ANNUAL SUMMARY OF GROUND WATER CONDITIONS IN THE SOUTHEAST BOISE GROUND WATER MANAGEMENT AREA CALENDAR YEAR 2018

Prepared by Will Parham 5/15/2019

This report describes the ground water conditions in and around the Southeast Boise Ground Water Management Area (GWMA) based on the ground water level observation network established in the spring of 2000 under the guidance of the Southeast Boise Ground Water Advisory Committee (Advisory Committee). The network is a cooperative effort among Micron Technology, Inc., Suez Water Idaho Inc., and the Idaho Department of Water Resources (IDWR). Each cooperator submits water level data to IDWR, which is maintained in the IDWR ground water database. The J.R. Simplot Co., City of Boise, Sunroc Corp., Idaho Transportation Department, Idaho Department of Lands, Boise Gun Club, and other land owners provide access to wells within the monitoring network.

Status of Monitoring Network

The network currently consists of 34 active monitoring sites, with one site (03N 02E 14ABC) containing a set of five nested wells for a total of 38 active wells (**Figure B1**). The core monitoring network has remained relatively stable over time. During calendar year 2018, IDWR added three wells to the monitoring network (01N 01E 34AAA1 - City of Boise Farm, 02N 02E 21CBB1 - SunRoc, and 02N 03E 28CAA1 - Blacks Creek Rest Area Westbound) and deployed pressure transducers in five wells (**Table A1**). Monitoring at the Micron Test #2 well was discontinued in 2016, but was re-activated in 2018. Wells that have been designated as inactive monitoring sites are listed at the bottom of **Table A1**.

IDWR worked with the Idaho Transportation Department to re-establish access to a well located at the Westbound Blacks Creek Rest Area, and IDWR installed a pressure transducer in May 2018. IDWR installed a monitoring port and a pressure transducer in the SunRoc well in April 2018. IDWR installed a monitoring port and a pressure transducer in the Hollilynn domestic well in May 2018. IDWR installed a pressure transducer in the unused Harris South Cole Well in May 2018.

IDWR replaced two existing absolute (non-vented) pressure transducers with gauged (vented) pressure transducers and direct read cables at the Prigge well and the Blacks Creek Exit ITD well in April 2019 to improve data quality.

IDWR, with support from the Idaho Water Resource Board, is working with the City of Boise and the Boise Airport to drill a new dedicated monitoring well in the area southeast of the airport. The well is anticipated to be completed by July 1, 2019.

The current monitoring frequency for active wells in **Table A1** ranges from hourly to semi-annually. Sixteen wells monitored by IDWR are equipped with In-Situ™ pressure transducers, and are programmed to collect water level and water temperature observations at a minimum of two times per day (**Figure B1**), with most transducers now storing hourly readings. Wells measured by IDWR that do not contain pressure transducers are manually measured on a quarterly schedule. Micron Technology

Inc. provides approximately monthly water level observations for their monitoring wells, and Suez Water Idaho Inc. provides approximately bi-monthly measurements.

Ground Water Level Trends

Ground water level hydrographs showing the complete period of record for active wells in the monitoring network are shown in **Appendix C**. Ground water level hydrographs displaying data only for the period from January 1, 1990 to December 31, 2018 for all active monitoring wells are shown in **Appendix D**. All available data has been included in this report. A number of wells are subject to significant seasonal trends and/or pumping effects, which can make it difficult to draw meaningful conclusions from the hydrographs. Similarly, nearby pumping and/or management changes may impact apparent water level trends. Periodic data collection in wells lacking continuous measurement devices can make it difficult to conclude trends due to the uncertainty regarding the seasonal peaks and troughs of the hydrographs relative to the instantaneous manual measurements. The magnitude of the observed water level changes can also be such that determining trends independent of factors such as systematic and random errors can be challenging. All qualitative and quantitative analyses should recognize the limitations of the data as well as the associated uncertainties. Statistical trend analysis has not been performed, however, qualitative trends have been summarized for the active wells.

Qualitative trends were determined by subtracting the minimum depth to water for a given calendar year from the minimum depth to water for calendar year 2018, and by subtracting the maximum depth to water for a given calendar year from the maximum depth to water for calendar year 2018 (**Table A2**). If the calculated difference for the minimum depth to water and the maximum depth to water values are both negative, the water level trend is said to be increasing (measured water levels are becoming shallower). If the calculated difference for the minimum depth to water and the maximum depth to water values are both positive, the water level trend is said to be decreasing (measured water levels are becoming deeper). If the calculated difference for the minimum depth to water and the maximum depth to water values have different arithmetic signs, the water level trend is said to be undetermined.

Qualitative trends for 5, 10, and 15 year intervals were developed for the active monitoring network (**Table A2**). In the last five years (2013 to 2018), there have been apparent decreasing trends in the water levels in 10 of the 38 active wells. In that same time period, there have been apparent increasing trends in water levels in 13 of the 38 active wells. Water level trends for the remaining 15 wells were said to be undetermined due to water level ambiguity, and/or insufficient data.

Recommendations

The Advisory Committee has previously recommended the expansion of the monitoring network to include additional wells west of the GWMA boundary. IDWR continues to look for opportunities and consider Advisory Committee recommendations for establishing new monitoring wells, installing pressure transducers, and incorporating data from other entities. In addition, IDWR, with support from the Idaho Water Resource Board, is working with the City of Boise and the Boise Airport to drill a new dedicated monitoring well in the area southeast of the airport. The well is anticipated to be completed by July 1, 2019.

Appendix A

Tables

Table A1. Summary of the ground water monitoring network for the Southeast Boise GWMA.

Map ID	Well Number	Well Name	Period of Water Level Record	Status of Well	Comments
1	01N 01E 34AAA1	City of Boise Farm	2018 - 2018	Active	Transducer installed January 2018
2	01N 03E 04BBD1	Prigge	1994 - 2019	Active	Transducer installed October 2014, vented transducer installed April 2019
3	01N 04E 28CAC1	Ken Agenbroad	1979 - 2019	Active	
4	02N 01E 36BBB1	Harris South Cole	1969 - 2019	Active	Transducer installed May 2018
5	02N 02E 02BBC2	JR Flat	1989 - 2018	Active	
6	02N 02E 04CBB1	IDL House	1973 - 2019	Active	Transducer installed March 2017
7	02N 02E 07CBC1	Hollilynn	1993 - 2019	Active	Transducer installed May 2018
8	02N 02E 17ABD1	Ten Mile	1996 - 2018	Active	
9	02N 02E 21CBB1	SunRoc	2018 - 2019	Active	Transducer installed April 2018
10	02N 02E 22BBB1	Pioneer	1998 - 2018	Active	
11	02N 02E 34CCD1	Boise Gun Club	1976 - 2019	Active	Transducer installed November 2016
12	02N 03E 06DCA1	Micron Test #1	1986 - 2019	Active	
13	02N 03E 07BAC1	Micron Test #2	1983 - 2019	Active	
14	02N 03E 07CDA1	Pettibone	1997 - 2019	Active	
15	02N 03E 07DBB1	Micron Shallow Obs	1998 - 2019	Active	
16	02N 03E 07DBB2	Micron Deep Obs	1998 - 2019	Active	
17	02N 03E 09BAA2	Christensen	1993 - 2019	Active	
18	02N 03E 19DBB1	Micron South	2017 - 2019	Active	

Map ID	Well Number	Well Name	Period of Water Level Record	Status of Well	Comments
19	02N 03E 28CAA1	Blacks Creek Rest Area Westbound	2007 - 2019	Active	Site re-established and transducer installed May 2018
20	02N 03E 34ACC1	Blacks Creek Exit ITD	2012 - 2019	Active	Transducer installed October 2014, vented transducer installed April 2019
21	03N 02E 11DDD1	TV Lenzi	1977 - 2019	Active	Transducer installed June 2016
22	03N 02E 14ABC	TVHP 4-1 through 4-5	2002 - 2019	Active	Transducers installed August 2016
23	03N 02E 25ACBC1	Helen Lowder Park	1992 - 2019	Active	
24	03N 02E 25CAA1	Centennial	1976 - 2018	Active	
25	03N 02E 26DBA1	Bergeson	1990 - 2018	Active	
26	03N 02E 35BAB1	Market	1991 - 2018	Active	
27	03N 02E 36ABC1	Terteling	1972 - 2018	Active	
28	03N 02E 36CDA1	Cromon	1991 - 2018	Active	
29	03N 03E 30BCBD1	Hurok	1969 - 2019	Active	
30	03N 03E 30DDAA1	E Boise Ave	1987 - 2019	Active	Transducer installed March 2017
31	03N 03E 31ADD1	Simplot Golden Development	1993 - 2019	Active	
32	03N 03E 32BBA1	Whitney Fire	1975 - 2019	Active	
33	03N 03E 32CDD1	Columbia	1990 - 2019	Active	
34	03N 03E 33DAA1	Hammer Flats	1969 - 2019	Active	
	02N 02E 04CAA1	SEB IDL Field	2000 - 2009	Inactive	Discontinued in 2010
	02N 03E 09BCA2	Vern Guyer	1993 - 2007	Inactive	Discontinued in 2007

Map ID	Well Number	Well Name	Period of Water Level Record	Status of Well	Comments
	03N 02E 25CBCA1	Motive Power 41A	1997 - 2015	Inactive	Discontinued in 2015
	03N 03E 31BDD1 - DESTROYED	Oregon Trail - Destroyed	1977 - 2012	Inactive	Discontinued in 2013

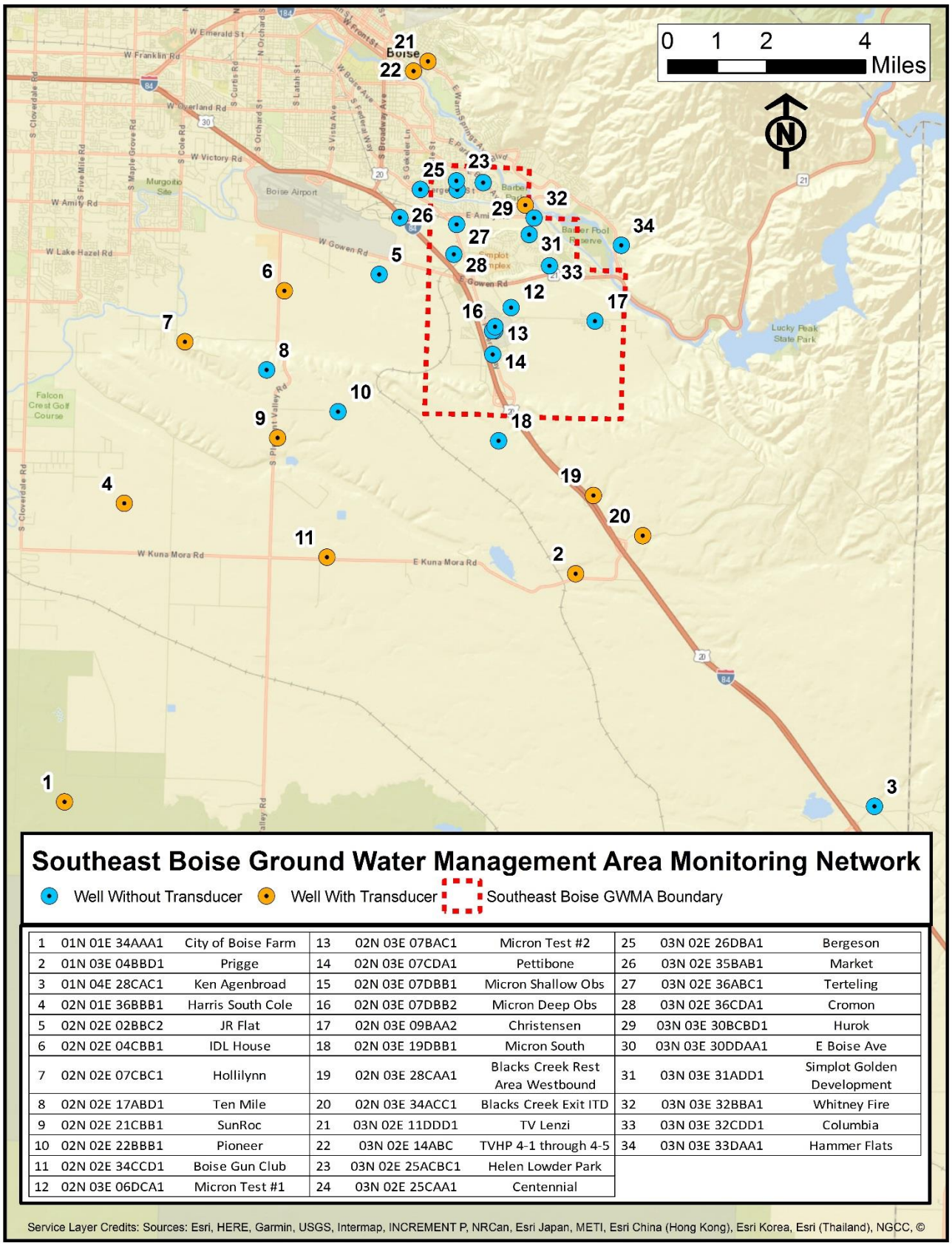
Table A2. Qualitative trend results for the 38 active monitoring wells.

Well Number	Well Name	5 Year Trend (2018-2013)	10 Year Trend (2018-2008)	15 Year Trend (2018-2003)
01N 01E 34AAA1	City of Boise Farm	N/A	N/A	N/A
01N 03E 04BBD1	Prigge	Increasing	N/A	N/A
01N 04E 28CAC1	Ken Agenbroad	Decreasing	Decreasing	N/A
02N 01E 36BBB1	Harris South Cole	Decreasing	Decreasing	Decreasing
02N 02E 02BBC2	JR Flat	Increasing	Increasing	Increasing
02N 02E 04CBB1	IDL House	Undetermined	N/A	N/A
02N 02E 07CBC1	Hollilynn	Decreasing	Decreasing	Decreasing
02N 02E 21CBB1	SunRoc	N/A	N/A	N/A
02N 02E 22BBB1	Pioneer	Undetermined	Decreasing	Undetermined
02N 02E 34CCD1	Boise Gun Club	Decreasing	Decreasing	Decreasing
02N 03E 06DCA1	Micron Test #1	Decreasing	Increasing	Increasing
02N 03E 07CDA1	Pettibone	Decreasing	Increasing	Increasing
02N 03E 07DBB1	Micron Shallow Obs	Decreasing	Increasing	Increasing
02N 03E 07DBB2	Micron Deep Obs	Decreasing	Undetermined	Increasing
02N 03E 09BAA2	Christensen	Increasing	Increasing	Increasing
02N 03E 28CAA1	Blacks Creek Rest Area Westbound	Increasing	Undetermined	N/A
02N 03E 34ACC1	Blacks Creek Exit ITD	Increasing	N/A	N/A
03N 02E 11DDD1	TV Lenzi	Undetermined	Increasing	Undetermined
03N 02E 14ABC1	TVHP 4-1	Undetermined	Undetermined	Undetermined
03N 02E 14ABC2	TVHP 4-2	Undetermined	Increasing	Increasing
03N 02E 14ABC3	TVHP 4-3	Undetermined	Increasing	Increasing
03N 02E 14ABC4	TVHP 4-4	Undetermined	Increasing	Increasing
03N 02E 14ABC5	TVHP 4-5	Undetermined	Increasing	Increasing
03N 02E 25CAA1	Centennial	Increasing	Increasing	Increasing
03N 02E 26DBA1	Bergeson	Increasing	Increasing	Increasing
03N 02E 35BAB1	Market	Increasing	Increasing	Increasing
03N 02E 36ABC1	Terteling	Increasing	Increasing	Increasing
03N 03E 30BCBD1	Hurok	Undetermined	Undetermined	Undetermined
03N 03E 30DDAA1	E Boise Ave	Undetermined	Increasing	Increasing
03N 03E 32BBA1	Whitney Fire	Increasing	Increasing	Increasing
03N 03E 31ADD1	Simplot Golden Development	Undetermined	Increasing	Increasing
03N 03E 32CDD1	Columbia	Decreasing	Increasing	Increasing
03N 03E 33DAA1	Hammer Flats	Decreasing	Decreasing	Decreasing
02N 03E 07BAC1	Micron Test #2	Increasing	Increasing	Increasing

Well Number	Well Name	5 Year Trend (2018-2013)	10 Year Trend (2018-2008)	15 Year Trend (2018-2003)
02N 02E 17ABD1	Ten Mile	Increasing	N/A	Decreasing
02N 03E 19DBB1	Micron South	N/A	N/A	N/A
03N 02E 25ACBC1	Helen Lowder Park	Undetermined	Undetermined	Undetermined
03N 02E 36CDA1	Cromon	Increasing	Increasing	N/A

Appendix B

Figures

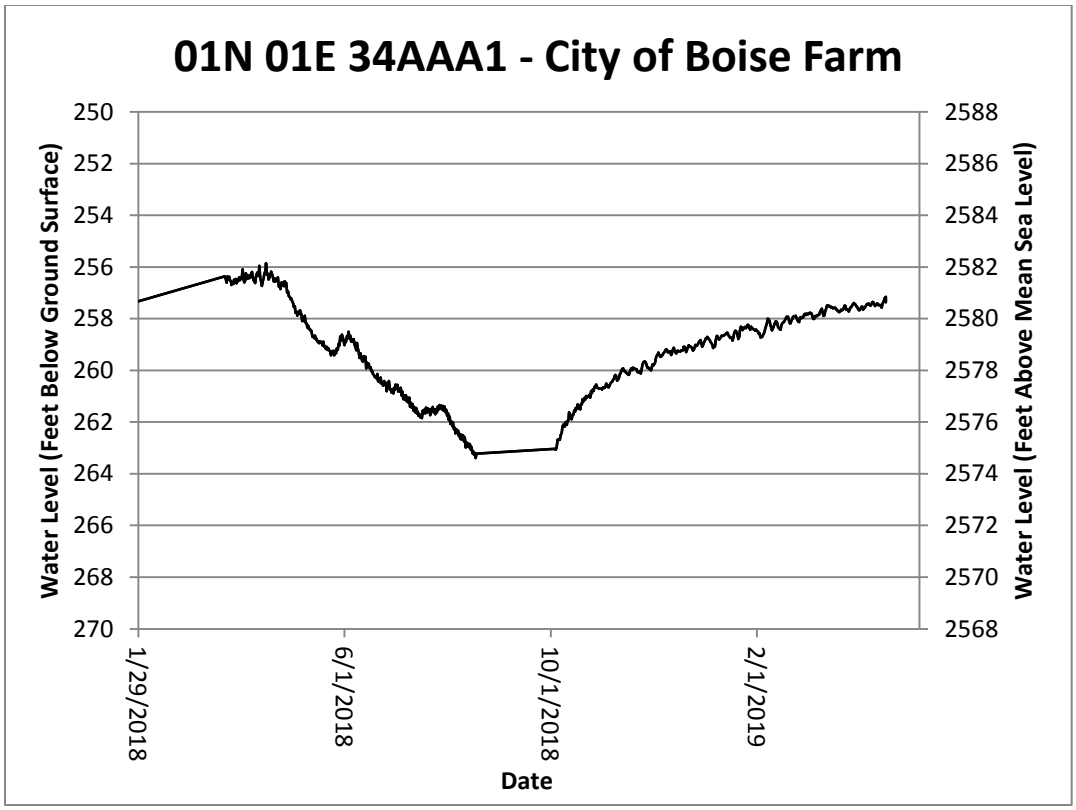


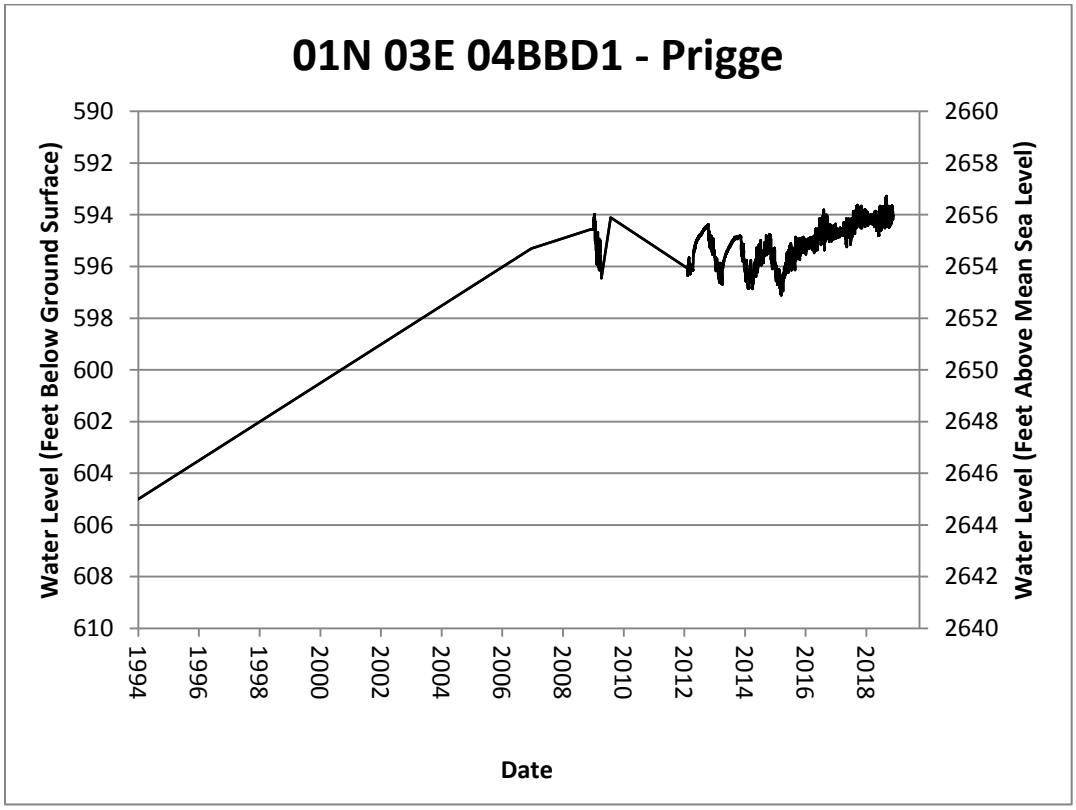
1	01N 01E 34AAA1	City of Boise Farm	13	02N 03E 07BAC1	Micron Test #2	25	03N 02E 26DBA1	Bergeson
2	01N 03E 04BBD1	Prigge	14	02N 03E 07CDA1	Pettibone	26	03N 02E 35BAB1	Market
3	01N 04E 28CAC1	Ken Agenbroad	15	02N 03E 07DBB1	Micron Shallow Obs	27	03N 02E 36ABC1	Terteling
4	02N 01E 36BBB1	Harris South Cole	16	02N 03E 07DBB2	Micron Deep Obs	28	03N 02E 36CDA1	Cromon
5	02N 02E 02BBC2	JR Flat	17	02N 03E 09BAA2	Christensen	29	03N 03E 30BCBD1	Hurok
6	02N 02E 04CBB1	IDL House	18	02N 03E 19DBB1	Micron South	30	03N 03E 30DDAA1	E Boise Ave
7	02N 02E 07CBC1	Hollilynn	19	02N 03E 28CAA1	Blacks Creek Rest Area Westbound	31	03N 03E 31ADD1	Simplot Golden Development
8	02N 02E 17ABD1	Ten Mile	20	02N 03E 34ACC1	Blacks Creek Exit ITD	32	03N 03E 32BBA1	Whitney Fire
9	02N 02E 21CBB1	SunRoc	21	03N 02E 11DDD1	TV Lenzi	33	03N 03E 32CDD1	Columbia
10	02N 02E 22BBB1	Pioneer	22	03N 02E 14ABC	TVHP 4-1 through 4-5	34	03N 03E 33DAA1	Hammer Flats
11	02N 02E 34CCD1	Boise Gun Club	23	03N 02E 25ACBC1	Helen Lowder Park			
12	02N 03E 06DCA1	Micron Test #1	24	03N 02E 25CAA1	Centennial			

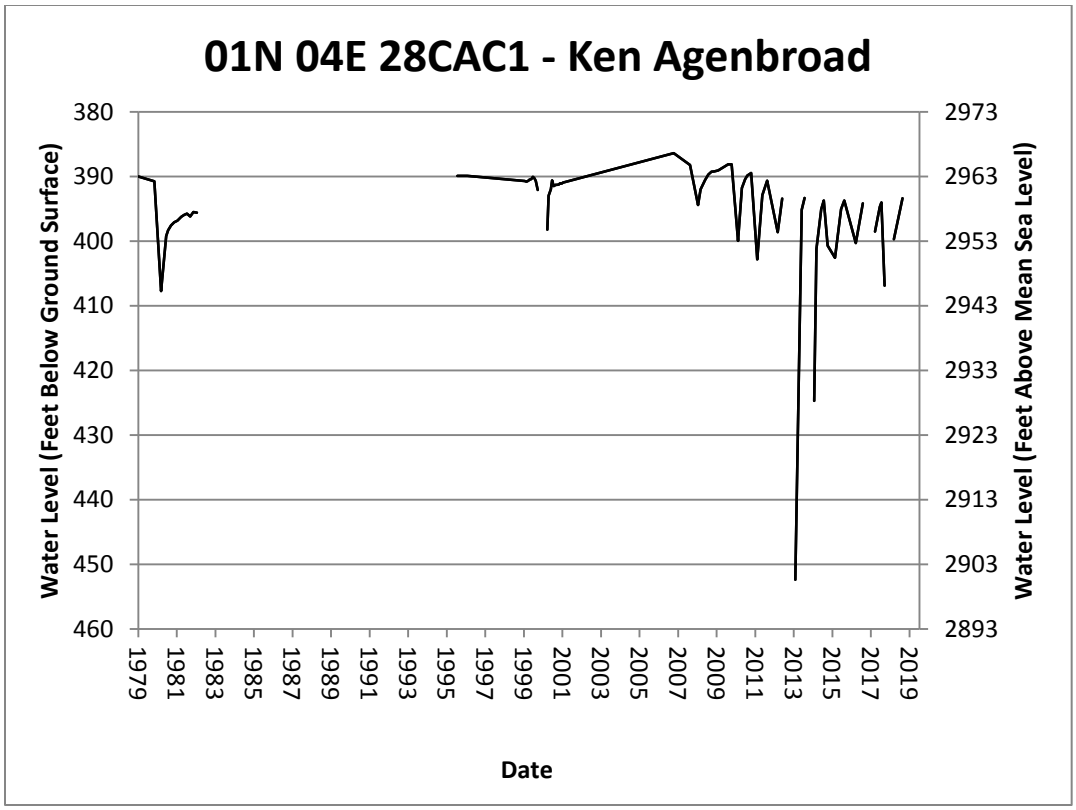
Figure B1. Current Southeast Boise GWMA monitoring network.

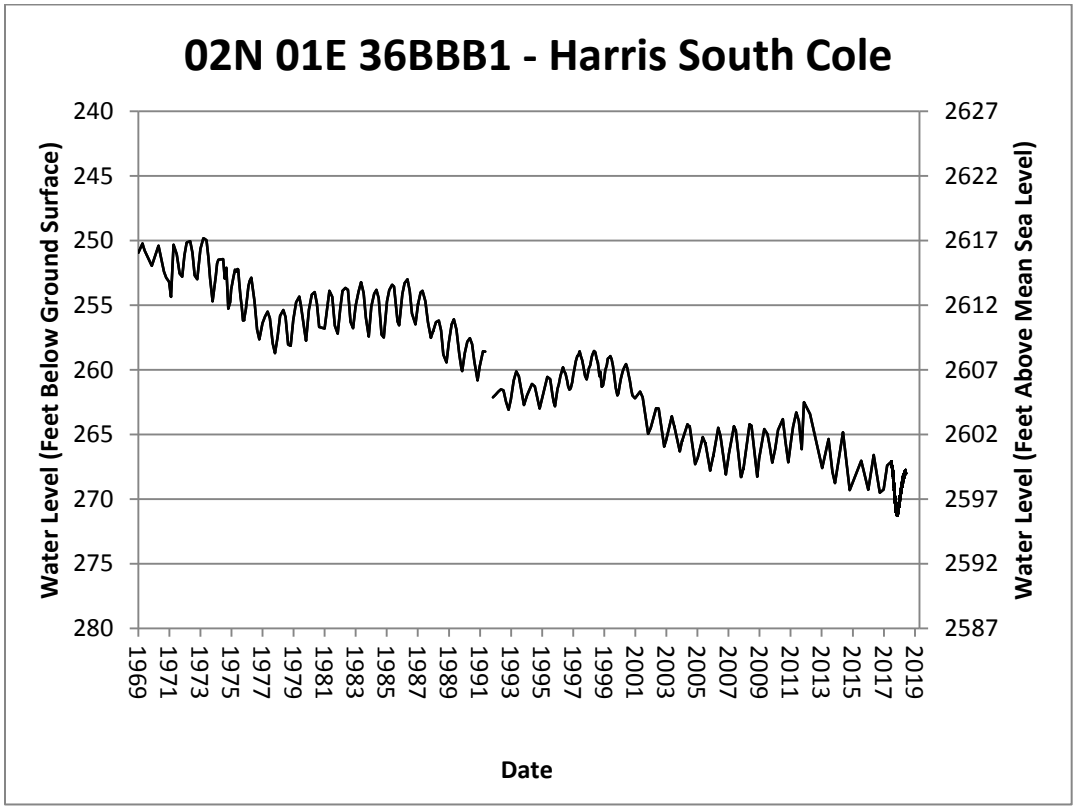
Appendix C

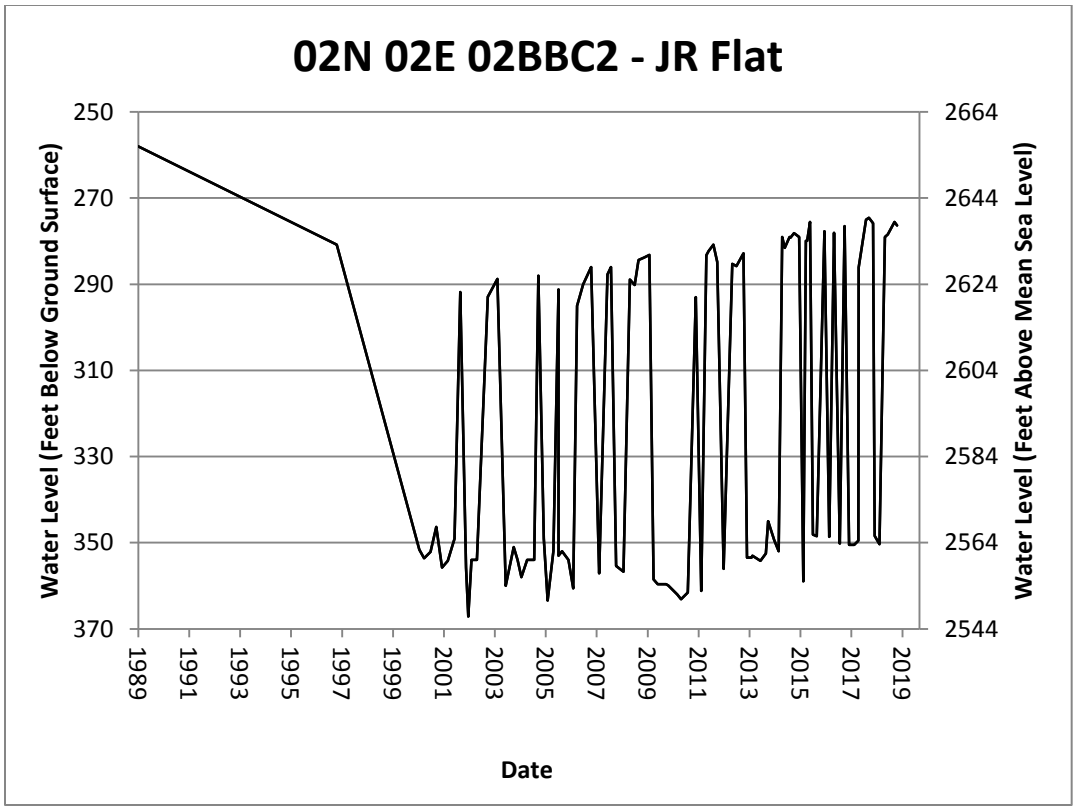
Hydrographs for Active Monitoring Wells

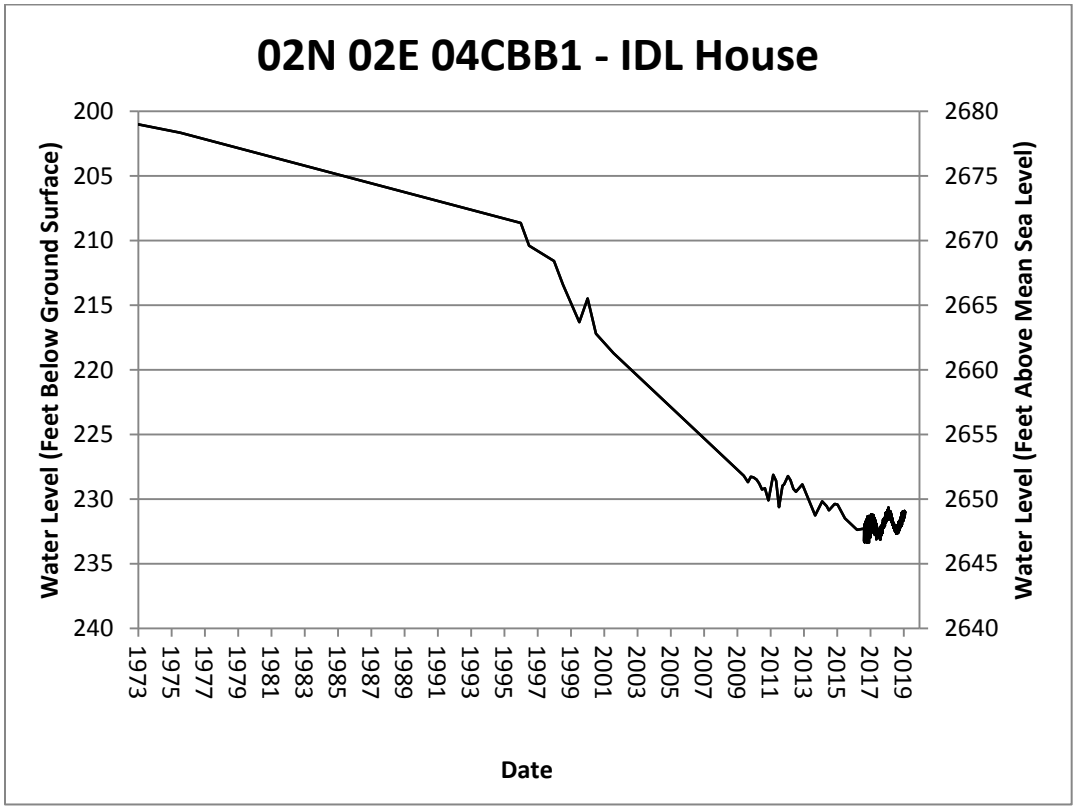

01N 01E 34AAA1 - City of Boise Farm
Water Level (Feet Below Ground Surface)
250
252
254
256
258
260
262
264
266
268
270
Water Level (Feet Above Mean Sea Level)
2588
2586
2584
2582
2580
2578
2576
2574
2572
2570
2568
1/29/2018
6/1/2018
10/1/2018
2/1/2019
Date

