

Oakley Fan Critical Ground Water Area

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This area was originally established as the Goose Creek-Rock Creek Critical Ground Water Area (CGWA) in 1962. This area was subdivided into 3 CGWAs in 1967. The West Oakley Fan CGWA was established in 1982; it is now known simply as the Oakley Fan CGWA. The Oakley Fan CGWA is located in the central part of the area and shares borders with the other three CGWAs (Figure 1).

The aquifers are predominately found in the Tertiary Idavada Volcanics (rhyolite), and the Quaternary Snake River Group (basalt). One well is completed in the Quaternary alluvium.

There are 9 Active IDWR monitoring wells (Figures 2 – 11). Eight of these wells show decreasing trends, and one well shows an increasing trend. The 8 IDWR wells with decreasing trends have average annual declines ranging from 0.8 to 7.6 ft/yr, with an overall average decline for these wells of 3.2 ft/yr. One IDWR well completed in basalt has an increasing trend of 3 ft/yr. There are three other wells in the Oakley Fan CGWA with long term water level records, and with one or more water level measurements since 2012 (Figures 2, 12 - 14). These well have average annual decreasing trends ranging from 1.4 to 4.8 ft/yr.

Nine of the 11 wells with declining trends had trends that were statistically significant at the 95 percent confidence level. The increasing trend in Well #6 was significant at the 95 percent confidence level. Summary statistics for the 11 wells that were analyzed are provided in Table 1.

Table 1. Summary statistics for 11 wells in the Oakley Fan CGWA.

Map Well Number	Station Name	Probability ¹	Mann Kendall Statistic
1	11S 21E 11DAA1	0.080	0.429
2	11S 21E 25AAA1	0	0.626
3	11S 21E 33BBB1	0	0.436
4	12S 21E 02DAA1	0	0.699
5	12S 21E 08CCC2	0.060	0.197
6	12S 21E 15ACD1	0.014	-0.056
7	12S 21E 16DCC1	0	0.339
8	12S 21E 25CCC1	0	0.513
9	12S 21E 26CCD2	0.006	-0.077
10	11S 21E 02CDD1	0.031	0.619
11	12S 21E 05BCB1	0	0.723
12	12S 21E 33BBC1	0	0.587

¹Probability values less than 0.05 indicate that the trend is significant at the 95 percent confidence level.

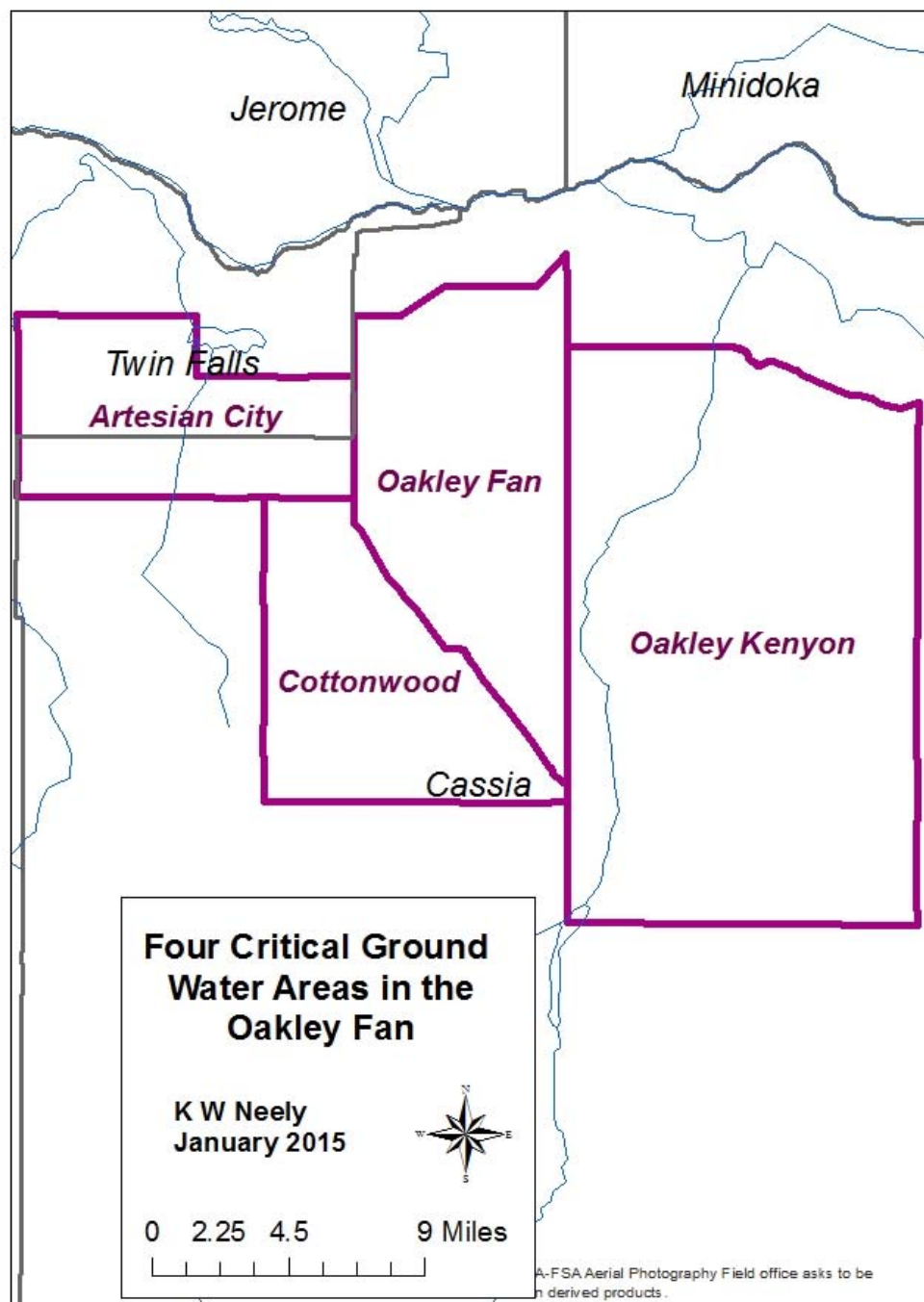


Figure 1. IDWR's four Critical Ground Water Areas in the Oakley Fan.

