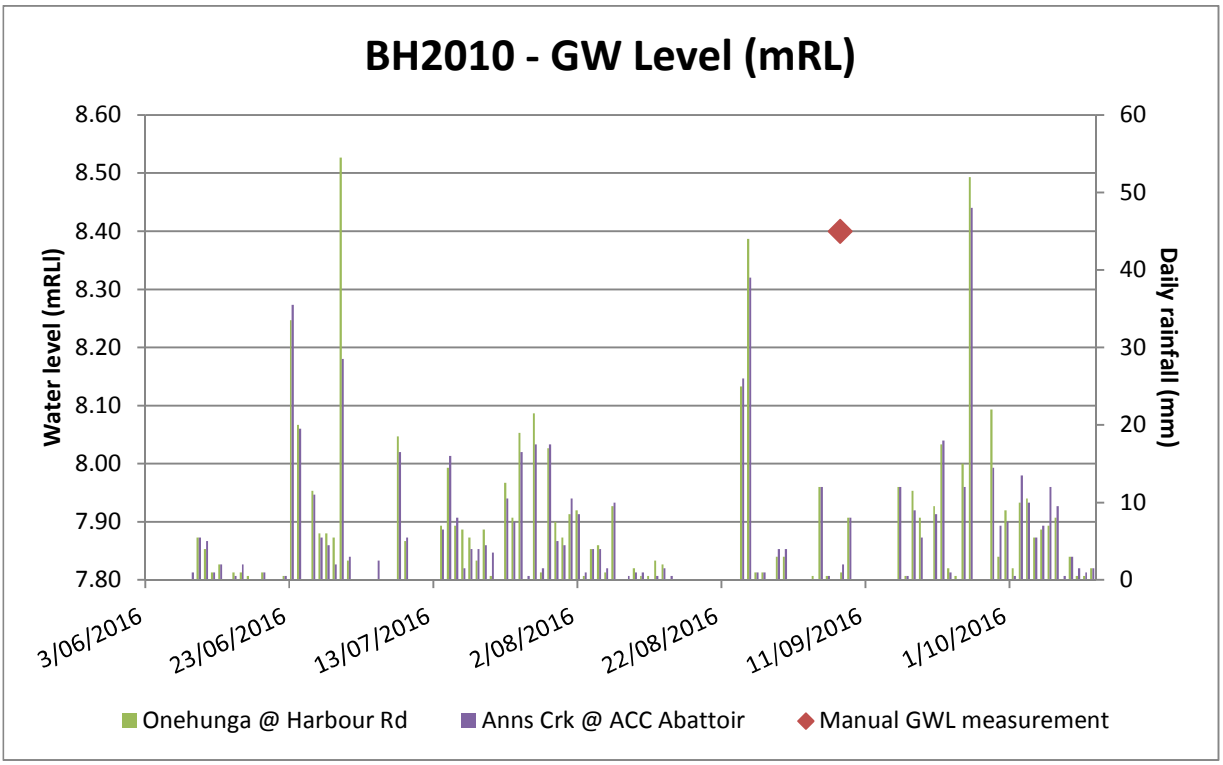

BH2005 - GW Level (mRL)
Water level (mRL)
7.60
7.50
7.40
7.30
7.20
7.10
7.00
6.90
6.80
Daily rainfall (mm)
60
50
40
30
20
10
0
3/06/2016
23/06/2016
13/07/2016
2/08/2016
22/08/2016
11/09/2016
1/10/2016
Onehunga @ Harbour Rd
Anns Crk @ ACC Abattoir
Manual GWL measurement

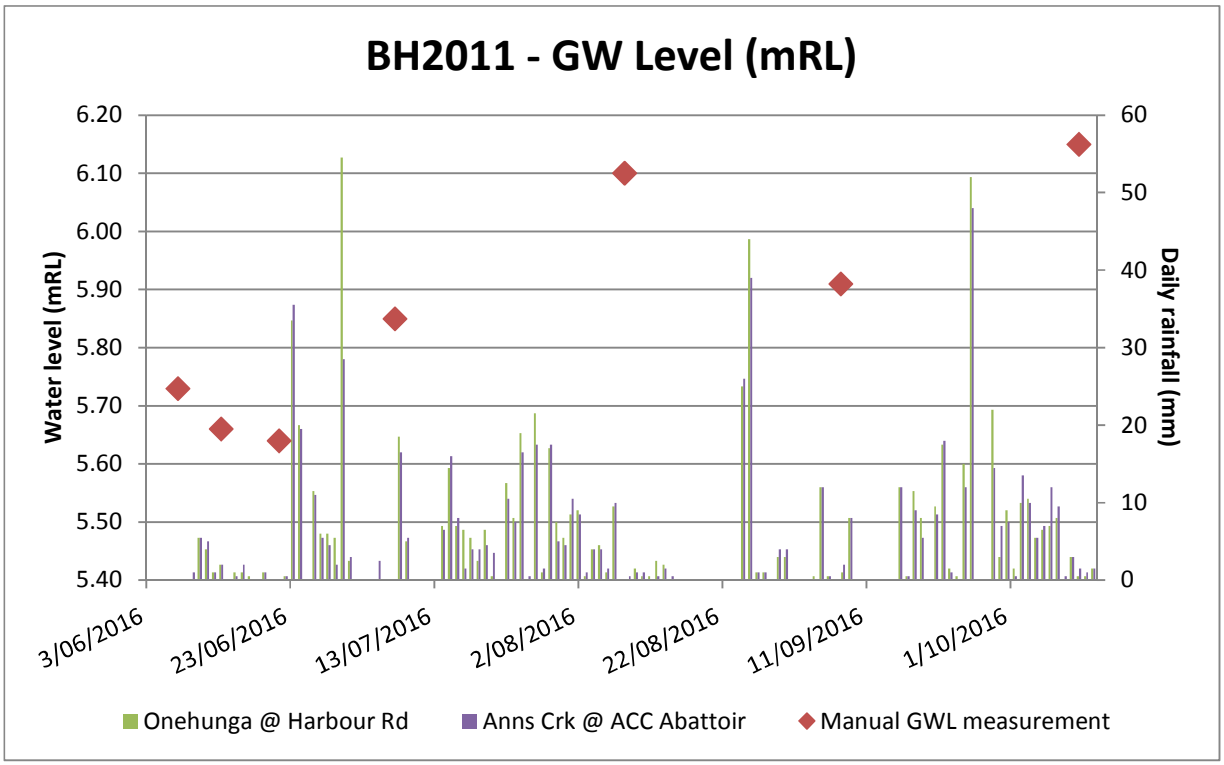

BH2006 - GW Level (mRL)
Water level (mRL)
8.10
8.00
7.90
7.80
7.70
7.60
7.50
7.40
7.30
Daily rainfall (mm)
60
50
40
30
20
10
0
3/06/2016
23/06/2016
13/07/2016
2/08/2016
22/08/2016
11/09/2016
1/10/2016
Onehunga @ Harbour Rd
Anns Crk @ ACC Abattoir
Manual GWL measurement

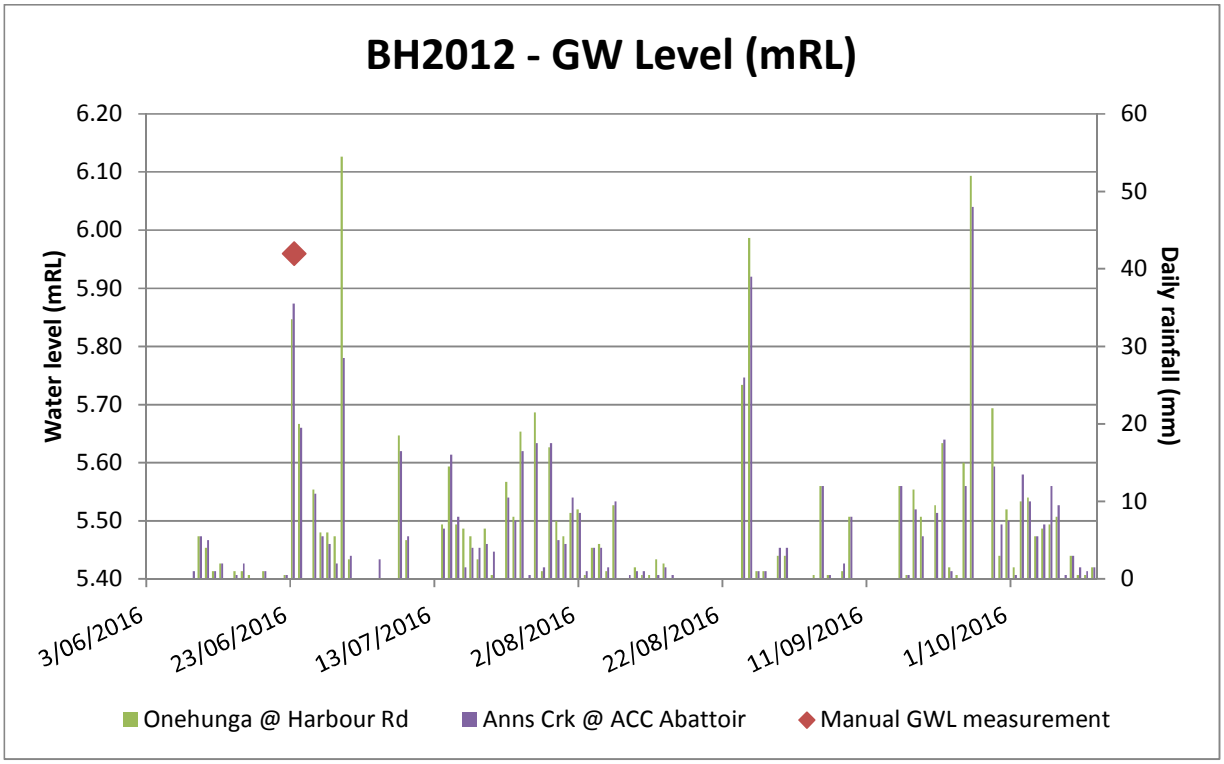

BH2007 - GW Level (mRL)
Water level (mRL)
Daily rainfall (mm)
10.20
10.10
10.00
9.90
9.80
9.70
9.60
9.50
9.40
60
50
40
30
20
10
0
3/06/2016
23/06/2016
13/07/2016
2/08/2016
22/08/2016
11/09/2016
1/10/2016
Onehunga @ Harbour Rd
Anns Crk @ ACC Abattoir
Manual GWL measurement

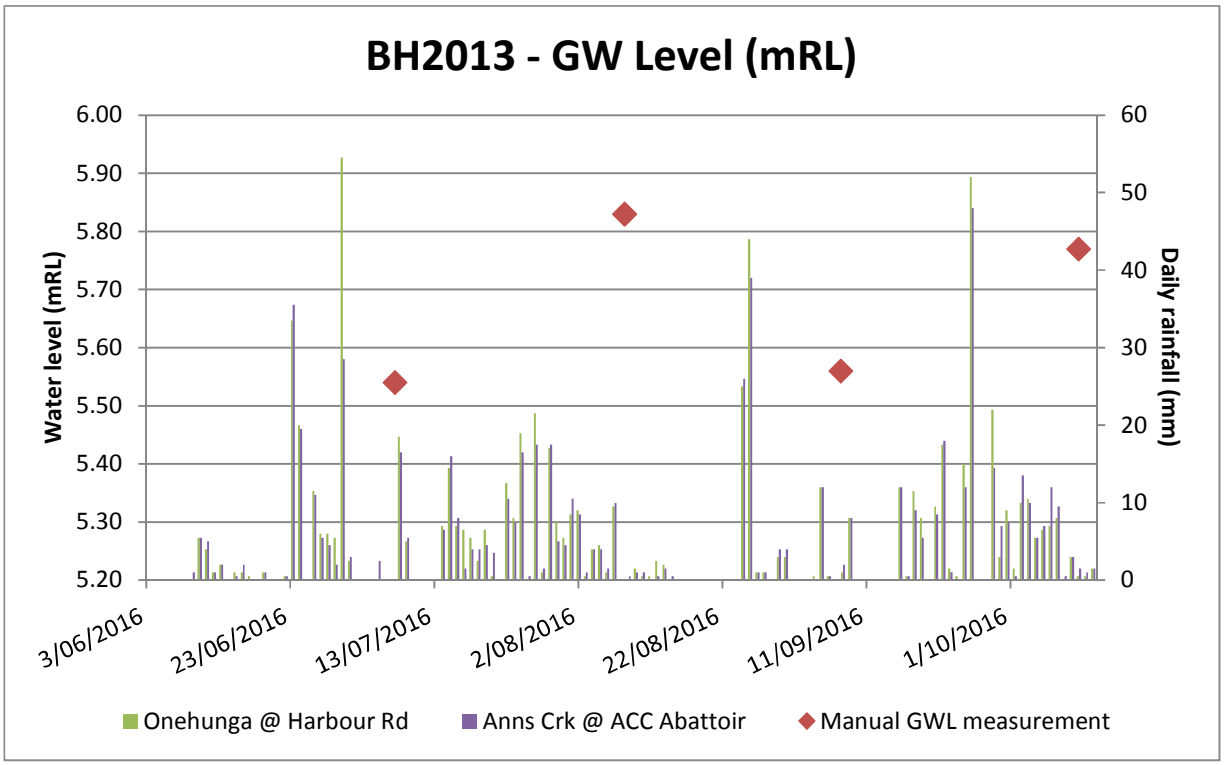

BH2008 - GW Level (mRL)
Water level (mRLl)
Daily rainfall (mm)
8.60
8.50
8.40
8.30
8.20
8.10
8.00
7.90
7.80
60
50
40
30
20
10
0
3/06/2016
23/06/2016
13/07/2016
2/08/2016
22/08/2016
11/09/2016
1/10/2016
Onehunga @ Harbour Rd
Anns Crk @ ACC Abattoir
Manual GWL measurement

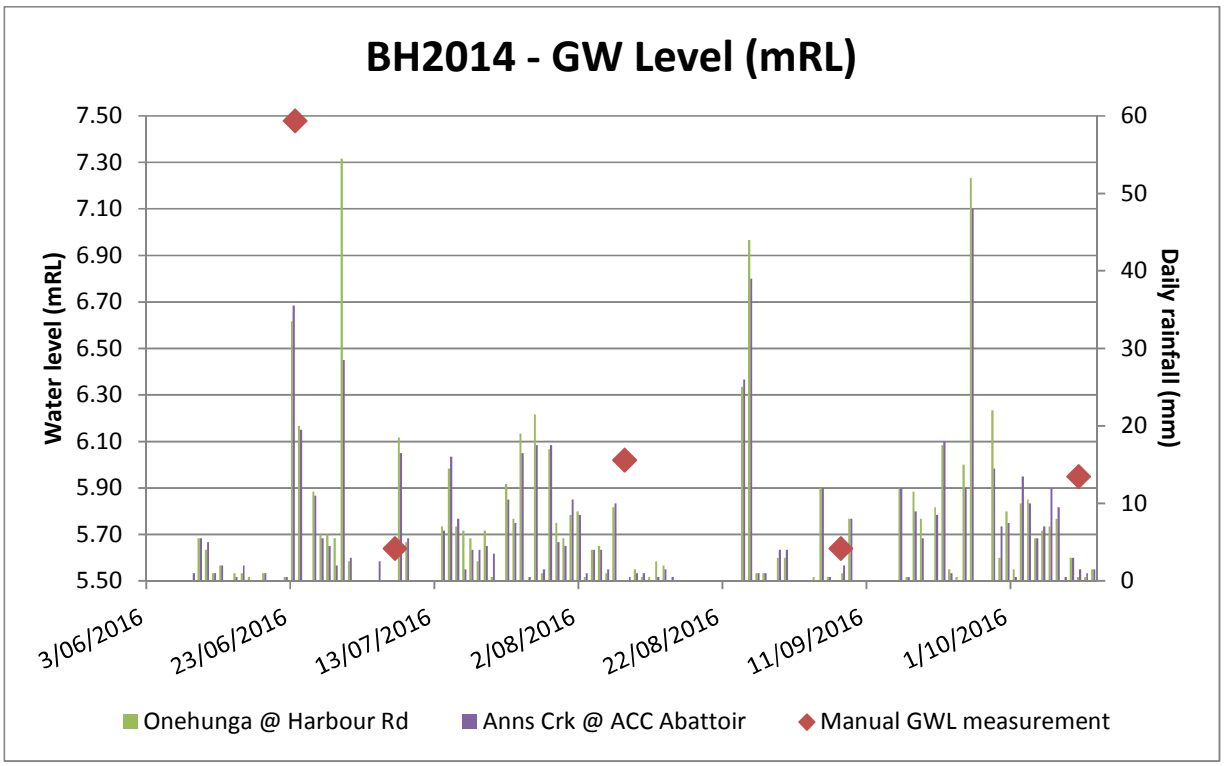

BH2009 - GW Level (mRL)
Water level (mRLl)
Daily rainfall (mm)
8.50
8.40
8.30
8.20
8.10
8.00
7.90
7.80
7.70
60
50
40
30
20
10
0
3/06/2016
23/06/2016
13/07/2016
2/08/2016
22/08/2016
11/09/2016
1/10/2016
Onehunga @ Harbour Rd
Anns Crk @ ACC Abattoir
Manual GWL measurement

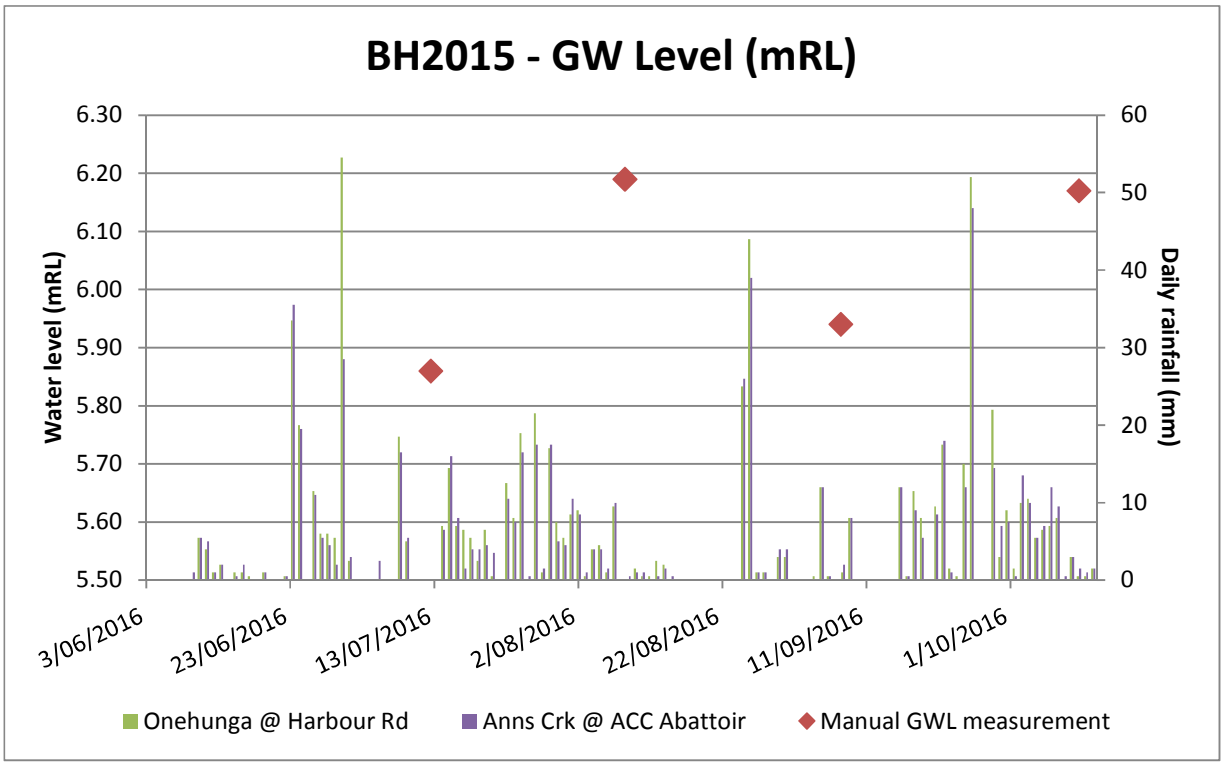

BH2010 - GW Level (mRL)
Water level (mRLl)
Daily rainfall (mm)
8.60
8.50
8.40
8.30
8.20
8.10
8.00
7.90
7.80
60
50
40
30
20
10
0
3/06/2016
23/06/2016
13/07/2016
2/08/2016
22/08/2016
11/09/2016
1/10/2016
Onehunga @ Harbour Rd
Anns Crk @ ACC Abattoir
Manual GWL measurement

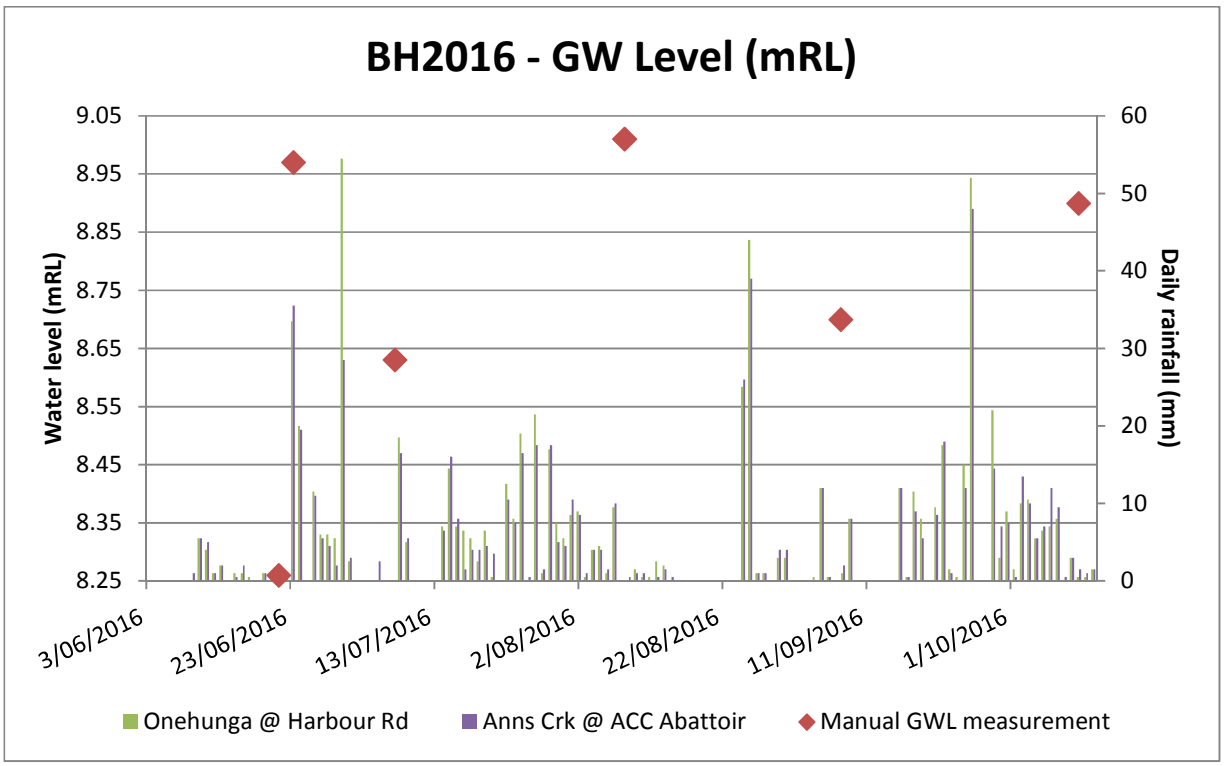

BH2011 - GW Level (mRL)
Water level (mRL)
Daily rainfall (mm)
6.20
6.10
6.00
5.90
5.80
5.70
5.60
5.50
5.40
60
50
40
30
20
10
0
3/06/2016
23/06/2016
13/07/2016
2/08/2016
22/08/2016
11/09/2016
1/10/2016
Onehunga @ Harbour Rd
Anns Crk @ ACC Abattoir
Manual GWL measurement

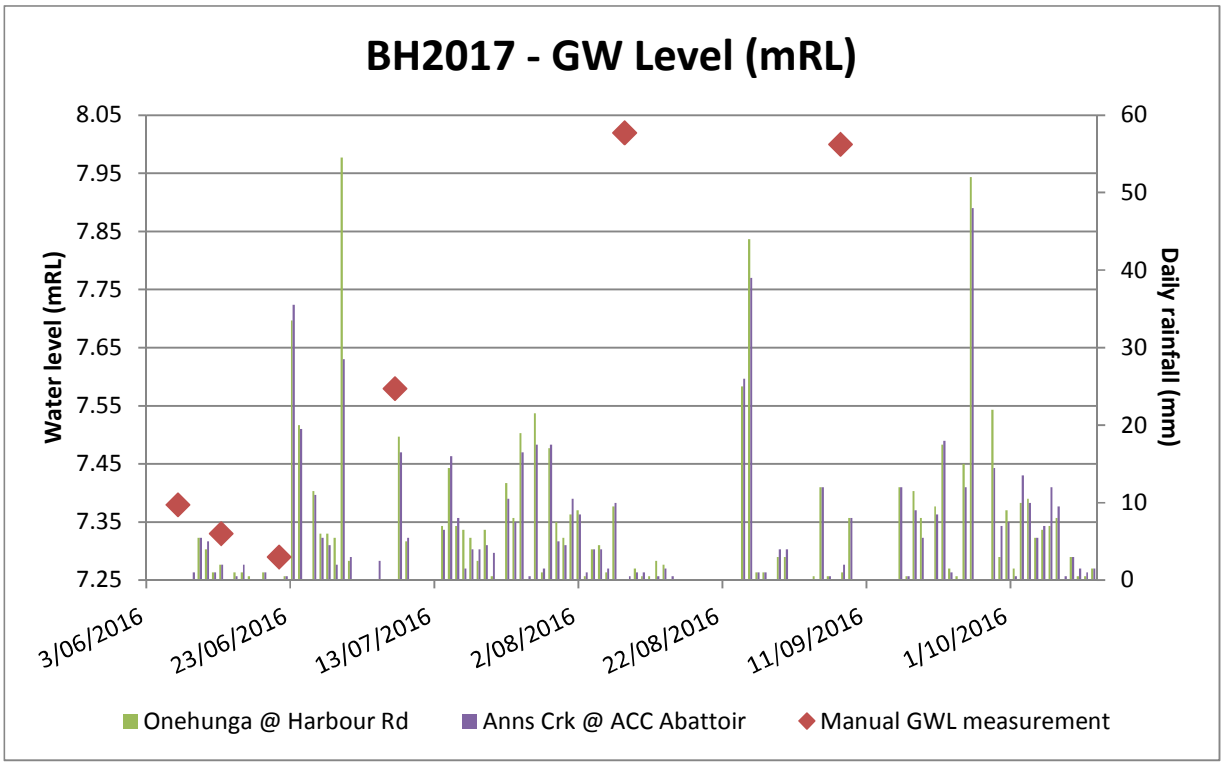

BH2012 - GW Level (mRL)
Water level (mRL)
Daily rainfall (mm)
6.20
6.10
6.00
5.90
5.80
5.70
5.60
5.50
5.40
60
50
40
30
20
10
0
3/06/2016
23/06/2016
13/07/2016
2/08/2016
22/08/2016
11/09/2016
1/10/2016
Onehunga @ Harbour Rd
Anns Crk @ ACC Abattoir
Manual GWL measurement