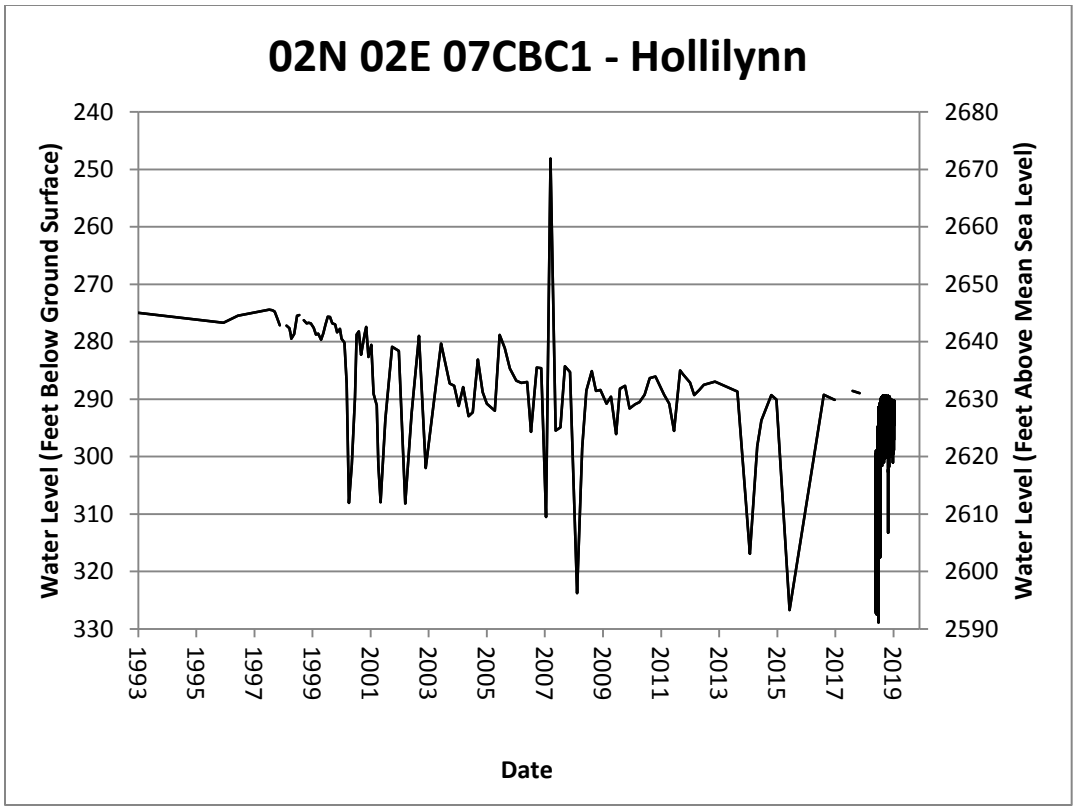

01N 03E 04BBD1 - Prigge
Water Level (Feet Below Ground Surface)
590
592
594
596
598
600
602
604
606
608
610
Water Level (Feet Above Mean Sea Level)
2660
2658
2656
2654
2652
2650
2648
2646
2644
2642
2640
1994
1996
1998
2000
2002
2004
2006
2008
2010
2012
2014
2016
2018
Date

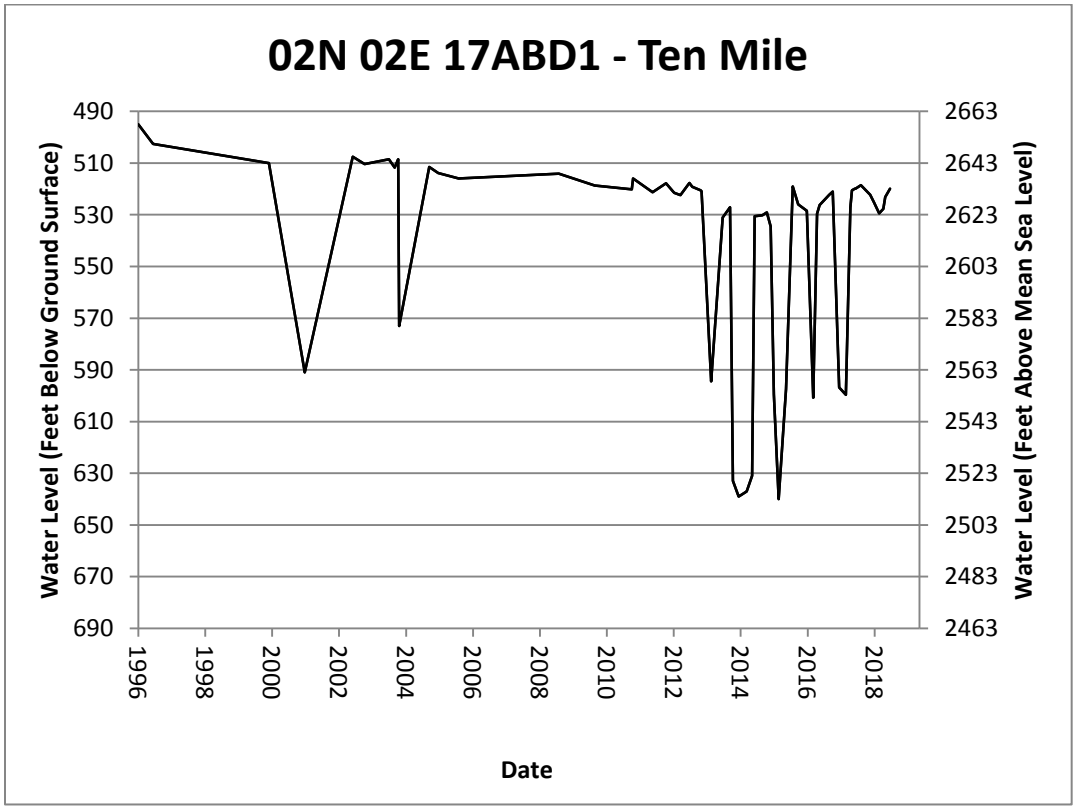

01N 04E 28CAC1 - Ken Agenbroad
Water Level (Feet Below Ground Surface)
380
390
400
410
420
430
440
450
460
Water Level (Feet Above Mean Sea Level)
2973
2963
2953
2943
2933
2923
2913
2903
2893
1979
1981
1983
1985
1987
1989
1991
1993
1995
1997
1999
2001
2003
2005
2007
2009
2011
2013
2015
2017
2019
Date

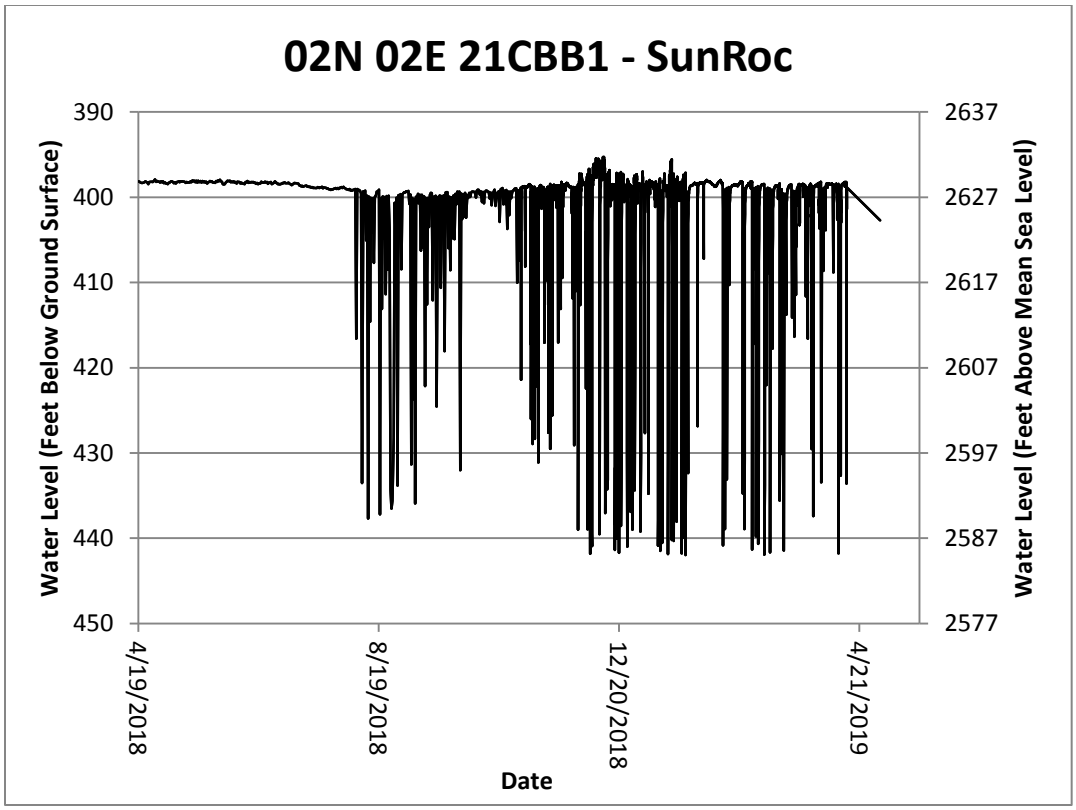

02N 01E 36BBB1 - Harris South Cole
Water Level (Feet Below Ground Surface)
240
245
250
255
260
265
270
275
280
Water Level (Feet Above Mean Sea Level)
2627
2622
2617
2612
2607
2602
2597
2592
2587
1969
1971
1973
1975
1977
1979
1981
1983
1985
1987
1989
1991
1993
1995
1997
1999
2001
2003
2005
2007
2009
2011
2013
2015
2017
2019
Date

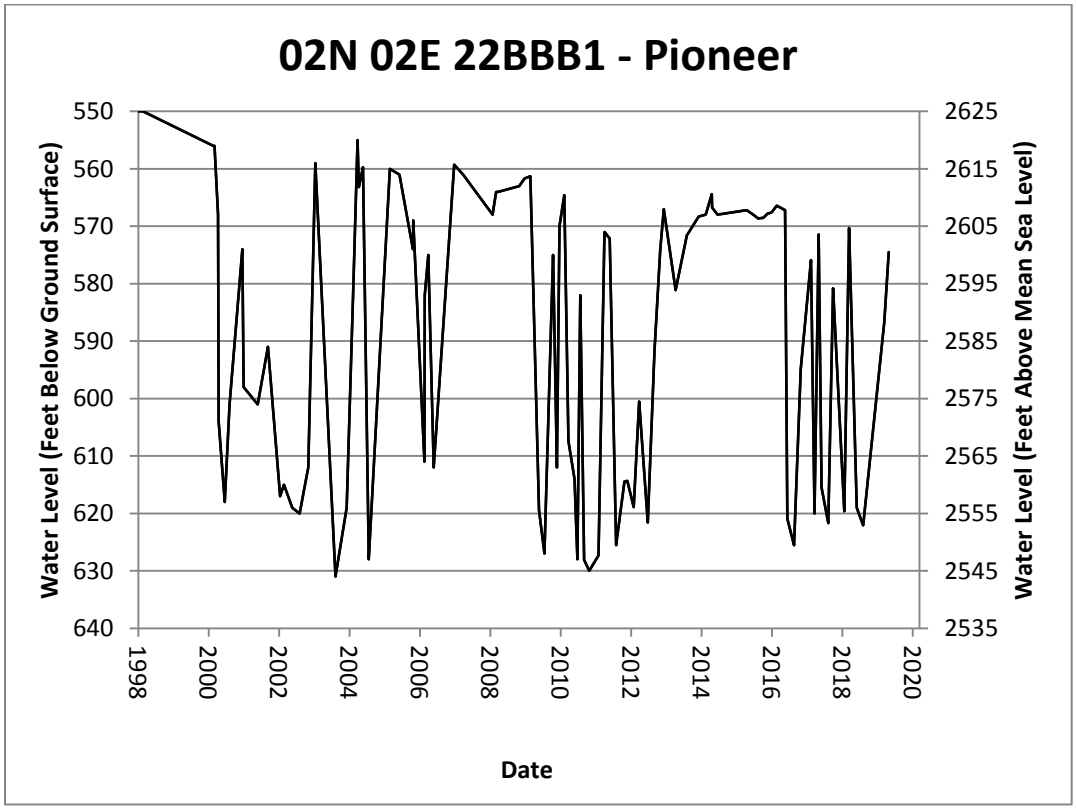

02N 02E 02BBC2 - JR Flat
Water Level (Feet Below Ground Surface)
250
270
290
310
330
350
370
Water Level (Feet Above Mean Sea Level)
2664
2644
2624
2604
2584
2564
2544
1989
1991
1993
1995
1997
1999
2001
2003
2005
2007
2009
2011
2013
2015
2017
2019
Date

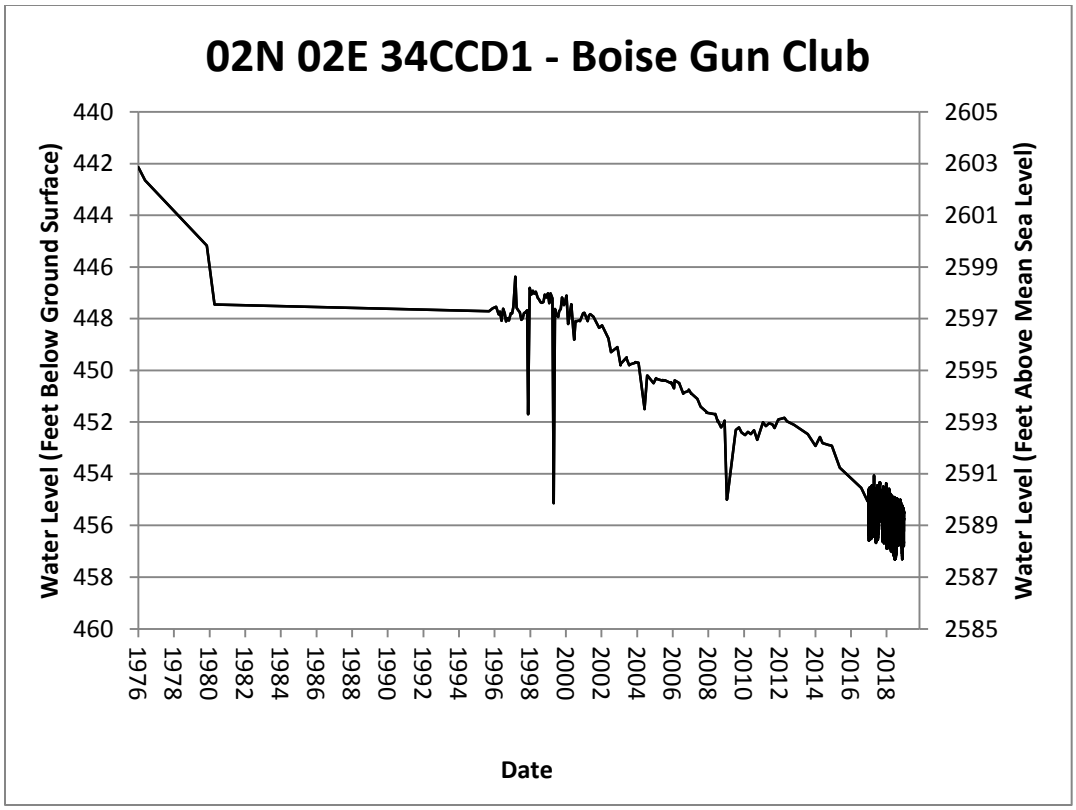

02N 02E 04CBB1 - IDL House
Water Level (Feet Below Ground Surface)
200
205
210
215
220
225
230
235
240
Water Level (Feet Above Mean Sea Level)
2680
2675
2670
2665
2660
2655
2650
2645
2640
1973
1975
1977
1979
1981
1983
1985
1987
1989
1991
1993
1995
1997
1999
2001
2003
2005
2007
2009
2011
2013
2015
2017
2019
Date


02N 02E 07CBC1 - Hollilynn
Water Level (Feet Below Ground Surface)
240
250
260
270
280
290
300
310
320
330
Water Level (Feet Above Mean Sea Level)
2680
2670
2660
2650
2640
2630
2620
2610
2600
2590
1993
1995
1997
1999
2001
2003
2005
2007
2009
2011
2013
2015
2017
2019
Date


02N 02E 17ABD1 - Ten Mile
Water Level (Feet Below Ground Surface)
490
510
530
550
570
590
610
630
650
670
690
Water Level (Feet Above Mean Sea Level)
2663
2643
2623
2603
2583
2563
2543
2523
2503
2483
2463
1996
1998
2000
2002
2004
2006
2008
2010
2012
2014
2016
2018
Date


02N 02E 21CBB1 - SunRoc
Water Level (Feet Below Ground Surface)
390
400
410
420
430
440
450
Water Level (Feet Above Mean Sea Level)
2637
2627
2617
2607
2597
2587
2577
4/19/2018
8/19/2018
12/20/2018
4/21/2019
Date


02N 02E 22BBB1 - Pioneer
Water Level (Feet Below Ground Surface)
550
560
570
580
590
600
610
620
630
640
Water Level (Feet Above Mean Sea Level)
2625
2615
2605
2595
2585
2575
2565
2555
2545
2535
1998
2000
2002
2004
2006
2008
2010
2012
2014
2016
2018
2020
Date


02N 02E 34CCD1 - Boise Gun Club
Water Level (Feet Below Ground Surface)
440
442
444
446
448
450
452
454
456
458
460
Water Level (Feet Above Mean Sea Level)
2605
2603
2601
2599
2597
2595
2593
2591
2589
2587
2585
1976
1978
1980
1982
1984
1986
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1990
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1998
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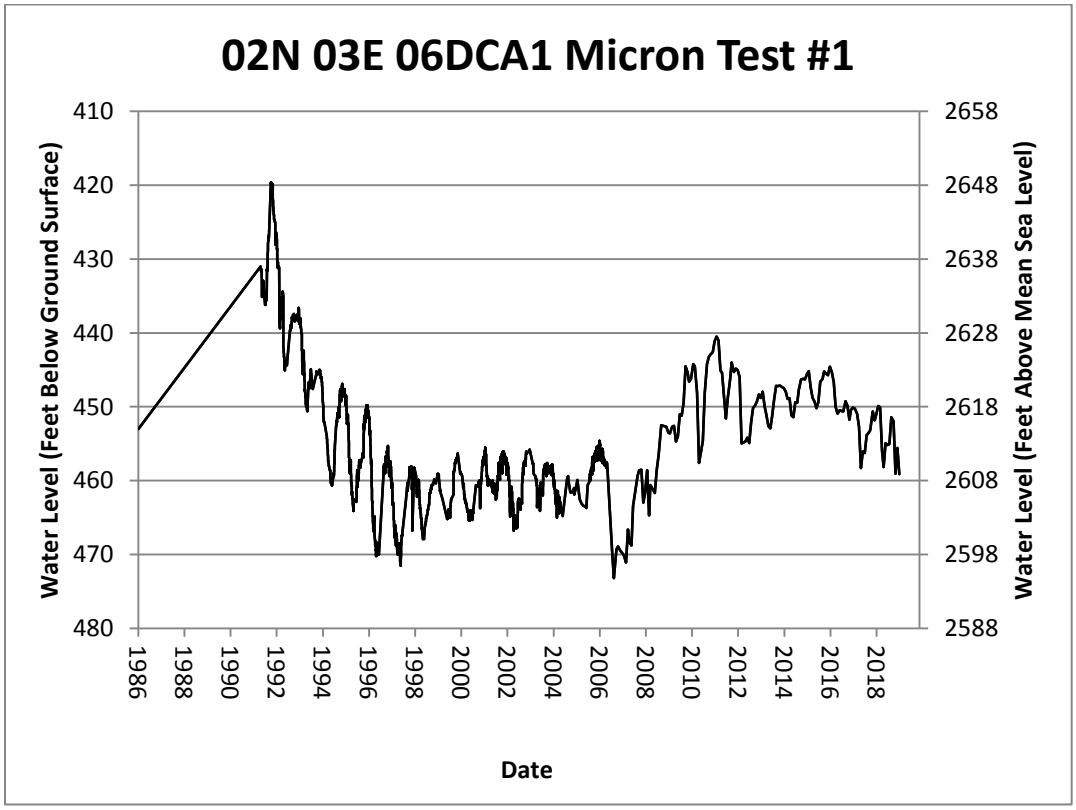
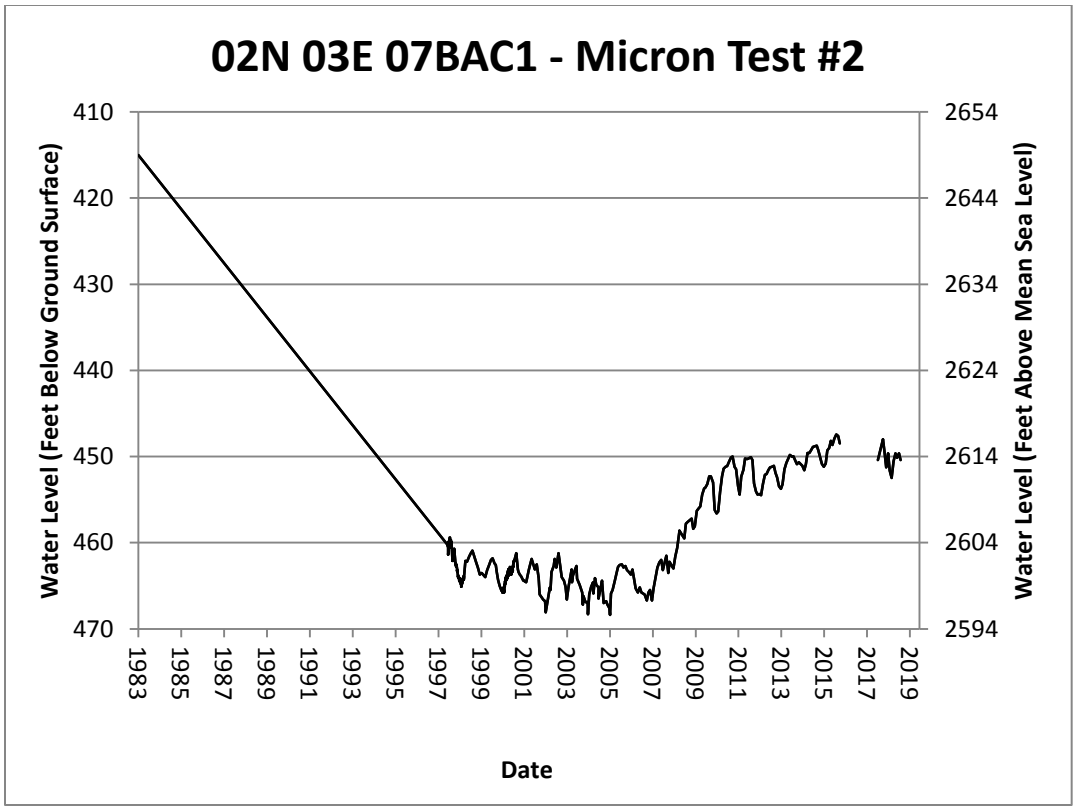
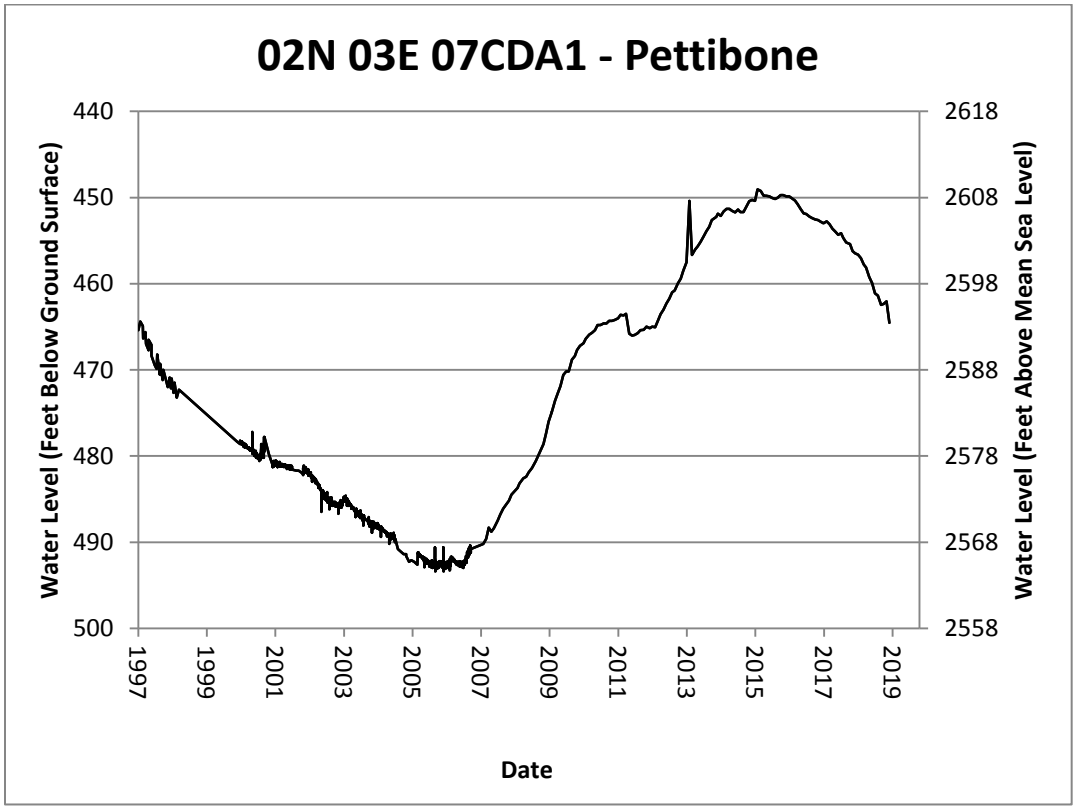
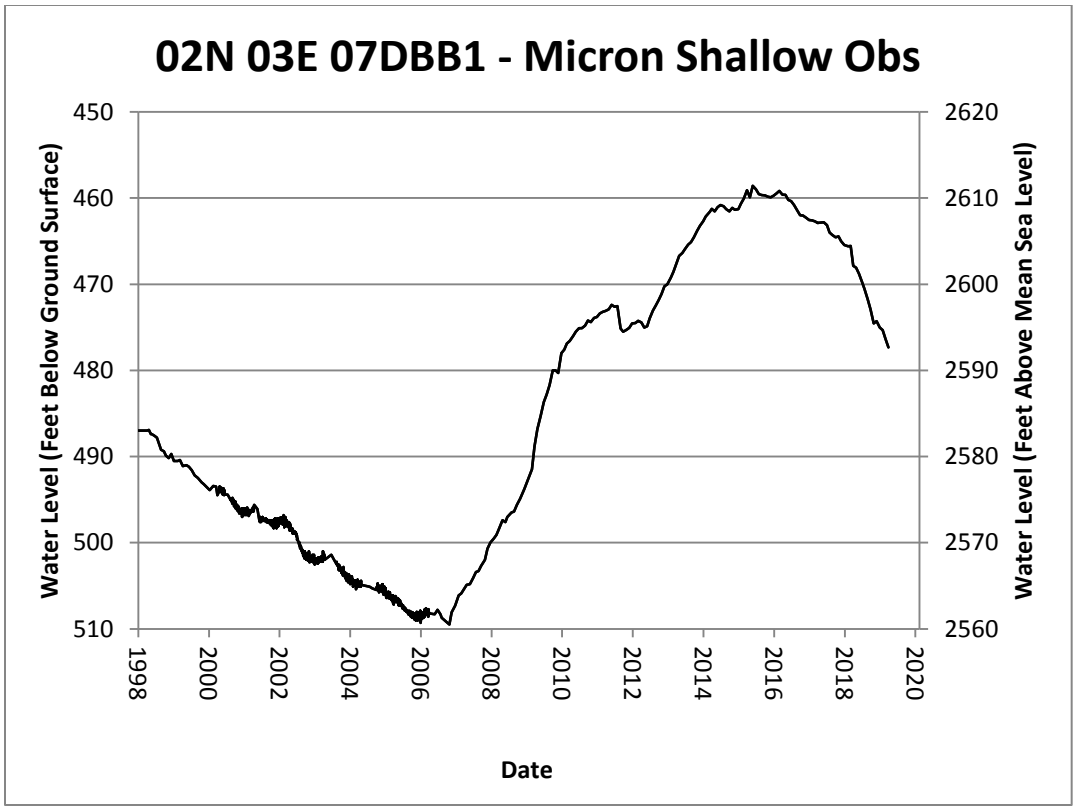
2002
2004
2006
2008
2010
2012
2014
2016
2018
Date