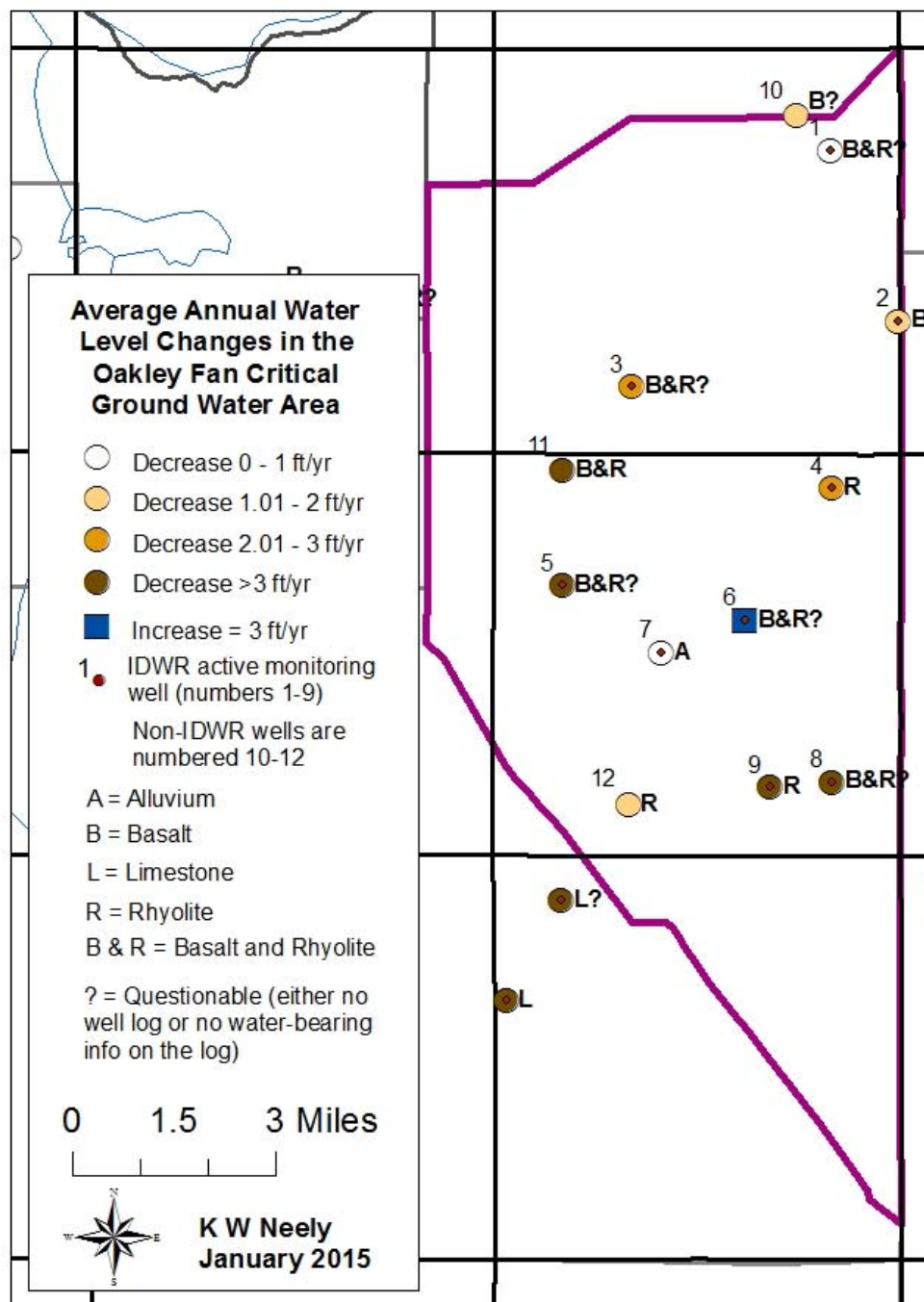


Figure 2. Average annual water level changes in the Oakley Fan Critical Ground Water Area.

