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May 9, 2023

Mr. David McNair
Scotts Valley Water District
2 Civic Center Dr.
Scotts Valley, CA 95066

SUBJECT: REVIEW OF APRIL 2023 GROUNDWATER CONDITIONS IN THE SCOTTS VALLEY WATER DISTRICT AREA

Dear Mr. McNair:

Montgomery & Associates prepared this letter report for Scotts Valley Water District (District) to review end of wet season groundwater conditions and dry season groundwater supply shortages. The report summarizes District precipitation, groundwater extraction, and groundwater level data for the wet season of Water Year (WY) 2023 from October 1, 2022, to April 30, 2023. The information reviewed informs an Annual Water Supply and Demand Assessment as outlined in Section 13.2 of the 2020 Urban Water Management Plan (UWMP), to determine if there is a need to implement the Water Shortage Contingency Plan (WSCP). Given high wet season precipitation, steadily decreasing annual extraction volumes, and stable to increasing groundwater level trends in all monitoring wells, the District will continue to have adequate supply in WY2023 to operate extraction wells consistent with prior years.

PRECIPITATION SUMMARY

The WY2023 wet season had an abnormally high number of atmospheric river events that produced large volumes of precipitation throughout the Central Coast region. The partial WY2023 rainfall total through April 30 measured at the El Pueblo Yard Station in Scotts Valley is 53.2 inches (Figure 1). This rainfall total is 129% of the long-term average annual precipitation of 41.4 inches in Scotts Valley. Large storms produced much of the wet season precipitation from the end of December 2022 to the end of March 2023 (Figure 2).

WY2023 total precipitation will be wetter than about 80% of years since 1947 (Figure 1). May rainfall probability can be used to project the likely total rainfall for the wet season. April is typically the end of the wet season in Scotts Valley, though about 25% of years have May rainfall greater than 1 inch. Early May storms have already produced an additional 1.1 inches of rainfall through May 3. Figure 3 shows the likelihood of receiving various amounts of rain in March (blue line), April, (orange line), and May (grey line). The median rainfall for May –

0.56 inches – has already been exceeded. May maximum rainfall is 7.7 inches, therefore total rainfall for the water year under record conditions will be likely be greater than 57 inches.

Since rainfall in prior years can influence current groundwater conditions in the region, the 2-year and 3-year average is a useful metric for evaluating water supply and recharge. Despite the wet year in 2023, much dryer than average conditions in prior water years may limit recharge of the deeper aquifers. The 2-year and 3-year average precipitation are also specific triggers in the 2020 UWMP Water Supply and Demand Assessment. The 2-year average precipitation from WY2022 through April 30, 2023, is 40.3 inches, which is 98% of average; the 3-year average precipitation from WY2021 through April 30, 2023, is 32.6 inches, which is 79% of average.

The current drought status confirms that wet conditions in WY2023 effectively ended regional drought conditions that prevailed over the prior 3 years. The National Integrated Drought Information System (NIDIS) program provides real time and historical drought information at the local, state, and federal levels. The NIDIS online tool classified Scotts Valley as being in severe to extreme drought from April 2021 to January 2023. However, after the wet beginning to WY2023, the region is no longer in a state of drought[1].

