

Groundwater Condition

REPORT | SANTA CLARA COUNTY

January 2021

SUMMARY

This report summarizes current (December 2020) groundwater storage, recharge, pumping, and level conditions for the Santa Clara Subbasin (which includes the Santa Clara Plain and Coyote Valley groundwater management areas) and the Llagas Subbasin. Overall, countywide groundwater storage and water levels are in good condition. Table 1 summarizes current conditions.

- Estimated groundwater storage is above normal and is projected to remain well within the Stage 1 (Normal) range of Valley Water's Water Shortage Contingency Plan throughout 2020.
- Year-to-date (YTD) managed recharge is 88% to 97% of the five-year average.
- 2020 pumping through November is 103% to 131% of the five-year average.
- Groundwater index well water levels for December 2020 range from 14 feet lower to being the same as the average of the previous five-years of December readings.

Table 1. Summary of Current Groundwater Conditions

	Santa Clara Subbasin		Llagas Subbasin
	Santa Clara Plain	Coyote Valley	
December managed recharge estimate (AF)	5,450	1,200	1,550
January to December managed recharge est. (AF)	52,000	14,500	19,300
YTD managed recharge, % of 5-year average	88%	97%	89%
November pumping estimate (AF)	6,450	700	3,400
January to November pumping estimate (AF)	75,200	10,700	41,900
YTD pumping, % of 5-year average	131%	103%	106%
GW index well level compared to last December 2019	15 feet lower	2 feet lower	23 feet lower
GW index level compared to December 5-year average	14 feet lower	the same	13 feet lower

AF = acre-feet.

YTD = Year-to-date

Contact Us For questions, contact
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Groundwater Recharge

- Figures 1, 2, and 3 show the estimated cumulative managed recharge for 2020 YTD compared to the average of the last five years (2015 – 2019).
- The cumulative managed recharge for 2020 YTD is lower for the Santa Clara Plain, Coyote Valley, and the Llagas Subbasin compared to the averages of cumulative managed recharge of the previous five years.
- The monthly managed recharge depends on many factors, including water demand and availability, regulatory needs, groundwater storage, and facility maintenance.

Figure 1. Estimated Cumulative Managed Recharge in the Santa Clara Plain

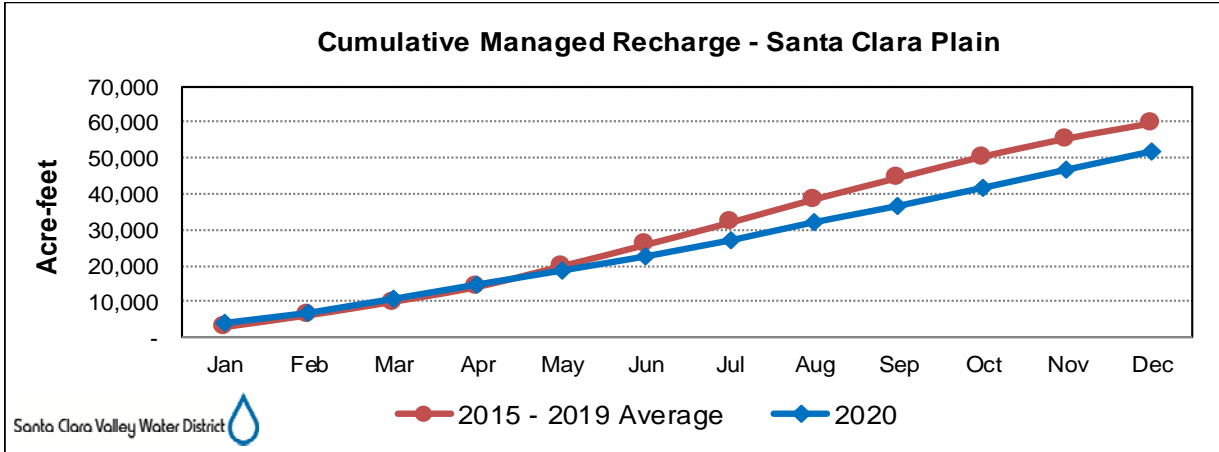


Figure 2. Estimated Cumulative Managed Recharge in the Coyote Valley

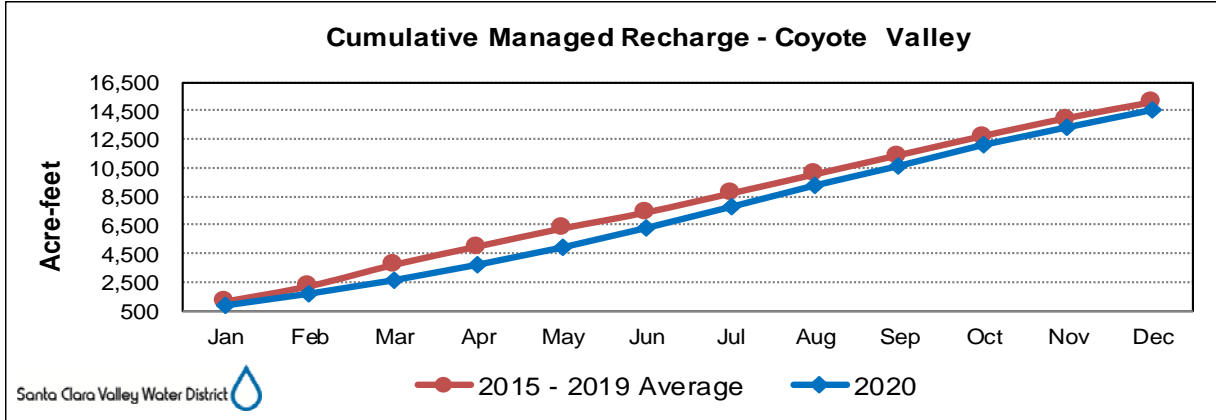
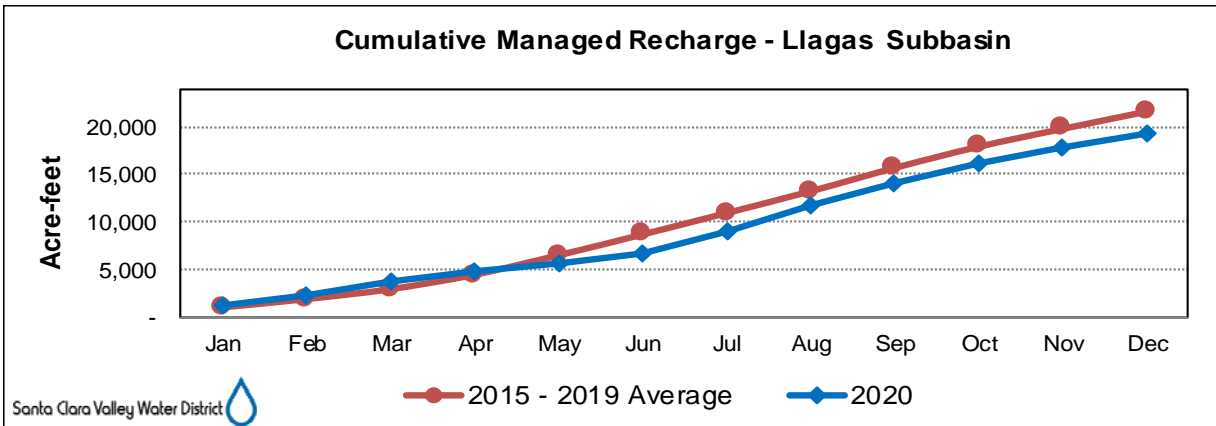