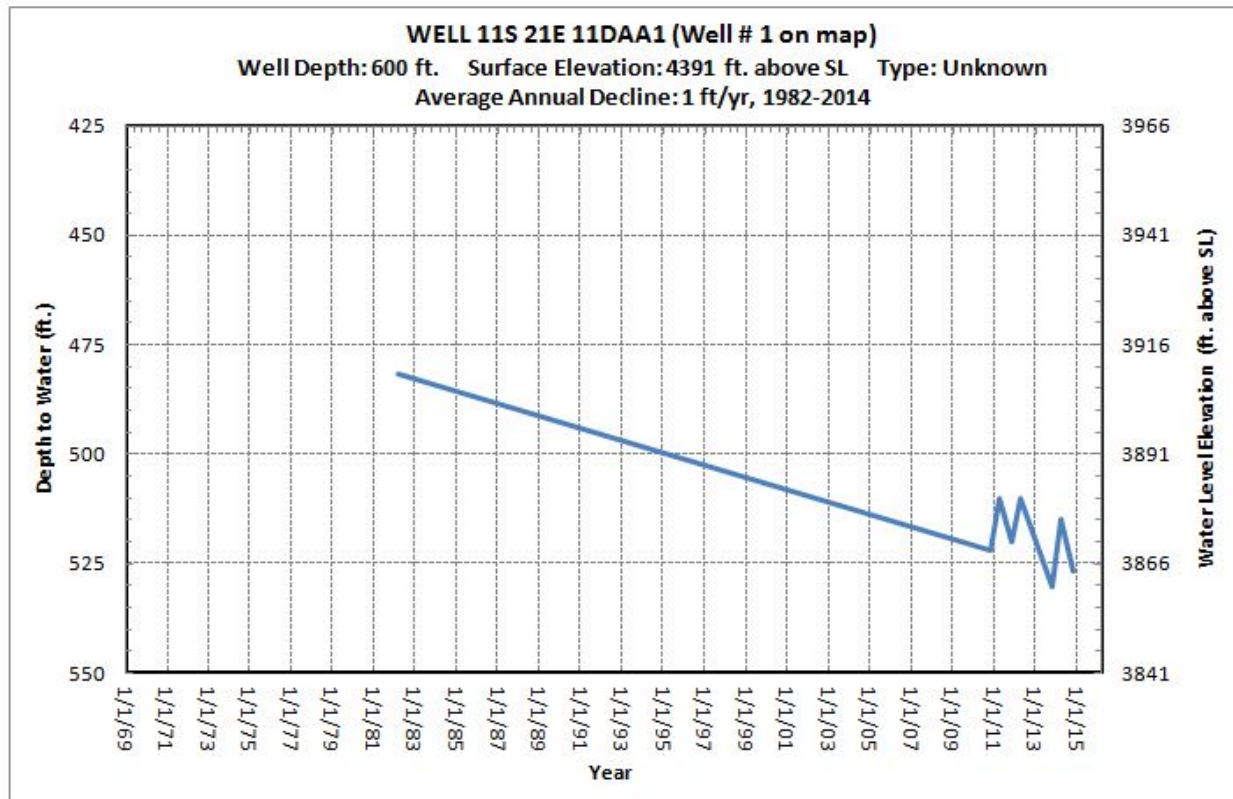


Figure 3. Ground water level hydrograph for 11S 21E 11DAA1, 1982 – 2014.

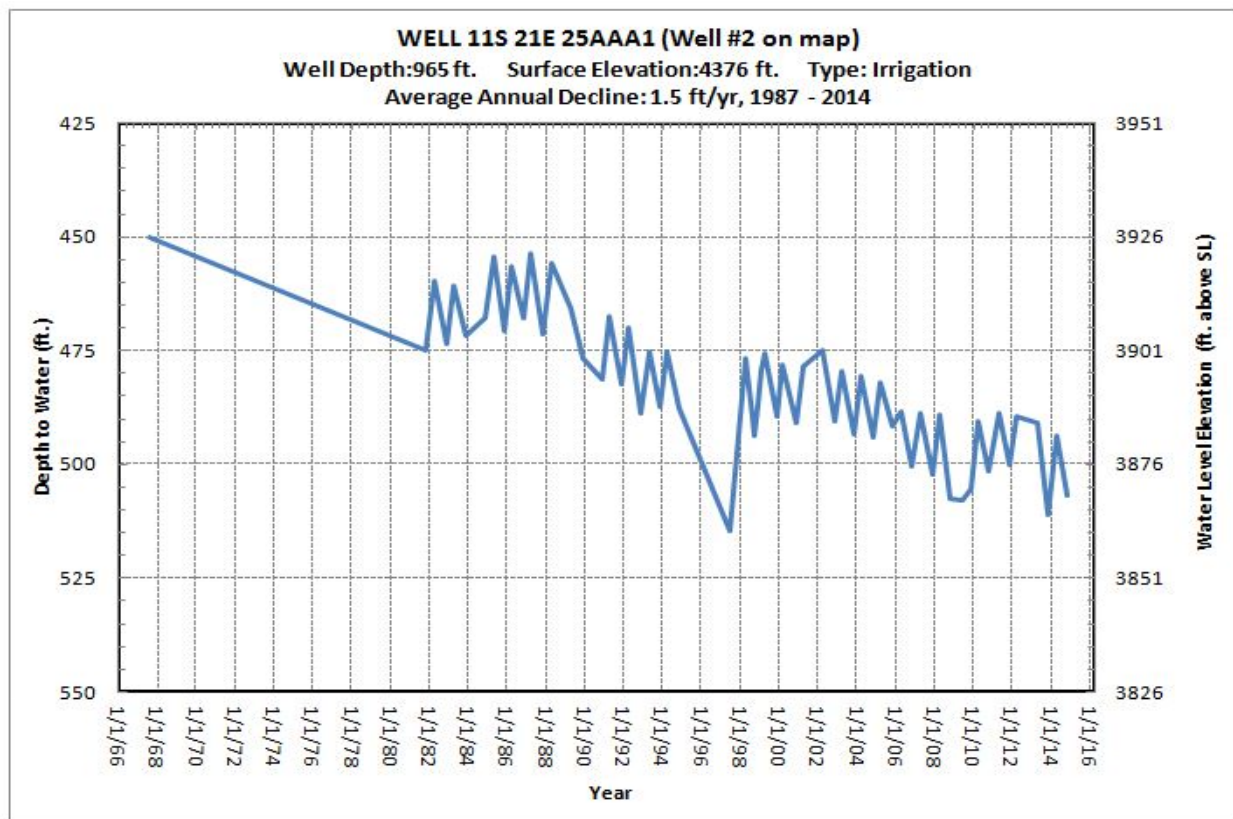


Figure 4. Ground water level hydrograph for 11S 21E 25AAA1, 1967 – 2014.