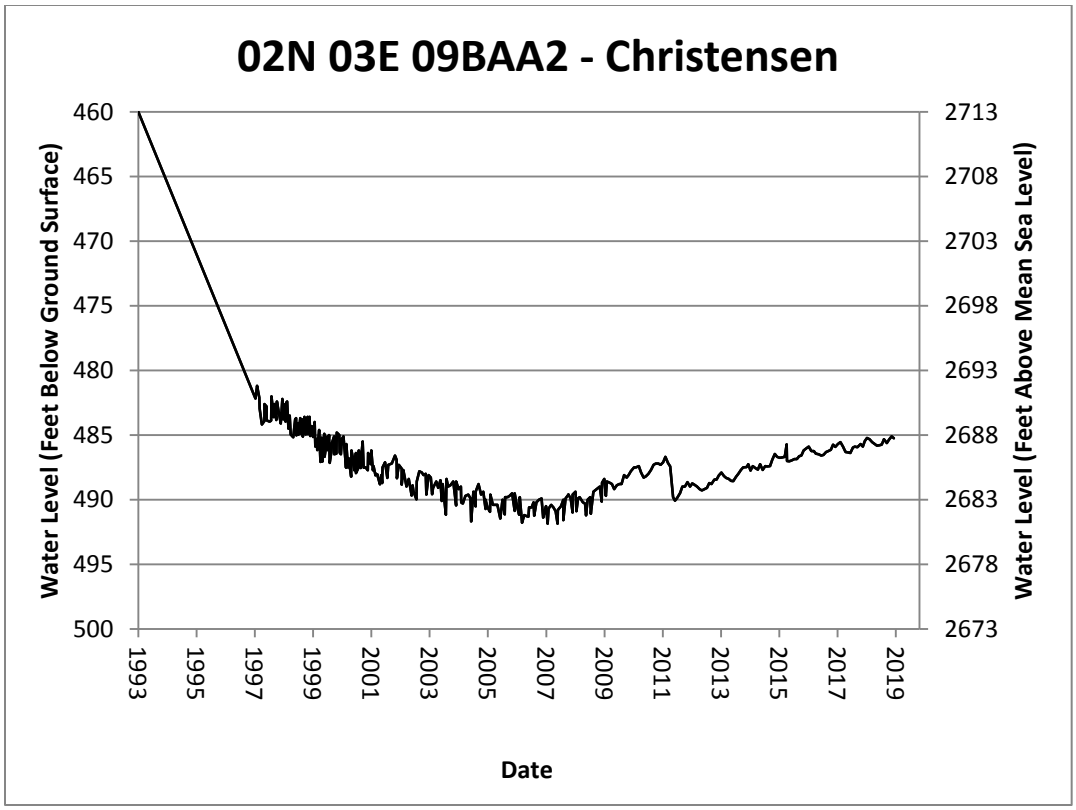

02N 03E 06DCA1 Micron Test #1
Water Level (Feet Below Ground Surface)
410
420
430
440
450
460
470
480
Water Level (Feet Above Mean Sea Level)
2658
2648
2638
2628
2618
2608
2598
2588
1986
1988
1990
1992
1994
1996
1998
2000
2002
2004
2006
2008
2010
2012
2014
2016
2018
Date

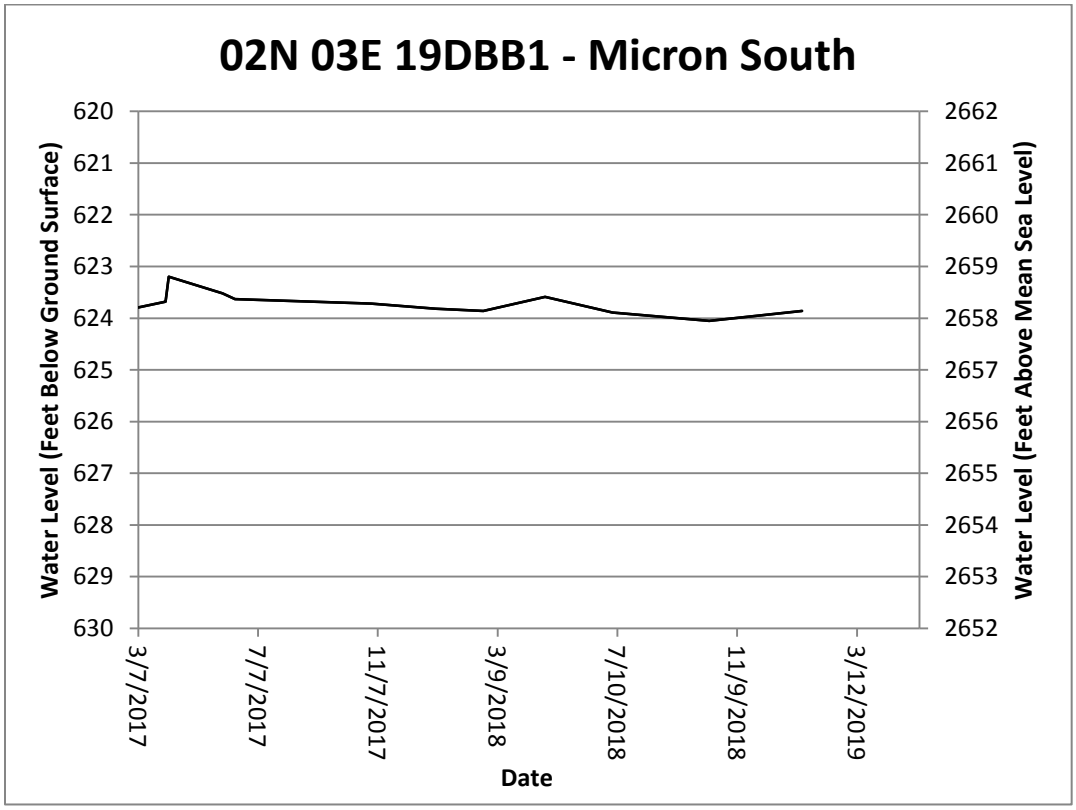

02N 03E 07BAC1 - Micron Test #2
Water Level (Feet Below Ground Surface)
410
420
430
440
450
460
470
Water Level (Feet Above Mean Sea Level)
2654
2644
2634
2624
2614
2604
2594
1983
1985
1987
1989
1991
1993
1995
1997
1999
2001
2003
2005
2007
2009
2011
2013
2015
2017
2019
Date

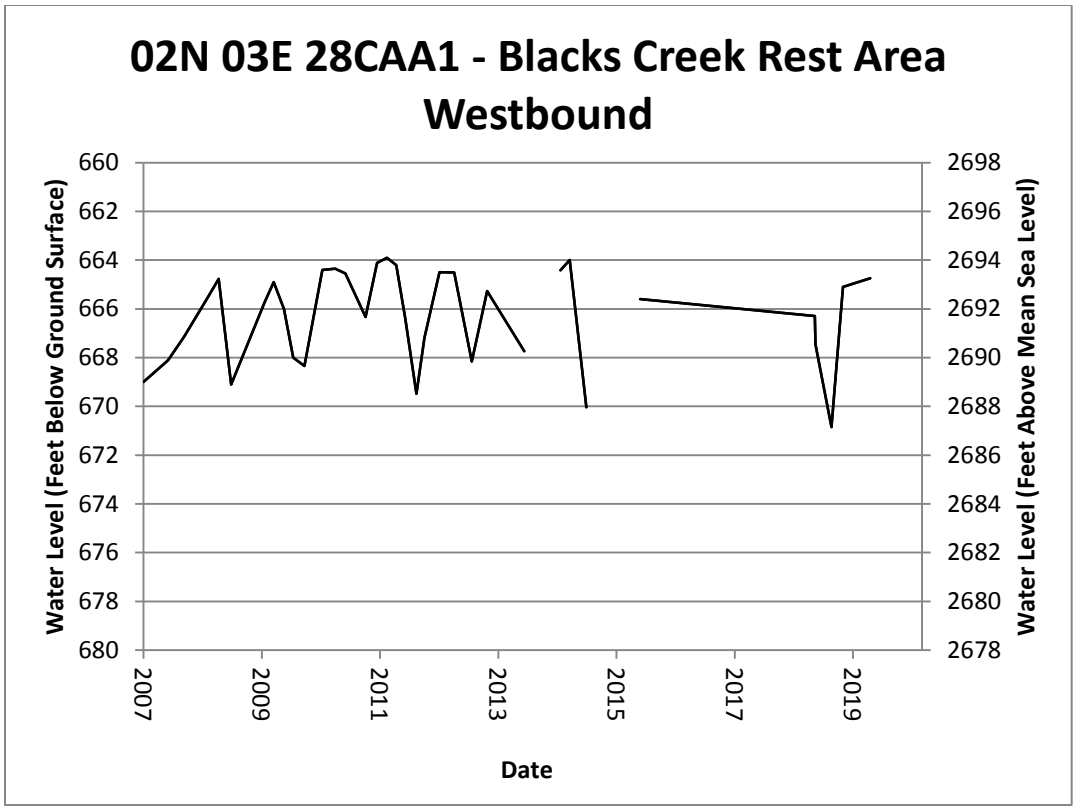

02N 03E 07CDA1 - Pettibone
Water Level (Feet Below Ground Surface)
440
450
460
470
480
490
500
Water Level (Feet Above Mean Sea Level)
2618
2608
2598
2588
2578
2568
2558
1997
1999
2001
2003
2005
2007
2009
2011
2013
2015
2017
2019
Date

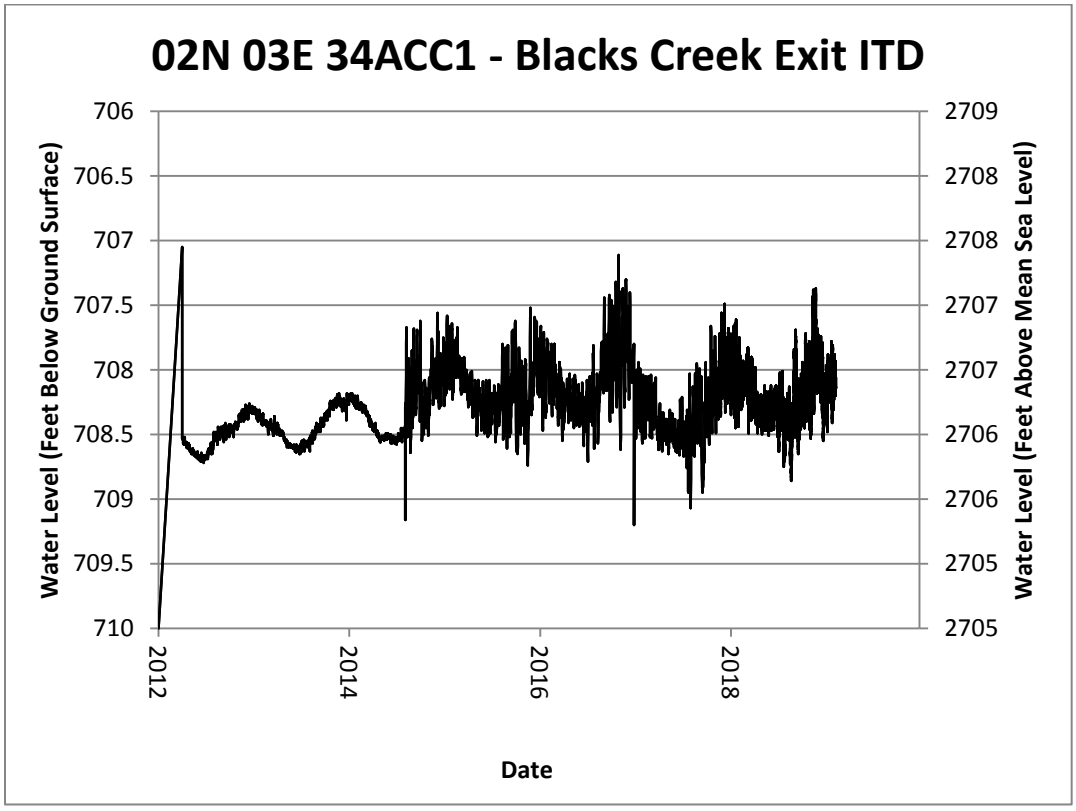

02N 03E 07DBB1 - Micron Shallow Obs
Water Level (Feet Below Ground Surface)
450
460
470
480
490
500
510
Water Level (Feet Above Mean Sea Level)
2620
2610
2600
2590
2580
2570
2560
1998
2000
2002
2004
2006
2008
2010
2012
2014
2016
2018
2020
Date

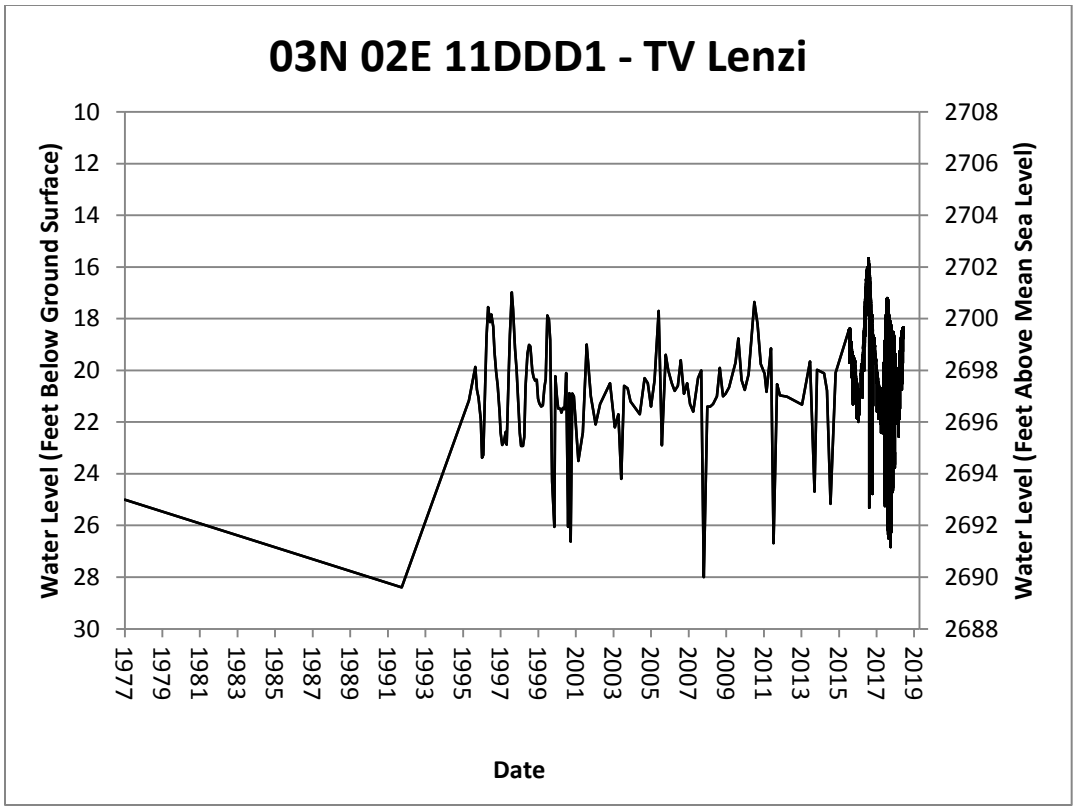

02N 03E 07DBB2 - Micron Deep Obs
Water Level (Feet Below Ground Surface)
450
460
470
480
490
500
510
520
530
Water Level (Feet Above Mean Sea Level)
2619
2609
2599
2589
2579
2569
2559
2549
2539
1998
2000
2002
2004
2006
2008
2010
2012
2014
2016
2018
2020
Date

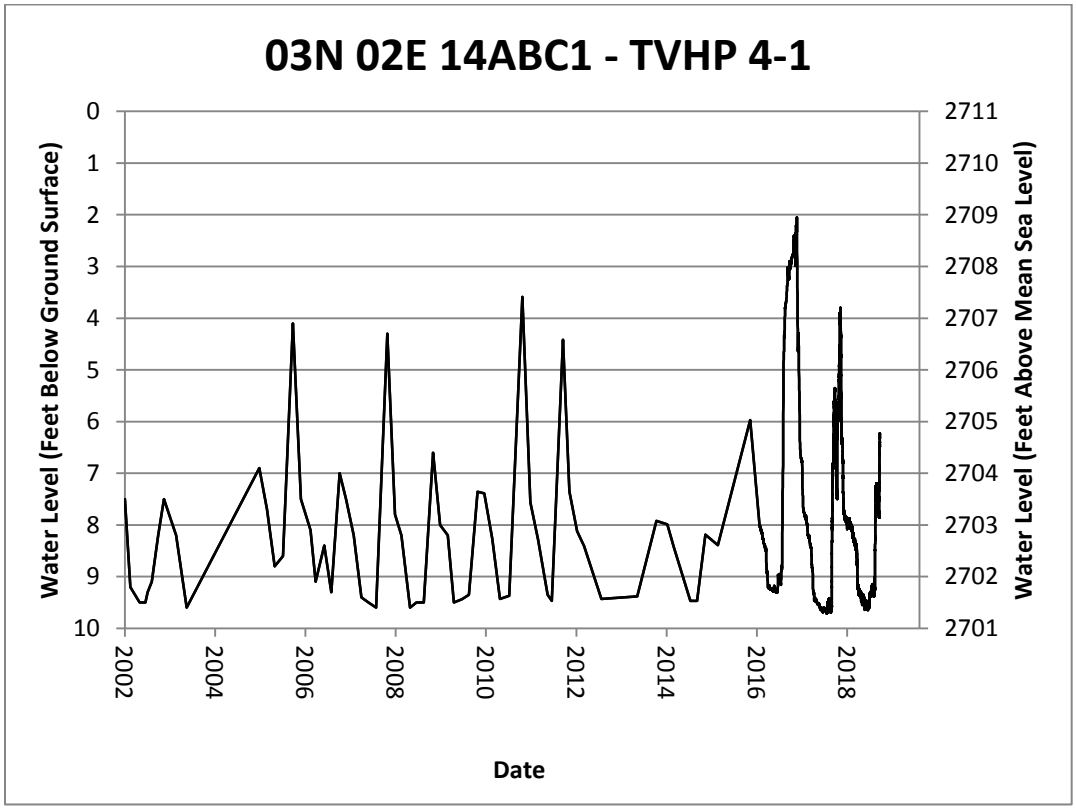

02N 03E 09BAA2 - Christensen
Water Level (Feet Below Ground Surface)
460
465
470
475
480
485
490
495
500
Water Level (Feet Above Mean Sea Level)
2713
2708
2703
2698
2693
2688
2683
2678
2673
1993
1995
1997
1999
2001
2003
2005
2007
2009
2011
2013
2015
2017
2019
Date

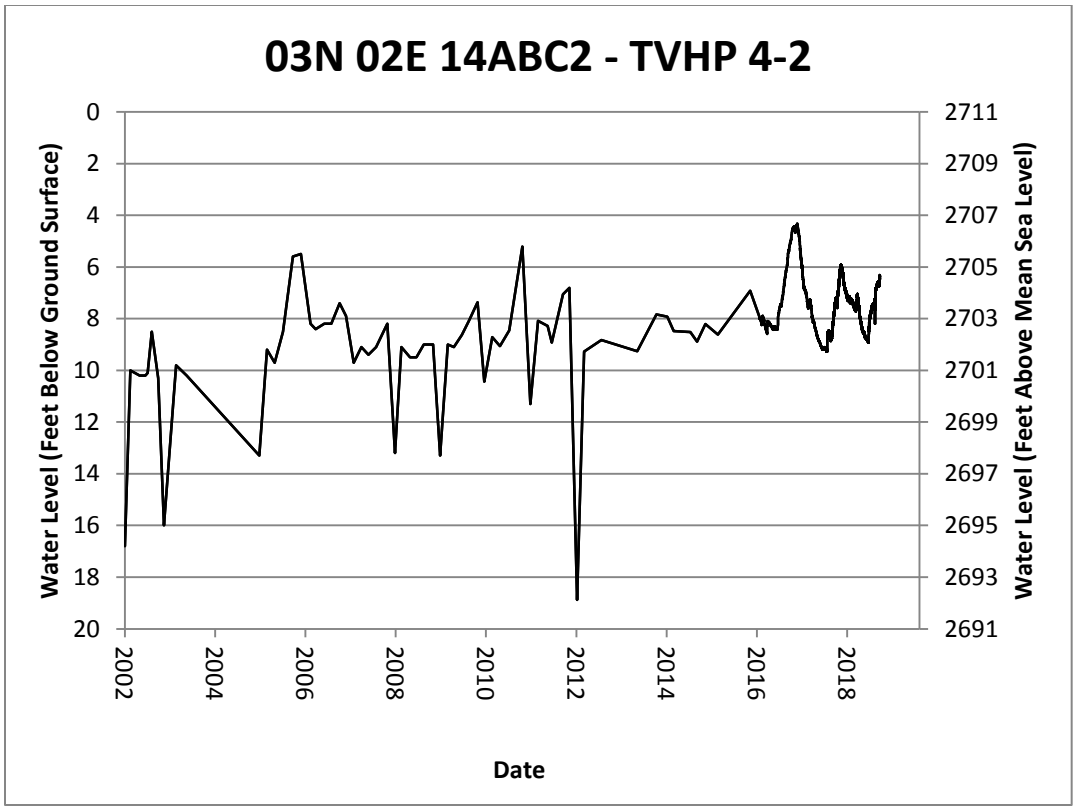

02N 03E 19DBB1 - Micron South
Water Level (Feet Below Ground Surface)
620
621
622
623
624
625
626
627
628
629
630
Water Level (Feet Above Mean Sea Level)
2662
2661
2660
2659
2658
2657
2656
2655
2654
2653
2652
3/7/2017
7/7/2017
11/7/2017
3/9/2018
7/10/2018
11/9/2018
3/12/2019
Date

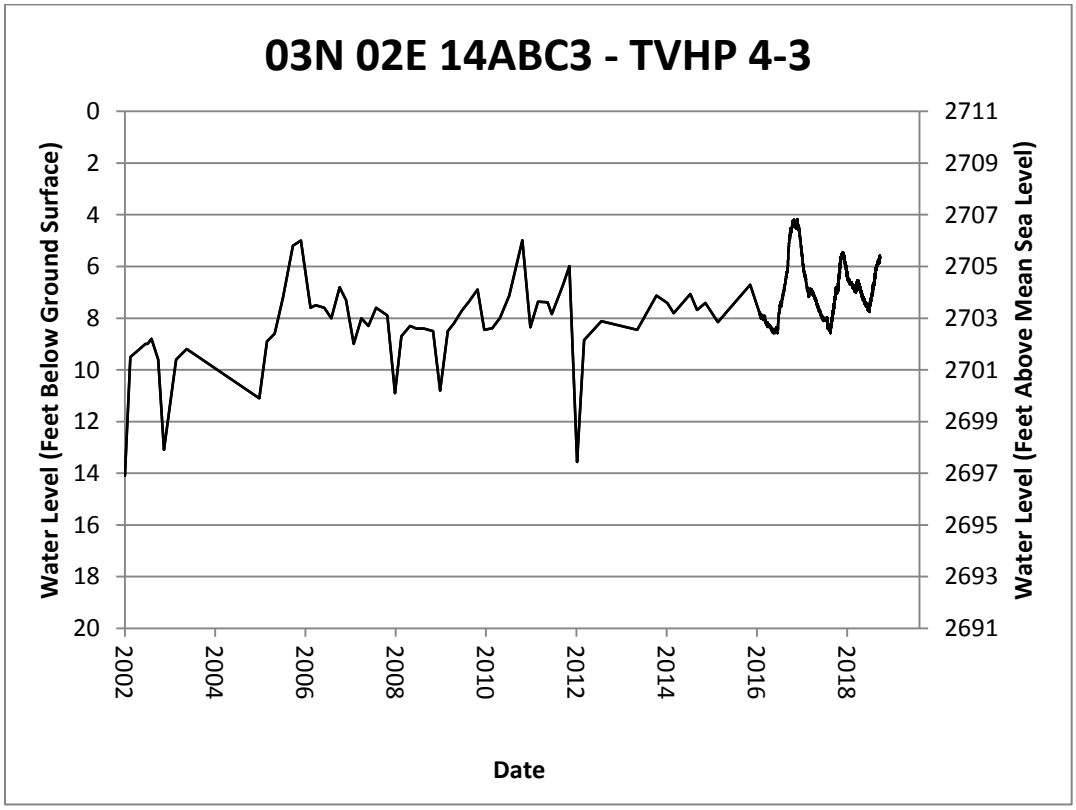

02N 03E 28CAA1 - Blacks Creek Rest Area Westbound
Water Level (Feet Below Ground Surface)
660
662
664
666
668
670
672
674
676
678
680
Water Level (Feet Above Mean Sea Level)
2698
2696
2694
2692
2690
2688
2686
2684
2682
2680
2678
2007
2009
2011
2013
2015
2017
2019
Date

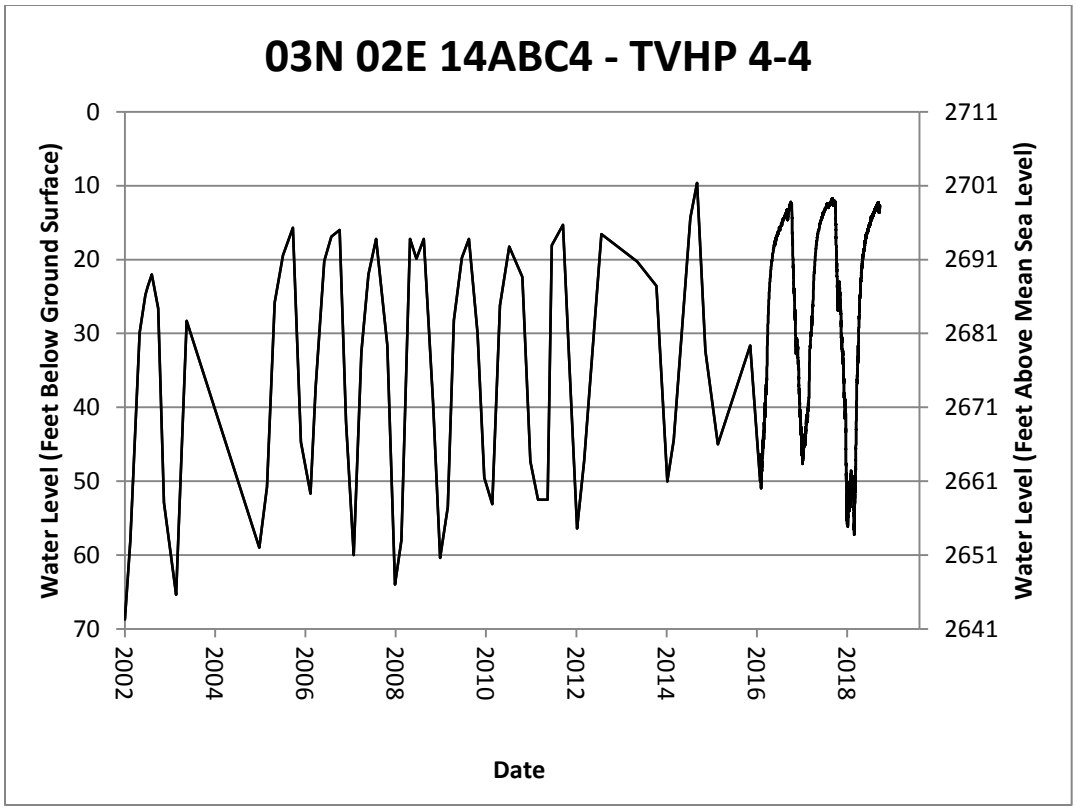

02N 03E 34ACC1 - Blacks Creek Exit ITD
Water Level (Feet Below Ground Surface)
706
706.5
707
707.5
708
708.5
709
709.5
710
Water Level (Feet Above Mean Sea Level)
2709
2708
2708
2707
2707
2706
2706
2705
2705
2012
2014
2016
2018
Date

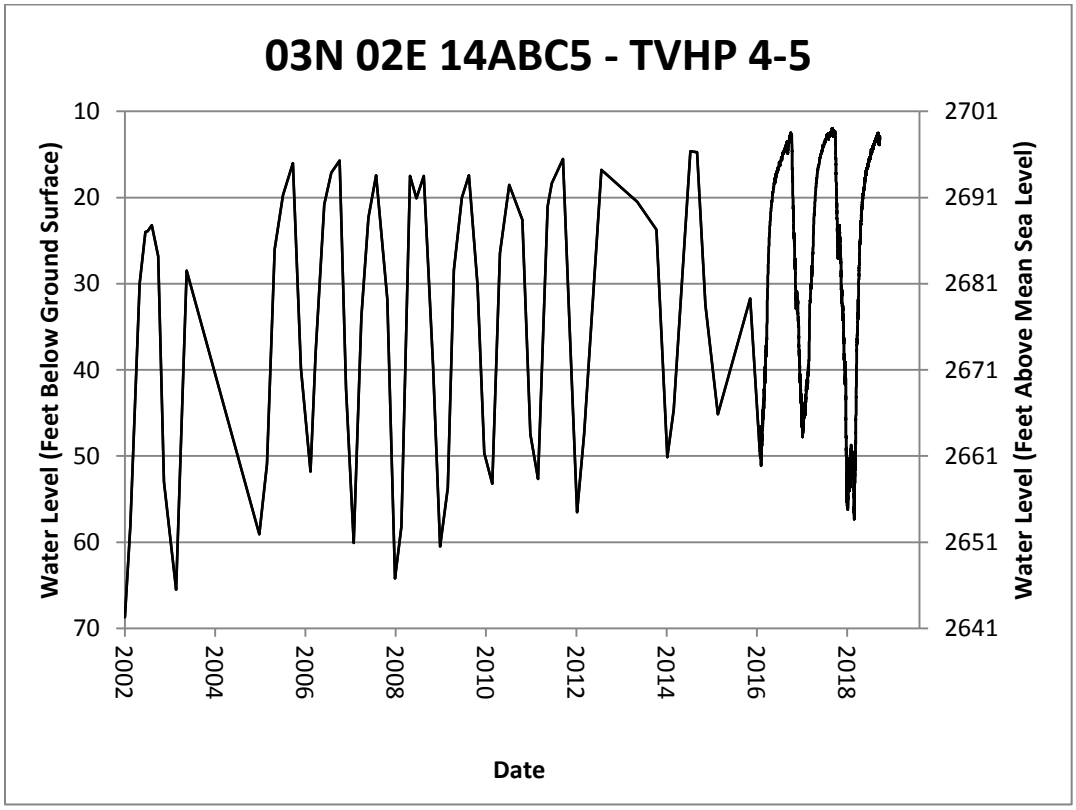

03N 02E 11DDD1 - TV Lenzi
Water Level (Feet Below Ground Surface)
Water Level (Feet Above Mean Sea Level)
10
12
14
16
18
20
22
24
26
28
30
2708
2706
2704
2702
2700
2698
2696
2694
2692
2690
2688
1977
1979
1981
1983
1985
1987
1989
1991
1993
1995
1997
1999
2001
2003
2005
2007
2009
2011
2013
2015
2017
2019
Date