Figure 3. Estimated Cumulative Managed Recharge in the Llagas Subbasin



Groundwater Pumping

- Figures 4, 5, and 6 show the cumulative groundwater pumping for 2020 compared to the average of the last five years (2015 – 2019).
- Pumping for November 2020 is an estimated number based on retailers’ pumping data; it includes data from the new water zones that took effect in July 2020.
- Cumulative pumping through November 2020 shows much higher than average pumping in the Santa Clara Plain and higher than average in the Coyote Valley and the Llagas Subbasin.

Figure 4. Estimated Cumulative Santa Clara Plain Pumping

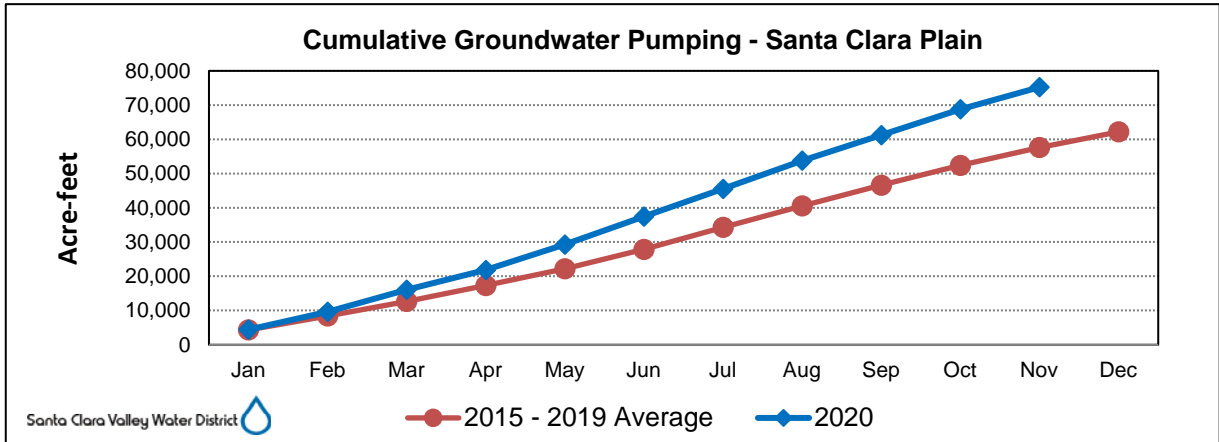


Figure 5. Estimated Cumulative Coyote Valley Pumping

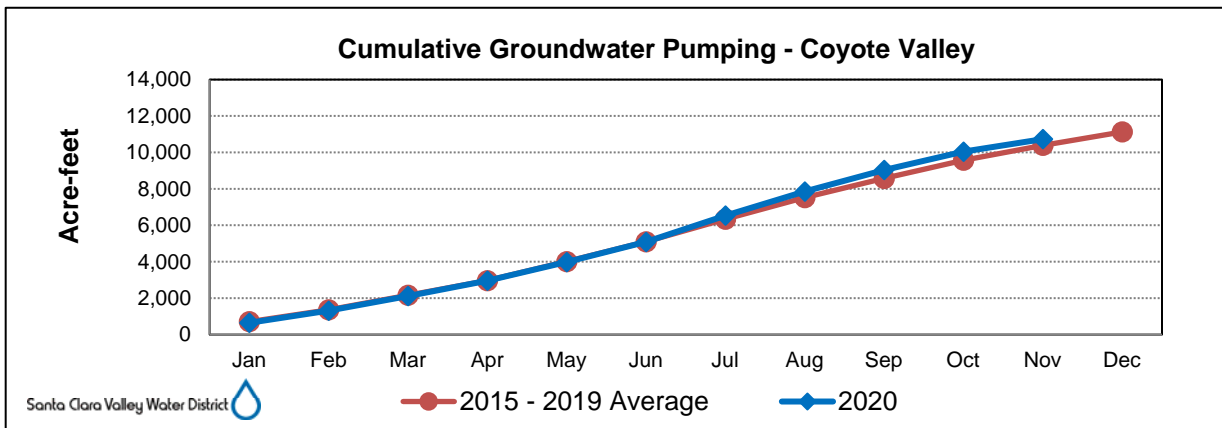
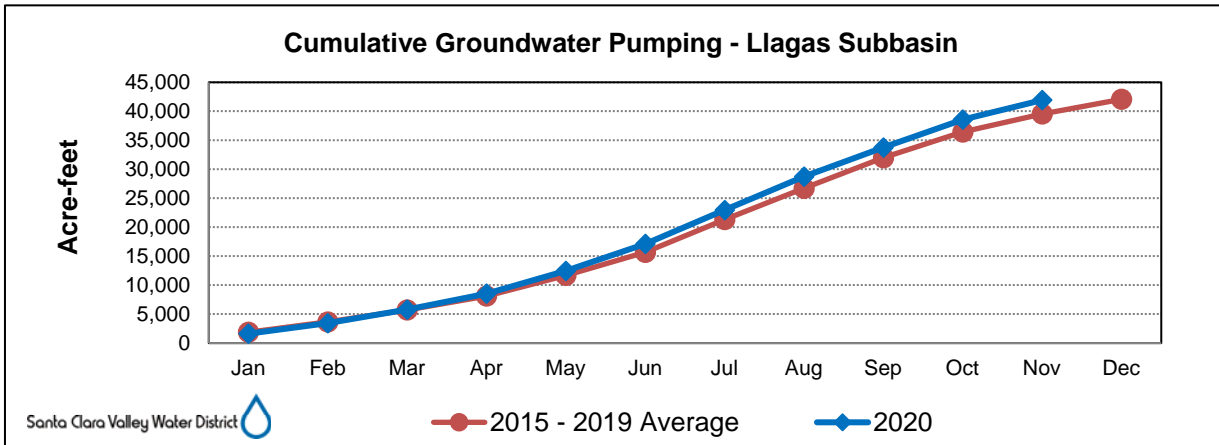