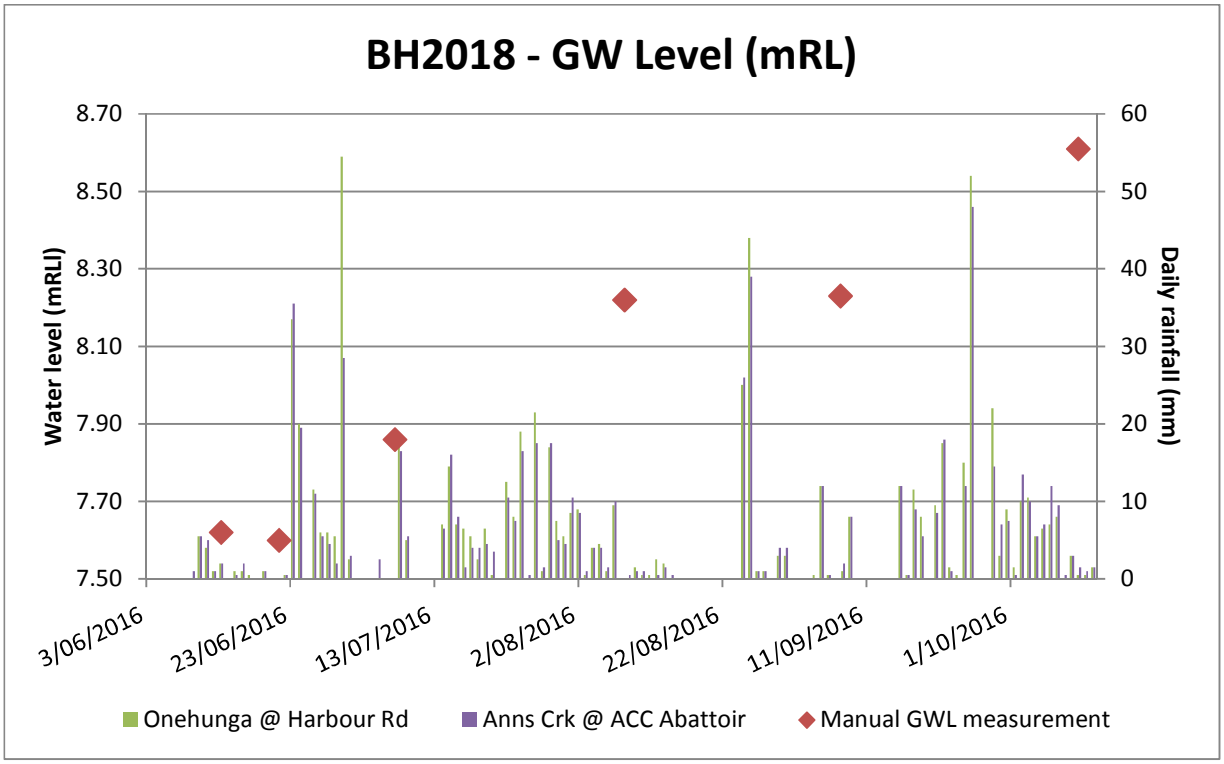

BH2013 - GW Level (mRL)
Water level (mRL)
6.00
5.90
5.80
5.70
5.60
5.50
5.40
5.30
5.20
Daily rainfall (mm)
60
50
40
30
20
10
0
3/06/2016
23/06/2016
13/07/2016
2/08/2016
22/08/2016
11/09/2016
1/10/2016
Onehunga @ Harbour Rd
Anns Crk @ ACC Abattoir
Manual GWL measurement

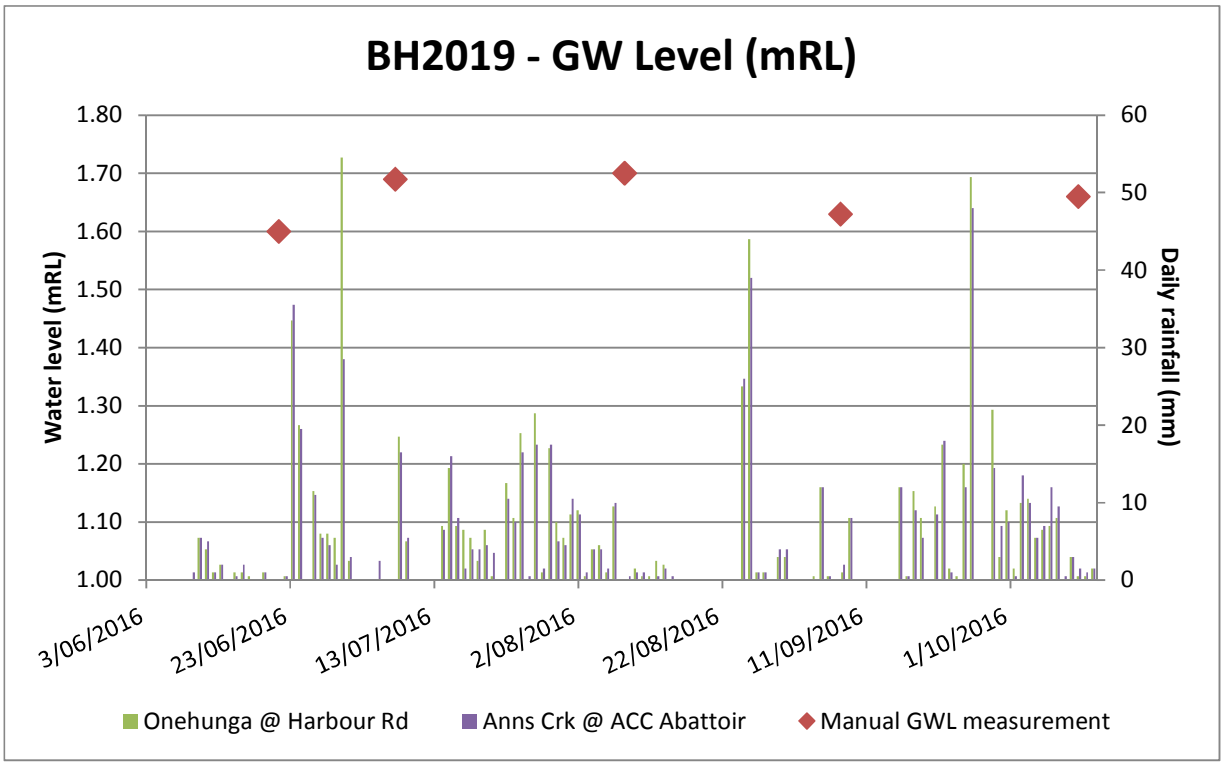

BH2014 - GW Level (mRL)
Water level (mRL)
7.50
7.30
7.10
6.90
6.70
6.50
6.30
6.10
5.90
5.70
5.50
Daily rainfall (mm)
60
50
40
30
20
10
0
3/06/2016
23/06/2016
13/07/2016
2/08/2016
22/08/2016
11/09/2016
1/10/2016
Onehunga @ Harbour Rd
Anns Crk @ ACC Abattoir
Manual GWL measurement

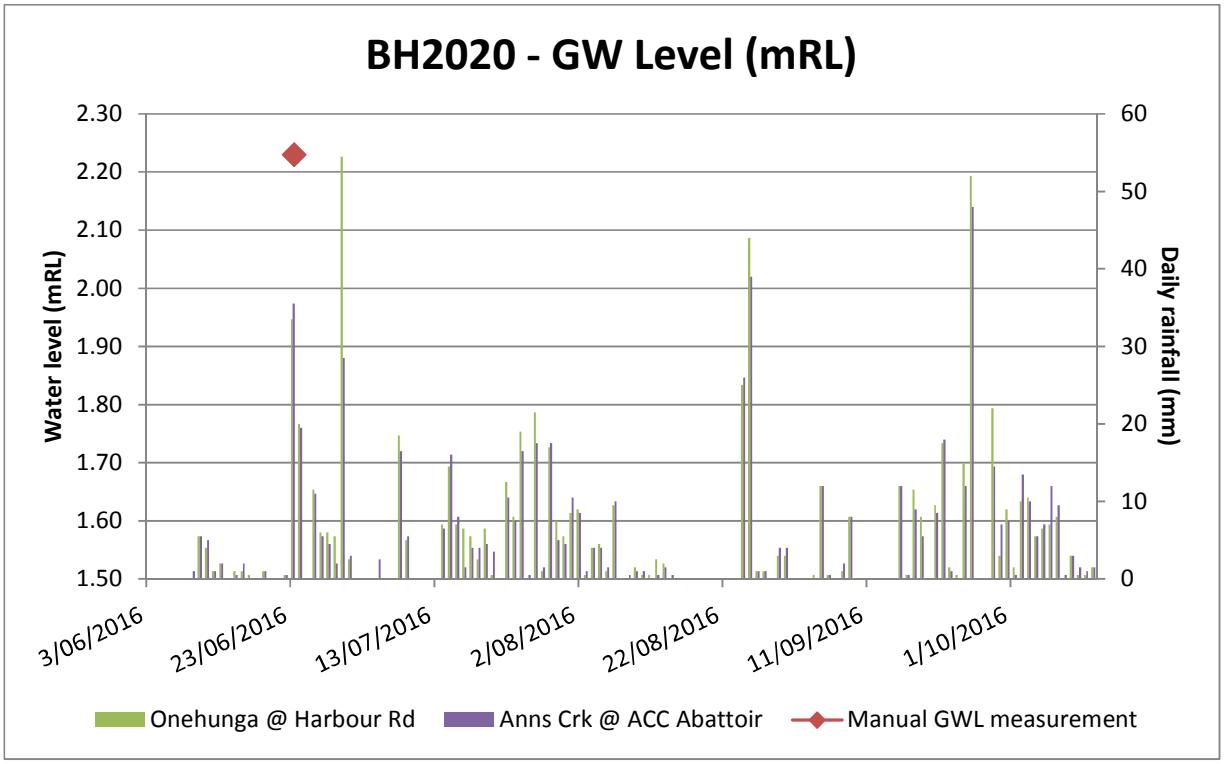

BH2015 - GW Level (mRL)
Water level (mRL)
6.30
6.20
6.10
6.00
5.90
5.80
5.70
5.60
5.50
Daily rainfall (mm)
60
50
40
30
20
10
0
3/06/2016
23/06/2016
13/07/2016
2/08/2016
22/08/2016
11/09/2016
1/10/2016
Onehunga @ Harbour Rd
Anns Crk @ ACC Abattoir
Manual GWL measurement

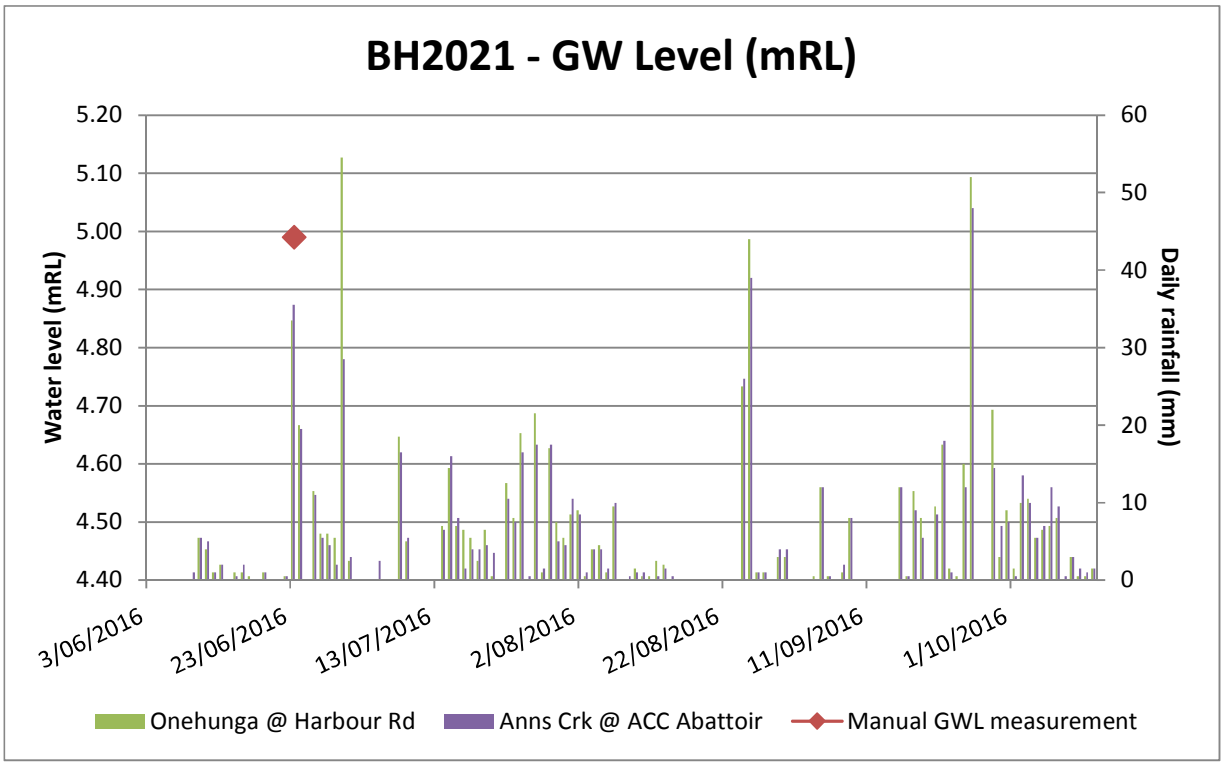

BH2016 - GW Level (mRL)
Water level (mRL)
9.05
8.95
8.85
8.75
8.65
8.55
8.45
8.35
8.25
Daily rainfall (mm)
60
50
40
30
20
10
0
3/06/2016
23/06/2016
13/07/2016
2/08/2016
22/08/2016
11/09/2016
1/10/2016
Onehunga @ Harbour Rd
Anns Crk @ ACC Abattoir
Manual GWL measurement

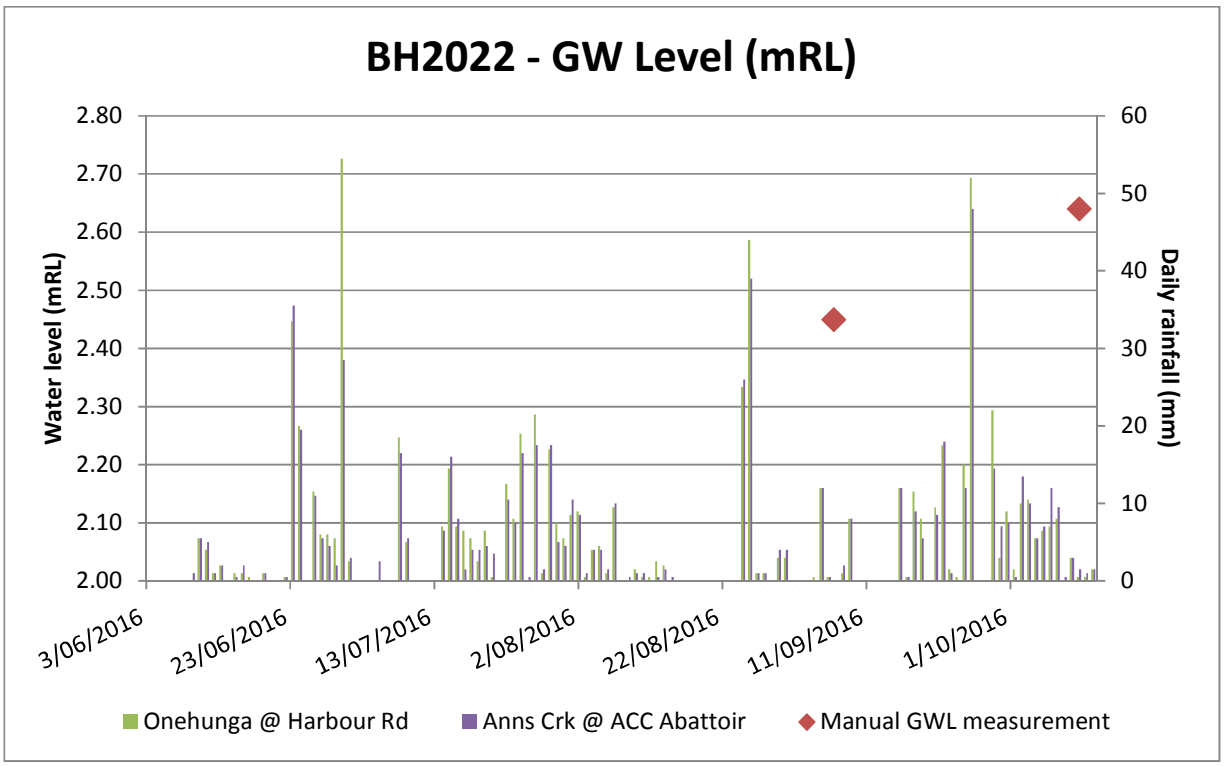

BH2017 - GW Level (mRL)
Water level (mRL)
Daily rainfall (mm)
8.05
7.95
7.85
7.75
7.65
7.55
7.45
7.35
7.25
60
50
40
30
20
10
0
3/06/2016
23/06/2016
13/07/2016
2/08/2016
22/08/2016
11/09/2016
1/10/2016
Onehunga @ Harbour Rd
Anns Crk @ ACC Abattoir
Manual GWL measurement

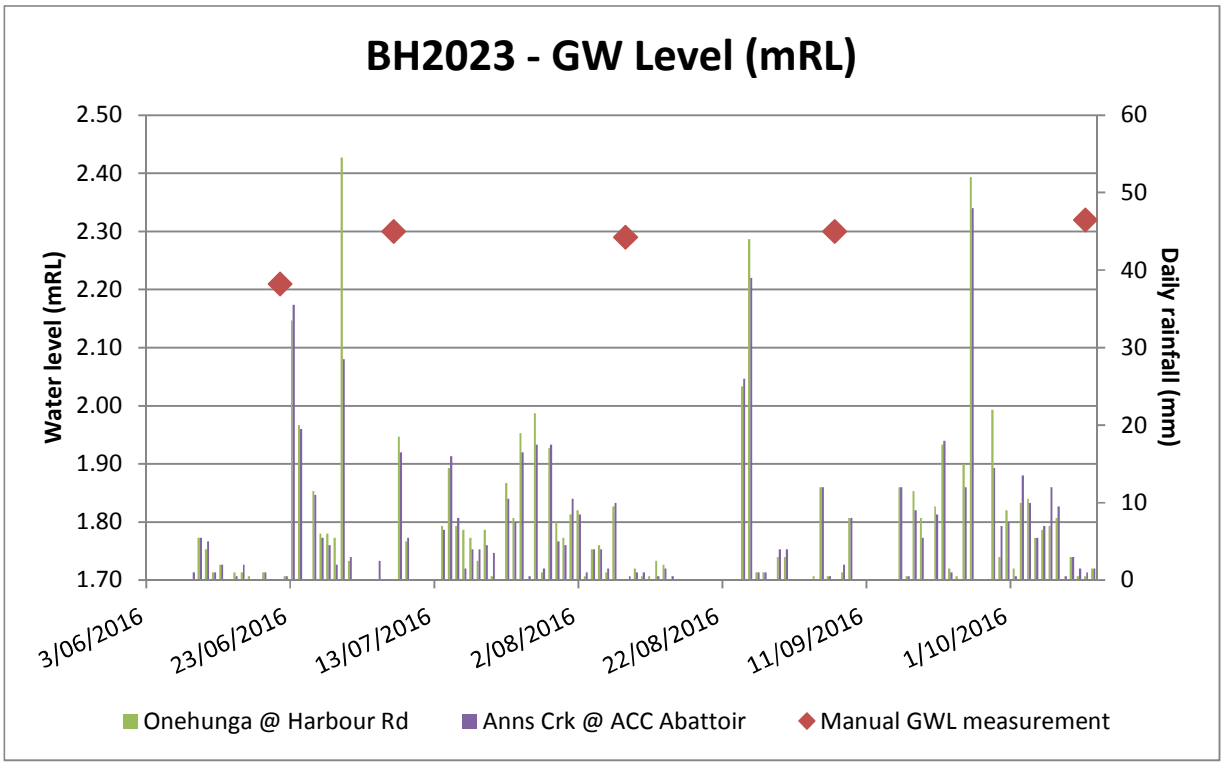

BH2018 - GW Level (mRL)
Water level (mRLl)
Daily rainfall (mm)
8.70
8.50
8.30
8.10
7.90
7.70
7.50
60
50
40
30
20
10
0
3/06/2016
23/06/2016
13/07/2016
2/08/2016
22/08/2016
11/09/2016
1/10/2016
Onehunga @ Harbour Rd
Anns Crk @ ACC Abattoir
Manual GWL measurement

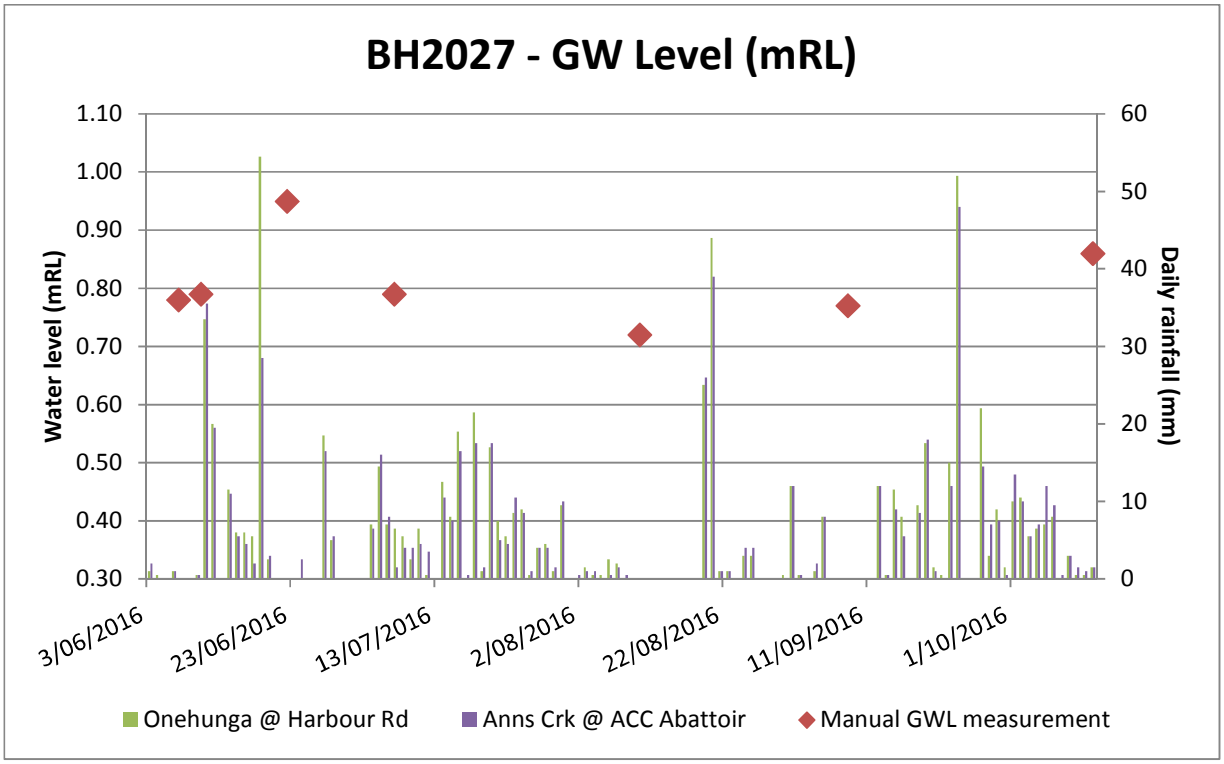

BH2019 - GW Level (mRL)
Water level (mRL)
1.80
1.70
1.60
1.50
1.40
1.30
1.20
1.10
1.00
Daily rainfall (mm)
60
50
40
30
20
10
0
3/06/2016
23/06/2016
13/07/2016
2/08/2016
22/08/2016
11/09/2016
1/10/2016
Onehunga @ Harbour Rd
Anns Crk @ ACC Abattoir
Manual GWL measurement

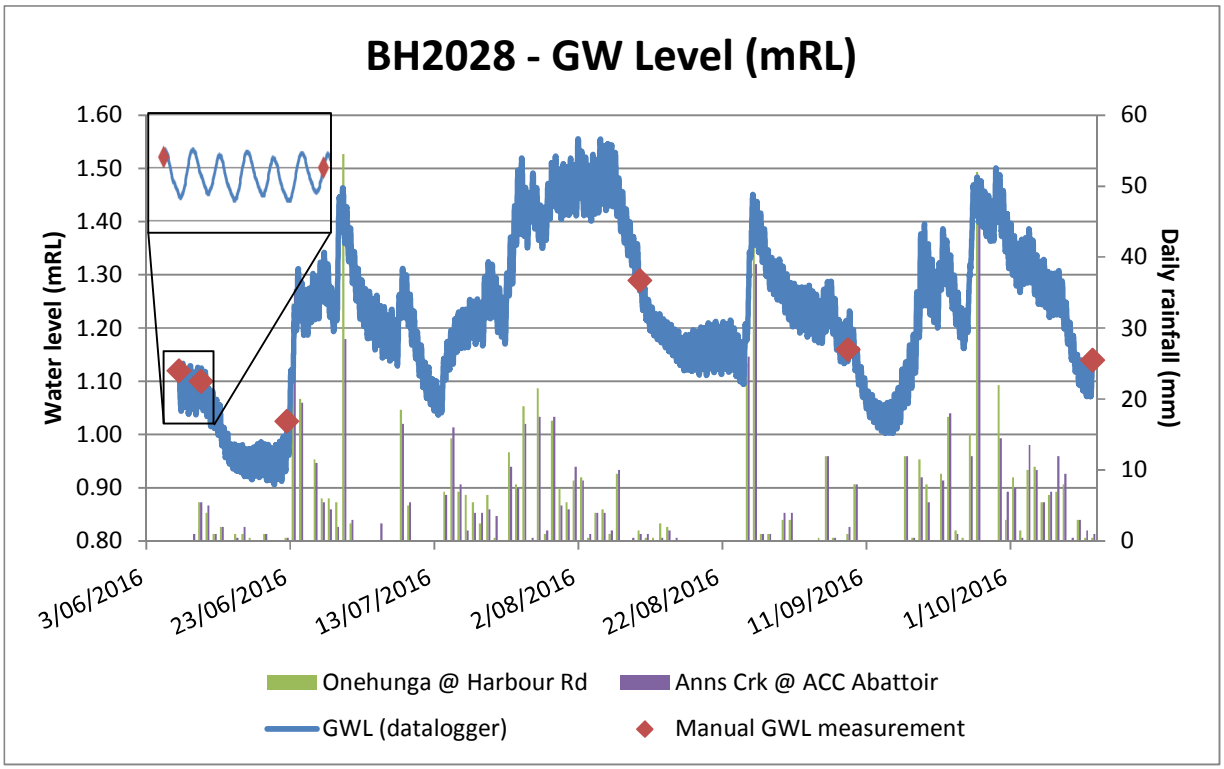

BH2020 - GW Level (mRL)
Water level (mRL)
2.30
2.20
2.10
2.00
1.90
1.80
1.70
1.60
1.50
Daily rainfall (mm)
60
50
40
30
20
10
0
3/06/2016
23/06/2016
13/07/2016
2/08/2016
22/08/2016
11/09/2016
1/10/2016
Onehunga @ Harbour Rd
Anns Crk @ ACC Abattoir
Manual GWL measurement