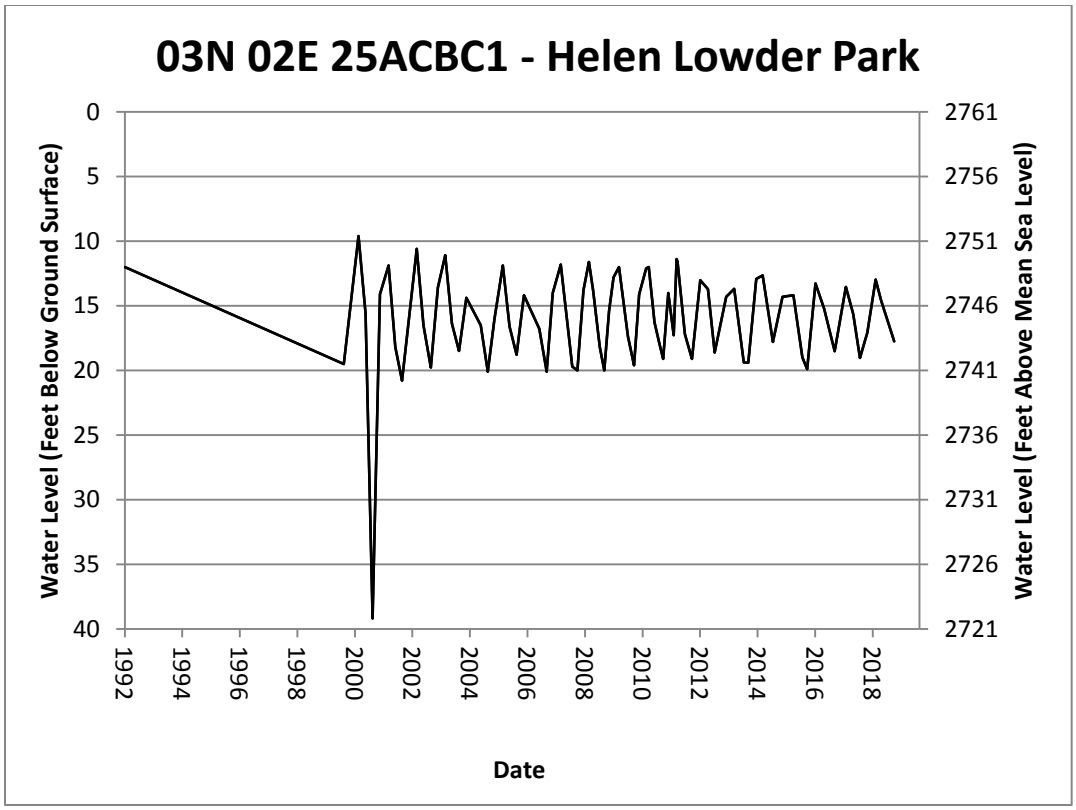

03N 02E 14ABC1 - TVHP 4-1
Water Level (Feet Below Ground Surface)
Water Level (Feet Above Mean Sea Level)
0
1
2
3
4
5
6
7
8
9
10
2711
2710
2709
2708
2707
2706
2705
2704
2703
2702
2701
2002
2004
2006
2008
2010
2012
2014
2016
2018
Date

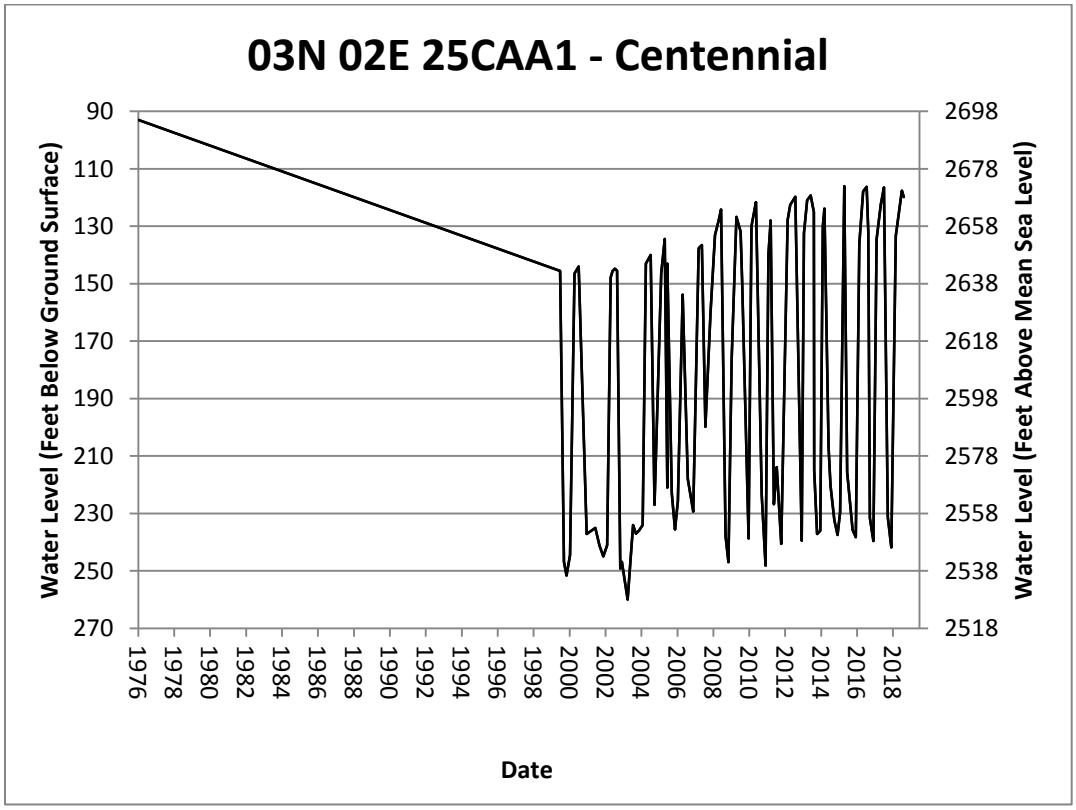

03N 02E 14ABC2 - TVHP 4-2
Water Level (Feet Below Ground Surface)
0
2
4
6
8
10
12
14
16
18
20
Water Level (Feet Above Mean Sea Level)
2711
2709
2707
2705
2703
2701
2699
2697
2695
2693
2691
2002
2004
2006
2008
2010
2012
2014
2016
2018
Date

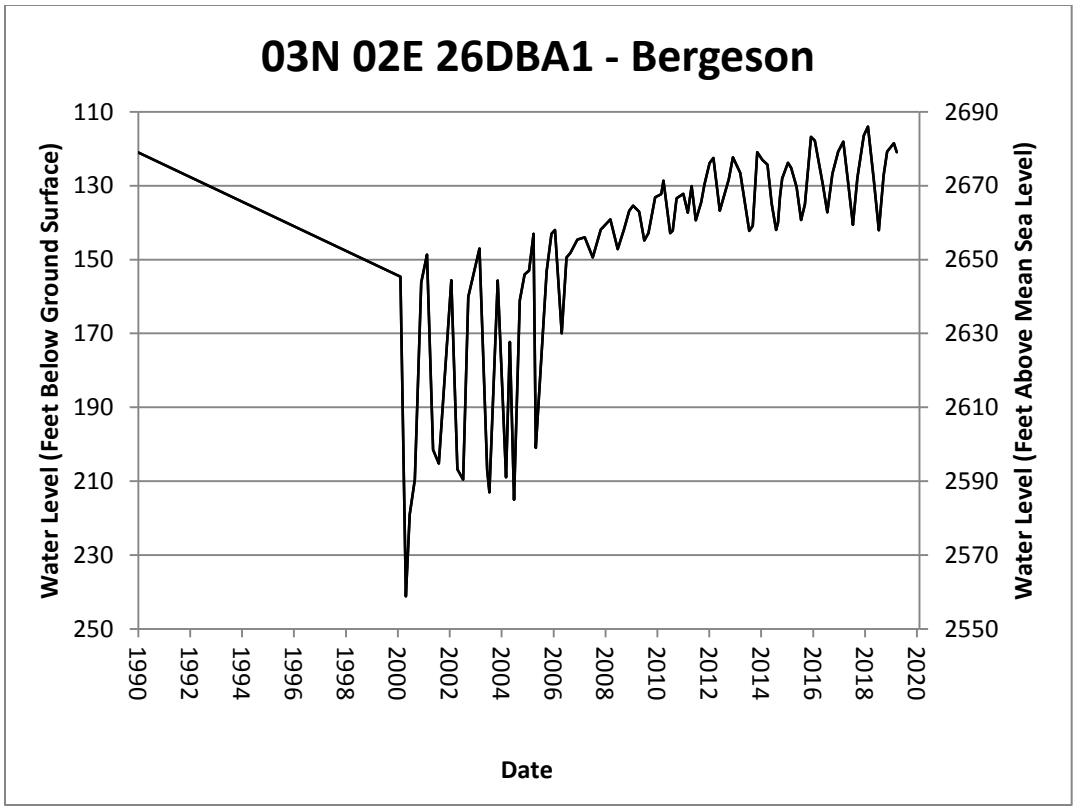

03N 02E 14ABC3 - TVHP 4-3
Water Level (Feet Below Ground Surface)
0
2
4
6
8
10
12
14
16
18
20
Water Level (Feet Above Mean Sea Level)
2711
2709
2707
2705
2703
2701
2699
2697
2695
2693
2691
2002
2004
2006
2008
2010
2012
2014
2016
2018
Date

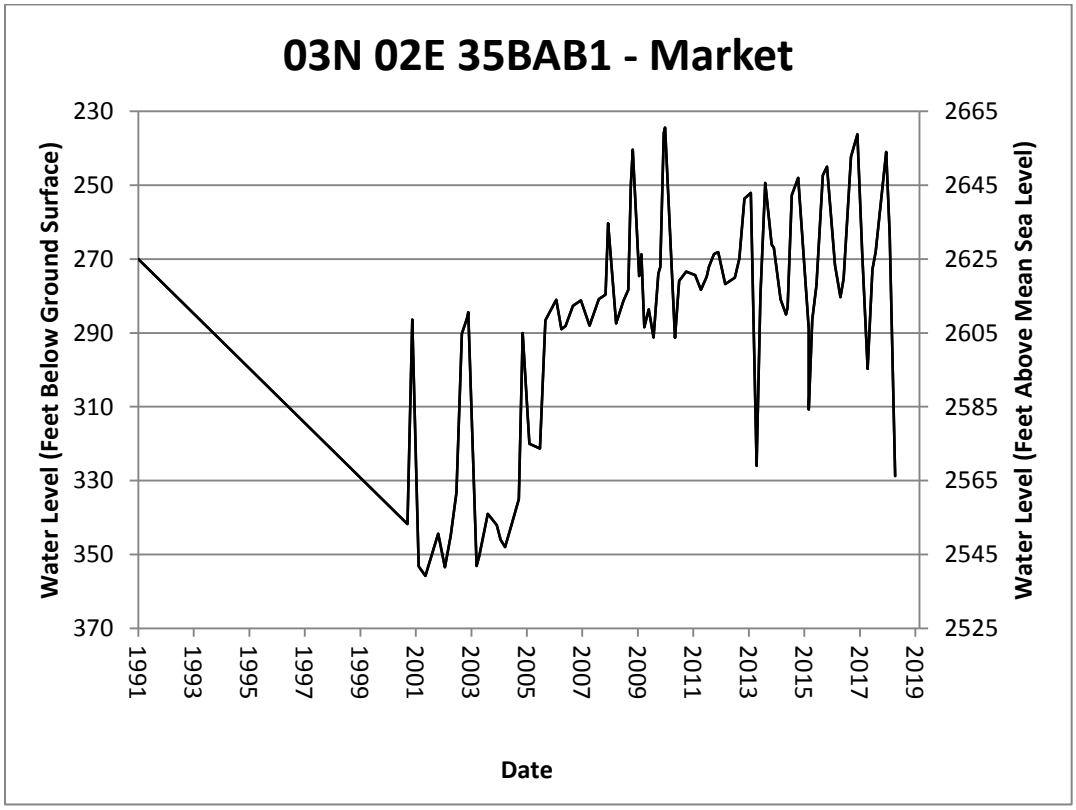

03N 02E 14ABC4 - TVHP 4-4
Water Level (Feet Below Ground Surface)
0
10
20
30
40
50
60
70
Water Level (Feet Above Mean Sea Level)
2711
2701
2691
2681
2671
2661
2651
2641
2002
2004
2006
2008
2010
2012
2014
2016
2018
Date

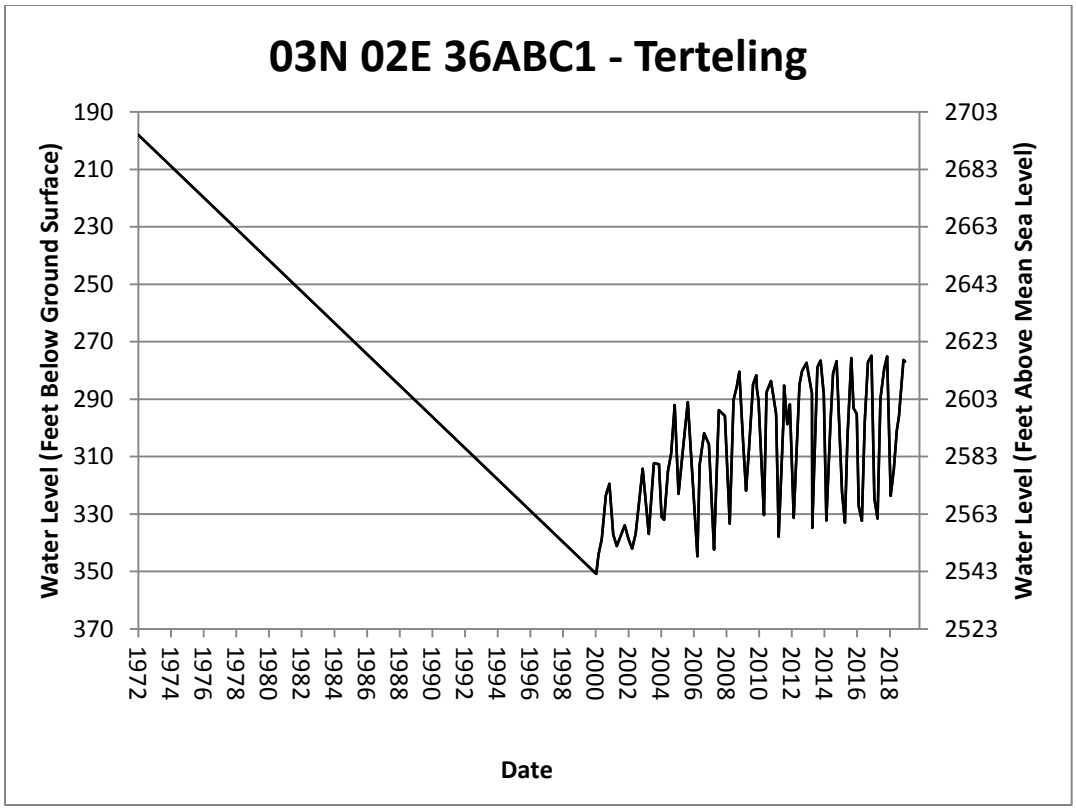

03N 02E 14ABC5 - TVHP 4-5
Water Level (Feet Below Ground Surface)
10
20
30
40
50
60
70
Water Level (Feet Above Mean Sea Level)
2701
2691
2681
2671
2661
2651
2641
2002
2004
2006
2008
2010
2012
2014
2016
2018
Date

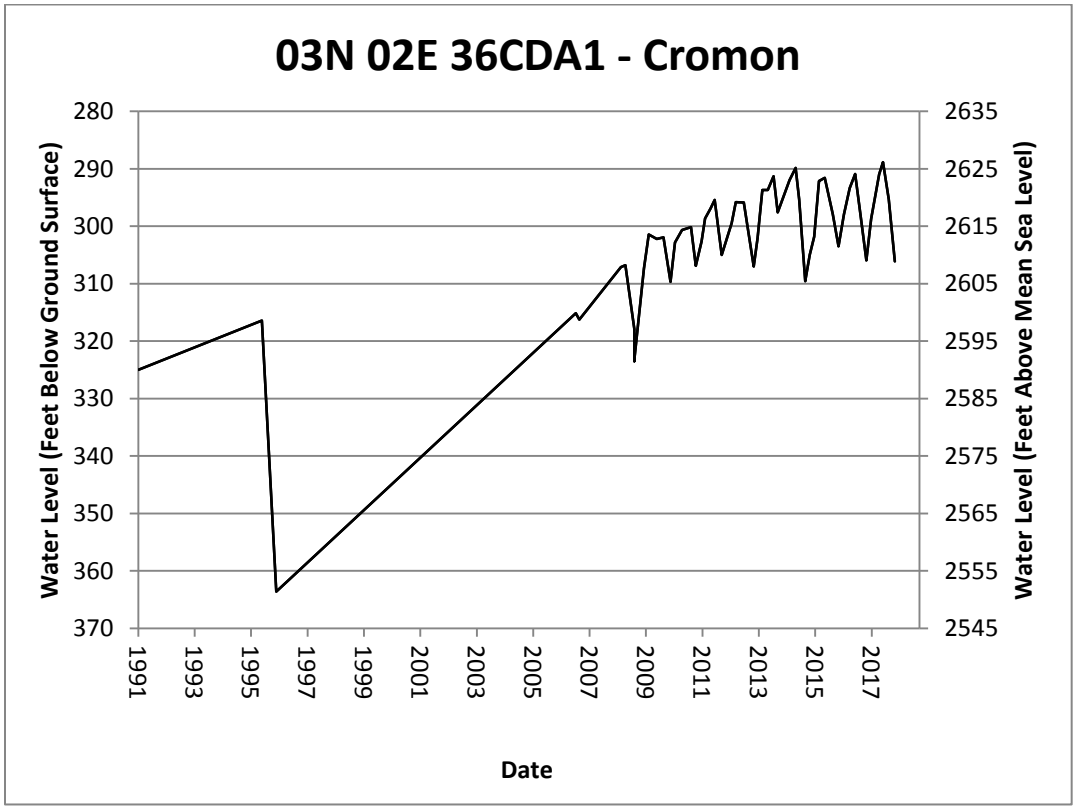

03N 02E 25ACBC1 - Helen Lowder Park
Water Level (Feet Below Ground Surface)
0
5
10
15
20
25
30
35
40
Water Level (Feet Above Mean Sea Level)
2761
2756
2751
2746
2741
2736
2731
2726
2721
1992
1994
1996
1998
2000
2002
2004
2006
2008
2010
2012
2014
2016
2018
Date

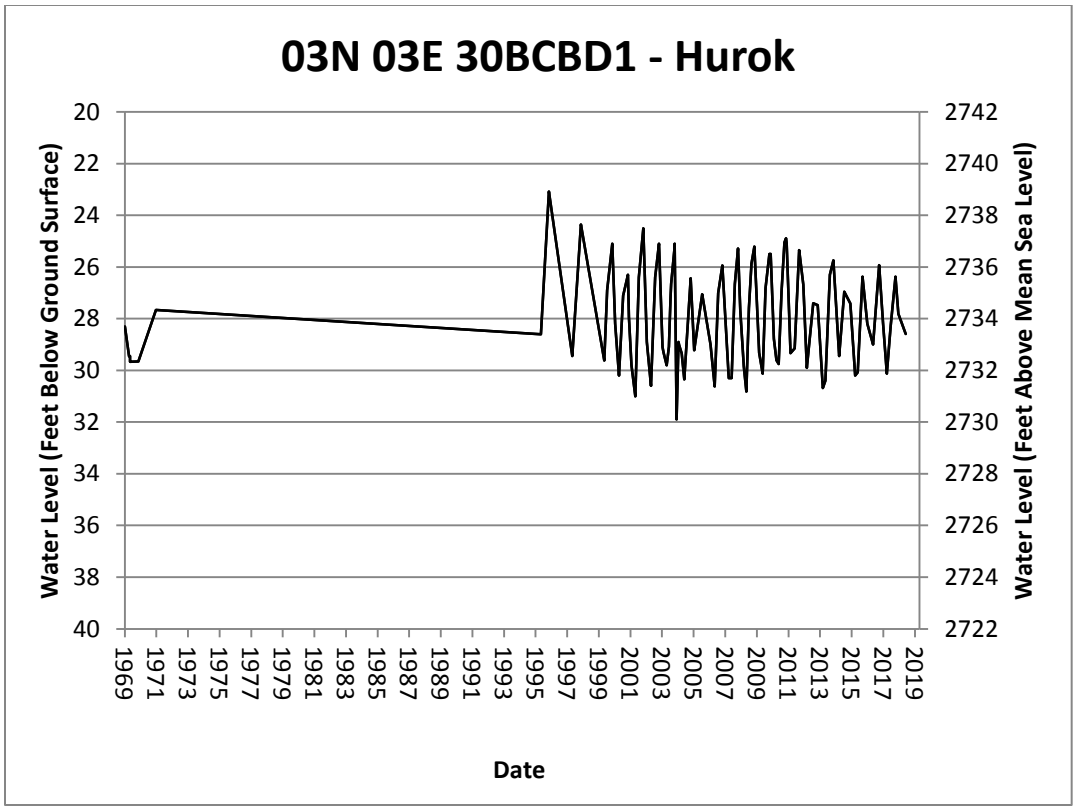

03N 02E 25CAA1 - Centennial
Water Level (Feet Below Ground Surface)
90
110
130
150
170
190
210
230
250
270
Water Level (Feet Above Mean Sea Level)
2698
2678
2658
2638
2618
2598
2578
2558
2538
2518
1976
1978
1980
1982
1984
1986
1988
1990
1992
1994
1996
1998
2000
2002
2004
2006
2008
2010
2012
2014
2016
2018
Date

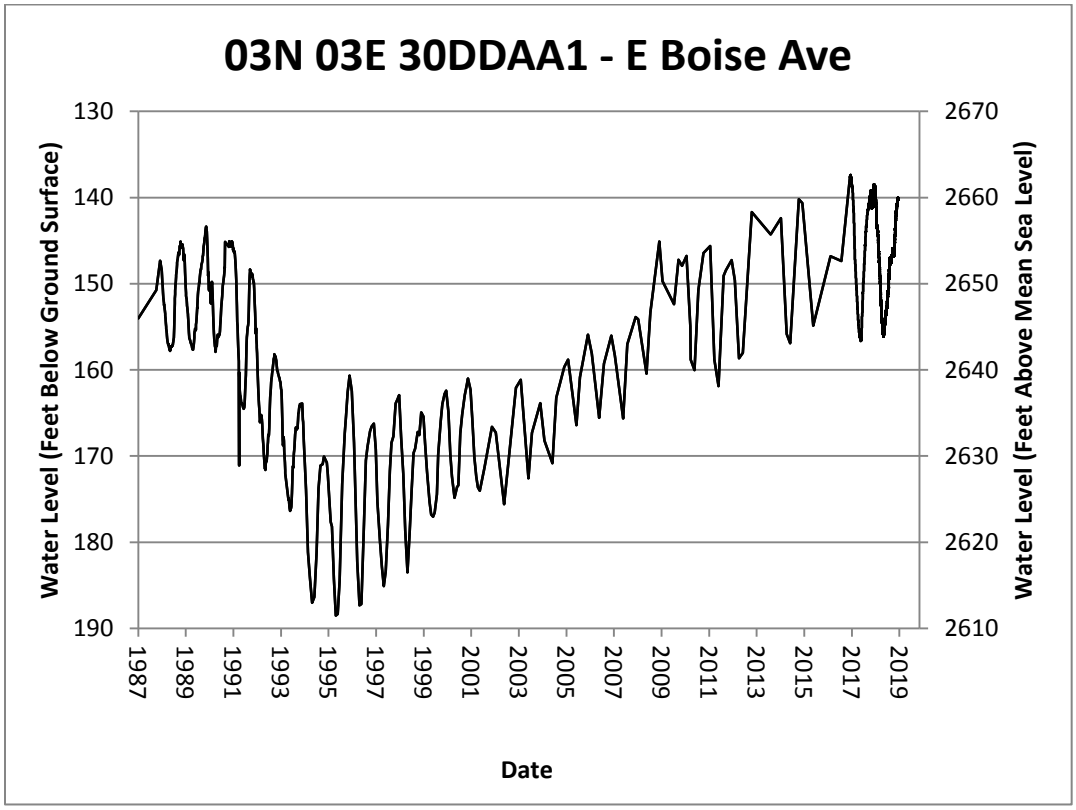

03N 02E 26DBA1 - Bergeson
Water Level (Feet Below Ground Surface)
110
130
150
170
190
210
230
250
Water Level (Feet Above Mean Sea Level)
2690
2670
2650
2630
2610
2590
2570
2550
1990
1992
1994
1996
1998
2000
2002
2004
2006
2008
2010
2012
2014
2016
2018
2020
Date

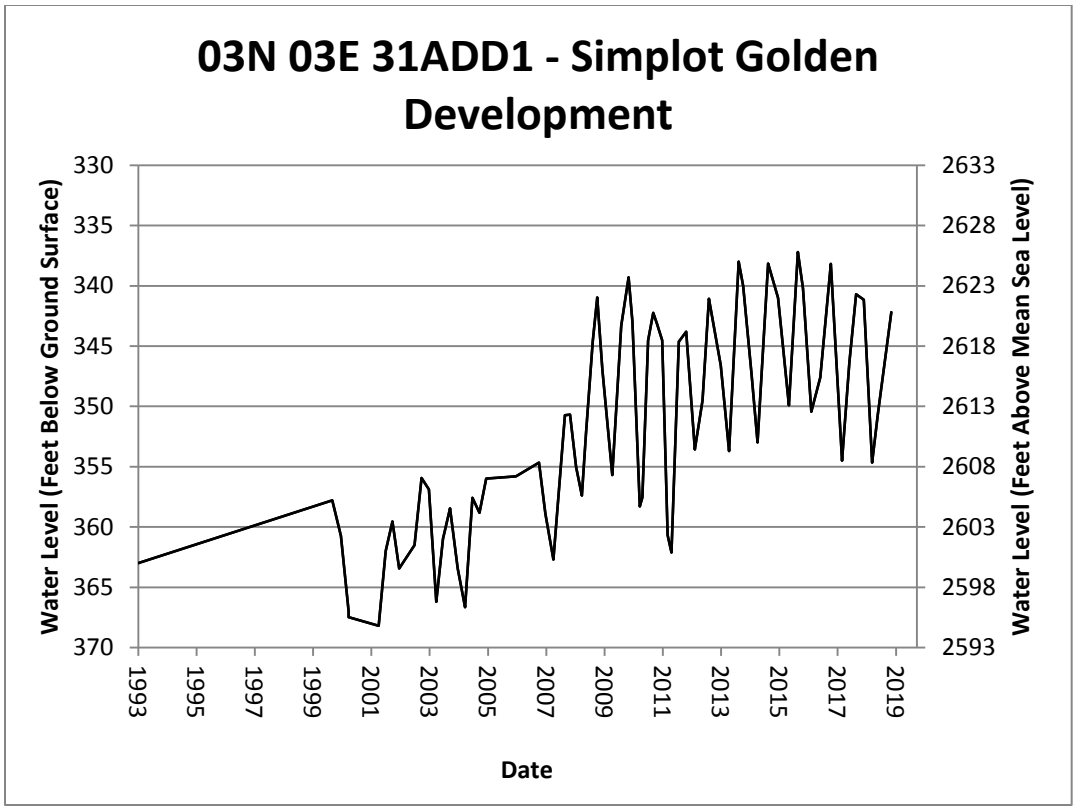

03N 02E 35BAB1 - Market
Water Level (Feet Below Ground Surface)
230
250
270
290
310
330
350
370
Water Level (Feet Above Mean Sea Level)
2665
2645
2625
2605
2585
2565
2545
2525
1991
1993
1995
1997
1999
2001
2003
2005
2007
2009
2011
2013
2015
2017
2019
Date

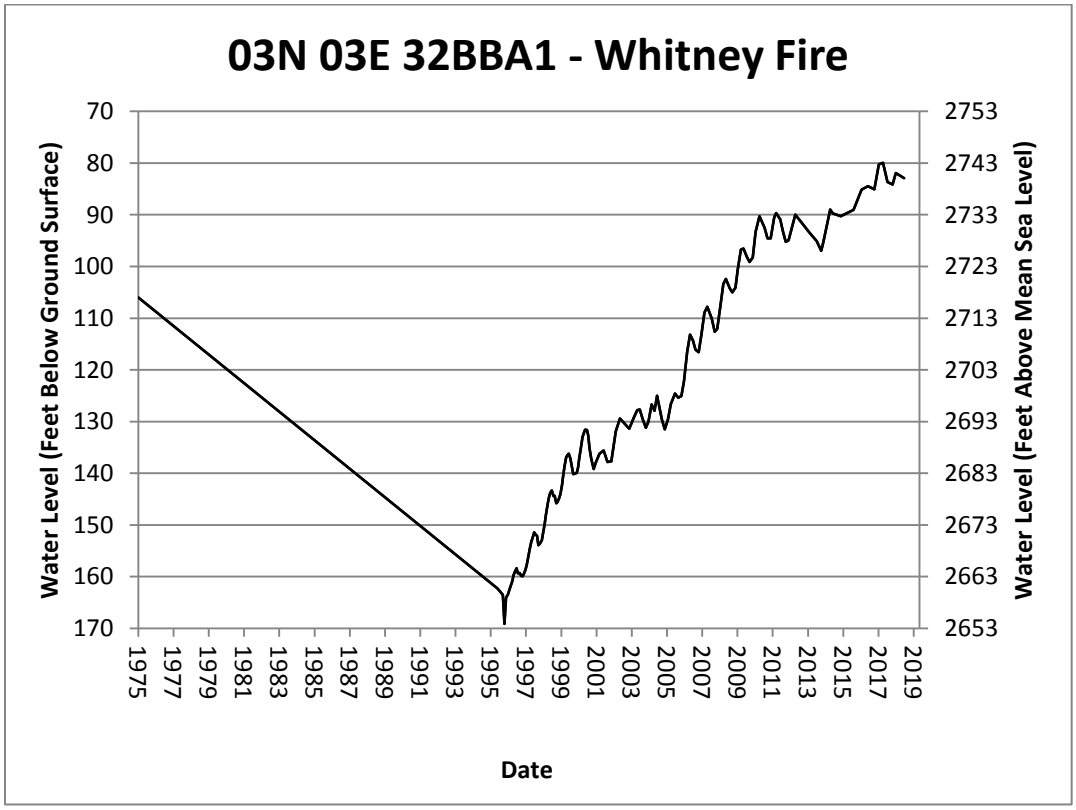

03N 02E 36ABC1 - Terteling
Water Level (Feet Below Ground Surface)
190
210
230
250
270
290
310
330
350
370
Water Level (Feet Above Mean Sea Level)
2703
2683
2663
2643
2623
2603
2583
2563
2543
2523
1972
1974
1976
1978
1980
1982
1984
1986
1988
1990
1992
1994
1996
1998
2000
2002
2004
2006
2008
2010
2012
2014
2016
2018
Date