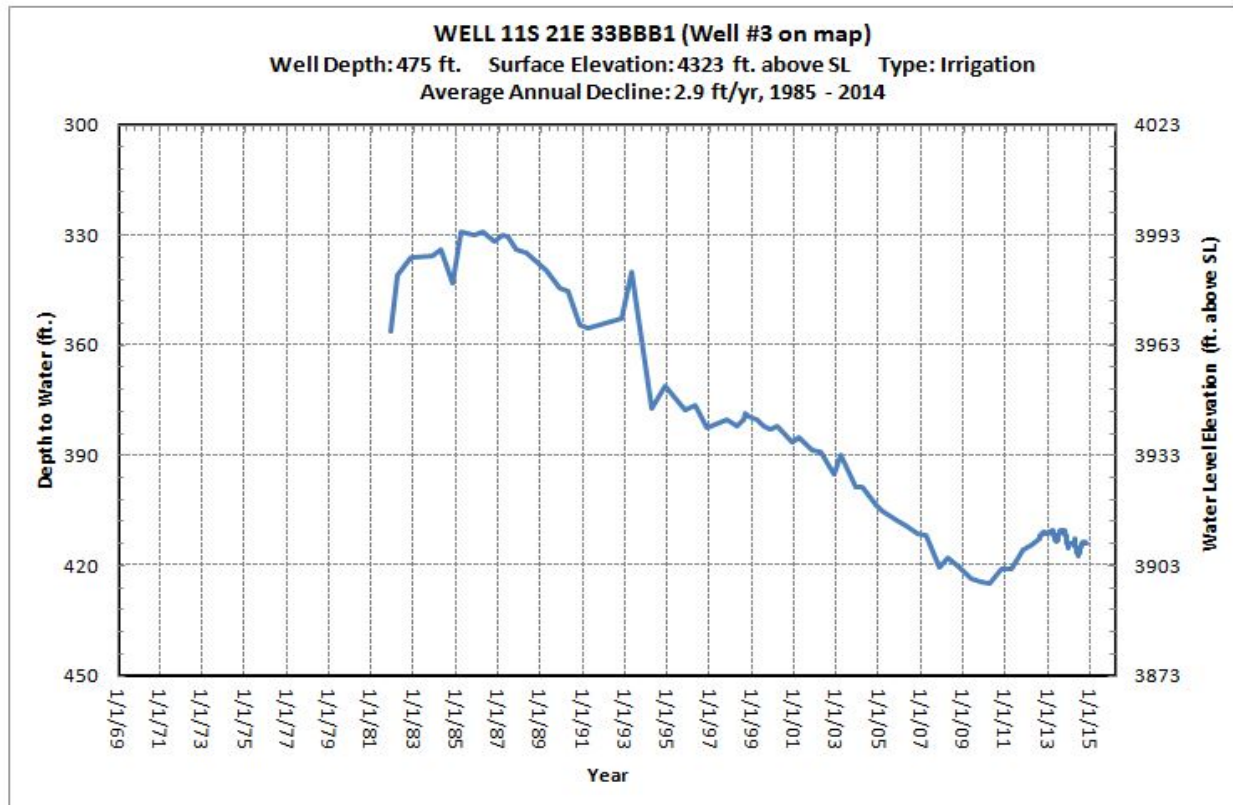


Figure 5. Ground water level hydrograph for 11S 21E 33BBB1, 1981 – 2014.

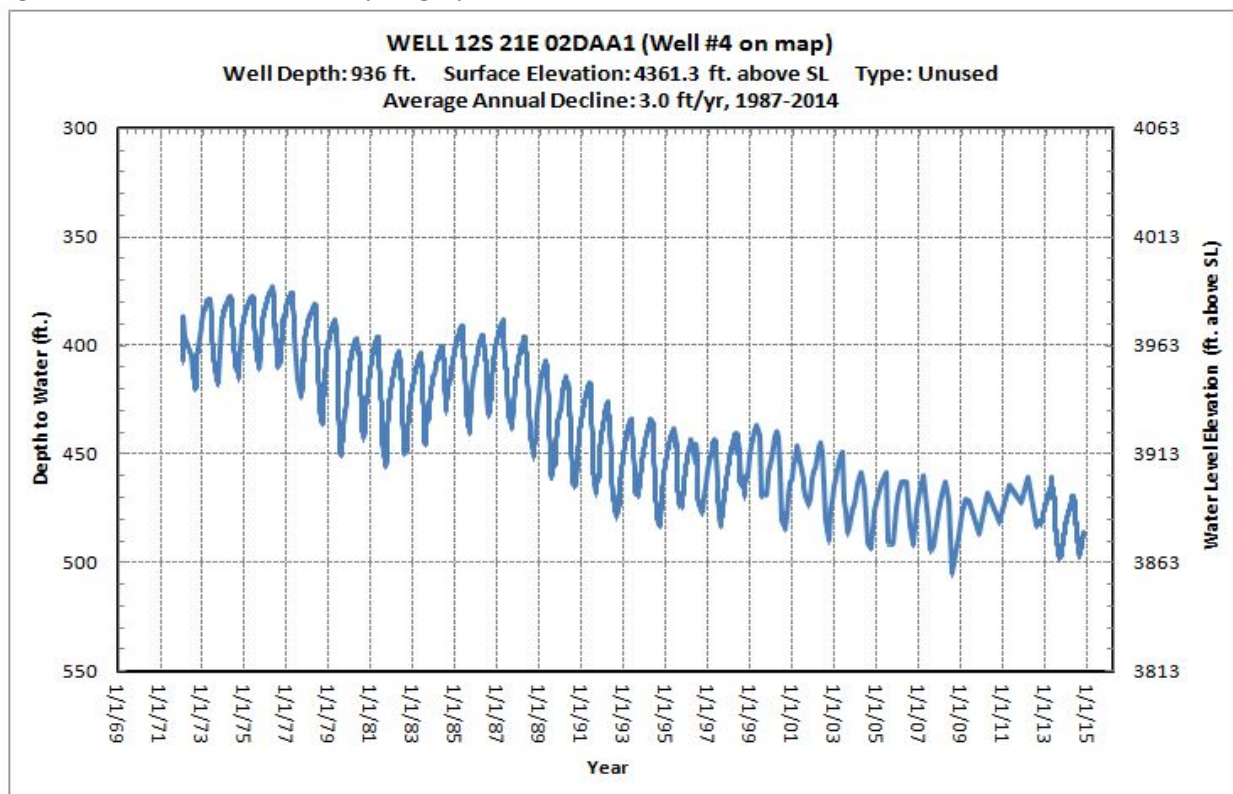


Figure 6. Ground water level hydrograph for 12S 21E 02DAA1, 1972 – 2014.