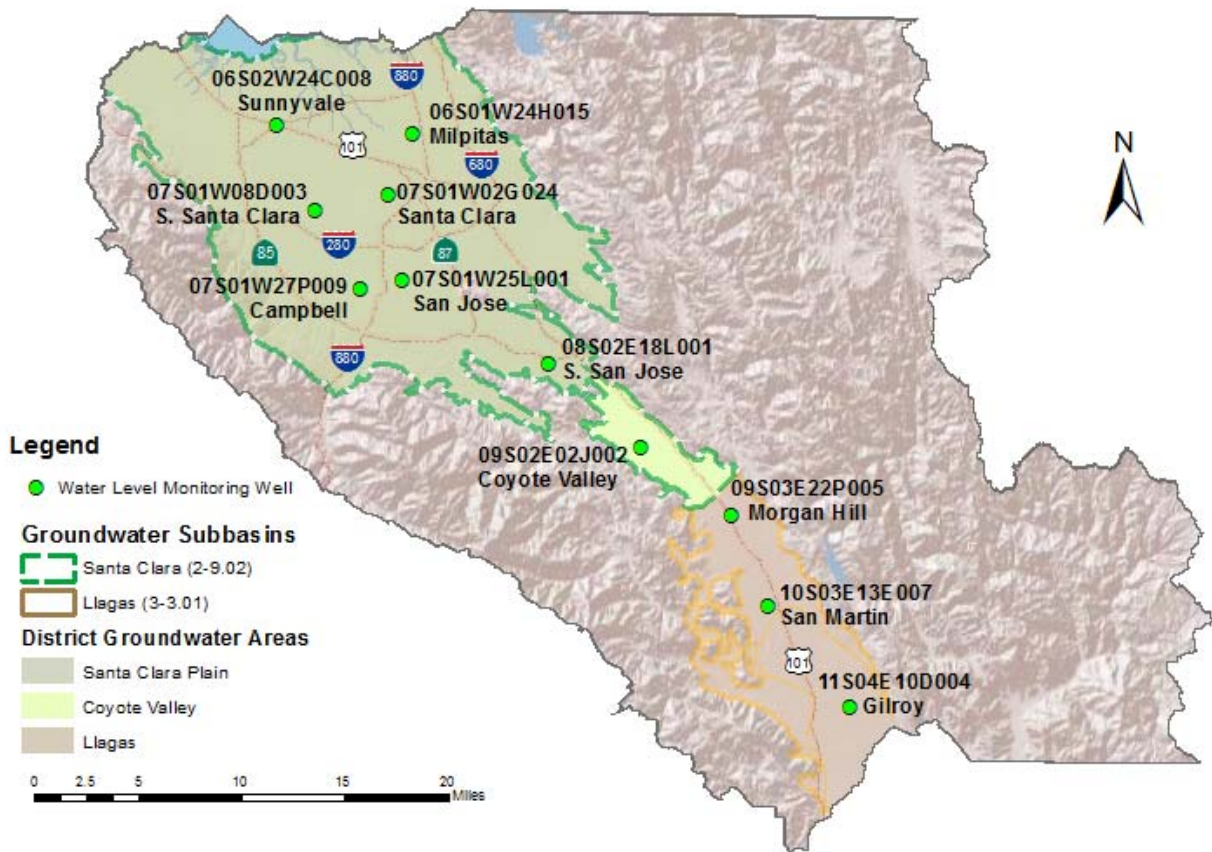
Figure 6. Estimated Cumulative Llagas Subbasin Pumping



Groundwater Levels

Current groundwater level conditions are summarized using eleven monitoring wells distributed across the sub-basins, as shown in Figure 7.