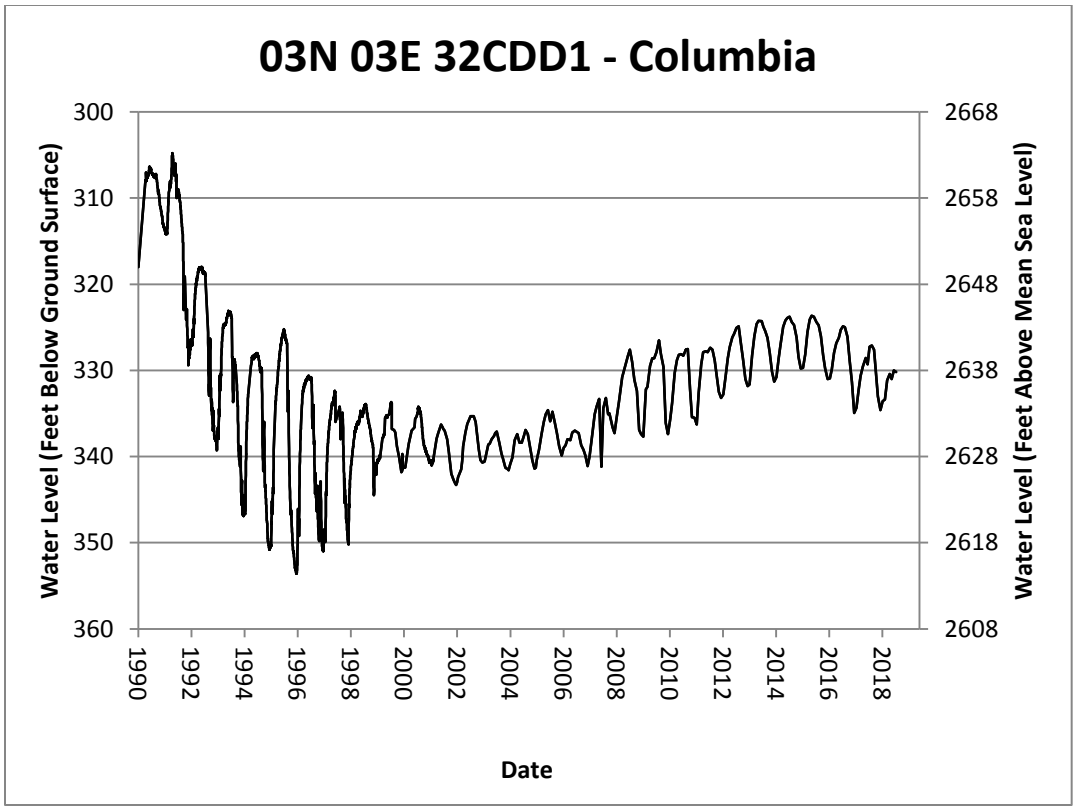

03N 02E 36CDA1 - Cromon
Water Level (Feet Below Ground Surface)
280
290
300
310
320
330
340
350
360
370
Water Level (Feet Above Mean Sea Level)
2635
2625
2615
2605
2595
2585
2575
2565
2555
2545
1991
1993
1995
1997
1999
2001
2003
2005
2007
2009
2011
2013
2015
2017
Date

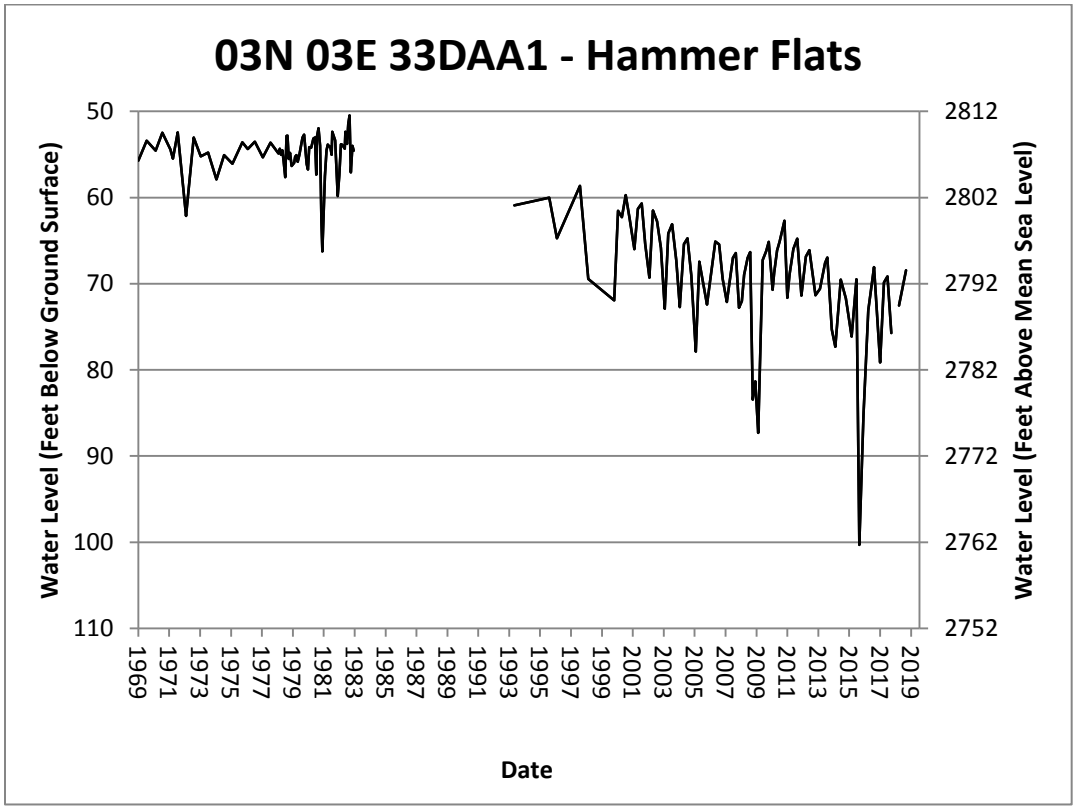

03N 03E 30BCBD1 - Hurok
Water Level (Feet Below Ground Surface)
20
22
24
26
28
30
32
34
36
38
40
Water Level (Feet Above Mean Sea Level)
2742
2740
2738
2736
2734
2732
2730
2728
2726
2724
2722
1969
1971
1973
1975
1977
1979
1981
1983
1985
1987
1989
1991
1993
1995
1997
1999
2001
2003
2005
2007
2009
2011
2013
2015
2017
2019
Date


03N 03E 30DDAA1 - E Boise Ave
Water Level (Feet Below Ground Surface)
130
140
150
160
170
180
190
Water Level (Feet Above Mean Sea Level)
2670
2660
2650
2640
2630
2620
2610
1987
1989
1991
1993
1995
1997
1999
2001
2003
2005
2007
2009
2011
2013
2015
2017
2019
Date


03N 03E 31ADD1 - Simplot Golden Development
Water Level (Feet Below Ground Surface)
330
335
340
345
350
355
360
365
370
Water Level (Feet Above Mean Sea Level)
2633
2628
2623
2618
2613
2608
2603
2598
2593
1993
1995
1997
1999
2001
2003
2005
2007
2009
2011
2013
2015
2017
2019
Date

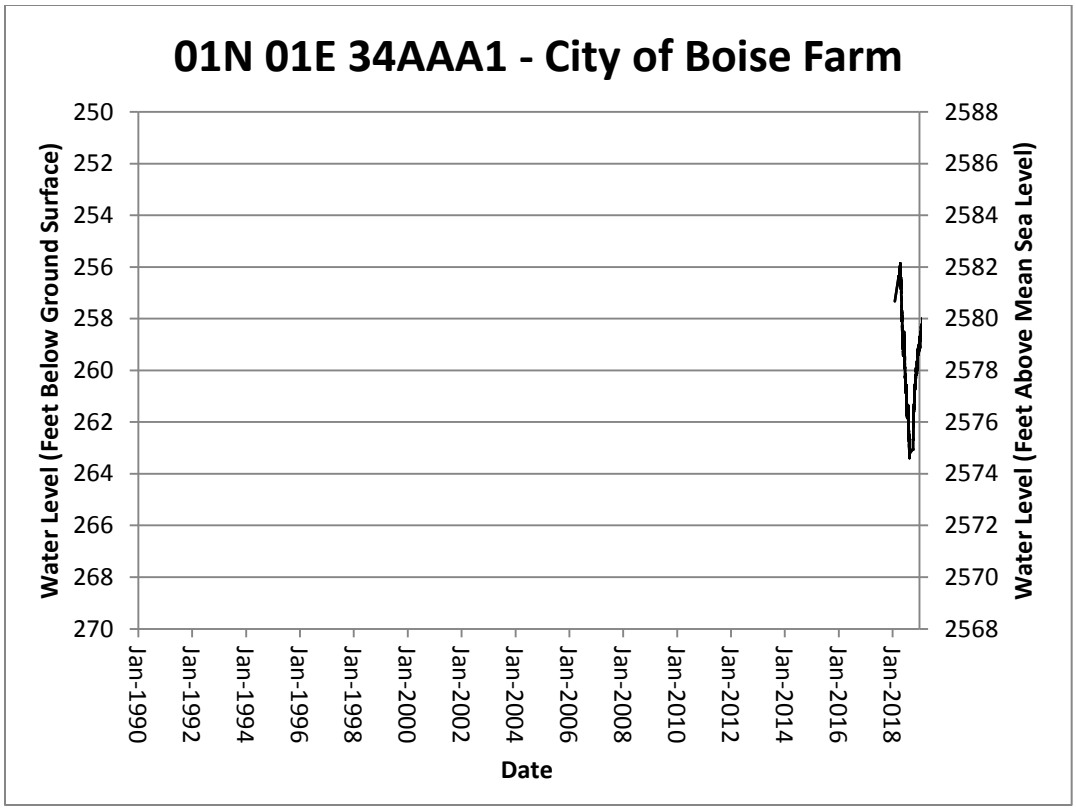

03N 03E 32BBA1 - Whitney Fire
Water Level (Feet Below Ground Surface)
70
80
90
100
110
120
130
140
150
160
170
Water Level (Feet Above Mean Sea Level)
2753
2743
2733
2723
2713
2703
2693
2683
2673
2663
2653
1975
1977
1979
1981
1983
1985
1987
1989
1991
1993
1995
1997
1999
2001
2003
2005
2007
2009
2011
2013
2015
2017
2019
Date

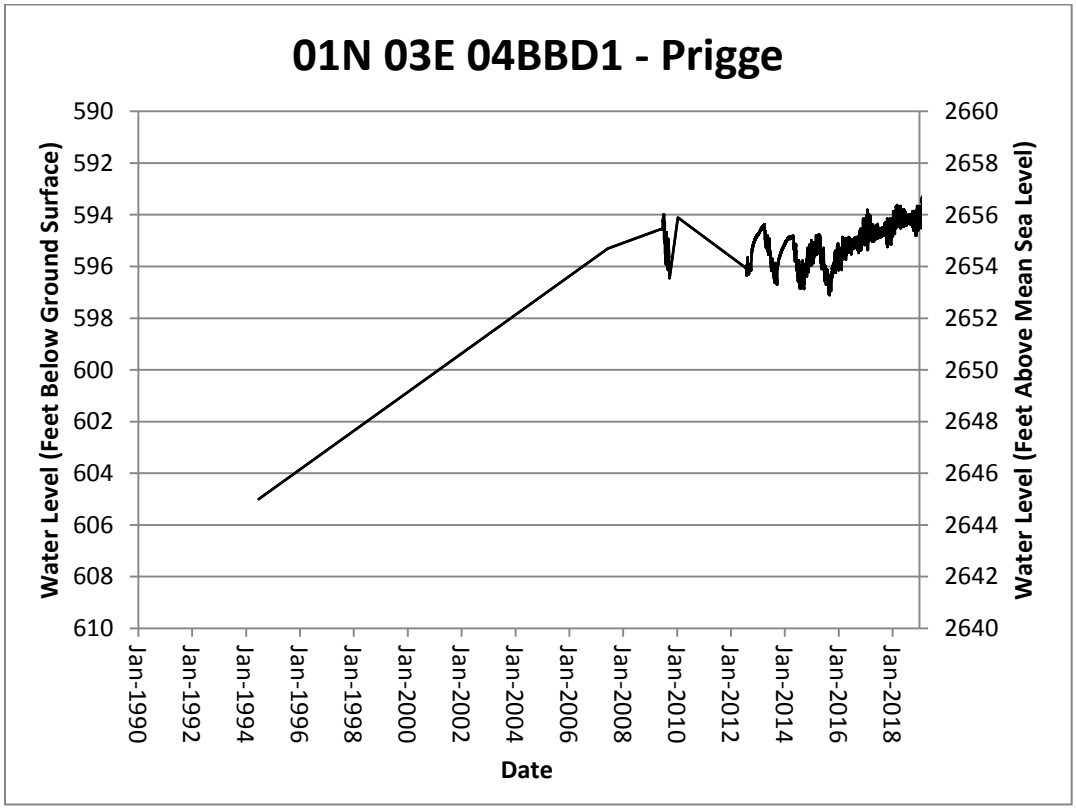

03N 03E 32CDD1 - Columbia
Water Level (Feet Below Ground Surface)
300
310
320
330
340
350
360
Water Level (Feet Above Mean Sea Level)
2668
2658
2648
2638
2628
2618
2608
1990
1992
1994
1996
1998
2000
2002
2004
2006
2008
2010
2012
2014
2016
2018
Date

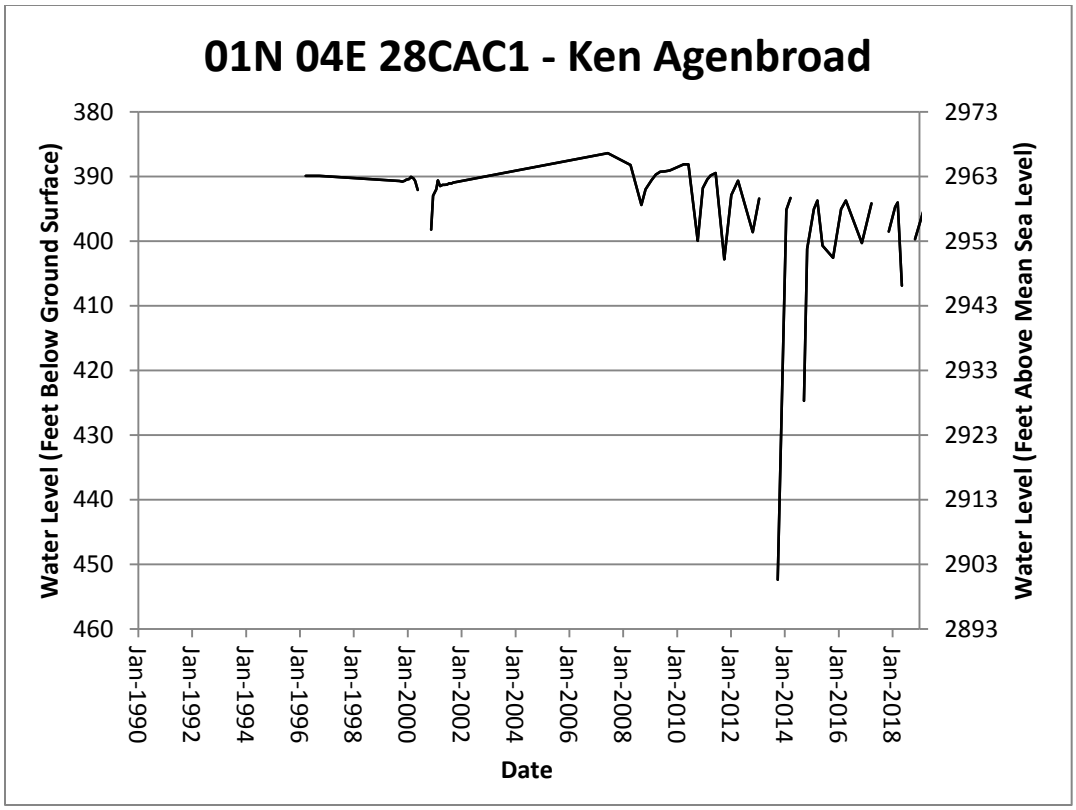

03N 03E 33DAA1 - Hammer Flats
Water Level (Feet Below Ground Surface)
50
60
70
80
90
100
110
Water Level (Feet Above Mean Sea Level)
2812
2802
2792
2782
2772
2762
2752
1969
1971
1973
1975
1977
1979
1981
1983
1985
1987
1989
1991
1993
1995
1997
1999
2001
2003
2005
2007
2009
2011
2013
2015
2017
2019
Date

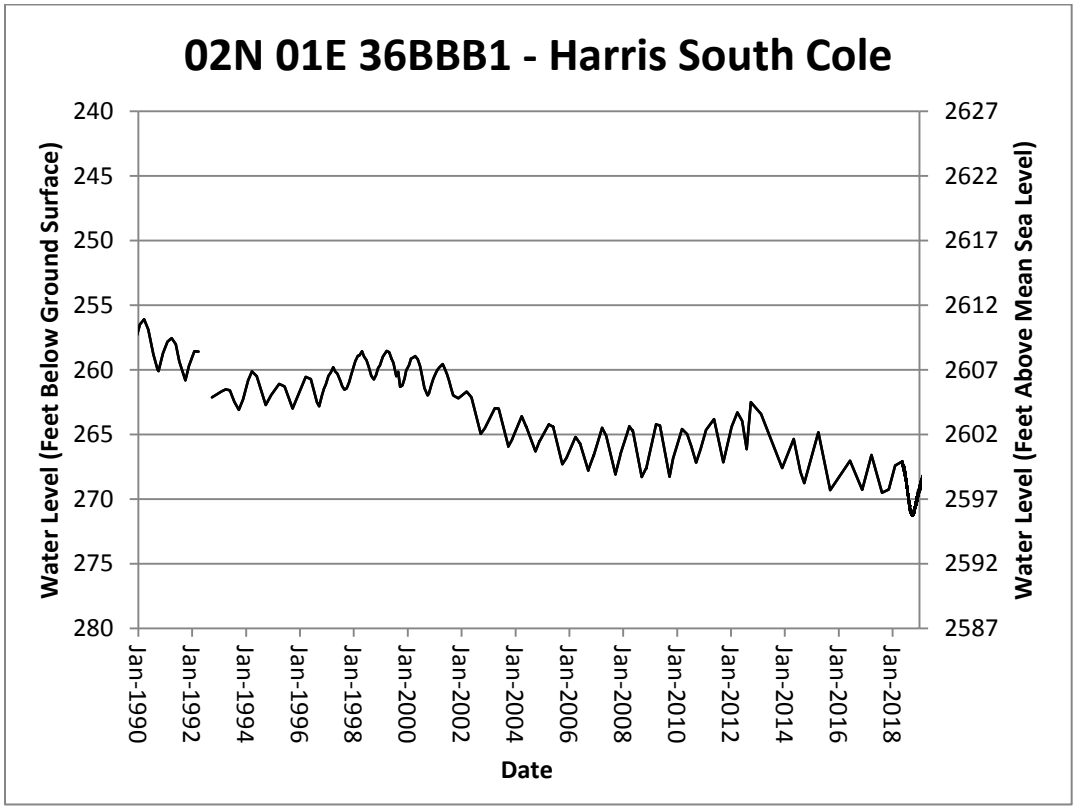
Appendix D

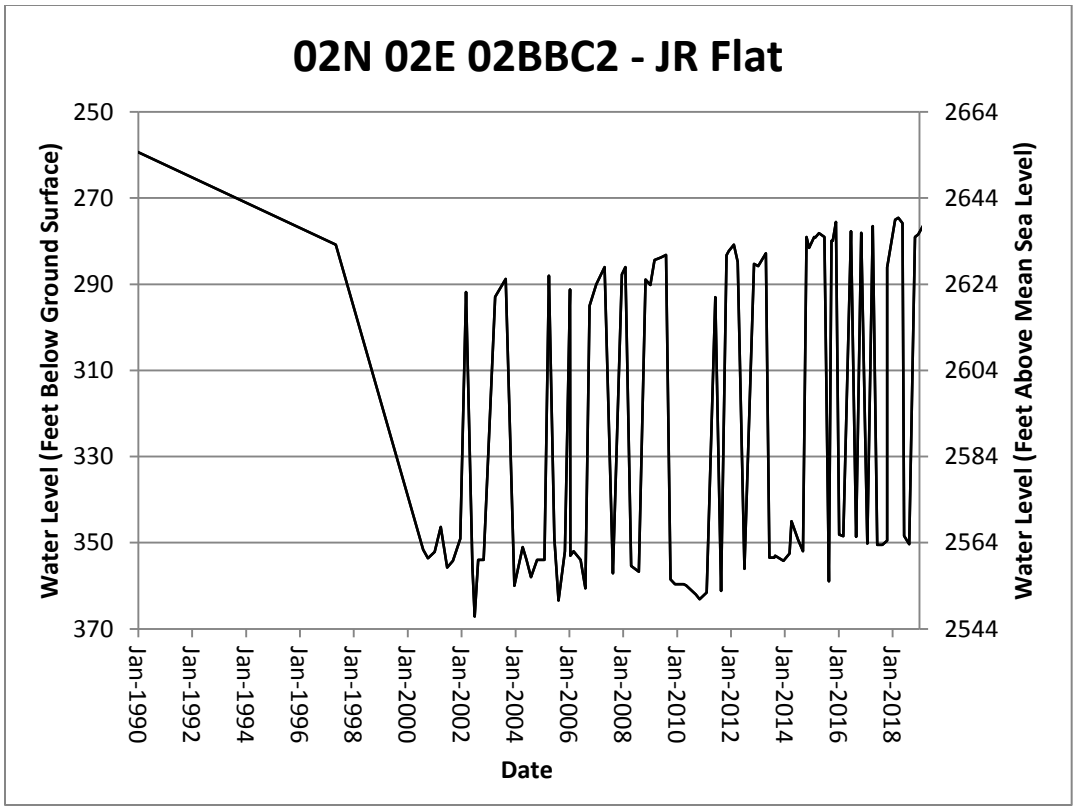
Hydrographs for Active Monitoring Wells From 1990 through 2018

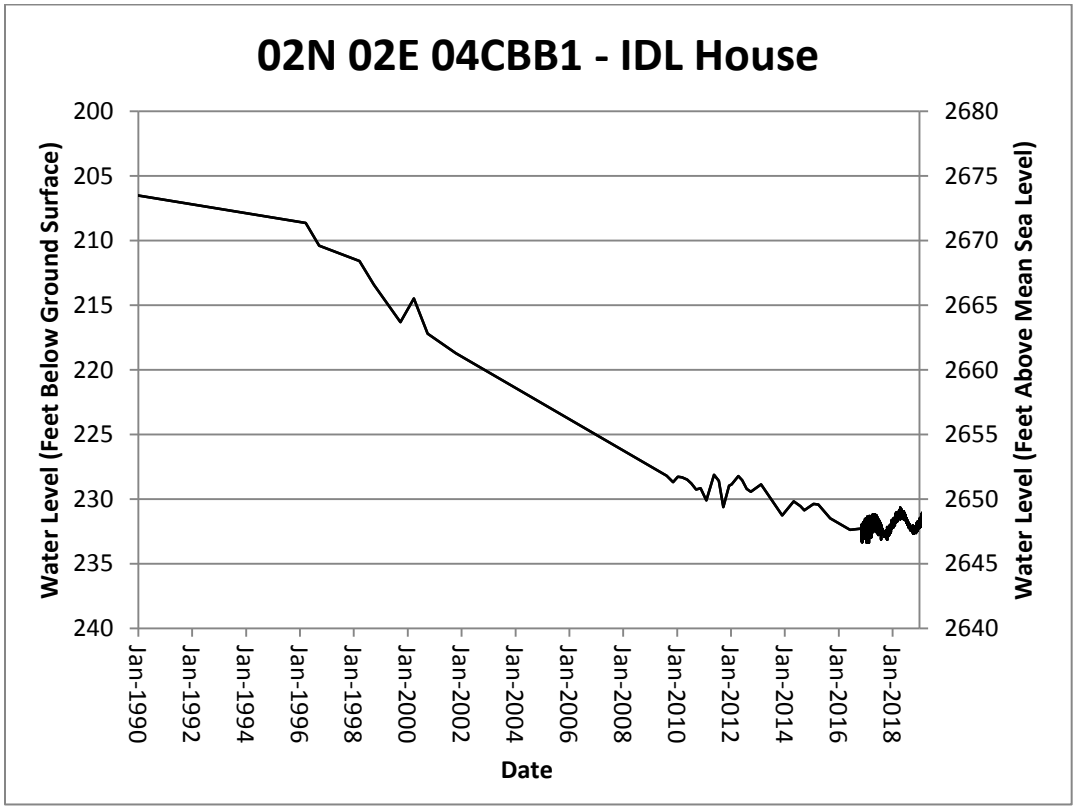

01N 01E 34AAA1 - City of Boise Farm
Water Level (Feet Below Ground Surface)
250
252
254
256
258
260
262
264
266
268
270
Water Level (Feet Above Mean Sea Level)
2588
2586
2584
2582
2580
2578
2576
2574
2572
2570
2568
Jan-1990
Jan-1992
Jan-1994
Jan-1996
Jan-1998
Jan-2000
Jan-2002
Jan-2004
Jan-2006
Jan-2008
Jan-2010
Jan-2012
Jan-2014
Jan-2016
Jan-2018
Date


01N 03E 04BBD1 - Prigge
Water Level (Feet Below Ground Surface)
590
592
594
596
598
600
602
604
606
608
610
Water Level (Feet Above Mean Sea Level)
2660
2658
2656
2654
2652
2650
2648
2646
2644
2642
2640
Jan-1990
Jan-1992
Jan-1994
Jan-1996
Jan-1998
Jan-2000
Jan-2002
Jan-2004
Jan-2006
Jan-2008
Jan-2010
Jan-2012
Jan-2014
Jan-2016
Jan-2018
Date


01N 04E 28CAC1 - Ken Agenbroad
Water Level (Feet Below Ground Surface)
380
390
400
410
420
430
440
450
460
Water Level (Feet Above Mean Sea Level)
2973
2963
2953
2943
2933
2923
2913
2903
2893
Jan-1990
Jan-1992
Jan-1994
Jan-1996
Jan-1998
Jan-2000
Jan-2002
Jan-2004
Jan-2006
Jan-2008
Jan-2010
Jan-2012
Jan-2014
Jan-2016
Jan-2018
Date


02N 01E 36BBB1 - Harris South Cole
Water Level (Feet Below Ground Surface)
240
245
250
255
260
265
270
275
280
Water Level (Feet Above Mean Sea Level)
2627
2622
2617
2612
2607
2602
2597
2592
2587
Jan-1990
Jan-1992
Jan-1994
Jan-1996
Jan-1998
Jan-2000
Jan-2002
Jan-2004
Jan-2006
Jan-2008
Jan-2010
Jan-2012
Jan-2014
Jan-2016
Jan-2018
Date


02N 02E 02BBC2 - JR Flat
Water Level (Feet Below Ground Surface)
250
270
290
310
330
350
370
Water Level (Feet Above Mean Sea Level)
2664
2644
2624
2604
2584
2564
2544
Jan-1990
Jan-1992
Jan-1994
Jan-1996
Jan-1998
Jan-2000
Jan-2002
Jan-2004
Jan-2006
Jan-2008
Jan-2010
Jan-2012
Jan-2014
Jan-2016
Jan-2018
Date


02N 02E 04CBB1 - IDL House
Water Level (Feet Below Ground Surface)
200
205
210
215
220
225
230
235
240
Water Level (Feet Above Mean Sea Level)
2680
2675
2670
2665
2660
2655
2650
2645
2640
Jan-1990
Jan-1992
Jan-1994
Jan-1996
Jan-1998
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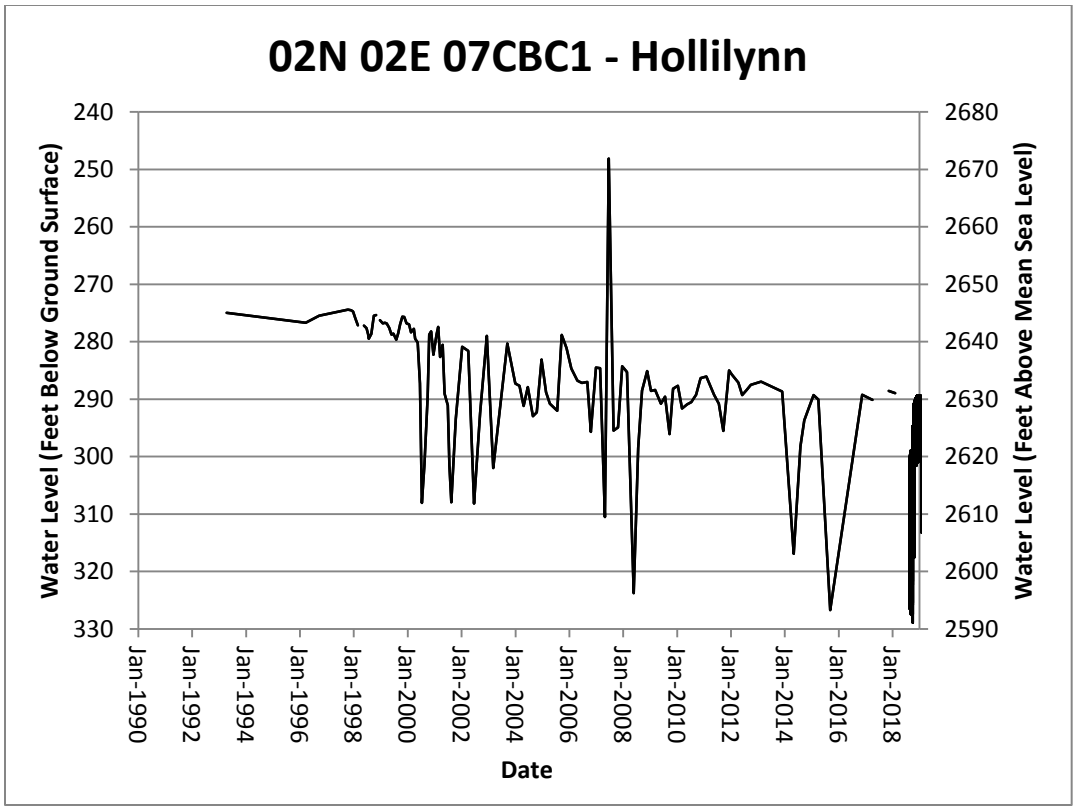
02N 02E 07CBC1 - Hollilynn
Water Level (Feet Below Ground Surface)
240
250
260
270
280
290
300
310
320
330
Water Level (Feet Above Mean Sea Level)
2680
2670
2660
2650
2640
2630
2620
2610
2600
2590
Jan-1990
Jan-1992
Jan-1994
Jan-1996
Jan-1998
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Jan-2002
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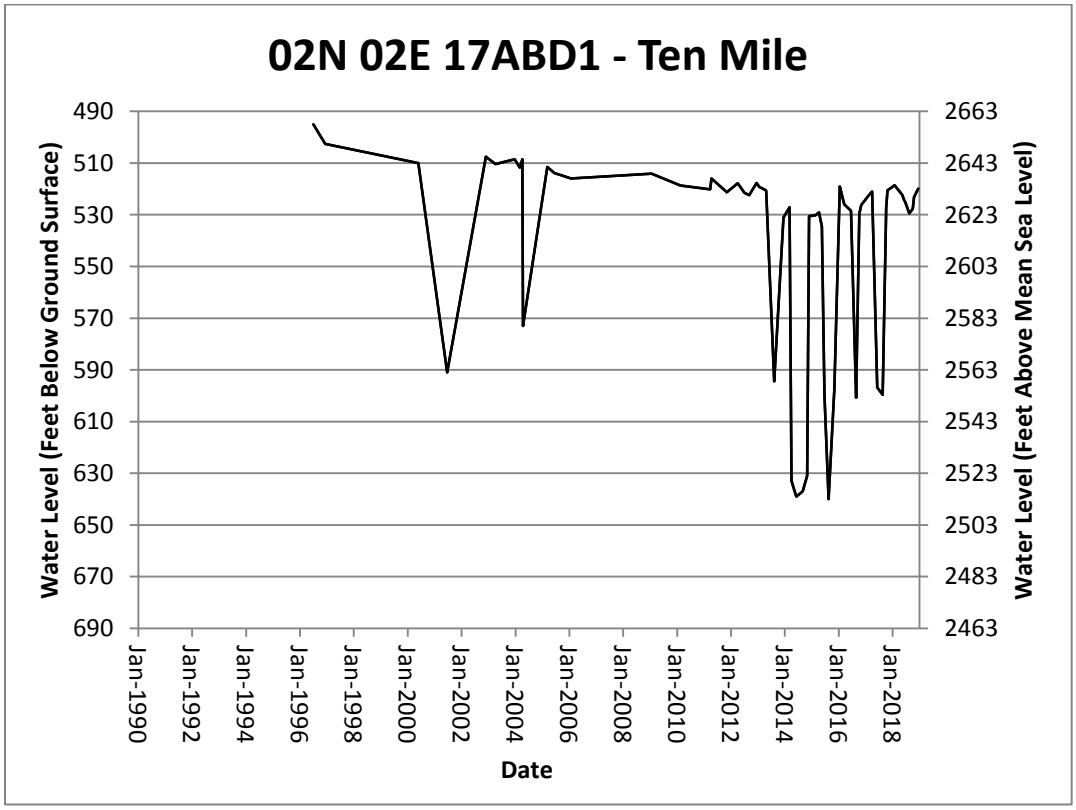
02N 02E 17ABD1 - Ten Mile
Water Level (Feet Below Ground Surface)
490
510
530
550
570
590
610
630
650
670
690
Water Level (Feet Above Mean Sea Level)
2663
2643
2623
2603
2583
2563
2543
2523
2503
2483
2463
Jan-1990
Jan-1992
Jan-1994
Jan-1996
Jan-1998
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Jan-2012
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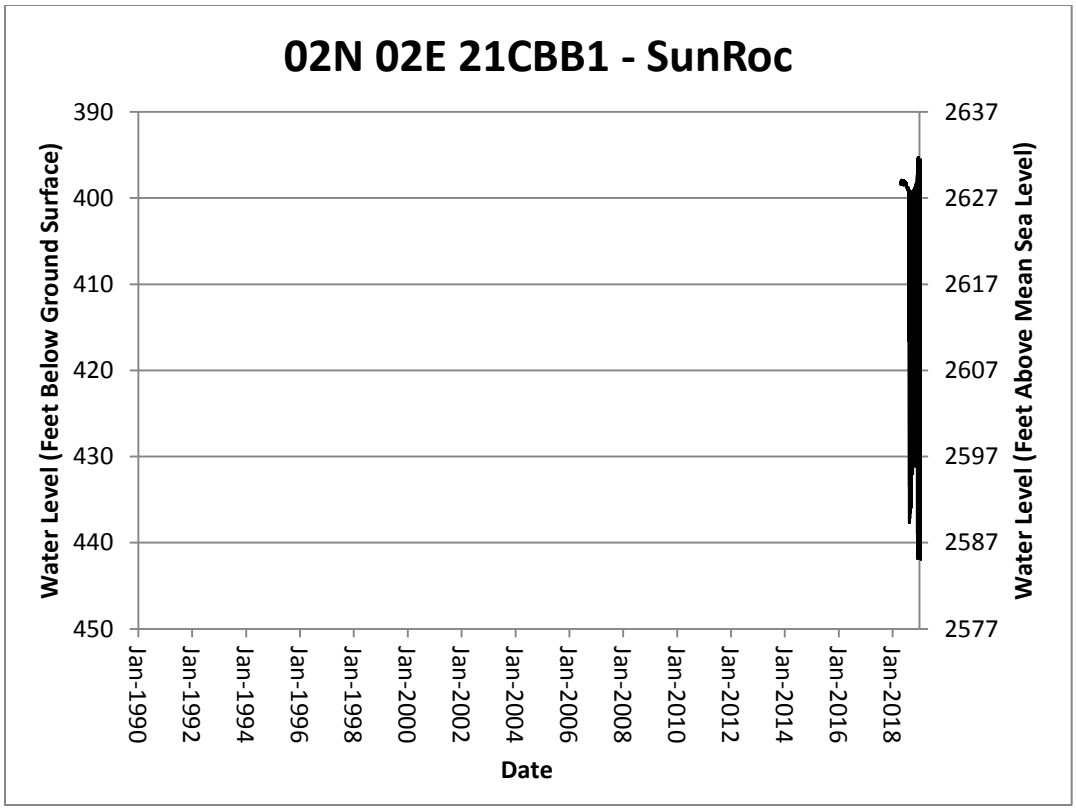
Date