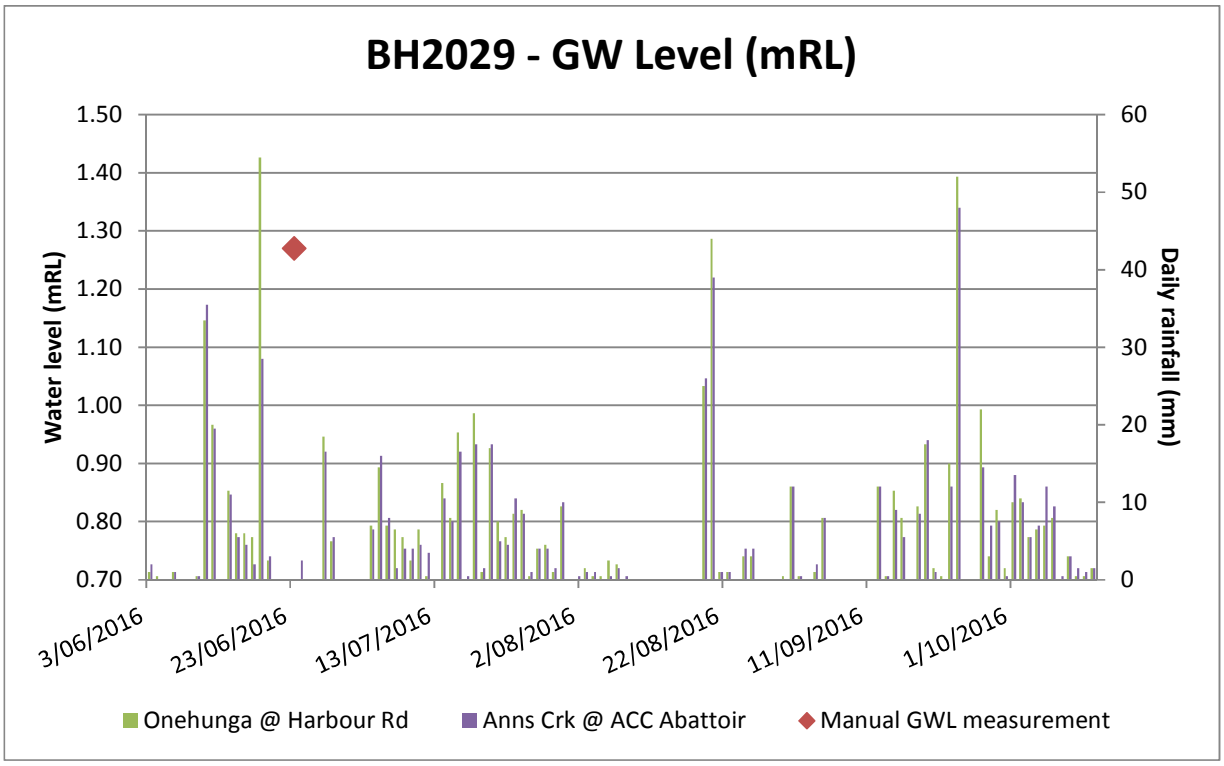

BH2021 - GW Level (mRL)
Water level (mRL)
5.20
5.10
5.00
4.90
4.80
4.70
4.60
4.50
4.40
Daily rainfall (mm)
60
50
40
30
20
10
0
3/06/2016
23/06/2016
13/07/2016
2/08/2016
22/08/2016
11/09/2016
1/10/2016
Onehunga @ Harbour Rd
Anns Crk @ ACC Abattoir
Manual GWL measurement

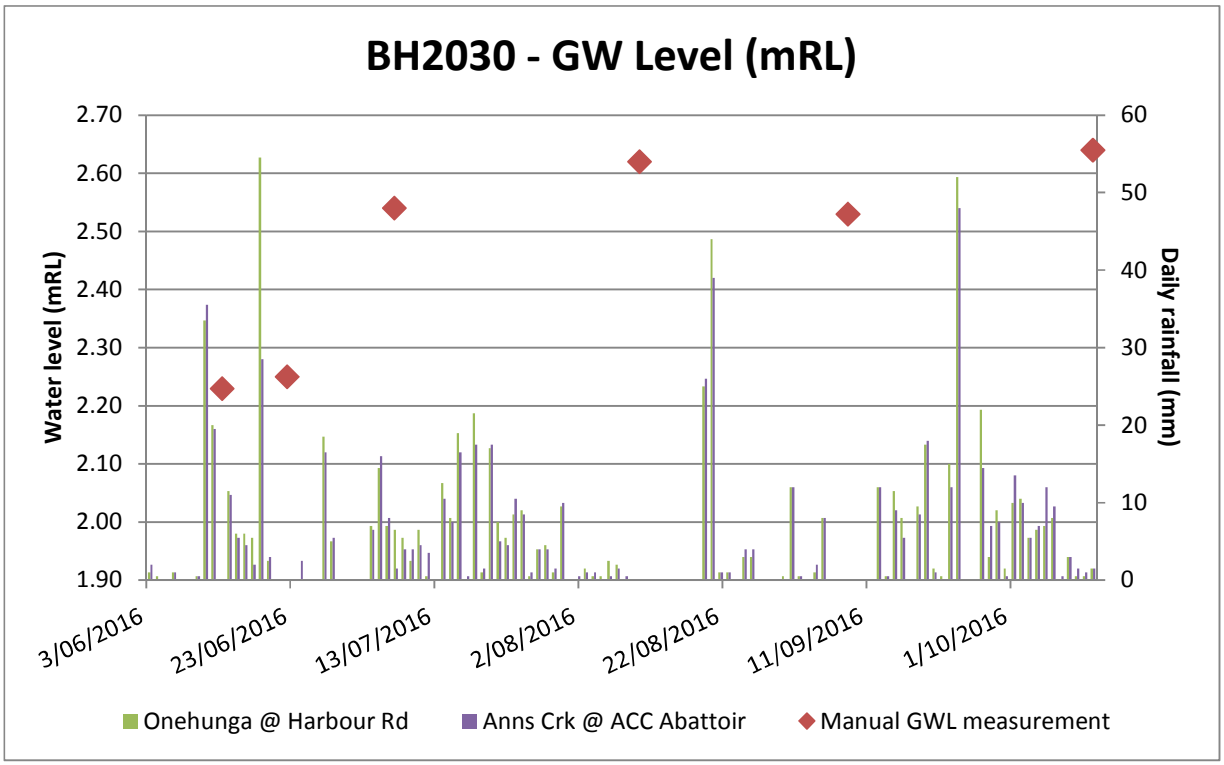

BH2022 - GW Level (mRL)
Water level (mRL)
2.80
2.70
2.60
2.50
2.40
2.30
2.20
2.10
2.00
Daily rainfall (mm)
60
50
40
30
20
10
0
3/06/2016
23/06/2016
13/07/2016
2/08/2016
22/08/2016
11/09/2016
1/10/2016
Onehunga @ Harbour Rd
Anns Crk @ ACC Abattoir
Manual GWL measurement

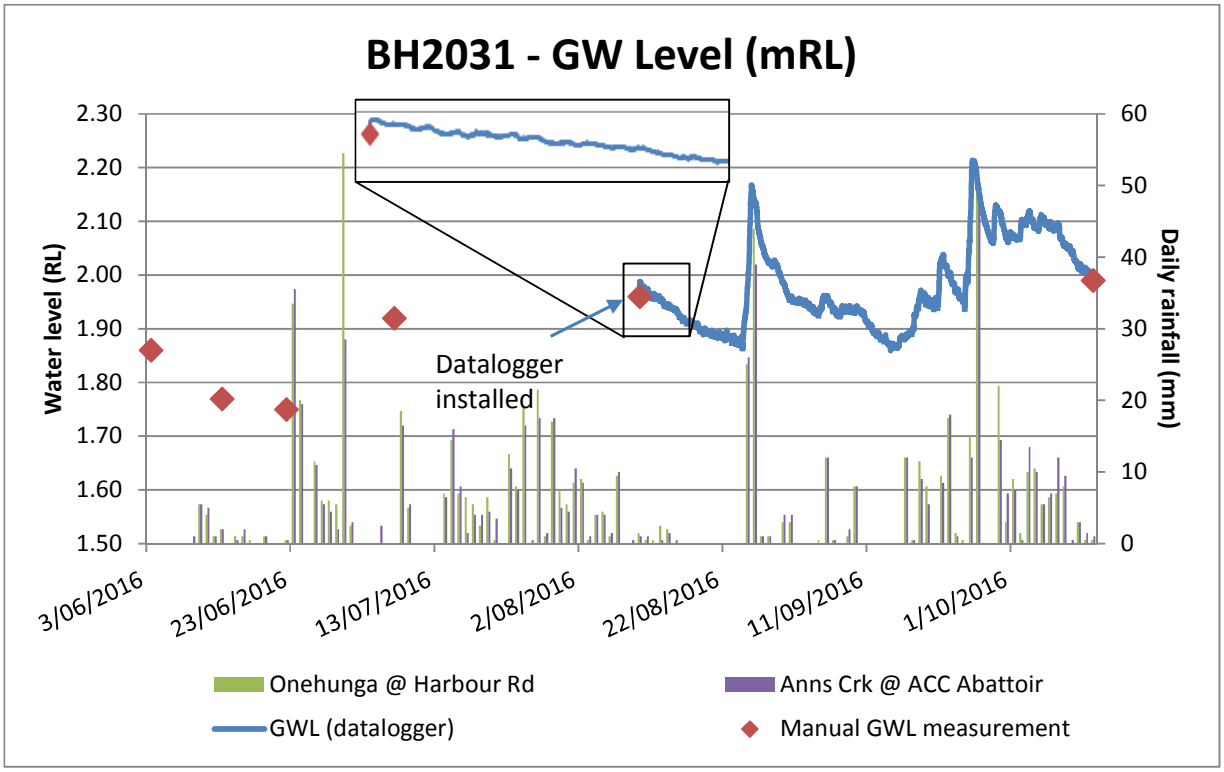

BH2023 - GW Level (mRL)
Water level (mRL)
Daily rainfall (mm)
2.50
2.40
2.30
2.20
2.10
2.00
1.90
1.80
1.70
60
50
40
30
20
10
0
3/06/2016
23/06/2016
13/07/2016
2/08/2016
22/08/2016
11/09/2016
1/10/2016
Onehunga @ Harbour Rd
Anns Crk @ ACC Abattoir
Manual GWL measurement

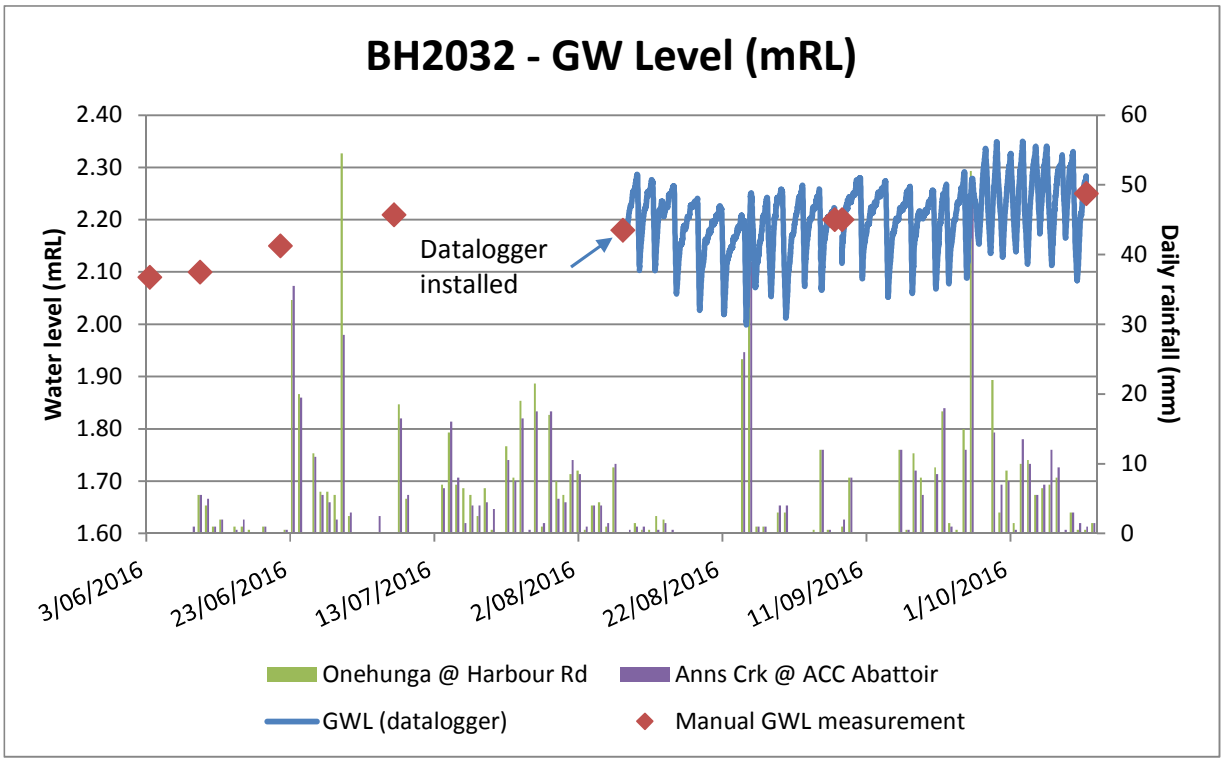

BH2027 - GW Level (mRL)
Water level (mRL)
Daily rainfall (mm)
1.10
1.00
0.90
0.80
0.70
0.60
0.50
0.40
0.30
60
50
40
30
20
10
0
3/06/2016
23/06/2016
13/07/2016
2/08/2016
22/08/2016
11/09/2016
1/10/2016
Onehunga @ Harbour Rd
Anns Crk @ ACC Abattoir
Manual GWL measurement

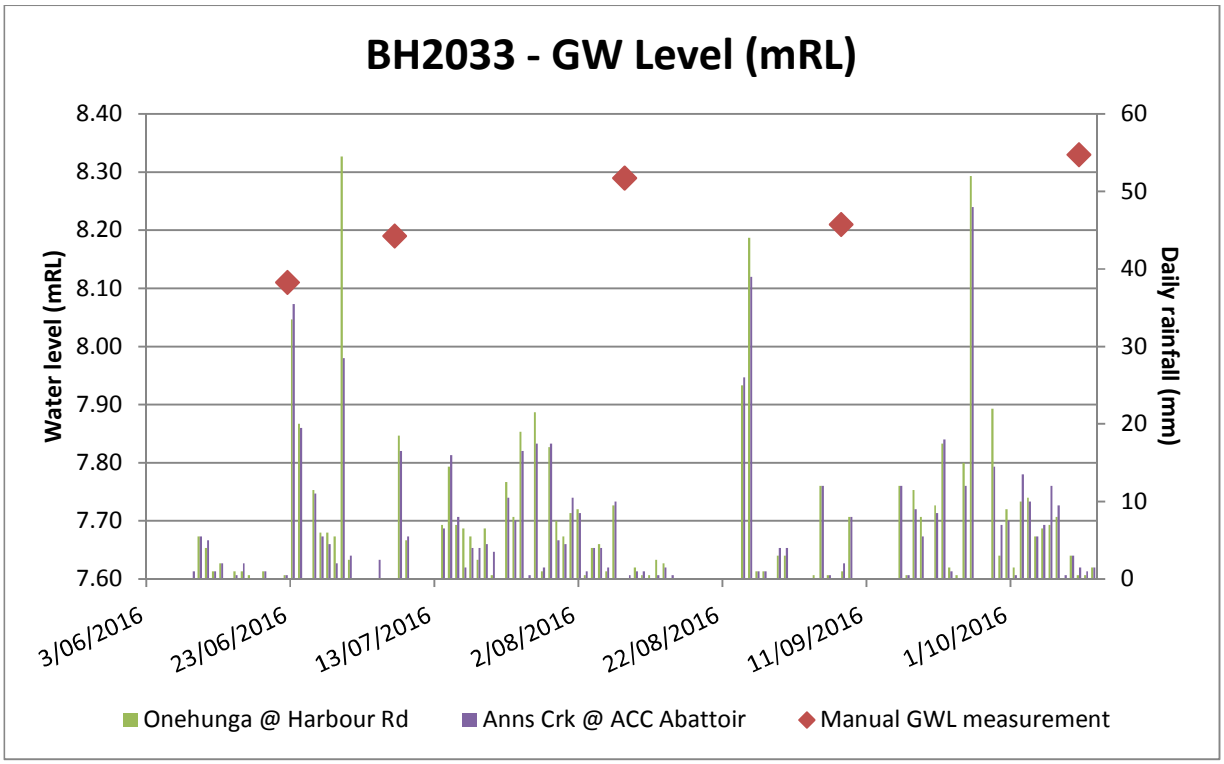

BH2028 - GW Level (mRL)
Water level (mRL)
Daily rainfall (mm)
1.60
1.50
1.40
1.30
1.20
1.10
1.00
0.90
0.80
60
50
40
30
20
10
0
3/06/2016
23/06/2016
13/07/2016
2/08/2016
22/08/2016
11/09/2016
1/10/2016
Onehunga @ Harbour Rd
Anns Crk @ ACC Abattoir
GWL (datalogger)
Manual GWL measurement

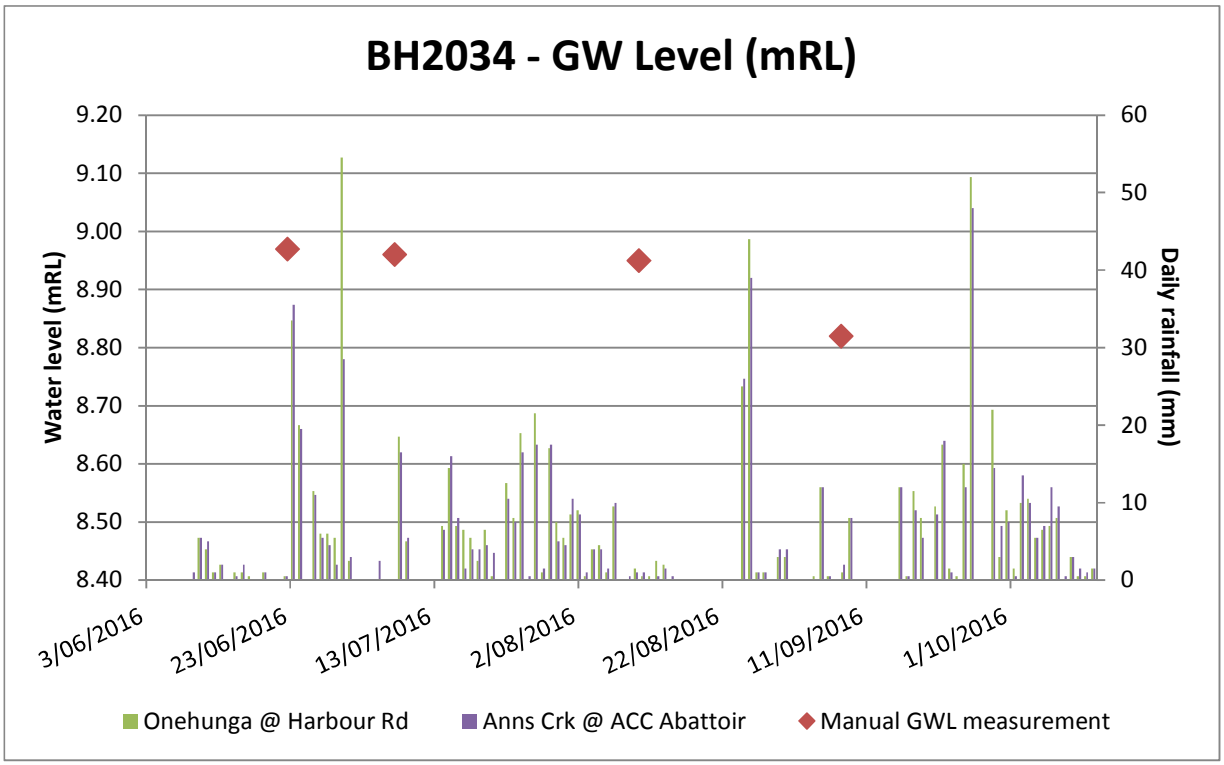

BH2029 - GW Level (mRL)
Water level (mRL)
Daily rainfall (mm)
1.50
1.40
1.30
1.20
1.10
1.00
0.90
0.80
0.70
60
50
40
30
20
10
0
3/06/2016
23/06/2016
13/07/2016
2/08/2016
22/08/2016
11/09/2016
1/10/2016
Onehunga @ Harbour Rd
Anns Crk @ ACC Abattoir
Manual GWL measurement

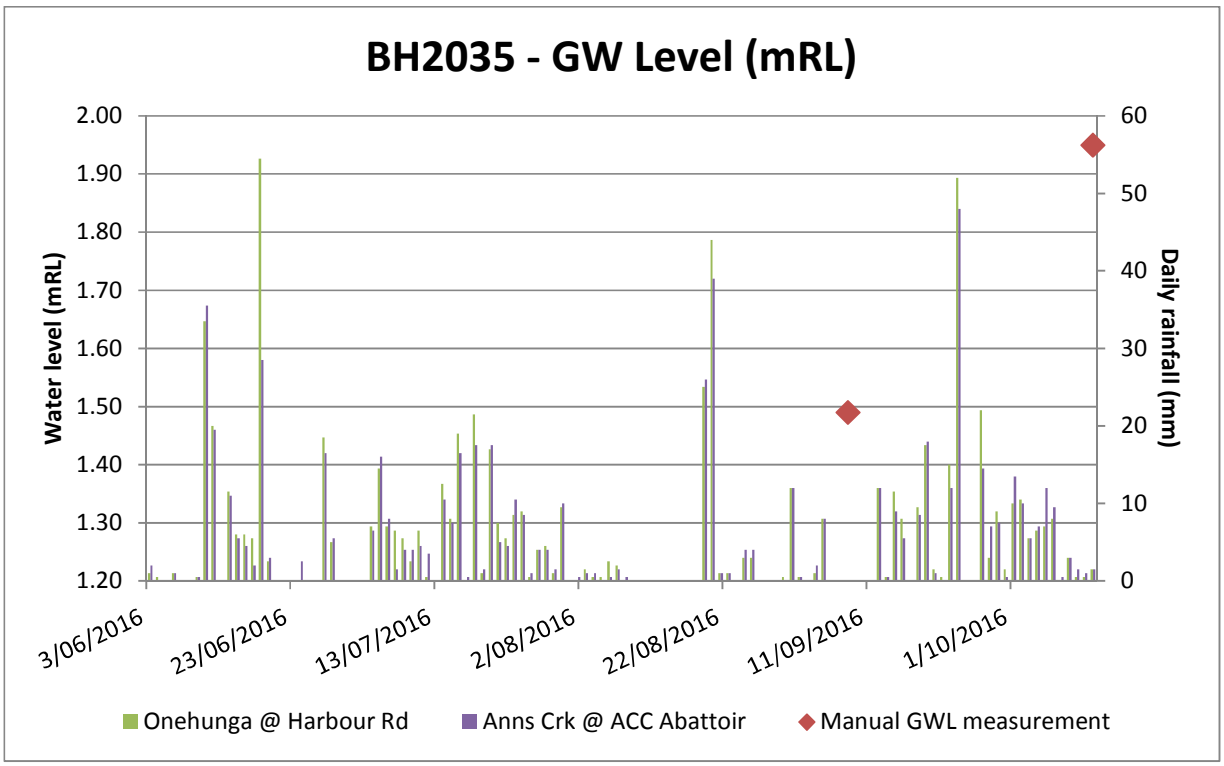

BH2030 - GW Level (mRL)
Water level (mRL)
Daily rainfall (mm)
2.70
2.60
2.50
2.40
2.30
2.20
2.10
2.00
1.90
60
50
40
30
20
10
0
3/06/2016
23/06/2016
13/07/2016
2/08/2016
22/08/2016
11/09/2016
1/10/2016
Onehunga @ Harbour Rd
Anns Crk @ ACC Abattoir
Manual GWL measurement

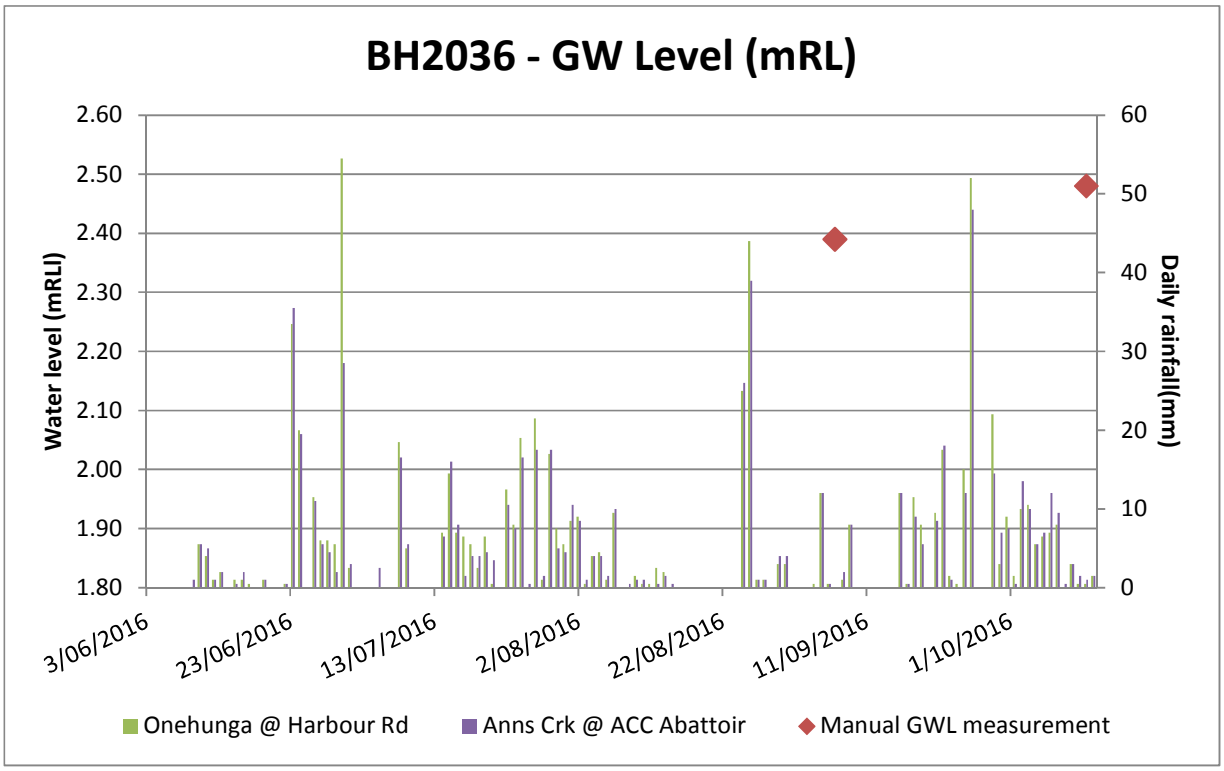

BH2031 - GW Level (mRL)
Water level (RL)
Daily rainfall (mm)
2.30
2.20
2.10
2.00
1.90
1.80
1.70
1.60
1.50
60
50
40
30
20
10
0
Datalogger
installed
3/06/2016
23/06/2016
13/07/2016
2/08/2016
22/08/2016
11/09/2016
1/10/2016
Onehunga @ Harbour Rd
Anns Crk @ ACC Abattoir
GWL (datalogger)
Manual GWL measurement