[1] https://www.drought.gov/location/scotts%20valley%2C%20ca

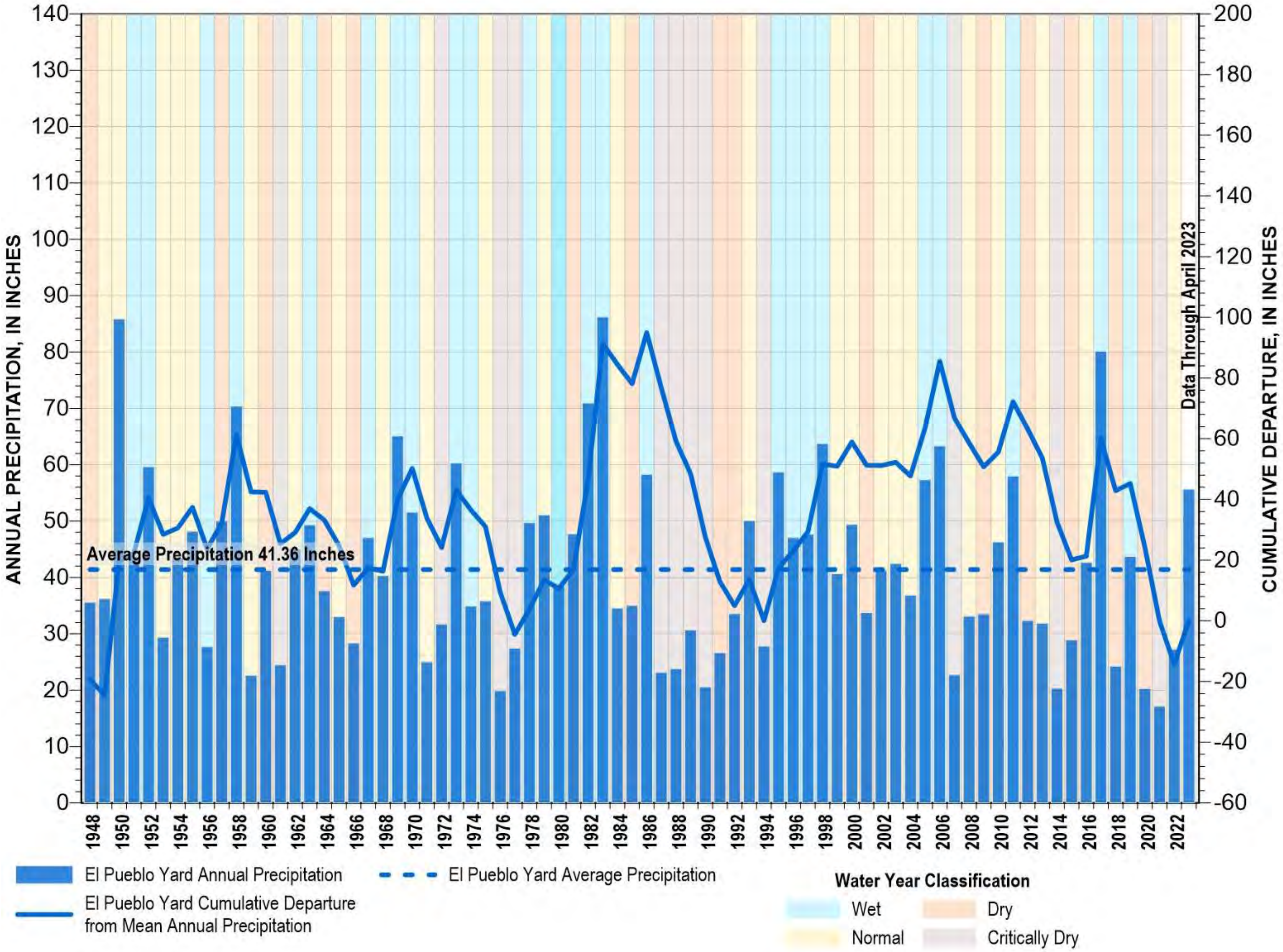

Figure 1. Annual Rainfall at El Pueblo Yard

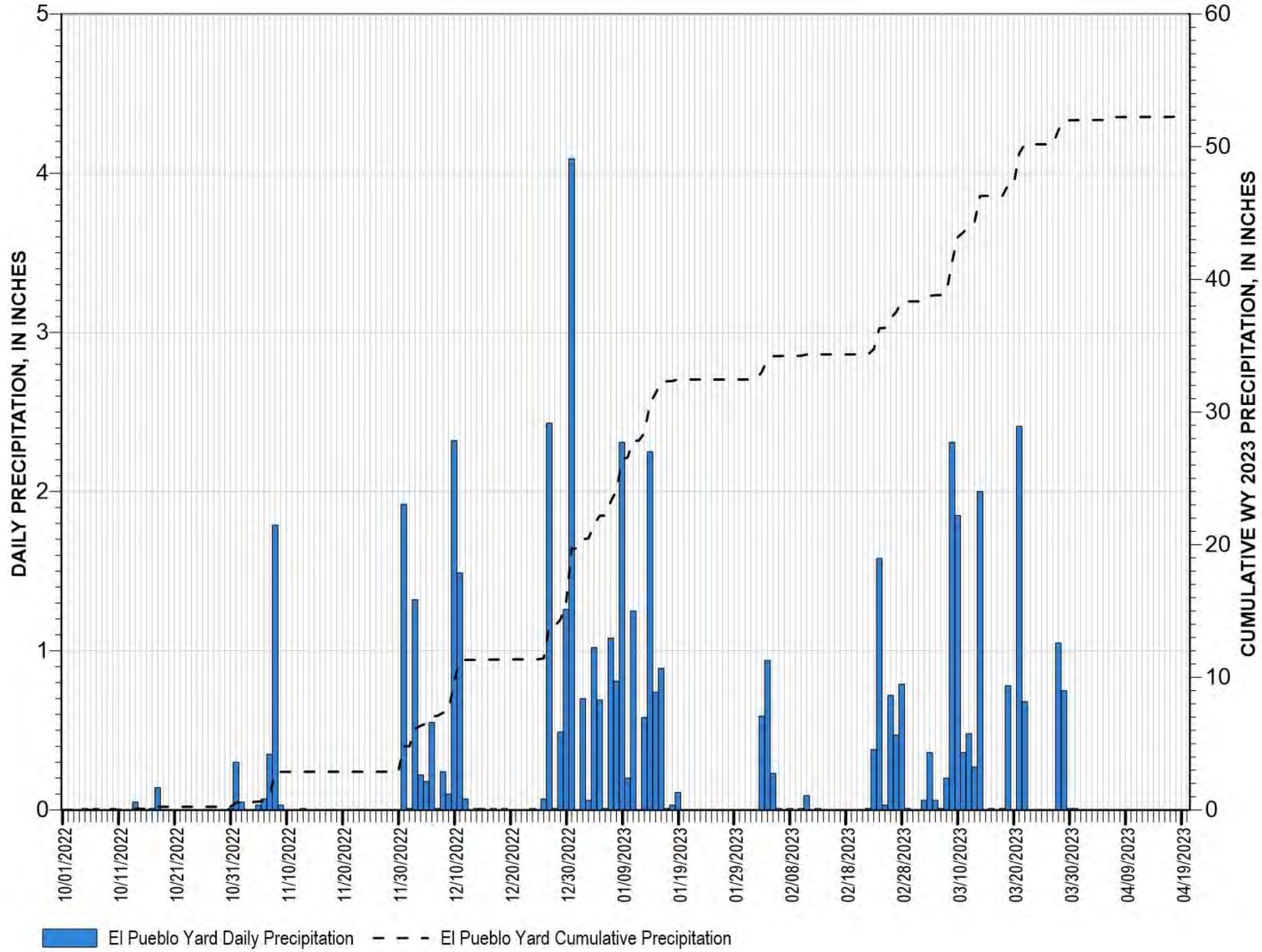

Figure 2. WY2023 Daily Rainfall at El Pueblo Yard

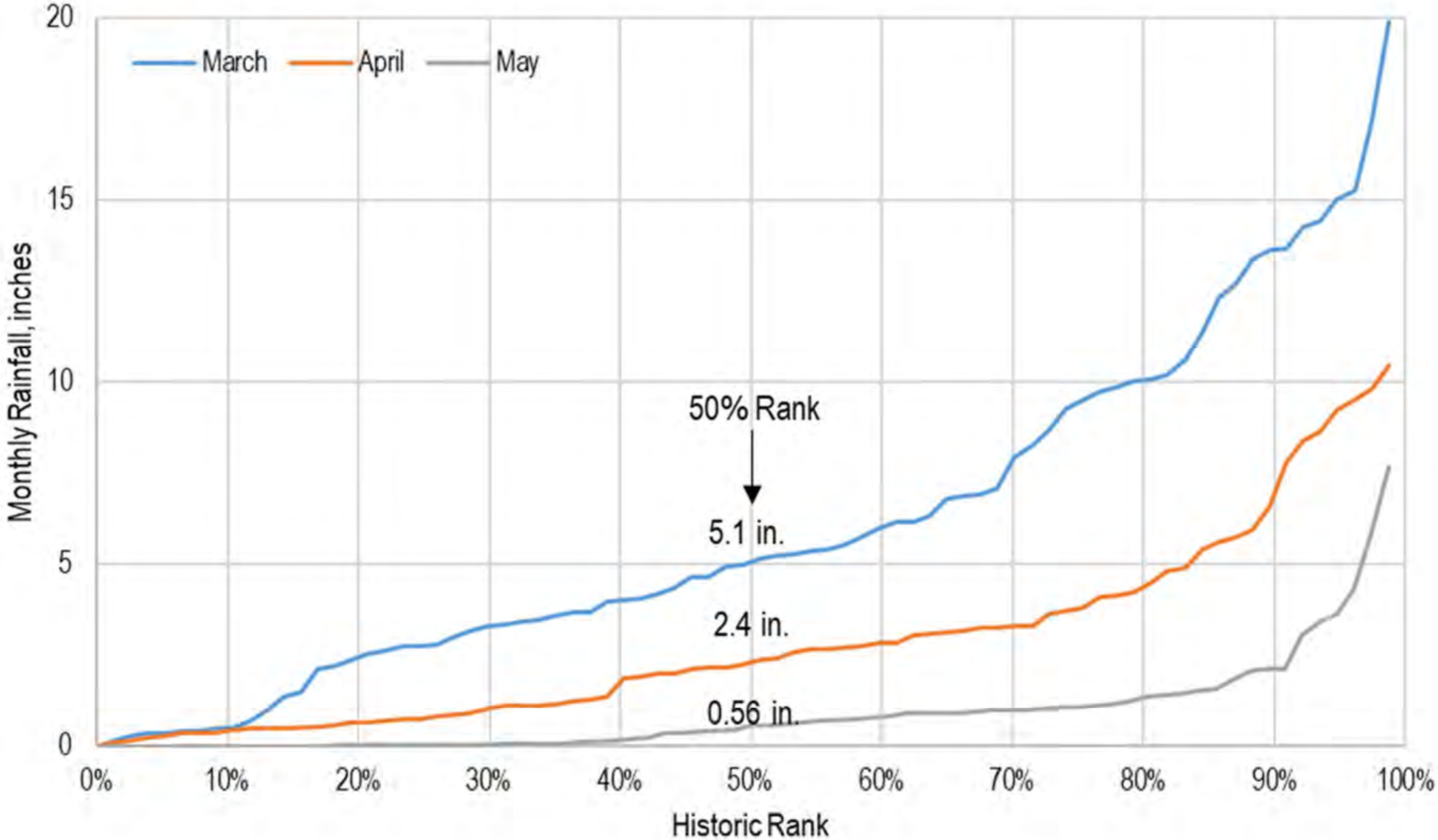

Figure 3. Historical March through May Rainfall Ranking

GROUNDWATER EXTRACTION SUMMARY

Groundwater extracted from extraction wells in the Lompico and Butano aquifers is used to supply nearly all water distributed by the District. About 200 acre-feet (AF) per year of recycled water is also used to supplement supply. Current extraction wells, Wells #10A, #11A, and #11B are screened in the Lompico aquifer and Wells #3B and Orchard are screened in both the Lompico and Butano aquifers. Locations of extraction wells are shown on Figure 4.

From October 2022 to the end of March 2023, District extraction is 466.8 AF, which is about 40 to 140 AF lower than historical extraction volumes during the wet season in the past 5 years (Table 1). The District extracted groundwater from Wells #10A, #11B, and Orchard in the first half of WY2023. About 53% of extraction was from Lompico Wells #10A and #11B and 47% of extraction was from Lompico/Butano Orchard Well. Well #3B has not been pumped recently due to its poor condition and is being replaced and Well #11A was rested during the entire WY2023 wet season.

Table 1. Summary of Wet Season Extraction

Time Period	Lompico Extraction Wells #10A, #11A and #11B (AF)	Lompico/Butano Extraction Wells #3B and Orchard (AF)*	Total (AF)
WY2018 Oct 2017 - Mar 2018	368.4	234.7	603.1
WY2019 Oct 2018 - Mar 2019	97.6	422.7	520.4
WY2020 Oct 2019 - Mar 2020	250.8	301.2	552.0
WY2021 Oct 2020 - Mar 2021	468.4	127.5	595.9
WY2022 Oct 2021 - Mar 2022	193.8	311.4	505.2
WY2023 Oct 2022 - Mar 2023	248.2	218.6	466.8

*The relative contribution of the Lompico and Butano aquifers to extraction wells screened across the units is estimated to be 40% from the Lompico aquifer and 60% from the Butano aquifer in the Santa Margarita Basin Groundwater Sustainability Plan (GSP). This estimate is required by the GSP but is not supported by extraction data analysis. The estimated extraction volumes are not distributed by aquifer in this report due to the uncertainty in the estimates.

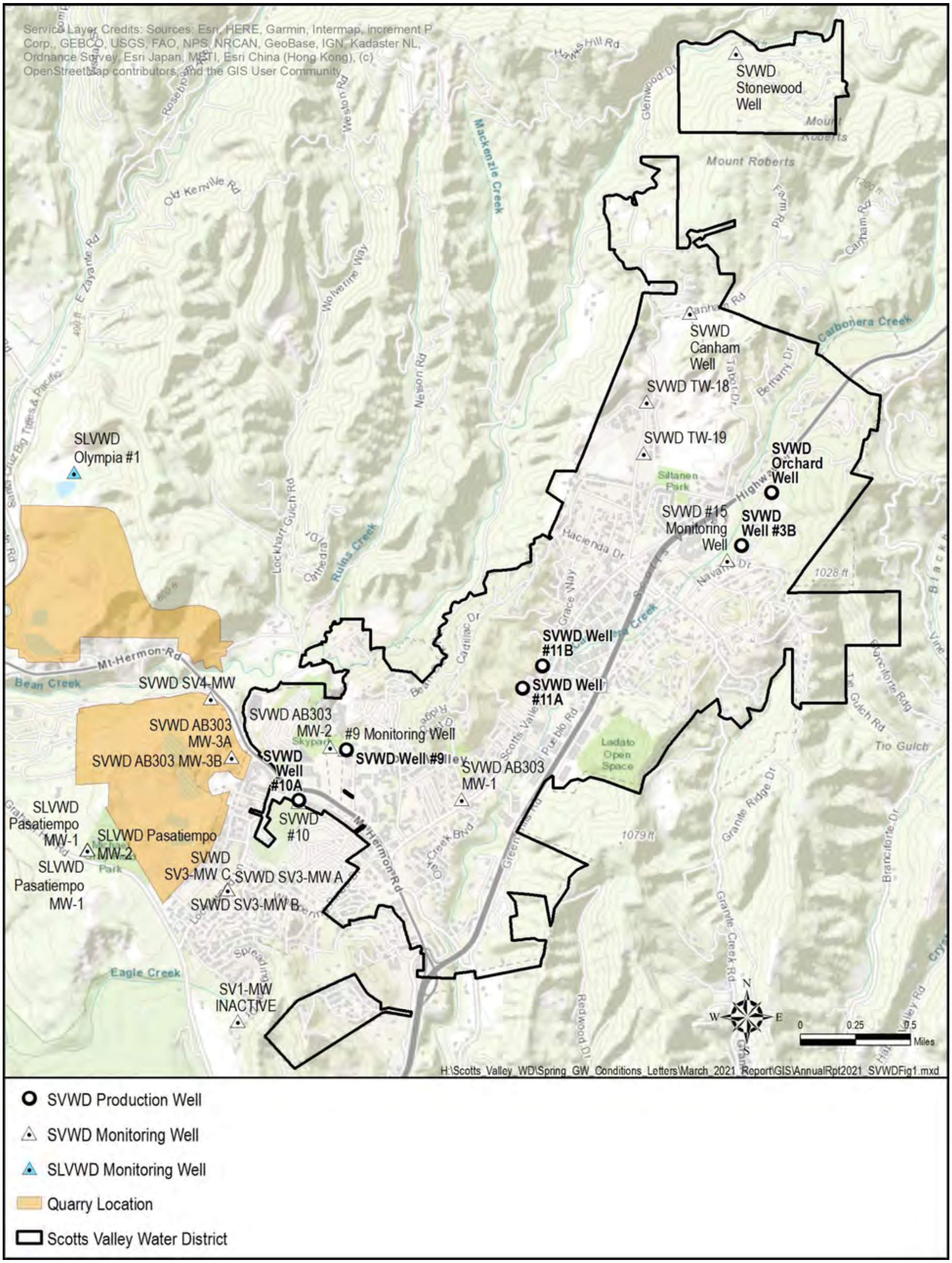

Figure 4. Extraction and Monitoring Well Locations

District extraction for partial WY2023 and prior water years is summarized on Figure 5. In WY2022, the District pumped 1,108 AF, which is the lowest annual volume on record since WY 1985. About 446 AF (40% of total extraction) was from Lompico aquifer wells and 662 AF (60% of total extraction) was from Lompico/Butano aquifer wells.

The shallower Santa Margarita aquifer and Monterey Formation are not pumped by District extraction wells. The Santa Margarita aquifer is an important regional aquifer for groundwater recharge and surface water baseflow particularly to Bean Creek, located north of the District's service area. The Monterey Formation is a regional aquitard separating the Santa Margarita aquifer and the Lompico aquifer, except where absent under parts of Scotts Valley. The District last extracted from the Santa Margarita aquifer in the 1980s. Monterey Formation extraction has not occurred in Well #9 since 2020 and prior to that it only produced less than 100 AF per year since 2008.