02N 02E 21CBB1 - SunRoc
Water Level (Feet Below Ground Surface)
390
400
410
420
430
440
450
Water Level (Feet Above Mean Sea Level)
2637
2627
2617
2607
2597
2587
2577
Jan-1990
Jan-1992
Jan-1994
Jan-1996
Jan-1998
Jan-2000
Jan-2002
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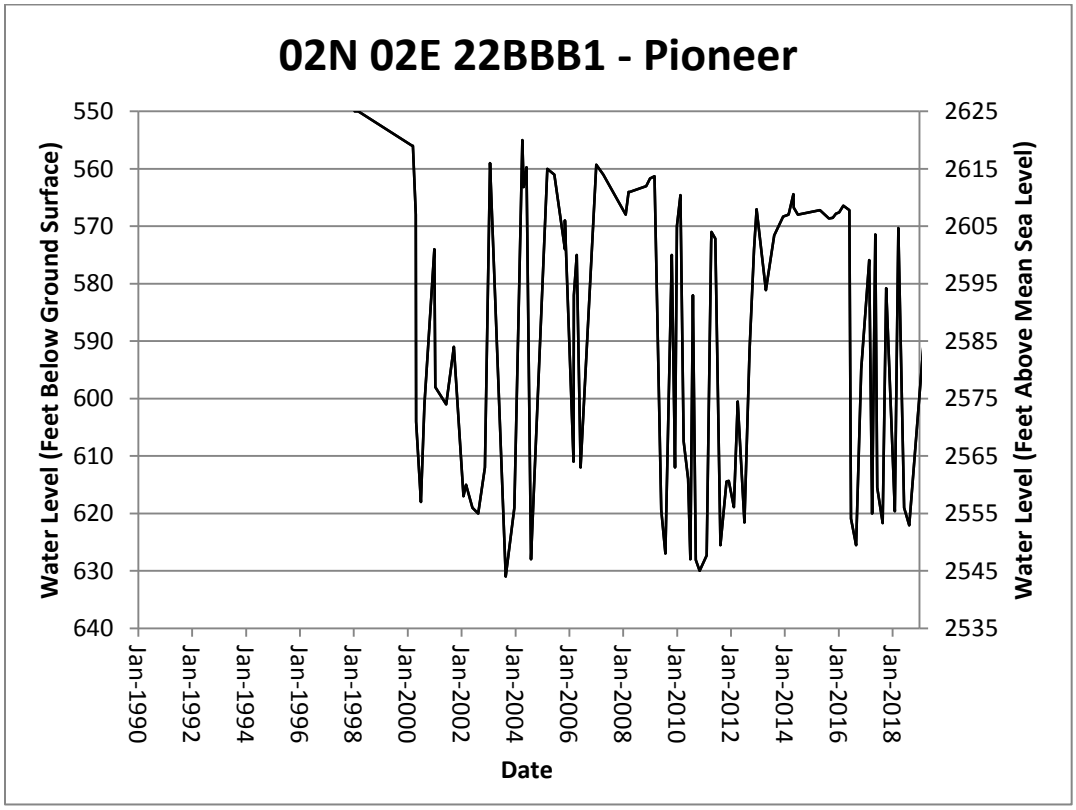
02N 02E 22BBB1 - Pioneer
Water Level (Feet Below Ground Surface)
550
560
570
580
590
600
610
620
630
640
Water Level (Feet Above Mean Sea Level)
2625
2615
2605
2595
2585
2575
2565
2555
2545
2535
Jan-1990
Jan-1992
Jan-1994
Jan-1996
Jan-1998
Jan-2000
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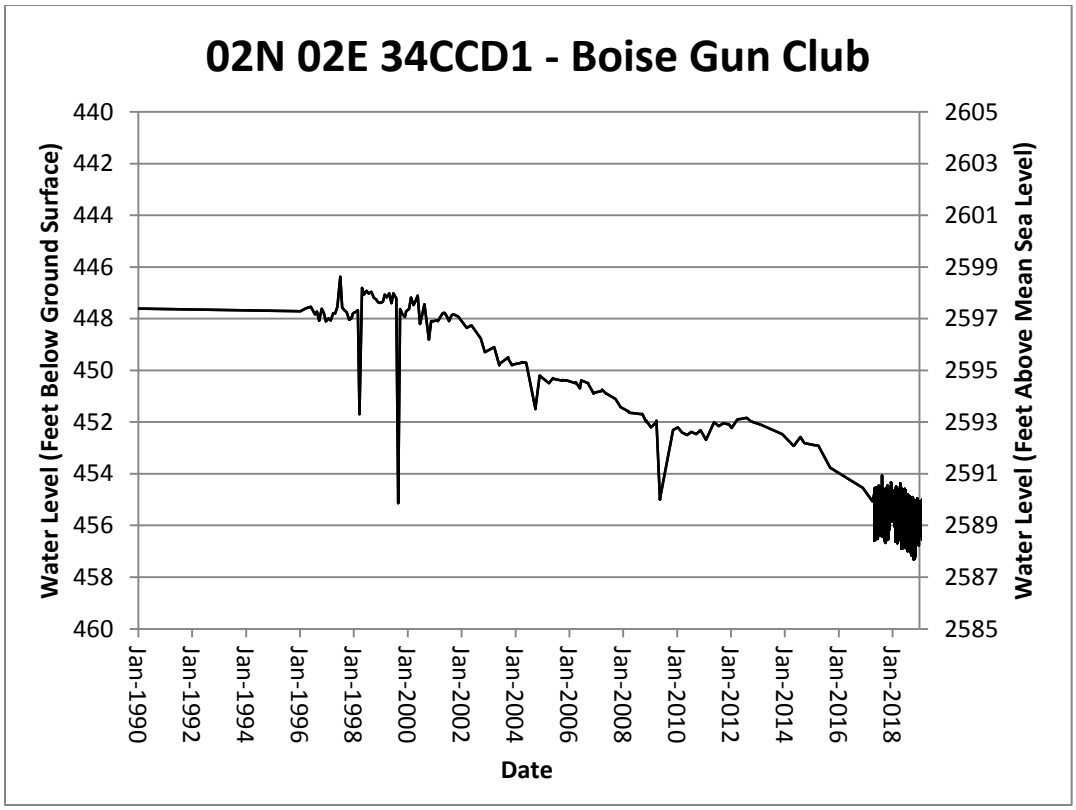
Date


02N 02E 34CCD1 - Boise Gun Club
Water Level (Feet Below Ground Surface)
440
442
444
446
448
450
452
454
456
458
460
Water Level (Feet Above Mean Sea Level)
2605
2603
2601
2599
2597
2595
2593
2591
2589
2587
2585
Jan-1990
Jan-1992
Jan-1994
Jan-1996
Jan-1998
Jan-2000
Jan-2002
Jan-2004
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Jan-2010
Jan-2012
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Jan-2016
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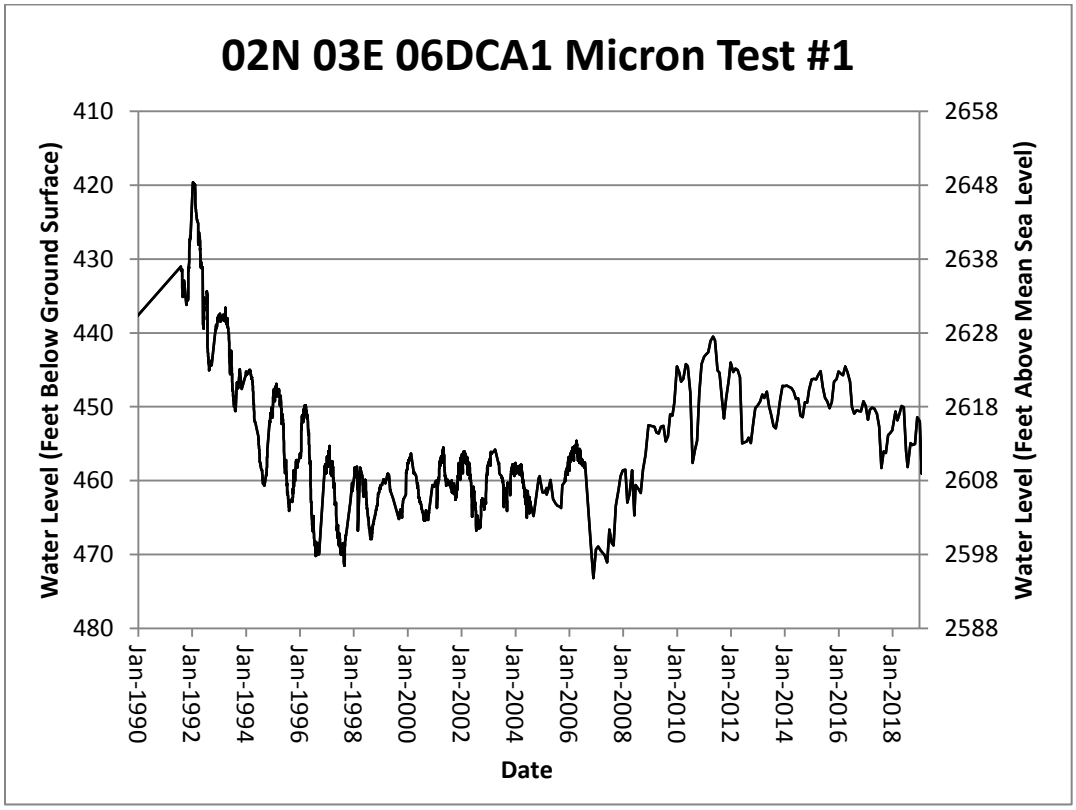
02N 03E 06DCA1 Micron Test #1
Water Level (Feet Below Ground Surface)
410
420
430
440
450
460
470
480
Water Level (Feet Above Mean Sea Level)
2658
2648
2638
2628
2618
2608
2598
2588
Jan-1990
Jan-1992
Jan-1994
Jan-1996
Jan-1998
Jan-2000
Jan-2002
Jan-2004
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Jan-2008
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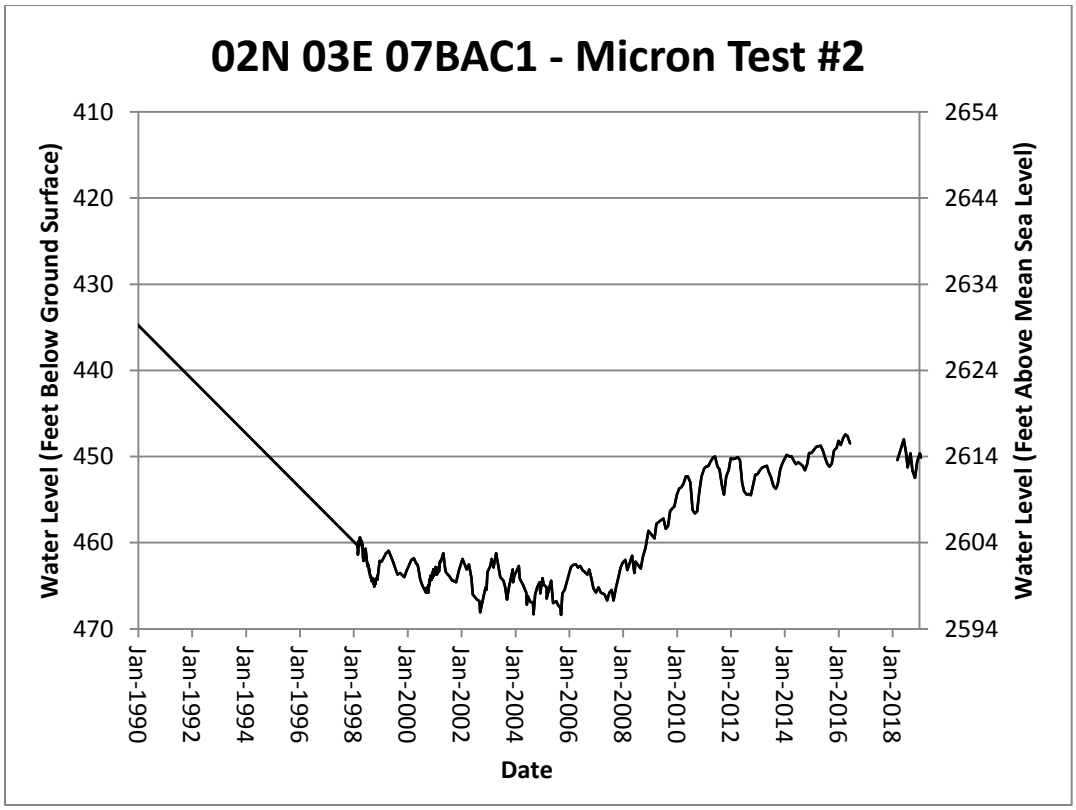
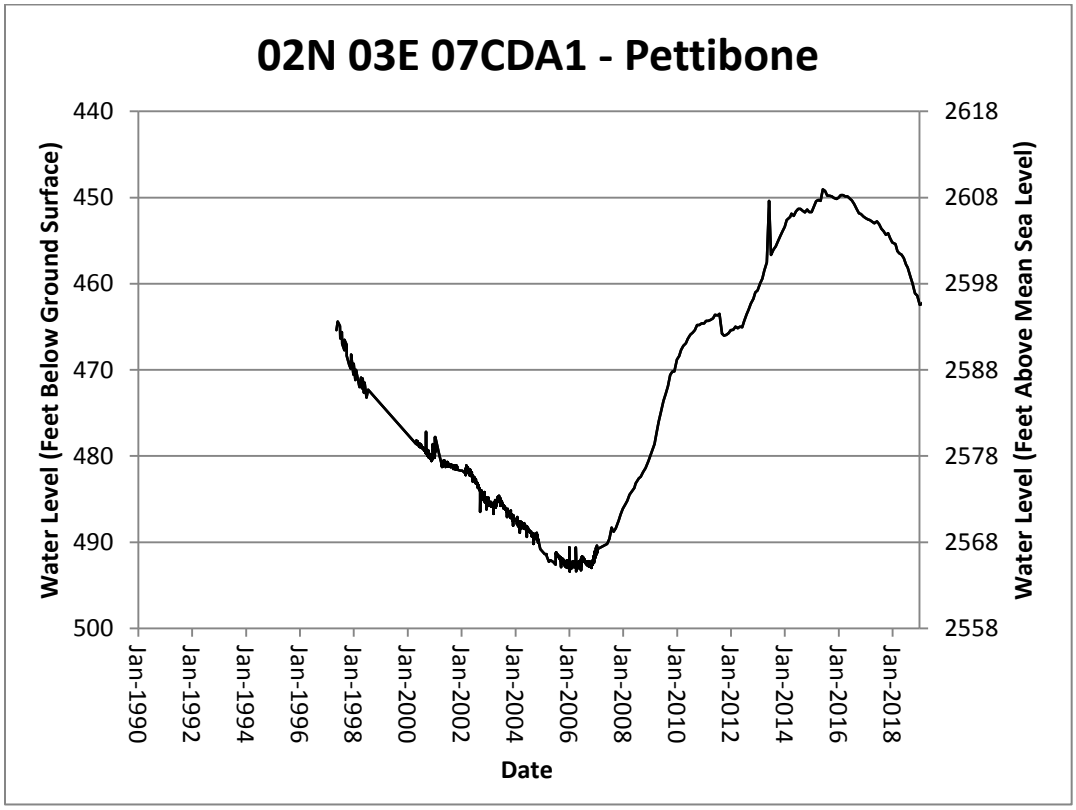
Jan-2012
Jan-2014
Jan-2016
Jan-2018
Date


02N 03E 07BAC1 - Micron Test #2
Water Level (Feet Below Ground Surface)
410
420
430
440
450
460
470
Water Level (Feet Above Mean Sea Level)
2654
2644
2634
2624
2614
2604
2594
Jan-1990
Jan-1992
Jan-1994
Jan-1996
Jan-1998
Jan-2000
Jan-2002
Jan-2004
Jan-2006
Jan-2008
Jan-2010
Jan-2012
Jan-2014
Jan-2016
Jan-2018
Date