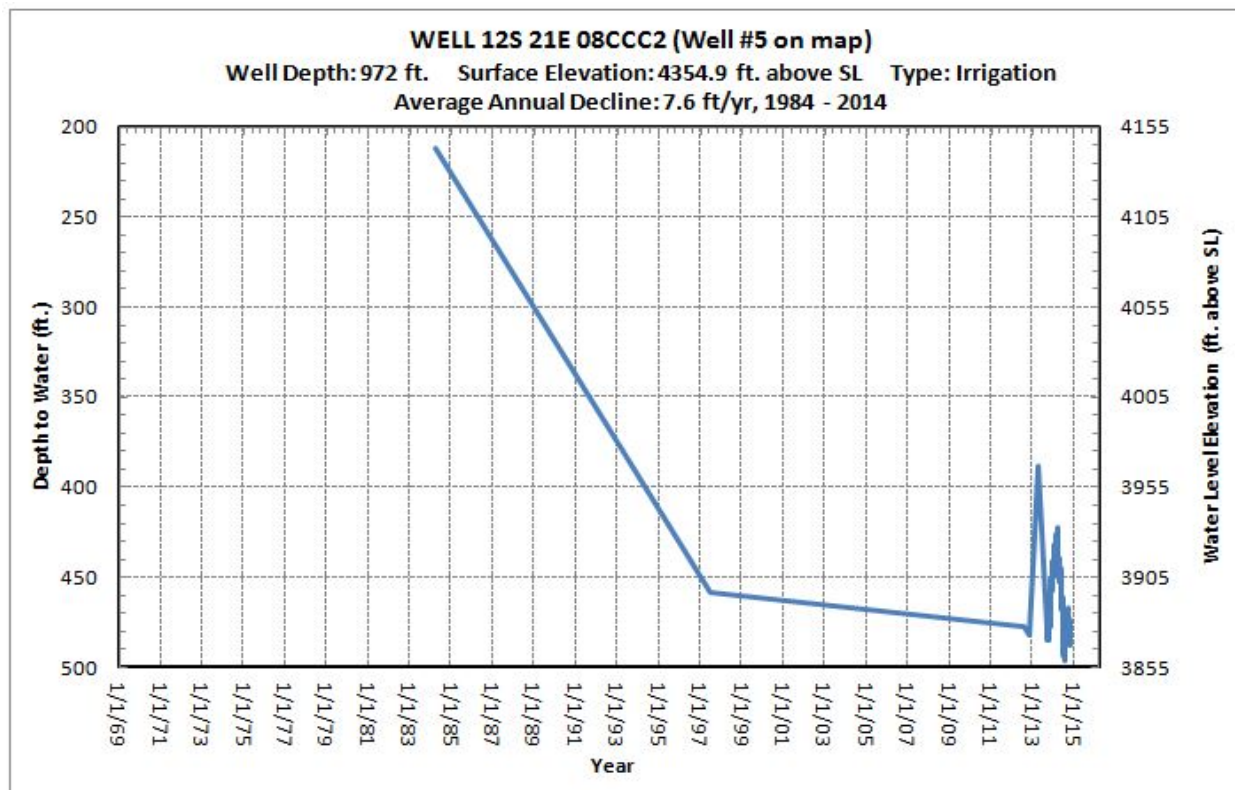


Figure 7. Ground water level hydrograph for 12S 21E 08CCC2, 1984 – 2014.

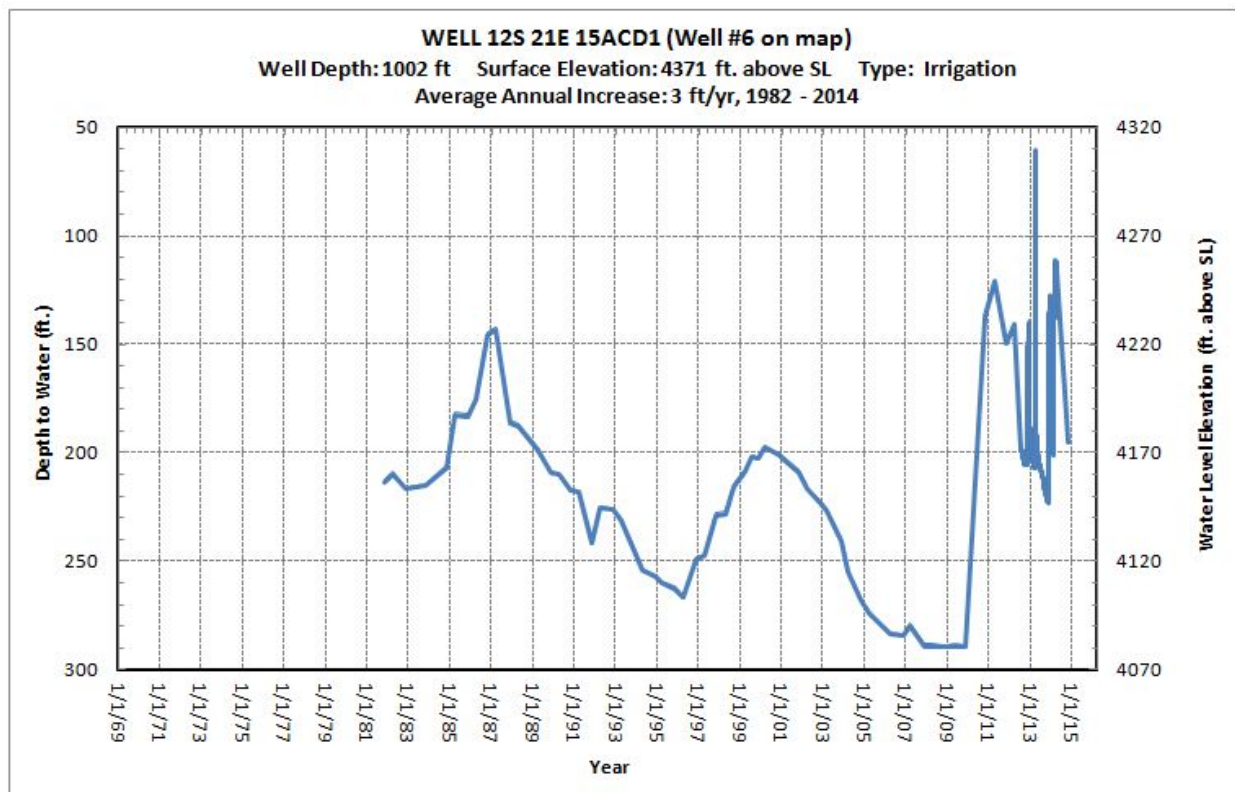


Figure 8. Ground water level hydrograph for 12S 21E 15ACD1, 1982 – 2014.