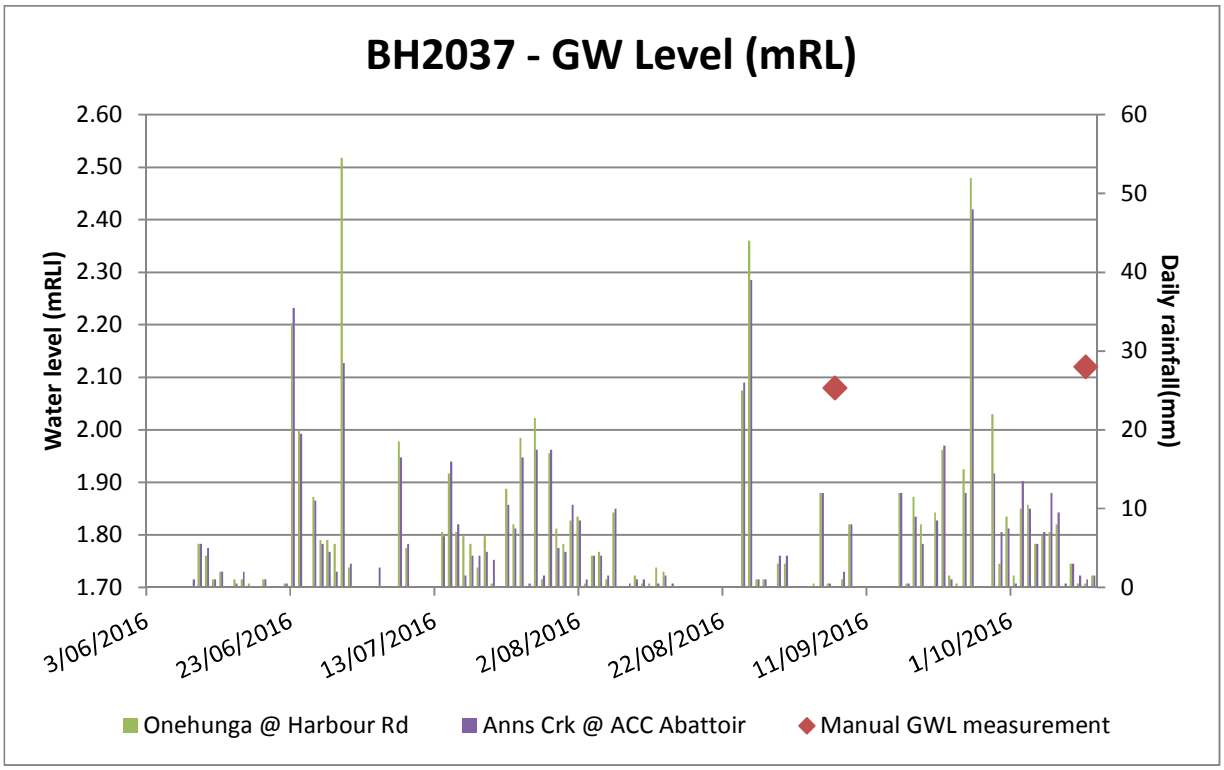

BH2032 - GW Level (mRL)
Water level (mRL)
Daily rainfall (mm)
2.40
2.30
2.20
2.10
2.00
1.90
1.80
1.70
1.60
60
50
40
30
20
10
0
Datalogger installed
3/06/2016
23/06/2016
13/07/2016
2/08/2016
22/08/2016
11/09/2016
1/10/2016
Onehunga @ Harbour Rd
Anns Crk @ ACC Abattoir
GWL (datalogger)
Manual GWL measurement

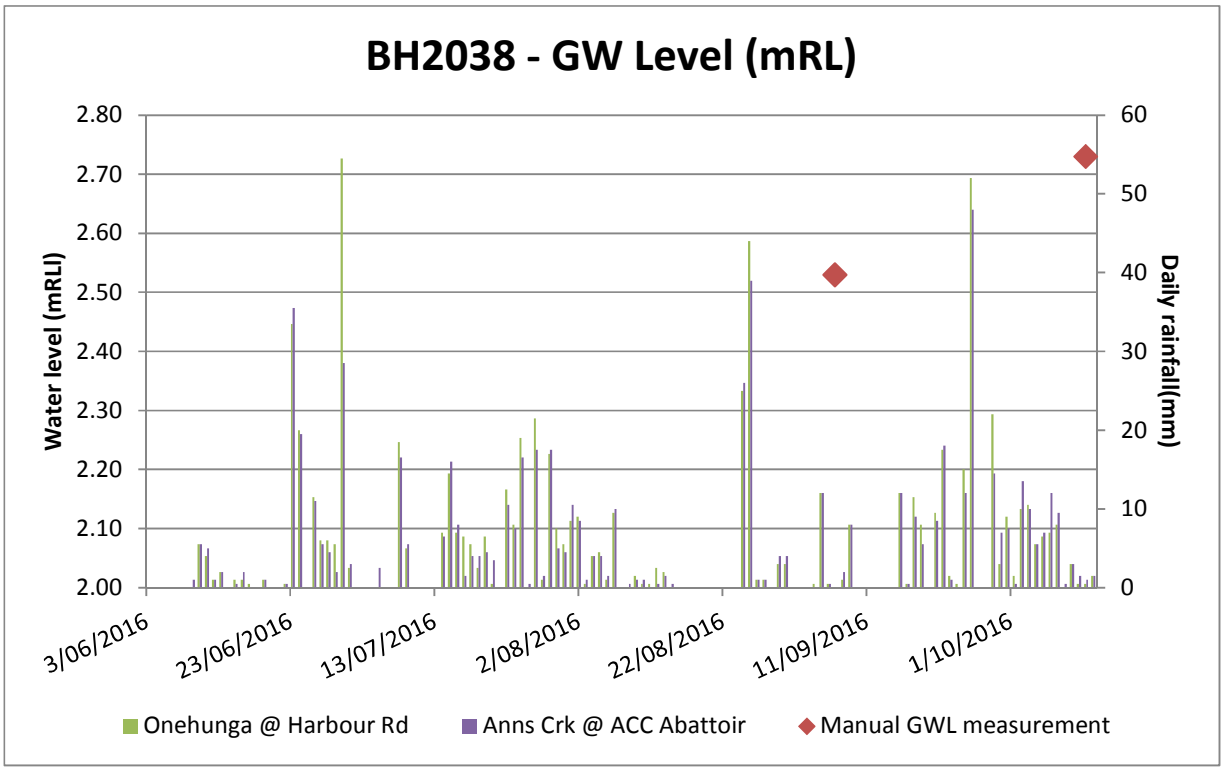

BH2033 - GW Level (mRL)
Water level (mRL)
Daily rainfall (mm)
8.40
8.30
8.20
8.10
8.00
7.90
7.80
7.70
7.60
60
50
40
30
20
10
0
3/06/2016
23/06/2016
13/07/2016
2/08/2016
22/08/2016
11/09/2016
1/10/2016
Onehunga @ Harbour Rd
Anns Crk @ ACC Abattoir
Manual GWL measurement

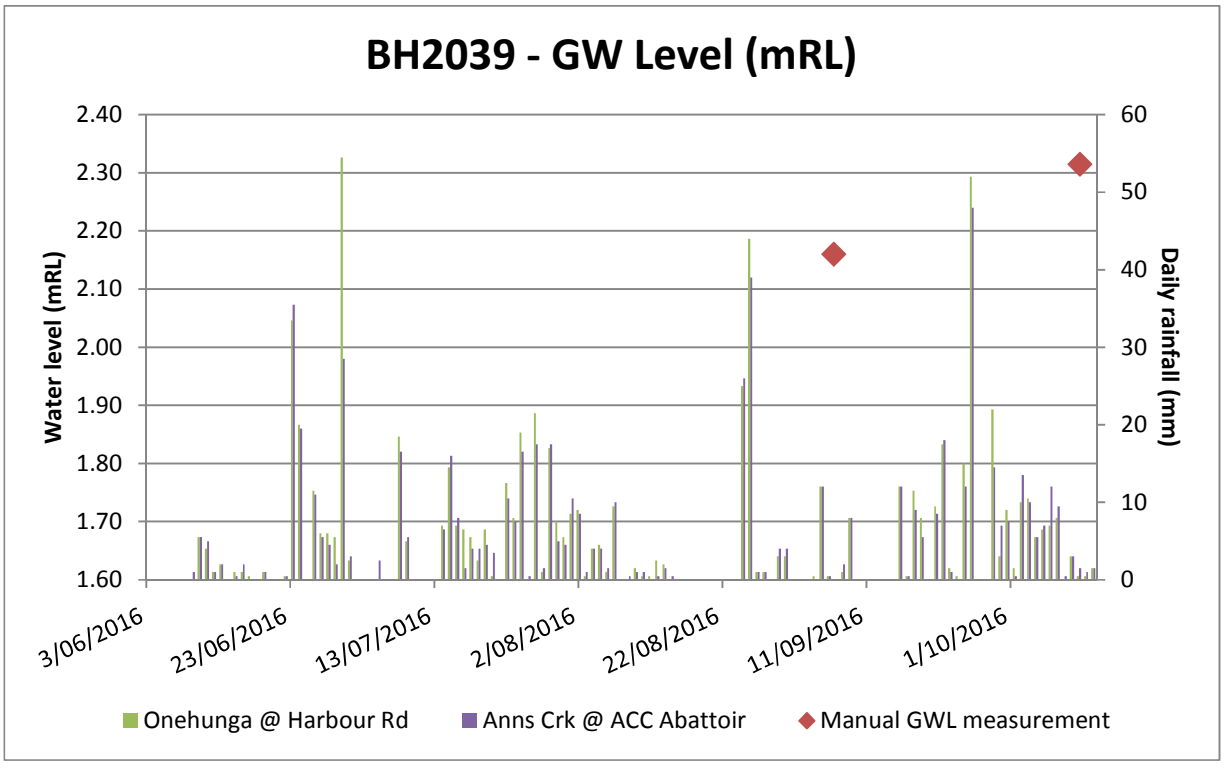

BH2034 - GW Level (mRL)
Water level (mRL)
9.20
9.10
9.00
8.90
8.80
8.70
8.60
8.50
8.40
Daily rainfall (mm)
60
50
40
30
20
10
0
3/06/2016
23/06/2016
13/07/2016
2/08/2016
22/08/2016
11/09/2016
1/10/2016
Onehunga @ Harbour Rd
Anns Crk @ ACC Abattoir
Manual GWL measurement

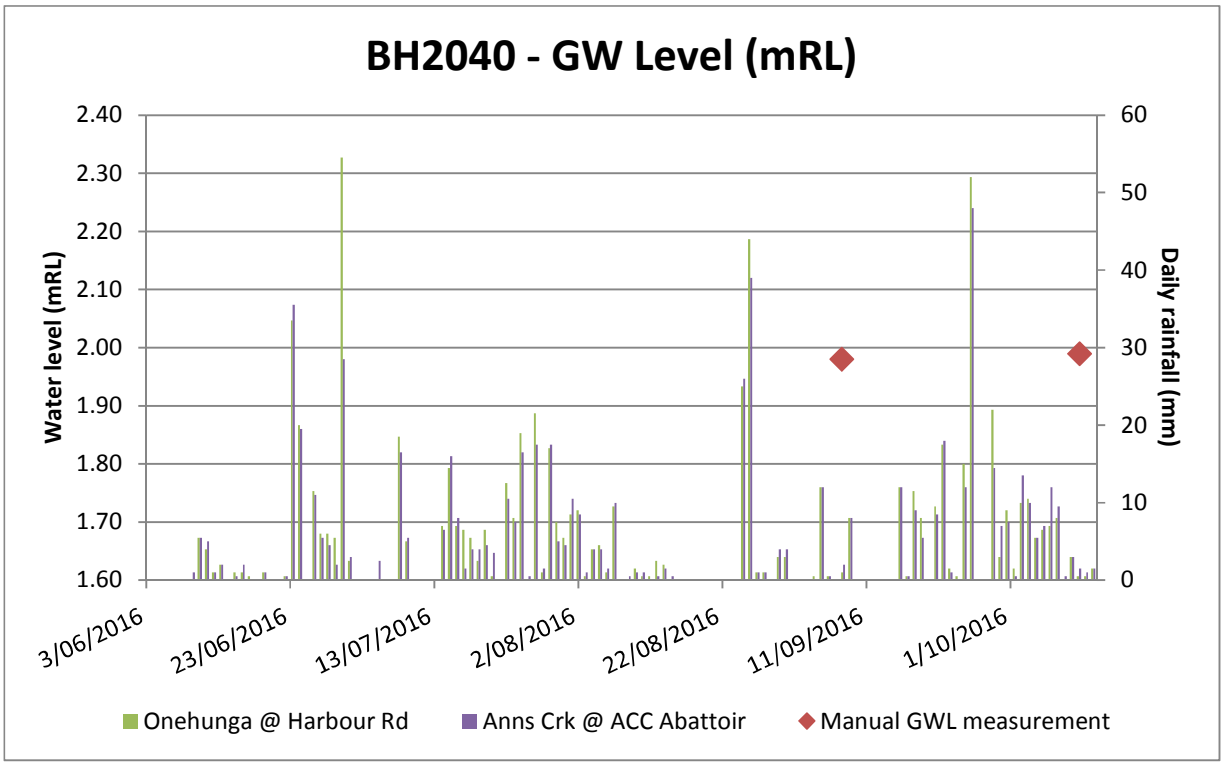

BH2035 - GW Level (mRL)
Water level (mRL)
2.00
1.90
1.80
1.70
1.60
1.50
1.40
1.30
1.20
Daily rainfall (mm)
60
50
40
30
20
10
0
3/06/2016
23/06/2016
13/07/2016
2/08/2016
22/08/2016
11/09/2016
1/10/2016
Onehunga @ Harbour Rd
Anns Crk @ ACC Abattoir
Manual GWL measurement

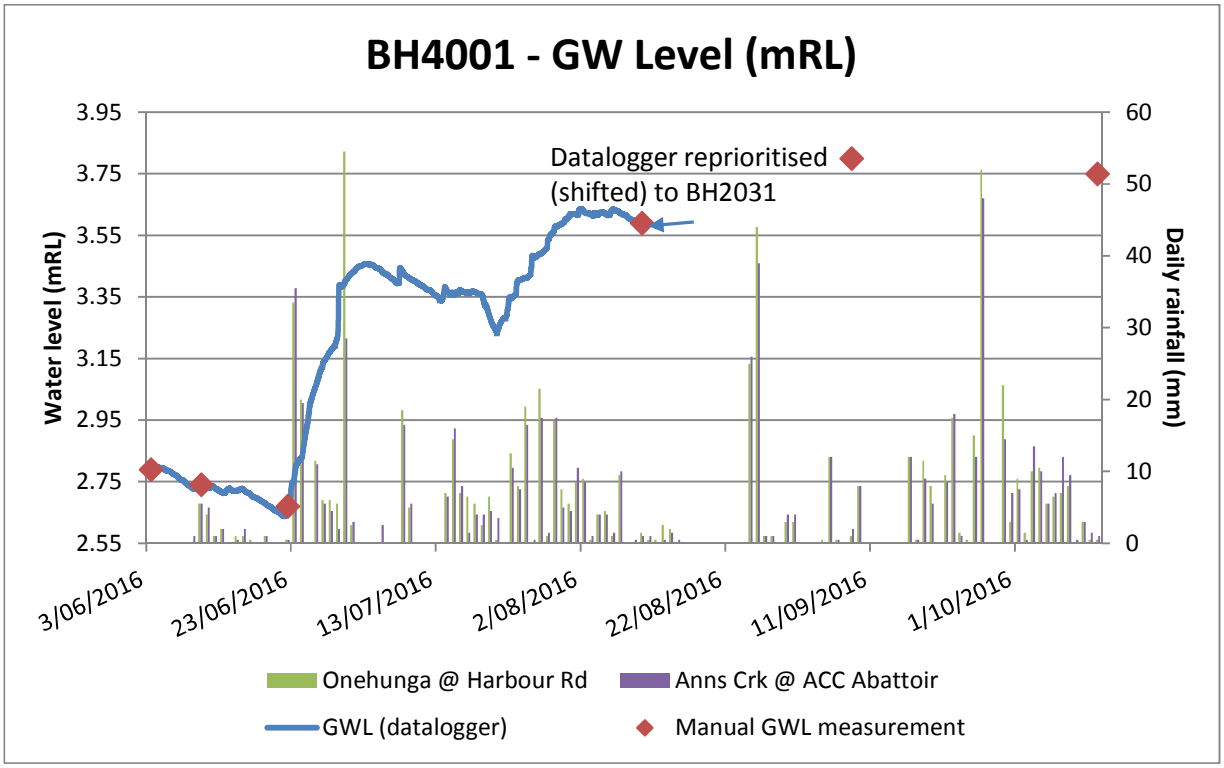

BH2036 - GW Level (mRL)
Water level (mRLl)
Daily rainfall(mm)
2.60
2.50
2.40
2.30
2.20
2.10
2.00
1.90
1.80
60
50
40
30
20
10
0
3/06/2016
23/06/2016
13/07/2016
2/08/2016
22/08/2016
11/09/2016
1/10/2016
Onehunga @ Harbour Rd
Anns Crk @ ACC Abattoir
Manual GWL measurement

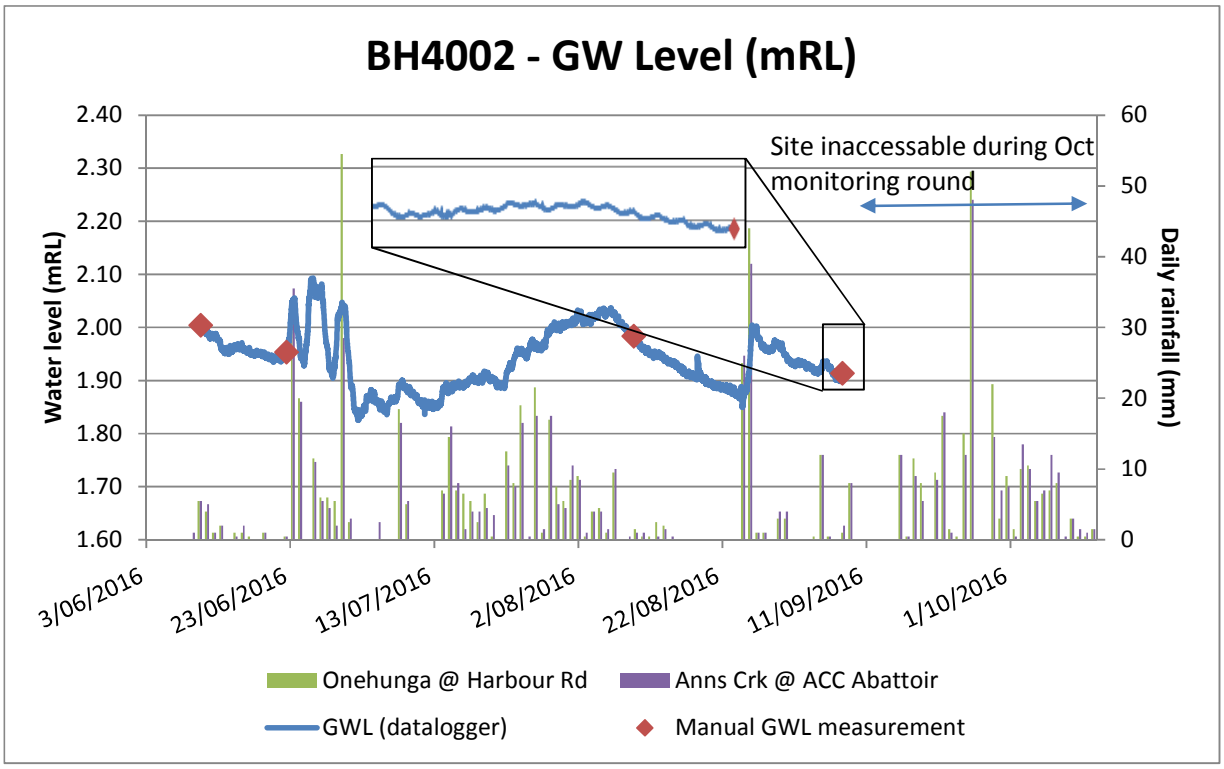

BH2037 - GW Level (mRL)
Water level (mRLl)
Daily rainfall(mm)
2.60
2.50
2.40
2.30
2.20
2.10
2.00
1.90
1.80
1.70
60
50
40
30
20
10
0
3/06/2016
23/06/2016
13/07/2016
2/08/2016
22/08/2016
11/09/2016
1/10/2016
Onehunga @ Harbour Rd
Anns Crk @ ACC Abattoir
Manual GWL measurement

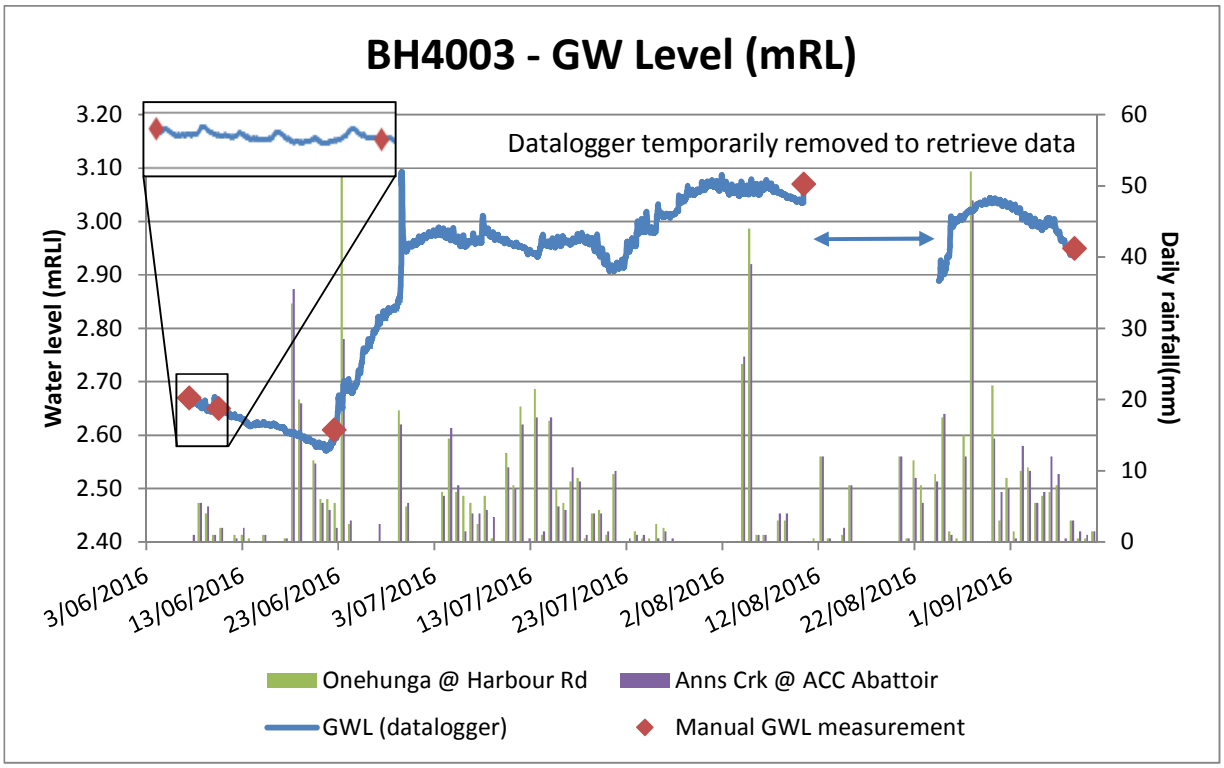

BH2038 - GW Level (mRL)
Water level (mRLl)
Daily rainfall(mm)
2.80
2.70
2.60
2.50
2.40
2.30
2.20
2.10
2.00
60
50
40
30
20
10
0
3/06/2016
23/06/2016
13/07/2016
2/08/2016
22/08/2016
11/09/2016
1/10/2016
Onehunga @ Harbour Rd
Anns Crk @ ACC Abattoir
Manual GWL measurement

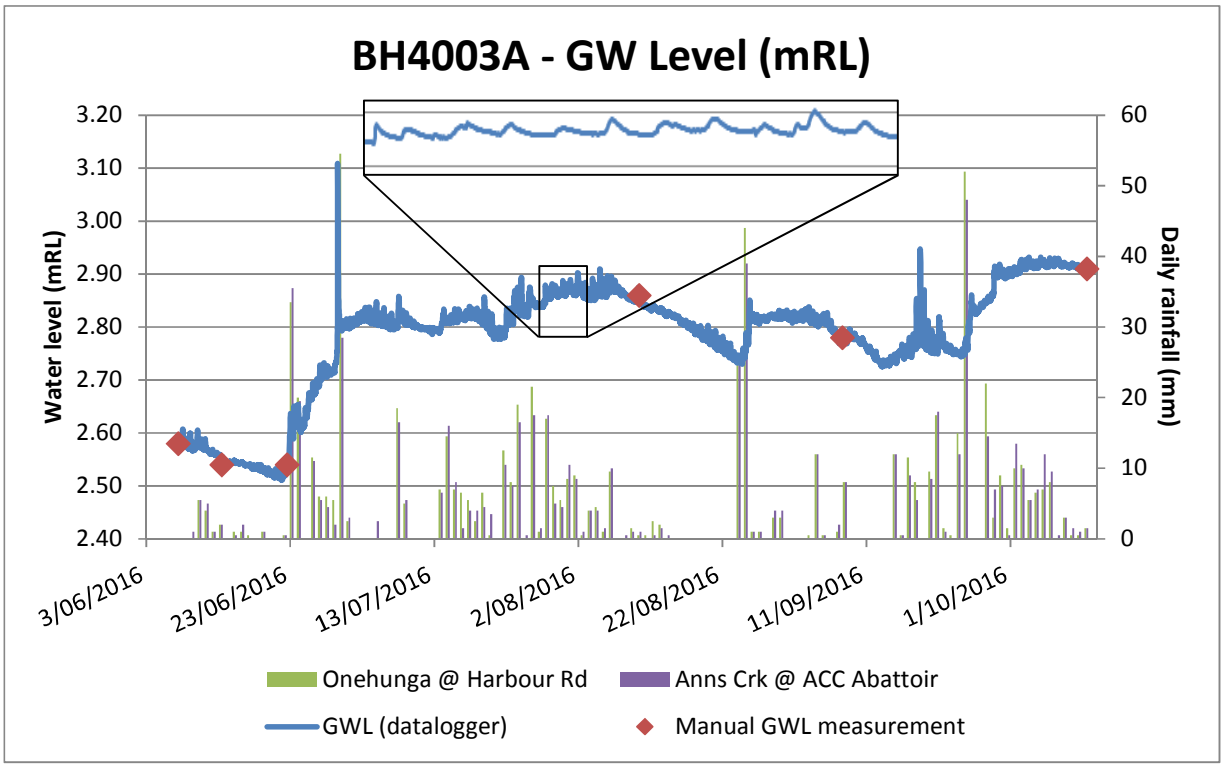

BH2039 - GW Level (mRL)
Water level (mRL)
Daily rainfall (mm)
2.40
2.30
2.20
2.10
2.00
1.90
1.80
1.70
1.60
60
50
40
30
20
10
0
3/06/2016
23/06/2016
13/07/2016
2/08/2016
22/08/2016
11/09/2016
1/10/2016
Onehunga @ Harbour Rd
Anns Crk @ ACC Abattoir
Manual GWL measurement