02N 03E 07CDA1 - Pettibone
Water Level (Feet Below Ground Surface)
440
450
460
470
480
490
500
Water Level (Feet Above Mean Sea Level)
2618
2608
2598
2588
2578
2568
2558
Jan-1990
Jan-1992
Jan-1994
Jan-1996
Jan-1998
Jan-2000
Jan-2002
Jan-2004
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Jan-2012
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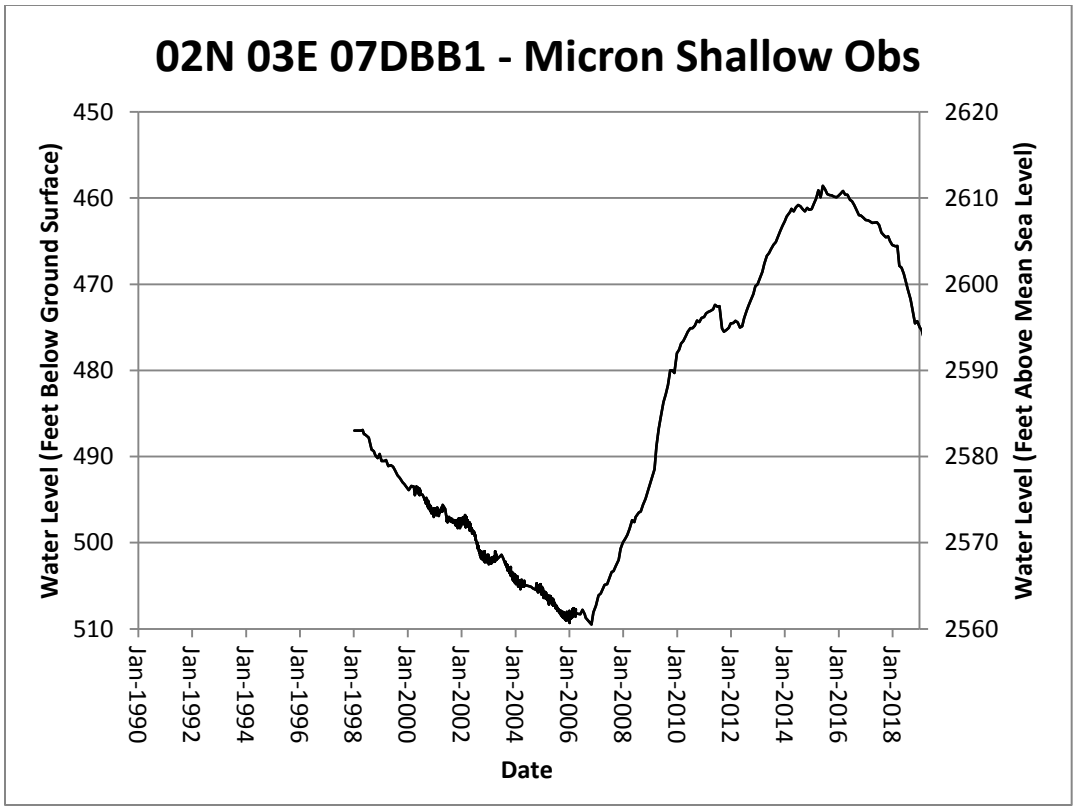
02N 03E 07DBB1 - Micron Shallow Obs
Water Level (Feet Below Ground Surface)
450
460
470
480
490
500
510
Water Level (Feet Above Mean Sea Level)
2620
2610
2600
2590
2580
2570
2560
Jan-1990
Jan-1992
Jan-1994
Jan-1996
Jan-1998
Jan-2000
Jan-2002
Jan-2004
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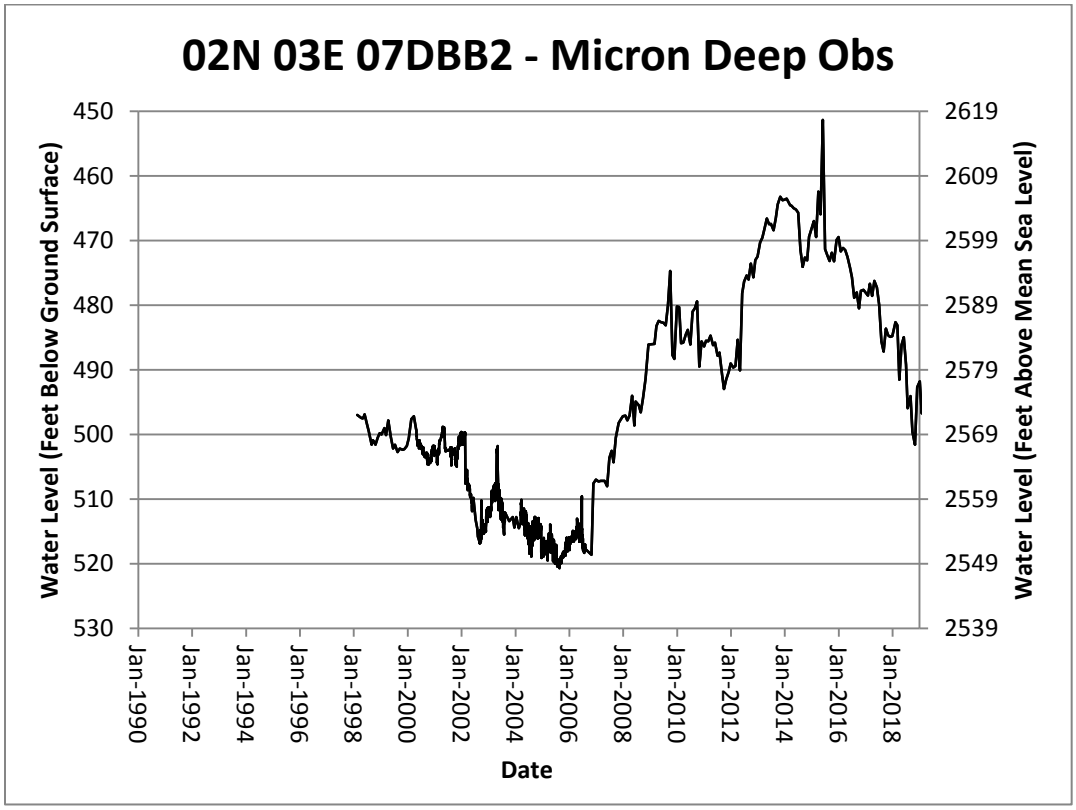
02N 03E 07DBB2 - Micron Deep Obs
Water Level (Feet Below Ground Surface)
450
460
470
480
490
500
510
520
530
Water Level (Feet Above Mean Sea Level)
2619
2609
2599
2589
2579
2569
2559
2549
2539
Jan-1990
Jan-1992
Jan-1994
Jan-1996
Jan-1998
Jan-2000
Jan-2002
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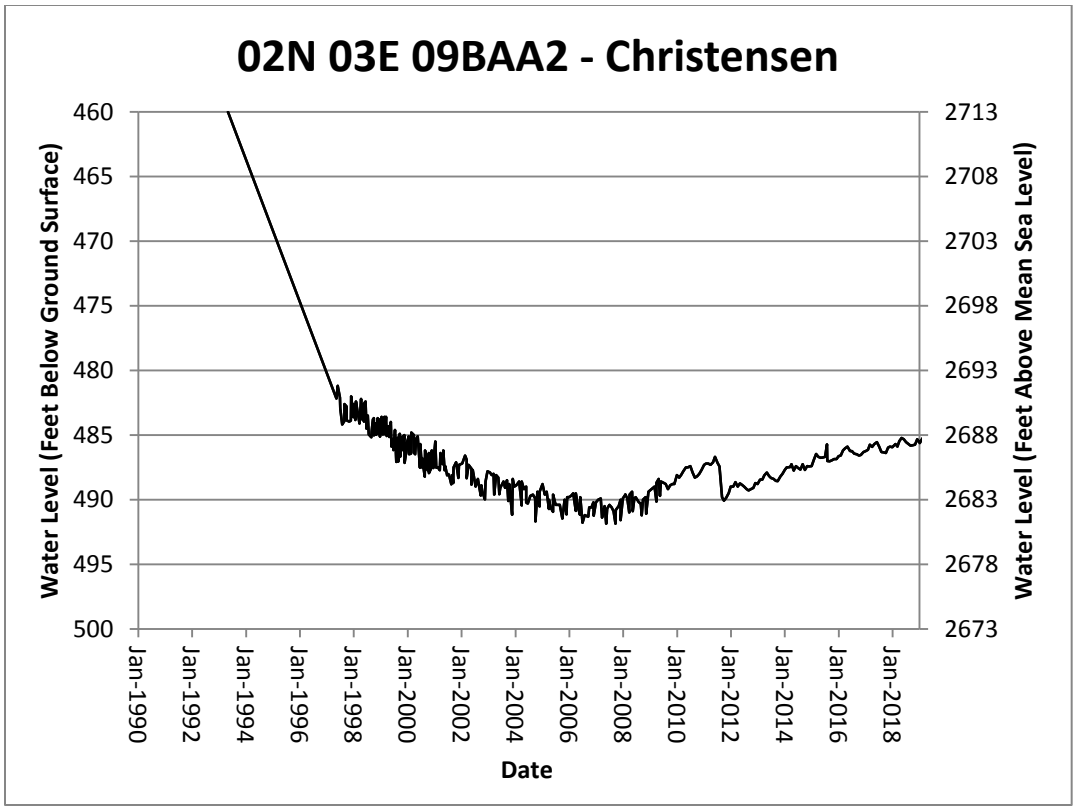
02N 03E 09BAA2 - Christensen
Water Level (Feet Below Ground Surface)
460
465
470
475
480
485
490
495
500
Water Level (Feet Above Mean Sea Level)
2713
2708
2703
2698
2693
2688
2683
2678
2673
Jan-1990
Jan-1992
Jan-1994
Jan-1996
Jan-1998
Jan-2000
Jan-2002
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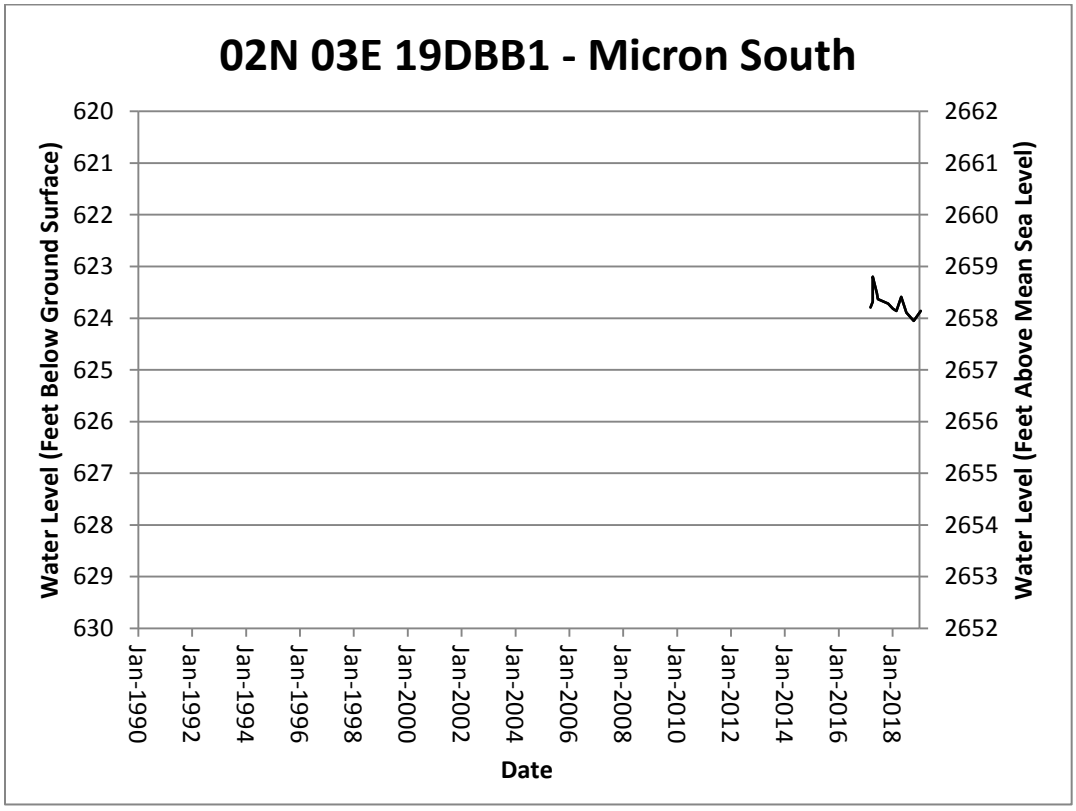
02N 03E 19DBB1 - Micron South
Water Level (Feet Below Ground Surface)
620
621
622
623
624
625
626
627
628
629
630
Water Level (Feet Above Mean Sea Level)
2662
2661
2660
2659
2658
2657
2656
2655
2654
2653
2652
Jan-1990
Jan-1992
Jan-1994
Jan-1996
Jan-1998
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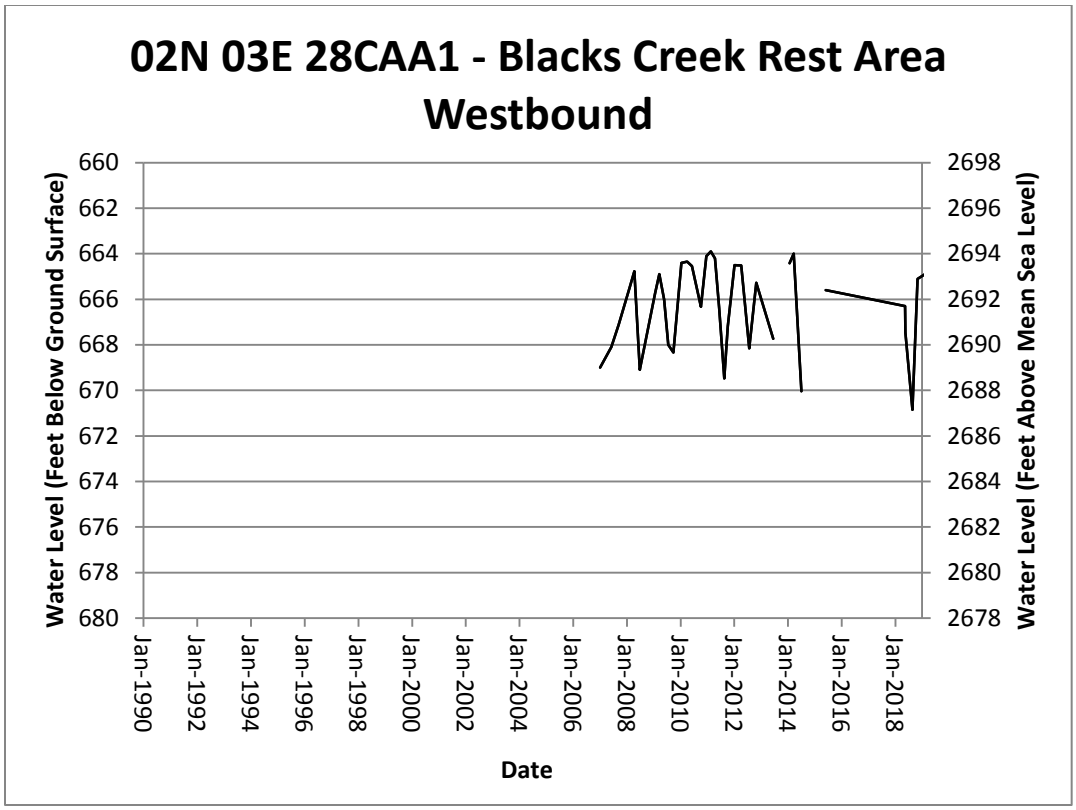
02N 03E 28CAA1 - Blacks Creek Rest Area Westbound
Water Level (Feet Below Ground Surface)
660
662
664
666
668
670
672
674
676
678
680
Water Level (Feet Above Mean Sea Level)
2698
2696
2694
2692
2690
2688
2686
2684
2682
2680
2678
Jan-1990
Jan-1992
Jan-1994
Jan-1996
Jan-1998
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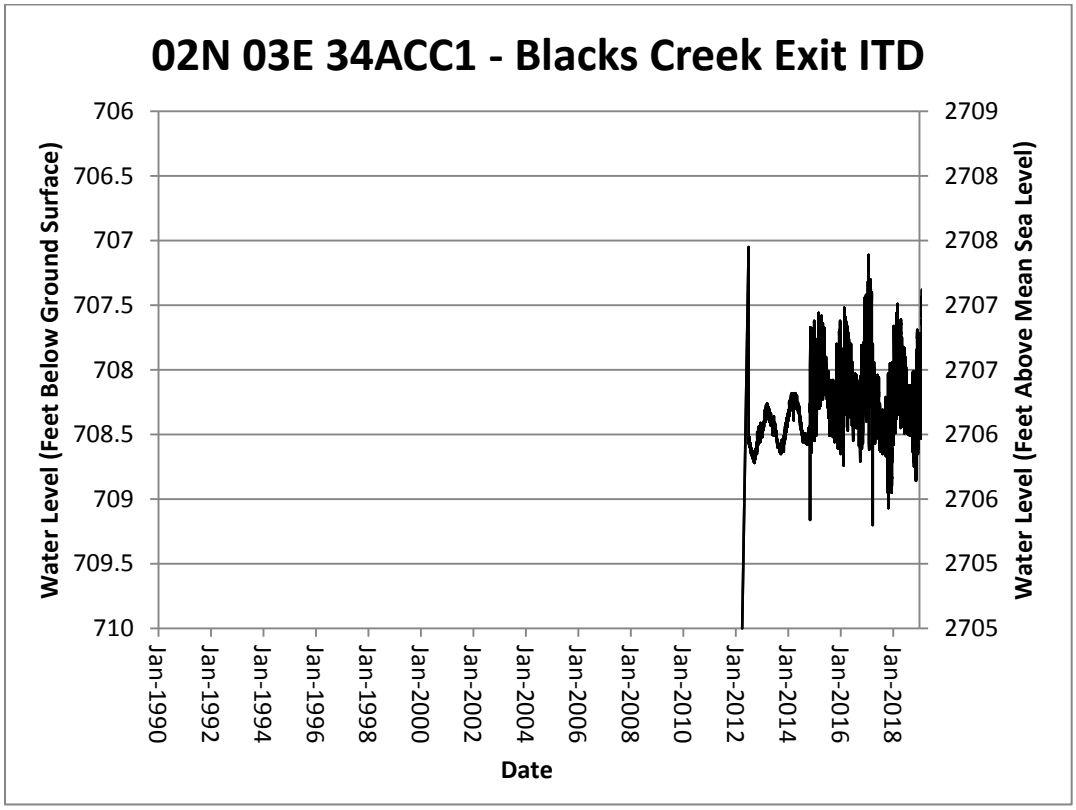
02N 03E 34ACC1 - Blacks Creek Exit ITD
Water Level (Feet Below Ground Surface)
706
706.5
707
707.5
708
708.5
709
709.5
710
Water Level (Feet Above Mean Sea Level)
2709
2708
2708
2707
2707
2706
2706
2705
2705
Jan-1990
Jan-1992
Jan-1994
Jan-1996
Jan-1998
Jan-2000
Jan-2002
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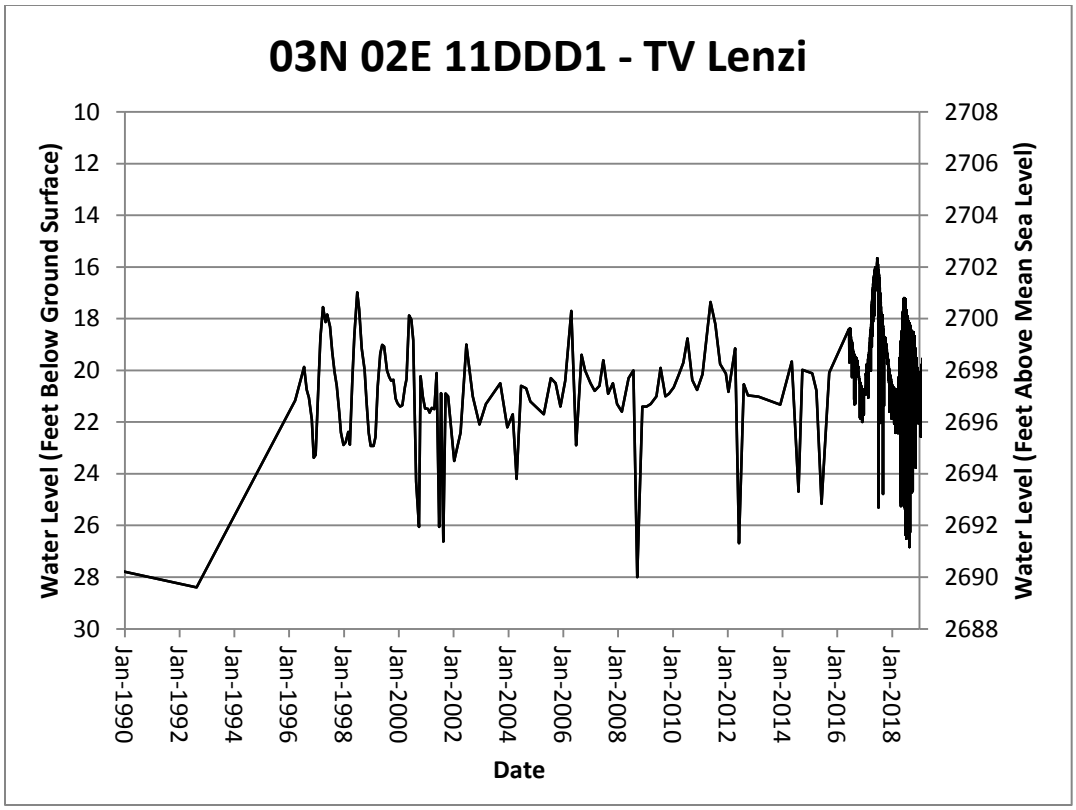
03N 02E 11DDD1 - TV Lenzi
Water Level (Feet Below Ground Surface)
10
12
14
16
18
20
22
24
26
28
30
Water Level (Feet Above Mean Sea Level)
2708
2706
2704
2702
2700
2698
2696
2694
2692
2690
2688
Jan-1990
Jan-1992
Jan-1994
Jan-1996
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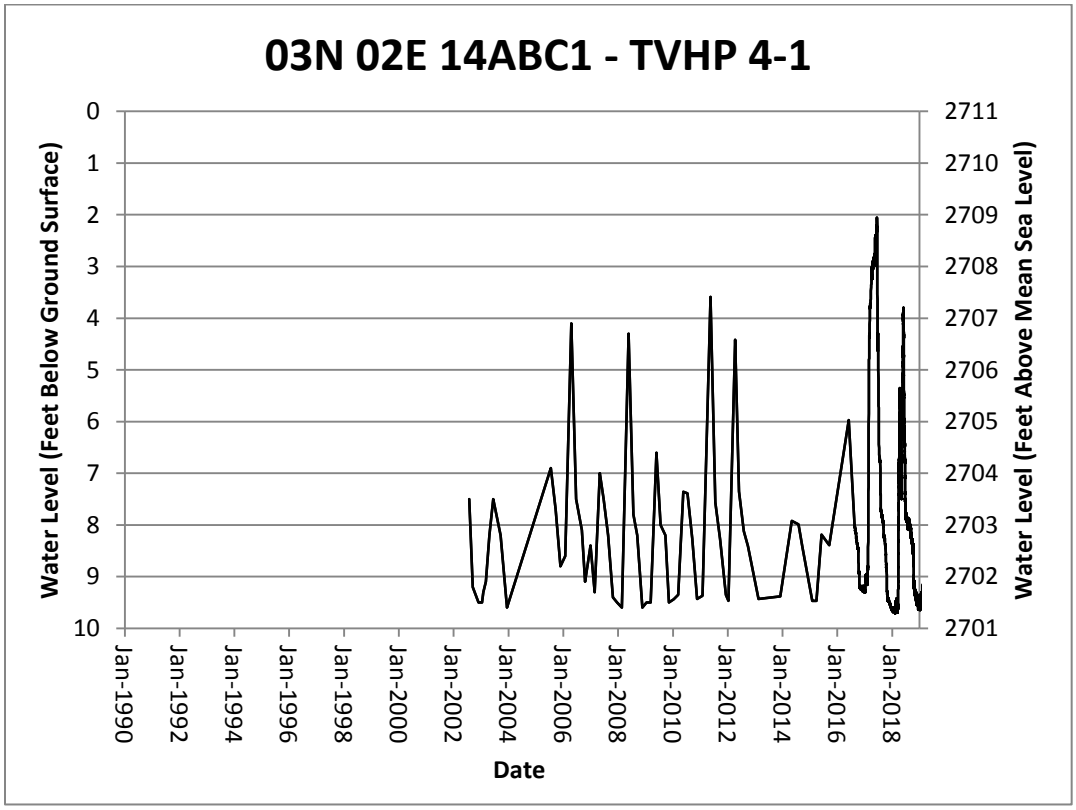
03N 02E 14ABC1 - TVHP 4-1
Water Level (Feet Below Ground Surface)
0
1
2
3
4
5
6
7
8
9
10
Water Level (Feet Above Mean Sea Level)
2711
2710
2709
2708
2707
2706
2705
2704
2703
2702
2701
Jan-1990
Jan-1992
Jan-1994
Jan-1996
Jan-1998
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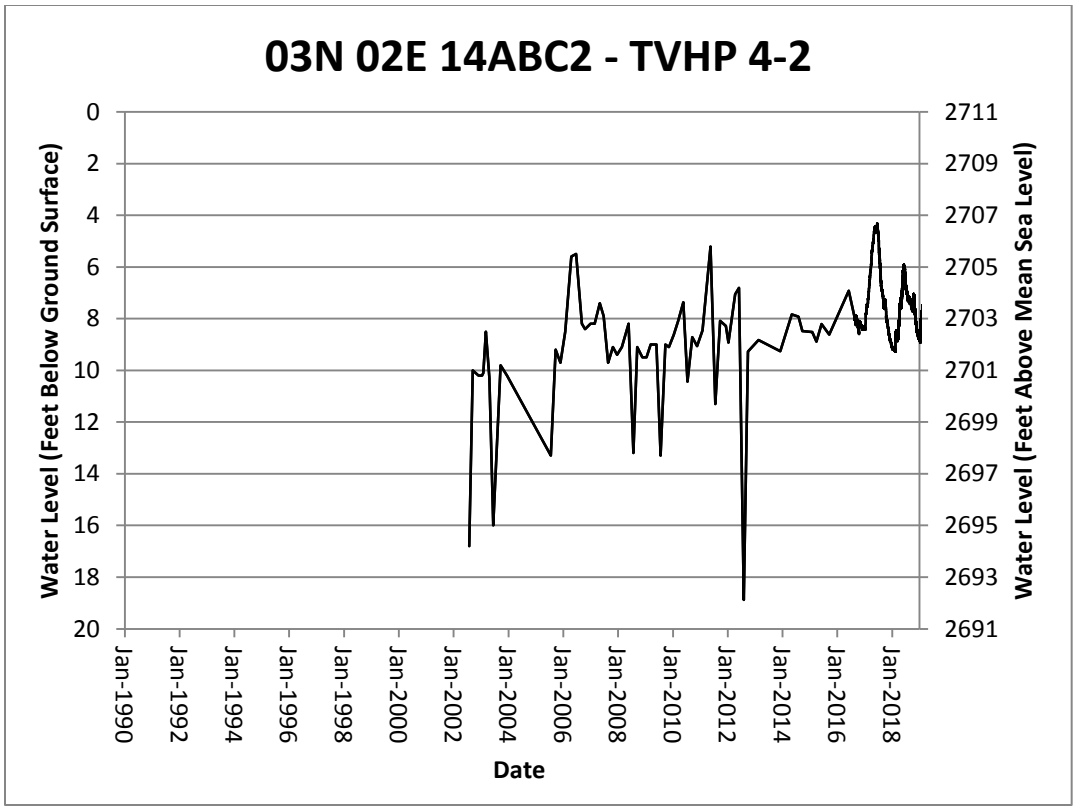
03N 02E 14ABC2 - TVHP 4-2
Water Level (Feet Below Ground Surface)
0
2
4
6
8
10
12
14
16
18
20
Water Level (Feet Above Mean Sea Level)
2711
2709
2707
2705
2703
2701
2699
2697
2695
2693
2691
Jan-1990
Jan-1992
Jan-1994
Jan-1996
Jan-1998
Jan-2000
Jan-2002
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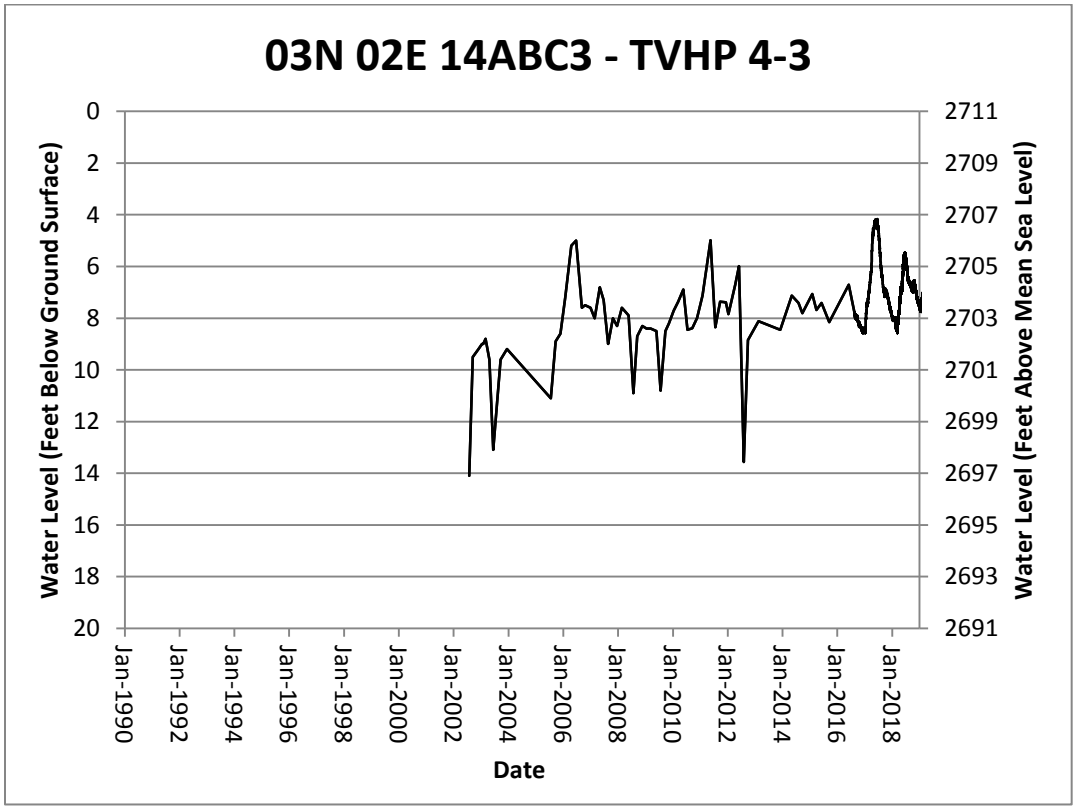
03N 02E 14ABC3 - TVHP 4-3
Water Level (Feet Below Ground Surface)
0
2
4
6
8
10
12
14
16
18
20
Water Level (Feet Above Mean Sea Level)
2711
2709
2707
2705
2703
2701
2699
2697
2695
2693
2691
Jan-1990
Jan-1992
Jan-1994
Jan-1996
Jan-1998
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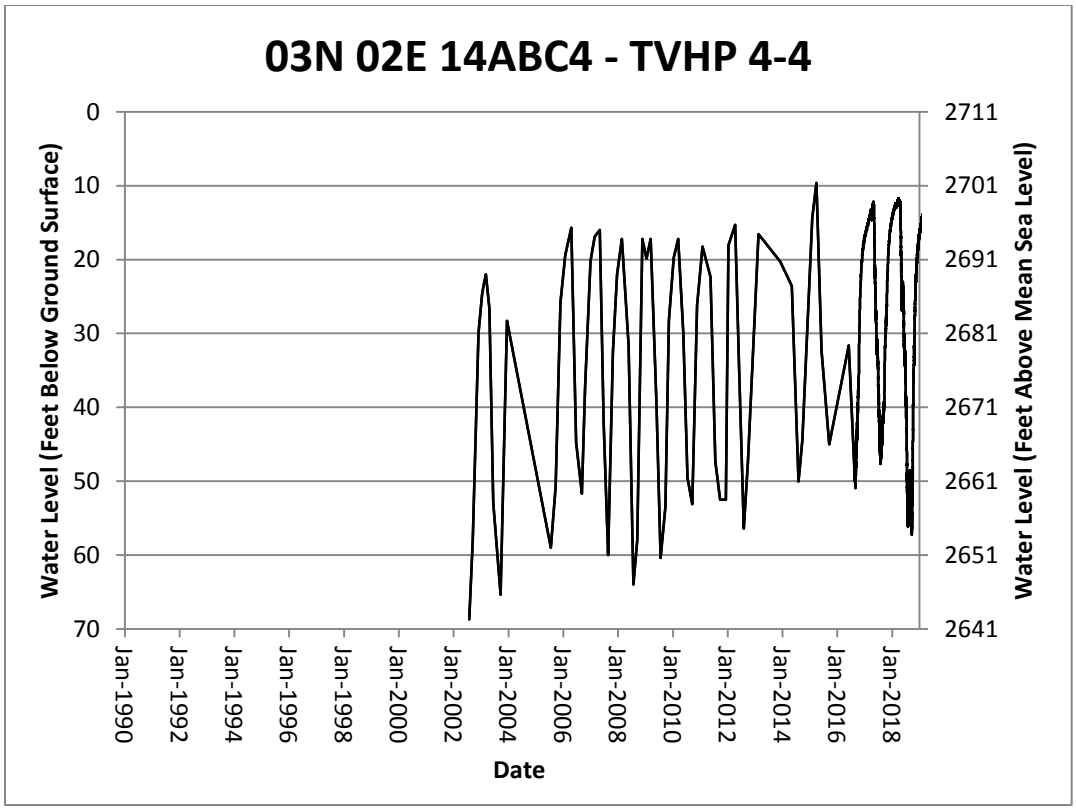
03N 02E 14ABC4 - TVHP 4-4
Water Level (Feet Below Ground Surface)
0
10
20
30
40
50
60
70
Water Level (Feet Above Mean Sea Level)
2711
2701
2691
2681
2671
2661
2651
2641
Jan-1990
Jan-1992
Jan-1994
Jan-1996
Jan-1998
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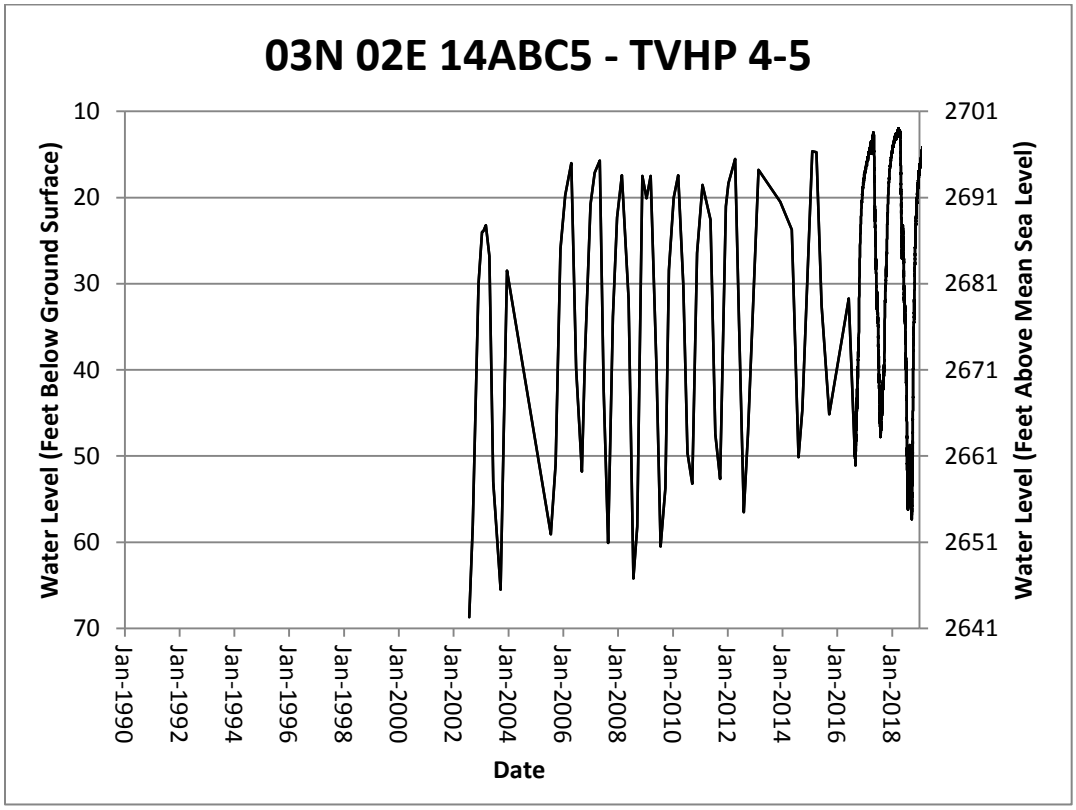
03N 02E 14ABC5 - TVHP 4-5
Water Level (Feet Below Ground Surface)
10
20
30
40
50
60
70
Water Level (Feet Above Mean Sea Level)
2701
2691
2681
2671
2661
2651
2641
Jan-1990
Jan-1992
Jan-1994
Jan-1996
Jan-1998
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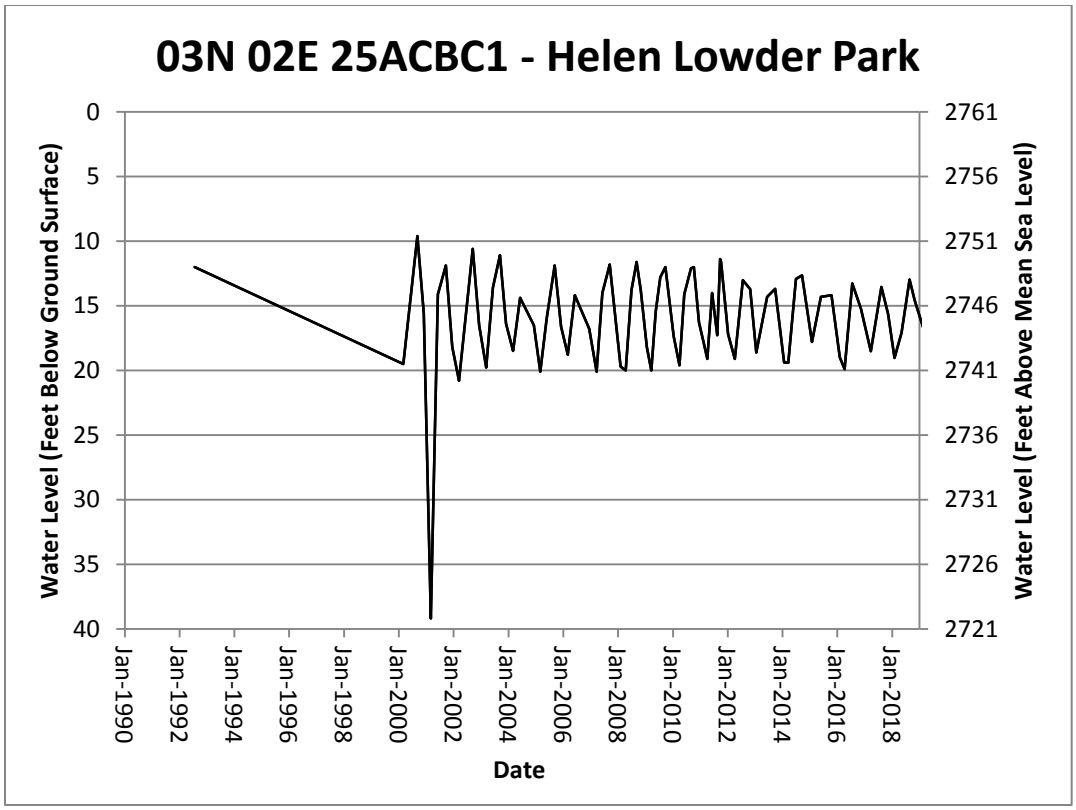
03N 02E 25ACBC1 - Helen Lowder Park
Water Level (Feet Below Ground Surface)
0
5
10
15
20
25
30
35
40
Water Level (Feet Above Mean Sea Level)
2761
2756
2751
2746
2741
2736
2731
2726
2721
Jan-1990
Jan-1992
Jan-1994
Jan-1996
Jan-1998
Jan-2000
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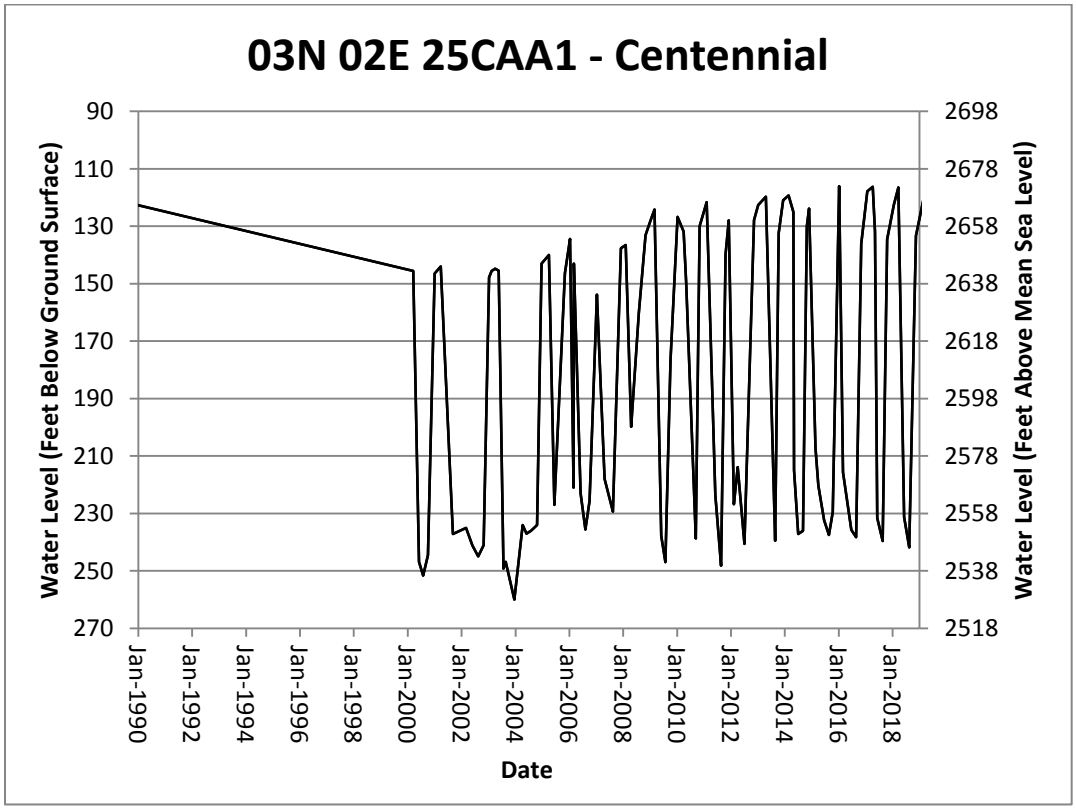
03N 02E 25CAA1 - Centennial
Water Level (Feet Below Ground Surface)
90
110
130
150
170
190
210
230
250
270
Water Level (Feet Above Mean Sea Level)
2698
2678
2658
2638
2618
2598
2578
2558
2538
2518
Jan-1990
Jan-1992
Jan-1994
Jan-1996
Jan-1998
Jan-2000
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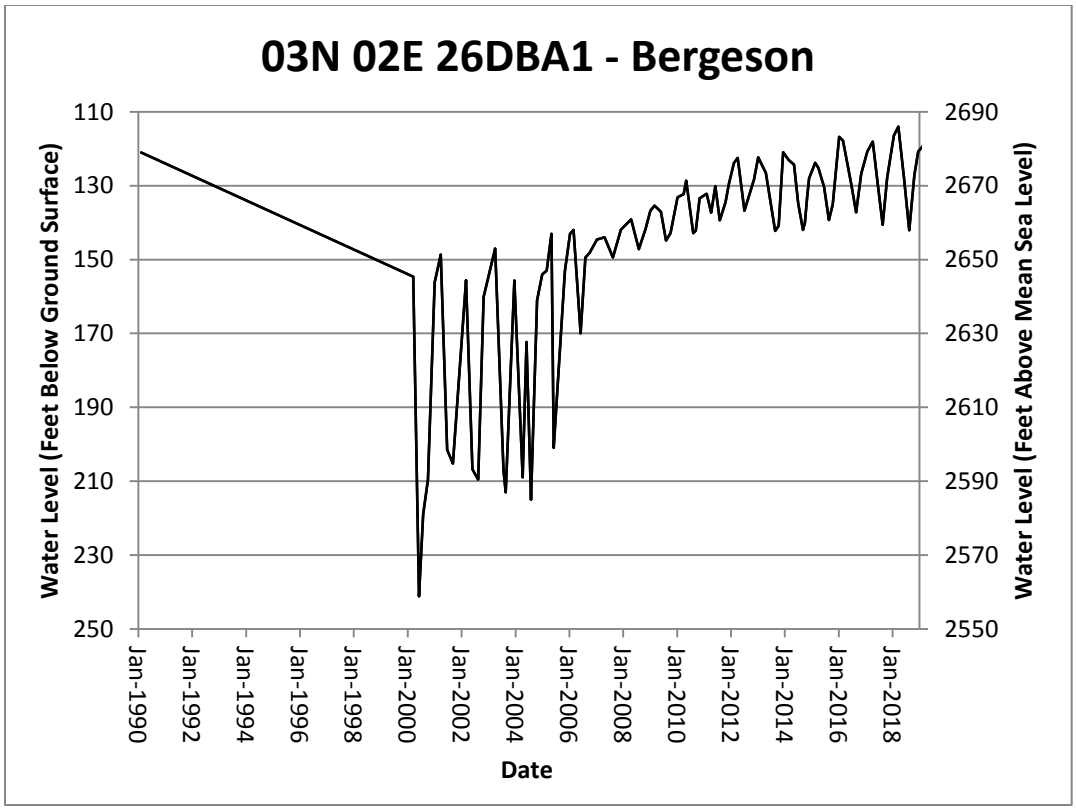
Date