Figure 7. Location of Selected Monitoring Wells

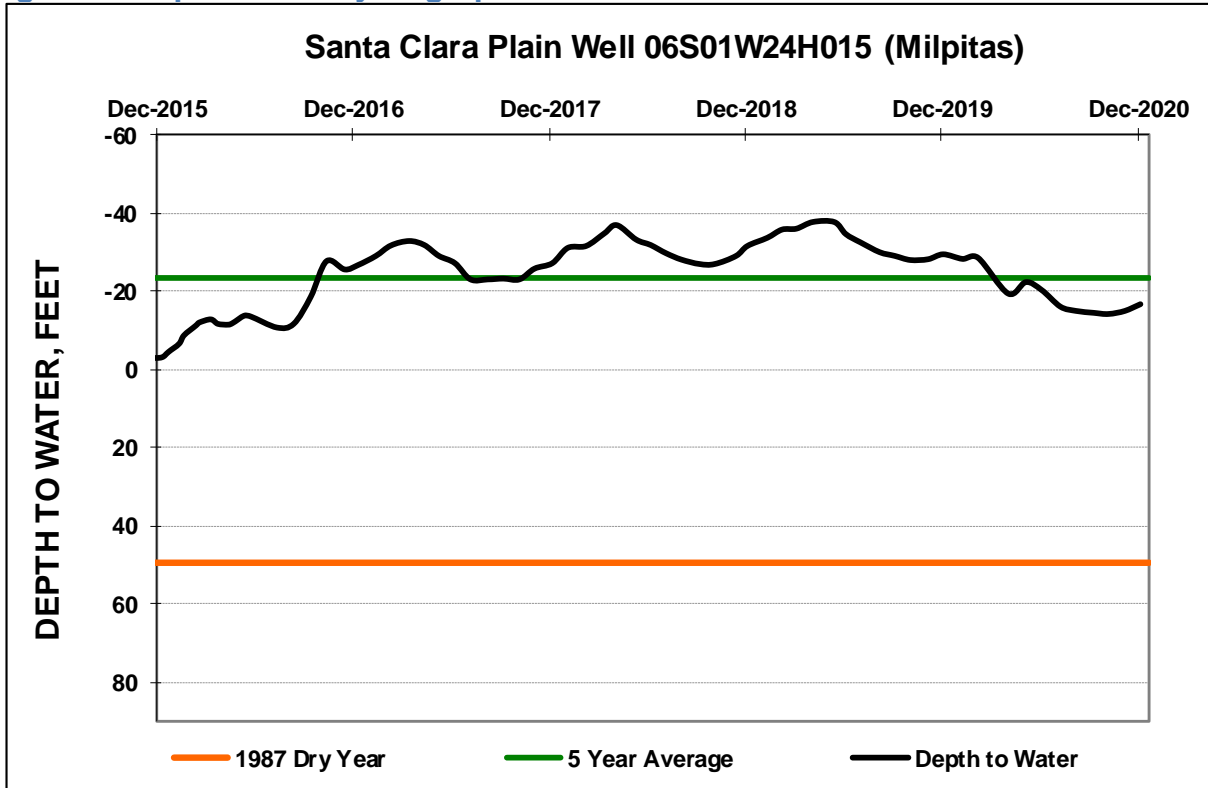


In Figures 8 through 18, hydrographs with December 2020 water levels from these eleven wells are compared to water levels from (i) November 2020, (ii) December 2019, (iii) December 2004 (a normal year), (iv) the prior five-year (2015-2019) average of December measurements, and (v) December 1987 (a dry year).

These hydrographs show that the December 2020 groundwater levels were:

- i. Higher than November 2020 levels in eight wells by 1 to 3 feet and lower in three wells by between 1 and 2 feet,
- ii. Lower than December 2019 in ten wells by 2 to 25 feet; the Sunnyvale well does not have a December 2019 level,
- iii. Higher in four wells by 1 to 20 feet and lower in six wells by 2 to 21 feet as compared to December 2004 (a normal year); one well does not have a 2004 water level,
- iv. Higher in four wells by 1 and 8 feet, lower in seven wells by 1 to 27 feet, as compared to the average of the previous five-years of December readings, and
- v. Higher in ten wells by 3 to 80 feet and lower by 7 feet in one well as compared to December 1987 (a dry year).

Figure 8. Milpitas Well Hydrograph



A measured value at Milpitas for 2004 is not available for comparison. Between March 1998 and October 2006, this well was flowing artesian and not measured. In October 2006, the well was modified to allow measurement of artesian pressures.

Figure 9. Sunnyvale Well Hydrograph

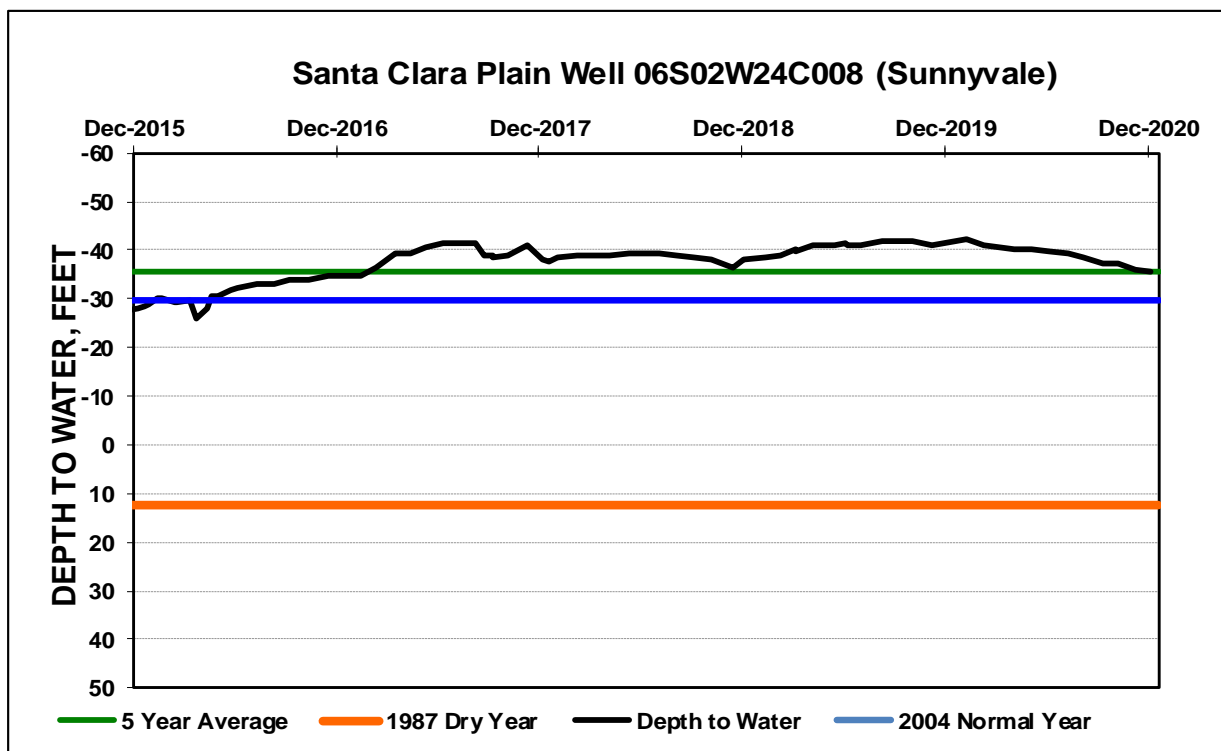


Figure 10. San Jose Well Hydrograph (Index Well for the Santa Clara Plain)