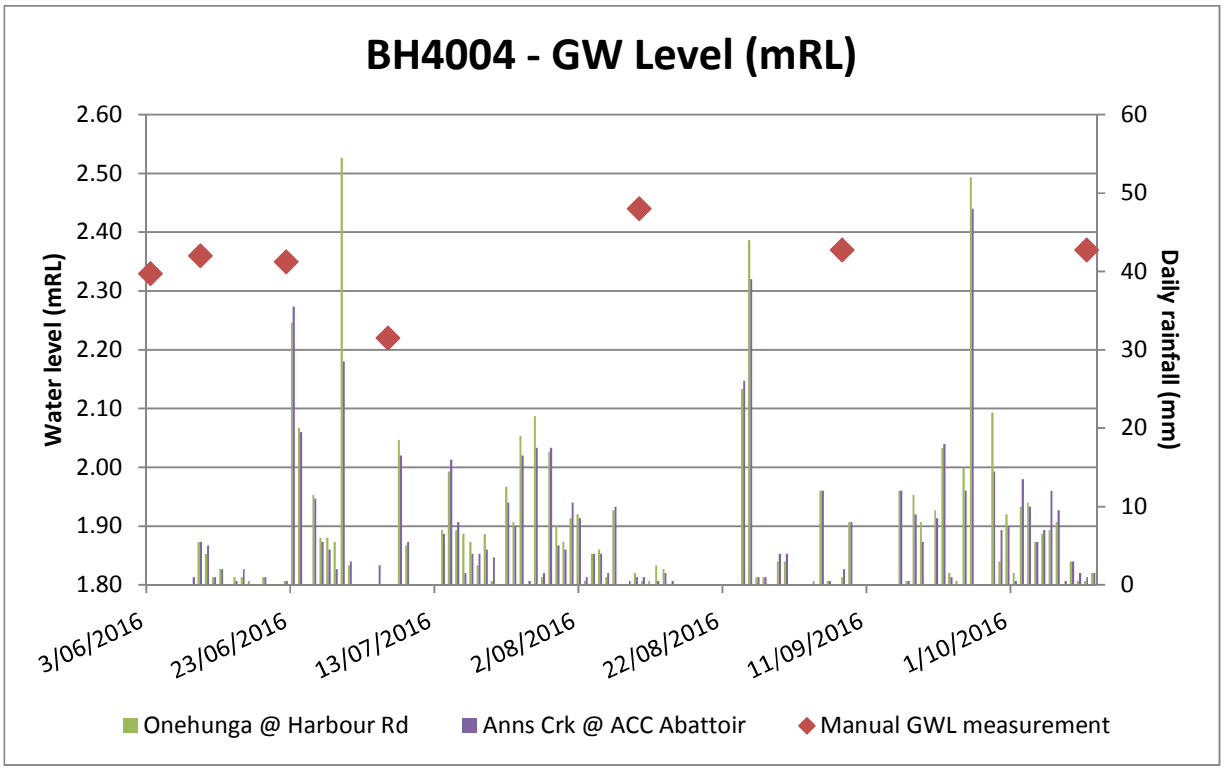

BH2040 - GW Level (mRL)
Water level (mRL)
Daily rainfall (mm)
2.40
2.30
2.20
2.10
2.00
1.90
1.80
1.70
1.60
60
50
40
30
20
10
0
3/06/2016
23/06/2016
13/07/2016
2/08/2016
22/08/2016
11/09/2016
1/10/2016
Onehunga @ Harbour Rd
Anns Crk @ ACC Abattoir
Manual GWL measurement

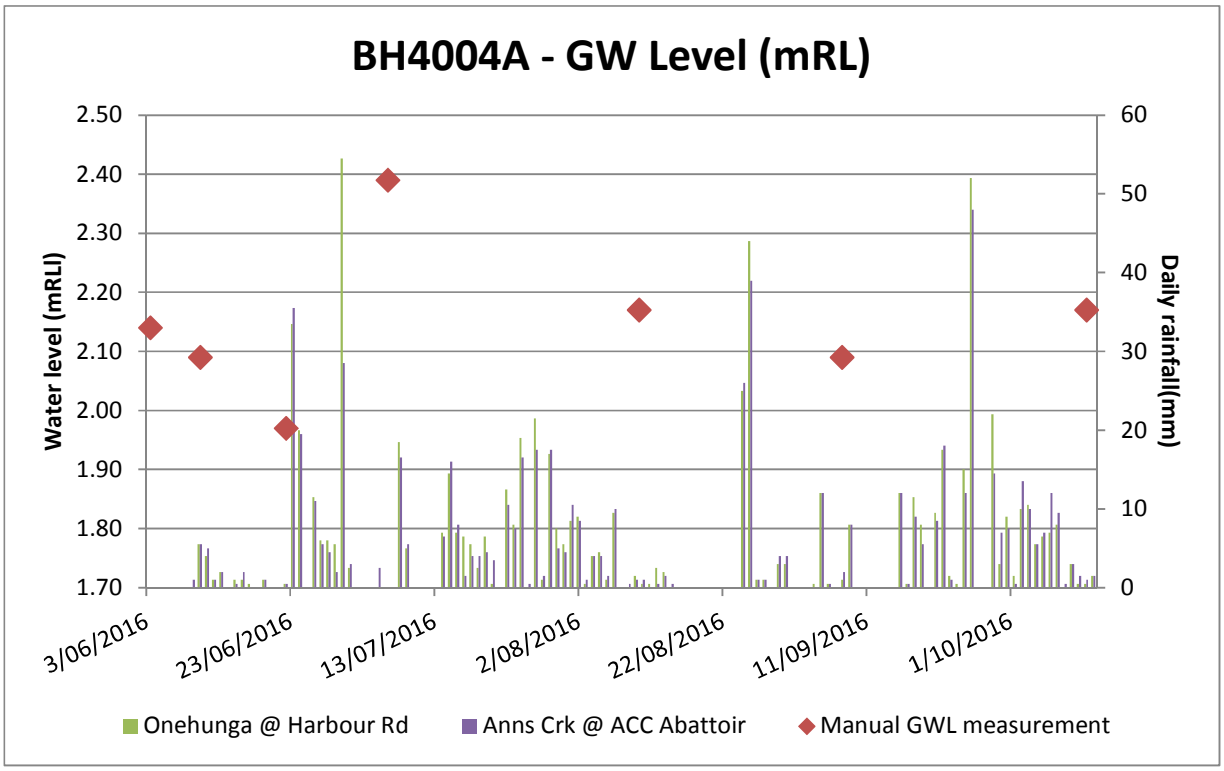

BH4001 - GW Level (mRL)
Water level (mRL)
Daily rainfall (mm)
3.95
3.75
3.55
3.35
3.15
2.95
2.75
2.55
60
50
40
30
20
10
0
Datalogger reprioritised
(shifted) to BH2031
3/06/2016
23/06/2016
13/07/2016
2/08/2016
22/08/2016
11/09/2016
1/10/2016
Onehunga @ Harbour Rd
Anns Crk @ ACC Abattoir
GWL (datalogger)
Manual GWL measurement

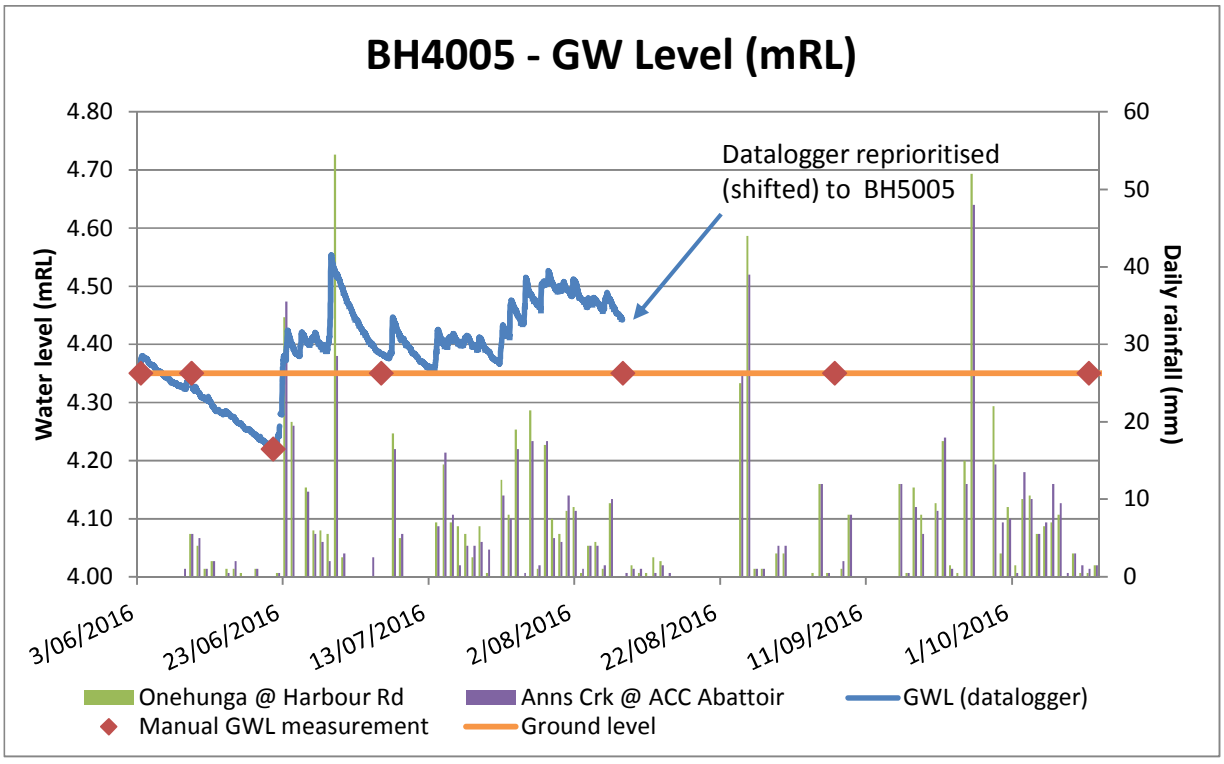

BH4002 - GW Level (mRL)
Site inaccessable during Oct monitoring round
Water level (mRL)
Daily rainfall (mm)
2.40
2.30
2.20
2.10
2.00
1.90
1.80
1.70
1.60
60
50
40
30
20
10
0
3/06/2016
23/06/2016
13/07/2016
2/08/2016
22/08/2016
11/09/2016
1/10/2016
Onehunga @ Harbour Rd
Anns Crk @ ACC Abattoir
GWL (datalogger)
Manual GWL measurement

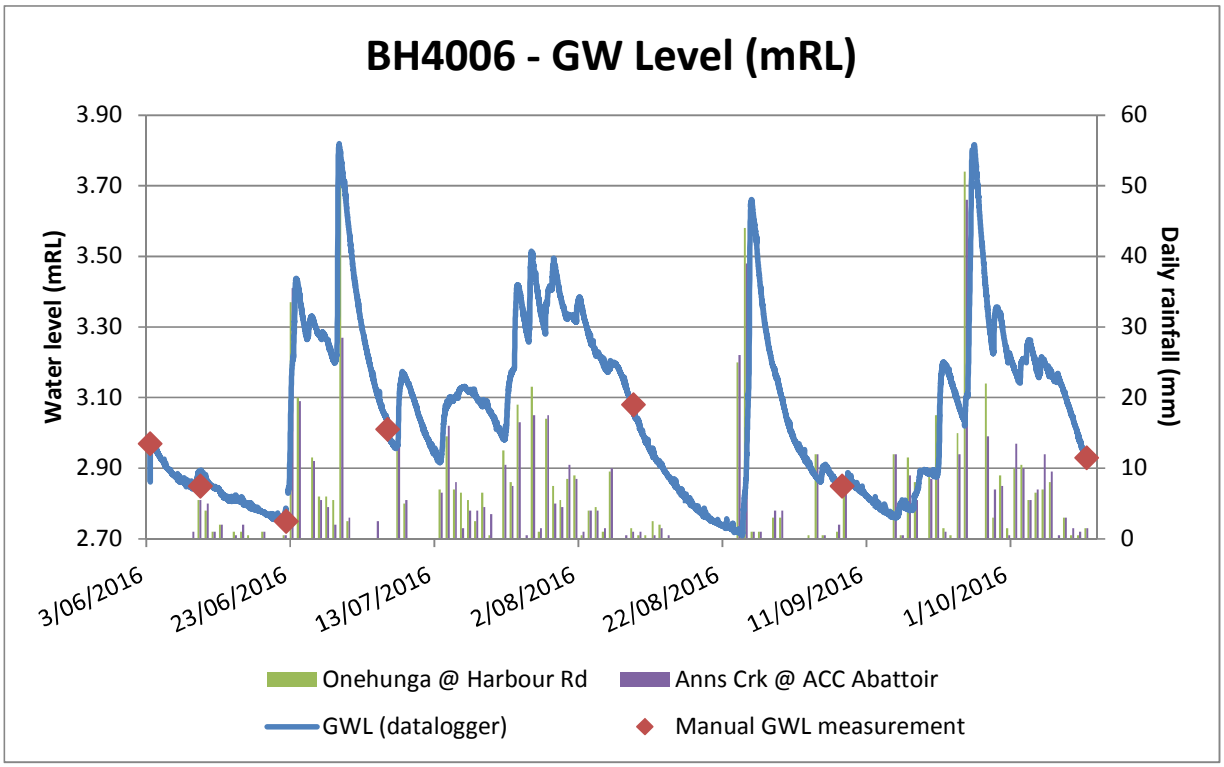

BH4003 - GW Level (mRL)
Datalogger temporarily removed to retrieve data
Water level (mRLl)
Daily rainfall(mm)
3.20
3.10
3.00
2.90
2.80
2.70
2.60
2.50
2.40
60
50
40
30
20
10
0
3/06/2016
13/06/2016
23/06/2016
3/07/2016
13/07/2016
23/07/2016
2/08/2016
12/08/2016
22/08/2016
1/09/2016
Onehunga @ Harbour Rd
Anns Crk @ ACC Abattoir
GWL (datalogger)
Manual GWL measurement

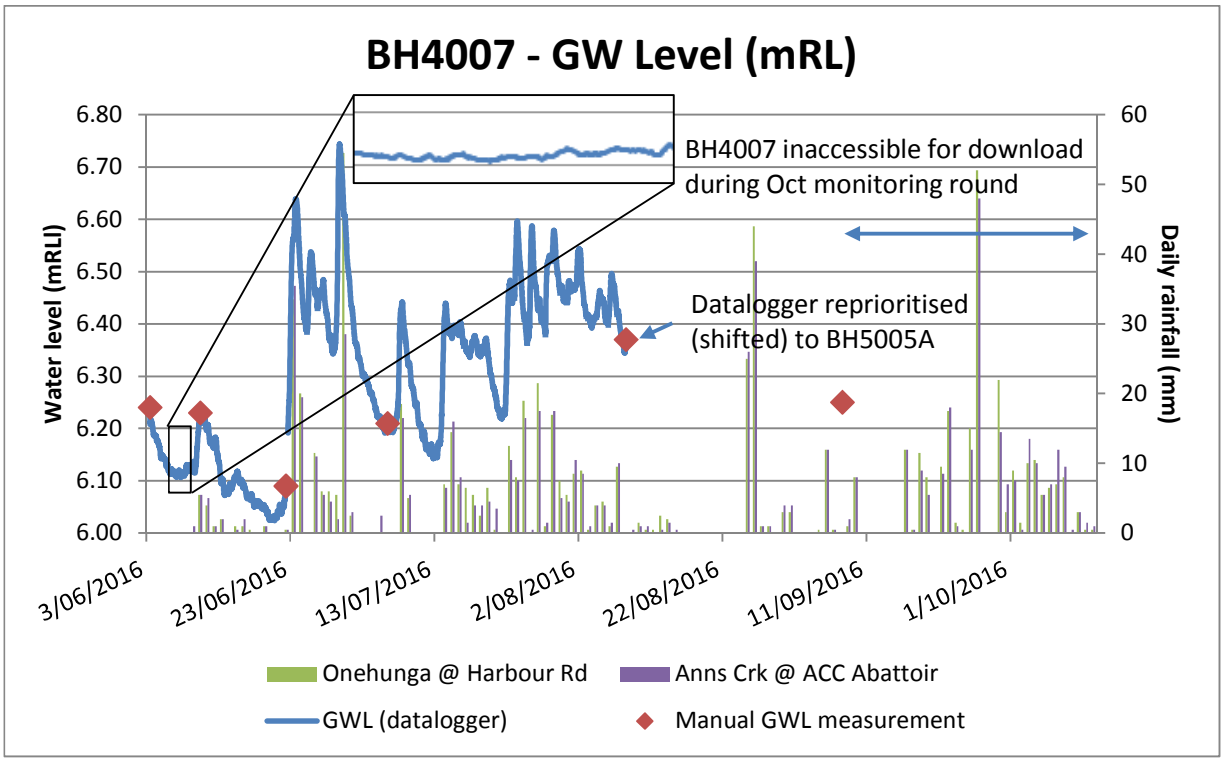

BH4003A - GW Level (mRL)
Water level (mRL)
Daily rainfall (mm)
3.20
3.10
3.00
2.90
2.80
2.70
2.60
2.50
2.40
60
50
40
30
20
10
0
3/06/2016
23/06/2016
13/07/2016
2/08/2016
22/08/2016
11/09/2016
1/10/2016
Onehunga @ Harbour Rd
Anns Crk @ ACC Abattoir
GWL (datalogger)
Manual GWL measurement

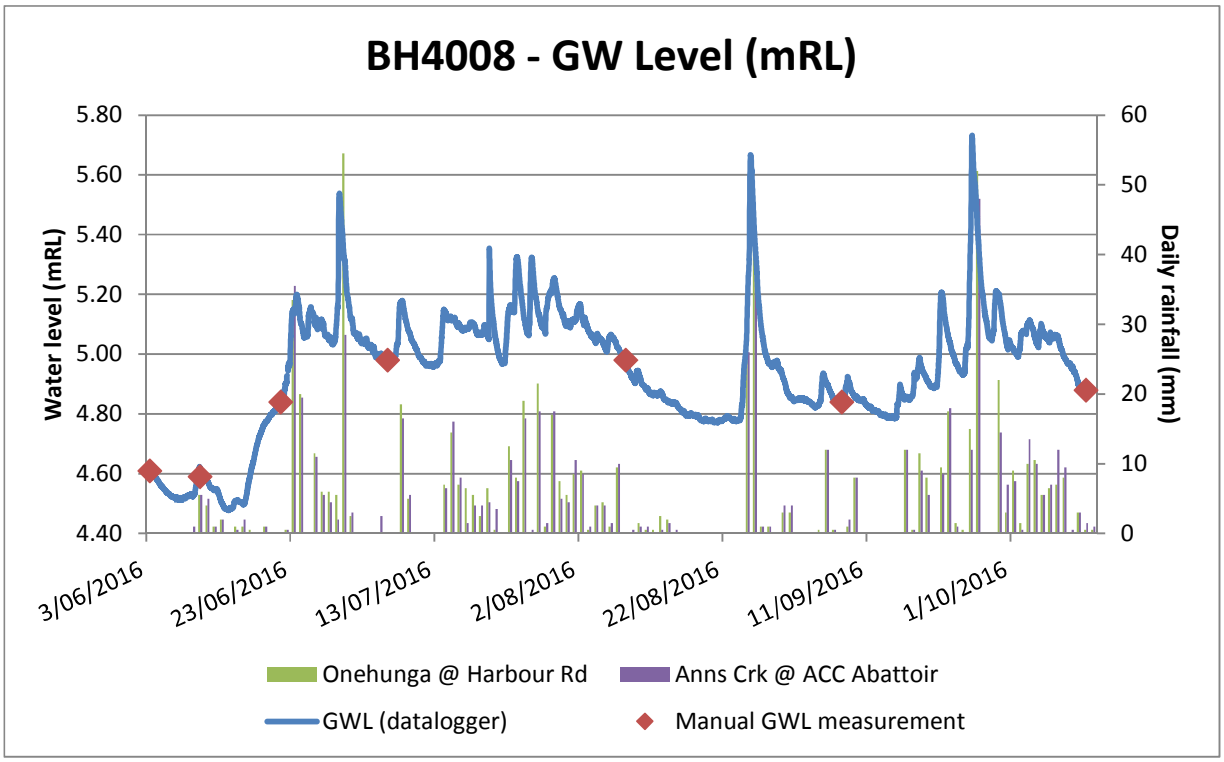

BH4004 - GW Level (mRL)
Water level (mRL)
Daily rainfall (mm)
2.60
2.50
2.40
2.30
2.20
2.10
2.00
1.90
1.80
60
50
40
30
20
10
0
3/06/2016
23/06/2016
13/07/2016
2/08/2016
22/08/2016
11/09/2016
1/10/2016
Onehunga @ Harbour Rd
Anns Crk @ ACC Abattoir
Manual GWL measurement

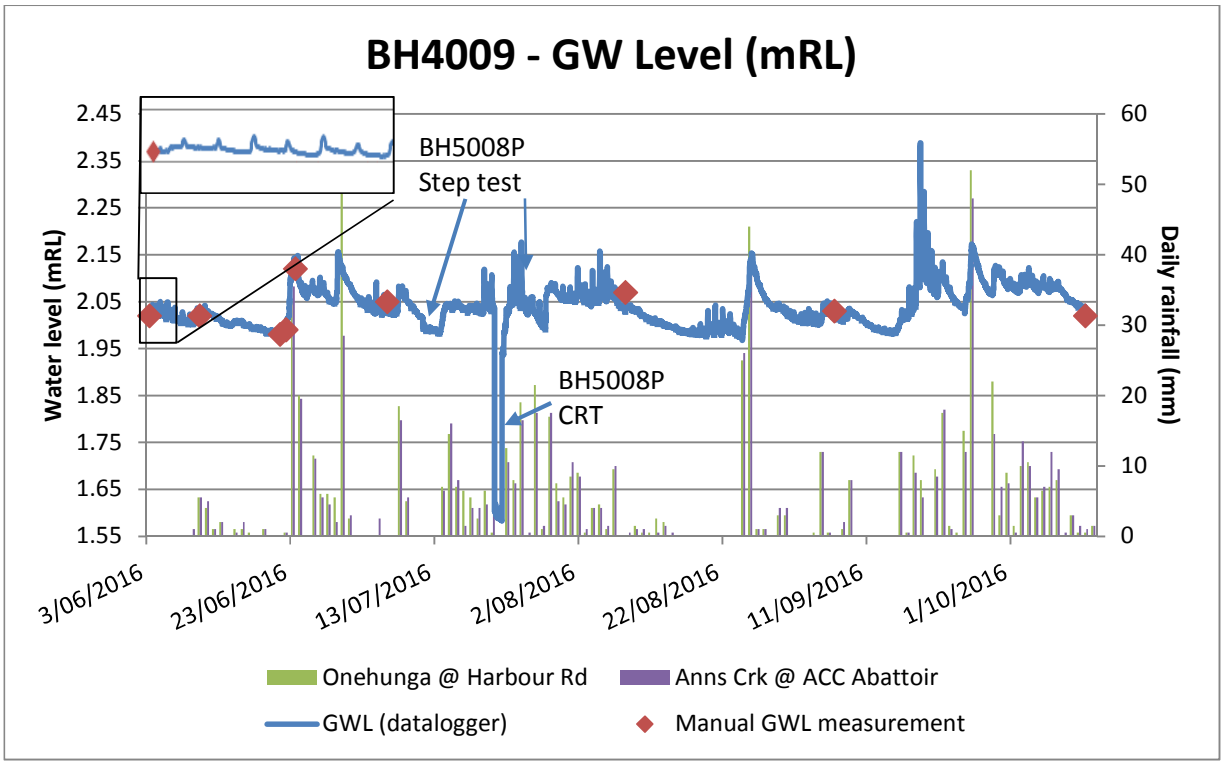

BH4004A - GW Level (mRL)
Water level (mRLl)
Daily rainfall(mm)
2.50
2.40
2.30
2.20
2.10
2.00
1.90
1.80
1.70
60
50
40
30
20
10
0
3/06/2016
23/06/2016
13/07/2016
2/08/2016
22/08/2016
11/09/2016
1/10/2016
Onehunga @ Harbour Rd
Anns Crk @ ACC Abattoir
Manual GWL measurement

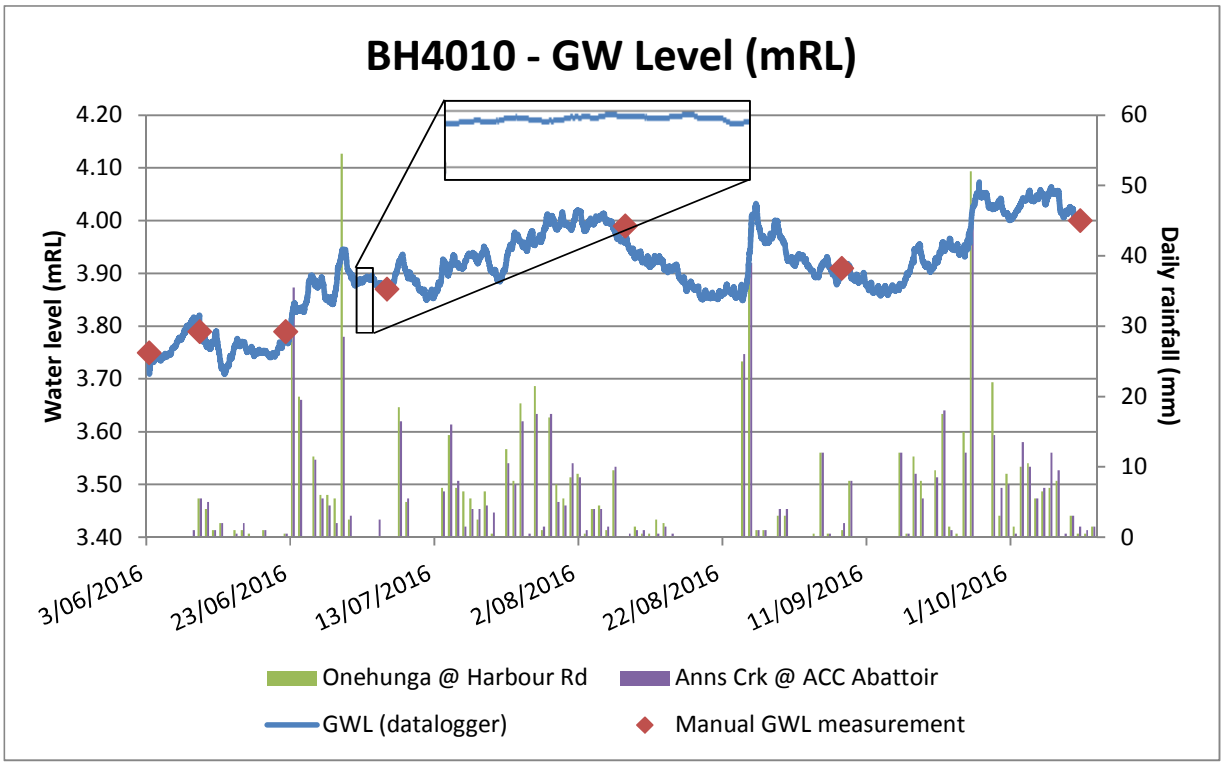

BH4005 - GW Level (mRL)
Water level (mRL)
Daily rainfall (mm)
Datalogger reprioritised
(shifted) to BH5005
4.80
4.70
4.60
4.50
4.40
4.30
4.20
4.10
4.00
60
50
40
30
20
10
0
3/06/2016
23/06/2016
13/07/2016
2/08/2016
22/08/2016
11/09/2016
1/10/2016
Onehunga @ Harbour Rd
Anns Crk @ ACC Abattoir
GWL (datalogger)
Manual GWL measurement
Ground level