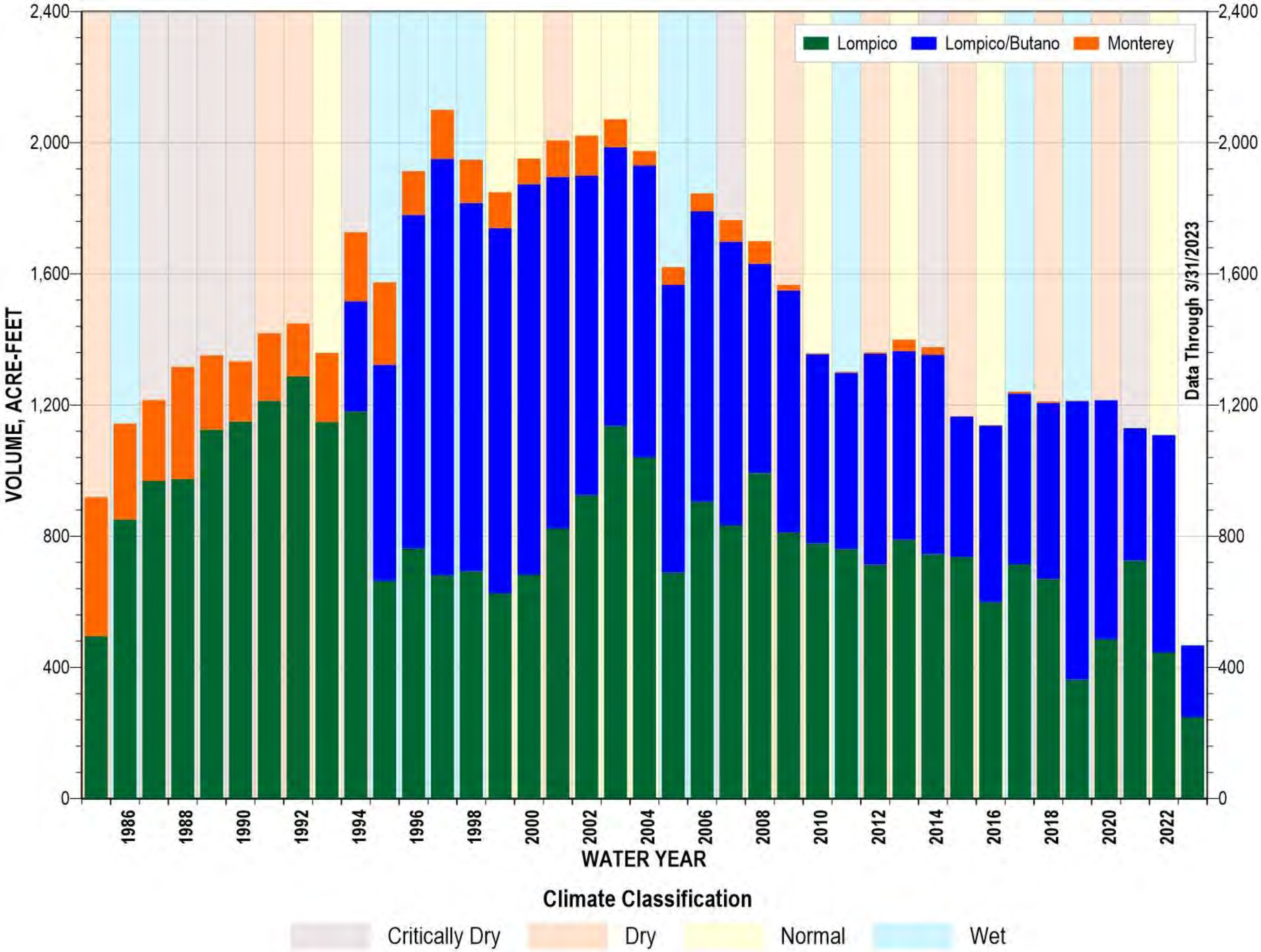

Figure 5. Annual Scotts Valley District Groundwater Extraction

GROUNDWATER LEVELS SUMMARY

Groundwater levels are manually measured by the District every quarter. Most monitoring wells also have transducers that record daily groundwater levels, which are measured in both monitoring and inactive extraction wells screened in the Santa Margarita, Lompico, and Butano aquifers and the Monterey Formation. Each aquifer in the District's service area has unique responses to precipitation and pumping conditions, based on depth and overlying geology, as discussed below. Groundwater levels measured in active extraction wells are often not indicative of regional aquifer conditions so are omitted from this analysis.

Table 2 summarizes changes in groundwater levels at District monitoring wells relative to last fall (October 2022) and October 2017, which preceded the 2012 to 2016 drought. Hydrographs showing groundwater elevations over time at selected wells are referenced in Table 2. Well locations are shown on Figure 4.

Additionally, April 2023 groundwater elevations for representative monitoring points (RMPs) in the District's service area are evaluated relative to the GSP's sustainable management criteria (SMC). SMC include minimum thresholds (MT), measurable objectives (MO), and interim milestones. MTs are groundwater elevations at which undesirable results may start to occur. MOs are the groundwater elevation goal that allows for operational flexibility and ensures that future droughts and unforeseen changes to water supplies do not cause unsustainable conditions. Interim milestones are 5-year goals to help meet MOs by 2042. For purposes of the GSP annual report, annual minimum groundwater elevations at RMPs are compared to the SMC. For this spring conditions evaluation, higher spring elevations are compared to SMC to show how current wet season conditions compare to target groundwater levels. Groundwater elevation comparisons to MTs are also part of the Water Supply and Demand Assessment section of this letter report.

In general, groundwater levels in District monitoring wells have been stable to increasing since 2017. Spring 2023 groundwater elevations in 6 out of 9 RMP wells are above the MO with no groundwater levels close to MTs.

Santa Margarita Aquifer Groundwater Levels

Groundwater levels in the Santa Margarita aquifer are generally stable in the District because the aquifer is no longer pumped by the District or nearby quarries. However, San Lorenzo Valley Water District still extracts from the Santa Margarita aquifer south of Scotts Valley in their Pasatiempo well field and in their Olympia and Quail Hollow well fields north of Bean Creek. The Santa Margarita aquifer is also an important aquifer for domestic supply for homes not connected to one of the water districts. Some Santa Margarita aquifer monitoring wells in the District respond rapidly to rainfall with groundwater levels rising in wet years and declining in dry years, while other Santa Margarita monitoring wells in the northern portion of the District are less responsive. Generally, seasonal groundwater level fluctuations are more pronounced further to the south where the Santa Margarita aquifer provides baseflow to Bean Creek. The aquifer in the northern portion of the District has less connection to streams and is not used as much for water supply. Historic overpumping of the Santa Margarita and Lompico aquifers has caused the Santa Margarita aquifer to be dewatered below Scotts Valley where the Monterey Formation is absent.

April 2023 groundwater levels in the 3 Santa Margarita aquifer monitoring wells in the southern portion of the District have risen between 12 to 14 feet since October 2022 and are 8 to 10 feet higher than fall 2017 (Table 2). Groundwater levels in spring 2023 are relatively high in the aquifer, similar to after the wet year in 2017 (Figure 6 through Figure 8). In dry periods such as from 2020 to 2022 and 2012 to 2016, groundwater levels are lower in Santa Margarita aquifer wells in the southern portion of the District. The groundwater elevation in interconnected surface water RMP SV4 MW increased 14 feet this wet season and is now 33 feet above the MO (Table 3).

Santa Margarita well TW-18 in the northern portion of the District fluctuates very little, with all groundwater level measurements within a range of only a few feet (Figure 9). The April 2023 groundwater elevation is within a foot of the MO and is about 8 feet higher than the MT (Table 3).

Monterey Formation Groundwater Levels

The Monterey Formation groundwater levels have a long-term increasing trend in the only District well screened in this aquifer, Well #9. This well is an important monitoring feature in the because it is currently the only Monterey Formation monitoring well in the entire Basin. The Monterey Formation is no longer used as a water supply by the District.

Groundwater levels in Monterey Formation inactive extraction Well #9 continue to steadily increase since the well has barely been used as a water source since 2008 (Figure 10). The groundwater level in Well #9 in spring 2023 is 3 feet higher than fall 2022 and about 21 feet higher than fall 2017 (Table 2). The April 2023 groundwater elevation is a foot above the MO for the well (Table 3).

Lompico Aquifer Groundwater Levels

Groundwater level fluctuation in the deeper Lompico aquifer is influenced more by pumping than precipitation. As depicted on Figure 11, groundwater levels in the Lompico aquifer in south Scotts Valley declined substantially through the early 2000s when District and other regional pumping volumes were greater. Reduced extraction since 2010 has allowed groundwater levels to stabilize from 2010 to 2016. Ongoing pumping reductions through water use efficiency measures and conservation have led to increases in groundwater elevations since 2016 despite overall drier than average conditions.

Groundwater levels in Lompico aquifer Well #10 (Figure 11), Well #11 (Figure 12), TW-19 (Figure 13), and AB303-MW2 (Figure 14) have increased to varying degrees in the last few years (Table 2). Groundwater level increases may be in part due to recovery in wet years like WY2017 and WY2023, but since increases continued in recent dry years, they appear to be more related to reduced extraction from the Lompico aquifer.

Groundwater levels in Well #10, which is close to the District's southern pumping Well #10A and relatively close to the SLVWD's Pasatiempo wells, have shown sustained increases in both seasonal high and seasonal low groundwater levels since 2016 (Figure 11). Well #10's April 2023 groundwater level is 11 feet higher than the groundwater level in fall 2022 and 24 feet higher than fall 2017. Groundwater levels in Well #10 fluctuate by about 30 to 40 feet during annual cycles due to pumping at nearby Well #10A. Well #10's April 2023 groundwater elevation is 28 feet above the MO (Table 3).

Well #11A has a similar groundwater level trend to Well #10, with groundwater level fluctuation related to pumping at the District's central pumping Well #11B. Well #11A's April 2023 groundwater level is about 2 feet higher than the groundwater level in fall 2022 and 30 feet higher than fall 2017 (Table 2). The April 2023 groundwater elevation is 5 feet above the MO (Table 3).

Other Lompico monitoring wells, TW-19 and AB303 MW-2, also have increasing groundwater level trends similar to Well #10 and #11A but without seasonal fluctuation due to nearby pumping (Figure 13 and Figure 14, respectively). TW-19's April 2023 groundwater elevation is 1 foot higher than fall 2022 and 37 feet higher than fall 2017 (Table 2). The groundwater elevation at TW-19 is 4 feet above the MO (Table 3).

AB303 MW-2's groundwater level increase is less pronounced than TW-19, with a 2-foot increase since fall 2022 and 9-foot increase since fall 2017 (Table 2). AB303 MW-2 is closer to extraction Well #10A while TW-19 in north Scotts Valley is not close to a pumping well (Figure 4). Differing increases in groundwater levels in both wells in different parts of Scotts Valley reaffirms our understanding that groundwater levels in the Lompico aquifer are recovering because of decreased pumping.

Lompico/Butano Aquifer Groundwater Levels

Monitoring Well #15 is the only District monitoring well screened near the Lompico and Butano aquifers northern extraction wells, Well #3B and Orchard. Well #15 is within 50 feet of Well #3B and about 2,500 feet from Orchard. Pumping at Well #3B highly influences groundwater levels in the monitoring well and during WY2023 when only Orchard was active, the influence of pumping at this more distant extraction well was noted (Figure 4). Well #15 is the only District well with a lower April 2023 groundwater level compared to prior years; its groundwater level is about 1 foot lower than October 2022 and 27 feet lower than fall 2017 (Table 2).

The April 2023 groundwater elevation is about 27 feet below the MO and 15 feet above the MT (Table 3). However, the January 2023 groundwater elevation was above the MO (Figure 15). Since the groundwater elevation is very sensitive to active and inactive pumping cycles, and the MO was recently achieved, this goal is still achievable in the near term.

Butano Aquifer Groundwater Levels

Butano aquifer dedicated monitoring wells, Canham and Stonewood, are former exploratory wells that did not produce economically viable quantities of water. The hydrogeologic influence of the District's Lompico/Butano extraction wells on these monitoring wells is uncertain, especially because (1) the distance between the monitoring and extraction wells is relatively large (the shortest distance is 0.8 miles between Canham and Orchard), (2) the wells were not monitored until nearly a decade after Lompico/Butano extraction began, and (3) groundwater levels in monitoring wells were stable when the extraction wells were resting during treatment system upgrades in 2021 (Figure 16 and Figure 17). Groundwater levels in the Butano aquifer monitoring wells increased between 3 and 9 feet since fall 2022 and by 5 to 7 feet since fall 2017 (Table 2). Based on transducer data from the Canham well, it appears that the below ground well vault flooded during the February 2023 storms and rainwater entered the well from the surface. The April 2023 groundwater elevation in Stonewood is about 5 feet above the MO and Canham is about 17 feet below the MO (Table 3).

A deep dedicated monitoring well in the Butano aquifer closer to the District's Lompico/Butano aquifer pumping wells is planned as part of the Santa Margarita Groundwater Agency implementation of its GSP. This well will provide an additional groundwater level data point closer to where Butano pumping is occurring to help the District monitor and manage Butano aquifer extraction.