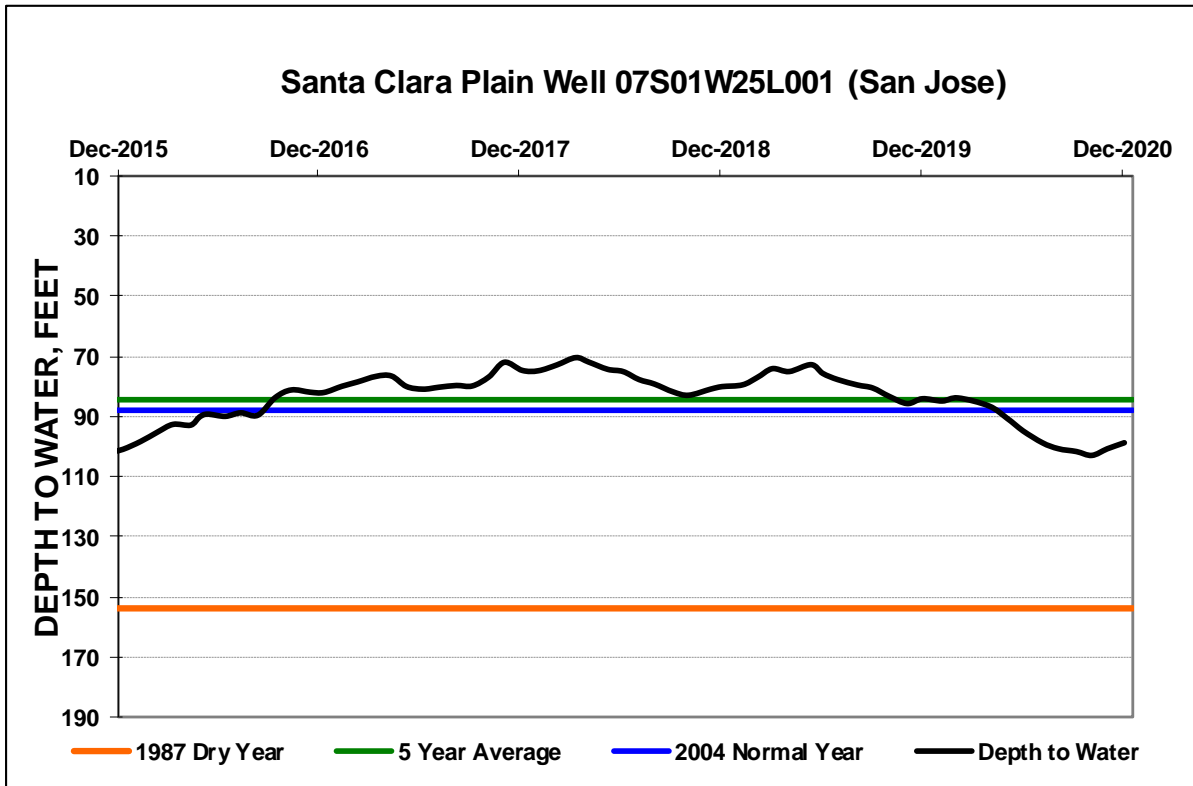


Figure 11. Santa Clara Well Hydrograph

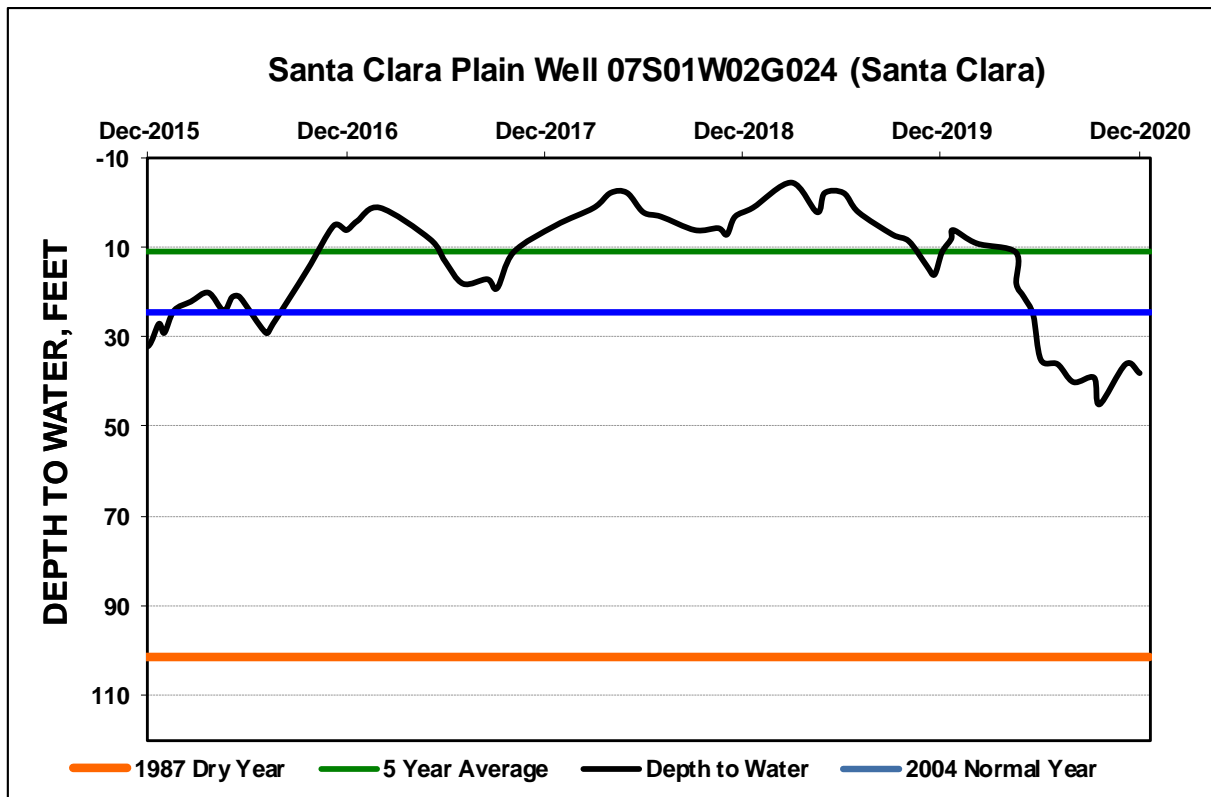


Figure 12. South Santa Clara Well Hydrograph

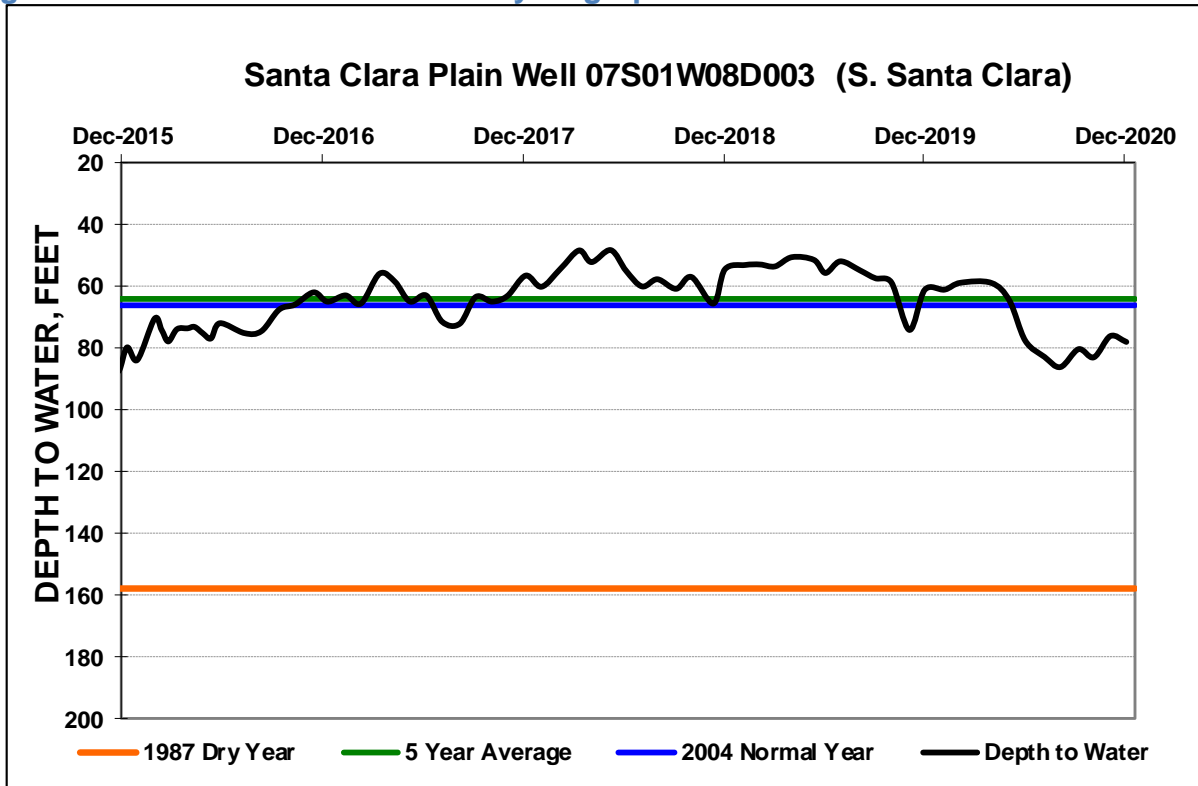
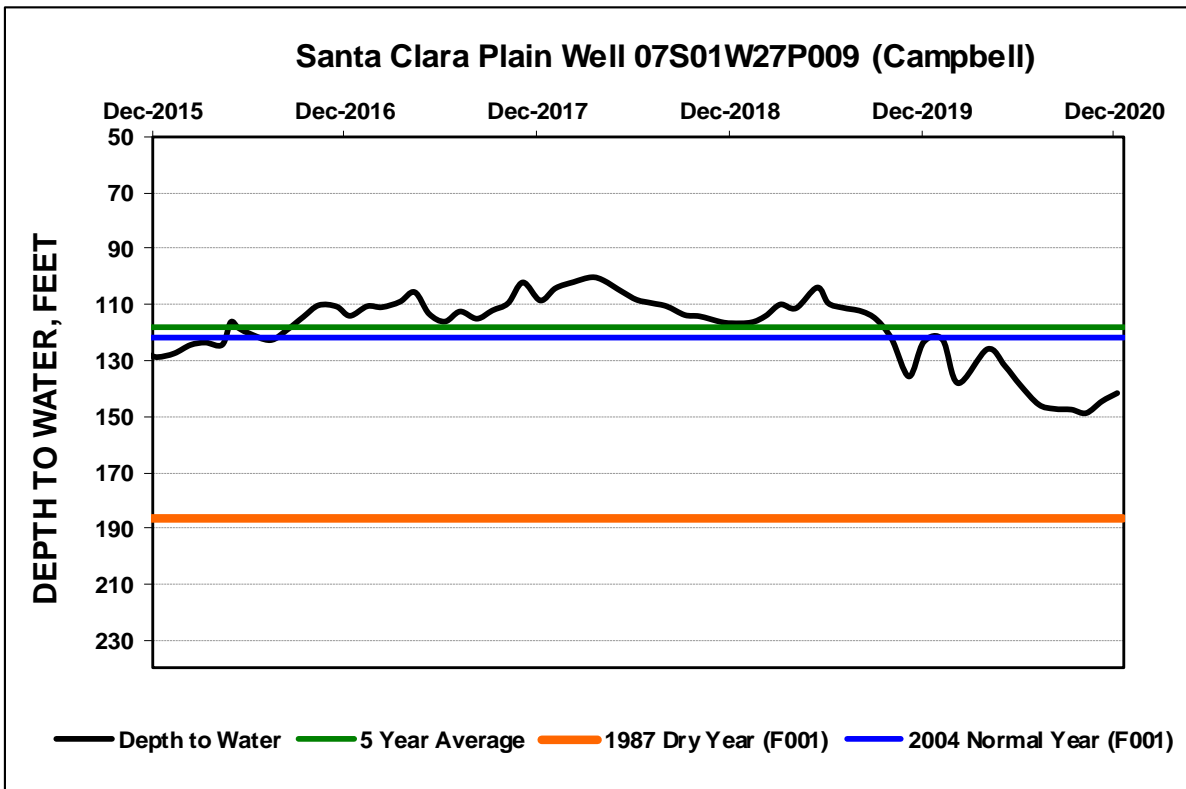


Figure 13. Campbell Well Hydrograph



The Campbell index well was replaced in August 2015 with a nearby well with similar water levels. Historic comparisons for 1987 and 2004 use data from the former index well (07S01W34F001).