03N 02E 26DBA1 - Bergeson
Water Level (Feet Below Ground Surface)
110
130
150
170
190
210
230
250
Water Level (Feet Above Mean Sea Level)
2690
2670
2650
2630
2610
2590
2570
2550
Jan-1990
Jan-1992
Jan-1994
Jan-1996
Jan-1998
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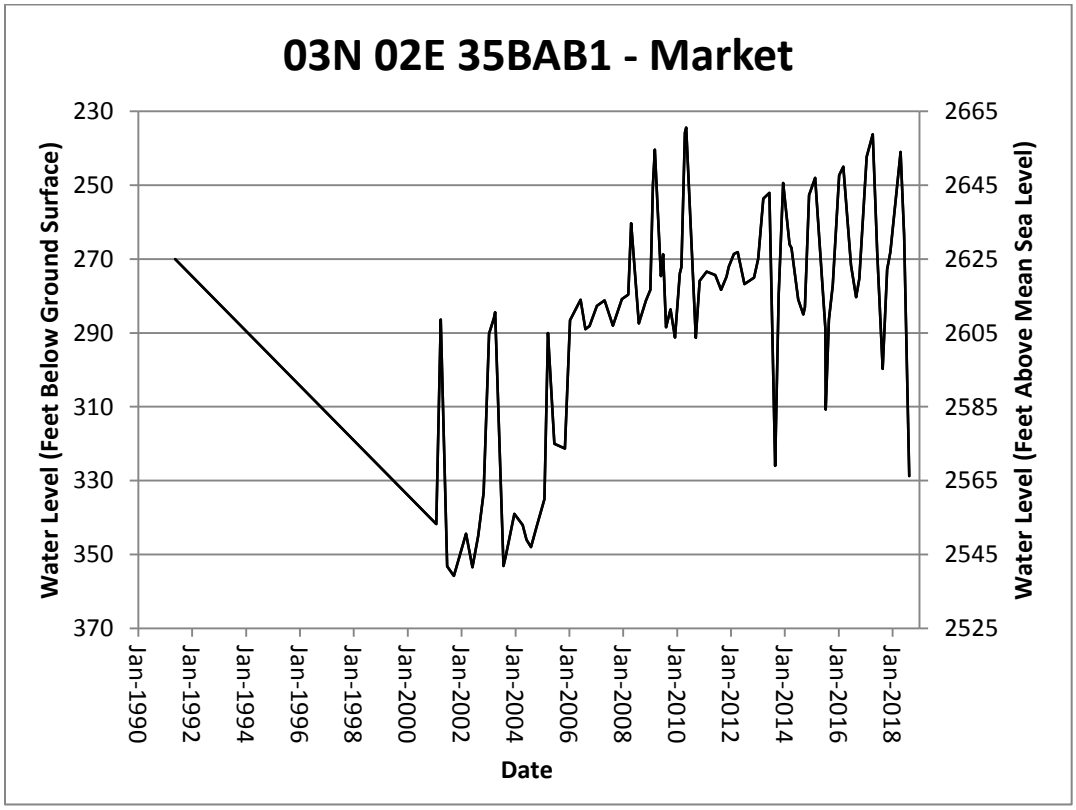
03N 02E 35BAB1 - Market
Water Level (Feet Below Ground Surface)
230
250
270
290
310
330
350
370
Water Level (Feet Above Mean Sea Level)
2665
2645
2625
2605
2585
2565
2545
2525
Jan-1990
Jan-1992
Jan-1994
Jan-1996
Jan-1998
Jan-2000
Jan-2002
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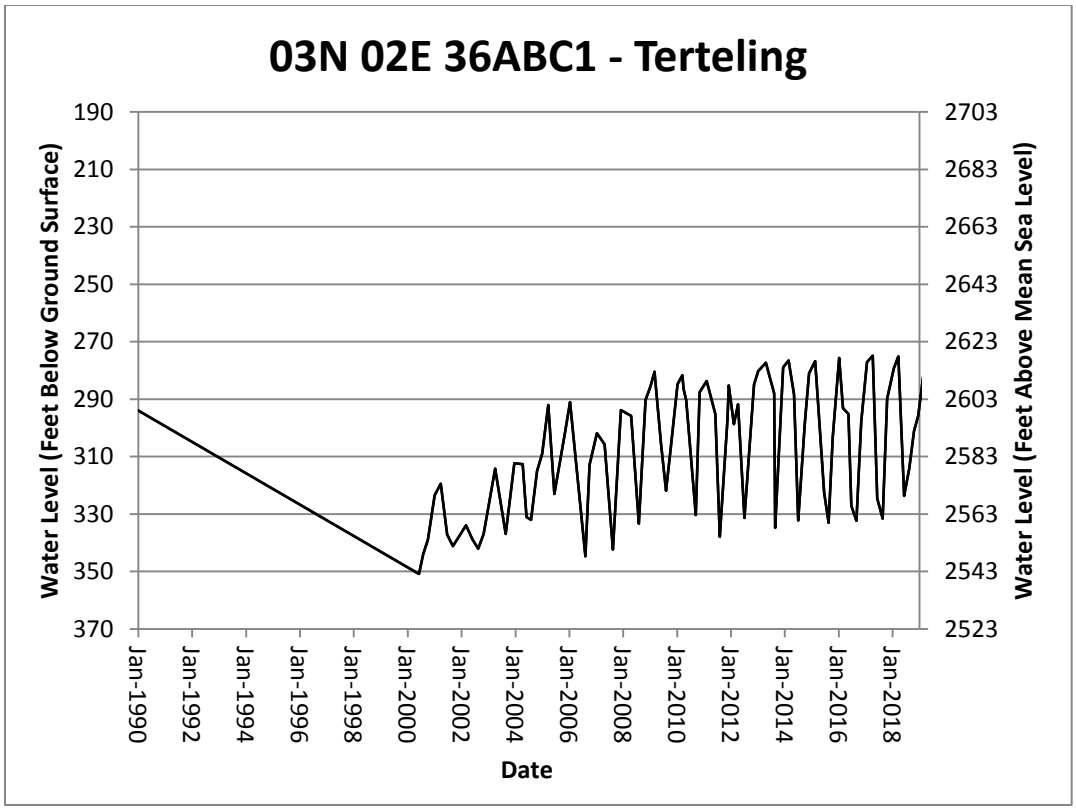
03N 02E 36ABC1 - Terteling
Water Level (Feet Below Ground Surface)
190
210
230
250
270
290
310
330
350
370
Water Level (Feet Above Mean Sea Level)
2703
2683
2663
2643
2623
2603
2583
2563
2543
2523
Jan-1990
Jan-1992
Jan-1994
Jan-1996
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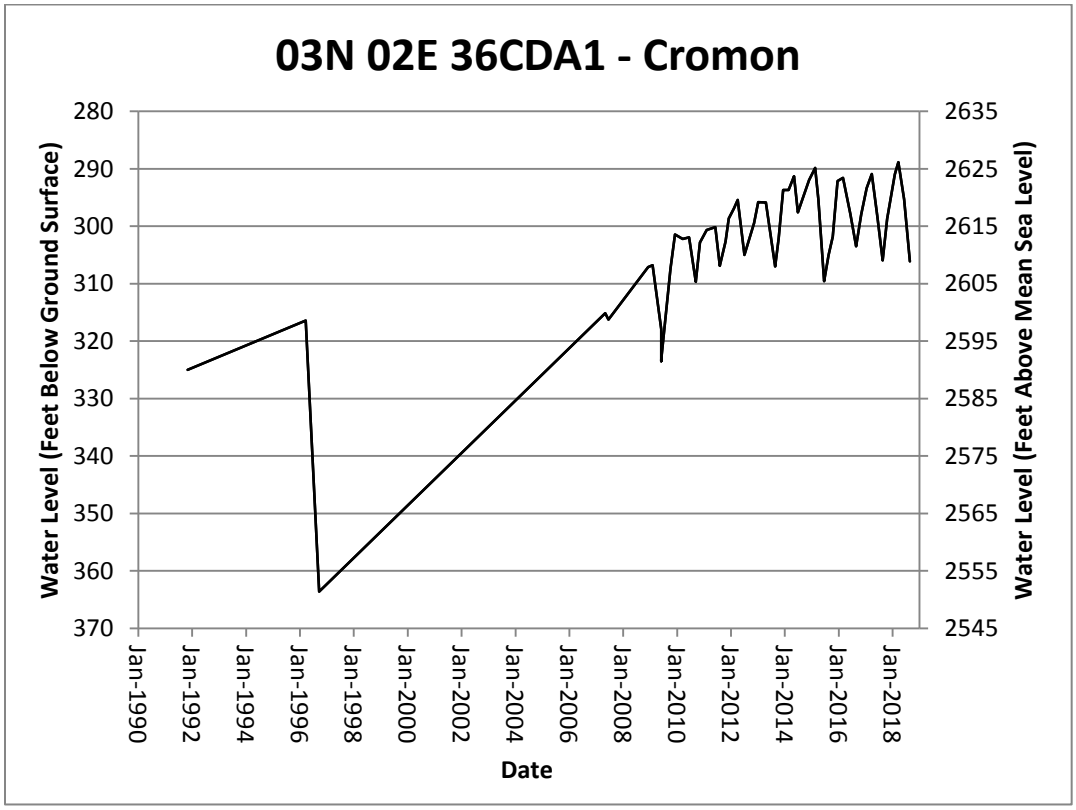
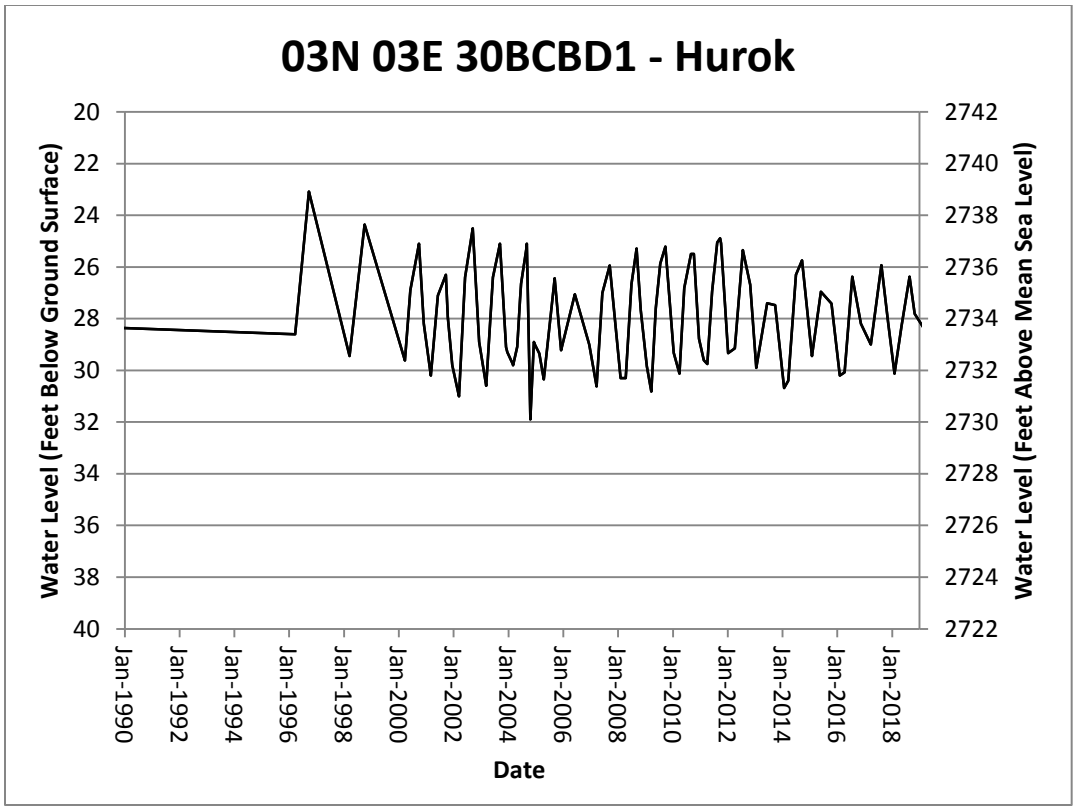

03N 02E 36CDA1 - Cromon
Water Level (Feet Below Ground Surface)
280
290
300
310
320
330
340
350
360
370
Water Level (Feet Above Mean Sea Level)
2635
2625
2615
2605
2595
2585
2575
2565
2555
2545
Jan-1990
Jan-1992
Jan-1994
Jan-1996
Jan-1998
Jan-2000
Jan-2002
Jan-2004
Jan-2006
Jan-2008
Jan-2010
Jan-2012
Jan-2014
Jan-2016
Jan-2018
Date


03N 03E 30BCBD1 - Hurok
Water Level (Feet Below Ground Surface)
20
22
24
26
28
30
32
34
36
38
40
Water Level (Feet Above Mean Sea Level)
2742
2740
2738
2736
2734
2732
2730
2728
2726
2724
2722
Jan-1990
Jan-1992
Jan-1994
Jan-1996
Jan-1998
Jan-2000
Jan-2002
Jan-2004
Jan-2006
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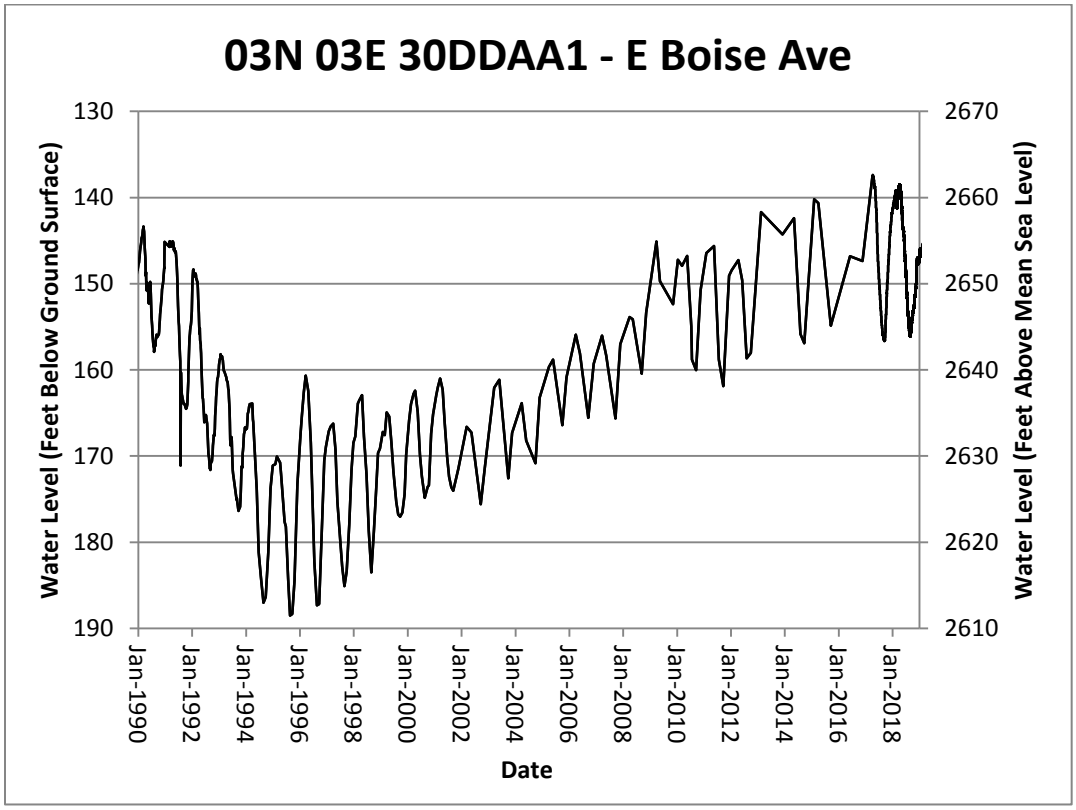
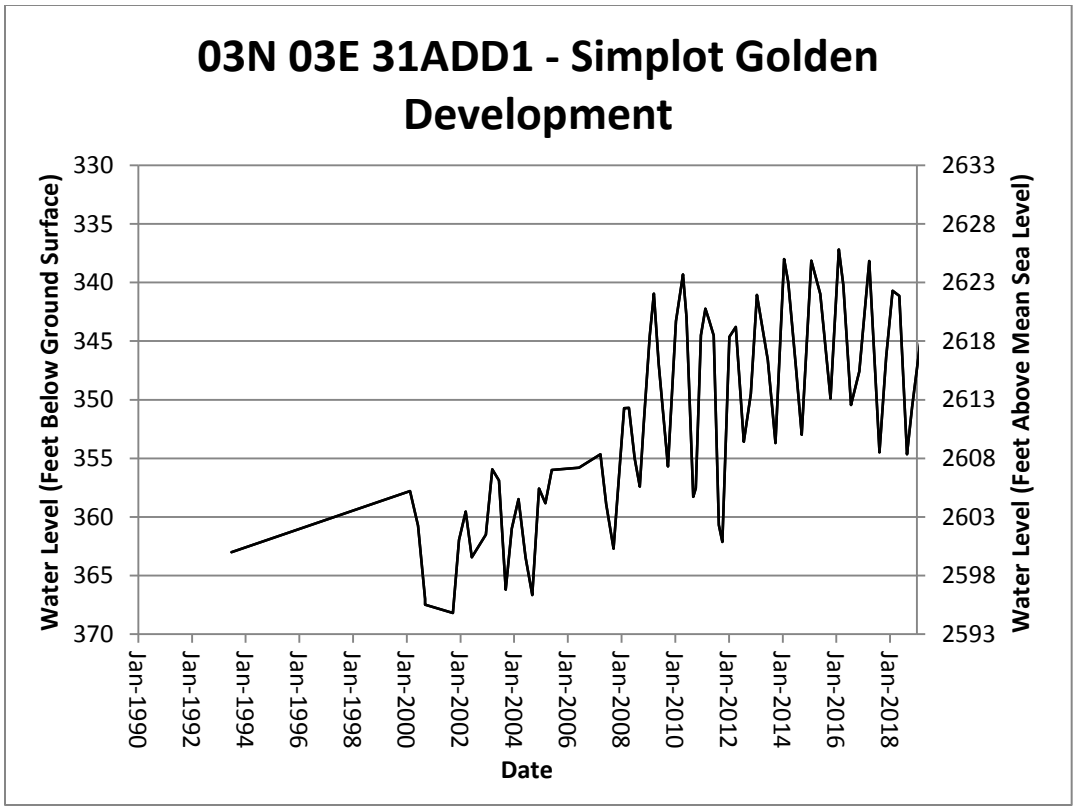
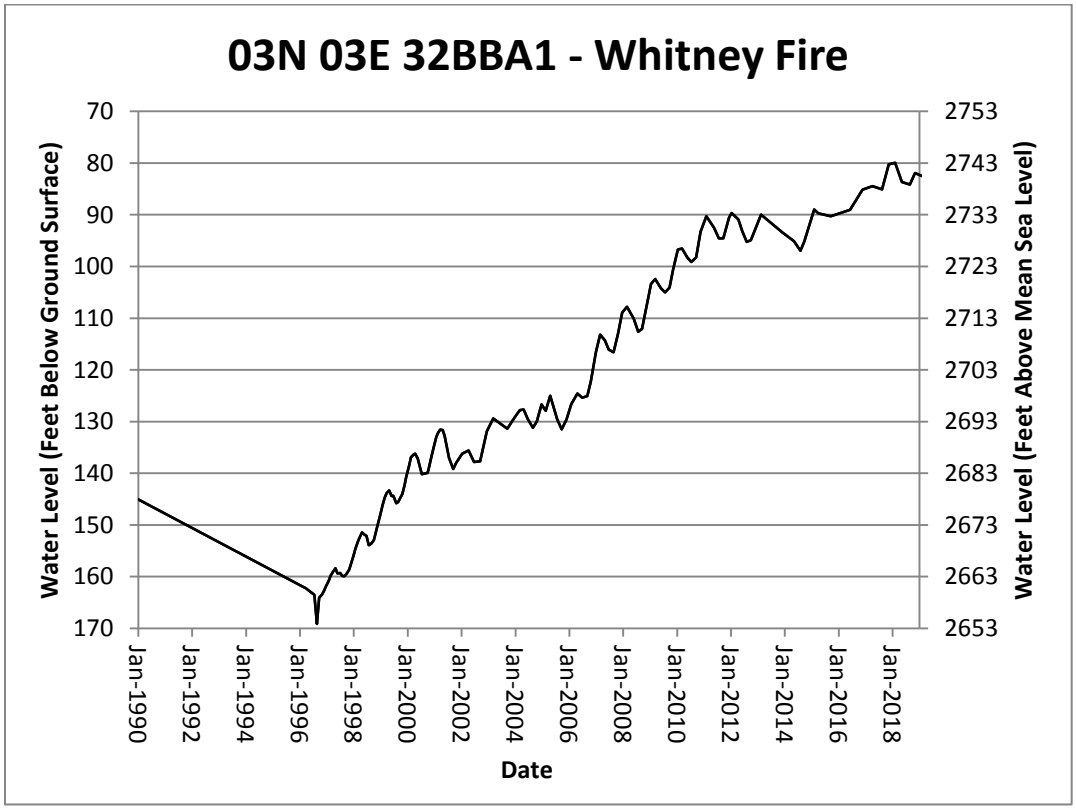
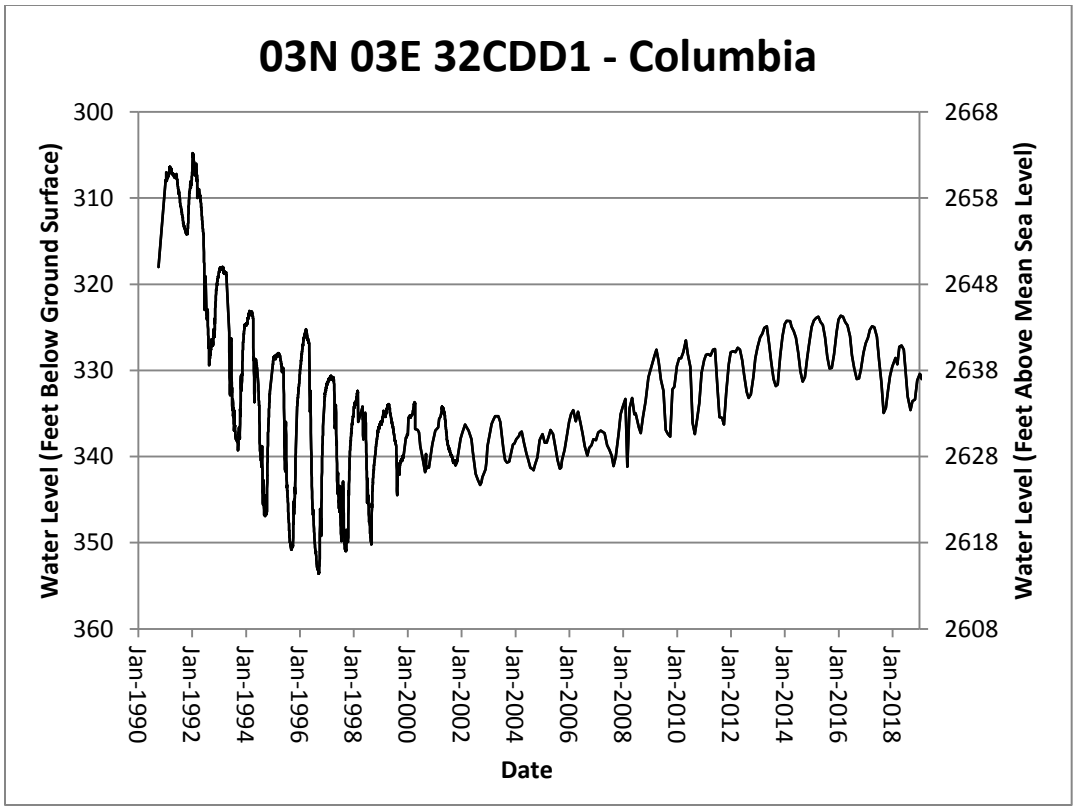
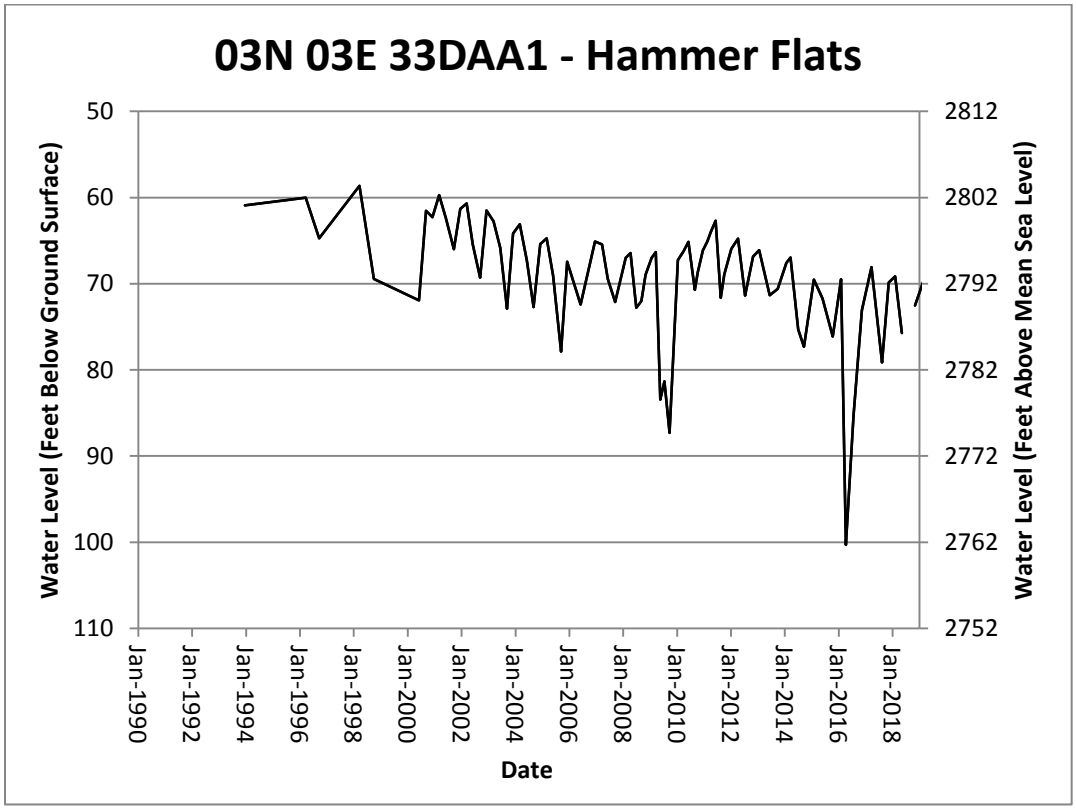
Jan-2010
Jan-2012
Jan-2014
Jan-2016
Jan-2018
Date


03N 03E 30DDAA1 - E Boise Ave
Water Level (Feet Below Ground Surface)
130
140
150
160
170
180
190
Water Level (Feet Above Mean Sea Level)
2670
2660
2650
2640
2630
2620
2610
Jan-1990
Jan-1992
Jan-1994
Jan-1996
Jan-1998
Jan-2000
Jan-2002
Jan-2004
Jan-2006
Jan-2008
Jan-2010
Jan-2012
Jan-2014
Jan-2016
Jan-2018
Date


03N 03E 31ADD1 - Simplot Golden Development
Water Level (Feet Below Ground Surface)
330
335
340
345
350
355
360
365
370
Water Level (Feet Above Mean Sea Level)
2633
2628
2623
2618
2613
2608
2603
2598
2593
Jan-1990
Jan-1992
Jan-1994
Jan-1996
Jan-1998
Jan-2000
Jan-2002
Jan-2004
Jan-2006
Jan-2008
Jan-2010
Jan-2012
Jan-2014
Jan-2016
Jan-2018
Date


03N 03E 32BBA1 - Whitney Fire
Water Level (Feet Below Ground Surface)
70
80
90
100
110
120
130
140
150
160
170
Water Level (Feet Above Mean Sea Level)
2753
2743
2733
2723
2713
2703
2693
2683
2673
2663
2653
Jan-1990
Jan-1992
Jan-1994
Jan-1996
Jan-1998
Jan-2000
Jan-2002
Jan-2004
Jan-2006
Jan-2008
Jan-2010
Jan-2012
Jan-2014
Jan-2016
Jan-2018
Date


03N 03E 32CDD1 - Columbia
Water Level (Feet Below Ground Surface)
300
310
320
330
340
350
360
Water Level (Feet Above Mean Sea Level)
2668
2658
2648
2638
2628
2618
2608
Jan-1990
Jan-1992
Jan-1994
Jan-1996
Jan-1998
Jan-2000
Jan-2002
Jan-2004
Jan-2006
Jan-2008
Jan-2010
Jan-2012
Jan-2014
Jan-2016
Jan-2018
Date


03N 03E 33DAA1 - Hammer Flats
Water Level (Feet Below Ground Surface)
50
60
70
80
90
100
110
Water Level (Feet Above Mean Sea Level)
2812
2802
2792
2782
2772
2762
2752
Jan-1990
Jan-1992
Jan-1994
Jan-1996
Jan-1998
Jan-2000
Jan-2002
Jan-2004
Jan-2006
Jan-2008
Jan-2010
Jan-2012
Jan-2014
Jan-2016
Jan-2018
Date