Table 2. Groundwater Level Summary

Well	Groundwater Level April 2023 (feet below ground surface)	Change in Groundwater Level Since Oct 2022 (feet)	Change in Groundwater Level Since Oct 2017 (feet)	Hydrograph Figure Number
Santa Margarita Aquifer				
AB303 MW-1	68.9	12.4	9.4	Figure 6
AB303 MW-3B	104.8	12.0	10.1	Figure 7
SV4–MW	35.0	14.2	7.7	Figure 8
TW-18	244.6	-0.5	0.6	Figure 9
Monterey Formation				
Well #9	168.8	3.0	20.7	Figure 10
Lompico Aquifer				
Well #10	160.8	11.4	24.1	Figure 11
Well #11A	280.2	1.5	29.8	Figure 12
TW-19	279.6	1.3	37.4	Figure 13
AB303 MW-2	125.6	2.4	8.9	Figure 14
Lompico/Butano Aquifer				
Well #15	353.5	-1.4	-26.6	Figure 15
Lompico/Butano Aquifer				
Stonewood	50.0	2.7	4.6	Figure 16
Canham	332.5	9.1	6.5	Figure 17

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Table 3. Groundwater Level Sustainable Management Criteria Evaluation

Aquifer	Well Name	Annual Minimum Groundwater Elevation (feet above mean sea level)						
		Minimum Threshold	Interim Milestone #1 (2027)	Measurable Objective	WY2020	WY2021	WY2022	April WY2023
					Dry WY	Critically Dry WY	Normal WY	--
Santa Margarita	TW-18	462	471	471	471.8	471.8	470.9	470.4
	SV4-MW*	381	387	387	401.6	404.1	405.7	420.3
Monterey	Well #9	301	340	358	346.7	351.0	354.0	359.3
Lompico	Well #10	286	302	322	317.9	330.3	338.1	350.1
	Well #11A	288	299	317	310.4	308.0	312.6	322.4
	TW-19	314	357	376	373.1	370.4	370.0	380.0
Lompico/Butano	Well #15	291	310	333	302.8	307.1	307.9	306.5
Butano	Stonewood	836	844	844	848.3	845.0	845.8	848.5
	Canham	427	447	467	442.0	441.7	441.2	450.3

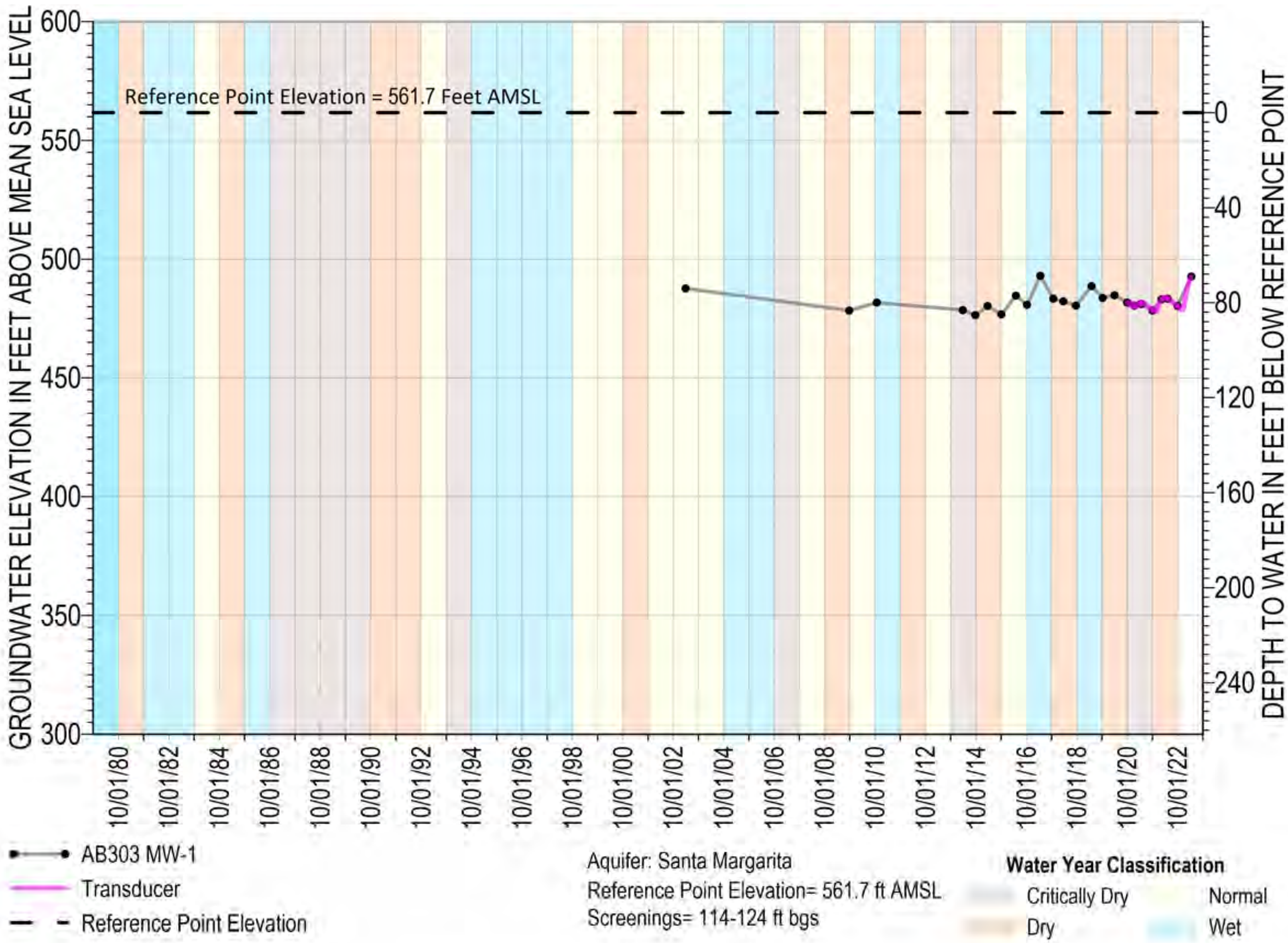
*SV4-MW is an RMP for the interconnected surface water sustainability indicator

Minimum threshold not met

Minimum threshold met but 2027 interim milestone and measurable objective not met

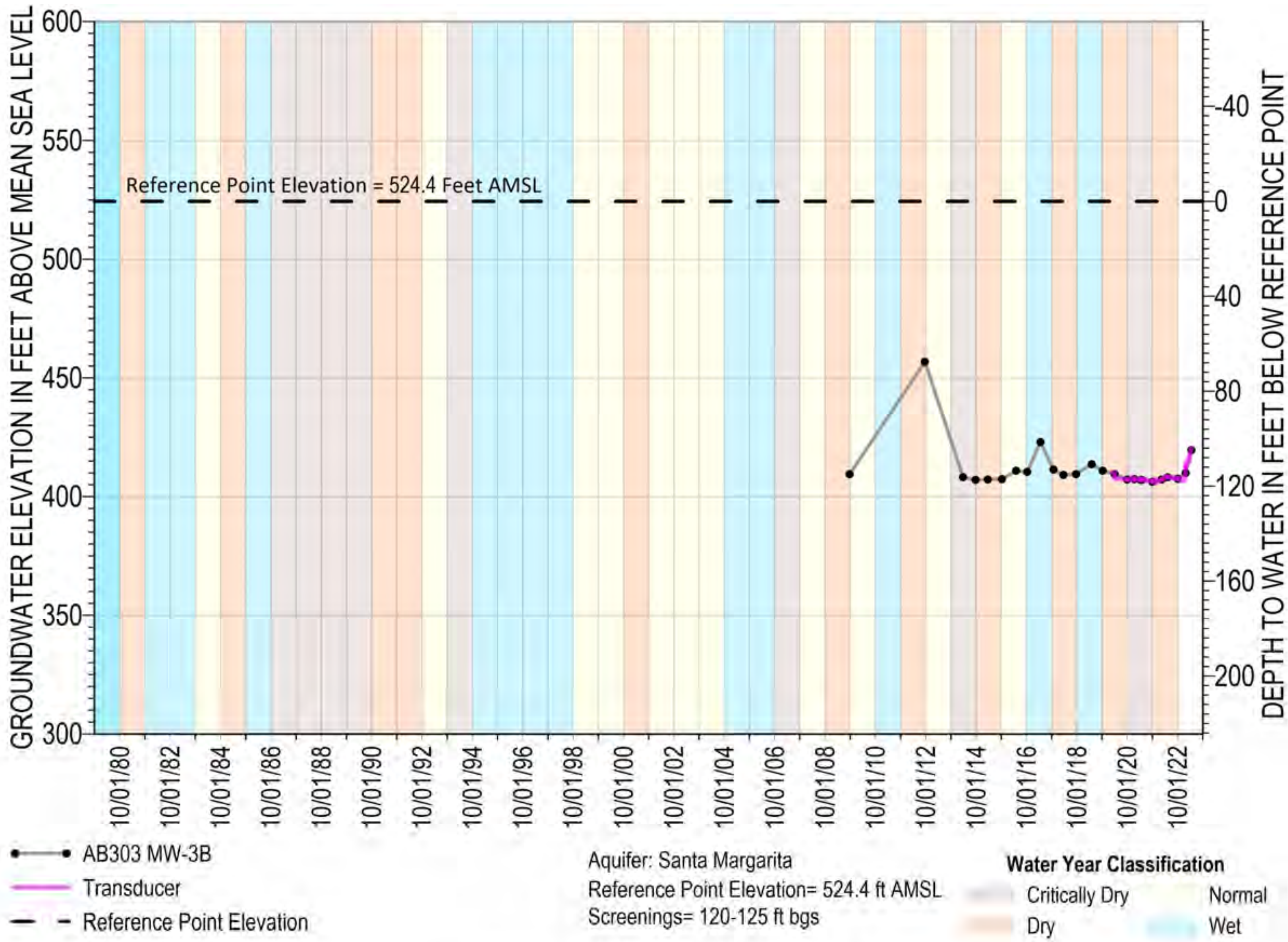
Minimum threshold and 2027 interim milestone met, but measurable objective not met