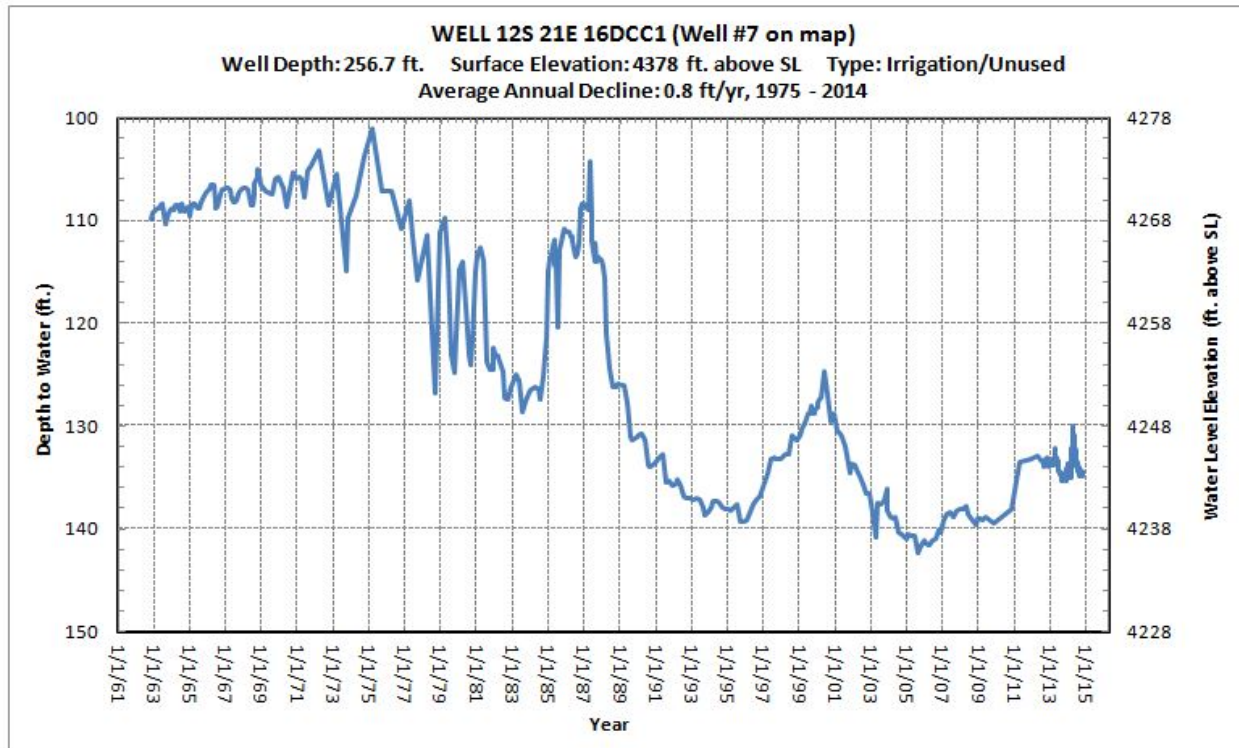


Figure 9. Ground water level hydrograph for 12S 21E 16DCC1, 1962 – 2014.

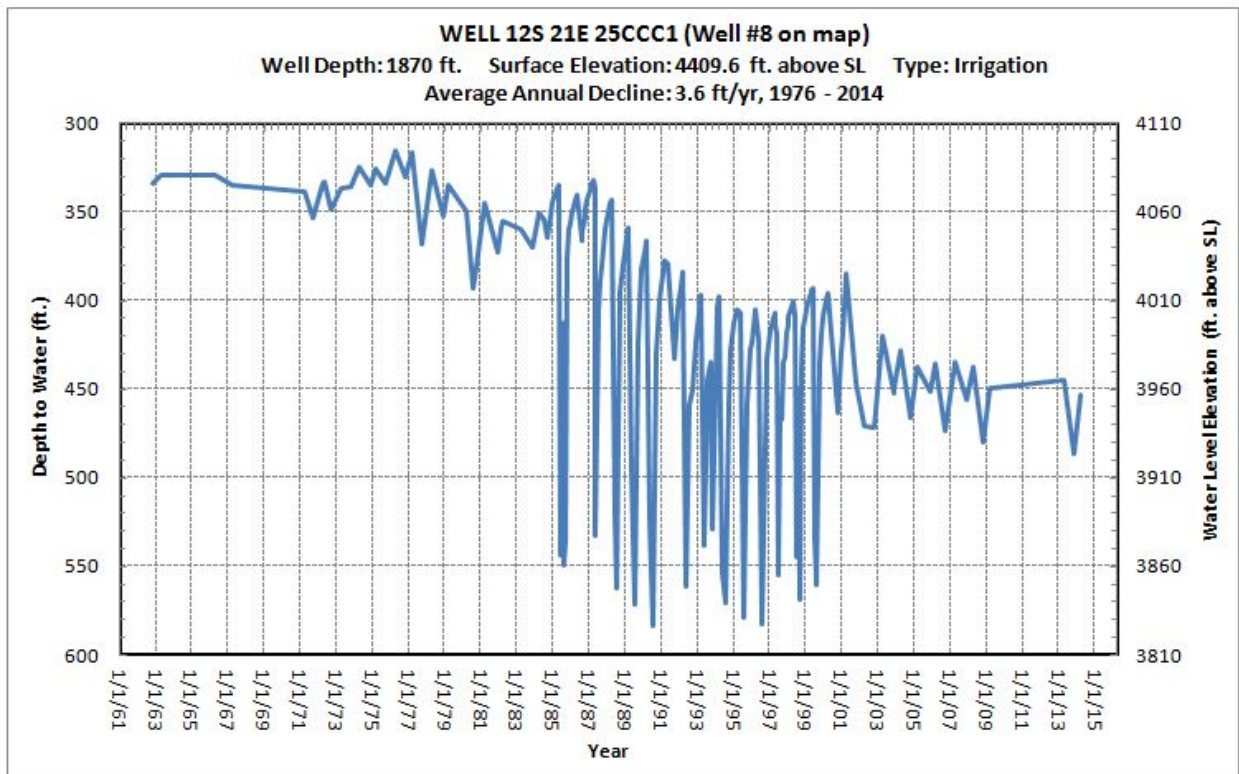


Figure 10. Ground water level hydrograph for 12S 21E 25CCC1, 1962 – 2014.