Figure 14. South San Jose Well Hydrograph

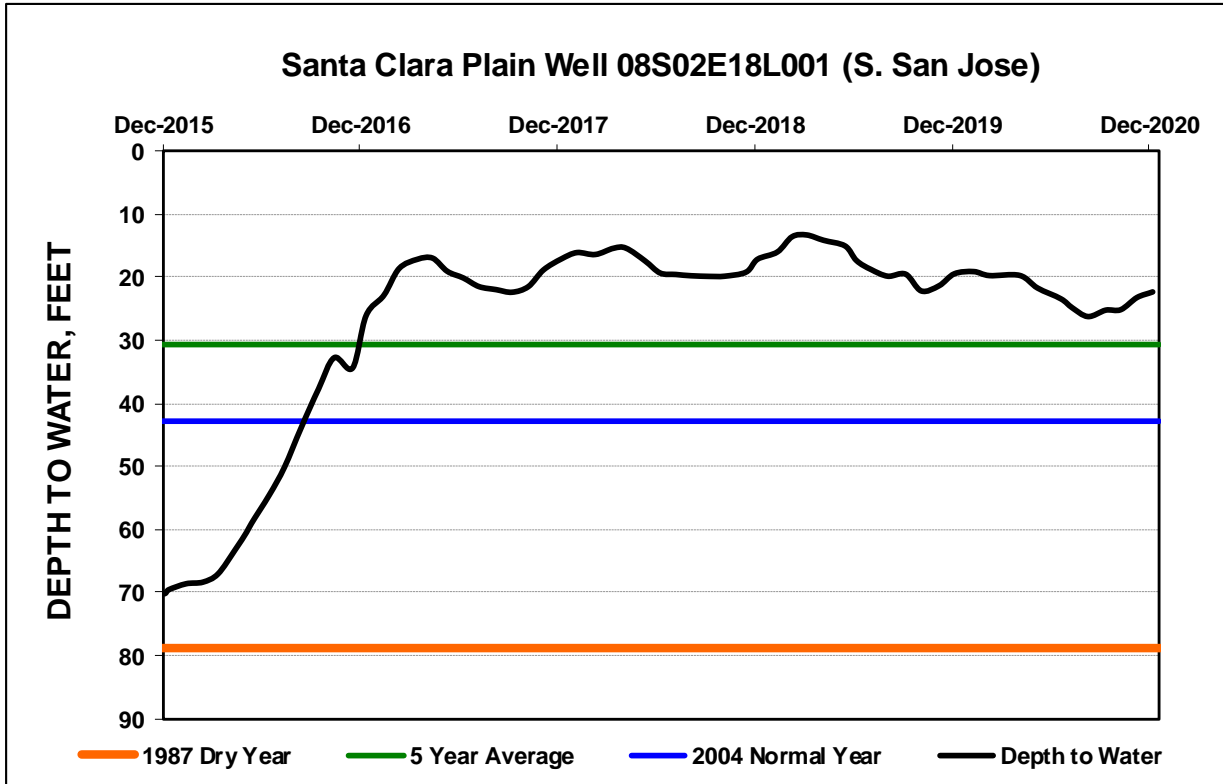


Figure 15. Coyote Valley Well Hydrograph (Index Well for the Coyote Valley)