Measurable objective met



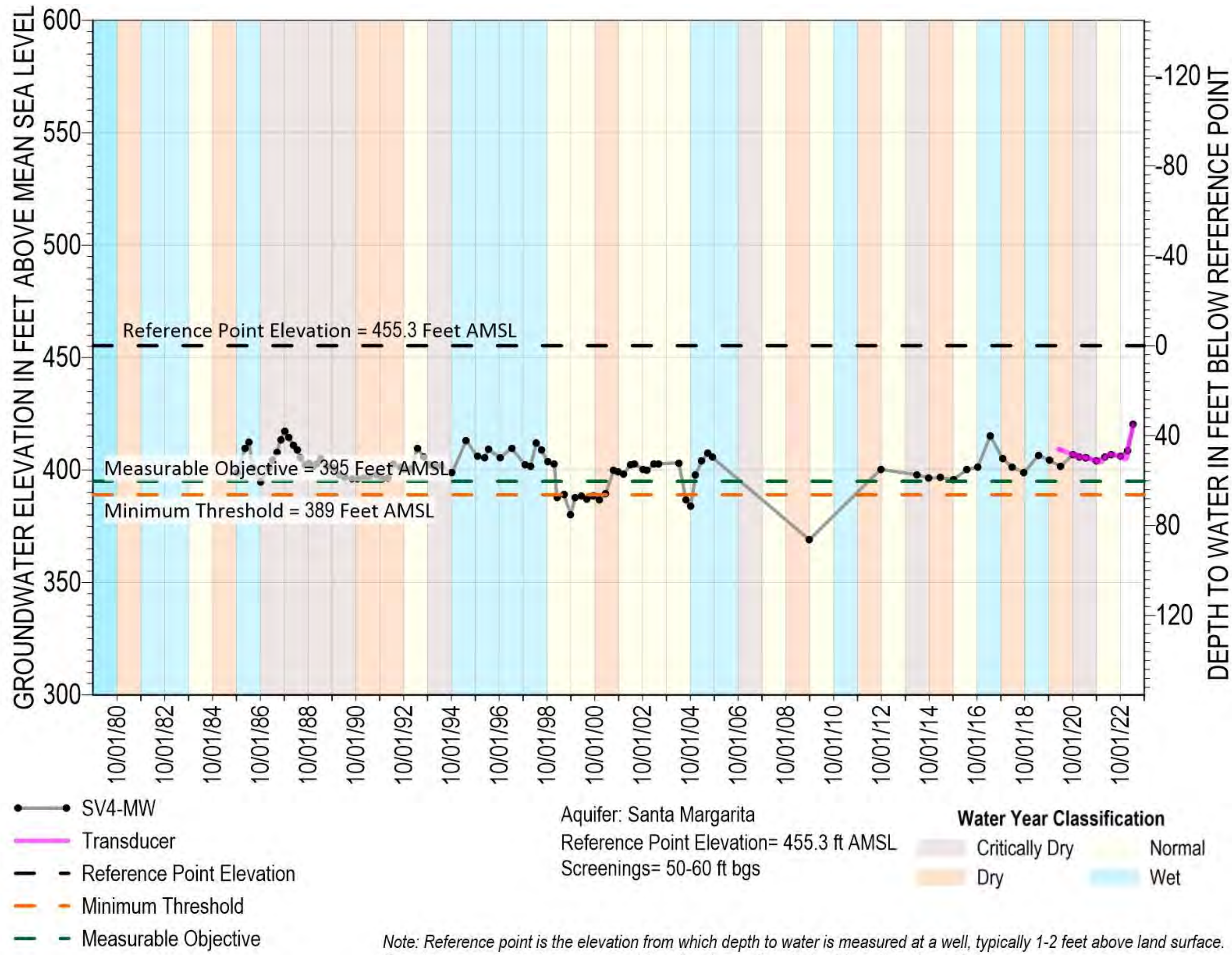
Note: Reference point is the elevation from which depth to water is measured at a well, typically 1-2 feet above land surface. Pumping measurements are removed from hand soundings but not from transducer data.

Figure 6. AB303 MW-1 Hydrograph (Santa Margarita Aquifer)



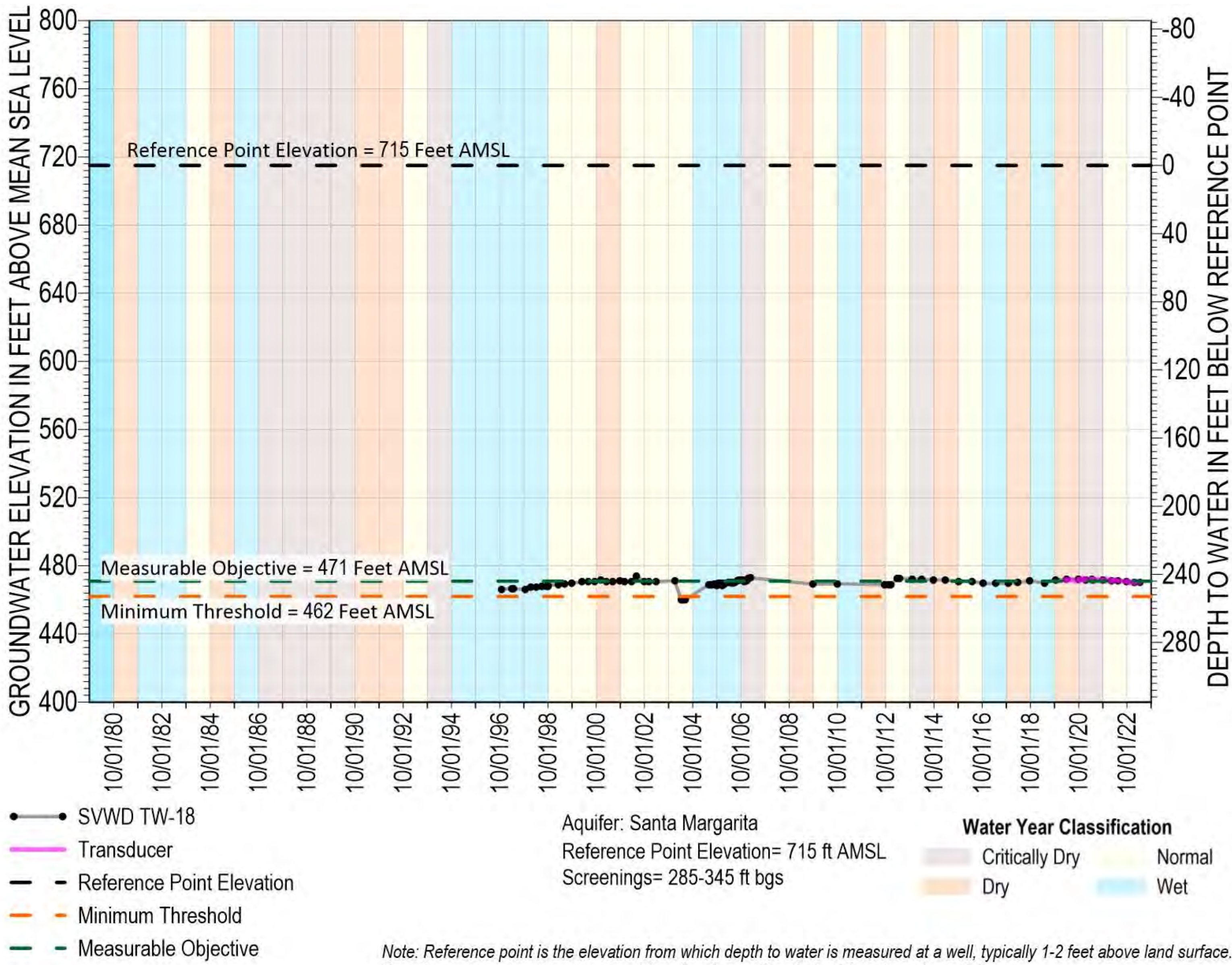
Note: Reference point is the elevation from which depth to water is measured at a well, typically 1-2 feet above land surface. Pumping measurements are removed from hand soundings but not from transducer data.

Figure 7. AB303 MW-3B Hydrograph (Santa Margarita Aquifer)



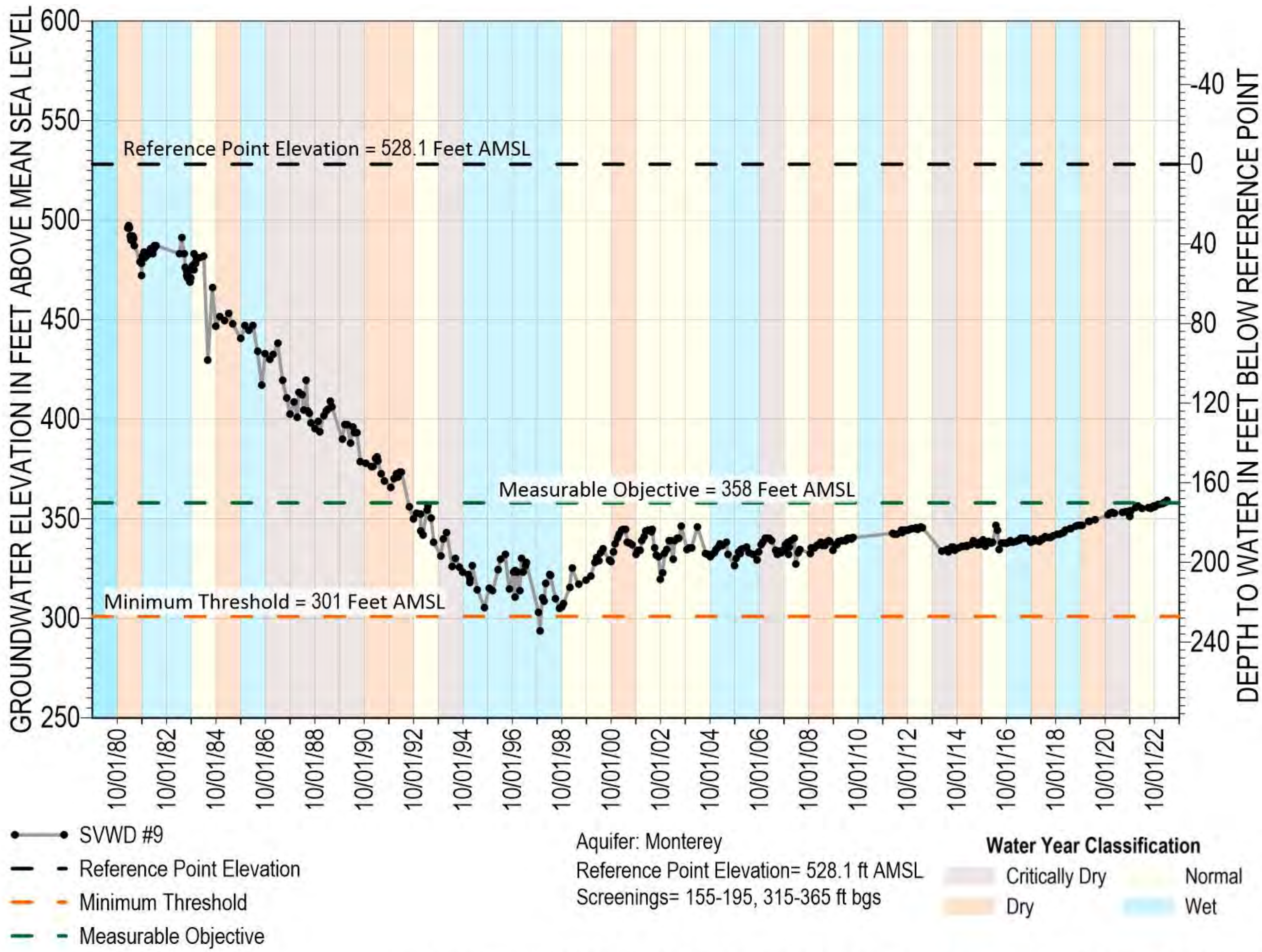
Note: Reference point is the elevation from which depth to water is measured at a well, typically 1-2 feet above land surface. Pumping measurements are removed from hand soundings but not from transducer data.

Figure 8. SV4-MW Hydrograph (Santa Margarita Aquifer)



Note: Reference point is the elevation from which depth to water is measured at a well, typically 1-2 feet above land surface. Pumping measurements are removed from hand soundings but not from transducer data.

Figure 9. TW-18 Hydrograph (Santa Margarita Aquifer)



Note: Reference point is the elevation from which depth to water is measured at a well, typically 1-2 feet above land surface. Pumping measurements are removed from hand soundings but not from transducer data.