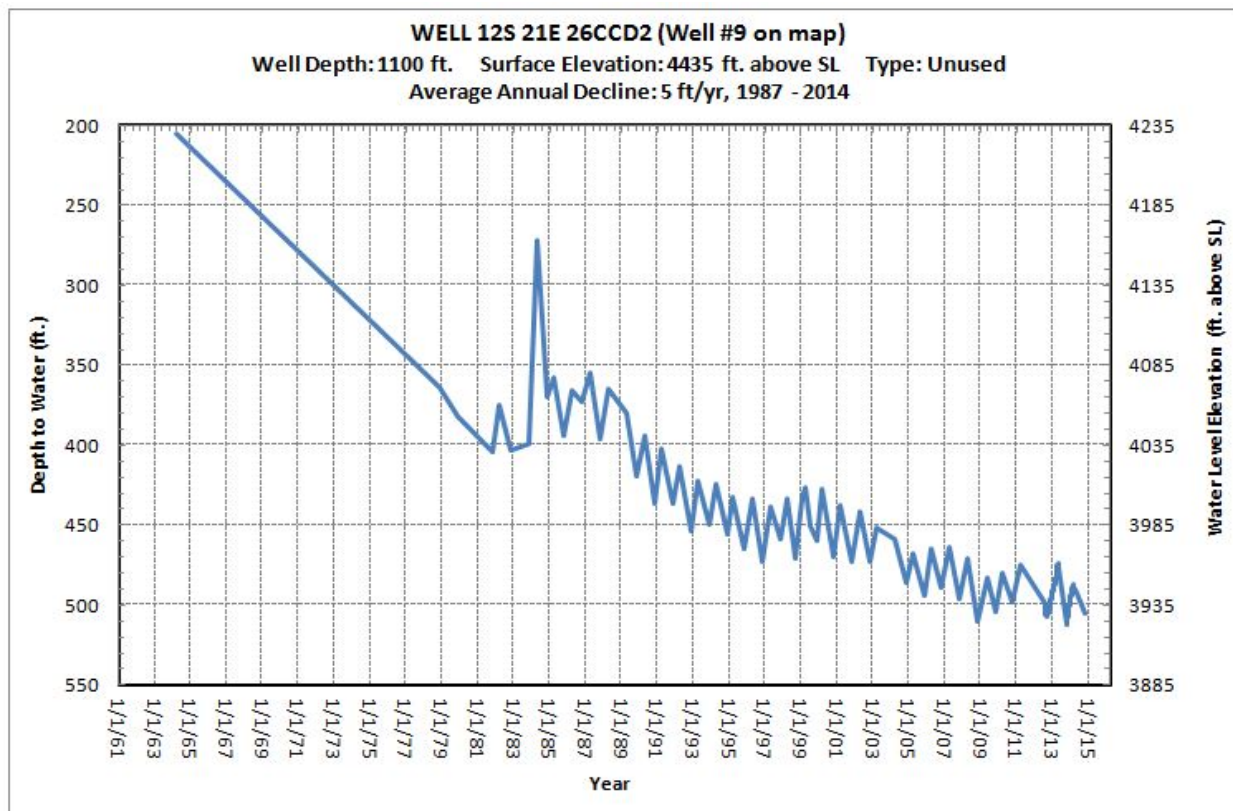


Figure 11. Ground water level hydrograph for 12S 21E 26CCD2, 1964 – 2014.

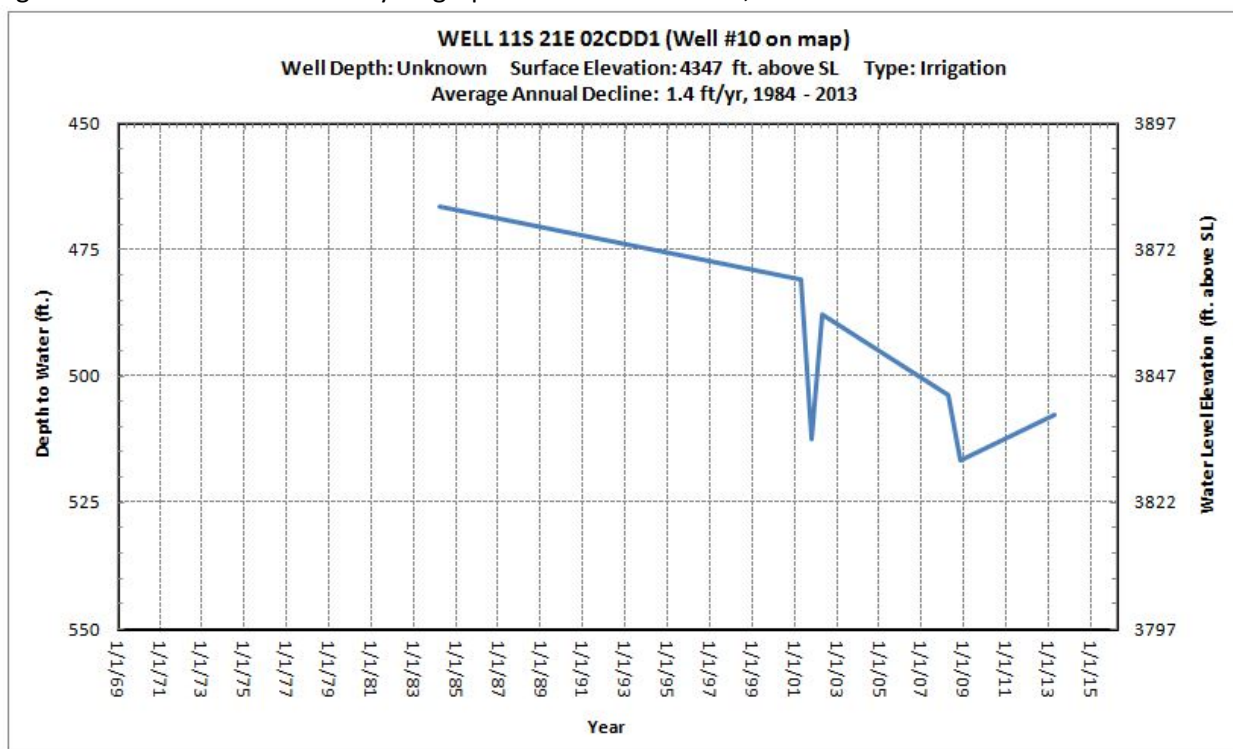


Figure 12. Ground water level hydrograph for 11S 21E 02CCD2, 1984 – 2013.