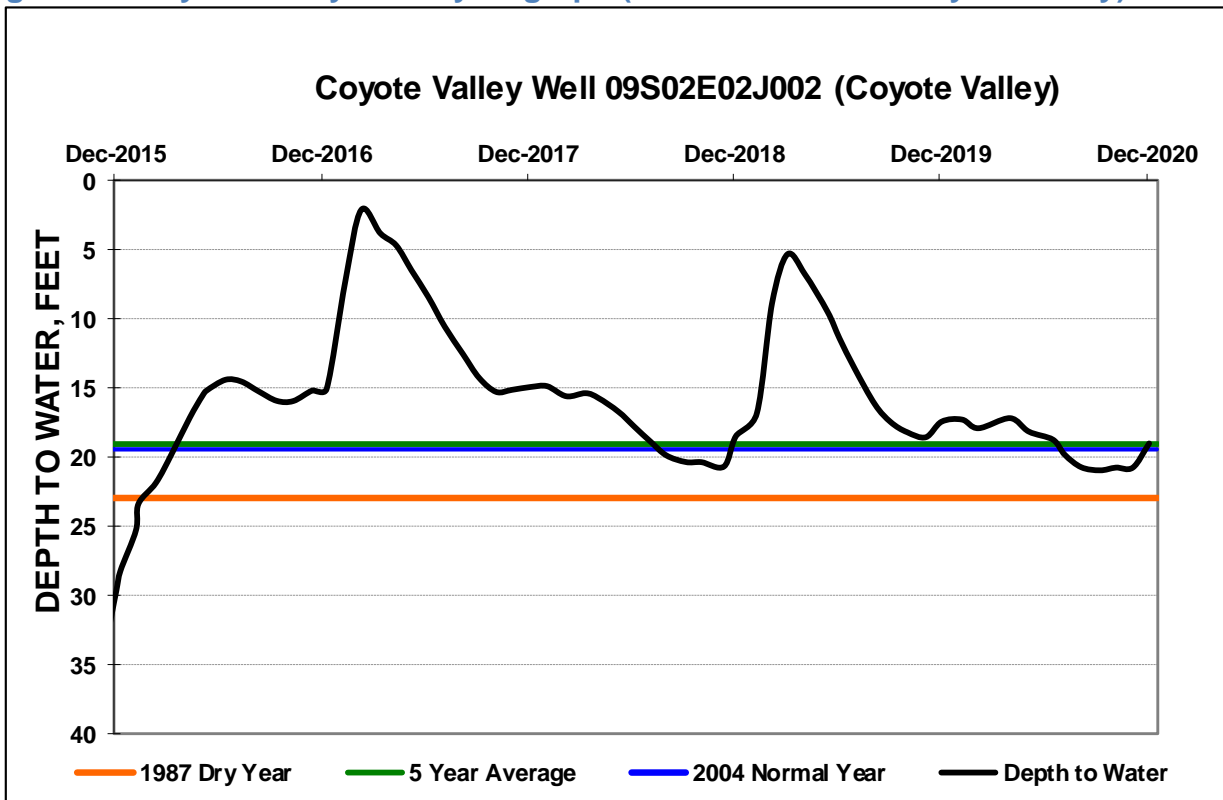


Figure 16. Morgan Hill Well Hydrograph

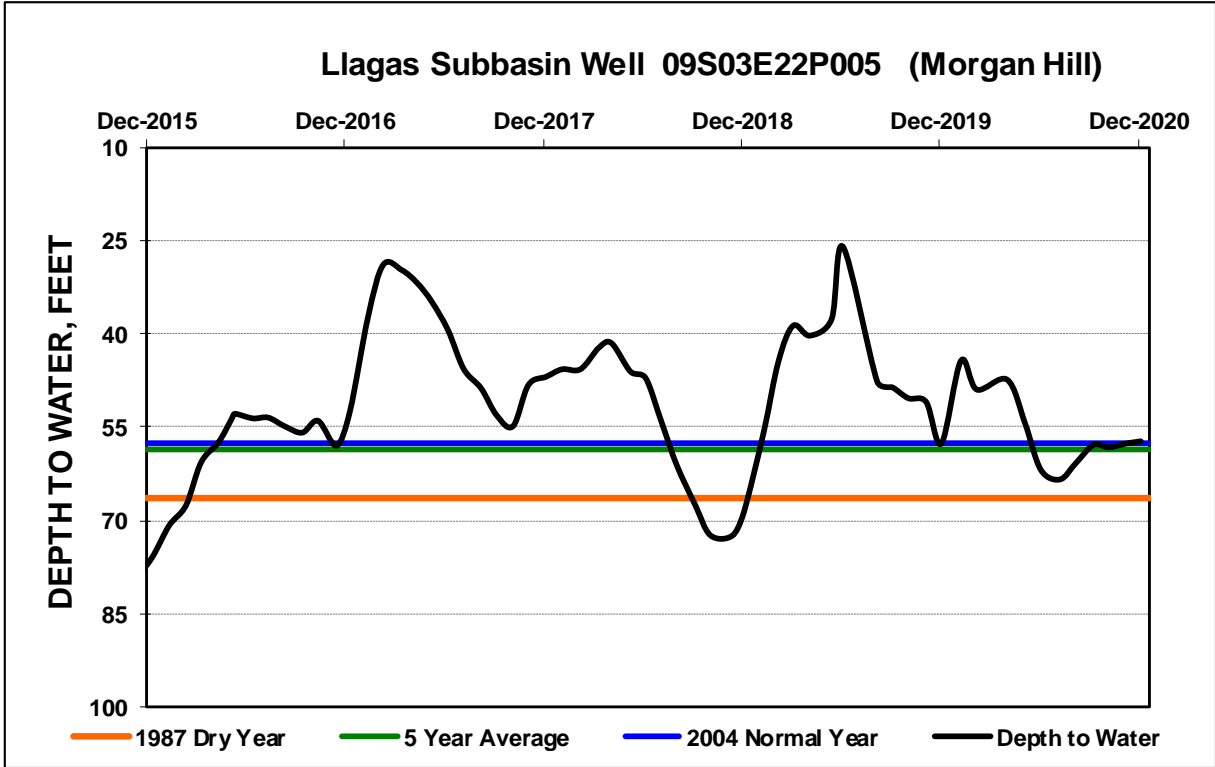
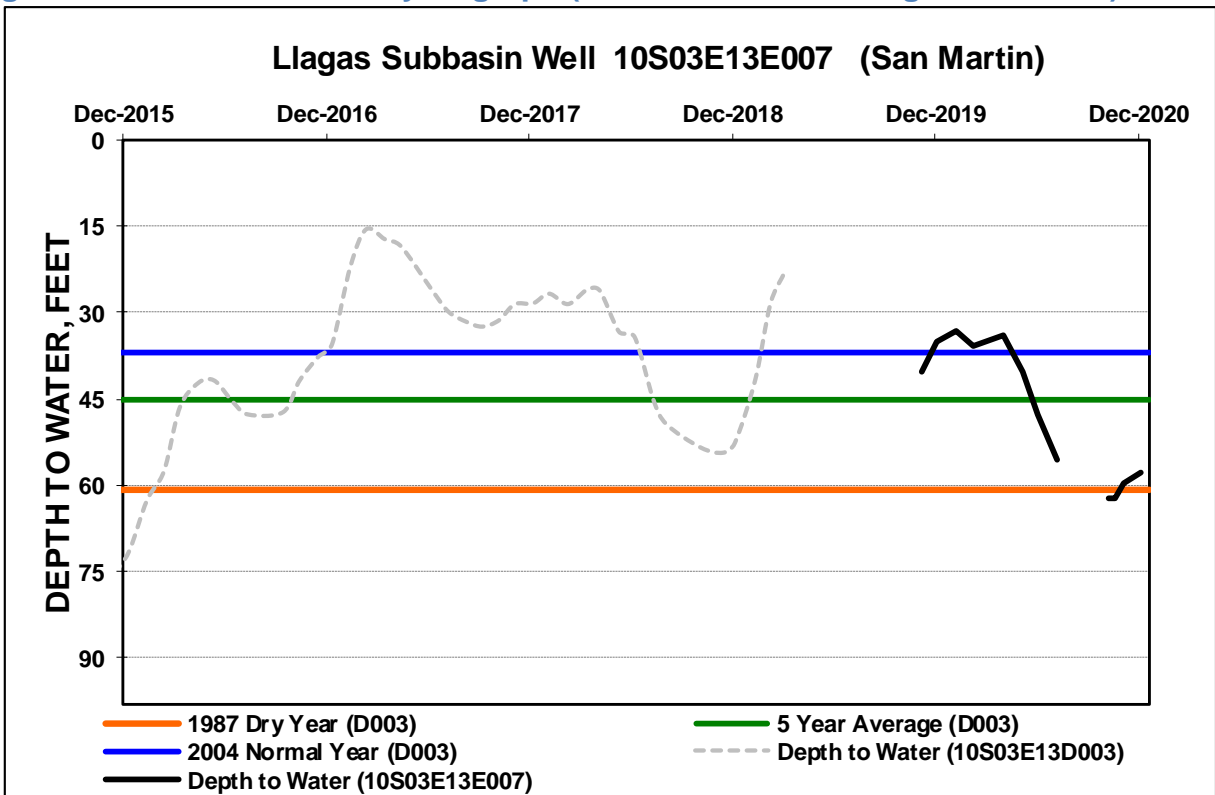


Figure 17. San Martin Well Hydrograph (Index Well for the Llagas Subbasin)



The San Martin index well was replaced in November 2019 with a nearby well with similar water levels. Historic comparison data for 1987, 2004, and 5-year average use data from the former index well (10S03E13D003). *Note: There was no measurement for August and September 2020.

Figure 18. Gilroy Well Hydrograph