Figure 10. Well #9 Hydrograph (Monterey Formation)

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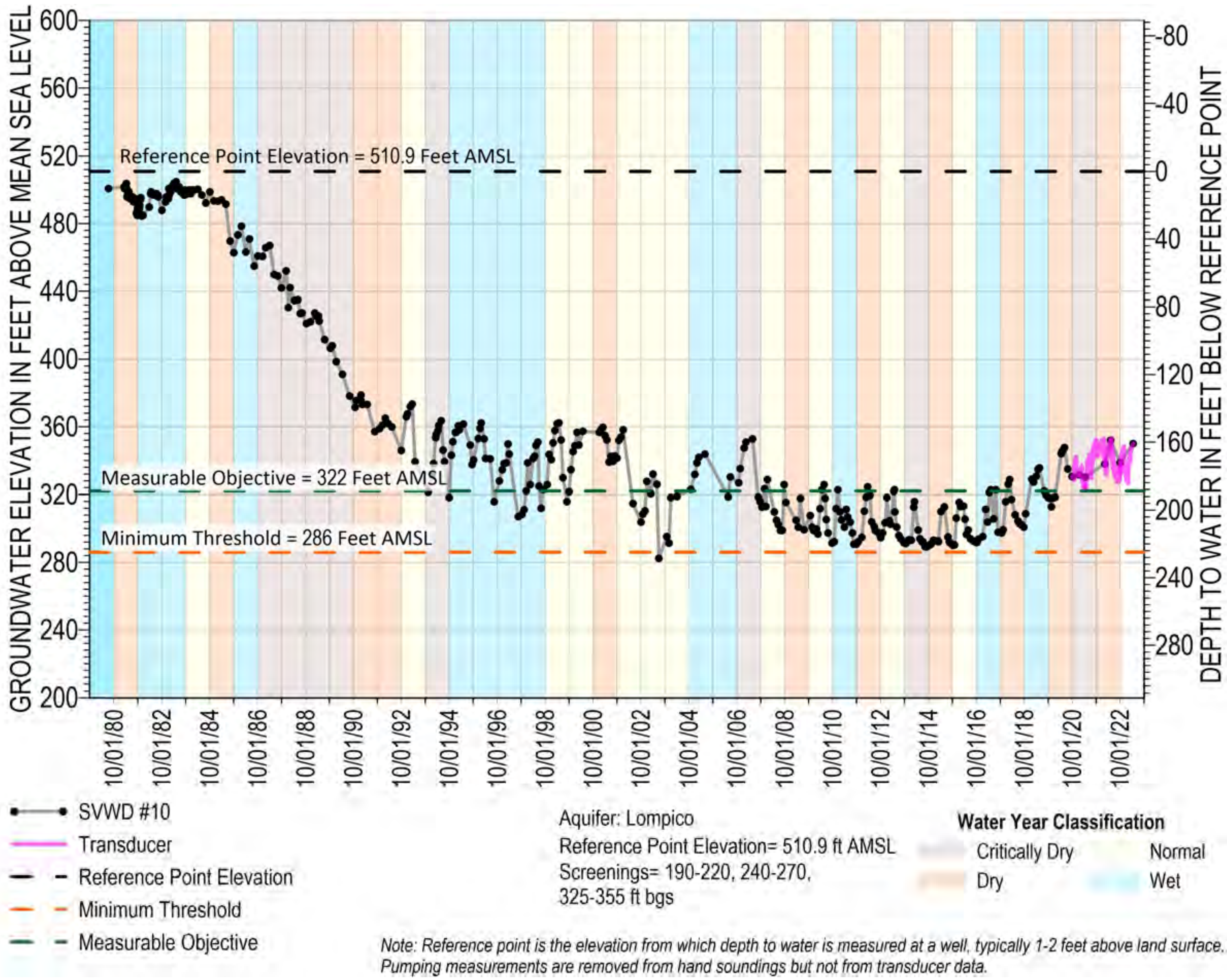
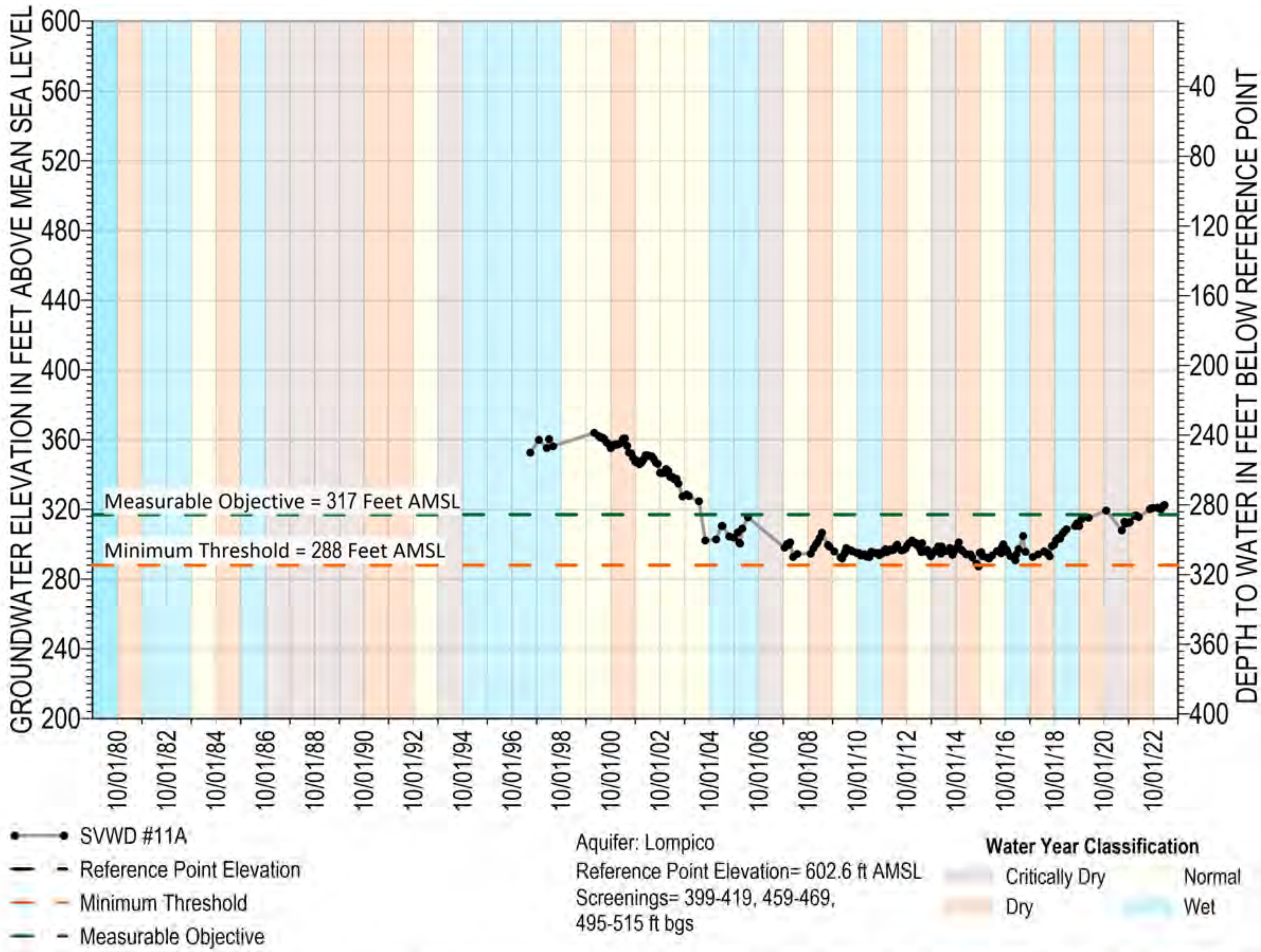


Figure 11. Well #10 Hydrograph (Lompico Aquifer)



Note: Reference point is the elevation from which depth to water is measured at a well, typically 1-2 feet above land surface. Pumping measurements are removed from hand soundings but not from transducer data.

Figure 12. Well #11A Hydrograph (Lompico Aquifer)

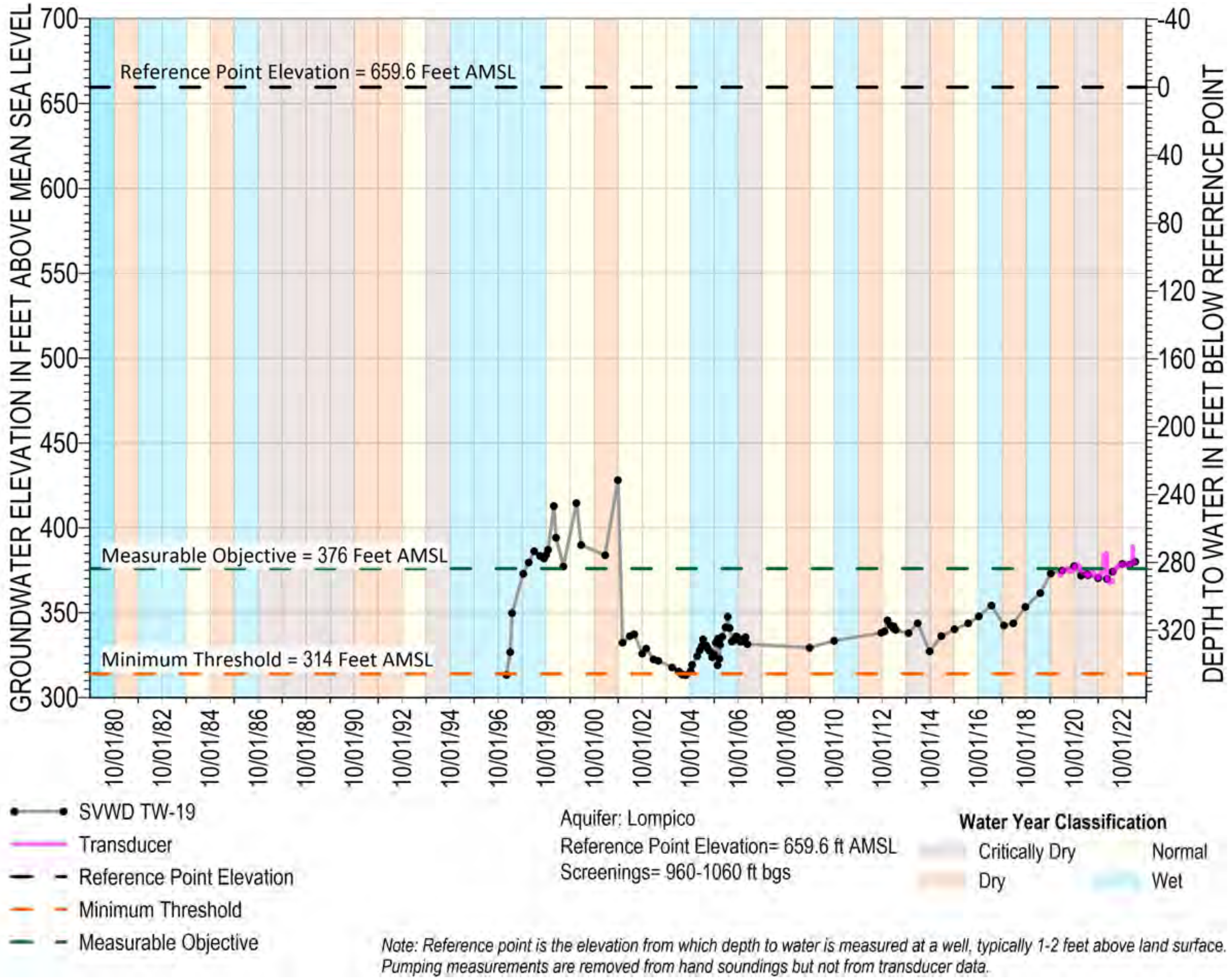
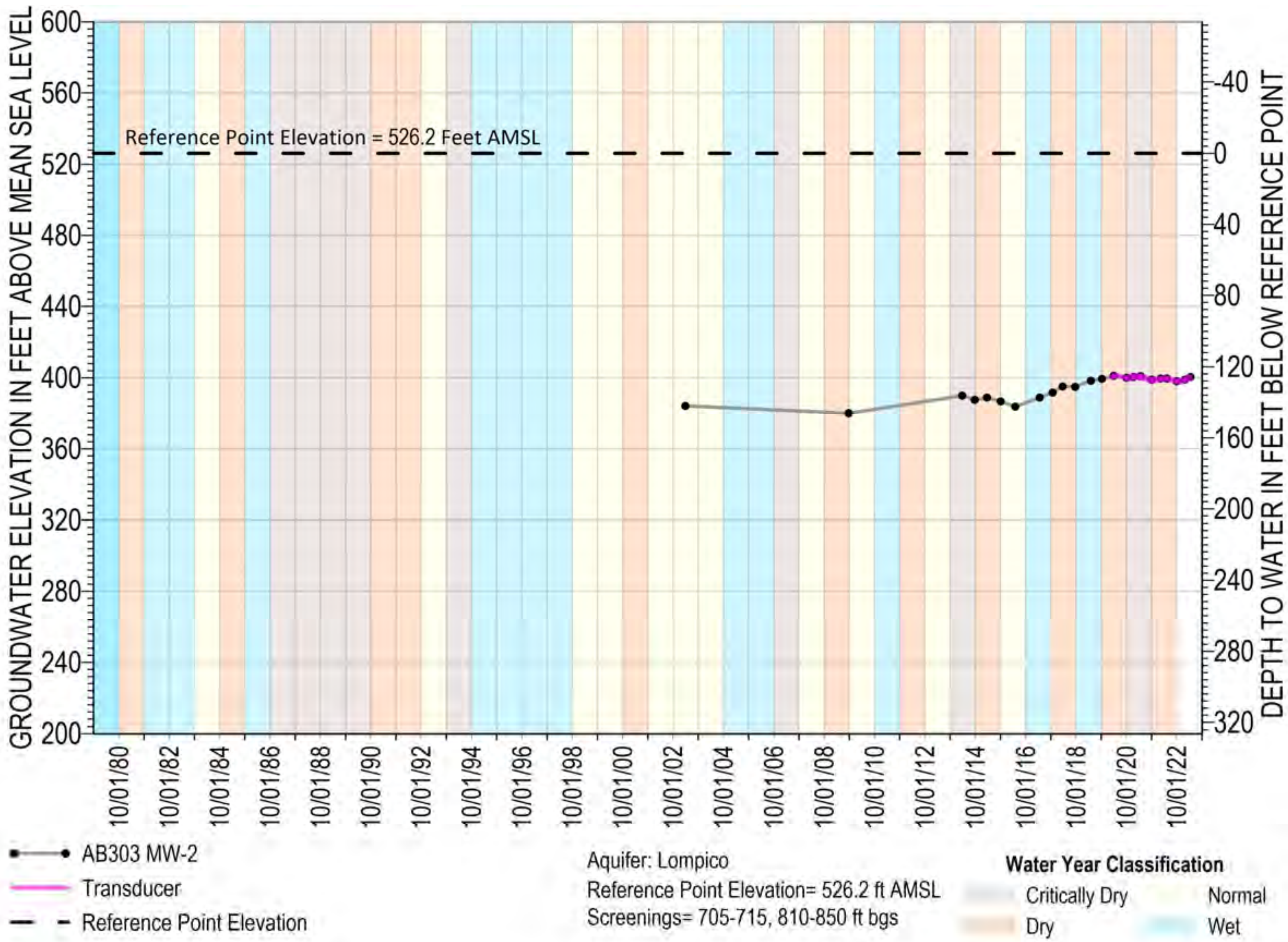