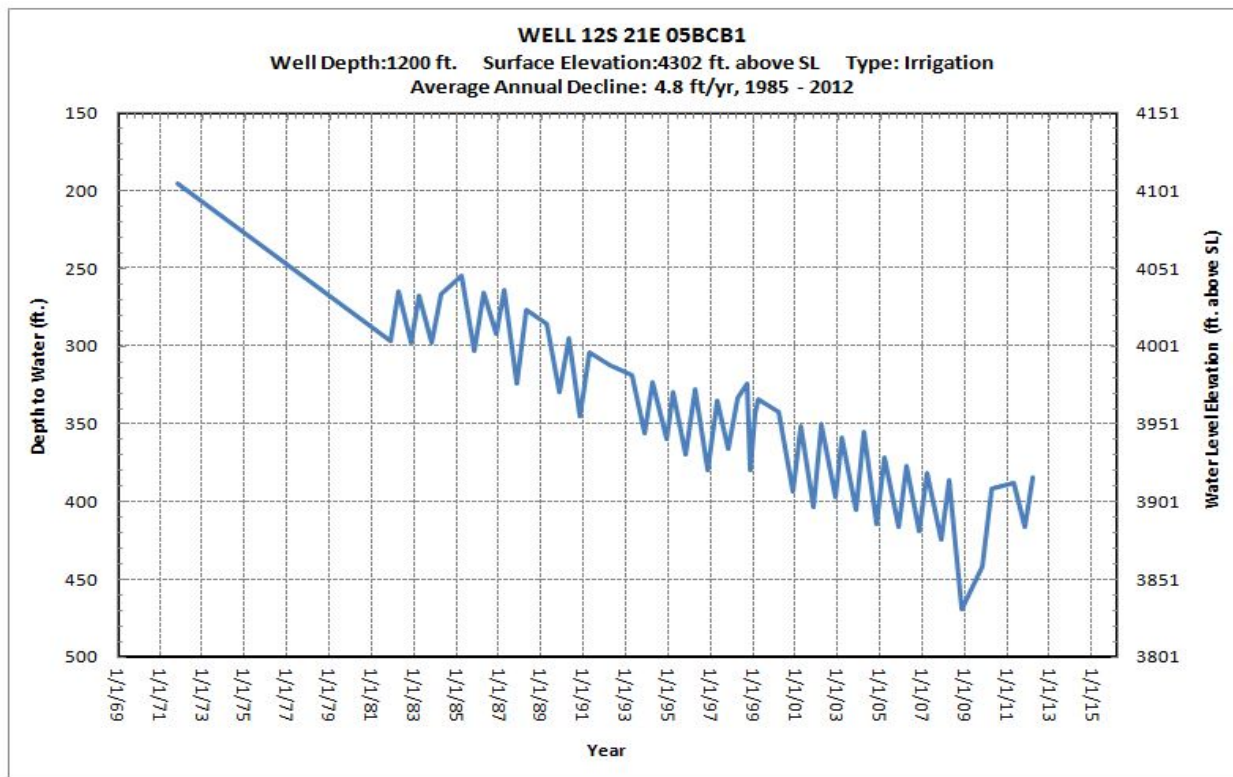


Figure 13. Ground water level hydrograph for 12S 21E 05BCB1, 1971 – 2012.

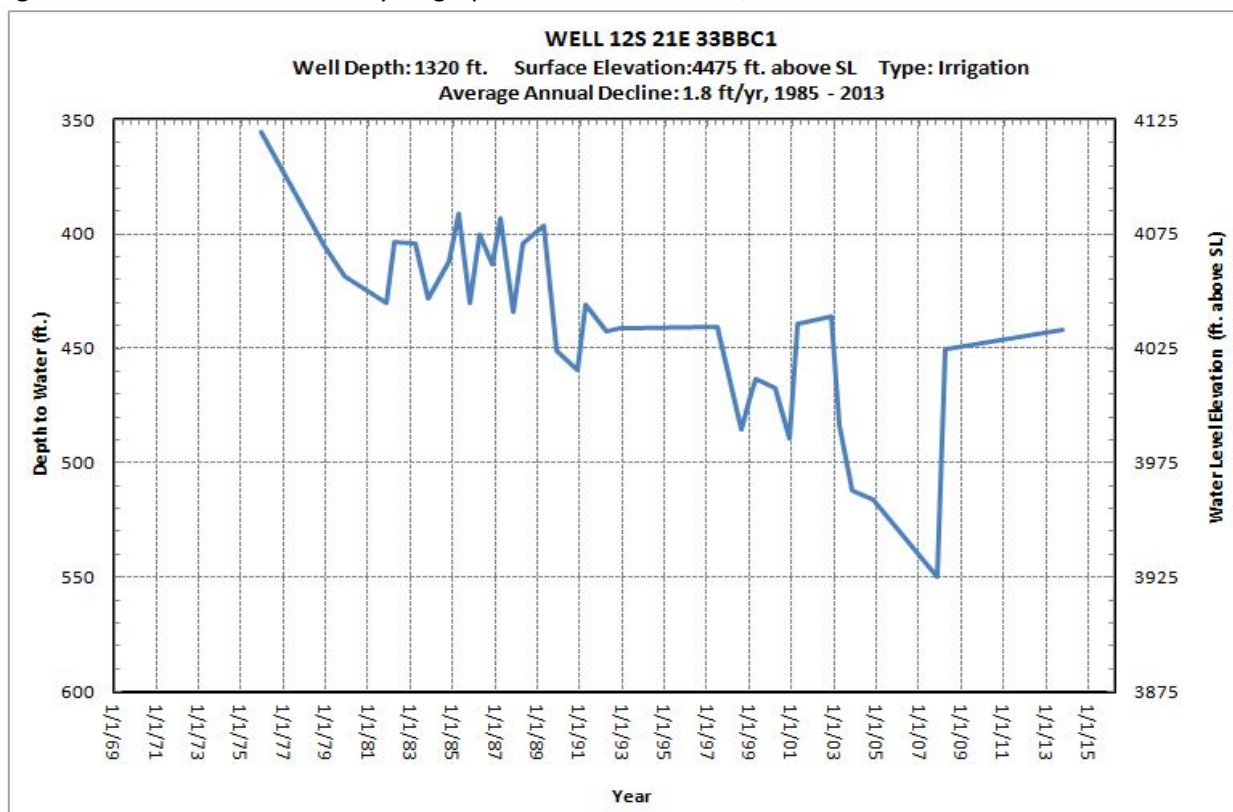


Figure 14. Ground water level hydrograph for 12S 21E 33BBC1, 1975 – 2013.