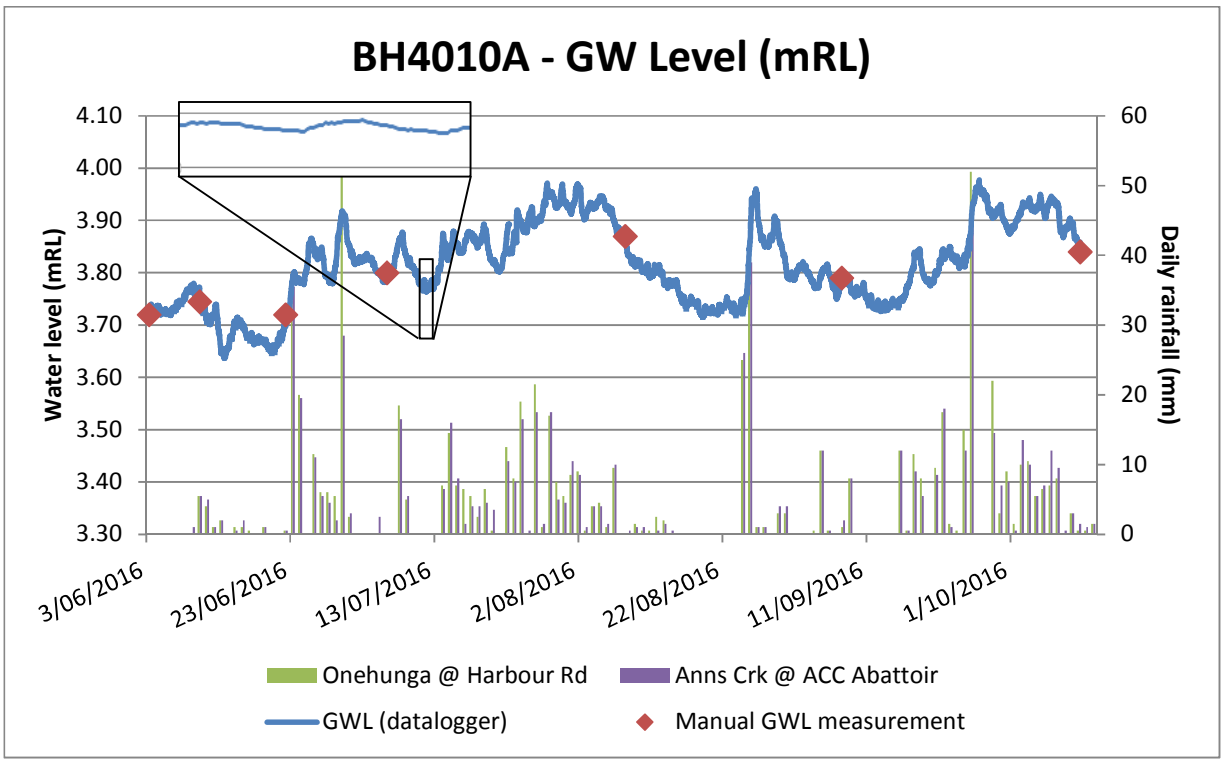

BH4006 - GW Level (mRL)
Water level (mRL)
Daily rainfall (mm)
3.90
3.70
3.50
3.30
3.10
2.90
2.70
60
50
40
30
20
10
0
3/06/2016
23/06/2016
13/07/2016
2/08/2016
22/08/2016
11/09/2016
1/10/2016
Onehunga @ Harbour Rd
Anns Crk @ ACC Abattoir
GWL (datalogger)
Manual GWL measurement

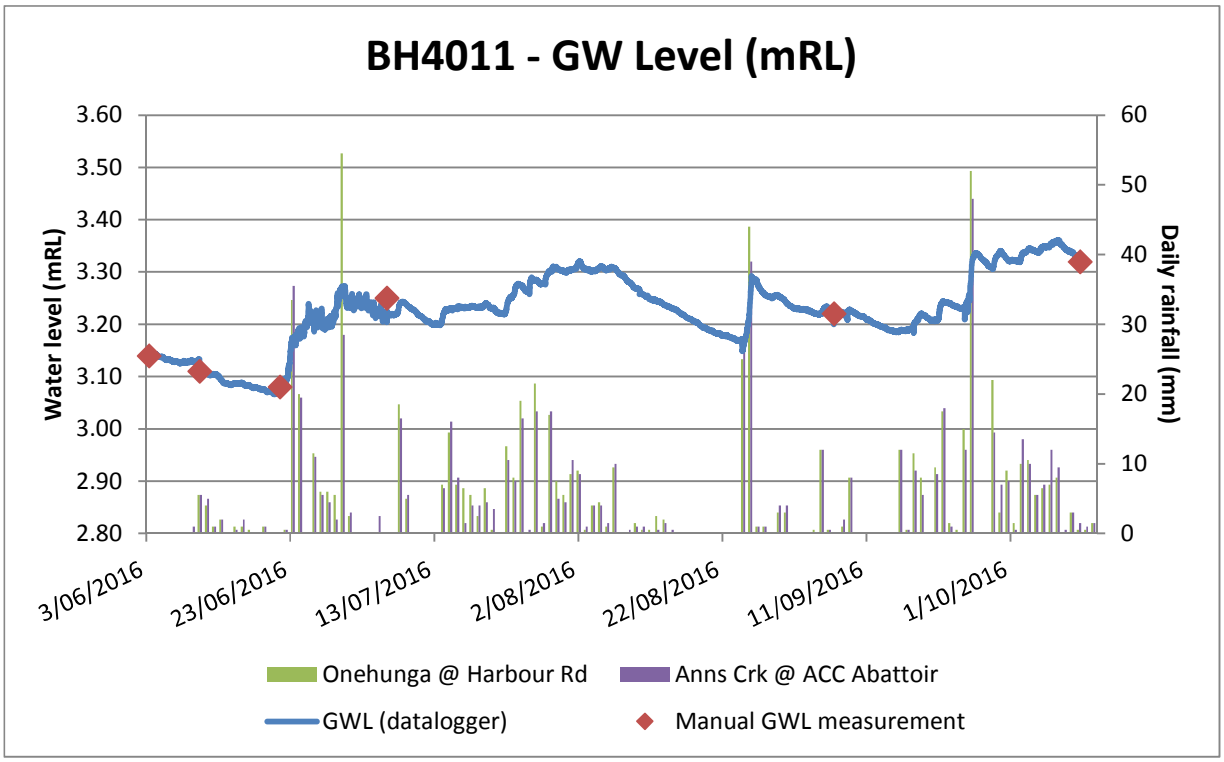

BH4007 - GW Level (mRL)
Water level (mRLl)
Daily rainfall (mm)
6.80
6.70
6.60
6.50
6.40
6.30
6.20
6.10
6.00
60
50
40
30
20
10
0
BH4007 inaccessible for download during Oct monitoring round
Datalogger reprioritised (shifted) to BH5005A
3/06/2016
23/06/2016
13/07/2016
2/08/2016
22/08/2016
11/09/2016
1/10/2016
Onehunga @ Harbour Rd
Anns Crk @ ACC Abattoir
GWL (datalogger)
Manual GWL measurement

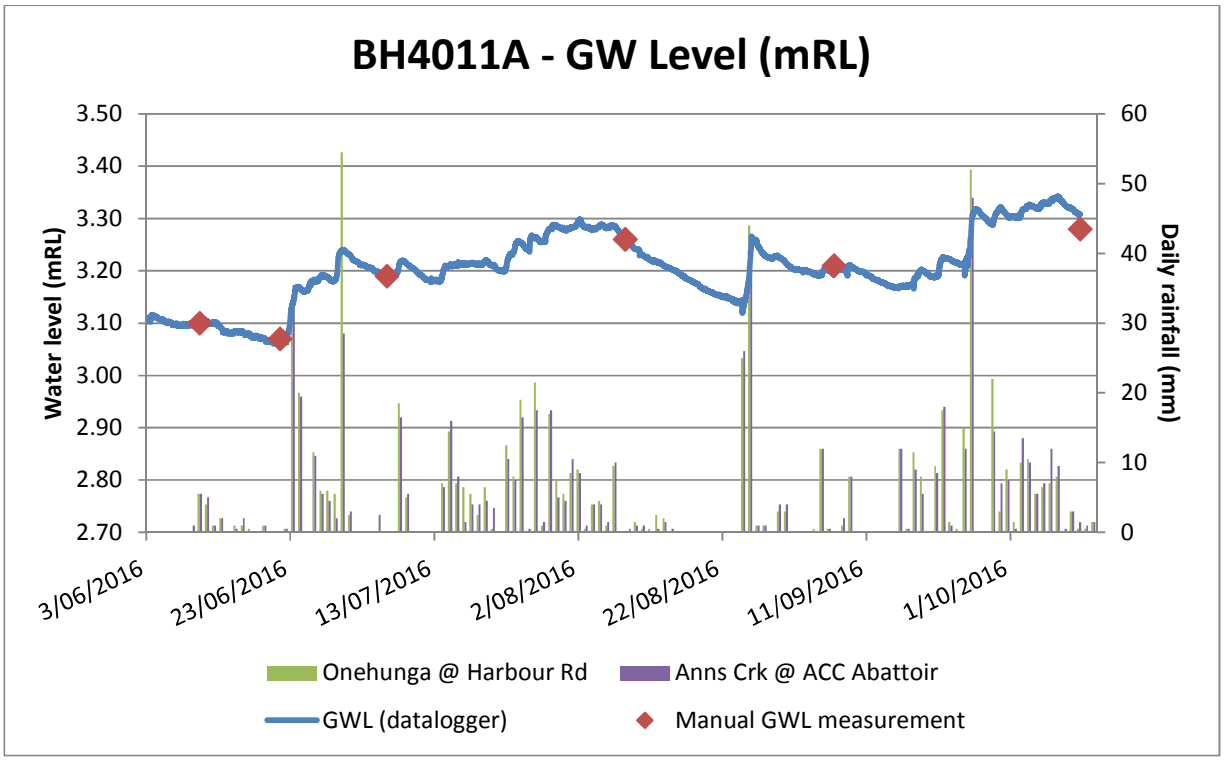

BH4008 - GW Level (mRL)
Water level (mRL)
Daily rainfall (mm)
5.80
5.60
5.40
5.20
5.00
4.80
4.60
4.40
60
50
40
30
20
10
0
3/06/2016
23/06/2016
13/07/2016
2/08/2016
22/08/2016
11/09/2016
1/10/2016
Onehunga @ Harbour Rd
Anns Crk @ ACC Abattoir
GWL (datalogger)
Manual GWL measurement

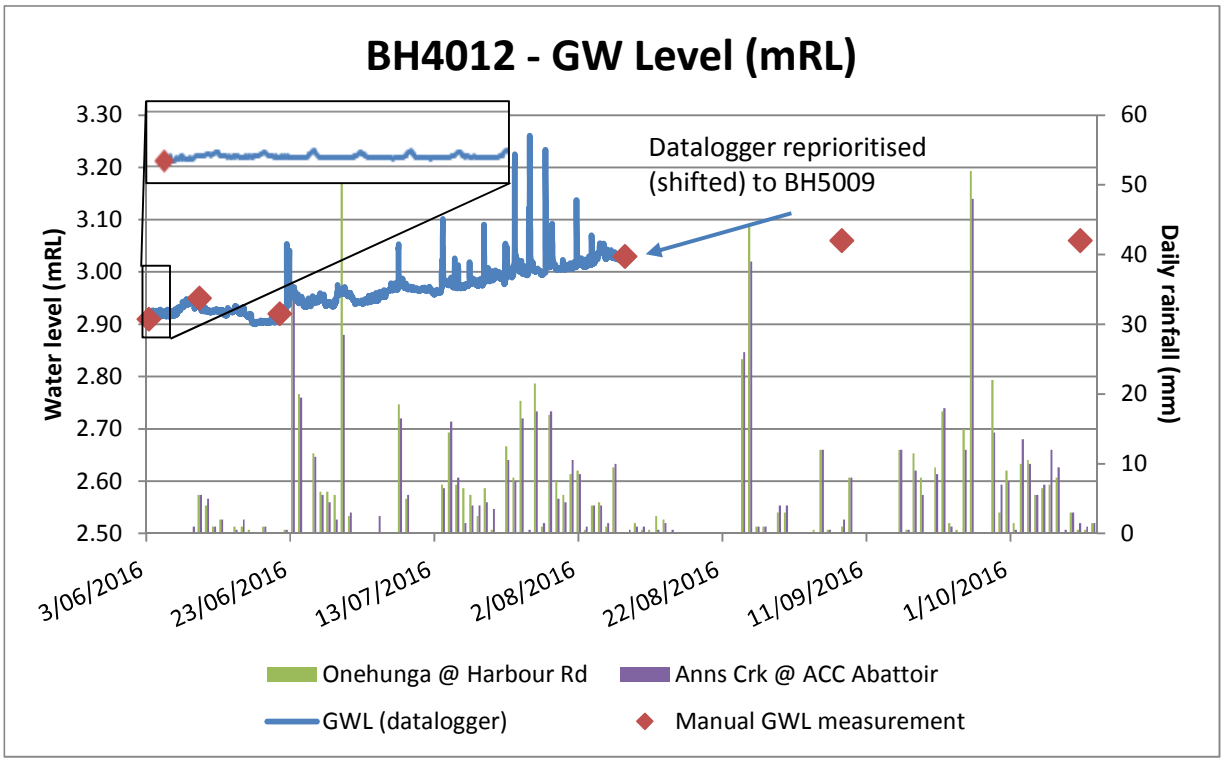

BH4009 - GW Level (mRL)
Water level (mRL)
Daily rainfall (mm)
2.45
2.35
2.25
2.15
2.05
1.95
1.85
1.75
1.65
1.55
60
50
40
30
20
10
0
BH5008P
Step test
BH5008P
CRT
3/06/2016
23/06/2016
13/07/2016
2/08/2016
22/08/2016
11/09/2016
1/10/2016
Onehunga @ Harbour Rd
Anns Crk @ ACC Abattoir
GWL (datalogger)
Manual GWL measurement

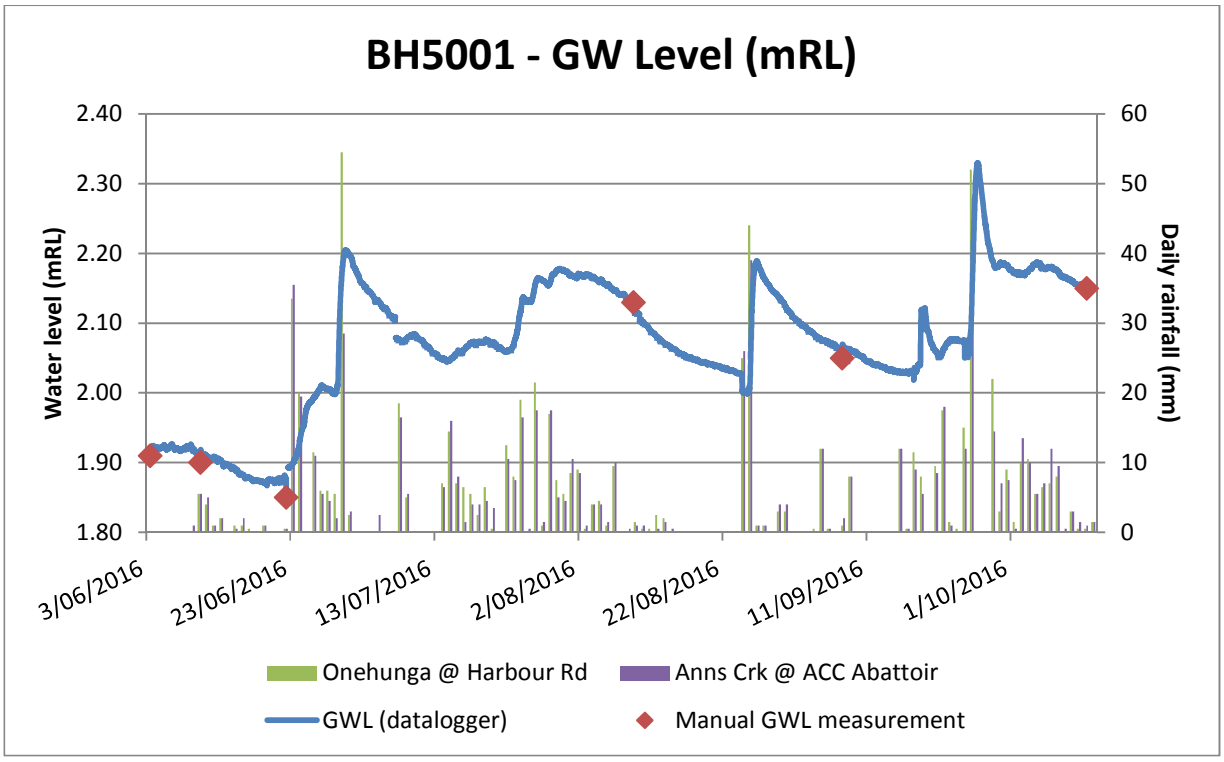

BH4010 - GW Level (mRL)
Water level (mRL)
Daily rainfall (mm)
4.20
4.10
4.00
3.90
3.80
3.70
3.60
3.50
3.40
60
50
40
30
20
10
0
3/06/2016
23/06/2016
13/07/2016
2/08/2016
22/08/2016
11/09/2016
1/10/2016
Onehunga @ Harbour Rd
Anns Crk @ ACC Abattoir
GWL (datalogger)
Manual GWL measurement

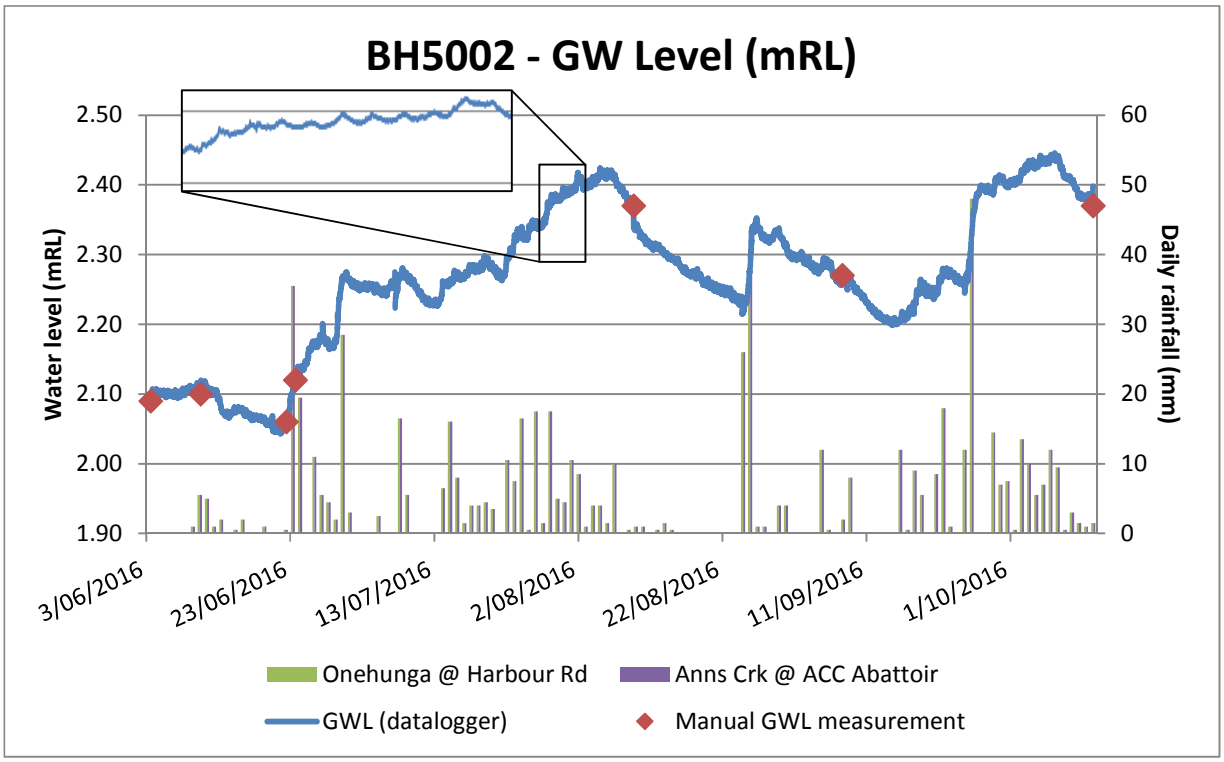

BH4010A - GW Level (mRL)
Water level (mRL)
Daily rainfall (mm)
4.10
4.00
3.90
3.80
3.70
3.60
3.50
3.40
3.30
60
50
40
30
20
10
0
3/06/2016
23/06/2016
13/07/2016
2/08/2016
22/08/2016
11/09/2016
1/10/2016
Onehunga @ Harbour Rd
Anns Crk @ ACC Abattoir
GWL (datalogger)
Manual GWL measurement

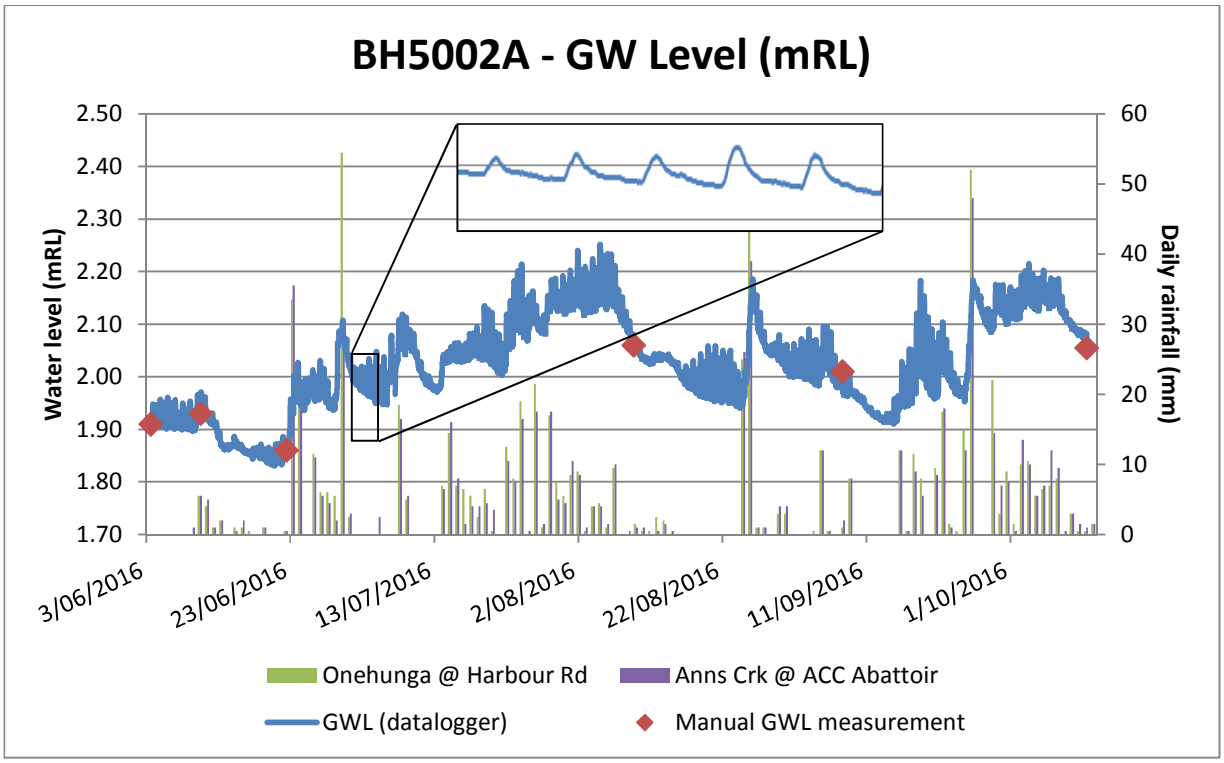

BH4011 - GW Level (mRL)
Water level (mRL)
Daily rainfall (mm)
3.60
3.50
3.40
3.30
3.20
3.10
3.00
2.90
2.80
60
50
40
30
20
10
0
3/06/2016
23/06/2016
13/07/2016
2/08/2016
22/08/2016
11/09/2016
1/10/2016
Onehunga @ Harbour Rd
Anns Crk @ ACC Abattoir
GWL (datalogger)
Manual GWL measurement

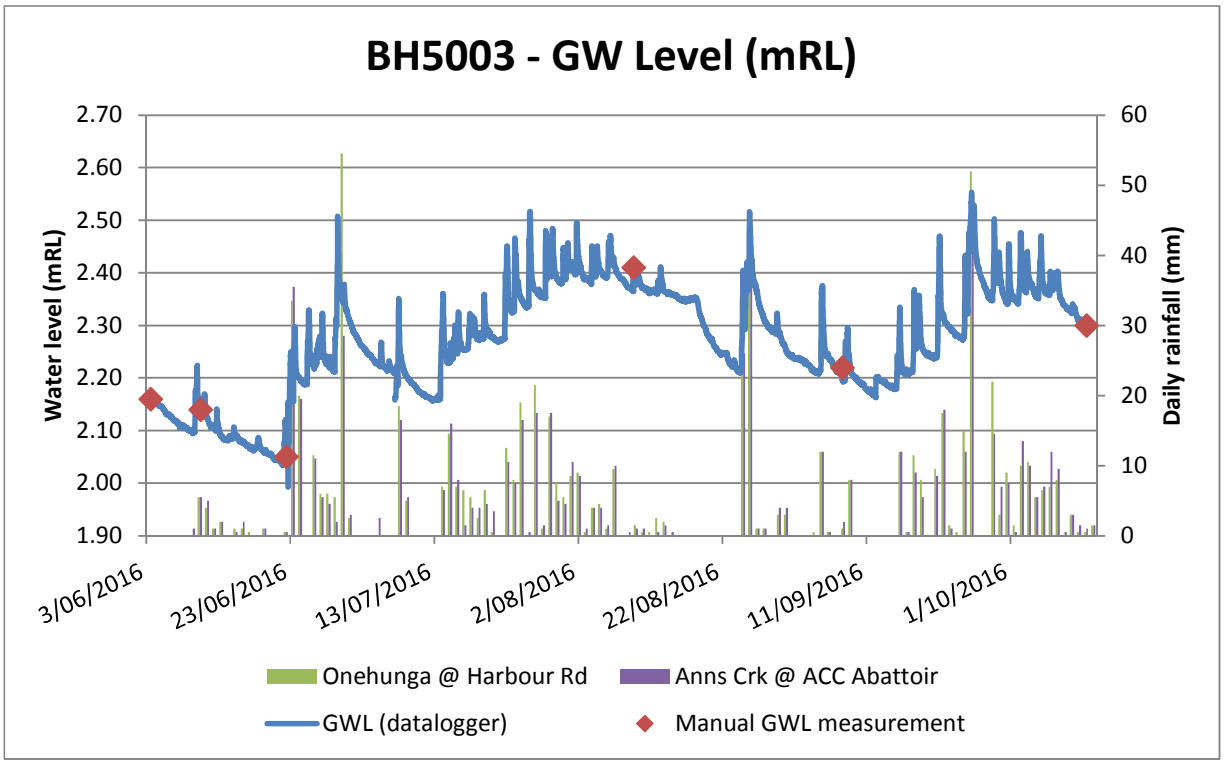

BH4011A - GW Level (mRL)
Water level (mRL)
Daily rainfall (mm)
3.50
3.40
3.30
3.20
3.10
3.00
2.90
2.80
2.70
60
50
40
30
20
10
0
3/06/2016
23/06/2016
13/07/2016
2/08/2016
22/08/2016
11/09/2016
1/10/2016
Onehunga @ Harbour Rd
Anns Crk @ ACC Abattoir
GWL (datalogger)
Manual GWL measurement