Figure 13. TW-19 Hydrograph (Lompico Aquifer)



Note: Reference point is the elevation from which depth to water is measured at a well, typically 1-2 feet above land surface. Pumping measurements are removed from hand soundings but not from transducer data.

Figure 14. AB303-MW2 Hydrograph (Lompico Aquifer)

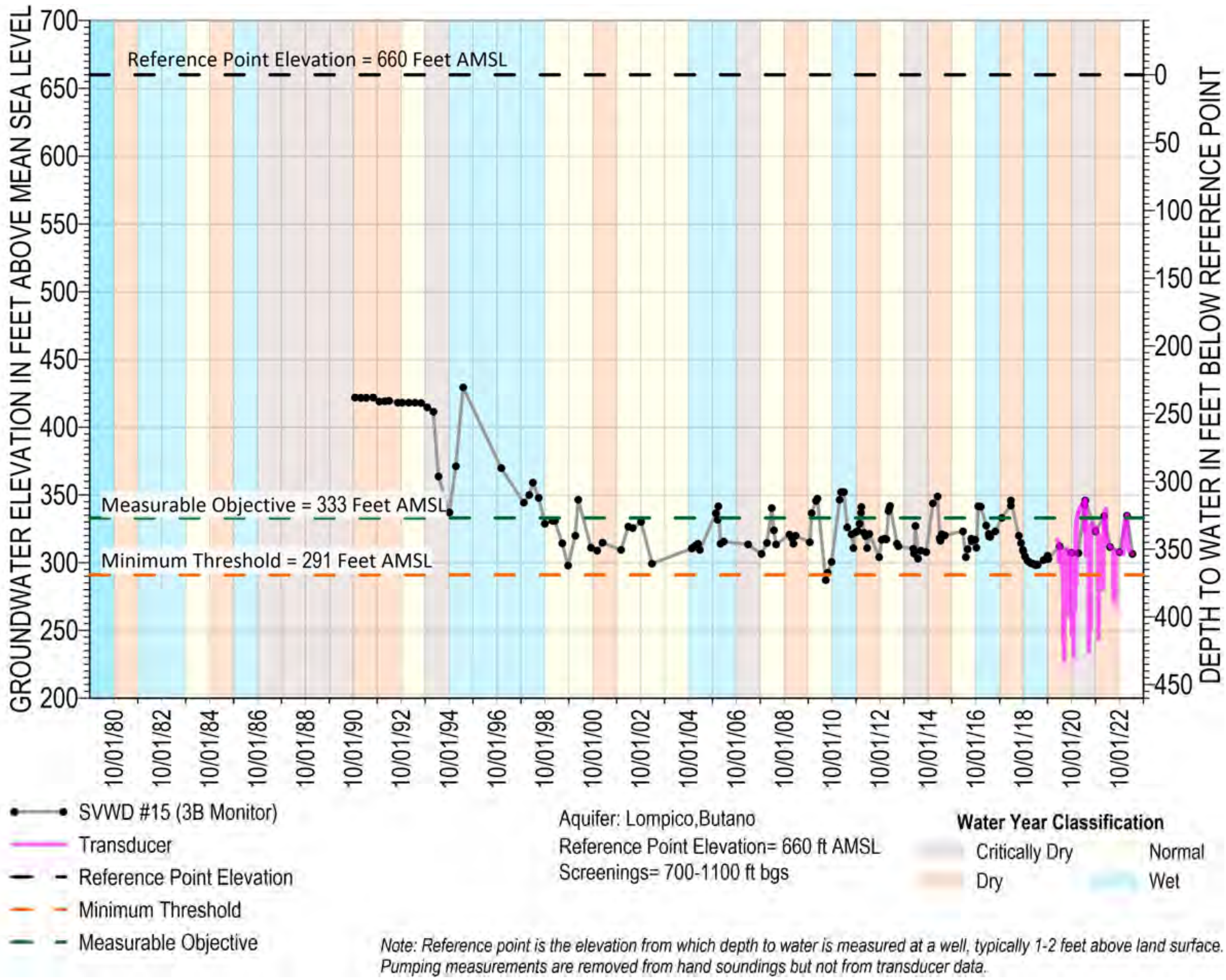


Figure 15. Well #15 Hydrograph (Lompico/Butano Aquifers)

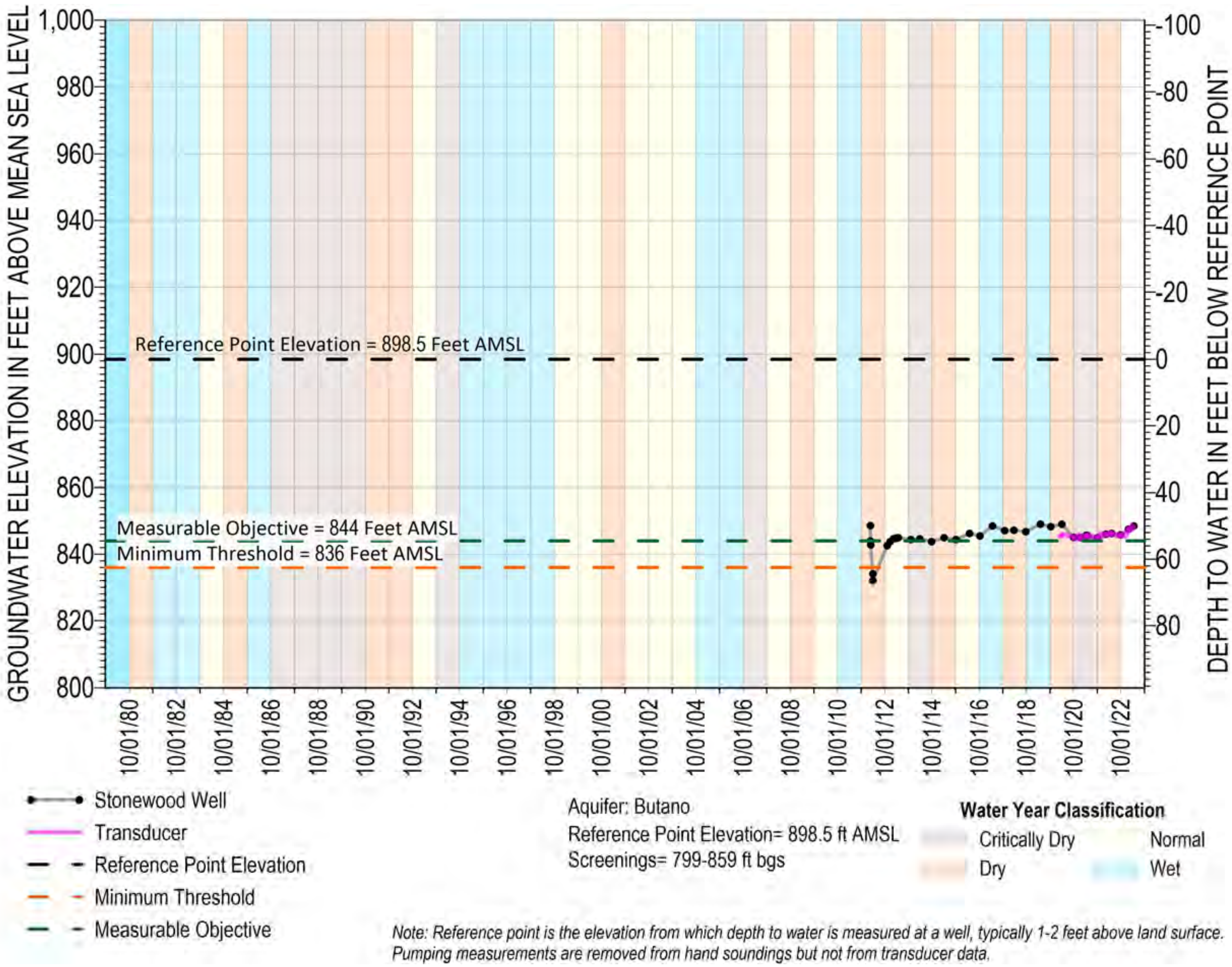
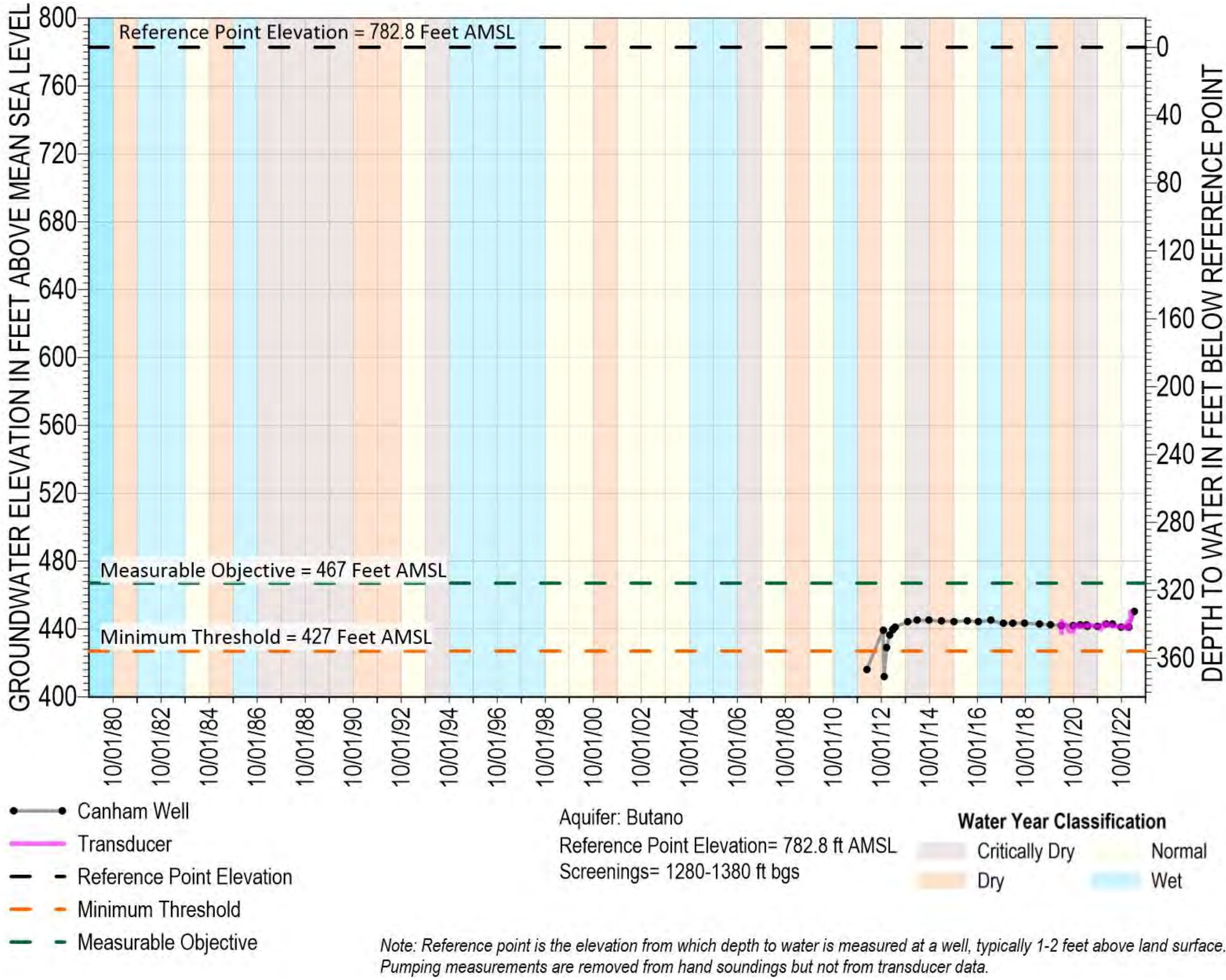