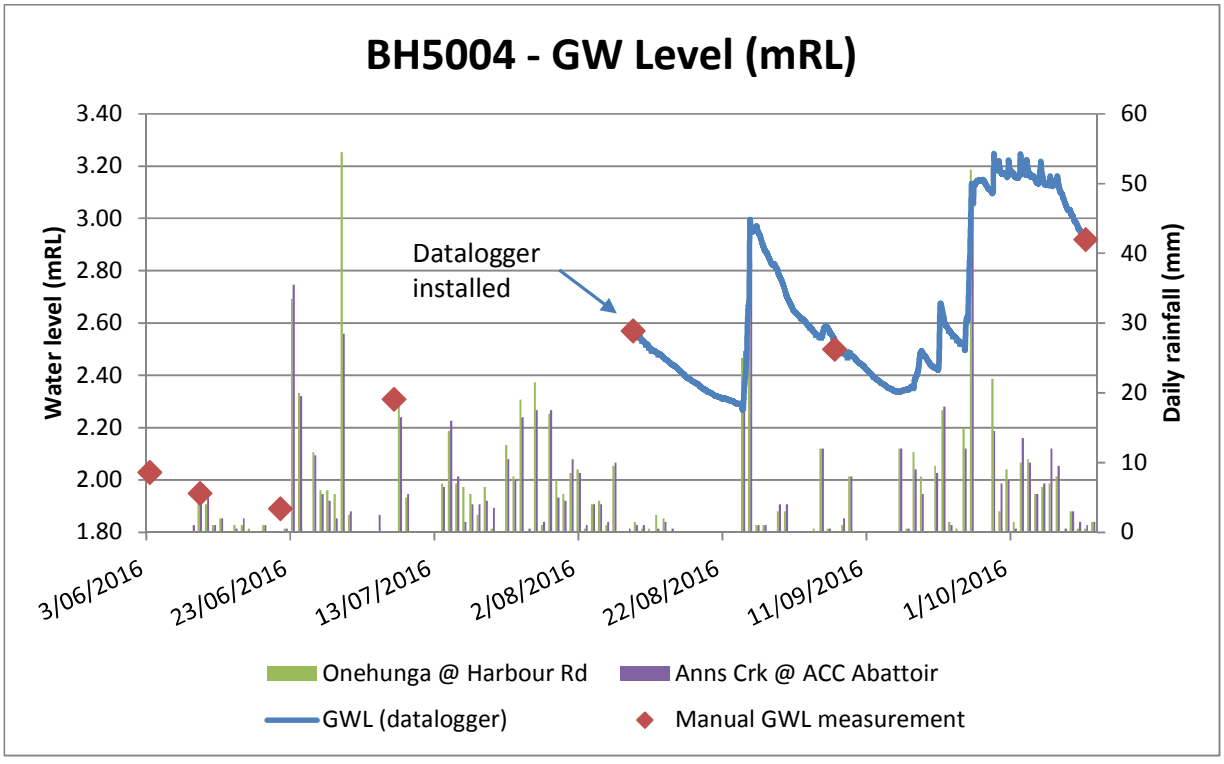

BH4012 - GW Level (mRL)
Datalogger reprioritised
(shifted) to BH5009
Water level (mRL)
Daily rainfall (mm)
3.30
3.20
3.10
3.00
2.90
2.80
2.70
2.60
2.50
60
50
40
30
20
10
0
3/06/2016
23/06/2016
13/07/2016
2/08/2016
22/08/2016
11/09/2016
1/10/2016
Onehunga @ Harbour Rd
Anns Crk @ ACC Abattoir
GWL (datalogger)
Manual GWL measurement

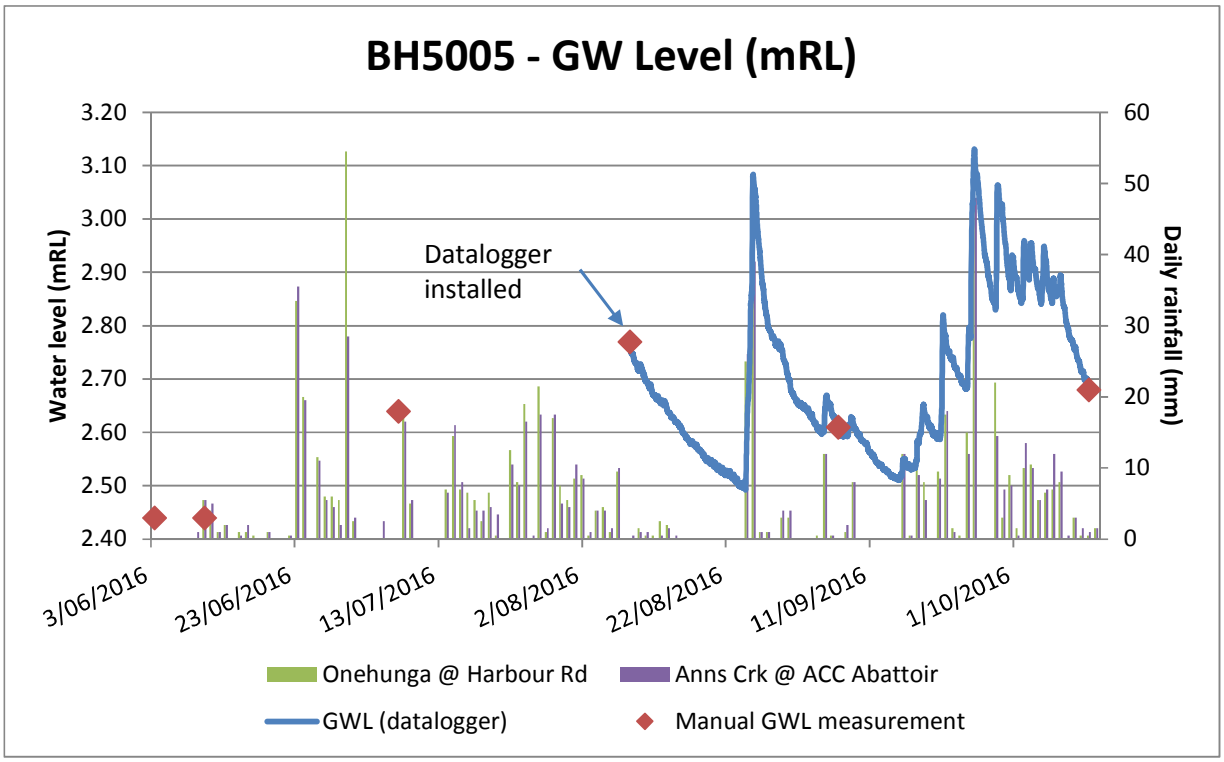

BH5001 - GW Level (mRL)
Water level (mRL)
Daily rainfall (mm)
2.40
2.30
2.20
2.10
2.00
1.90
1.80
60
50
40
30
20
10
0
3/06/2016
23/06/2016
13/07/2016
2/08/2016
22/08/2016
11/09/2016
1/10/2016
Onehunga @ Harbour Rd
Anns Crk @ ACC Abattoir
GWL (datalogger)
Manual GWL measurement

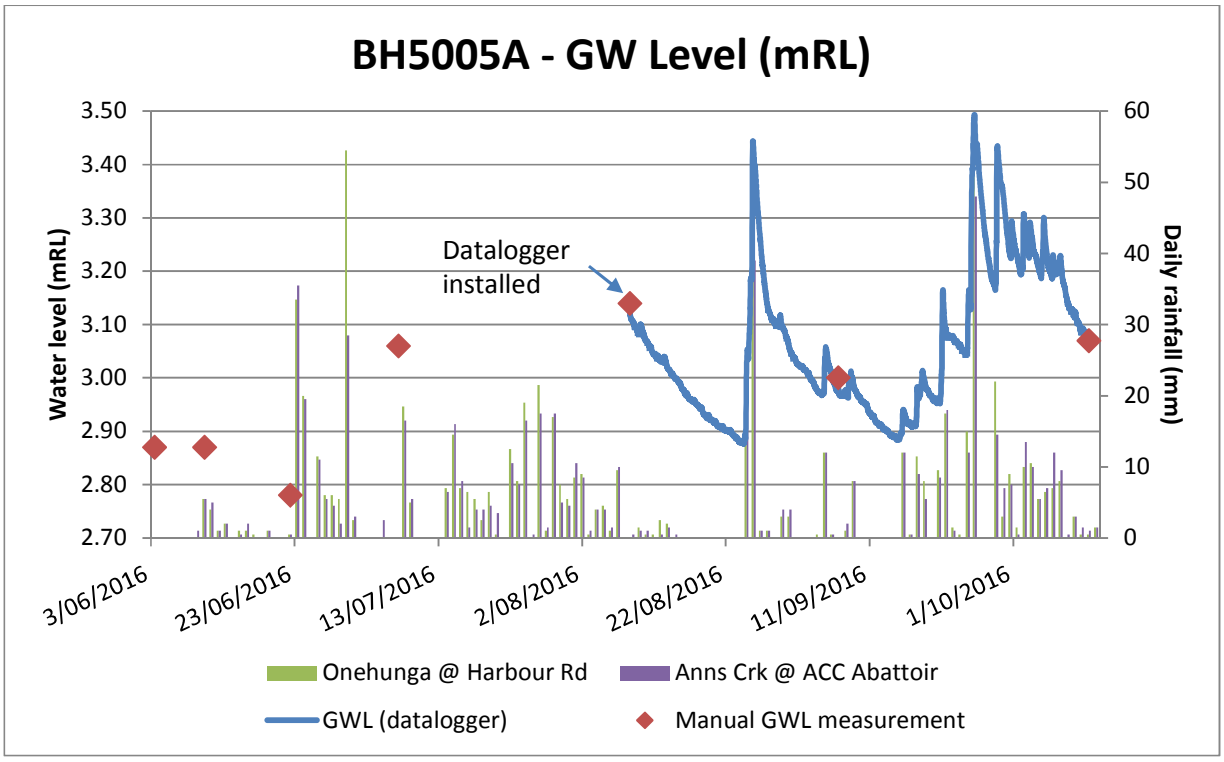

BH5002 - GW Level (mRL)
Water level (mRL)
Daily rainfall (mm)
2.50
2.40
2.30
2.20
2.10
2.00
1.90
60
50
40
30
20
10
0
3/06/2016
23/06/2016
13/07/2016
2/08/2016
22/08/2016
11/09/2016
1/10/2016
Onehunga @ Harbour Rd
Anns Crk @ ACC Abattoir
GWL (datalogger)
Manual GWL measurement

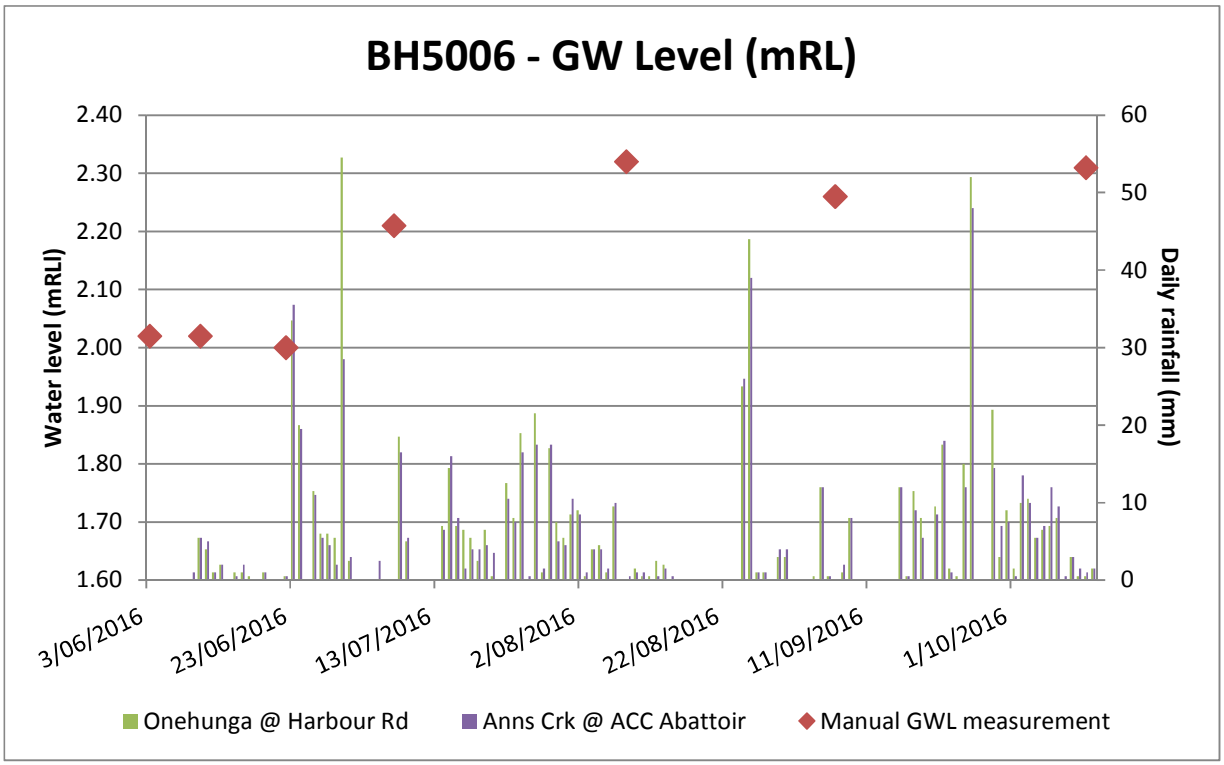

BH5002A - GW Level (mRL)
Water level (mRL)
Daily rainfall (mm)
2.50
2.40
2.30
2.20
2.10
2.00
1.90
1.80
1.70
60
50
40
30
20
10
0
3/06/2016
23/06/2016
13/07/2016
2/08/2016
22/08/2016
11/09/2016
1/10/2016
Onehunga @ Harbour Rd
Anns Crk @ ACC Abattoir
GWL (datalogger)
Manual GWL measurement

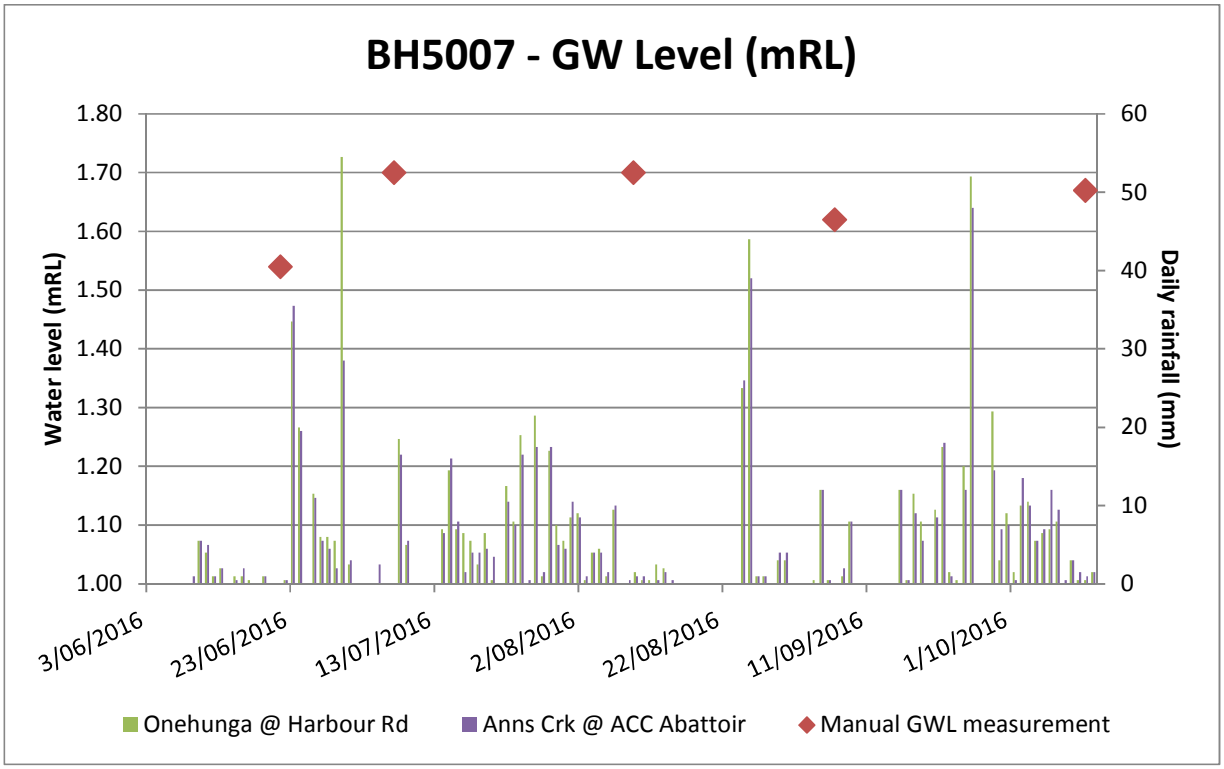

BH5003 - GW Level (mRL)
Water level (mRL)
Daily rainfall (mm)
2.70
2.60
2.50
2.40
2.30
2.20
2.10
2.00
1.90
60
50
40
30
20
10
0
3/06/2016
23/06/2016
13/07/2016
2/08/2016
22/08/2016
11/09/2016
1/10/2016
Onehunga @ Harbour Rd
Anns Crk @ ACC Abattoir
GWL (datalogger)
Manual GWL measurement

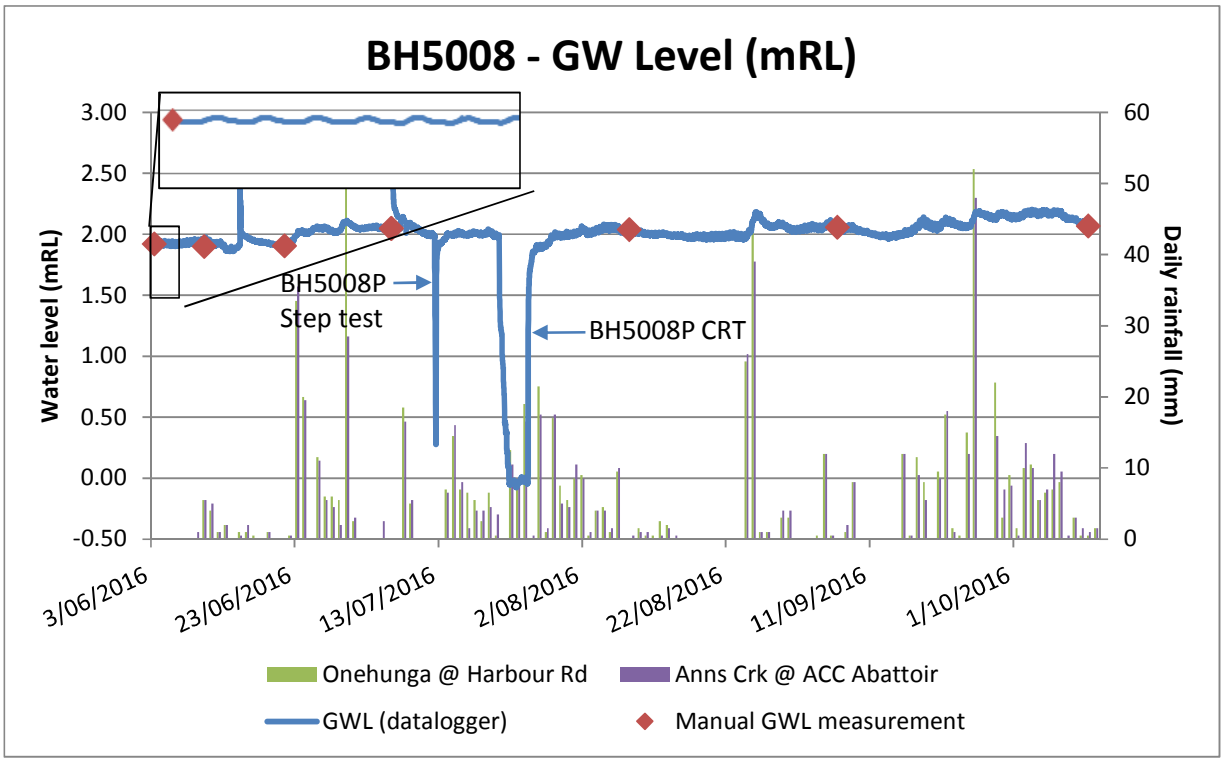

BH5004 - GW Level (mRL)
Water level (mRL)
Daily rainfall (mm)
3.40
3.20
3.00
2.80
2.60
2.40
2.20
2.00
1.80
60
50
40
30
20
10
0
Datalogger
installed
3/06/2016
23/06/2016
13/07/2016
2/08/2016
22/08/2016
11/09/2016
1/10/2016
Onehunga @ Harbour Rd
Anns Crk @ ACC Abattoir
GWL (datalogger)
Manual GWL measurement

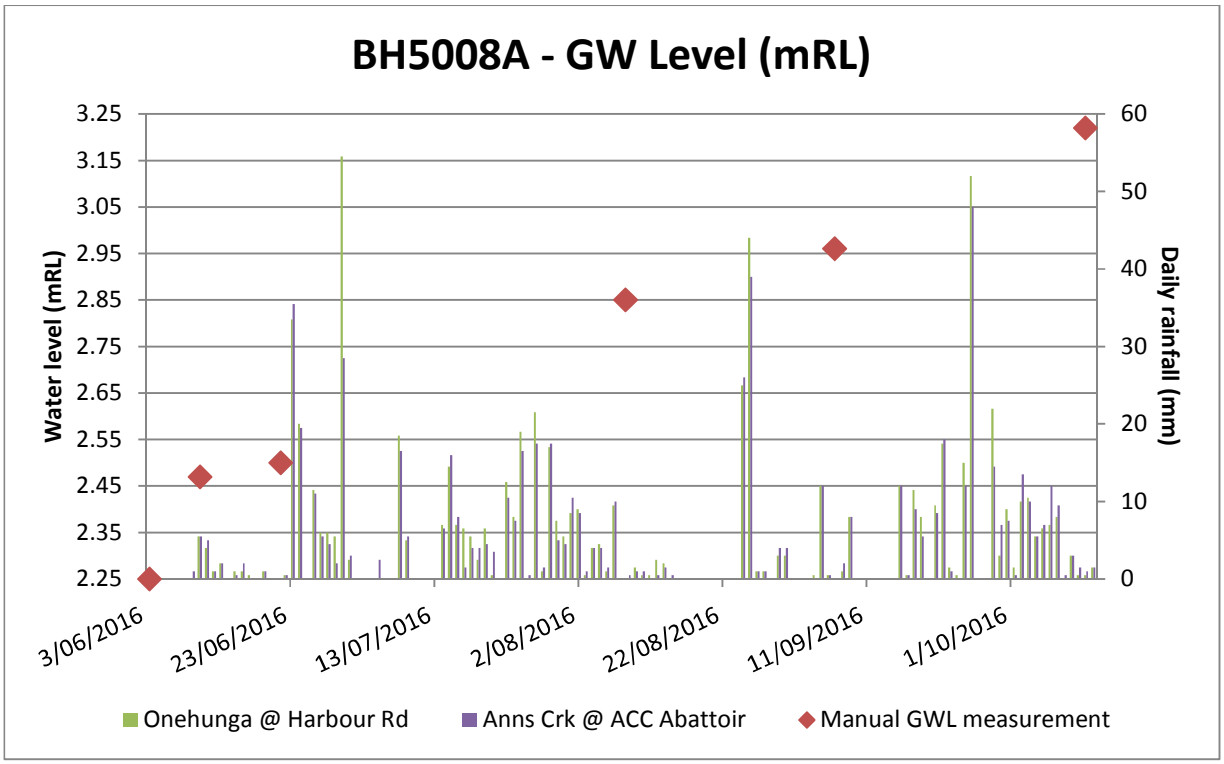

BH5005 - GW Level (mRL)
Water level (mRL)
Daily rainfall (mm)
3.20
3.10
3.00
2.90
2.80
2.70
2.60
2.50
2.40
60
50
40
30
20
10
0
Datalogger installed
3/06/2016
23/06/2016
13/07/2016
2/08/2016
22/08/2016
11/09/2016
1/10/2016
Onehunga @ Harbour Rd
Anns Crk @ ACC Abattoir
GWL (datalogger)
Manual GWL measurement

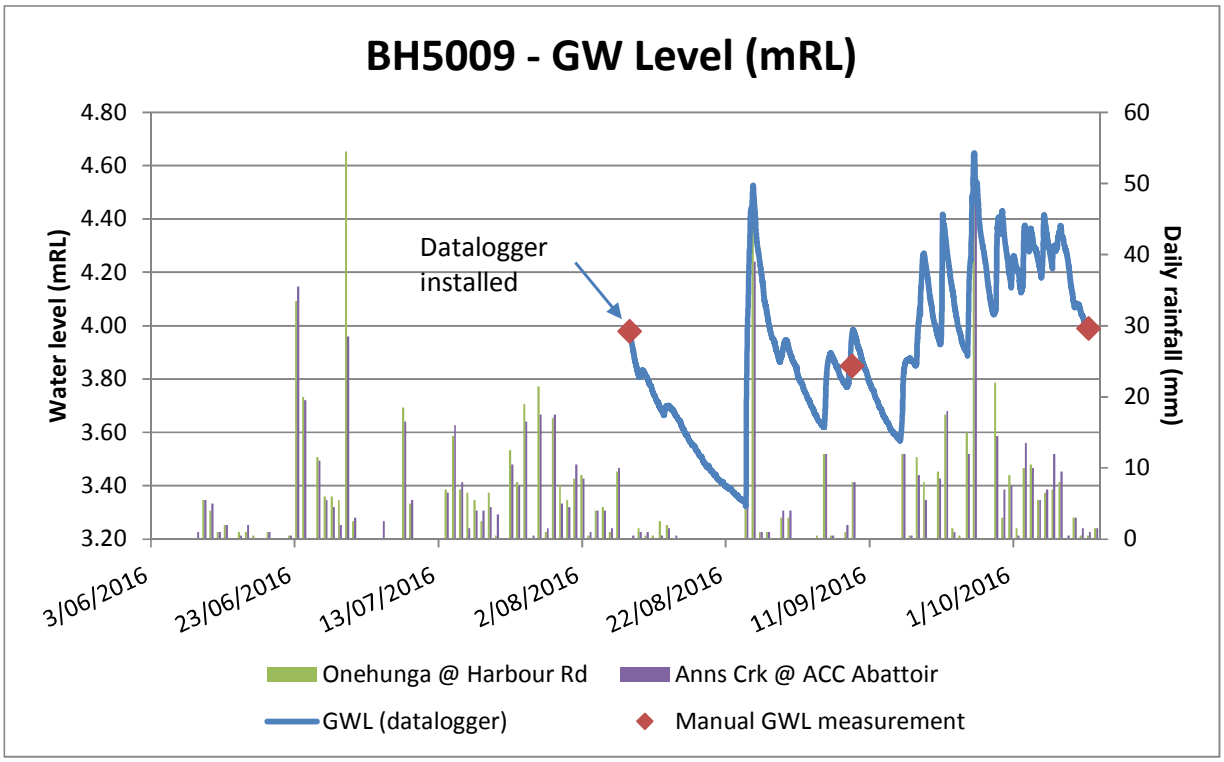

BH5005A - GW Level (mRL)
Water level (mRL)
Daily rainfall (mm)
3.50
3.40
3.30
3.20
3.10
3.00
2.90
2.80
2.70
60
50
40
30
20
10
0
Datalogger installed
3/06/2016
23/06/2016
13/07/2016
2/08/2016
22/08/2016
11/09/2016
1/10/2016
Onehunga @ Harbour Rd
Anns Crk @ ACC Abattoir
GWL (datalogger)
Manual GWL measurement


BH5006 - GW Level (mRL)
Water level (mRLl)
Daily rainfall (mm)
2.40
2.30
2.20
2.10
2.00
1.90
1.80
1.70
1.60
60
50
40
30
20
10
0
3/06/2016
23/06/2016
13/07/2016
2/08/2016
22/08/2016
11/09/2016
1/10/2016
Onehunga @ Harbour Rd
Anns Crk @ ACC Abattoir
Manual GWL measurement


BH5007 - GW Level (mRL)
Water level (mRL)
Daily rainfall (mm)
1.80
1.70
1.60
1.50
1.40
1.30
1.20
1.10
1.00
60
50
40
30
20
10
0
3/06/2016
23/06/2016
13/07/2016
2/08/2016
22/08/2016
11/09/2016
1/10/2016
Onehunga @ Harbour Rd
Anns Crk @ ACC Abattoir
Manual GWL measurement


BH5008 - GW Level (mRL)
Water level (mRL)
Daily rainfall (mm)
3.00
2.50
2.00
1.50
1.00
0.50
0.00
-0.50
60
50
40
30
20
10
0
BH5008P
Step test
BH5008P CRT
3/06/2016
23/06/2016
13/07/2016
2/08/2016
22/08/2016
11/09/2016
1/10/2016
Onehunga @ Harbour Rd
Anns Crk @ ACC Abattoir
GWL (datalogger)
Manual GWL measurement


BH5008A - GW Level (mRL)
Water level (mRL)
Daily rainfall (mm)
3.25
3.15
3.05
2.95
2.85
2.75
2.65
2.55
2.45
2.35
2.25
60
50
40
30
20
10
0
3/06/2016
23/06/2016
13/07/2016
2/08/2016
22/08/2016
11/09/2016
1/10/2016
Onehunga @ Harbour Rd
Anns Crk @ ACC Abattoir
Manual GWL measurement


BH5009 - GW Level (mRL)
Water level (mRL)
Daily rainfall (mm)
4.80
4.60
4.40
4.20
4.00
3.80
3.60
3.40
3.20
60
50
40
30
20
10
0
Datalogger installed
3/06/2016
23/06/2016
13/07/2016
2/08/2016
22/08/2016
11/09/2016
1/10/2016
Onehunga @ Harbour Rd
Anns Crk @ ACC Abattoir
GWL (datalogger)
Manual GWL measurement

Piezo ID	Easting(m) NZTM	Northing(m) NZTM	Surface Elevation (mRL)	Screen Depth (mBGL)		Response zone (mBGL)		Screened Material
				Top	Bottom	Top	Bottom	
BH2001	1762442.763	5911681.493	3.16	4.00	5.00	3.80	5.00	AVF - Basalt
BH2002	1762517.255	5911623.348	9.85	7.50	10.50	7.30	11.00	AVF - Basalt
BH2003	1762871.43	5911741.393	7.63	5.00	8.00	4.50	8.50	AVF - Basalt
BH2004	1763156.085	5911833.916	7.02	8.50	10.50	7.40	11.00	AVF - Basalt
BH2005	1763598.221	5912012.264	8.66	3.80	6.80	3.10	7.00	AVF - Basalt
BH2006	1763719.26	5912065.661	7.99	6.50	9.50	5.50	10.00	AVF - Basalt
BH2007	1763779.544	5912206.029	12.25	6.00	9.00	6.40	9.50	TGA Silt/Sand/ECBF
BH2008	1763911.521	5912155.729	11.31	9.00	12.00	8.50	12.50	AVF - Basalt
BH2009	1764002.293	5912283.917	9.25	6.00	9.00	5.00	11.00	AVF - Basalt
BH2010	1764043.844	5912359.336	9.94	3.50	6.50	3.40	6.90	AVF - Basalt
BH2011	1764137.285	5912354.406	9.26	10.00	13.00	9.50	13.50	AVF - Basalt
BH2012	1764169.759	5912406.159	14.74	14.20	17.20	13.60	17.40	AVF - Basalt
BH2013	1764302.632	5912357.222	8.32	9.50	12.50	9.00	13.00	AVF - Basalt
BH2014	1764406.034	5912290.022	8.98	8.00	11.00	7.50	11.50	AVF - Basalt
BH2015	1764275.88	5912283.242	9.47	11.00	14.00	10.50	14.50	AVF - Basalt
BH2016	1764479.764	5912199.584	11.19	11.50	14.50	11.00	15.00	AVF - Basalt
BH2017	1764687.233	5911718.599	19.33	13.00	16.00	12.50	16.50	AVF - Tuff
BH2018	1764645.41	5911643.222	16.09	7.00	9.00	6.50	9.50	AVF - Tuff
BH2019	1764909.164	5910917.100	6.40	7.00	10.00	6.50	10.50	TGA SAND/SILT
BH2020	1764881.955	5910846.475	4.48	14.00	16.00	14.00	16.00	TGA SAND/SILT
BH2021	1765023.753	5910351.428	8.12	22.50	25.50	21.90	25.90	ECBF SAND/SILT
BH2022	1762416.92	5911539.344	6.38	5.50	8.50	5.00	9.00	AVF - Basalt
BH2023	1761207.023	5911587.085	5.26	7.50	10.50	4.50	10.50	AVF - Basalt
BH2027	1758803.997	5911236.361	3.85	2.00	7.90	1.90	8.00	AVF - Tuff
BH2028	1758753.454	5911338.591	2.06	9.00	12.00	8.50	12.00	AVF - Tuff
BH2029	1758689.425	5911609.926	3.00	3.50	6.50	3.30	6.70	AVF - Tuff
BH2030	1758746.129	5911751.196	4.32	9.00	12.00	8.50	12.50	AVF - Basalt
BH2031	1759262.822	5911507.473	7.13	9.00	12.00	8.80	12.50	AVF - Tuff
BH2032	1760461.26	5911291.299	6.66	3.50	6.50	3.00	6.80	FILL
BH2033	1764001.206	5912225.477	9.78	9.00	12.00	8.50	12.30	AVF - Basalt
BH2034	1763948.021	5912443.991	11.53	13.00	16.00	11.00	16.50	TGA SAND/SILT
BH2035	1758916.24	5911216.27	3.87	0.50	3.50	0.50	3.80	FILL
BH2036	1760615.03	5911341.71	7.16	3.45	6.45	3.45	7.25	FILL
BH2037	1760899.19	5911251.7	3.56	1.20	2.20	1.10	2.50	FILL
BH2038	1761717.65	5911299.26	4.15	1.00	4.00	1.00	4.30	FILL
BH2039	1762608.24	5911520.42	10.23	10.00	13.00	9.45	13.20	AVF - Basalt
BH2040	1763226.3	5911717.64	8.26	8.50	11.50	8.00	11.30	AVF - Basalt
BH4001	1758971.084	5911828.566	11.03	12.30	15.30	11.70	15.70	AVF - Basalt
BH4002	1759539.387	5911762.717	4.14	13.00	16.00	12.50	16.50	AVF - Basalt
BH4003	1759676.286	5912002.373	4.72	22.30	25.30	21.90	25.30	ECBF SAND/SILT
BH4003a	1759680.952	5912002.596	4.62	5.70	8.70	5.20	8.70	AVF - Basalt
BH4004	1759925.607	5911732.647	3.57	22.50	25.50	22.10	25.70	ECBF SAND/SILT
BH4004a	1759923.897	5911730.124	3.50	8.00	11.00	7.50	11.00	AVF - Basalt
BH4005	1760287.189	5912143.164	4.35	9.00	12.00	8.50	12.50	AVF - Basalt
BH4006	1760166.046	5911770.434	4.57	9.00	12.00	8.50	12.50	AVF - Basalt
BH4007	1760711.927	5912112.081	8.91	14.00	17.00	13.40	17.50	AVF - Basalt
BH4008	1760694.025	5911866.51	7.79	6.00	9.00	5.50	9.50	AVF - Basalt
BH4009	1760934.813	5911419.603	3.35	6.00	9.00	5.70	9.50	AVF - Basalt
BH4010	1761124.341	5911891.485	5.71	16.40	18.40	15.00	18.40	TGA SAND/SILT
BH4010a	1761126.963	5911892.721	5.71	10.00	13.00	9.40	13.55	AVF - Basalt
BH4011	1761603.746	5911808.36	4.79	6.50	9.50	6.00	10.00	AVF - Tuff
BH4011a	1761605.205	5911810.909	4.76	1.75	4.75	1.25	5.25	AVF - Basalt
BH4012	1762095.192	5911877.49	5.32	15.50	18.50	15.00	18.90	TGA Sandy SILT
BH5001	1759619.956	5911275.447	6.52	1.00	5.40	0.80	5.50	FILL
BH5002	1759611.787	5911507.059	5.17	9.50	12.50	9.10	13.00	AVF - Basalt
BH5002a	1759610.691	5911507.968	5.16	2.50	5.50	1.75	5.50	FILL
BH5003	1759657.62	5911662.118	4.59	0.80	3.80	0.60	4.30	FILL
BH5004	1760799.646	5911265.939	3.61	1.00	3.60	0.50	3.80	FILL
BH5005 Pump	1760431.458	5911524.941	3.75	7.00	10.00	6.50	10.00	AVF - Basalt
BH5005	1760431.367	5911524.972	3.82	6.50	9.50	6.00	9.90	AVF - Basalt
BH5005a	1760434.761	5911524.81	4.00	1.75	3.20	1.60	3.25	FILL
BH5006	1760427.256	5911609.104	3.74	2.50	5.50	1.60	5.80	AVF - Basalt
BH5007	1761267.102	5911286.725	3.56	1.00	3.20	0.70	3.30	FILL
BH5008 Pump	1761217.508	5911415.881	5.11	8.50	11.50	8.00	11.50	AVF - Basalt
BH5008	1761212.374	5911418.599	4.93	7.00	10.00	6.50	10.50	AVF - Basalt
BH5008A	1761214.975	5911417.217	5.08	0.60	3.10	0.50	3.20	FILL
BH5009	1761194.183	5911529.418	4.69	1.00	2.50	0.80	2.60	FILL

Appendix A3

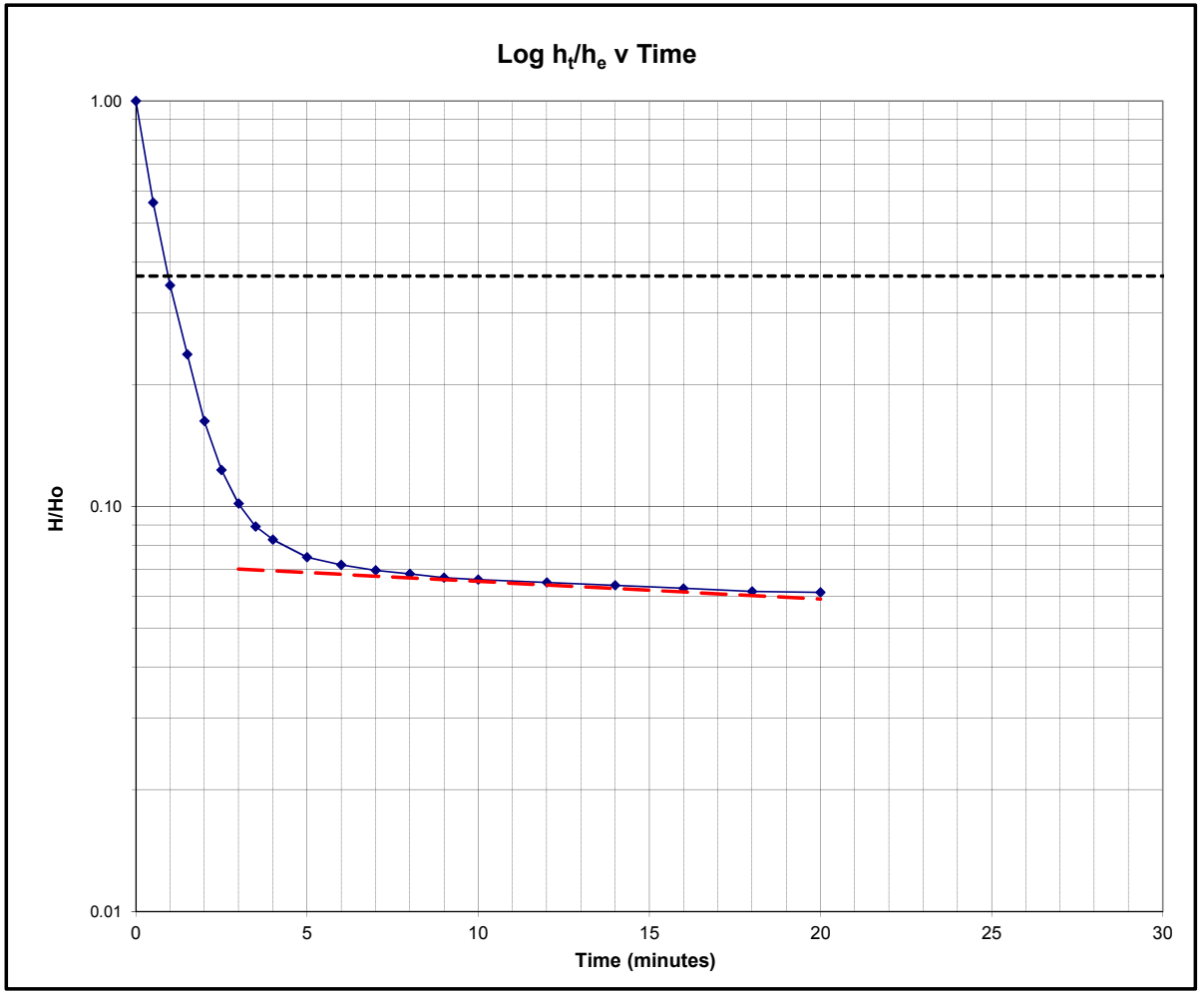
Falling Head Test Analysis and Results

In-Situ Hydraulic Conductivity Test in Piezometer - Hvorslev Method

Project Name:	*East West Link*		
Project No:	*4216210*		
Type of Test:	*Falling Head Test*		
Geologic Unit Tested:	*East Coast Bays Formation*		
Borehole ID:	*BH4003*	Date Tested:	*22/04/2016*
Analysed by:	*JWB*	Reviewed by:	

Base of Screen (m):	*25.300*	Top of Screen (m):	*22.300*
Diameter of Hole (m):	*0.101*	Diameter of Screen (m):	*0.050*
Height of Casing (m):	*0.000*	Test Length (m):	*3.00*
SWL (m bgl):	*2.805*		

Time	SWL	Water Depth	Head - Time Calculations		
	H_w	h_w	h_t	h_e	h_t/h_e
(minutes)	(m)	(m)	(m)	(m)	
0	2.805	0.000	2.805	2.805	1.000
0.5		1.230	1.575		0.561
1		1.820	0.985		0.351
1.5		2.140	0.665		0.237
2		2.350	0.455		0.162
2.5		2.460	0.345		0.123
3		2.520	0.285		0.102
3.5		2.555	0.250		0.089
4		2.573	0.232		0.083
4.5					
5		2.595	0.210		0.075
6		2.604	0.201		0.072
7		2.610	0.195		0.070
8		2.614	0.191		0.068
9		2.618	0.187		0.067
10		2.620	0.185		0.066
12		2.623	0.182		0.065
14		2.626	0.179		0.064
16		2.629	0.176		0.063
18		2.632	0.173		0.062
20		2.633	0.172		0.061



Notes: Test performed following development by airlifting

Time Lag T_L Factor (min)

Alternative calculation (use if intercept cannot be estimated)

	t (min)	H (m)		
1	3	0.070		
2	20	0.059	**permeability k (m/sec)**	**7.13E-08**

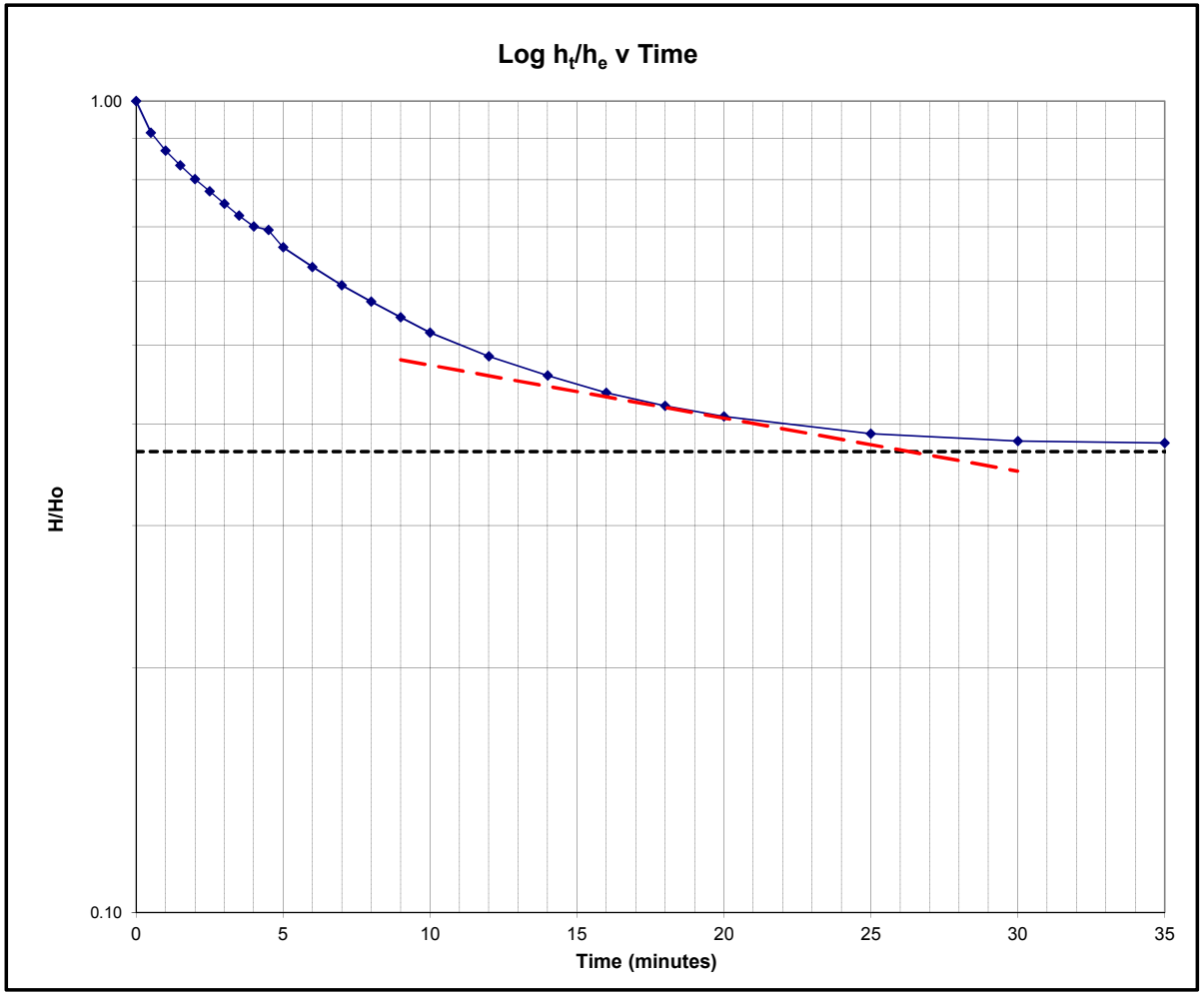
NZ TRANSPORT AGENCY | East West Link

In-Situ Hydraulic Conductivity Test in Piezometer - Hvorslev Method

Project Name:	*East West Link*		
Project No:	*4216210*		
Type of Test:	*Falling Head Test*		
Geologic Unit Tested:	*East Coast Bays Formation*		
Borehole ID:	*BH4004*	Date Tested:	*4/05/2016*
Analysed by:	*JWB*	Reviewed by:	

Base of Screen (m):	*25.500*	Top of Screen (m):	*22.500*
Diameter of Hole (m):	*0.101*	Diameter of Screen (m):	*0.050*
Height of Casing (m):	*0.000*	Test Length (m):	*3.00*
SWL (m bgl):	*4.570*		

Time	SWL	Water Depth	Head - Time Calculations		
	H_w	h_w	h_t	h_e	h_t/h_e
(minutes)	(m)	(m)	(m)	(m)	
0	4.570	0.000	4.570	4.570	1.000
0.5		0.390	4.180		0.915
1		0.599	3.971		0.869
1.5		0.760	3.810		0.834
2		0.906	3.664		0.802
2.5		1.030	3.540		0.775
3		1.155	3.415		0.747
3.5		1.268	3.302		0.723
4		1.367	3.203		0.701
4.5		1.400	3.170		0.694
5		1.552	3.018		0.660
6		1.715	2.855		0.625
7		1.860	2.710		0.593
8		1.982	2.588		0.566
9		2.095	2.475		0.542
10		2.200	2.370		0.519
12		2.355	2.215		0.485
14		2.472	2.098		0.459
16		2.573	1.997		0.437
18		2.645	1.925		0.421
20		2.702	1.868		0.409
25		2.792	1.778		0.389
30		2.828	1.742		0.381
35		2.838	1.732		0.379



Notes: Test performed following development by airlifting
Piezo allowed to recover for 55 mins

Time Lag T_L Factor (min)

Alternative calculation (use if intercept cannot be estimated)

	t (min)	H (m)
1	9	0.480
2	30	0.350

permeability k (m/sec) **1.07E-07**

NZ TRANSPORT AGENCY WAKA KOTAHI

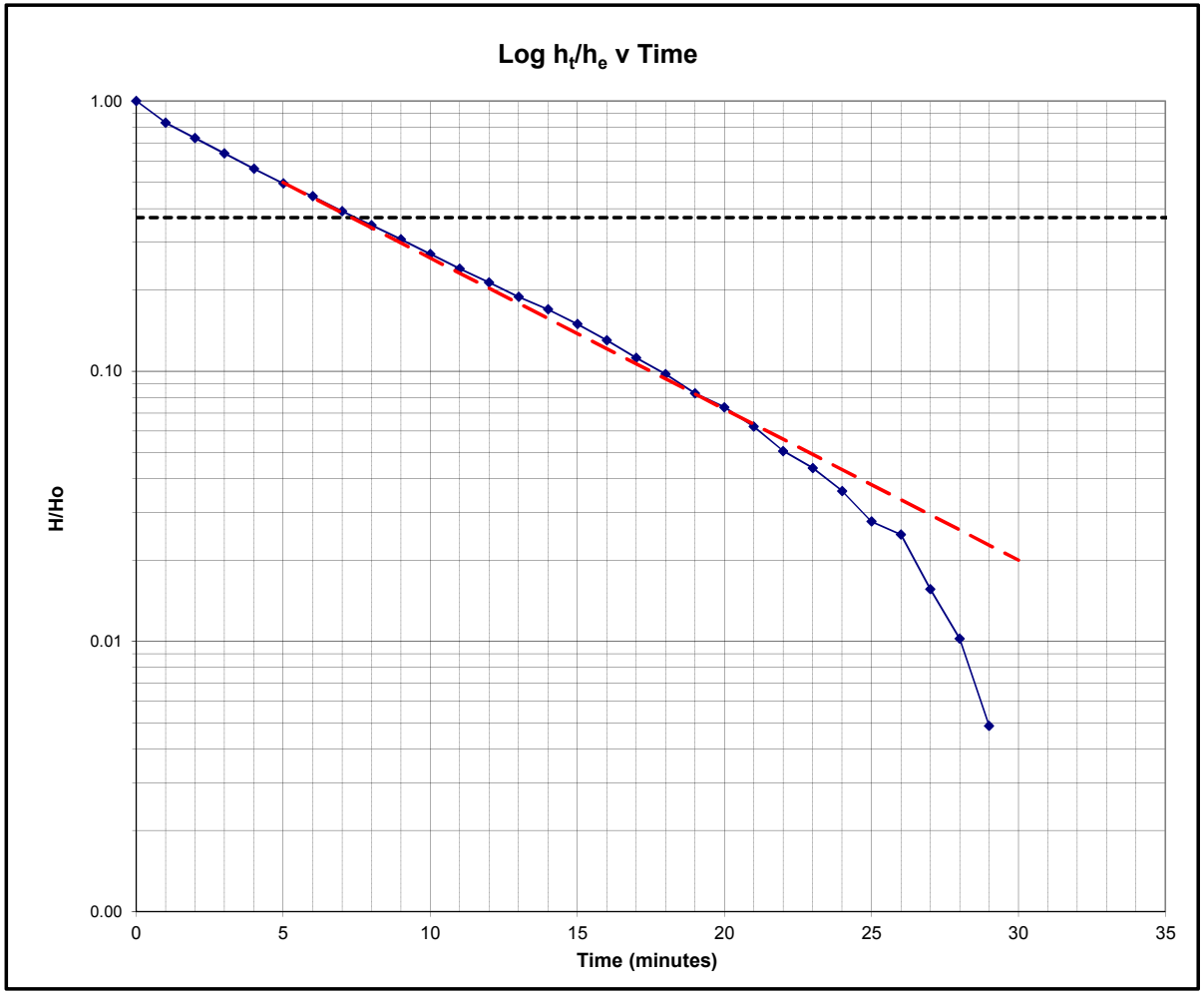
East West Link

In-Situ Hydraulic Conductivity Test in Piezometer - Hvorslev Method

Project Name:	*East West Link*		
Project No:	*4216210*		
Type of Test:	*Falling Head Test*		
Geologic Unit Tested:	*East Coast Bays Formation*		
Borehole ID:	*BH4012*	Date Tested:	*12/04/2016*
Analysed by:	*JWB*	Reviewed by:	

Base of Screen (m):	*18.500*	Top of Screen (m):	*15.500*
Diameter of Hole (m):	*0.101*	Diameter of Screen (m):	*0.050*
Height of Casing (m):	*-0.100*	Test Length (m):	*3.00*
SWL (m bgl):	*2.152*		

Time	SWL	Water Depth	Head - Time Calculations		
	H_w	h_w	h_t	h_e	h_t/h_e
(minutes)	(m)	(m)	(m)	(m)	
0	2.152	0.100	2.052	2.052	1.000
1		0.445	1.707		0.832
2		0.655	1.497		0.730
3		0.840	1.312		0.639
4		1.000	1.152		0.561
5		1.135	1.017		0.496
6		1.240	0.912		0.444
7		1.350	0.802		0.391
8		1.440	0.712		0.347
9		1.520	0.632		0.308
10		1.595	0.557		0.271
11		1.660	0.492		0.240
12		1.715	0.437		0.213
13		1.765	0.387		0.189
14		1.804	0.348		0.170
15		1.845	0.307		0.150
16		1.885	0.267		0.130
17		1.922	0.230		0.112
18		1.952	0.200		0.097
19		1.982	0.170		0.083
20		2.001	0.151		0.074
21		2.024	0.128		0.062
22		2.048	0.104		0.051
23		2.062	0.090		0.044
24		2.078	0.074		0.036
25		2.095	0.057		0.028
26		2.101	0.051		0.025
27		2.120	0.032		0.016
28		2.131	0.021		0.010
29		2.142	0.010		0.005
30		2.152	0.000		0.000



Notes:

Time Lag T_L Factor (min) 8

Alternative calculation (use if intercept cannot be estimated)

	t (min)	H (m)
1	5	0.500
2	30	0.020

permeability k (m/sec) **8.86E-07**

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East West Link