Figure 16. Stonewood Hydrograph (Butano)



Note: Reference point is the elevation from which depth to water is measured at a well, typically 1-2 feet above land surface. Pumping measurements are removed from hand soundings but not from transducer data.

Figure 17. Canham Hydrograph (Butano)

WATER SUPPLY CONDITIONS SUMMARY

Wet conditions in WY2023 and long-term decreasing groundwater extractions are benefiting regional groundwater levels in all aquifers. Above-average rainfall readily recharges the shallow Santa Margarita aquifer with its widespread surface exposure. Because the Lompico and Butano aquifers, used for District water supply, are deeper and mostly confined beneath the Monterey Formation, these aquifers generally do not respond immediately to rainfall like the Santa Margarita aquifer does. Reduced extraction from the Lompico aquifer and Monterey Formation has reversed long-term declining groundwater level trends. Groundwater levels in the Monterey Formation are clearly increasing, year after year, even during dry years. The Lompico aquifer has generally been recovering throughout the District since 2017. The Butano aquifer groundwater levels appear to be stable, though the current Butano aquifer monitoring network does not fully capture regional trends due to uncertain hydrogeologic connection with the extraction wells partially screened in the aquifer. A new dedicated Butano aquifer monitoring well is planned through GSP implementation that will help the District better monitor Butano groundwater levels closer to the active extraction wells.

WATER SUPPLY AND DEMAND ASSESSMENT

The WSCP in the 2020 UWMP establishes trigger levels for increased water resource management during periods of drought or increased extractions that result in water supply shortages. This section reviews precipitation, groundwater level, and groundwater extraction data relative to triggers established in the plan that would require management changes by the District if exceeded. Supply shortage stages from the 2020 UWMP are summarized on Figure 18. Groundwater elevations relative to the MTs are presented earlier in this report, in Table 3.
In WY2023, none of the rainfall or groundwater conditions water shortage triggers are exceeded, as shown below:

- Annual precipitation is 129% of average, 2-year precipitation is 98% of average, and 3-year precipitation is 79% of average. These values do not exceed any of the precipitation triggers on Figure 18.
- The District's baseline annual extraction referenced in the 2020 UWMP is 950 AF from the Lompico aquifer and 350 AF from the Butano aquifer. These baseline values are consistent with the groundwater in storage SMC in the GSP. Using the GSP assumption that 40% of extraction from the Lompico/Butano aquifer extraction wells is sourced from the Lompico aquifer, WY2022 extractions totaled 840 AF from the Lompico aquifer and 268 AF from the Butano aquifer. WY2022 extraction volumes are 88% of baseline extraction for the Lompico aquifer and 77% of baseline extraction for the Butano aquifer and do not exceed thresholds on Figure 18 that start at 120% of baseline. Groundwater

extractions so far for WY2023 are less than wet seasons in prior water years, so the District appears to be on track to maintain extraction volumes less than the baseline for the duration of WY2023.

- As shown in Table 3, WY2022 groundwater levels are 10 feet or more above the MT in the District's Monterey formation, Lompico, and Butano aquifer wells, so do not exceed supply shortage thresholds on Figure 18. As discussed in this report, April 2023 groundwater levels are stable or increasing in all monitoring wells, except for Lompico/Butano Well #15 that is highly influenced by nearby pumping.

STAGE	RAINFALL TRIGGER[1]
1	Cumulative rainfall over 2 years < 80% of average and/or Single year rainfall < 75% of average
2	Cumulative rainfall over 2 years < 70% of average and/or Single year rainfall < 60% of average
3	Cumulative rainfall over 3 years < 50% of average and/or Single year rainfall < 50% of average
4	Same or worse than Stage 3
5	Same or worse than Stage 3

The Districts' Boards may adjust stages up or down based on annual review and other WSCP shortage stage evaluation criteria.

[1] Single year rainfall < 50% of average is representative of water shortage of 50%.

STAGE	SLVWD TRIGGER	SVWD TRIGGER
1	• Only rainfall trigger applies	• Only rainfall trigger applies
2	• Groundwater level RMP Minimum Threshold levels are within: • 5 feet of Minimum Threshold for Santa Margarita Aquifer RMPs, or • 10 feet of Minimum Threshold for Monterey Formation or Lompico Aquifer RMPs • Last 5-year SLVWD extraction average exceeds SLVWD projected long-term average baseline pumping by 20% for Santa Margarita Aquifer or 20% for Lompico Aquifer	• Groundwater level RMP Minimum Threshold levels are within 10 feet of Minimum Threshold for Monterey Formation, Lompico or Butano Aquifer RMPs • Last 5-year SVWD extraction average exceeds SVWD projected long-term average baseline pumping by 20% for Lompico Aquifer or 20% for Butano Aquifer
3	• One RMP in any of the Santa Margarita Aquifer, Monterey Formation, and Lompico Aquifer has a Minimum Threshold exceedance • Overall groundwater level trend over 5 years is declining in 25% of RMPs • Last 5-year SLVWD extraction average exceeds SLVWD projected long-term average baseline pumping by 20% for Santa Margarita Aquifer or 20% for Lompico Aquifer	• One RMP in any of the Monterey Formation, Lompico Aquifer or Butano Aquifer has a Minimum Threshold exceedance • Overall groundwater level trend over 5 years is declining in 25% of RMPs • Last 5-year SVWD extraction average exceeds SVWD projected long-term average baseline pumping by 20% for Lompico Aquifer or 20% for Butano Aquifer
4	• Three RMP in any of the Santa Margarita Aquifer, Monterey Formation, and Lompico Aquifer have Minimum Threshold exceedances • Overall groundwater level trend over 5 years is declining in 50% of RMPs • Last 5-year SLVWD extraction average exceeds SLVWD projected long-term average baseline pumping by 30% for Santa Margarita Aquifer or 30% for Lompico Aquifer	• Three RMP in any of the Lompico, Monterey & Butano aquifers have Minimum Threshold exceedances • Overall groundwater level trend over 5 years is declining in 50% of RMPs • Last 5-year SVWD extraction average exceeds SVWD projected long-term average baseline pumping by 30% for Lompico Aquifer or 30% for Butano Aquifer
5	• Five RMP in any of the Santa Margarita Aquifer, Monterey Formation, and Lompico Aquifer have a Minimum Threshold exceedance • Overall groundwater level trend over 5 years is declining in 75% of RMPs • Last 5-year SLVWD extraction average exceeds SLVWD projected long-term average baseline pumping by 40% for Santa Margarita Aquifer or 40% for Lompico Aquifer	• Lompico, Monterey & Butano aquifers have up to 5 RMP exceedances • Santa Margarita aquifer has up to 5 RMP Minimum Threshold exceedances • Overall groundwater level trend over 5 years is declining in 75% of RMPs • Last 5-year SVWD extraction average exceeds SVWD projected long-term average baseline pumping by 40% for Lompico Aquifer or 40% for Butano Aquifer

The Districts' Boards may adjust stages up or down based on annual review and other WSCP shortage stage evaluation criteria.

Figure 18. Groundwater Conditions Trigger Levels - 2020 UWMP

CONCLUSIONS

Higher recent precipitation and decreasing groundwater extraction is increasing groundwater in storage. Groundwater recharge from precipitation in wet years and in-lieu recharge from decreased extraction are reasons for stable to increasing groundwater levels in all District monitoring wells since 2017. The wet start to 2023 immediately benefits groundwater recharge in the shallower aquifers and will eventually help recharge the deeper aquifers. The District only extracts groundwater from the deeper Lompico and Butano aquifers, with extraction from those aquifers decreasing annually since 2017. Prior reviews of groundwater conditions concluded that "based on groundwater level trends and pumping volumes in the Lompico aquifer through the 2012 to 2016 drought and beyond, keeping total District annual pumping below 1,250 AF per year should not stress the aquifers being pumped even in below average rainfall years over the short-term." The District has been able to maintain extraction volumes below the 1,250 AF per year threshold in recent years. With planned future urban growth and climate uncertainty, declines in groundwater levels in all aquifers still may occur, so the District should remain vigilant and continue closely monitoring and evaluating groundwater levels and extraction volumes.

Sincerely,
MONTGOMERY & ASSOCIATES

Georgina King
Principal Hydrogeologist